FCC RF Test Report (WLAN 5GHz)

Report No.:	RF161129C10A
FCC ID:	G95-DWA1230
Equipment Name:	Wireless .11ac Smart Ultra Broadband Gateway
Trade Name:	technicolor
Model Number:	DWA1230
Product Code:	DSLYBA123GP, DSLYBA123WA
Received Date:	Nov. 29, 2016
Test Date:	Feb. 10 ~ Mar. 24, 2017
Issued Date:	Mar. 24, 2017
Applicant:	Technicolor Connected Home USA LLC
Address:	5030 Sugarloaf Parkway Building Lawrenceville Georgia United States 30044
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
RF161129C10A	Original release.	Mar. 24, 2017

1 Certificate of Conformity

Equipment Name:	Wireless .11ac Smart Ultra Broadband Gateway
Trade Name:	technicolor
Test Model:	DWA1230
Product Code:	DSLYBA123GP, DSLYBA123WA
Sample Status:	Product Unit
Applicant:	Technicolor Connected Home USA LLC
Test Date:	Feb. 10 ~ Mar. 24, 2017
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Mar. 24, 2017
Polly Chien / Specialist

Approved by : _____ , **Date:** Mar. 24, 2017
Ken Liu / Senior Manager

2 Summary of Test Results

Applied Standard: 47 CFR FCC Part 15 Subpart E					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
3.9	15.203	Antenna Requirements	-	-	PASS
4.1	15.407(b)(6)	AC Power Conducted Emissions	Margin is -13.34dB at 0.15000MHz.	-	PASS
4.2	-	99% Occupied Bandwidth & 26dB Bandwidth	99% Occupied Bandwidth [MHz]: **For CDD Mode:** 11ac(40M): 37.32 11ac(80M): 76.08 **For TxBF Mode:** 11ac(40M): 37.32 11ac(80M): 75.60 26dB Bandwidth [MHz]: **For CDD Mode:** 11ac(40M): 45.62 11ac(80M): 89.23 **For TxBF Mode:** 11ac(40M): 44.92 11ac(80M): 95.80	-	-
4.4	15.407 (a)(1/2/3)	Maximum Conducted Output Power	**For CDD Mode:** 5250-5350MHz Power [dBm]: 11ac(40M): 23.85 dBm 11ac(80M): 22.72 dBm 5470-5725MHz Power [dBm]: 11ac(40M): 23.96 dBm 11ac(80M): 22.70 dBm **For TxBF Mode:** 5250-5350MHz Power [dBm]: 11ac(40M): 23.33 dBm 11ac(80M): 22.74 dBm 5470-5725MHz Power [dBm]: 11ac(40M): 22.92 dBm 11ac(80M): 22.84 dBm	Power [dBm] 5250-5350MHz:24 5470-5725MHz:24	PASS

Applied Standard: 47 CFR FCC Part 15 Subpart E					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
4.5	15.407 (a)(1/2/3)	Power Spectral Density	**For CDD Mode:** 5250-5350MHz [dBm/MHz]: 11ac(40M): 8.12 11ac(80M): 4.68 5470-5725MHz [dBm/MHz]: 11ac(40M): 8.03 11ac(80M): 5.62 **For TxBF Mode:** 5250-5350MHz [dBm/MHz]: 11ac(40M): 7.96 11ac(80M): 4.72 5470-5725MHz [dBm/MHz]: 11ac(40M): 6.94 11ac(80M): 4.58	5250-5350MHz: 11 [dBm/MHz] 5470-5725MHz: 11 [dBm/MHz]	PASS
4.6	15.407 (b)(1/2/3/4/6)	Radiated Emissions	Margin is -2.1dB at 875.84MHz.	-	PASS
		Band Edge	Margin is -0.1dB at 5350.00MHz	-	PASS
4.7	15.407(g)	Frequency Stability	-	Signal shall remain in-band	PASS

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	3.63 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.64 dB
	6GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Basic Description of Equipment Under Test (WLAN 5GHz)

Items	Description		
Equipment Name	Wireless .11ac Smart Ultra Broadband Gateway		
Trade Name	technicolor		
Model Number	DWA1230		
Product Code	DSLYBA123GP, DSLYBA123WA		
FCC ID	G95-DWA1230		
Power Type	From power adapter		
Antenna	Refer section 3.10		
EUT Stage	■ Product Unit	☐	Pre-Sample
Operating Band and Conducted Output Power	**U-NII-1** 5150~5250MHz	☐	IEEE 802.11a:
		☐	IEEE 802.11ac (20MHz):
		☐	IEEE 802.11ac (40MHz):
		☐	IEEE 802.11ac (80MHz):
	U-NII-2A 5250~5350MHz	☐	IEEE 802.11a
		☐	IEEE 802.11ac (20MHz)
		■	IEEE 802.11ac (40MHz): CDD Mode: 23.85 dBm TxBF Mode: 23.33 dBm
		■	IEEE 802.11ac (80MHz): CDD Mode: 22.72 dBm TxBF Mode: 22.74 dBm
	U-NII-2C 5470~ 5725 MHz	☐	IEEE 802.11a
		☐	IEEE 802.11ac (20MHz)
		■	IEEE 802.11ac (40MHz): CDD Mode: 23.96 dBm TxBF Mode: 22.92 dBm
		■	IEEE 802.11ac (80MHz): CDD Mode: 22.70 dBm TxBF Mode: 22.84 dBm
	U-NII-3 5725~ 5850 MHz	☐	IEEE 802.11a:
		☐	IEEE 802.11ac (20MHz):
		☐	IEEE 802.11ac (40MHz):
		☐	IEEE 802.11ac (80MHz):

Product Type	For IEEE 802.11n: WLAN(4TX, 4RX) For IEEE 802.11ac: WLAN (4TX, 4RX)			
Nominal Bandwidth	40MHz / 80MHz			
Modulation	802.11n: (BPSK / QPSK / 16QAM / 64QAM) See the below table 802.11ac: (BPSK / QPSK / 16QAM / 64QAM/ 256QAM) See the below table			
Data Rate (Mbps)	11n(40MHz) mode : MCS0~MCS15 11ac(40MHz) mode : MCS0~MCS9 for NSS1~NSS4 See the below table 11ac(80MHz) mode : MCS0~MCS9 for NSS1~NSS4 See the below table			
TPC Function	■	With TPC	□	Without TPC
Beam forming Function	■	With Beam forming	□	Without Beam forming
DFS Operating Mode(s)	■	Master	□	Slave without radar detection
DFS Function	■	5250~5350MHz		
	■	5470~5725MHz		
	■	5600~5650MHz		
Off Channel CAC Feature Implemented	■	No		
Ad-hoc/Hotspot Mode	■	No Ad-hoc/Hotspot operation in 5150 - 5350 MHz and 5470 - 5725 MHz.		
User Access Restrictions	■	DFS controls (hardware or software) related to radar detection are NOT accessible to the user.		
I/O Ports	LAN Port x 4 USB Port x 1 DSL Port x 2 MoCA Port x 1(Coaxial type) SFP Port x 1			
Hardware Version	LAB2c			
Software Version	16.4.7346-3110000-20161121223653-5f8b7460b37a17de7749af5a4f388095eea8e3c0			

802.11n Data Rate spec

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11n 20MHz Nss=1	MCS0	6.5	7.2	11n 40MHz Nss=1	MCS0	13.5	15
	MCS1	13	14.4		MCS1	27	30
	MCS2	19.5	21.7		MCS2	40.5	45
	MCS3	26	28.9		MCS3	54	60
	MCS4	39	43.3		MCS4	81	90
	MCS5	52	57.8		MCS5	108	120
	MCS6	58.5	65		MCS6	121.5	135
	MCS7	65	72.2		MCS7	135	150
11n 20MHz Nss=2	MCS8	13	14.4	11n 40MHz Nss=2	MCS8	27	30
	MCS9	26	28.9		MCS9	54	60
	MCS10	39	43.3		MCS10	81	90
	MCS11	52	57.8		MCS11	108	120
	MCS12	78	86.7		MCS12	162	180
	MCS13	104	115.6		MCS13	216	240
	MCS14	117	130		MCS14	243	270
	MCS15	130	144.4		MCS15	270	300
11n 20MHz Nss=3	MCS16	19.5	21.7	11n 40MHz Nss=3	MCS16	40.5	45
	MCS17	39	43.3		MCS17	81	90
	MCS18	58.5	65		MCS18	121.5	135
	MCS19	78	86.7		MCS19	162	180
	MCS20	117	130		MCS20	243	270
	MCS21	156	173.3		MCS21	324	360
	MCS22	175.5	195		MCS22	364.5	405
	MCS23	195	216.7		MCS23	405	450
11n 20MHz Nss=4	MCS24	26	28.9	11n 40MHz Nss=4	MCS24	54	60
	MCS25	52	57.8		MCS25	108	120
	MCS26	78	86.7		MCS26	162	180
	MCS27	104	115.6		MCS27	216	240
	MCS28	156	173.3		MCS28	324	360
	MCS29	208	231.1		MCS29	432	480
	MCS30	234	260		MCS30	486	540
	MCS31	260	288.9		MCS31	540	600

802.11ac Data Rate spec

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz NSS = 1	MCS0	6.5	7.2	11ac 40MHz NSS = 1	MCS0	13.5	15.0	11ac 80MHz NSS = 1	MCS0	29.3	32.5
	MCS1	13.0	14.4		MCS1	27	30.0		MCS1	58.5	65.0
	MCS2	19.5	21.7		MCS2	40.5	45.0		MCS2	87.8	97.5
	MCS3	26	28.9		MCS3	54	60.0		MCS3	117.0	130.0
	MCS4	39	43.3		MCS4	81	90.0		MCS4	175.5	195.0
	MCS5	52	57.8		MCS5	108	120.0		MCS5	234.0	260.0
	MCS6	58.5	65		MCS6	121.5	135.0		MCS6	263.3	292.5
	MCS7	65	72.2		MCS7	135.0	150.0		MCS7	292.5	325.0
	MCS8	78	86.7		MCS8	162.0	180.0		MCS8	351.0	390.0
	MCS9	Note	Note		MCS9	180.0	200.0		MCS9	390.0	433.3

NOTE: MCS 9 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz NSS = 2	MCS0	13.0	14.4	11ac 40MHz NSS = 2	MCS0	27.0	30.0	11ac 80MHz NSS = 2	MCS0	58.5	65.0
	MCS1	26.0	28.9		MCS1	54.0	60.0		MCS1	117.0	130.0
	MCS2	39.0	43.3		MCS2	81.0	90.0		MCS2	175.5	195.0
	MCS3	52.0	57.8		MCS3	108.-0	120.0		MCS3	234.0	260.0
	MCS4	78.0	86.7		MCS4	162.0	180.0		MCS4	351.0	390.0
	MCS5	104.0	115.6		MCS5	216.0	240.0		MCS5	468.0	520.0
	MCS6	117.0	130.0		MCS6	243.0	270.0		MCS6	526.5	585.0
	MCS7	130.0	144.4		MCS7	270.0	300.0		MCS7	585.0	650.0
	MCS8	156.0	173.3		MCS8	324.0	360.0		MCS8	702.0	780.0
	MCS9	13.0	14.4		MCS9	360.0	400.0		MCS9	780.0	866.7

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz NSS = 3	MCS0	19.5	21.7	11ac 40MHz NSS = 3	MCS0	40.5	45.0	11ac 80MHz NSS = 3	MCS0	87.8	97.5
	MCS1	39.0	43.3		MCS1	81.0	90.0		MCS1	175.5	195.0
	MCS2	58.5	65.0		MCS2	121.5	135.0		MCS2	263.3	292.5
	MCS3	78.0	86.7		MCS3	162.0	180.0		MCS3	351.0	190.0
	MCS4	117.0	130		MCS4	243.0	270.0		MCS4	526.5	585.0
	MCS5	156.0	173.3		MCS5	324.0	360.0		MCS5	702.0	780.0
	MCS6	175.5	195.0		MCS6	364.5	405.0		MCS6	Note	Note
	MCS7	195.0	216.7		MCS7	405.0	450.0		MCS7	877.5	975.0
	MCS8	234.0	260.0		MCS8	486.0	540.0		MCS8	1053.0	1170.0
	MCS9	260.0	228.9		MCS9	540.0	600.0		MCS9	1170.0	1300.0
NOTE: MCS 6 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.											

Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)		Standard	INDEX	Data Rate (Mbps)	
		LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)			LGI (800ns)	SGI (400ns)
11ac 20MHz NSS = 4	MCS0	26.0	28.9	11ac 40MHz NSS = 4	MCS0	54.0	60.0	11ac 80MHz NSS = 4	MCS0	117.0	130.0
	MCS1	52.0	57.8		MCS1	108.0	120.0		MCS1	234.0	260.0
	MCS2	78.0	86.7		MCS2	162.0	180.0		MCS2	351.0	390.0
	MCS3	104.0	115.6		MCS3	216.0	240.0		MCS3	468.0	520.0
	MCS4	156.0	173.3		MCS4	324.0	360.0		MCS4	702.0	780.0
	MCS5	208.0	231.1		MCS5	432.0	480.0		MCS5	936.0	1040.0
	MCS6	234.0	260.0		MCS6	486.0	540.0		MCS6	1053.0	1170.0
	MCS7	260.0	288.9		MCS7	540.0	600.0		MCS7	1170.0	1300.0
	MCS8	312.0	346.7		MCS8	648.0	720.0		MCS8	1404.0	1560.0
	MCS9	Note	Note		MCS9	720.0	800.0		MCS9	1560.0	1733.3
NOTE: MCS 9 is invalid due to mod(NCBPS/NES, DR) not being equal to 0.											

3.2 Accessories

Power supply:

Brand	AcBel
Model	WAC011
P/N	DSL37541960
Input Power	100-240Vac, 50/60Hz, 1A
Output Power	12Vdc, 2.8A
Power Line	1.5m power cable without core attached on adapter

3.3 Feature of Equipment Under Test

Please refer to user manual.

3.4 Information Provided by the Manufacturer

Interface Availability

Interface / Model	DC Power	ADSL: (ADSL2+) VDSL2 17a: (US0 EU-32)	MOCA	Ethernet LAN 1000Mbps	Ethernet WAN 1000Mbps	USB 3. 0	WLAN IEEE 802.11n (2.4GHz)	WLAN IEEE 802.11ac (5GHz)	SFP
DWA1230	12Vdc, 2.8A	●Annex A	●(1 port)	●(4 port)	●(1 port)	●(1 port)	●	●	●

●: Equipped
○: Not Equipped

3.5 General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v01r04
KDB 662911 D01 Multiple Transmitter Output v02r01
KDB 644545 D03 Guidance for 802 11ac New Rules v01
ANSI C63.10-2013

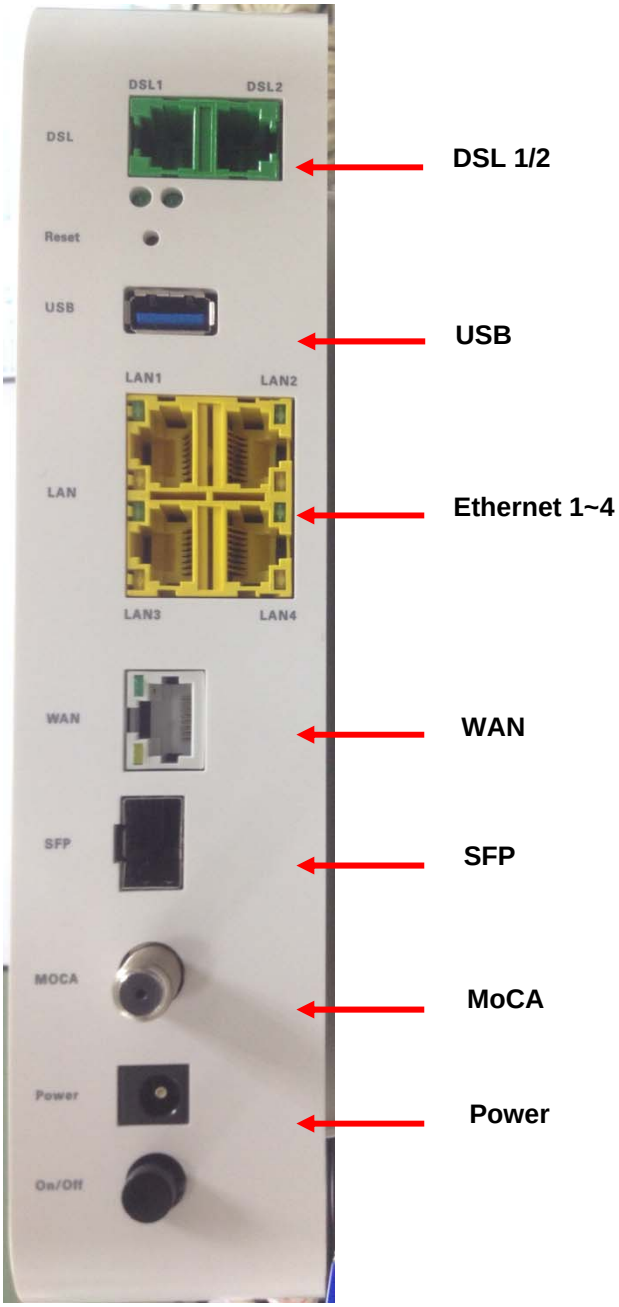
All test items have been performed and recorded as per the above standards.

3.6 Cabling Attached to the Equipment

Cable and Interconnection

Interface	Cable type	Cable length delivered with the modem	"Real life" Cable length that can be attached to this type of interface	Cable length to be used for testing	Internal/ external connection
DSL1/2	UTP Cat 3	2 meter flat cable	> 10 meter	10 meter	External
ETH1, WAN	UTP Cat 5	2 meter	> 10 meter	Two 10 meter cables;	Internal
MOCA	Coaxial	2 meter	> 10 meter	10 meter	External
USB	STP	NA	NA	NA	Internal
SFP (Fiber module)	Fiber	2 meter	> 10 meter	10 meter	External
AC power	UTP	1.5 meter	>10 meter	1.5 meter	External

3.7 Panel Drawing



3.8 Transmit Operating Mode

For 5250~5350MHz & 5470~5725MHz

Transmit Operating Mode							Transmit Muitiple Antennas					
☐	Operating mode 1 (single antenna)						☐	1TX				
■	Operating mode 2 (muitiple antenna, no beam forming)						☐	2TX	☐	3TX	■	4TX
■	Operating mode 3 (muitiple antenna, with beam forming)						☐	2TX	☐	3TX	■	4TX
☐	802.11a	Operating mode	☐	1T	☐	2T	☐	3TX	☐	4TX		
☐	802.11n (20MHz)	Operating mode	☐	1T	☐	2T	☐	3TX	☐	4TX		
■	802.11n (40MHz)	Operating mode	☐	1T	☐	2T	☐	3TX	■	4TX		
☐	802.11ac (20MHz)	Operating mode	☐	1T	☐	2T	☐	3TX	☐	4TX		
■	802.11ac (40MHz)	Operating mode	☐	1T	☐	2T	☐	3TX	■	4TX		
■	802.11ac (80MHz)	Operating mode	☐	1T	☐	2T	☐	3TX	■	4TX		

Note:
For IEEE802.11n 40MHz, MCS0~MCS7: 1 Stream 4TX; MCS8~MCS15: 2 Stream 4TX; MCS16~MCS23: 3 Stream 4TX; MCS24~MCS31: 4 Stream 4TX
For IEEE802.11ac 40MHz/80MHz, Nss1MCS0~Nss1MCS9: 1 Stream 4TX; Nss2MCS0~Nss2MCS9: 2 Stream 4TX; Nss3MCS0~Nss3MCS9: 3 Stream 4TX; Nss4MCS0~Nss4MCS9: 4 Stream 4TX

3.9 Antenna Requirements

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

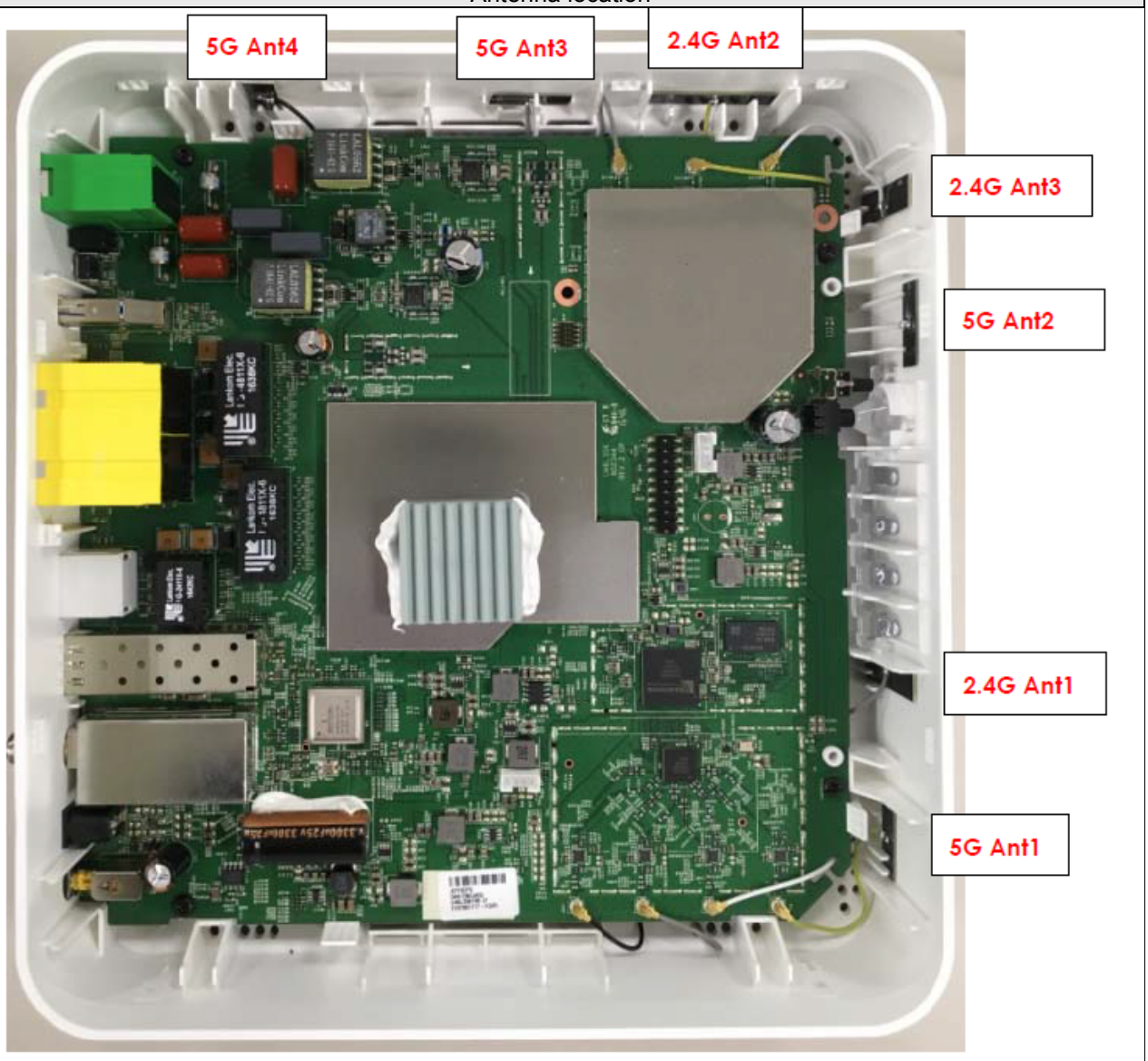
3.10 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	WHAYU	C107-511313-A	PCB	I-Pex
2	WHAYU	C107-511312-A	PCB	I-Pex
3	WHAYU	C107-511311-A	PCB	I-Pex
4	WHAYU	C107-511310-A	PCB	I-Pex

Antenna & Bandwidth

Antenna	1st (TX)			2nd (TX)			3rd (TX)			4th (TX)		
Bandwidth Mode	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
802.11a	V	X	X	V	X	X	V	X	X	V	X	X
802.11n	V	V	X	V	V	X	V	V	X	V	V	X
802.11ac	V	V	V	V	V	V	V	V	V	V	V	V

Antenna location



Frequency	Maximum Gain (dBi) for CDD mode					
	CDD mode (1 Stream 4 TX) for Power Gain			CDD mode (1 Stream 4 TX) for PSD Gain		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	3.27			6.89		
5190MHz		3.37			6.99	
5200MHz	3.34			6.94		
5210MHz			3.47			6.73
5230MHz		3.09			6.25	
5240MHz	3.07			6.38		
5260MHz	3.21			6.44		
5270MHz		4.14			6.61	
5290MHz			3.52			6.65
5300MHz	3.64			6.44		
5310MHz		3.94			6.48	
5320MHz	3.48			6.28		
5500MHz	2.98			6.13		
5510MHz		3.35			6.29	
5530MHz			3.71			6.71
5550MHz		3.43			6.33	
5580MHz	3.62			6.56		
5610MHz			3.50			6.13
5620MHz	4.02			6.63		
5630MHz		3.87			6.09	
5670MHz		3.37			6.06	
5690MHz			4.21			6.58
5700MHz	3.41			6.29		
5710MHz		3.85			6.18	
5720MHz	4.01			6.25		
5745MHz	4.02			6.31		
5755MHz		4.96			7.08	
5775MHz			4.34			6.49
5785MHz	3.64			5.92		
5795MHz		3.47			5.89	
5825MHz	3.90			6.22		

Note:

1. Antenna Gain refer to “DWA1230 antenna table_V1.08.xlsx” files
2. Maximum Correlated Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi
3. Maximum Uncorrelated Directional Gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10}) / N_{ANT}]$ dBi

Frequency	Maximum Gain (dBi) for TXBF mode					
	TXBF mode (1 Stream 4 TX) for Power Gain			TXBF mode (1 Stream 4 TX) for PSD Gain		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	6.89			6.89		
5190MHz		6.99			6.99	
5200MHz	6.94			6.94		
5210MHz			6.73			6.73
5230MHz		6.25			6.25	
5240MHz	6.38			6.38		
5260MHz	6.44			6.44		
5270MHz		6.61			6.61	
5290MHz			6.65			6.65
5300MHz	6.44			6.44		
5310MHz		6.48			6.48	
5320MHz	6.28			6.28		
5500MHz	6.13			6.13		
5510MHz		6.29			6.29	
5530MHz			6.71			6.71
5550MHz		6.33			6.33	
5580MHz	6.56			6.56		
5610MHz			6.13			6.13
5620MHz	6.63			6.63		
5630MHz		6.09			6.09	
5670MHz		6.06			6.06	
5690MHz			6.58			6.58
5700MHz	6.29			6.29		
5710MHz		6.18			6.18	
5720MHz	6.25			6.25		
5745MHz	6.31			6.31		
5755MHz		7.08			7.08	
5775MHz			6.49			6.49
5785MHz	5.92			5.92		
5795MHz		5.89			5.89	
5825MHz	6.22			6.22		

Note:

1. Antenna Gain refer to “DWA1230 antenna table_V1.08.xlsx” files
2. Maximum Correlated Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi
3. Maximum Uncorrelated Directional Gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10}) / N_{ANT}]$ dBi

3.11 Table for Carrier Frequency

8 channels are provided for 802.11n (40MHz) / 802.11ac (40MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz U-NII-2A	54	5270 MHz	62	5310 MHz
5470~5725 MHz U-NII-2C	102	5510 MHz	126	5630 MHz
	110	5550 MHz	134	5670 MHz
	118	5590 MHz	142	5710 MHz

4 channels are provided for 802.11ac (80MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz U-NII-2A	58	5290 MHz	-	-
5470~5725 MHz U-NII-2C	106	5530 MHz	138	5690 MHz
	122	5610 MHz	-	-

3.12 Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Note	Channel	Data Rate	Antenna
AC Power Conducted Emissions	11ac(40MHz)	OFDM/BPSK	54	Nss1 MCS0 (TxBF)	1+2+3+4
Emission bandwidth	11ac(40MHz)	OFDM/BPSK	54/62 102/110/134/142	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
	11ac(80MHz)		58 106/122/138	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
Maximum Peak Output Power Maximum Average Output Power	11ac(40MHz)	OFDM/BPSK	54/62 102/110/134/142	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
	11ac(80MHz)		58 106/122/138	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
Power Spectral Density	11ac(40MHz)	OFDM/BPSK	54/62 102/110/134/142	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
	11ac(80MHz)		58 106/122/138	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
Unwanted Emission in the restricted bands Above 1GHz (Radiated)	11ac(40MHz)	OFDM/BPSK	54/62 102/110/134/142	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
	11ac(80MHz)		58 106/122/138	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
Unwanted Emission out of the restricted bands Above 1GHz (Radiated)	11ac(40MHz)	OFDM/BPSK	54/62 102/110/134/142	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
	11ac(80MHz)		58 106/122/138	Nss1 MCS0 (CDD)	1+2+3+4
				Nss1 MCS0 (TxBF)	1+2+3+4
Radiated Emissions Below 1GHz(Radiated)	11ac(40MHz)	OFDM/BPSK	54	Nss1 MCS0 (TxBF)	1+2+3+4
Frequency Stability	40MHz	Un-modulation	54/62 102/110/134/142	-	1, 2, 3, 4
	80MHz		58 106/122/138	-	1, 2, 3, 4

Note:

1. The device with multiple operating mode, measurements on the middle channel were tested to determine the worst case mode. (Each modulation family were tested in band edge, spurious emission and in band PSD after investigate worst case mode)
2. Base on same power setting, the 802.11ac 2S4T CDD, 3S4T CDD, 4S4T SDM modes covered by 802.11ac 1S4T CDD mode; the 802.11ac 2S4T TxBF, 3S4T TxBF modes covered by 802.11ac 1S4T TxBF mode
3. The software does not support the 20MHz bandwidth of Band 2 and Band 3.

3.13 Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

The Power Setting Parameter					
Test Software Version	16.4.7346-3110000-20161121223653-5f8b7460b37a17de7749af5a4f388095eea8e3c0				
Worst Modulation Mode	**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**P_H (dBm)**	**Power Setting**	**Data Rate / MCS**
802.11ac 40MHz (CDD)	1 stream 4TX	5270	23.85	18	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5310	22.96	17	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5510	23.88	17	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5550	23.68	17	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5670	23.96	18	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5710	22.68	17	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5270	23.33	18	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5310	22.88	17	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5510	22.05	15	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5550	22.52	16	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5670	22.92	17	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5710	21.75	16	Nss1MCS0 (13.5)
802.11ac 80MHz (CDD)	1 stream 4TX	5290	22.72	17	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5530	22.70	16	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5610	22.58	17	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5690	22.26	18	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5290	22.74	17	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5530	22.84	16	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5610	22.54	17	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5690	21.27	17	Nss1MCS0 (29.3)

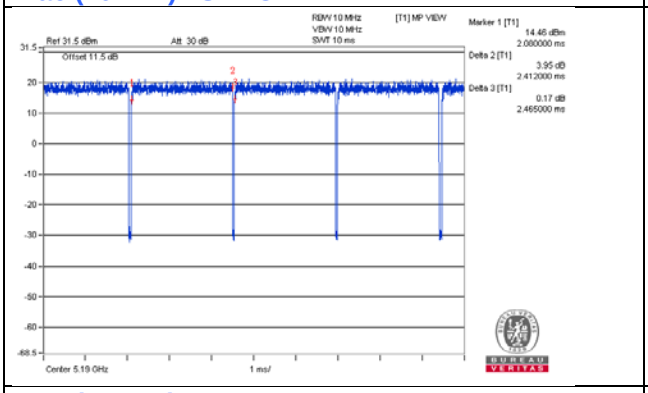
The Power Setting Parameter					
Test Software Version	16.4.7346-3110000-20161121223653-5f8b7460b37a17de7749af5a4f388095eea8e3c0				
Worst Modulation Mode	**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**P_L (dBm)**	**Power Setting**	**Data Rate / MCS**
802.11ac 40MHz (CDD)	1 stream 4TX	5270	16.87	11	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5310	15.36	10	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5510	15.30	10	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5550	14.81	10	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5670	16.11	11	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5710	14.78	10	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5270	16.87	11	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5310	15.36	10	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5510	10.49	8	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5550	13.83	9	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5670	14.94	10	Nss1MCS0 (13.5)
802.11ac 40MHz (TxBF)	1 stream 4TX	5710	13.17	9	Nss1MCS0 (13.5)
802.11ac 80MHz (CDD)	1 stream 4TX	5290	15.19	10	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5530	13.83	9	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5610	14.94	10	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5690	16.05	11	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5290	15.19	10	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5530	13.83	9	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5610	14.94	10	Nss1MCS0 (29.3)
802.11ac 80MHz (TxBF)	1 stream 4TX	5690	14.09	10	Nss1MCS0 (29.3)

3.14 On Time and Duty Cycle

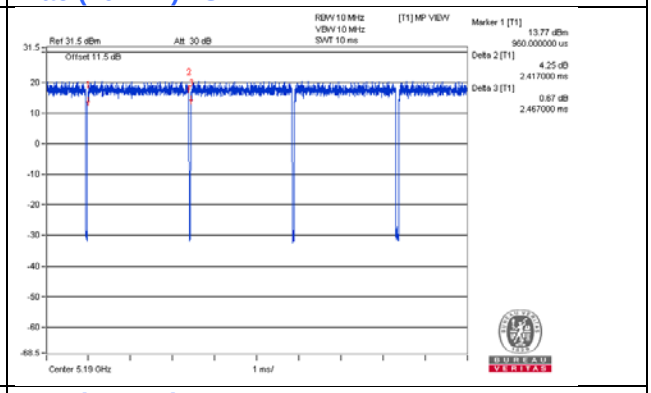
Mode	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)
11ac (40MHz) 1S4T CDD	2.412	2.465	97.8	0.09	1
11ac (40MHz) 1S4T TxBF	2.417	2.467	98.0	-	-
11ac (80MHz) 1S4T CDD	1.135	1.209	93.9	0.27	3
11ac (80MHz) 1S4T TxBF	1.134	1.207	93.9	0.27	3

Note:
1. Power measurement using sweep trigger and gating of the power meter, duty factor is not required.
2. Duty cycle > 98%, duty factor is not required.

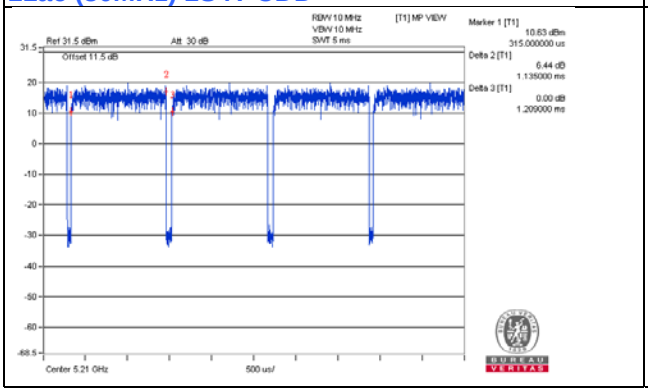
11ac (40MHz) 1S4T CDD



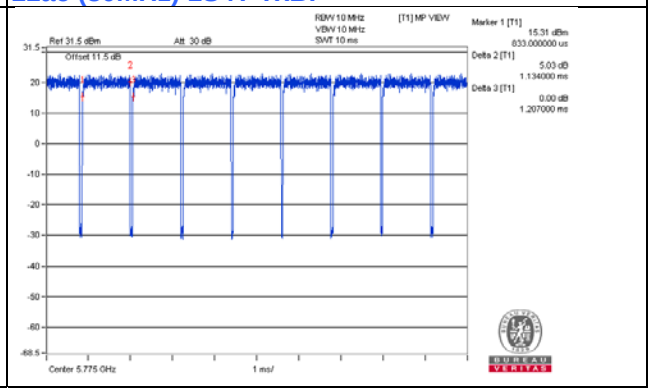
11ac (40MHz) 1S4T TxBF



11ac (80MHz) 1S4T CDD



11ac (80MHz) 1S4T TxBF



3.15 Testing Location Information

Test Site Location					
Address	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)				
TEL	886-3-3183232				
FAX	886-3-3270892				
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC Reg. No.**	**VCCI Reg. No**
Conduction 1	Conduction	Hwa Ya	-	-	C-2040
Chamber 4	966 Chamber	Hwa Ya	215374	7450F-9	-
Oven	Oven	Hwa Ya	-	-	-

3.16 EUT Diagram and Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

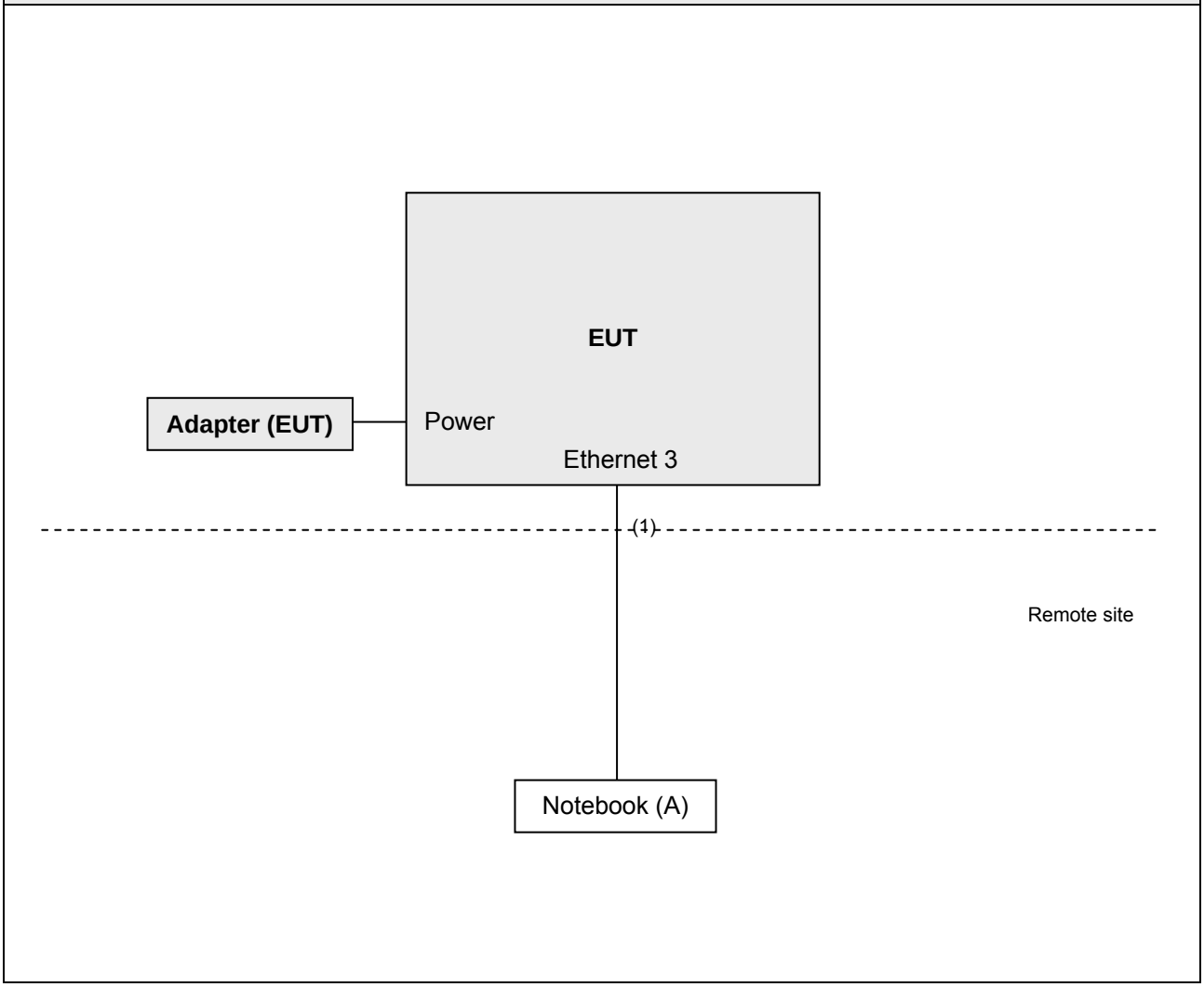
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	D531	CN-0XM006-48643-81U-2973	FCC DoC Approved	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45 cable	1	1.8	N	0	Provided by Lab

EUT Diagram



4 TEST TYPES AND RESULTS

4.1 AC Power Conducted Emissions Measurement

4.1.1 Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

4.1.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver

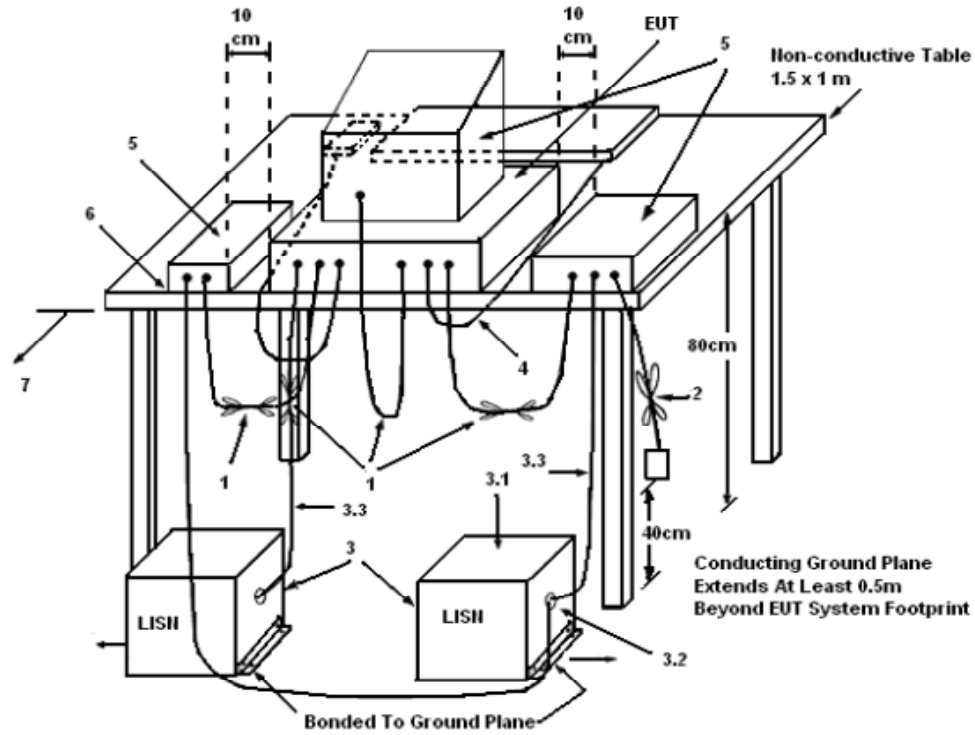
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3 Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4 Test Setup Layout

Test Setup



1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
2. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3. EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.
4. All other equipment powered from additional LISN(s).
5. Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
6. LISN at least 80 cm from nearest part of EUT chassis.
7. Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
8. Non-EUT components of EUT system being tested.
9. Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
10. Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5 Test Deviation

There are no deviations with the original standard.

4.1.6 EUT Operating during Test

The EUT was placed on the test table and programmed in normal function.

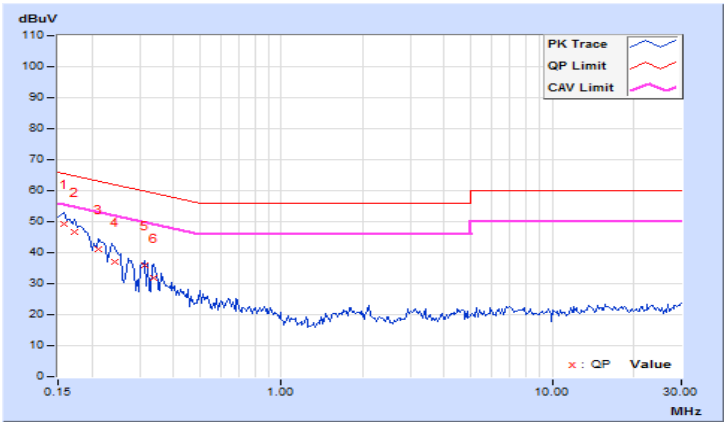
4.1.7 Test Results of AC Power Conducted Emissions

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	James Chang		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.99	39.15	23.19	49.14	33.18	65.58	55.58	-16.44	-22.40
2	0.17344	10.00	36.57	20.02	46.57	30.02	64.79	54.79	-18.22	-24.77
3	0.21250	10.02	30.96	15.76	40.98	25.78	63.11	53.11	-22.13	-27.33
4	0.24375	10.02	26.98	15.50	37.00	25.52	61.97	51.97	-24.97	-26.45
5	0.31406	10.03	25.85	16.01	35.88	26.04	59.86	49.86	-23.98	-23.82
6	0.33750	10.03	21.97	16.14	32.00	26.17	59.26	49.26	-27.26	-23.09

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

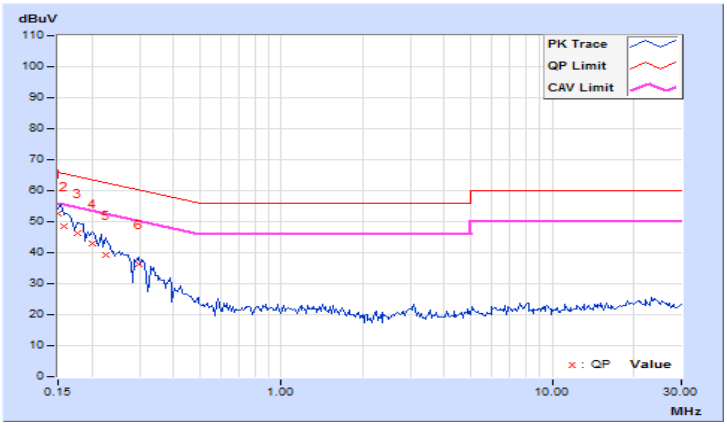


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	James Chang		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15000**	**10.03**	**42.63**	**24.48**	**52.66**	**34.51**	**66.00**	**56.00**	**-13.34**	**-21.49**
2	0.15781	10.01	38.46	22.53	48.47	32.54	65.58	55.58	-17.11	-23.04
3	0.17734	9.98	36.20	18.95	46.18	28.93	64.61	54.61	-18.43	-25.68
4	0.20078	9.95	33.14	16.67	43.09	26.62	63.58	53.58	-20.49	-26.96
5	0.22422	9.95	29.48	13.31	39.43	23.26	62.66	52.66	-23.23	-29.40
6	0.29844	9.97	26.16	15.31	36.13	25.28	60.29	50.29	-24.16	-25.01

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.2 Occupied Bandwidth and 26dB Bandwidth Measurement

4.2.1 Measuring Instruments and Setting

The following table is the setting of the Spectrum Analyzer.

99% Occupied Bandwidth	
Spectrum Parameter	**Setting**
Attenuation	Auto
Span Frequency	1.5 times to 5.0 times the OBW
RBW	1% to 5% of the anticipated emission bandwidth
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max hold
Sweep Time	Auto
26dB Bandwidth	
Spectrum Parameter	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth.
VBW	> RBW
Detector	Peak
Trace	Max hold
Sweep Time	Auto

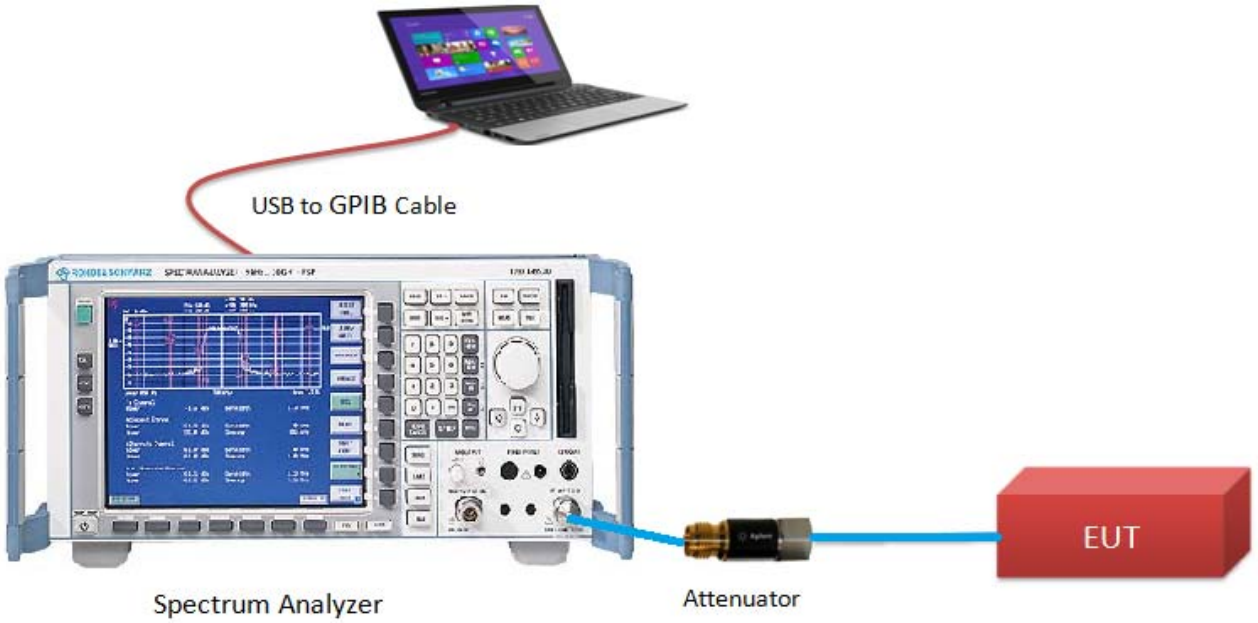
4.2.2 Test Procedure

1 The transmitter output (antenna port) was connected to the spectrum analyzer.

2 Test was performed in accordance with Measurement of Digital Transmission Systems Operating under 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Emission bandwidth (C)(1)” & "99 Percent Occupied Bandwidth"(D). 05/02/2017.

3 When measuring Emission bandwidth with multiple antenna systems, add every result of the values by mathematic formula.

4.2.3 Test Setup Layout

Setup


4.2.4 Test Deviation

There are no deviations with the original standard.

4.2.5 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.2.6 Test Results

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

11ac (40MHz) 1S4T CDD

CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
54	5270	44.79	44.10	44.33	44.39
62	5310	44.84	44.59	44.21	44.07
102	5510	44.61	44.46	44.39	43.97
110	5550	44.78	44.97	44.38	44.14
134	5670	44.87	45.62	44.81	44.42

11ac (40MHz) 1S4T TxBF

CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
54	5270	44.77	44.12	44.38	44.42
62	5310	44.92	44.66	44.40	44.24
102	5510	44.82	44.06	44.45	44.09
110	5550	44.63	44.24	44.35	43.88
134	5670	44.76	44.44	44.56	44.09

11ac (80MHz) 1S4T CDD

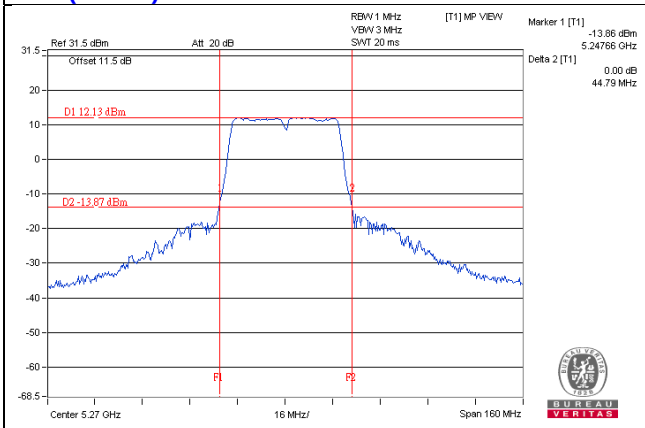
CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
58	5290	84.38	83.93	83.86	83.13
106	5530	84.30	82.87	83.49	83.71
122	5610	86.07	85.59	83.71	84.98

11ac (80MHz) 1S4T TxBF

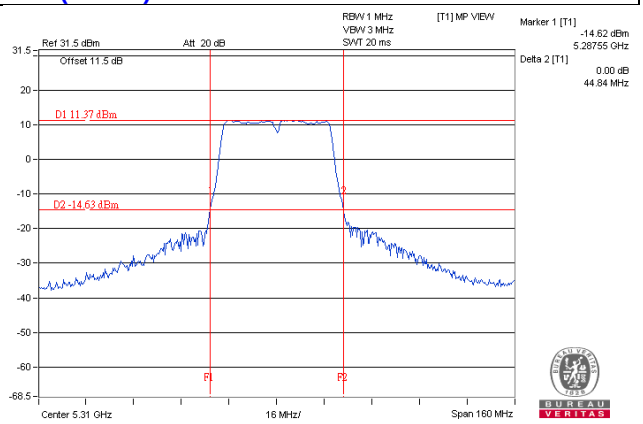
CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
58	5290	84.20	83.03	83.89	83.60
106	5530	84.34	80.92	84.02	83.57
122	5610	95.80	82.65	83.61	83.58

26dB BANDWIDTH SPECTRUM PLOT

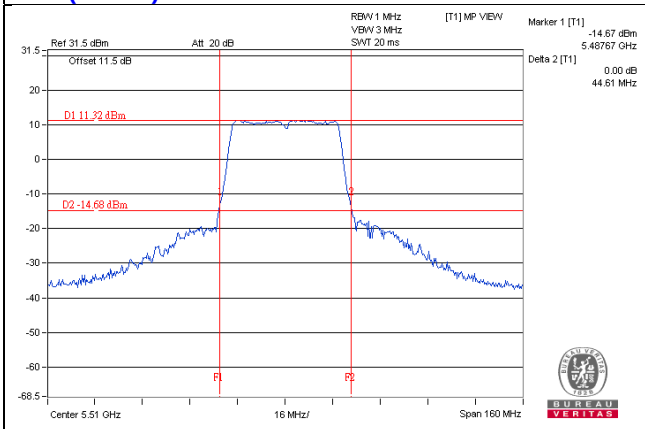
11ac (40MHz) 1S4T CDD CH54 Chain1



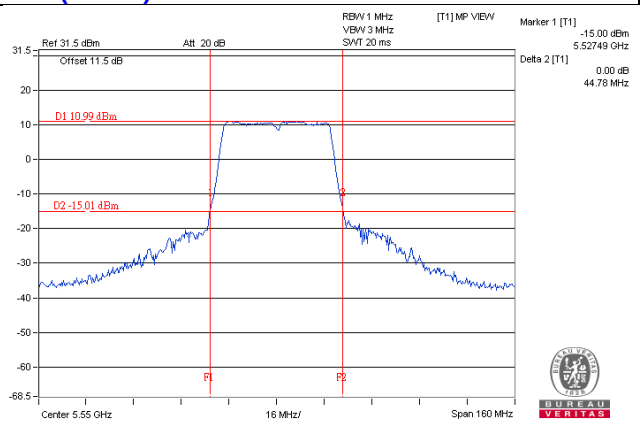
11ac (40MHz) 1S4T CDD CH62 Chain1



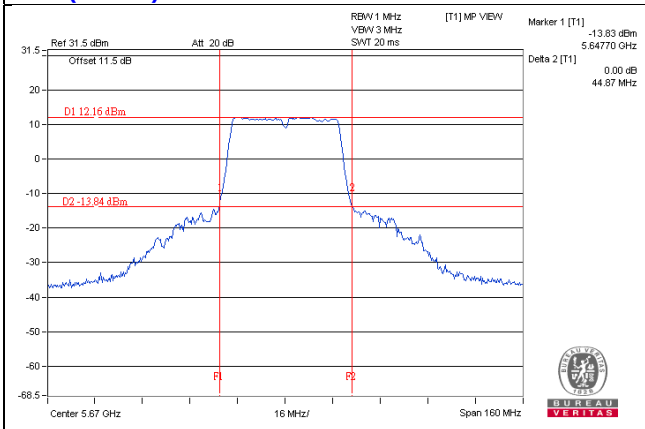
11ac (40MHz) 1S4T CDD CH102 Chain1



11ac (40MHz) 1S4T CDD CH110 Chain1

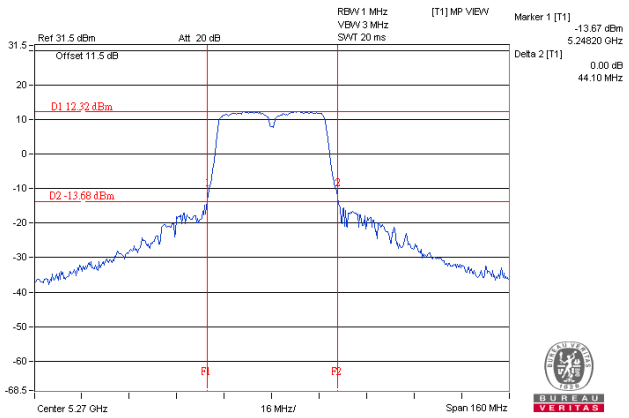


11ac (40MHz) 1S4T CDD CH134 Chain1

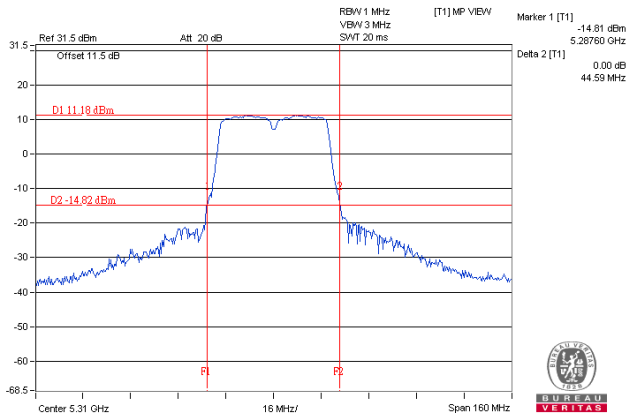


26dB BANDWIDTH SPECTRUM PLOT

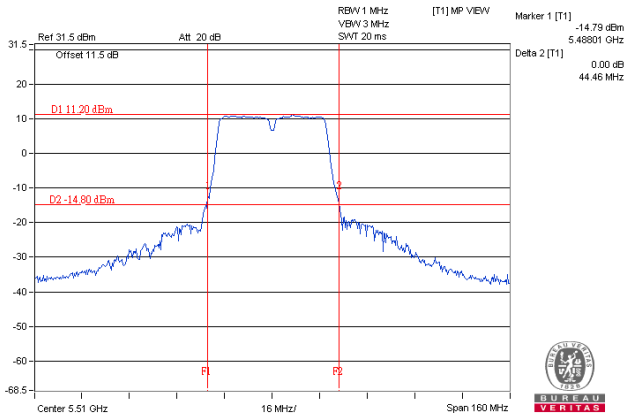
11ac (40MHz) 1S4T CDD CH54 Chain2



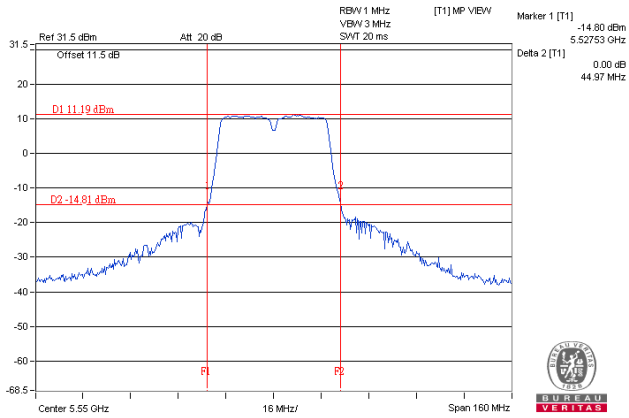
11ac (40MHz) 1S4T CDD CH62 Chain2



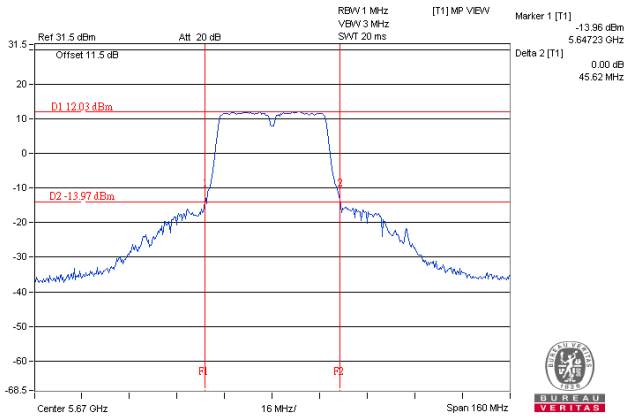
11ac (40MHz) 1S4T CDD CH102 Chain2



11ac (40MHz) 1S4T CDD CH110 Chain2

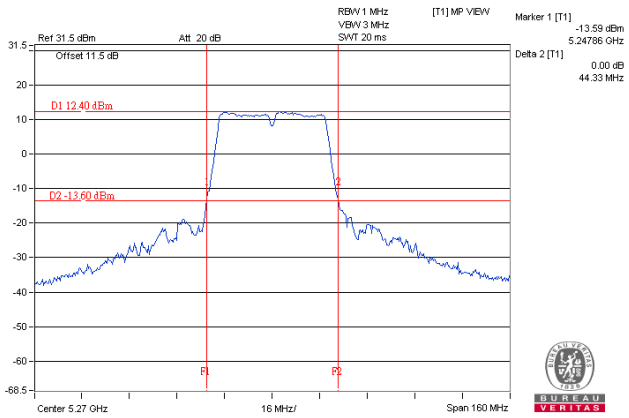


11ac (40MHz) 1S4T CDD CH134 Chain2

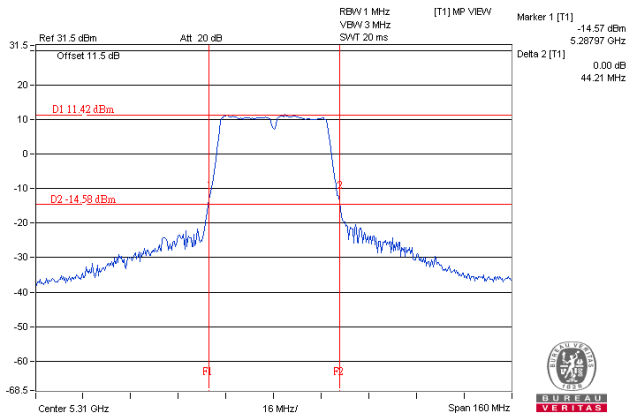


26dB BANDWIDTH SPECTRUM PLOT

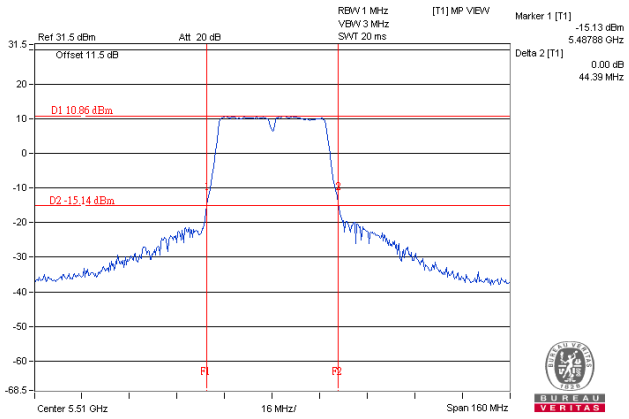
11ac (40MHz) 1S4T CDD CH54 Chain3



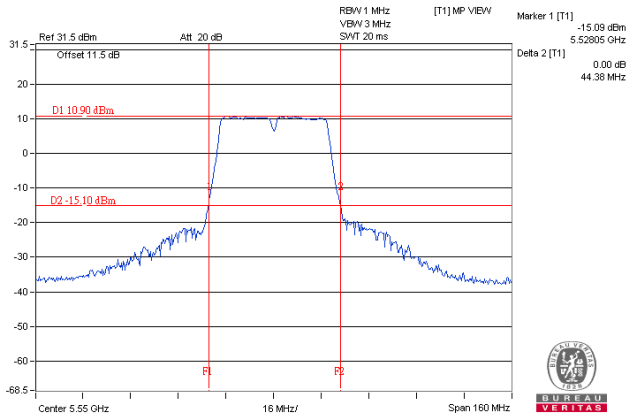
11ac (40MHz) 1S4T CDD CH62 Chain3



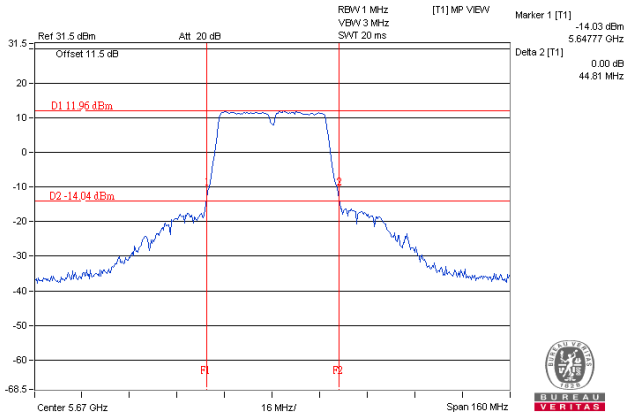
11ac (40MHz) 1S4T CDD CH102 Chain3



11ac (40MHz) 1S4T CDD CH110 Chain3

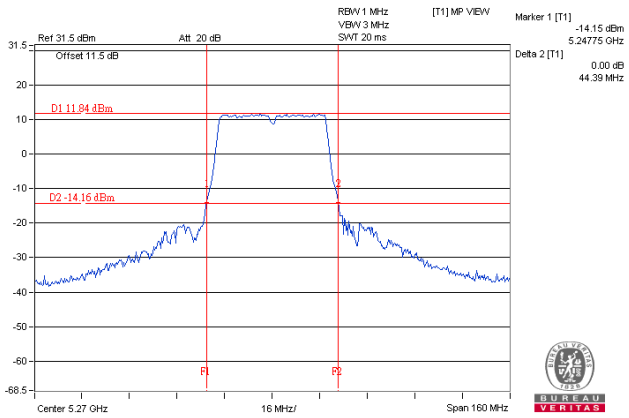


11ac (40MHz) 1S4T CDD CH134 Chain3

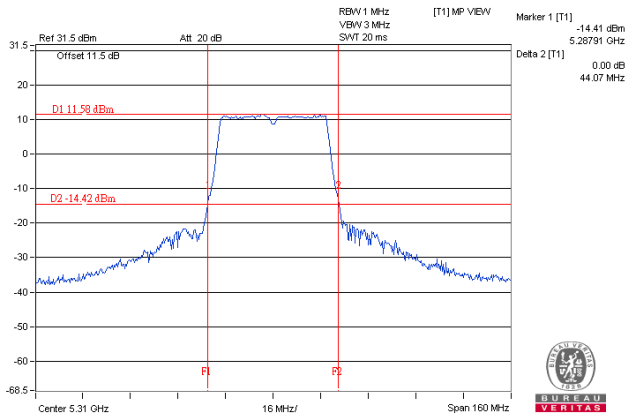


26dB BANDWIDTH SPECTRUM PLOT

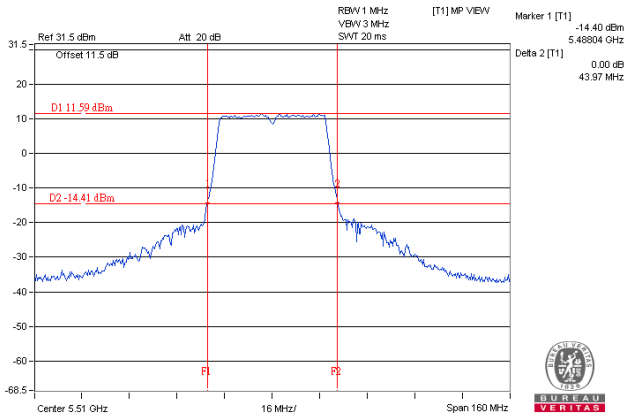
11ac (40MHz) 1S4T CDD CH54 Chain4



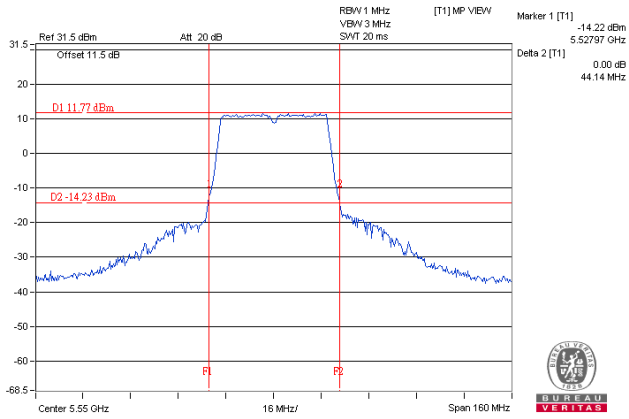
11ac (40MHz) 1S4T CDD CH62 Chain4



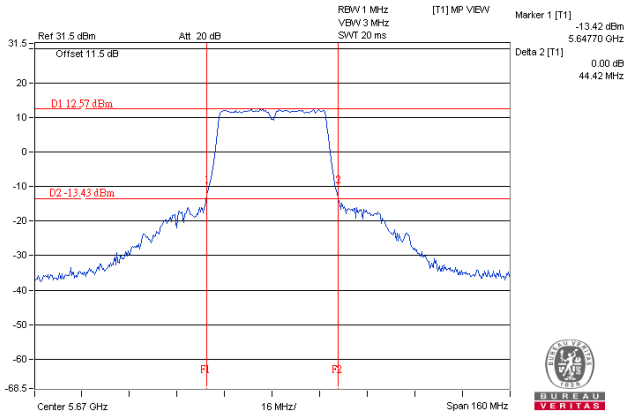
11ac (40MHz) 1S4T CDD CH102 Chain4



11ac (40MHz) 1S4T CDD CH110 Chain4

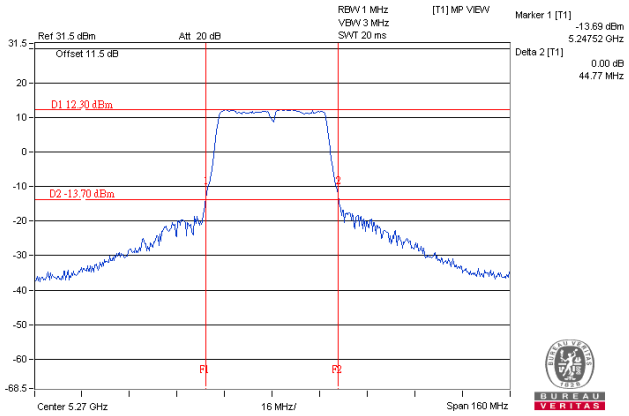


11ac (40MHz) 1S4T CDD CH134 Chain4

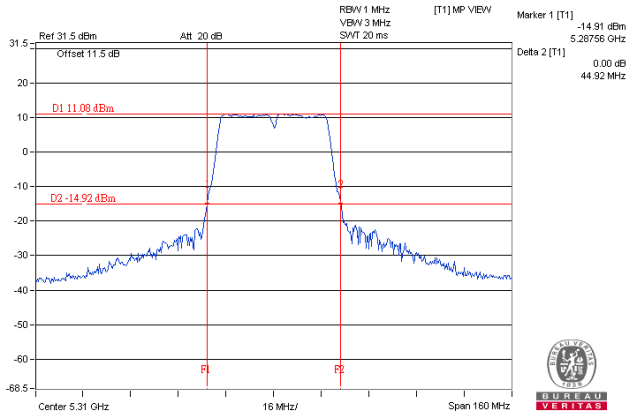


26dB BANDWIDTH SPECTRUM PLOT

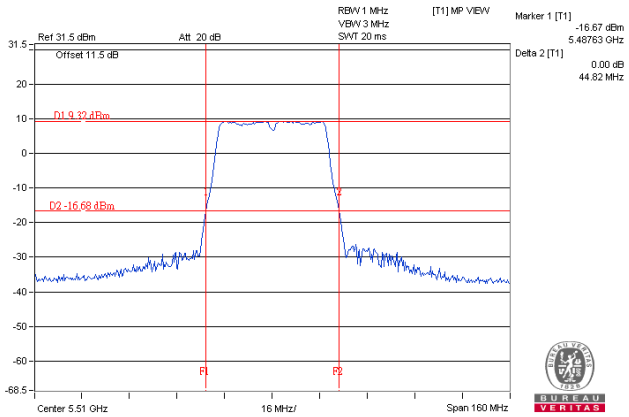
11ac (40MHz) 1S4T TXBF CH54 Chain1



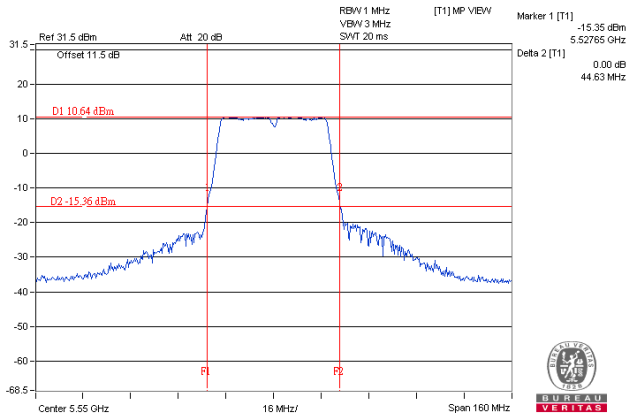
11ac (40MHz) 1S4T TXBF CH62 Chain1



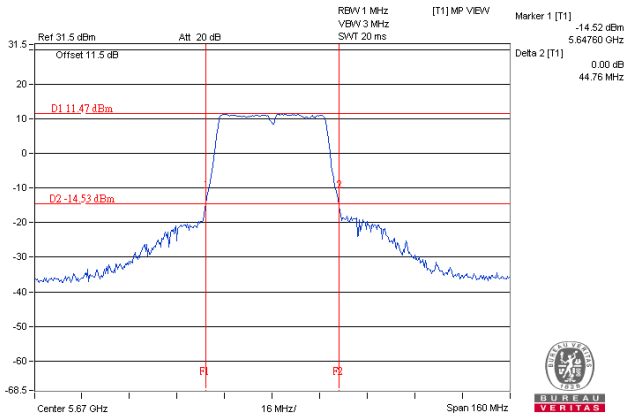
11ac (40MHz) 1S4T TXBF CH102 Chain1



11ac (40MHz) 1S4T TXBF CH110 Chain1

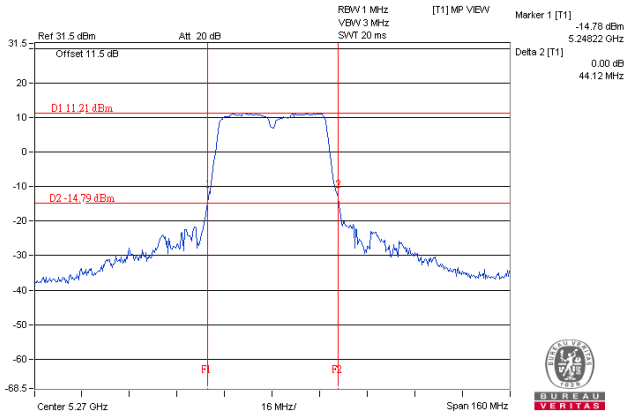


11ac (40MHz) 1S4T TXBF CH134 Chain1

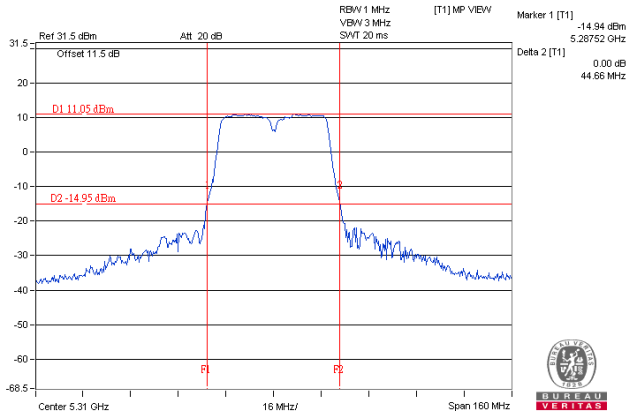


26dB BANDWIDTH SPECTRUM PLOT

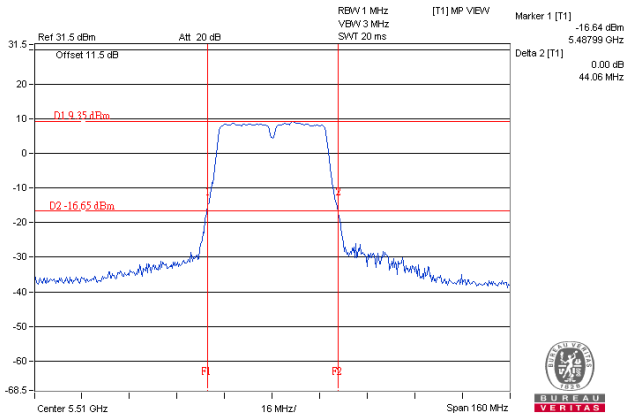
11ac (40MHz) 1S4T TXBF CH54 Chain2



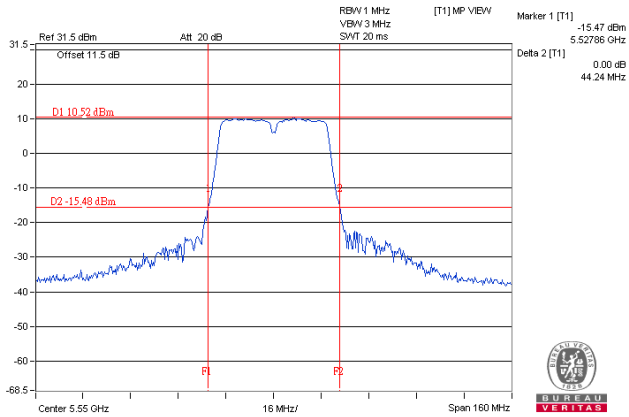
11ac (40MHz) 1S4T TXBF CH62 Chain2



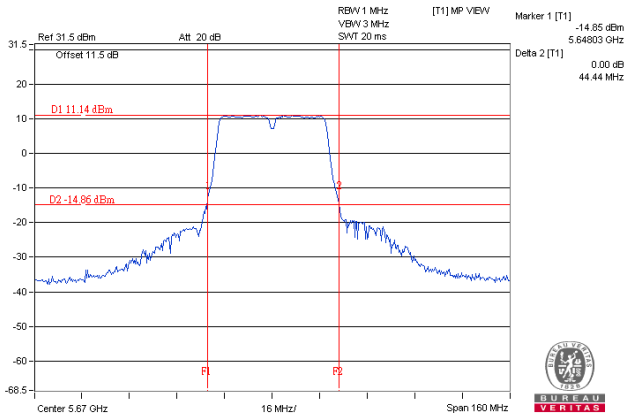
11ac (40MHz) 1S4T TXBF CH102 Chain2



11ac (40MHz) 1S4T TXBF CH110 Chain2

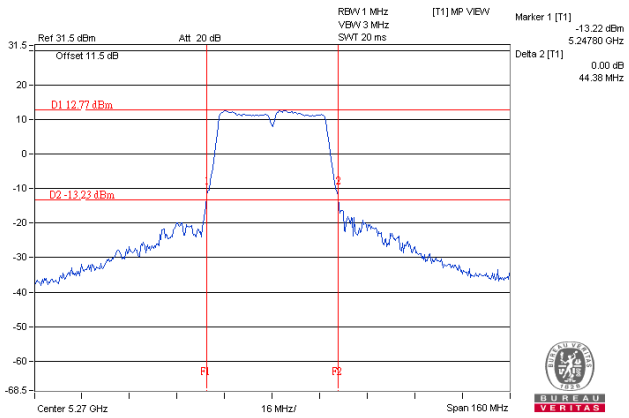


11ac (40MHz) 1S4T TXBF CH134 Chain2

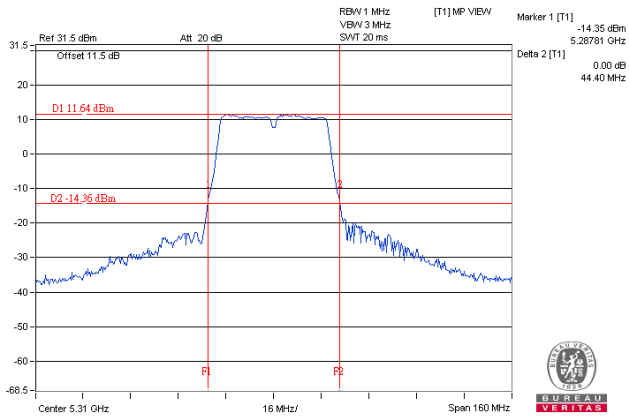


26dB BANDWIDTH SPECTRUM PLOT

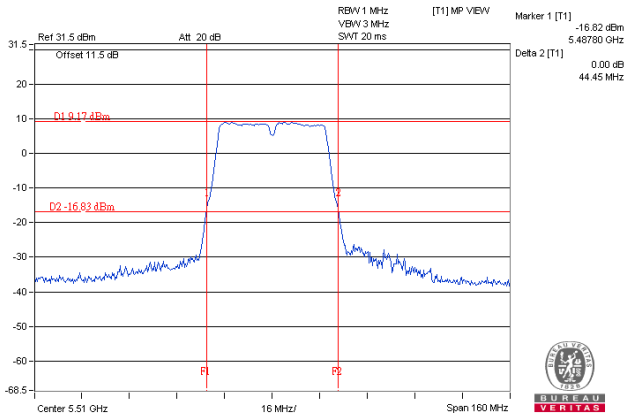
11ac (40MHz) 1S4T TXBF CH54 Chain3



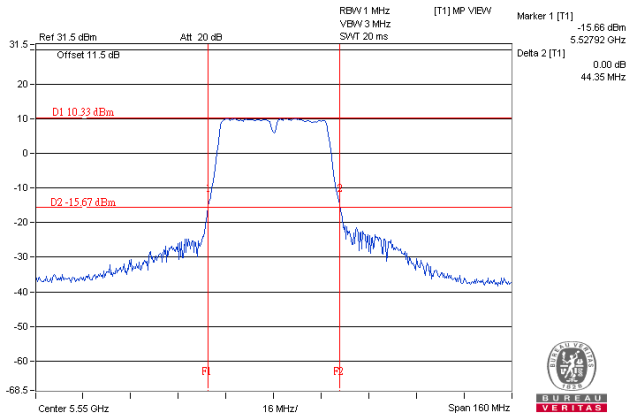
11ac (40MHz) 1S4T TXBF CH62 Chain3



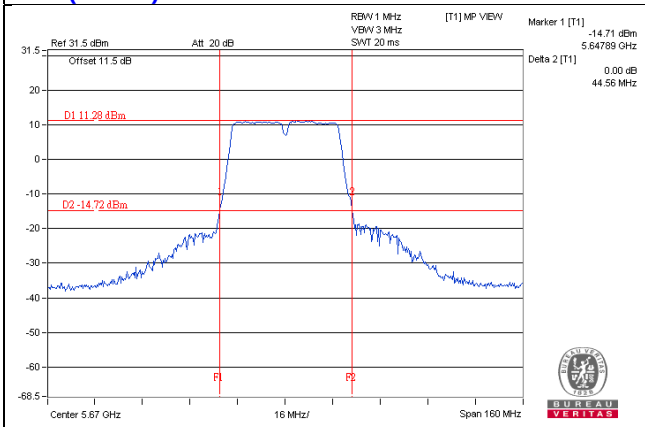
11ac (40MHz) 1S4T TXBF CH102 Chain3



11ac (40MHz) 1S4T TXBF CH110 Chain3

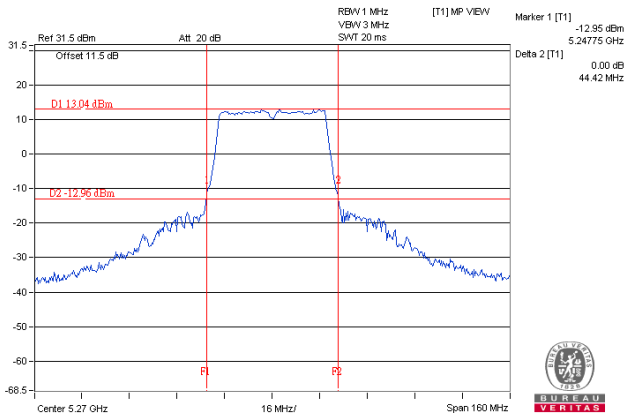


11ac (40MHz) 1S4T TXBF CH134 Chain3

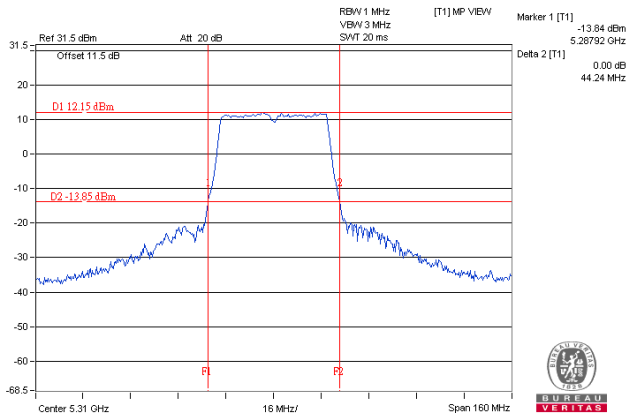


26dB BANDWIDTH SPECTRUM PLOT

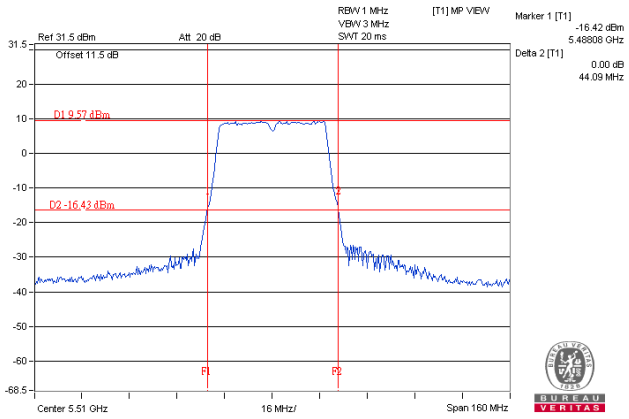
11ac (40MHz) 1S4T TXBF CH54 Chain4



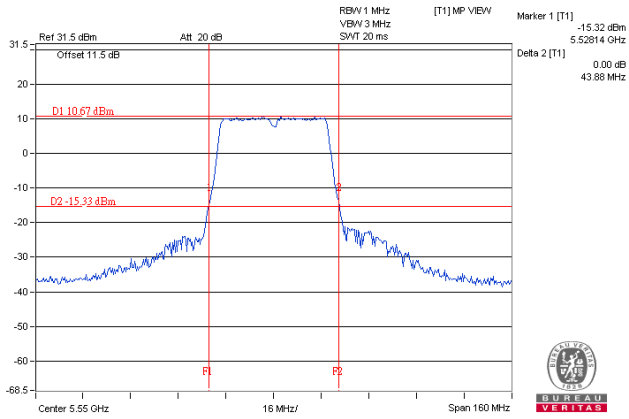
11ac (40MHz) 1S4T TXBF CH62 Chain4



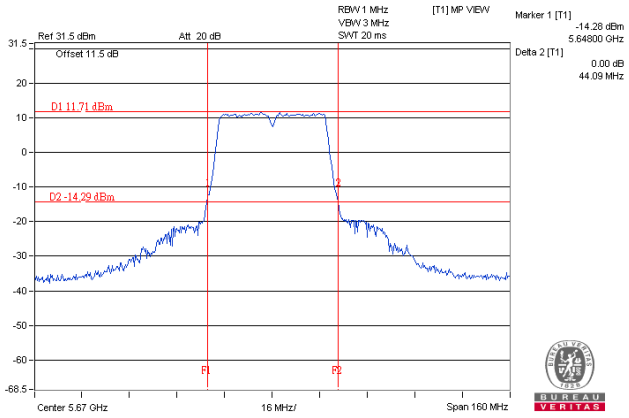
11ac (40MHz) 1S4T TXBF CH102 Chain4



11ac (40MHz) 1S4T TXBF CH110 Chain4

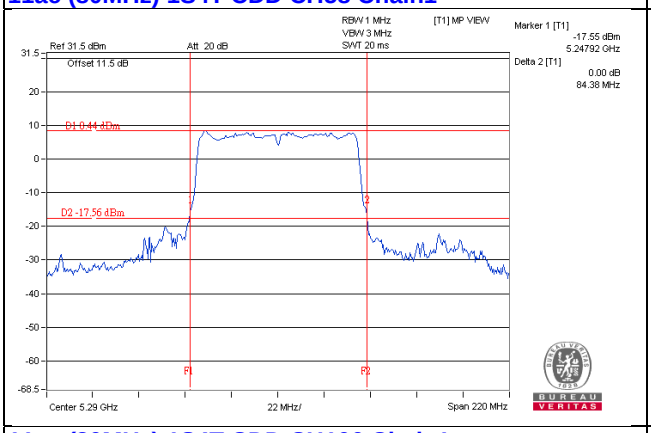


11ac (40MHz) 1S4T TXBF CH134 Chain4

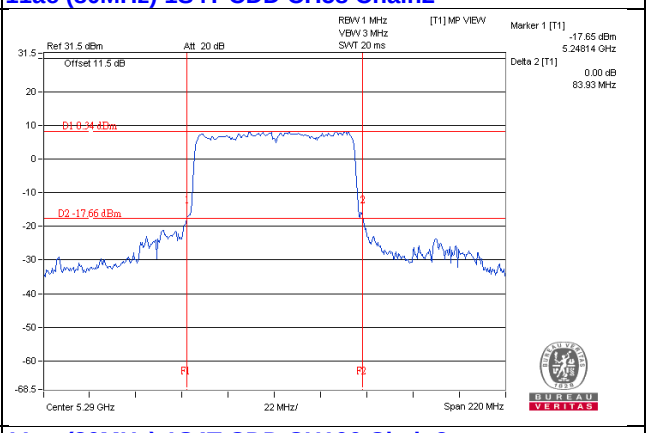


26dB BANDWIDTH SPECTRUM PLOT

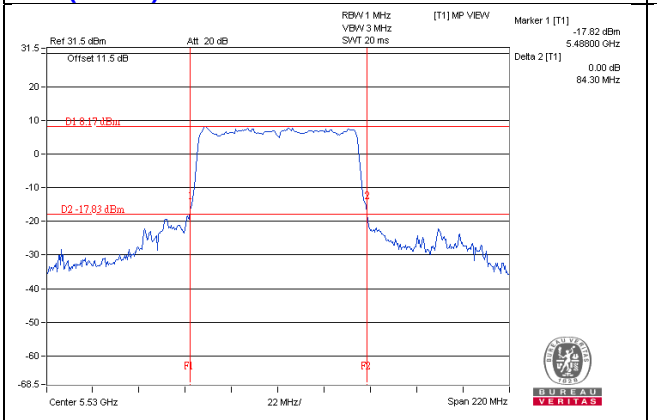
11ac (80MHz) 1S4T CDD CH58 Chain1



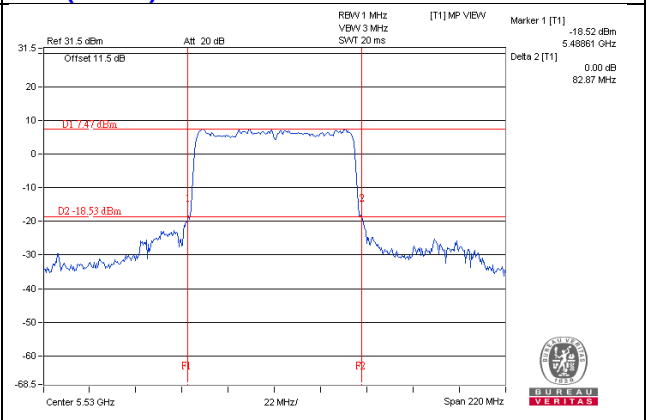
11ac (80MHz) 1S4T CDD CH58 Chain2



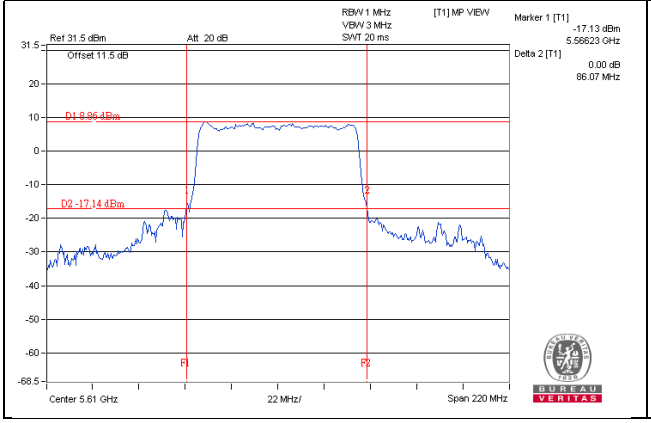
11ac (80MHz) 1S4T CDD CH106 Chain1



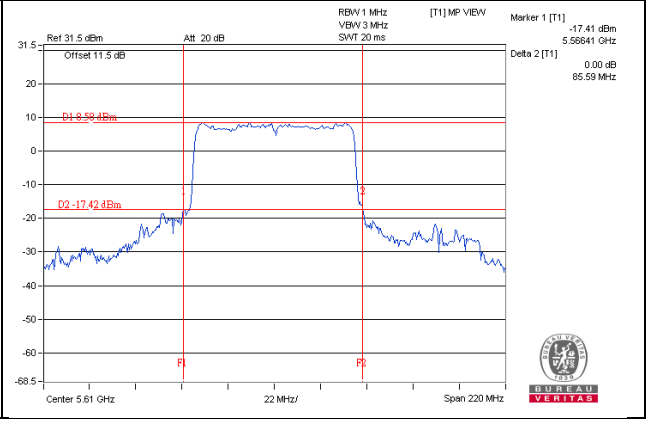
11ac (80MHz) 1S4T CDD CH106 Chain2



11ac (80MHz) 1S4T CDD CH122 Chain1

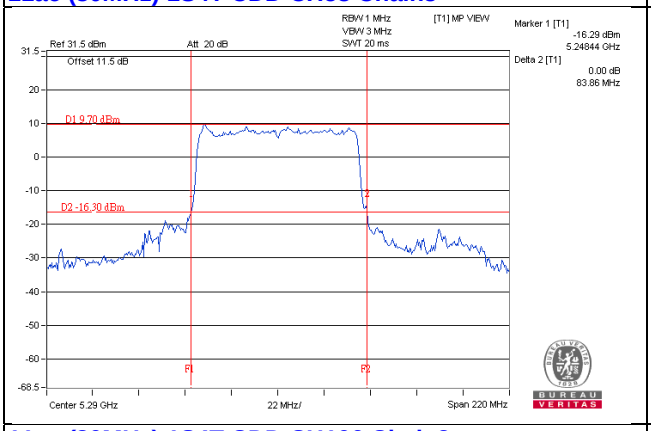


11ac (80MHz) 1S4T CDD CH122 Chain2

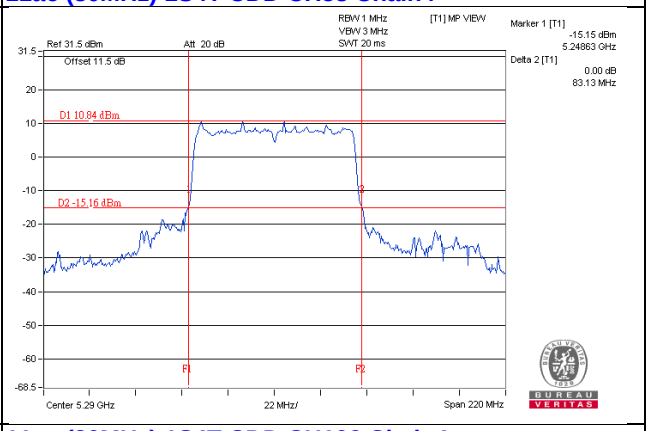


26dB BANDWIDTH SPECTRUM PLOT

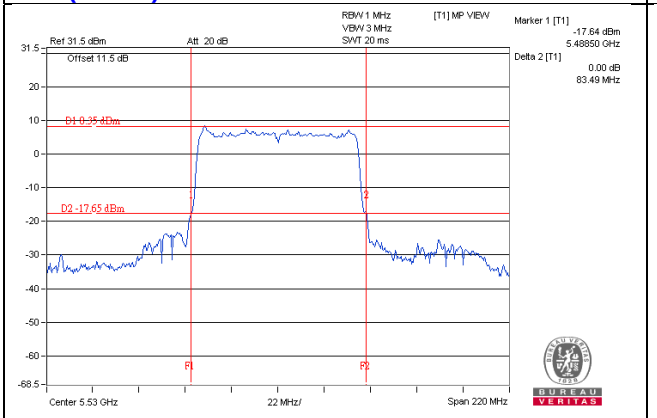
11ac (80MHz) 1S4T CDD CH58 Chain3



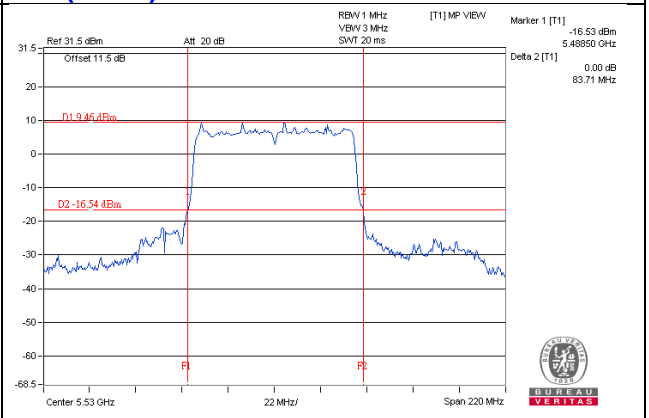
11ac (80MHz) 1S4T CDD CH58 Chain4



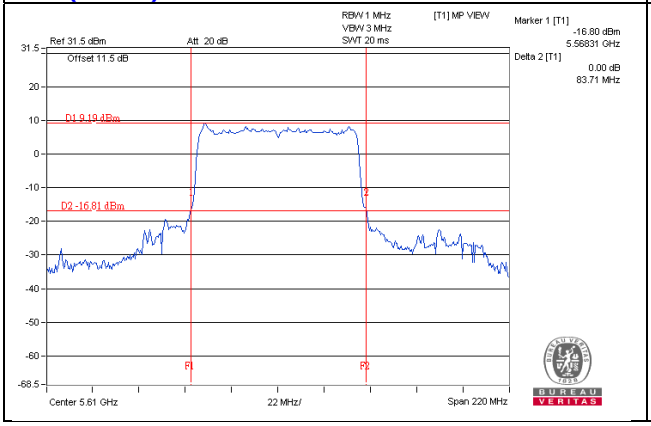
11ac (80MHz) 1S4T CDD CH106 Chain3



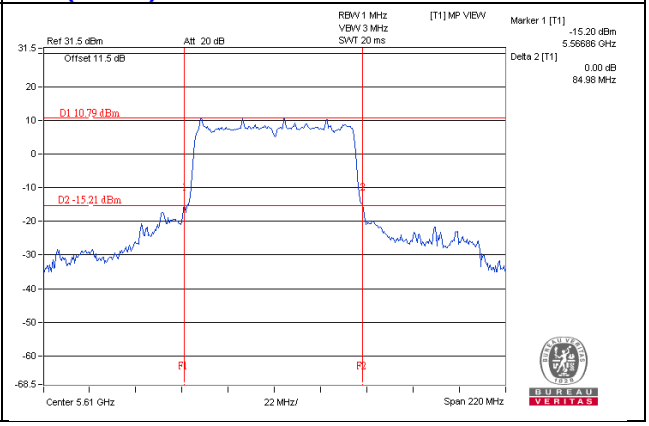
11ac (80MHz) 1S4T CDD CH106 Chain4



11ac (80MHz) 1S4T CDD CH122 Chain3

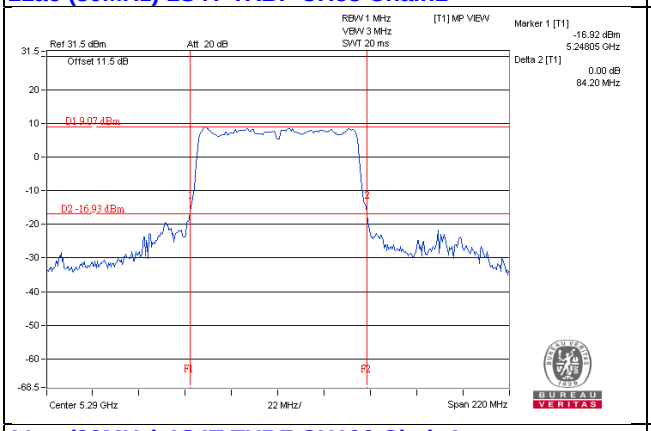


11ac (80MHz) 1S4T CDD CH122 Chain4

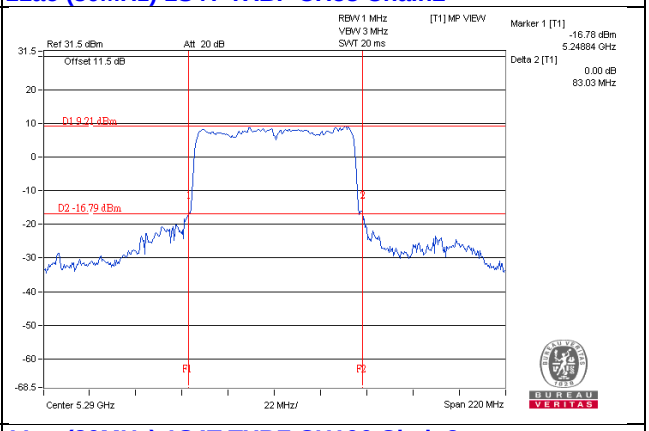


26dB BANDWIDTH SPECTRUM PLOT

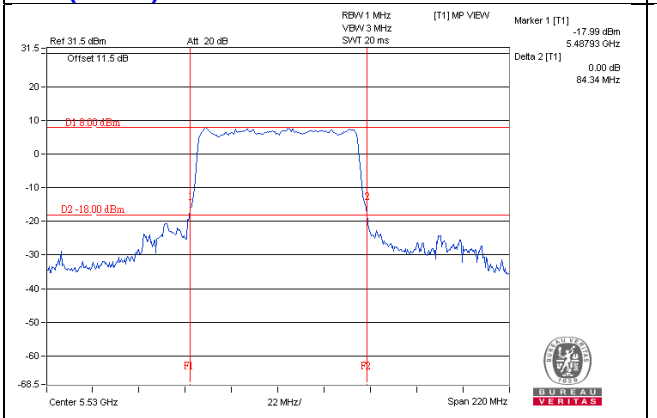
11ac (80MHz) 1S4T TXBF CH58 Chain1



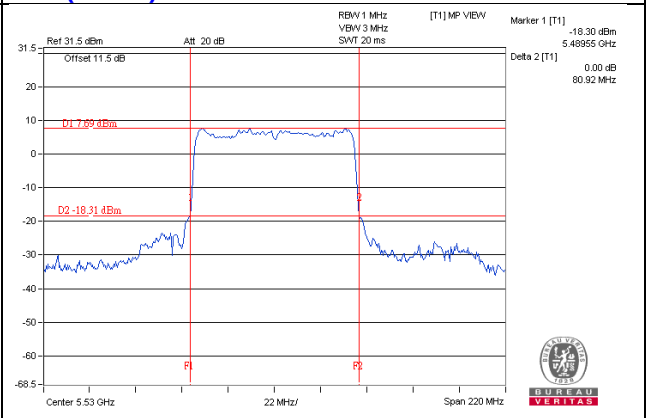
11ac (80MHz) 1S4T TXBF CH58 Chain2



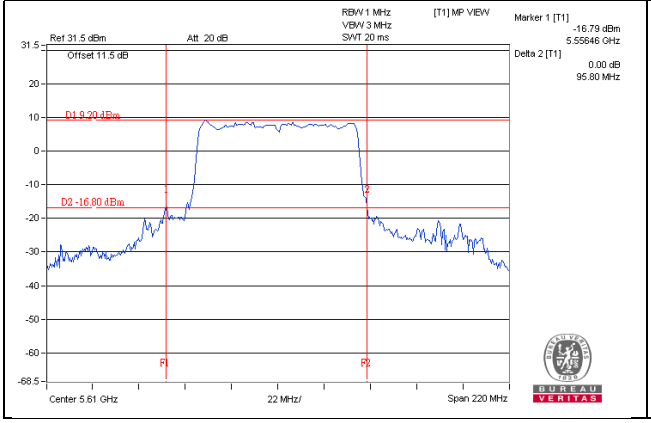
11ac (80MHz) 1S4T TXBF CH106 Chain1



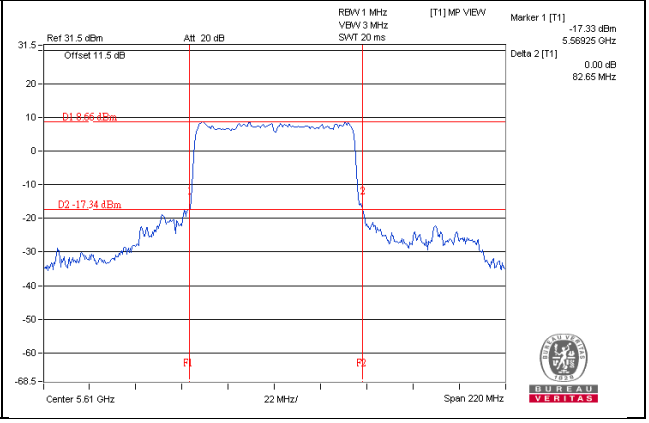
11ac (80MHz) 1S4T TXBF CH106 Chain2



11ac (80MHz) 1S4T TXBF CH122 Chain1

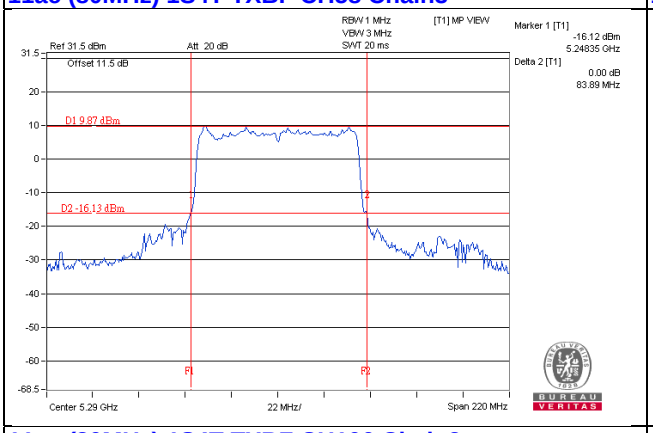


11ac (80MHz) 1S4T TXBF CH122 Chain2

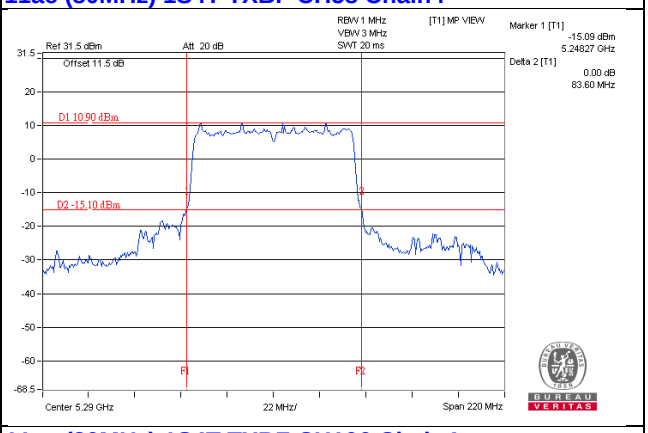


26dB BANDWIDTH SPECTRUM PLOT

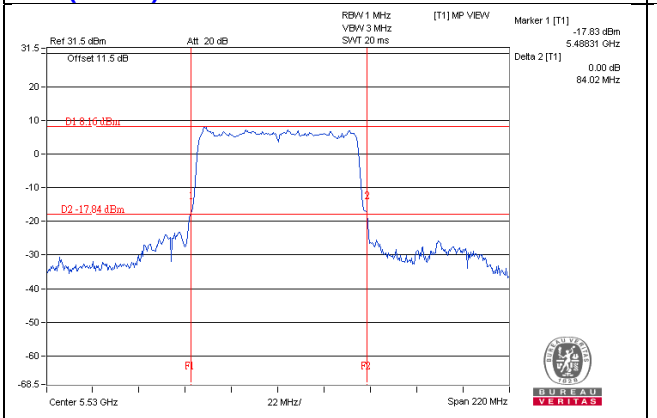
11ac (80MHz) 1S4T TXBF CH58 Chain3



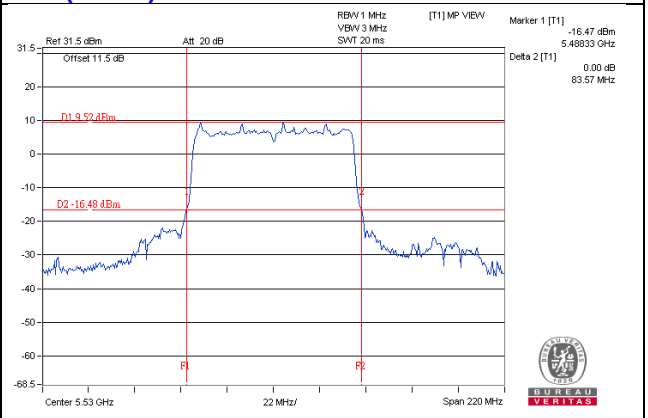
11ac (80MHz) 1S4T TXBF CH58 Chain4



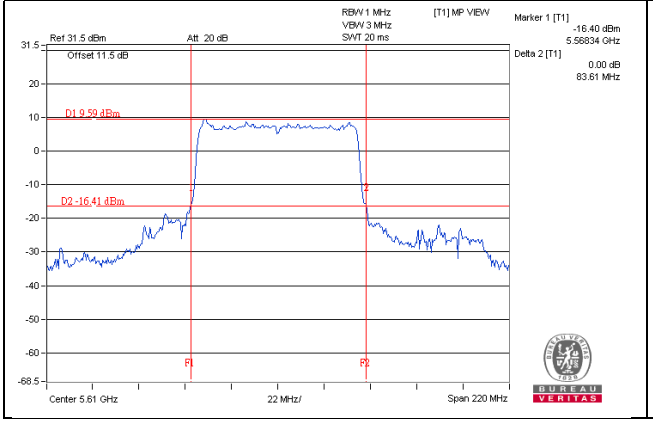
11ac (80MHz) 1S4T TXBF CH106 Chain3



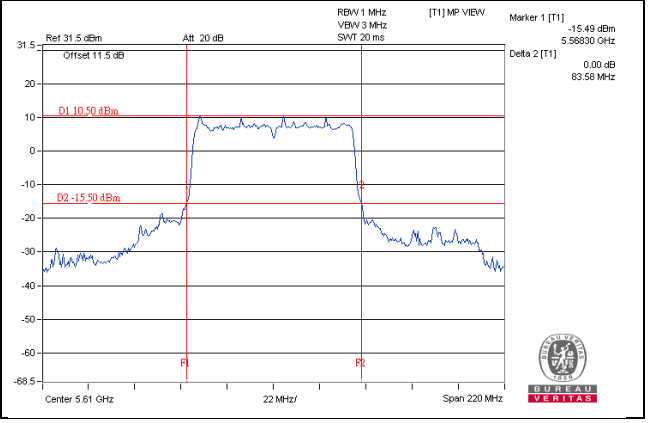
11ac (80MHz) 1S4T TXBF CH106 Chain4



11ac (80MHz) 1S4T TXBF CH122 Chain3



11ac (80MHz) 1S4T TXBF CH122 Chain4



11ac (40MHz) 1S4T CDD

CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
54	5270	37.20	36.84	37.08	36.84
62	5310	37.20	36.84	37.08	36.84
102	5510	37.20	36.84	37.08	36.72
110	5550	37.32	36.96	37.08	36.96
134	5670	37.20	36.96	37.08	36.96

11ac (40MHz) 1S4T TxBF

CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
54	5270	37.32	36.84	37.08	36.84
62	5310	37.32	36.84	37.08	36.84
102	5510	37.32	36.96	36.96	36.84
110	5550	37.08	36.84	37.08	36.84
134	5670	37.32	36.96	37.08	36.96

11ac (80MHz) 1S4T CDD

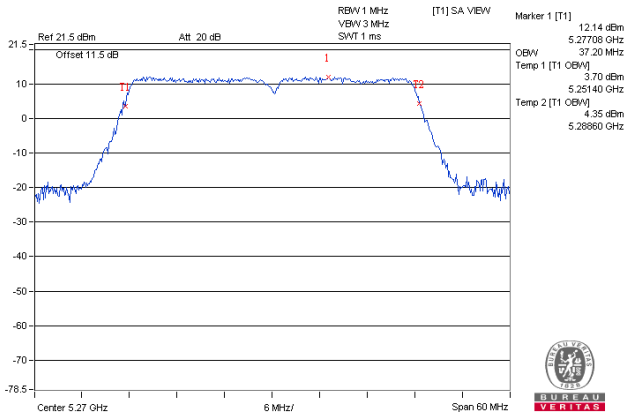
CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
58	5290	75.60	75.36	75.60	75.60
106	5530	75.60	75.12	75.60	75.36
122	5610	76.08	75.36	75.60	75.60

11ac (80MHz) 1S4T TxBF

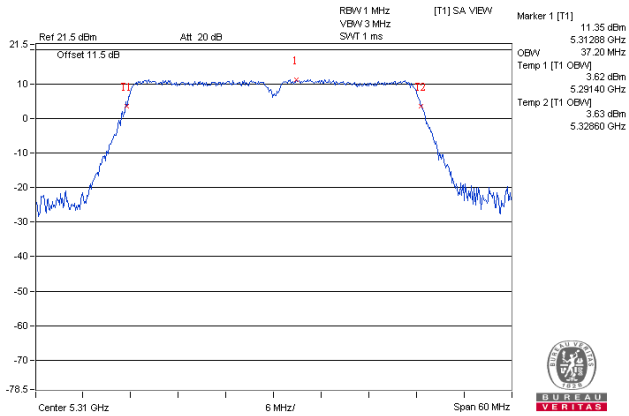
CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)			
		CHAIN 1	CHAIN 2	CHAIN 3	CHAIN 4
58	5290	75.60	75.12	75.60	75.60
106	5530	75.60	75.36	75.60	75.60
122	5610	75.60	75.36	75.60	75.60

99% OCCUPIED BANDWIDTH SPECTRUM PLOT

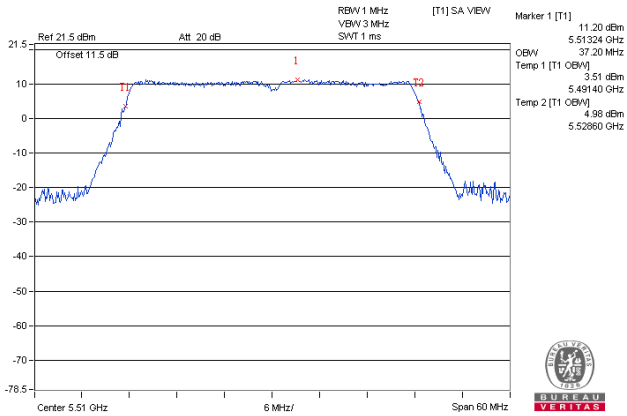
11ac (40MHz) 1S4T CDD CH54 Chain1



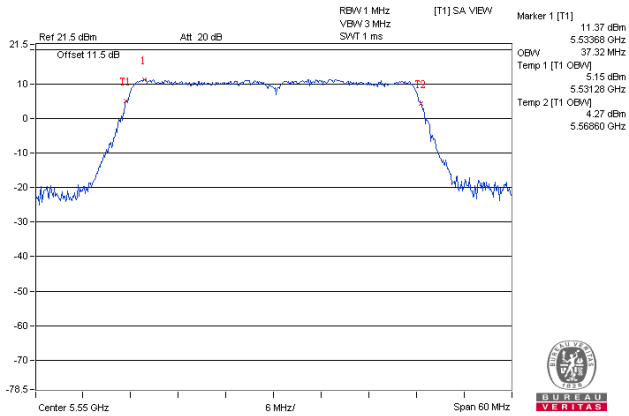
11ac (40MHz) 1S4T CDD CH62 Chain1



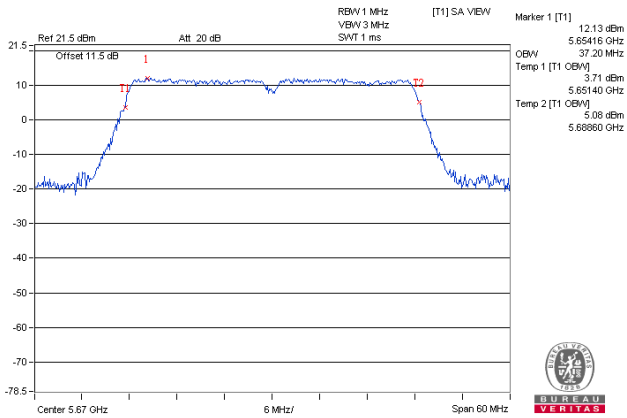
11ac (40MHz) 1S4T CDD CH102 Chain1



11ac (40MHz) 1S4T CDD CH110 Chain1

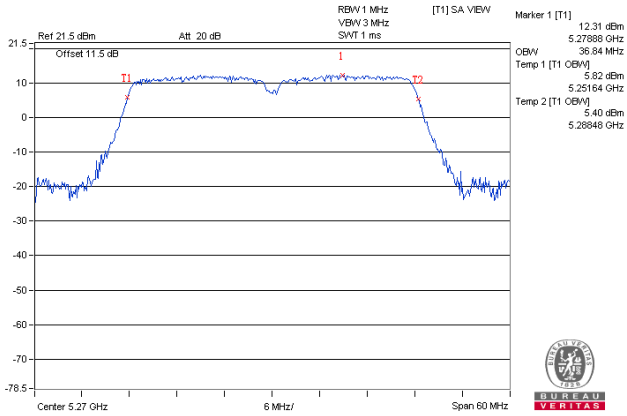


11ac (40MHz) 1S4T CDD CH134 Chain1

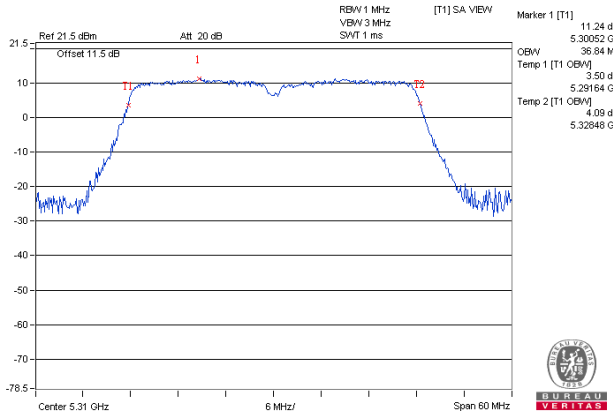


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

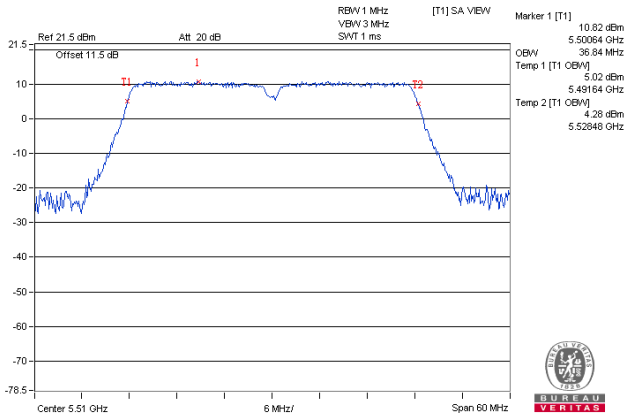
11ac (40MHz) 1S4T CDD CH54 Chain2



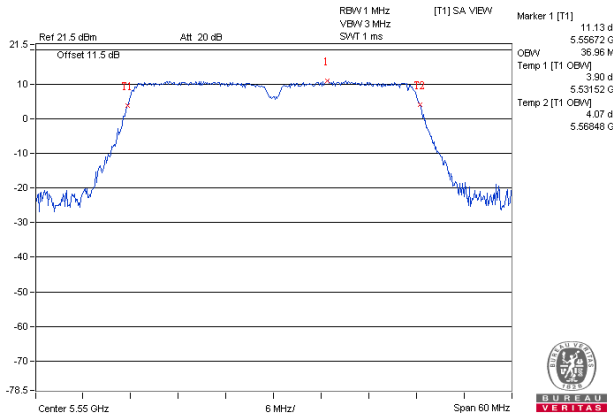
11ac (40MHz) 1S4T CDD CH62 Chain2



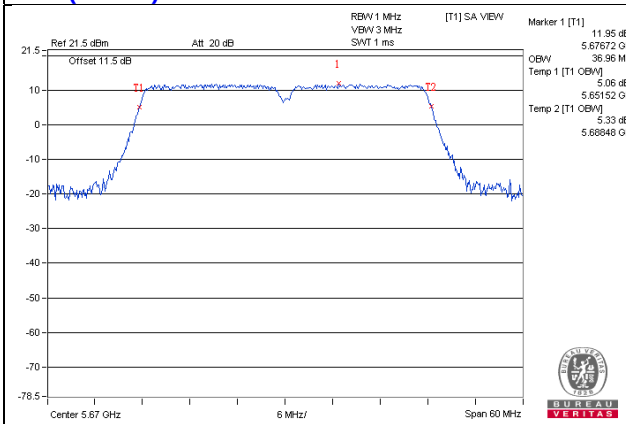
11ac (40MHz) 1S4T CDD CH102 Chain2



11ac (40MHz) 1S4T CDD CH110 Chain2

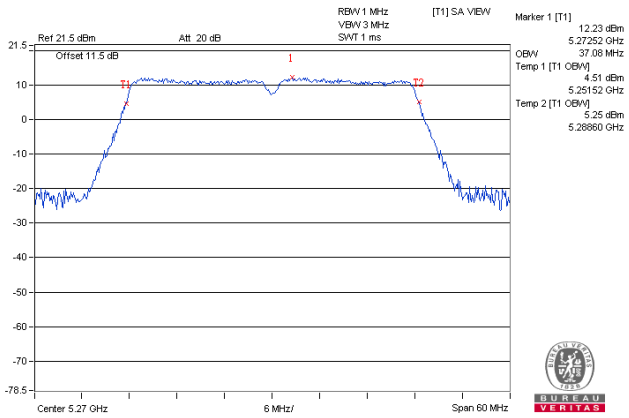


11ac (40MHz) 1S4T CDD CH134 Chain2

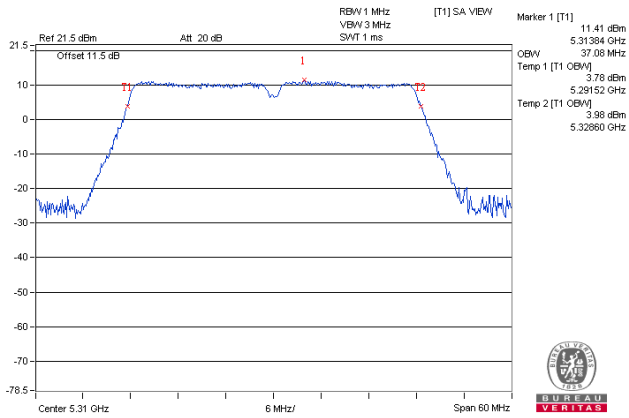


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

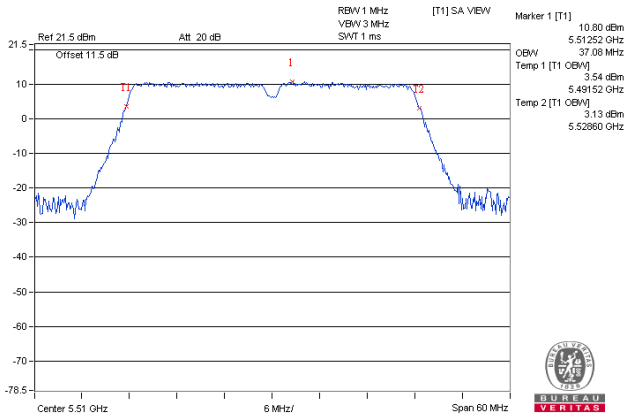
11ac (40MHz) 1S4T CDD CH54 Chain3



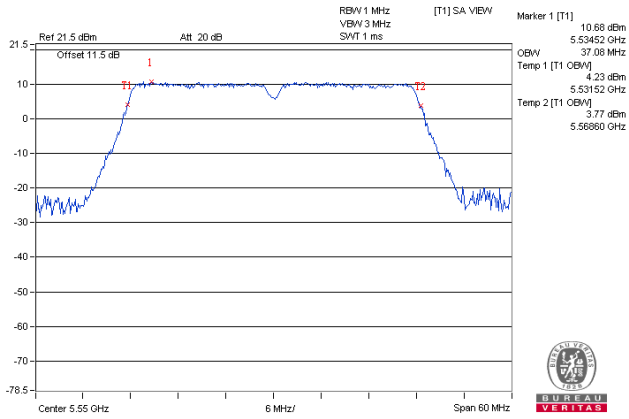
11ac (40MHz) 1S4T CDD CH62 Chain3



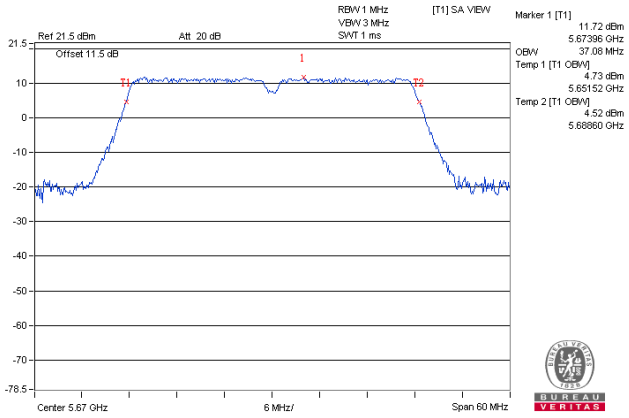
11ac (40MHz) 1S4T CDD CH102 Chain3



11ac (40MHz) 1S4T CDD CH110 Chain3

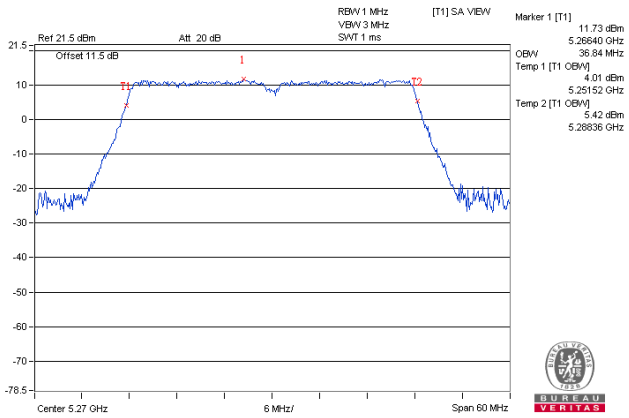


11ac (40MHz) 1S4T CDD CH134 Chain3

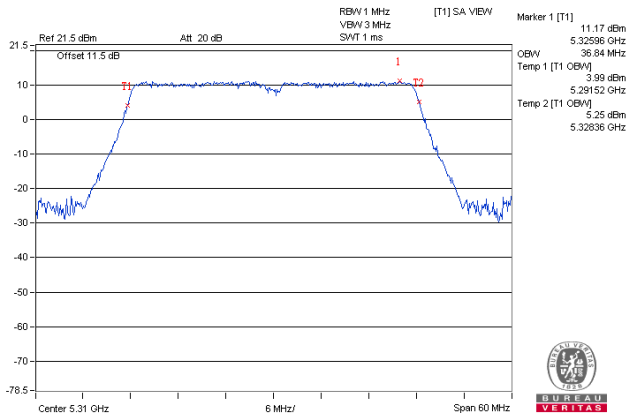


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

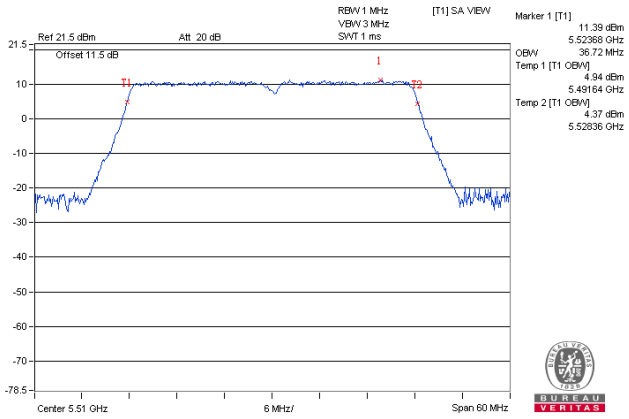
11ac (40MHz) 1S4T CDD CH54 Chain4



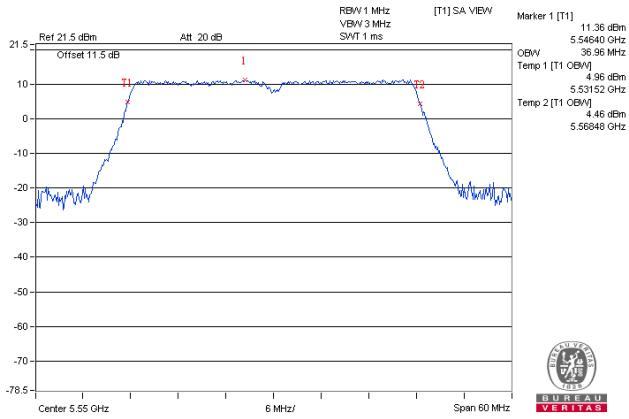
11ac (40MHz) 1S4T CDD CH62 Chain4



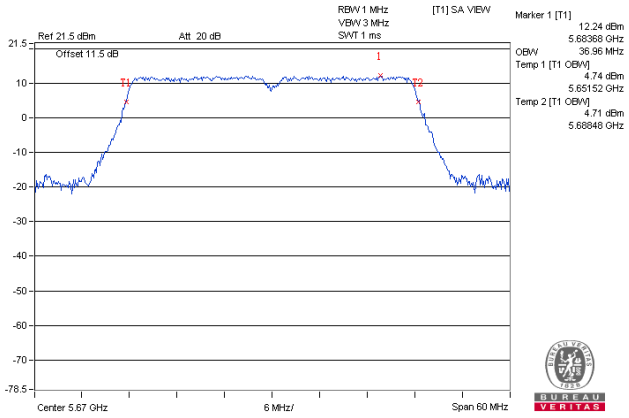
11ac (40MHz) 1S4T CDD CH102 Chain4



11ac (40MHz) 1S4T CDD CH110 Chain4

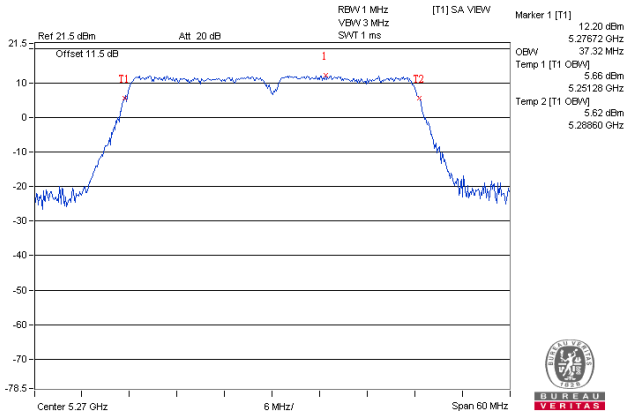


11ac (40MHz) 1S4T CDD CH134 Chain4

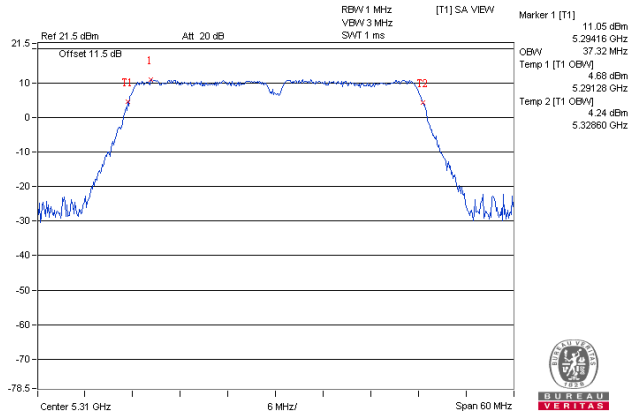


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

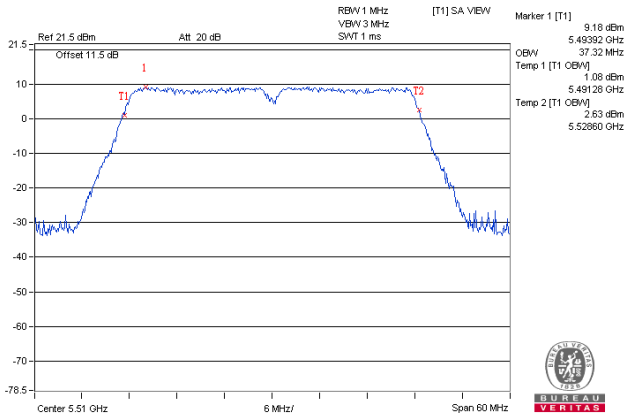
11ac (40MHz) 1S4T TXBF CH54 Chain1



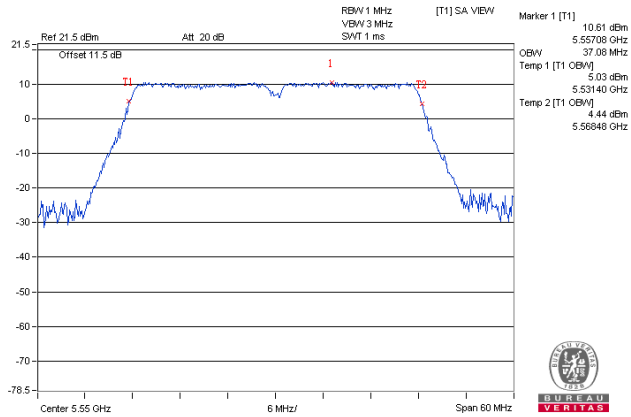
11ac (40MHz) 1S4T TXBF CH62 Chain1



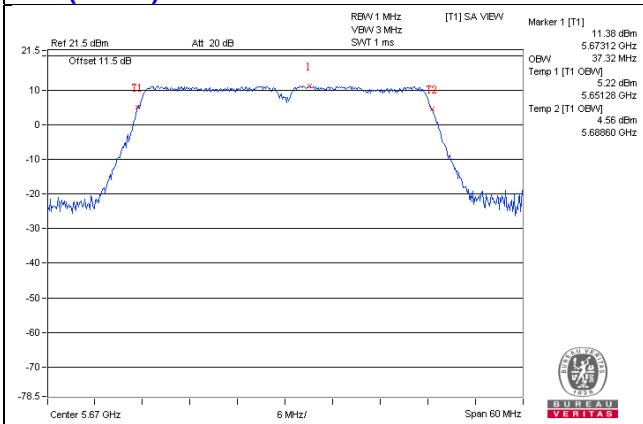
11ac (40MHz) 1S4T TXBF CH102 Chain1



11ac (40MHz) 1S4T TXBF CH110 Chain1

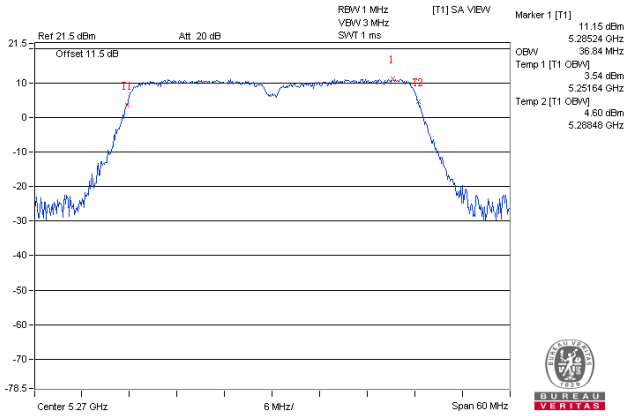


11ac (40MHz) 1S4T TXBF CH134 Chain1



99% OCCUPIED BANDWIDTH SPECTRUM PLOT

11ac (40MHz) 1S4T TXBF CH54 Chain2



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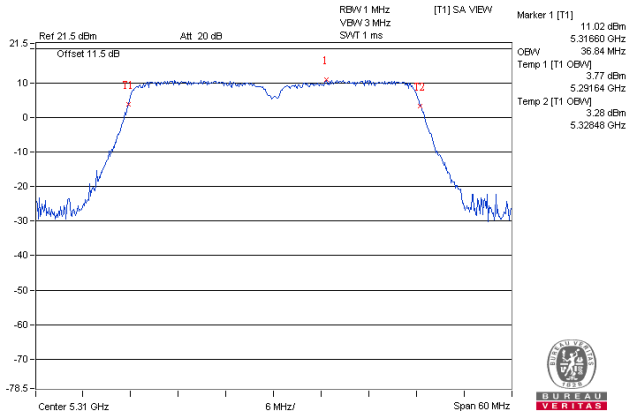

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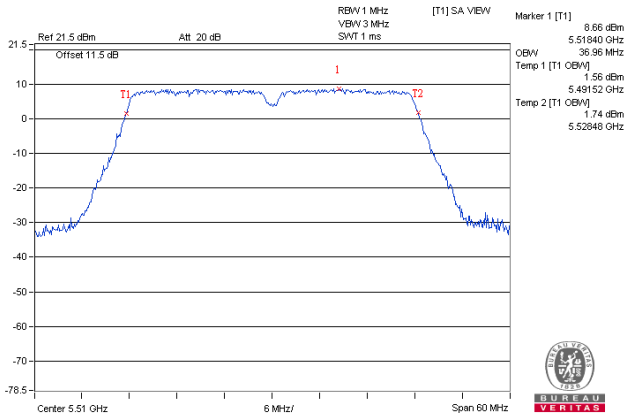

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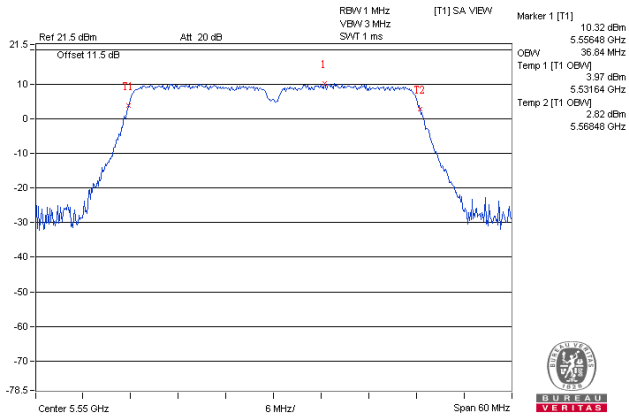

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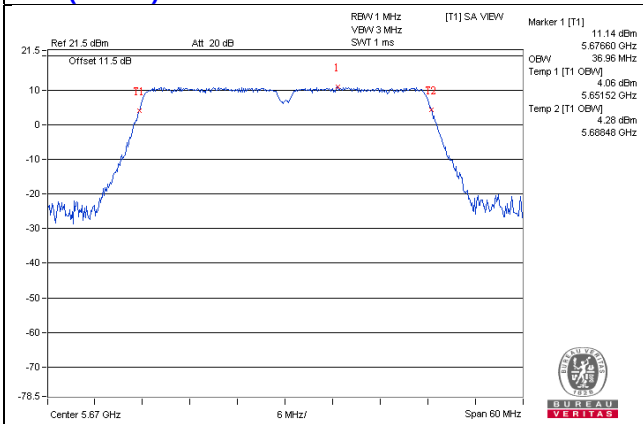
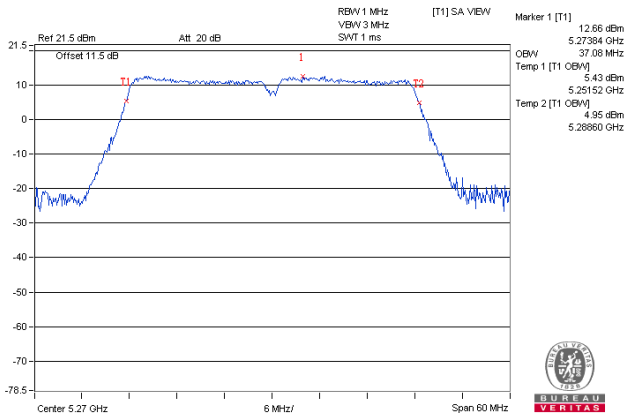
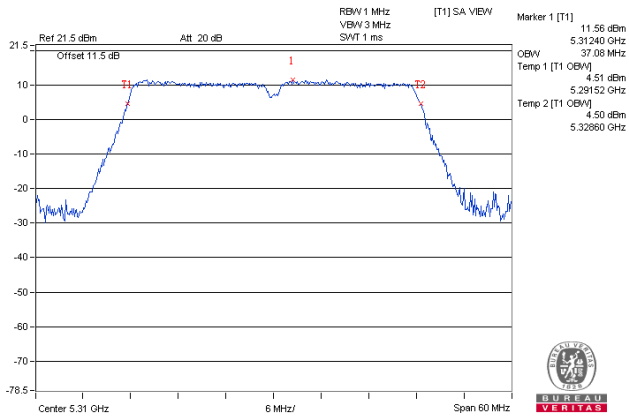


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

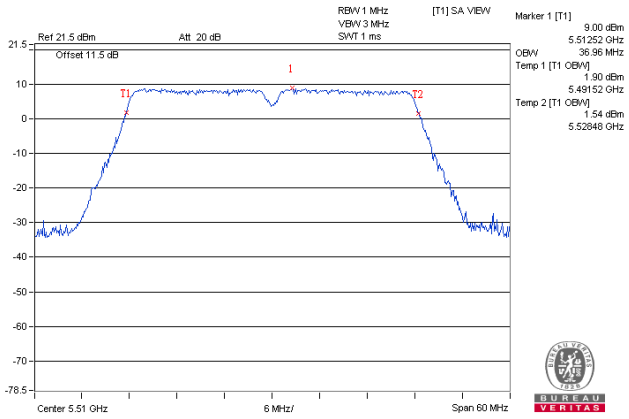
11ac (40MHz) 1S4T TXBF CH54 Chain3



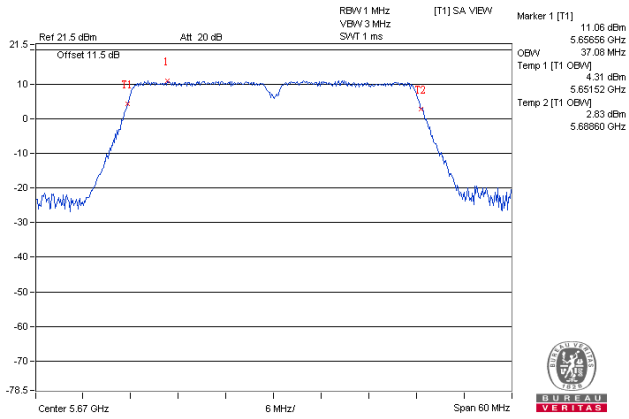
11ac (40MHz) 1S4T TXBF CH62 Chain3



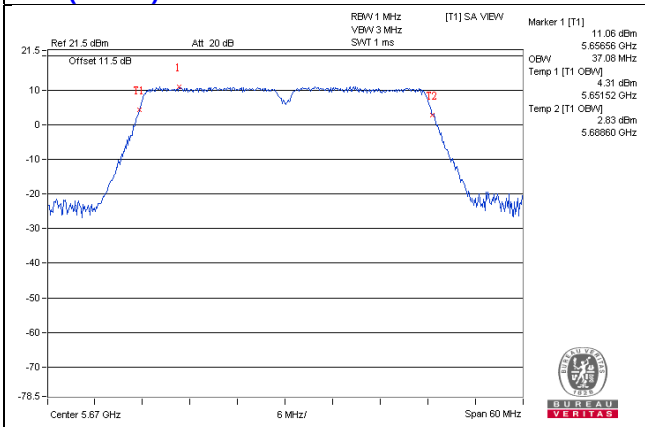
11ac (40MHz) 1S4T TXBF CH102 Chain3



11ac (40MHz) 1S4T TXBF CH110 Chain3

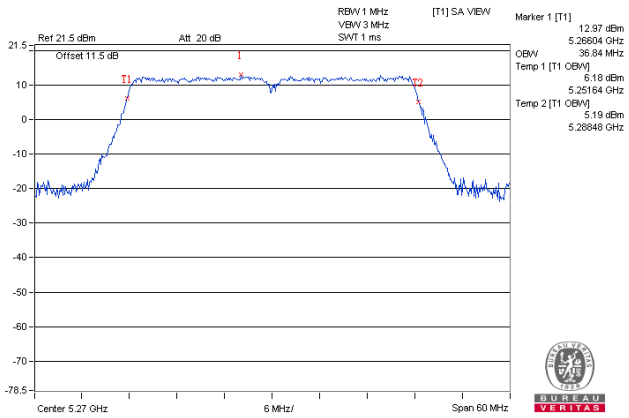


11ac (40MHz) 1S4T TXBF CH134 Chain3

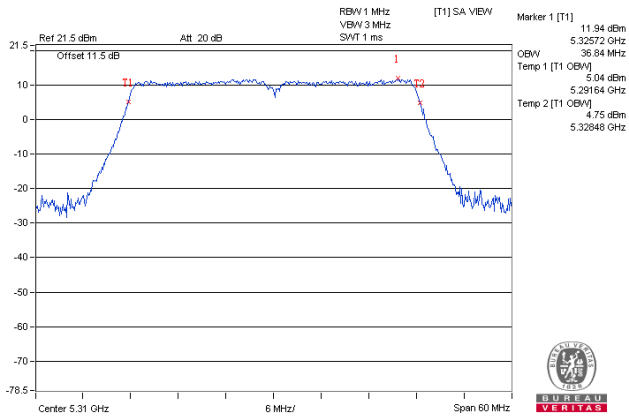


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

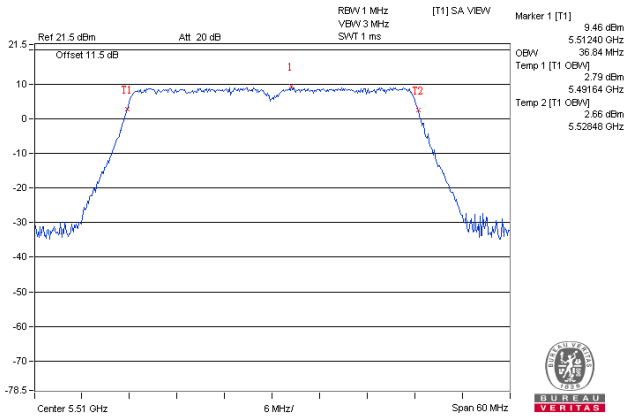
11ac (40MHz) 1S4T TXBF CH54 Chain4



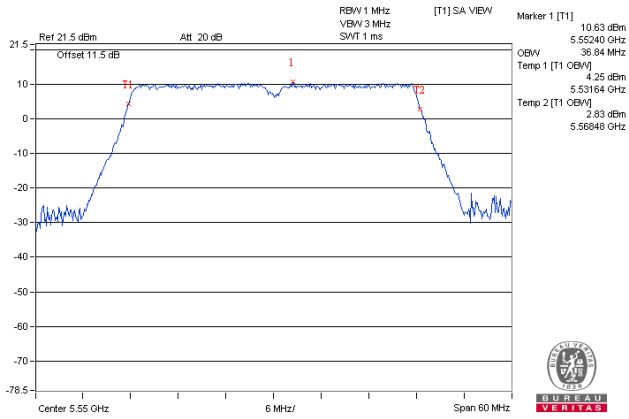
11ac (40MHz) 1S4T TXBF CH62 Chain4



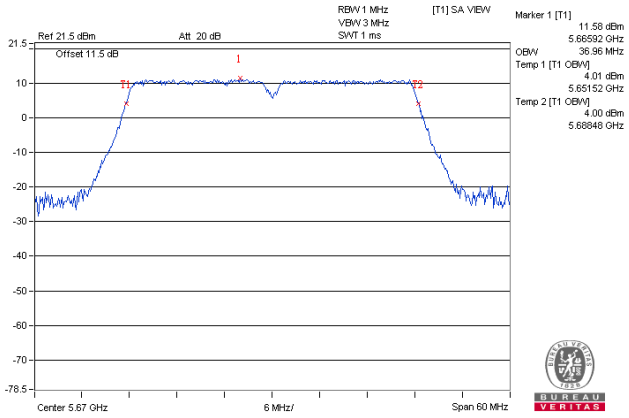
11ac (40MHz) 1S4T TXBF CH102 Chain4



11ac (40MHz) 1S4T TXBF CH110 Chain4

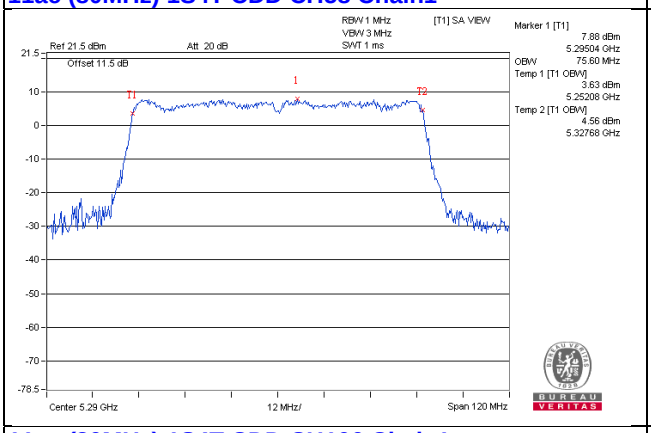


11ac (40MHz) 1S4T TXBF CH134 Chain4

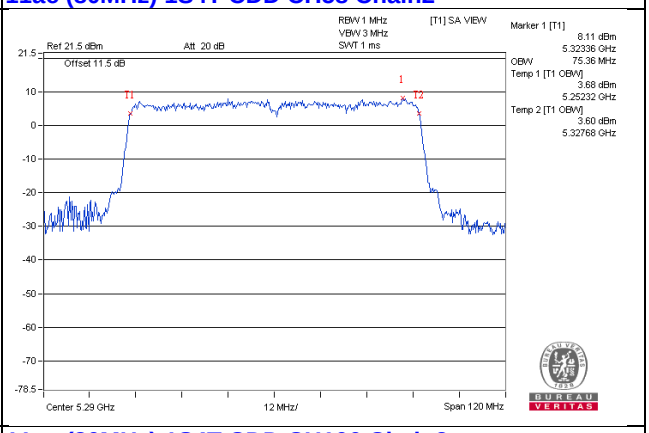


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

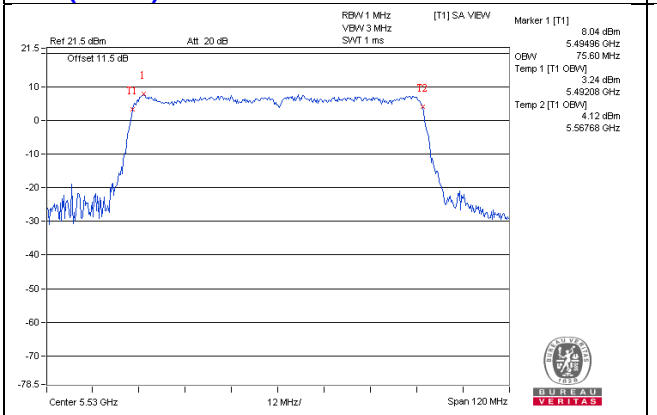
11ac (80MHz) 1S4T CDD CH58 Chain1



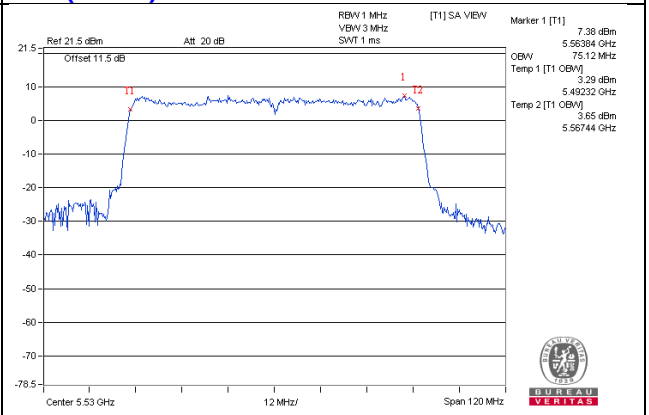
11ac (80MHz) 1S4T CDD CH58 Chain2



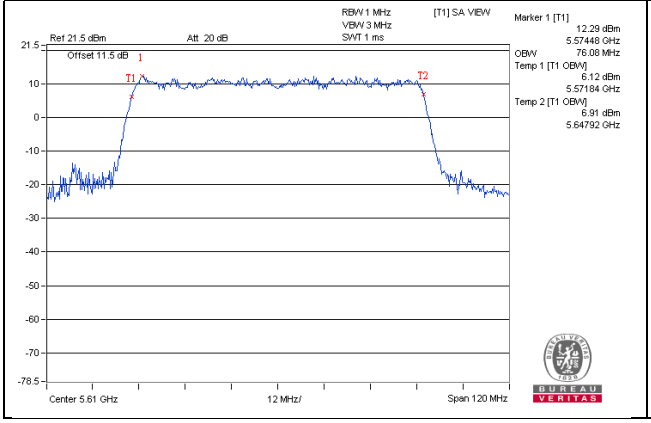
11ac (80MHz) 1S4T CDD CH106 Chain1



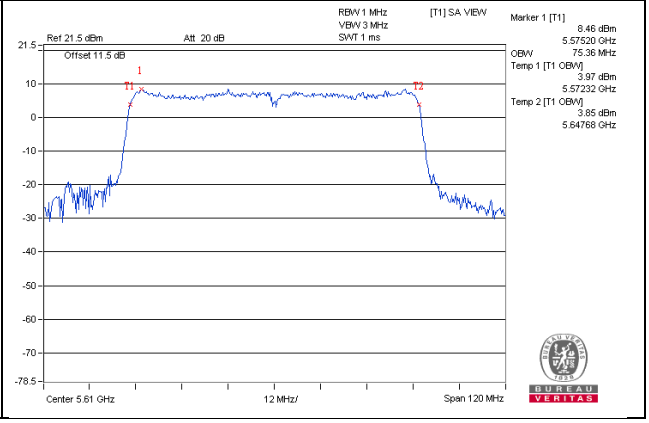
11ac (80MHz) 1S4T CDD CH106 Chain2



11ac (80MHz) 1S4T CDD CH122 Chain1

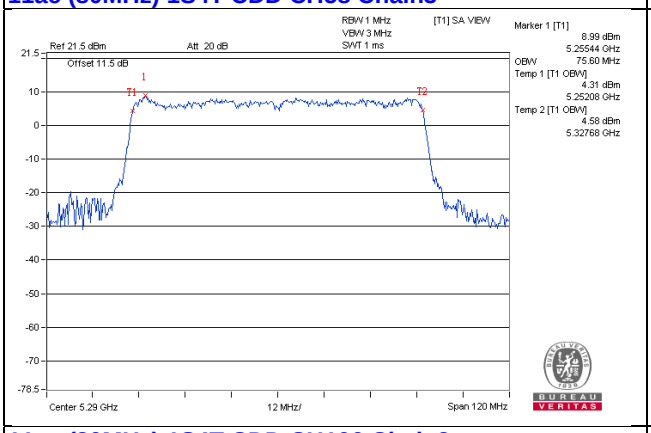


11ac (80MHz) 1S4T CDD CH122 Chain2

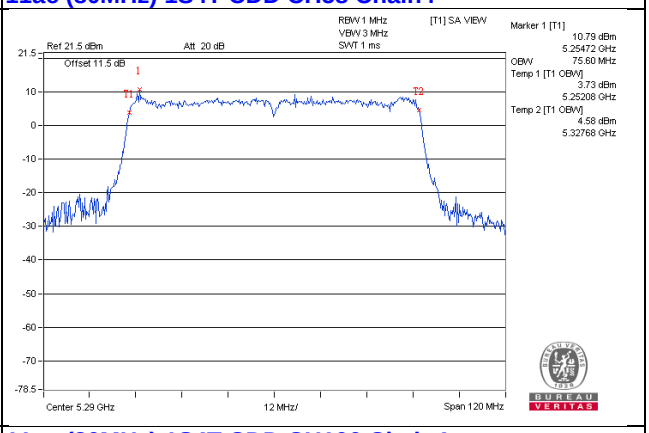


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

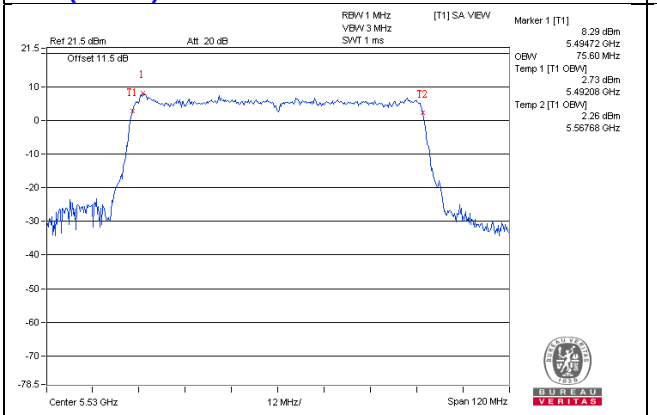
11ac (80MHz) 1S4T CDD CH58 Chain3



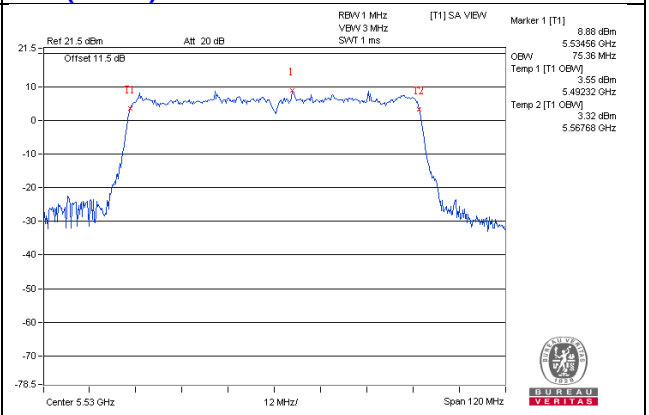
11ac (80MHz) 1S4T CDD CH58 Chain4



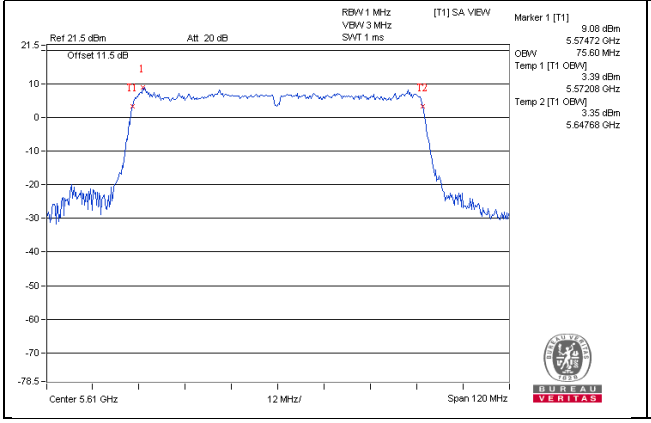
11ac (80MHz) 1S4T CDD CH106 Chain3



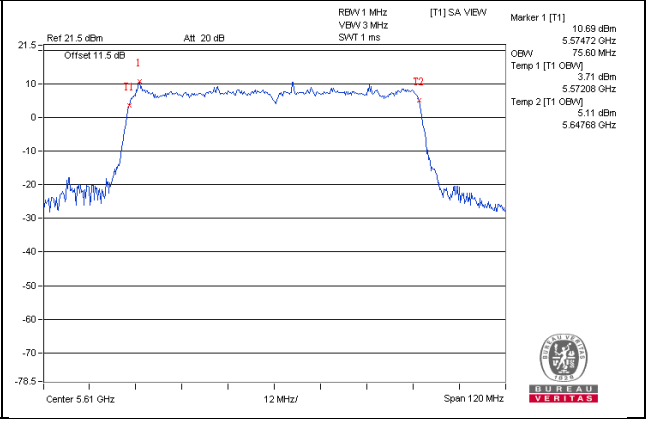
11ac (80MHz) 1S4T CDD CH106 Chain4



11ac (80MHz) 1S4T CDD CH122 Chain3

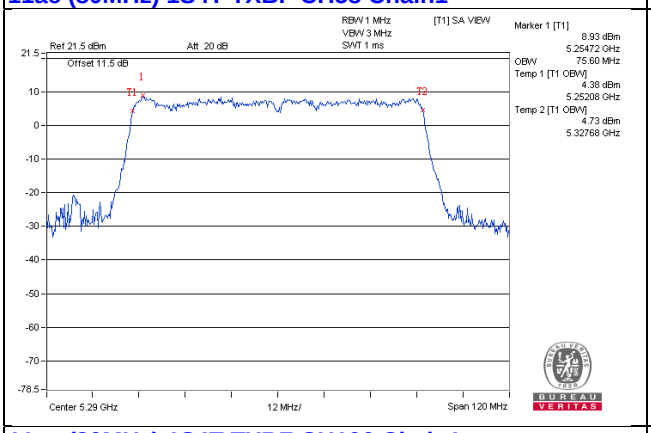


11ac (80MHz) 1S4T CDD CH122 Chain4

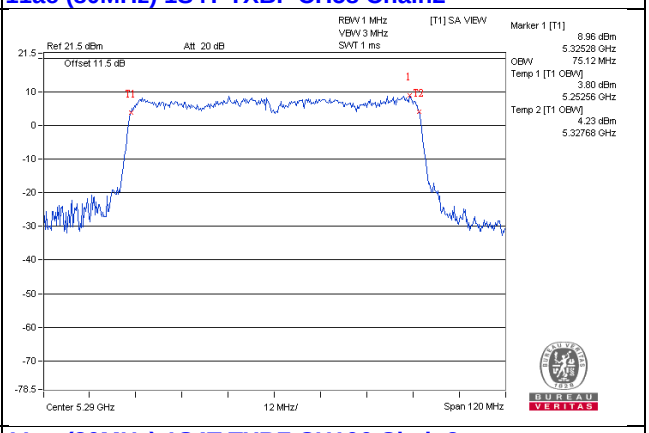


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

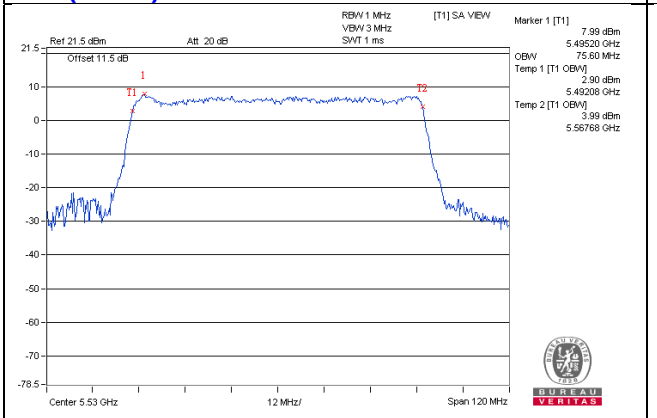
11ac (80MHz) 1S4T TXBF CH58 Chain1



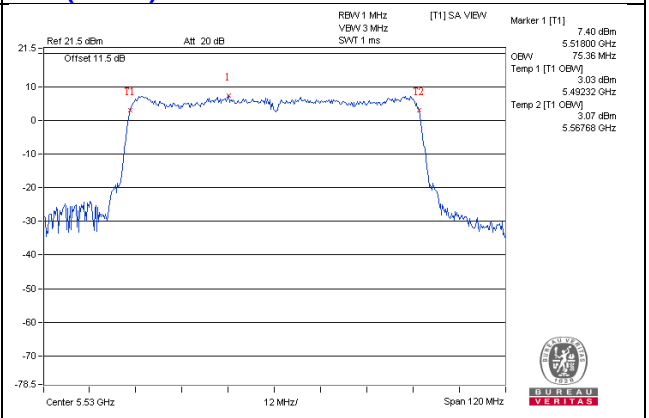
11ac (80MHz) 1S4T TXBF CH58 Chain2



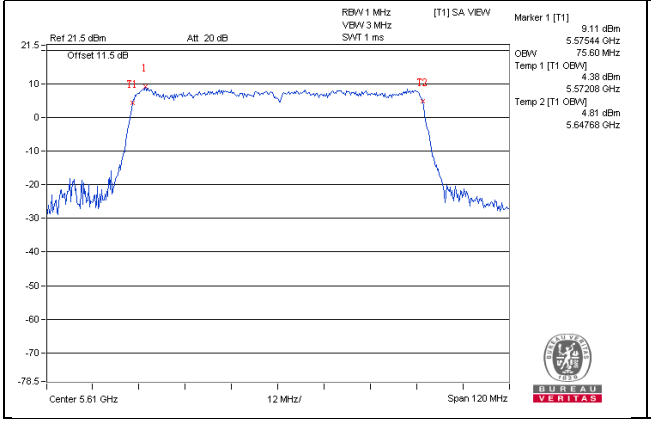
11ac (80MHz) 1S4T TXBF CH106 Chain1



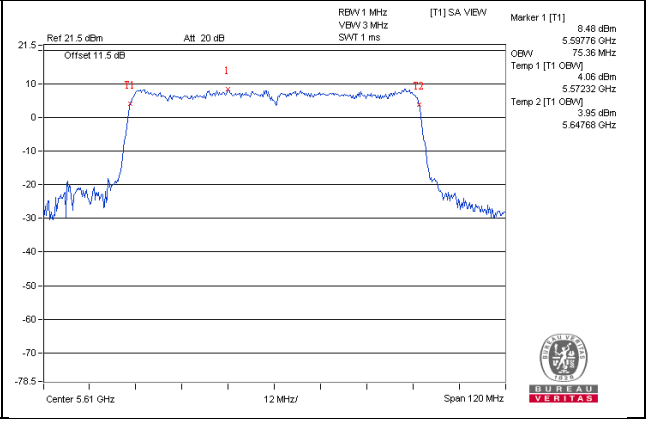
11ac (80MHz) 1S4T TXBF CH106 Chain2



11ac (80MHz) 1S4T TXBF CH122 Chain1

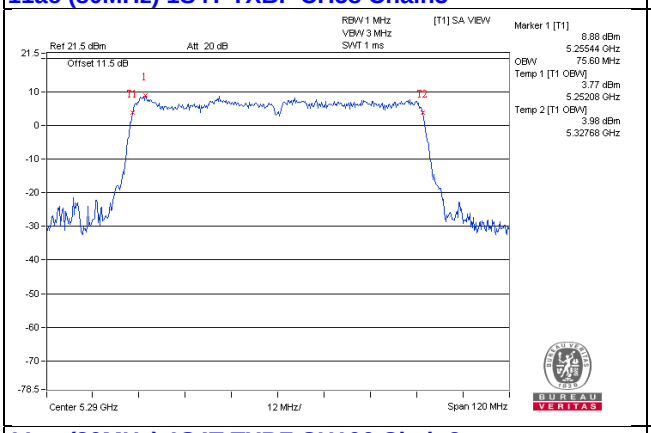


11ac (80MHz) 1S4T TXBF CH122 Chain2

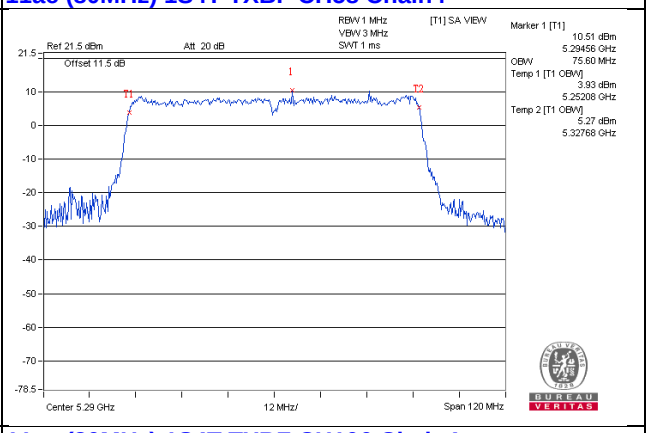


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

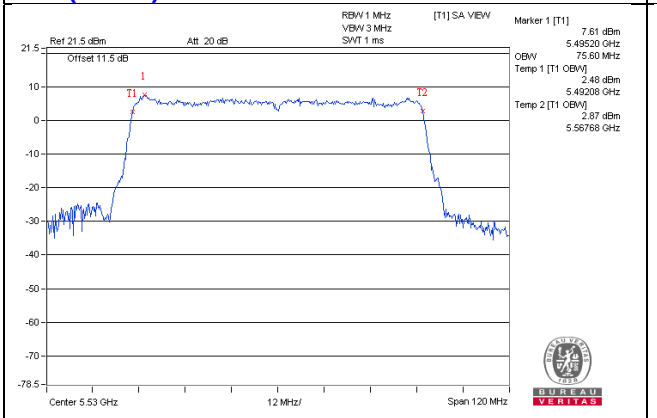
11ac (80MHz) 1S4T TXBF CH58 Chain3



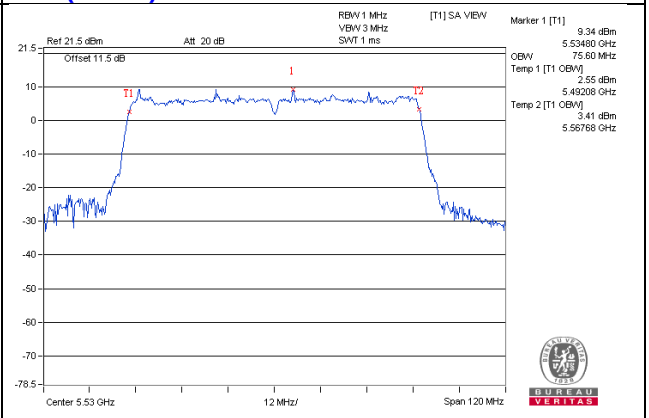
11ac (80MHz) 1S4T TXBF CH58 Chain4



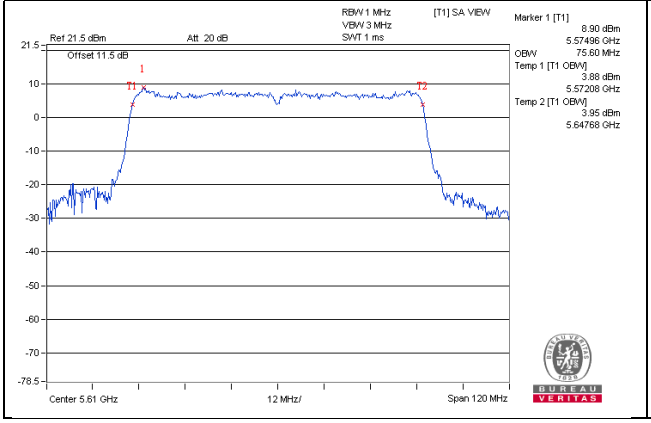
11ac (80MHz) 1S4T TXBF CH106 Chain3



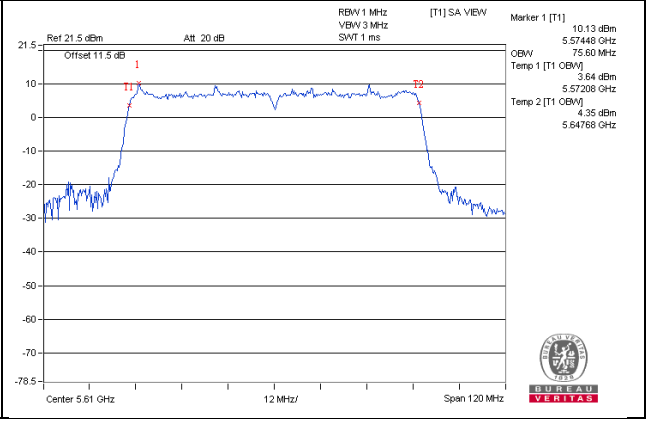
11ac (80MHz) 1S4T TXBF CH106 Chain4



11ac (80MHz) 1S4T TXBF CH122 Chain3



11ac (80MHz) 1S4T TXBF CH122 Chain4



4.3 Maximum Conducted Output Power Measurement

4.3.1 Limit

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3			1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	**Setting**
Filter No.	Auto
Measurement time	8ns
Power Sensor	MA2411B

4.3.3 Test Procedures

Maximum Conducted Output Power

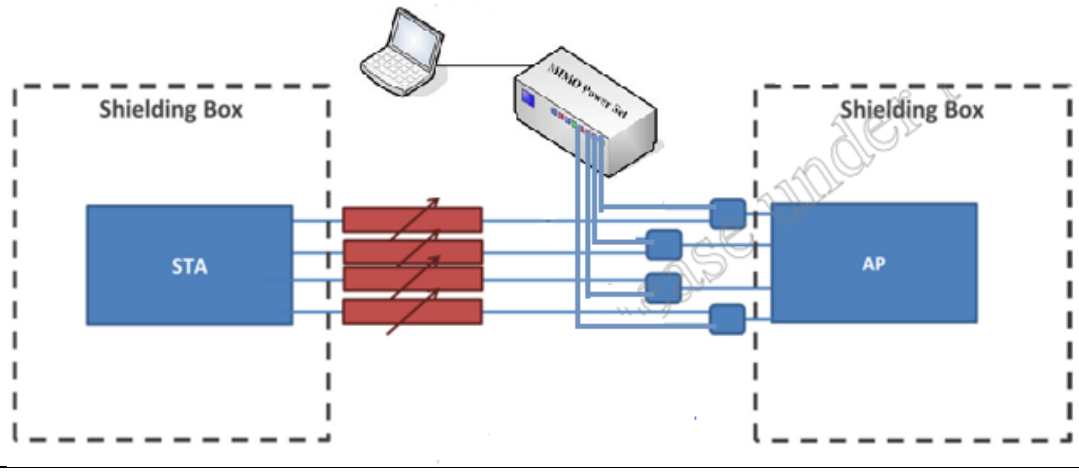
1. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum conducted output power Method (3)” , 05/02/2017.
2. The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor to get the all on time transmission. Record the average power level.
3. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

Transmit Power Control (TPC)

1. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under KDB789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum conducted output power Method (3)” , 05/02/2017.
2. Set Quantenna SW to calstate 3, and configure the CH, BW and SSID according to test plan at band 2 and band 3.
3. Make STA associate with AP.
4. Generate downlink data traffic with traffic generating tools (Iperf)
5. Use telnet via Ethernet port or console via Uart interface to control AP.
6. Go to folder where scripts are placed, usually they will be placed under /mnt/jffs2/
7. Issue ./tpc_eur_band2_new_2.sh under {Administrator}=> .
8. Adjust attenuators to get rssi value greater than -40dBm (ATT=30dB). Wait for 1min then recorded the Transmitting power and setting as TPC power Low.
9. Adjust attenuators to get rssi value less than -55dBm (ATT=80dB). Wait for 1min then recorded the Transmitting power and setting as TPC power High.
10. The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor to get the all on time transmission. Record the average power level.
11. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.3.4 Test Setup Layout

Setup

Transmit Power Control (TPC)


4.3.5 Test Deviation

There are no deviations with the original standard.

4.3.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.3.7 Test Results of Maximum Conducted Output Power

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

11ac (40MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
54	5270	17.85	17.65	17.53	18.27	23.85	4.14	24.00	Pass
62	5310	16.87	16.77	16.95	17.15	22.96	3.94	24.00	Pass
102	5510	18.12	17.63	17.59	18.08	23.88	3.35	24.00	Pass
110	5550	17.85	17.44	17.26	18.05	23.68	3.43	24.00	Pass
134	5670	18.27	17.84	17.51	18.11	23.96	3.37	24.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
54	5270	10.83	10.24	10.95	11.32	16.87	4.14	21.01	24.00	Pass
62	5310	9.27	8.91	9.59	9.55	15.36	3.94	19.30	24.00	Pass
102	5510	9.08	8.91	9.54	9.55	15.30	3.35	18.65	24.00	Pass
110	5550	8.66	8.69	9.10	8.71	14.81	3.43	18.24	24.00	Pass
134	5670	10.16	10.04	10.01	10.13	16.11	3.37	19.48	24.00	Pass

11ac (40MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
54	5270	17.44	17.31	17.11	17.38	23.33	6.61	23.39	Pass
62	5310	17.15	16.67	16.62	16.99	22.88	6.48	23.52	Pass
102	5510	16.22	15.83	15.96	16.08	22.05	6.29	23.71	Pass
110	5550	16.46	16.73	16.16	16.63	22.52	6.33	23.67	Pass
134	5670	17.07	16.94	16.83	16.74	22.92	6.06	23.94	Pass

Note: 1. For 5270MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.61dBi > 6dBi, so the power limit shall be reduced to 24-(6.61-6) = 23.39dBm.
2. For 5310MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.48dBi > 6dBi, so the power limit shall be reduced to 24-(6.48-6) = 23.52dBm.
3. For 5510MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.29dBi > 6dBi, so the power limit shall be reduced to 24-(6.29-6) = 23.71dBm.
4. For 5550MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.33dBi > 6dBi, so the power limit shall be reduced to 24-(6.33-6) = 23.67dBm.
5. For 567MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.06dBi > 6dBi, so the power limit shall be reduced to 24-(6.06-6) = 23.94dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
54	5270	10.83	10.24	10.95	11.32	16.87	6.61	23.48	24.00	Pass
62	5310	9.27	8.91	9.59	9.55	15.36	6.48	21.84	24.00	Pass
102	5510	3.78	4.55	4.65	4.83	10.49	6.29	16.78	24.00	Pass
110	5550	8.02	7.82	7.88	7.48	13.83	6.33	20.16	24.00	Pass
134	5670	9.44	8.71	8.55	8.94	14.94	6.06	21.00	24.00	Pass

11ac (80MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
58	5290	16.74	16.52	16.61	16.93	22.72	3.52	24.00	Pass
106	5530	17.02	16.45	16.37	16.83	22.70	3.71	24.00	Pass
122	5610	16.94	16.43	16.41	16.43	22.58	3.50	24.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
58	5290	9.28	8.97	9.17	9.24	15.19	3.52	18.71	24.00	Pass
106	5530	8.02	7.82	7.88	7.48	13.83	3.71	17.54	24.00	Pass
122	5610	9.44	8.71	8.55	8.94	14.94	3.50	18.44	24.00	Pass

11ac (80MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
58	5290	16.81	16.94	16.37	16.74	22.74	6.65	23.35	Pass
106	5530	16.89	17.14	16.28	16.92	22.84	6.71	23.29	Pass
122	5610	16.83	16.74	16.14	16.32	22.54	6.13	23.87	Pass

Note: 1. For 5270MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.65dBi > 6dBi, so the power limit shall be reduced to 24-(6.65-6) = 23.35dBm.
2. For 5530MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.71dBi > 6dBi, so the power limit shall be reduced to 24-(6.71-6) = 23.29dBm.
3. For 5610MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.13dBi > 6dBi, so the power limit shall be reduced to 24-(6.13-6) = 23.87dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
58	5290	9.28	8.97	9.17	9.24	15.19	6.65	21.84	24.00	Pass
106	5530	8.02	7.82	7.88	7.48	13.83	6.71	20.54	24.00	Pass
122	5610	9.44	8.71	8.55	8.94	14.94	6.13	21.07	24.00	Pass

4.4 Power Spectral Density Measurement

4.4.1 Limit

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
		Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3			30dBm/ 500kHz

4.4.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter Setting	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Average
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

4.4.3 Test Procedure

1 The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.

2 For U-NII-1, U-NII-2A & U-NII-2C Bands, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum conducted output power (E)(2)(d) Method SA-2”, 05/02/2017.

3 For U-NII-3 Band, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum Power Spectral Density (F)(5)” , 05/02/2017.

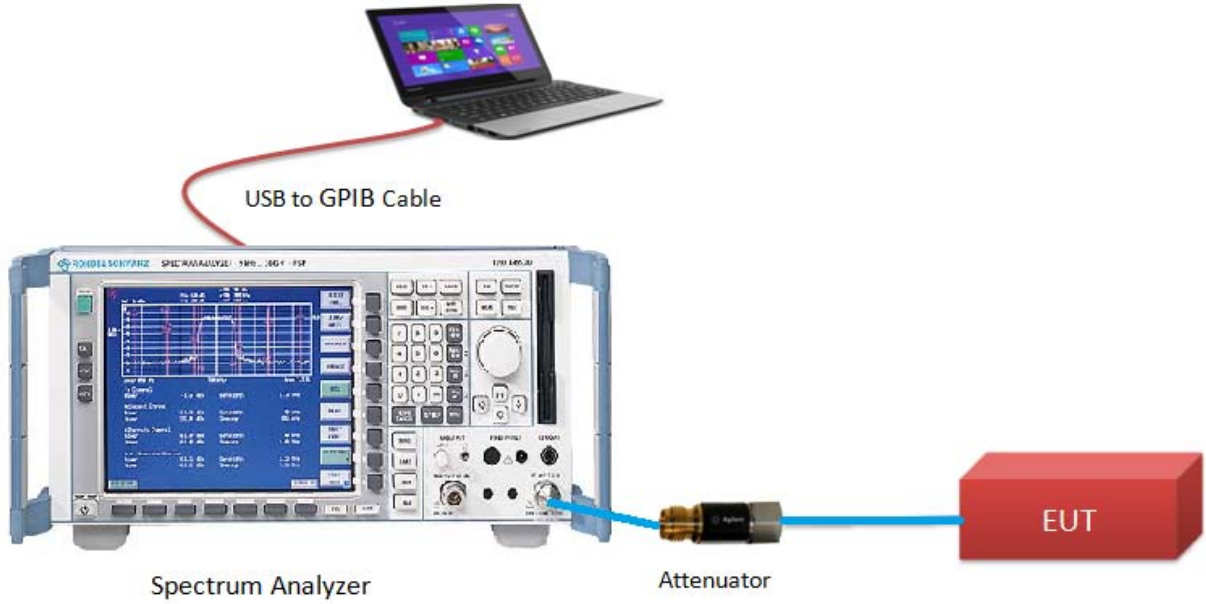
4 Multiple antenna systems was performed in accordance 662911 D01 Multiple Transmitter Output v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs (bin-by-bin summing).

5 When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum.

6 The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4 Test Setup Layout

Setup



4.4.5 Test Deviation

There are no deviations with the original standard.

4.4.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.4.7 Test Results

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

11ac (40MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
54	5270	8.03	0.09	8.12	6.61	10.39	Pass
62	5310	6.94	0.09	7.03	6.48	10.52	Pass
102	5510	7.05	0.09	7.14	6.29	10.71	Pass
110	5550	7.01	0.09	7.10	6.33	10.67	Pass
134	5670	7.94	0.09	8.03	6.06	10.94	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

2. For 5270MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.61dBi > 6dBi, therefore the limit shall be reduced to 11-(6.61-6) = 10.39dBm.
3. For 5310MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.48dBi > 6dBi, therefore the limit shall be reduced to 11-(6.48-6) = 10.52dBm.
4. For 5510MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.29dBi > 6dBi, therefore the limit shall be reduced to 11-(6.29-6) = 10.71dBm.
5. For 5550MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.33dBi > 6dBi, therefore the limit shall be reduced to 11-(6.33-6) = 10.67dBm.
6. For 5670MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.06dBi > 6dBi, therefore the limit shall be reduced to 11-(6.06-6) = 10.94dBm.

11ac (40MHz) 1S4T TxBF

Chan.	Chan. Freq. (MHz)	Total PSD (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
54	5270	7.96	6.61	10.39	Pass
62	5310	6.97	6.48	10.52	Pass
102	5510	5.08	6.29	10.71	Pass
110	5550	5.90	6.33	10.67	Pass
134	5670	6.94	6.06	10.94	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For 5270MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.61dBi > 6dBi, therefore the limit shall be reduced to 11-(6.61-6) = 10.39dBm.
3. For 5310MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.48dBi > 6dBi, therefore the limit shall be reduced to 11-(6.48-6) = 10.52dBm.
4. For 5510MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.29dBi > 6dBi, therefore the limit shall be reduced to 11-(6.29-6) = 10.71dBm.
5. For 5550MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.33dBi > 6dBi, therefore the limit shall be reduced to 11-(6.33-6) = 10.67dBm.
6. For 5670MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.06dBi > 6dBi, therefore the limit shall be reduced to 11-(6.06-6) = 10.94dBm.

11ac (80MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
58	5290	4.41	0.27	4.68	6.65	10.35	Pass
106	5530	3.31	0.27	3.58	6.71	10.29	Pass
122	5610	4.23	0.27	4.50	6.13	10.87	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

2. For 5290MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.65dBi > 6dBi, therefore the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
3. For 5530MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.71dBi > 6dBi, therefore the limit shall be reduced to 11-(6.71-6) = 10.29dBm.
4. For 5610MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.13dBi > 6dBi, therefore the limit shall be reduced to 11-(6.13-6) = 10.87dBm.

11ac (80MHz) 1S4T TxBF

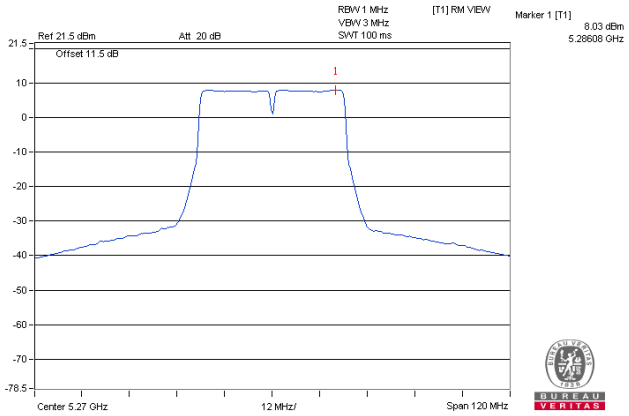
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
58	5290	4.45	0.27	4.72	6.65	10.35	Pass
106	5530	3.34	0.27	3.61	6.71	10.29	Pass
122	5610	4.19	0.27	4.46	6.13	10.87	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

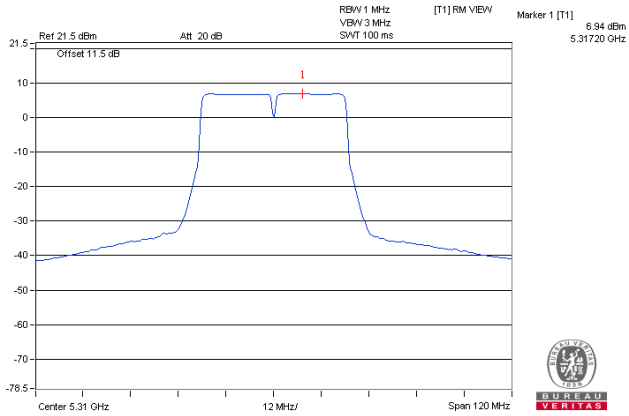
2. For 5290MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.65dBi > 6dBi, therefore the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
3. For 5530MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.71dBi > 6dBi, therefore the limit shall be reduced to 11-(6.71-6) = 10.29dBm.
4. For 5610MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.13dBi > 6dBi, therefore the limit shall be reduced to 11-(6.13-6) = 10.87dBm.

PSD SPECTRUM PLOT

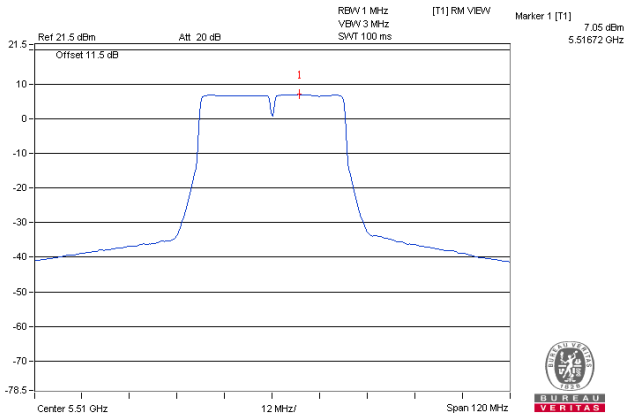
11ac (40MHz) 1S4T CDD CH54



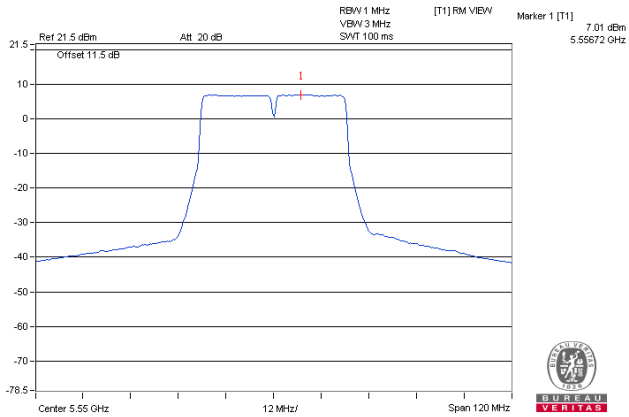
11ac (40MHz) 1S4T CDD CH62



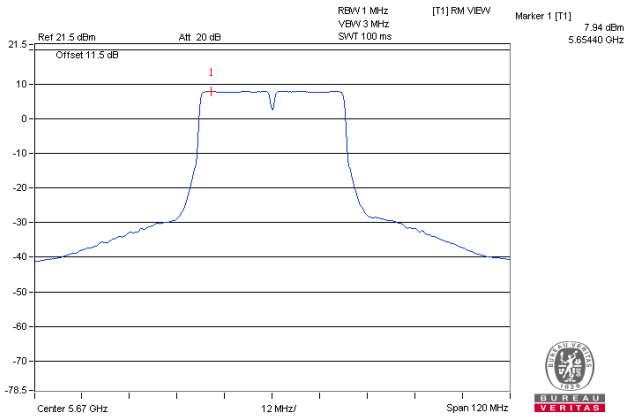
11ac (40MHz) 1S4T CDD CH102



11ac (40MHz) 1S4T CDD CH110

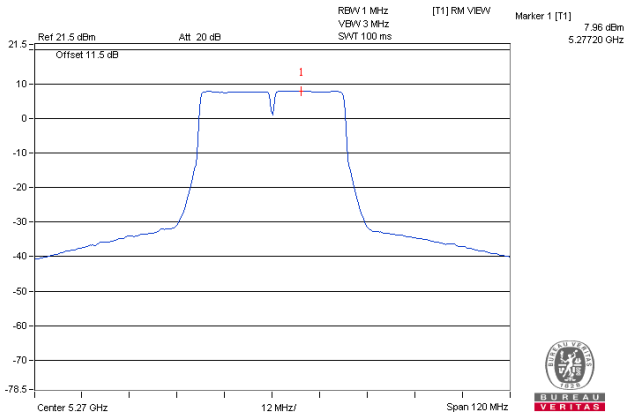


11ac (40MHz) 1S4T CDD CH134

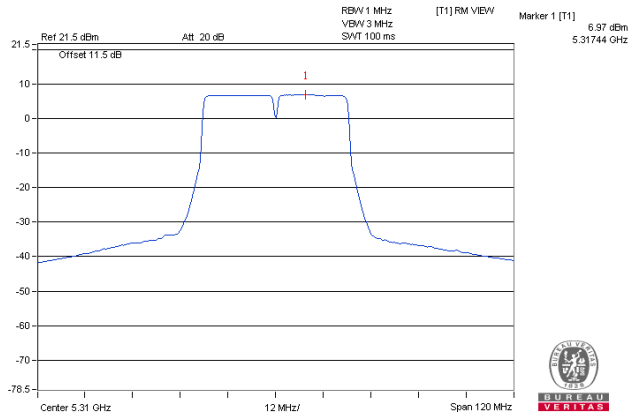


PSD SPECTRUM PLOT

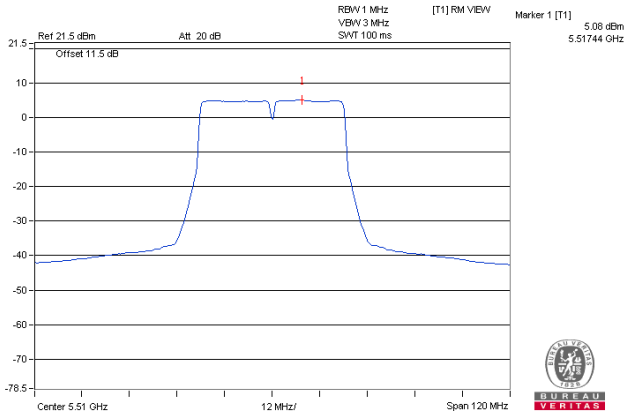
11ac (40MHz) 1S4T TXBF CH54



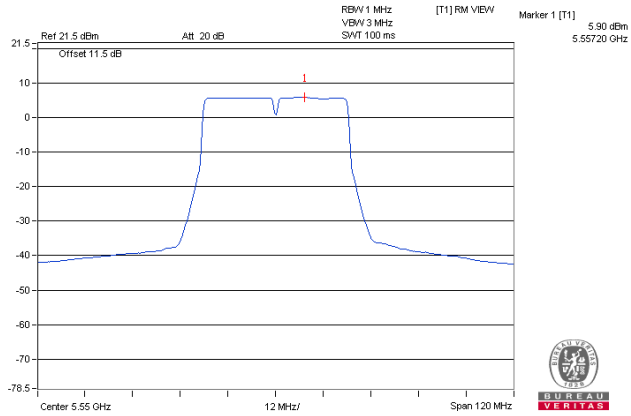
11ac (40MHz) 1S4T TXBF CH62



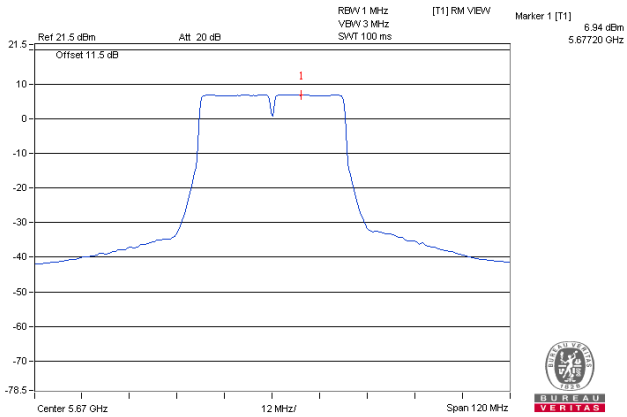
11ac (40MHz) 1S4T TXBF CH102



11ac (40MHz) 1S4T TXBF CH110

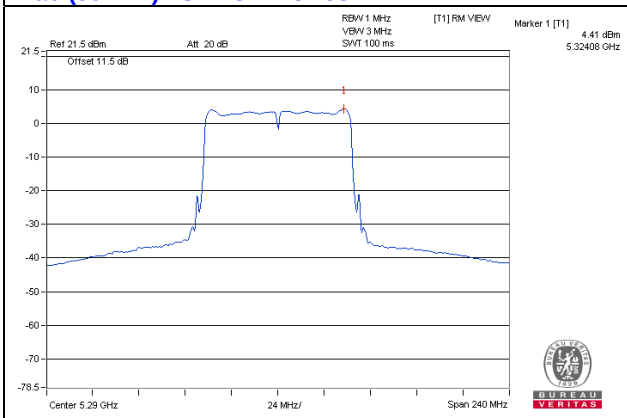


11ac (40MHz) 1S4T TXBF CH134

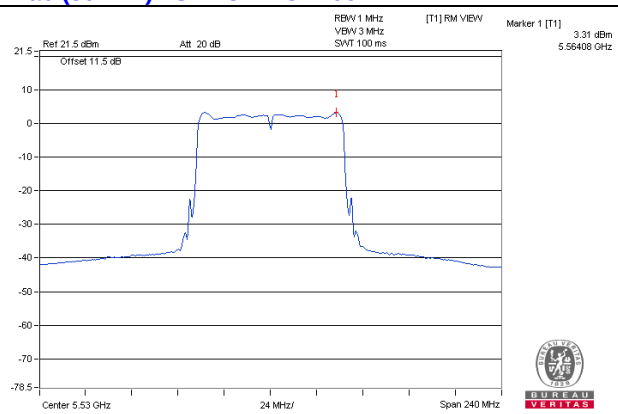


PSD SPECTRUM PLOT

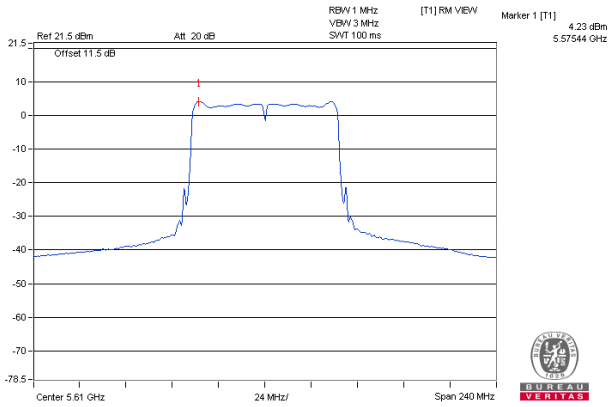
11ac (80MHz) 1S4T CDD CH58



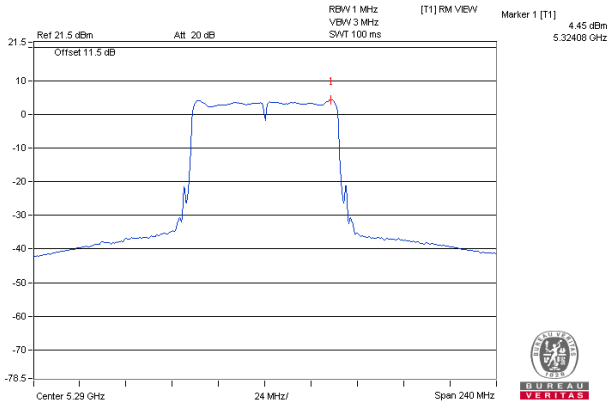
11ac (80MHz) 1S4T CDD CH106



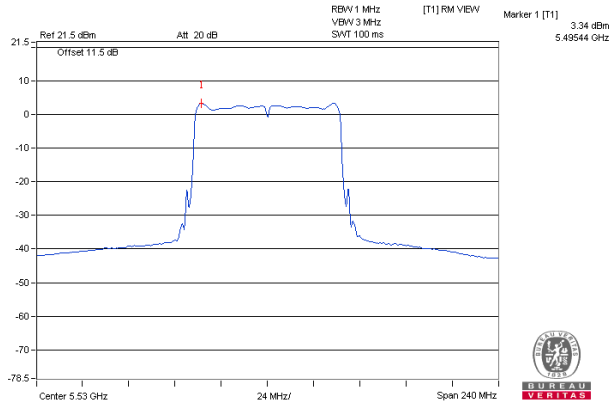
11ac (80MHz) 1S4T CDD CH122



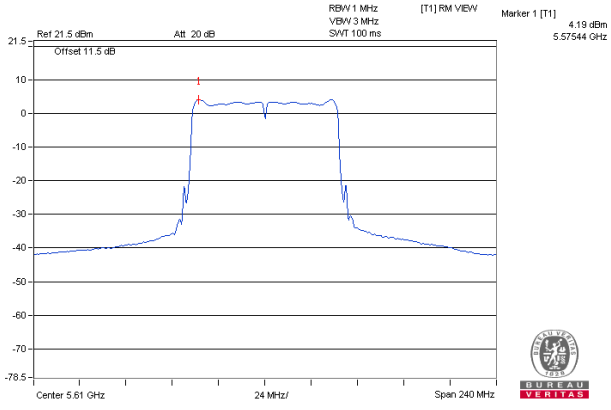
11ac (80MHz) 1S4T TXBF CH58



11ac (80MHz) 1S4T TXBF CH106



11ac (80MHz) 1S4T TXBF CH122



4.5 Band-crossing Channel Measurement

4.5.1 Emission bandwidth Measurement for Band-Crossing Channel

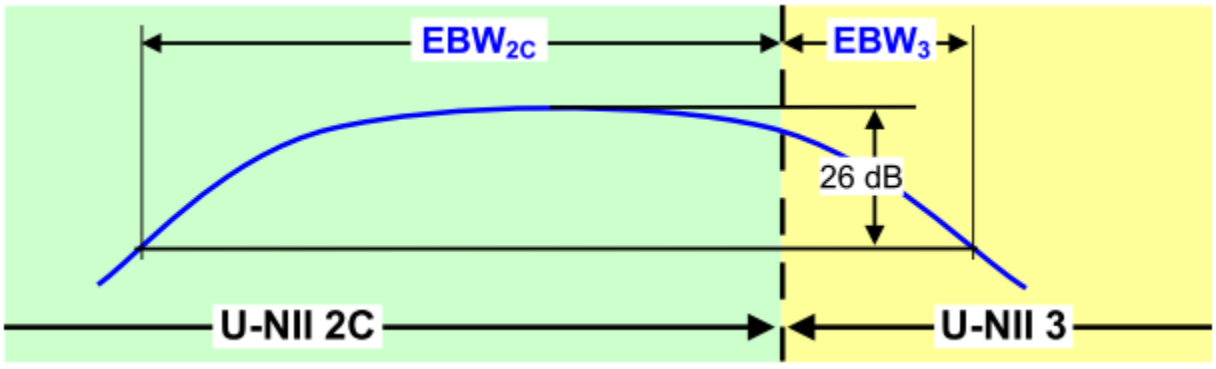
4.5.1.1 Limit

No restriction limits

4.5.1.2 Measuring Instruments and Setting

The following table is the setting of the Spectrum Analyzer.

99% Occupied Bandwidth	
Spectrum Parameter	**Setting**
Attenuation	Auto
Span Frequency	1.5 times to 5.0 times the OBW
RBW	1% to 5% of the anticipated emission bandwidth
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max hold
Sweep Time	Auto
26dB Bandwidth	
Spectrum Parameter	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth.
VBW	> RBW
Detector	Peak
Trace	Max hold
Sweep Time	Auto



Emission Bandwidth (EBW) within a Band for Band-Crossing Signals

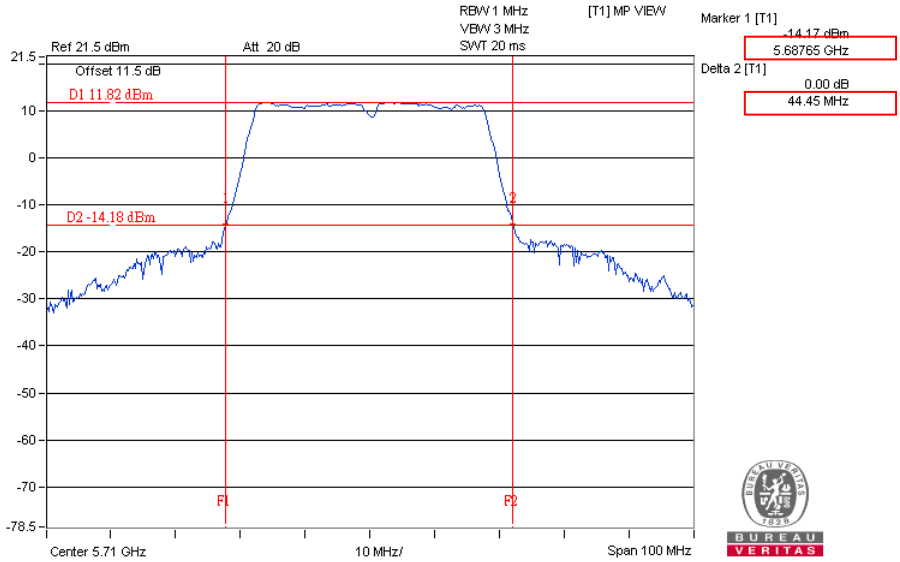
4.5.1.3 Test Procedure

1 The transmitter output (antenna port) was connected to the spectrum analyzer.

2 Test was performed in accordance with Measurement of Digital Transmission Systems Operating under 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Emission bandwidth (C)(1)” & "99 Percent Occupied Bandwidth"(D). 05/02/2017.

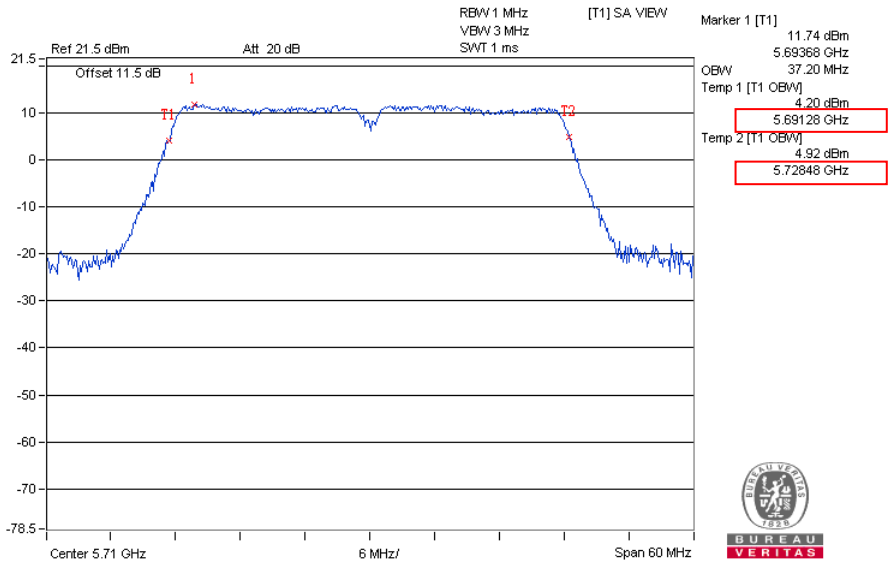
3 When measuring Emission bandwidth with multiple antenna systems, add every result of the values by mathematic formula.

For 26dB Bandwidth



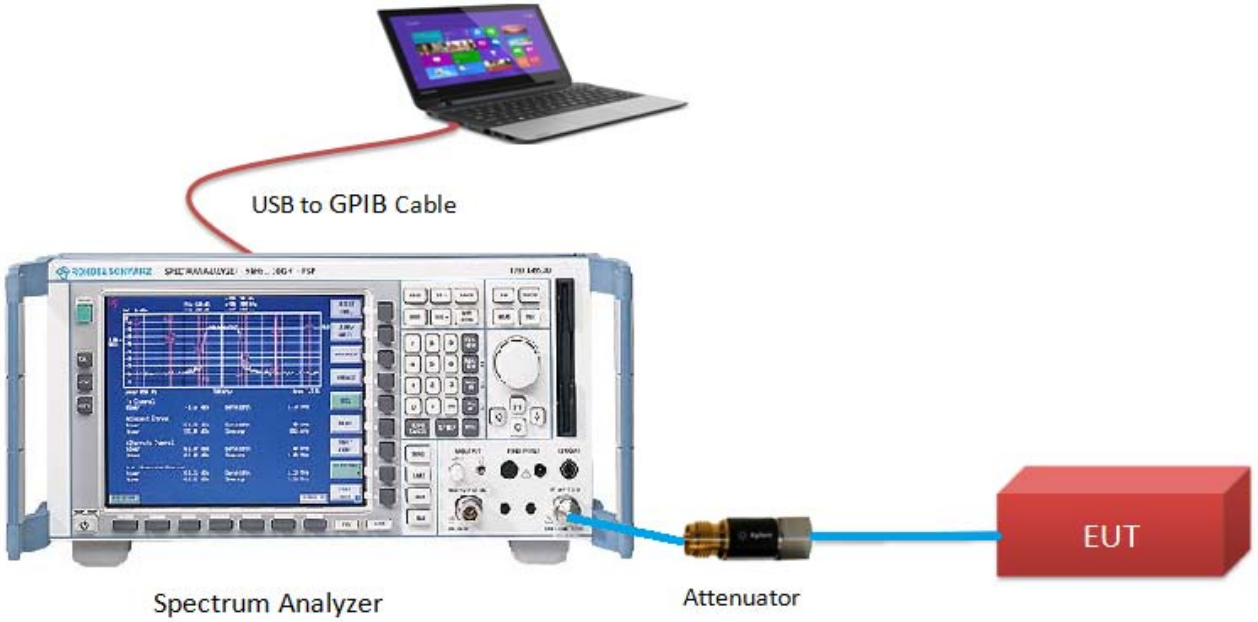
EBW_{2C}= 5.725GHz – Marker 1[T1]
EBW_3= Marker 1[T1] + Delta 2[T1](MHz)- 5.725GHz

For 99% Occupied Bandwidth



EBW_{2C}= 5.725GHz – Temp 1[T1 OBW]
EBW_3= Temp 2[T1 OBW]- 5.725GHz

4.5.1.4 Test Setup Layout

Setup


4.5.1.5 Test Deviation

There are no deviations with the original standard.

4.5.1.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.5.1.7 Test Results

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

11ac (40MHz) 1S4T CDD

CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
142	5710	37.35	7.10	37.68	7.55	37.06	7.52	37.24	6.97

11ac (40MHz) 1S4T TxBF

CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
142	5710	37.32	7.23	37.38	7.34	37.03	7.44	37.02	6.89

11ac (80MHz) 1S4T CDD

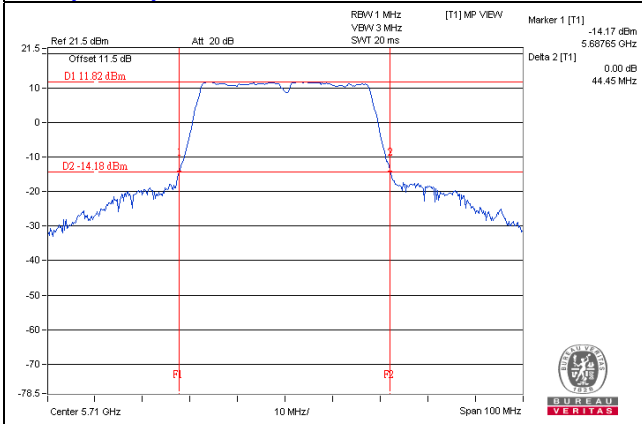
CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
138	5690	89.23	7.67	89.14	7.34	78.81	7.39	78.80	6.69

11ac (80MHz) 1S4T TxBF

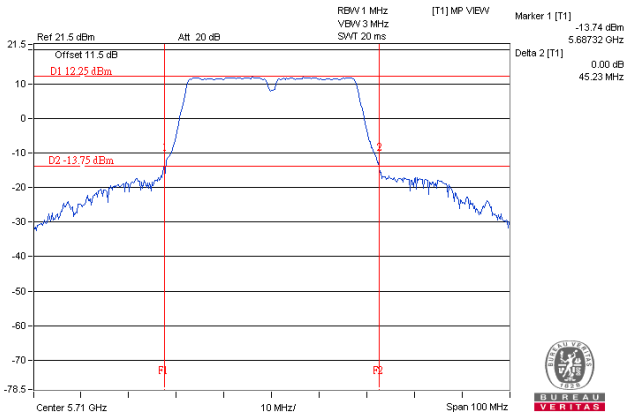
CHANNEL	FREQUENCY (MHz)	26dB Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
138	5690	78.24	7.32	76.48	6.66	77.00	7.29	76.67	6.66

26dB BANDWIDTH SPECTRUM PLOT

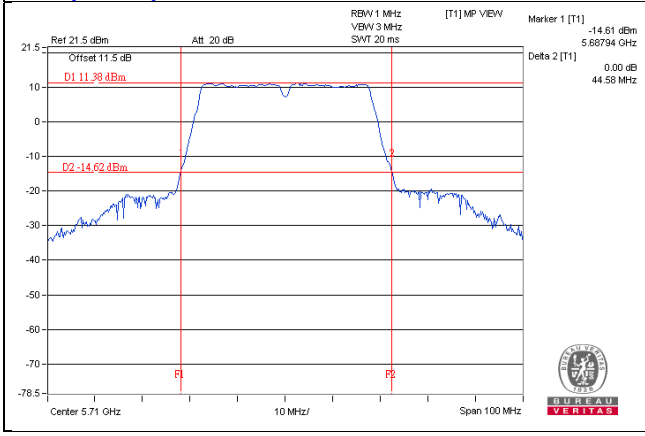
11ac (40MHz) 1S4T CDD CH142 Chain1



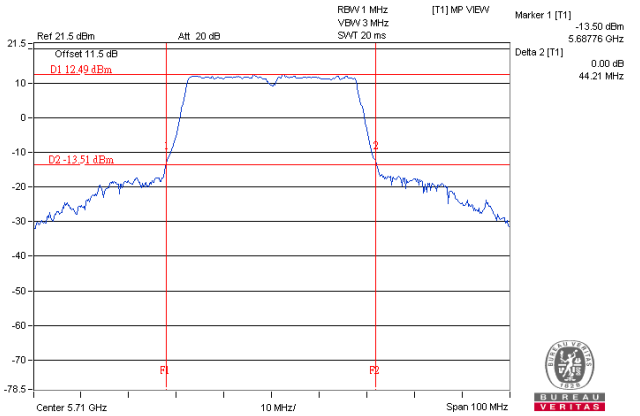
11ac (40MHz) 1S4T CDD CH142 Chain2



11ac (40MHz) 1S4T CDD CH142 Chain3

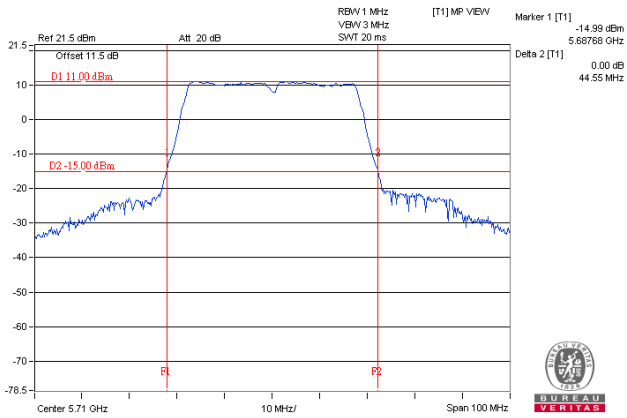


11ac (40MHz) 1S4T CDD CH142 Chain4

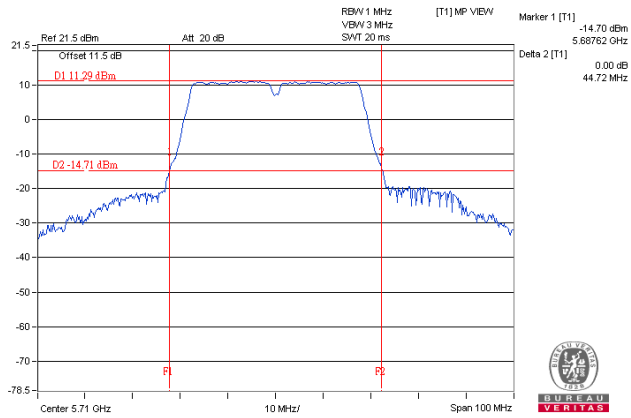


26dB BANDWIDTH SPECTRUM PLOT

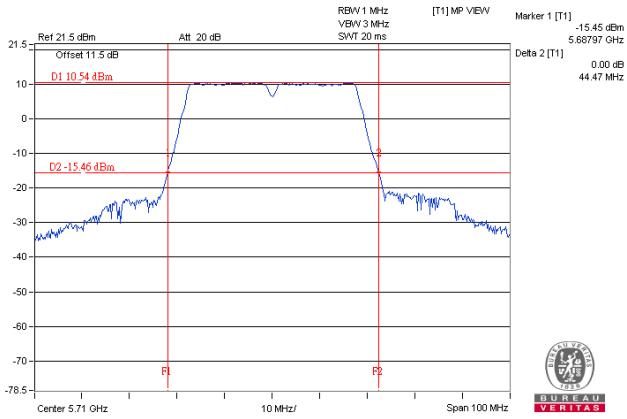
11ac (40MHz) 1S4T TXBF CH142 Chain1



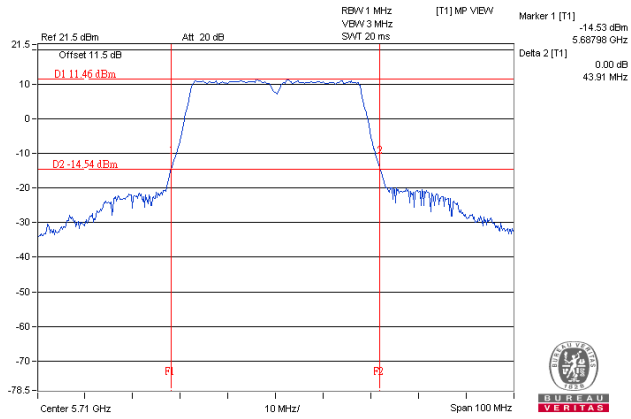
11ac (40MHz) 1S4T TXBF CH142 Chain2



11ac (40MHz) 1S4T TXBF CH142 Chain3

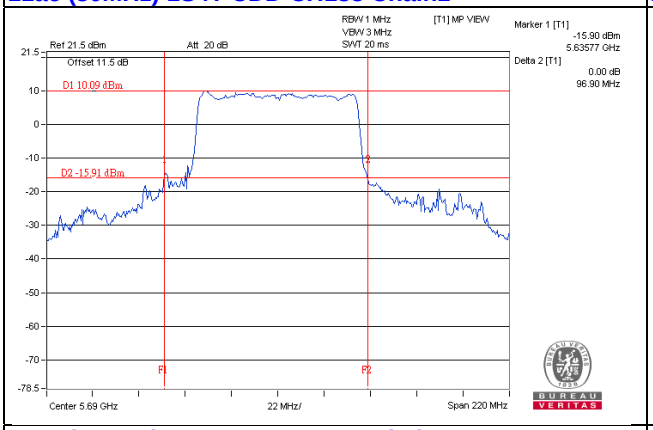


11ac (40MHz) 1S4T TXBF CH142 Chain4

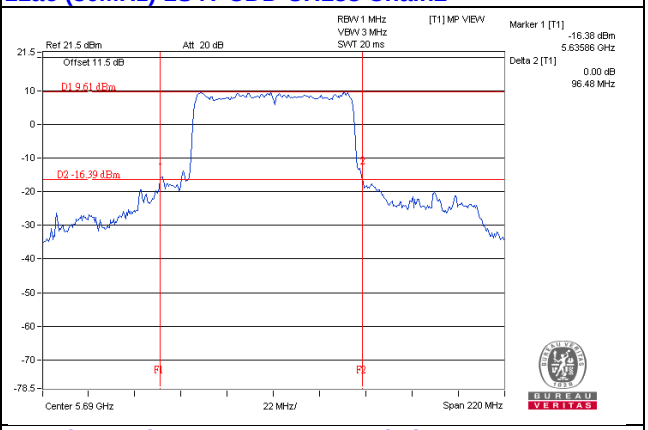


26dB BANDWIDTH SPECTRUM PLOT

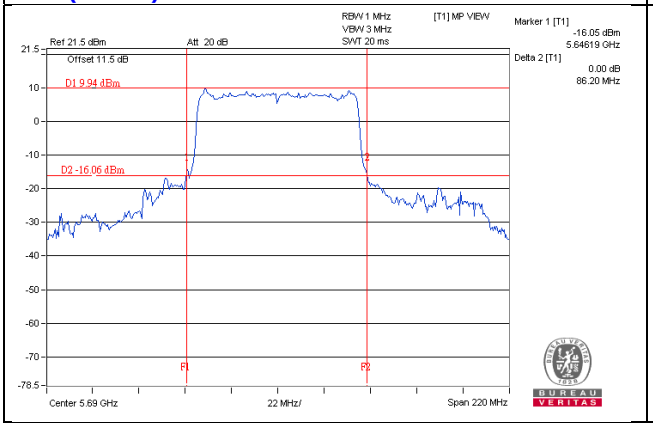
11ac (80MHz) 1S4T CDD CH138 Chain1



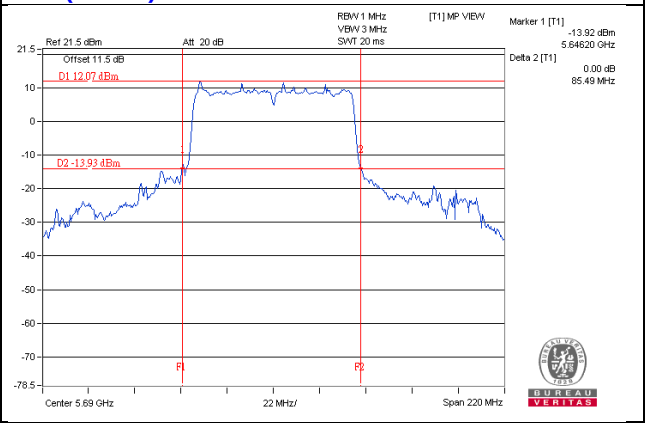
11ac (80MHz) 1S4T CDD CH138 Chain2



11ac (80MHz) 1S4T CDD CH138 Chain3

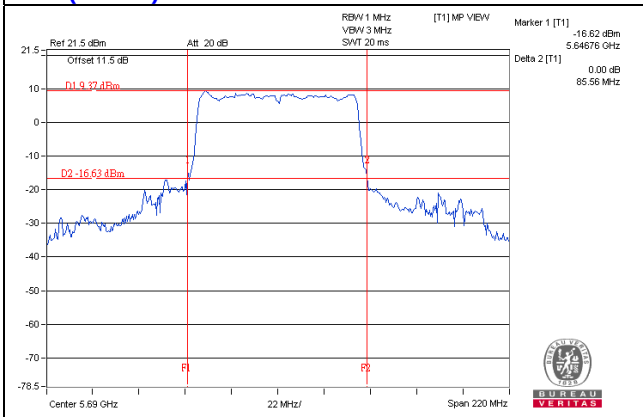


11ac (80MHz) 1S4T CDD CH138 Chain4

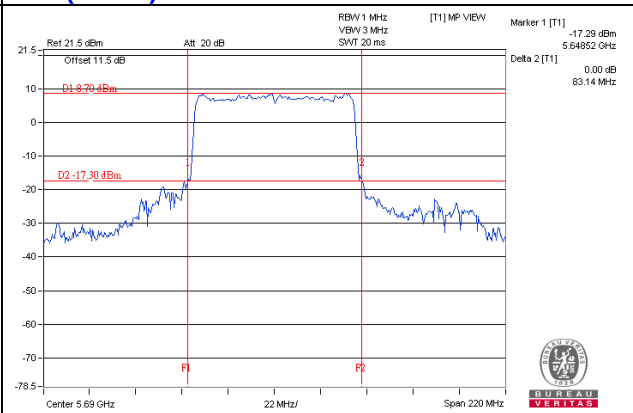


26dB BANDWIDTH SPECTRUM PLOT

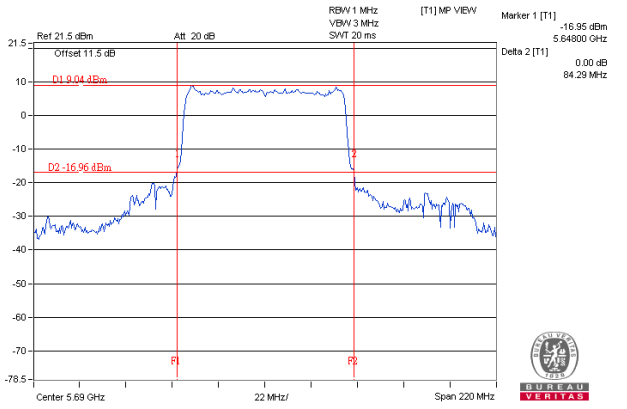
11ac (80MHz) 1S4T TXBF CH138 Chain1



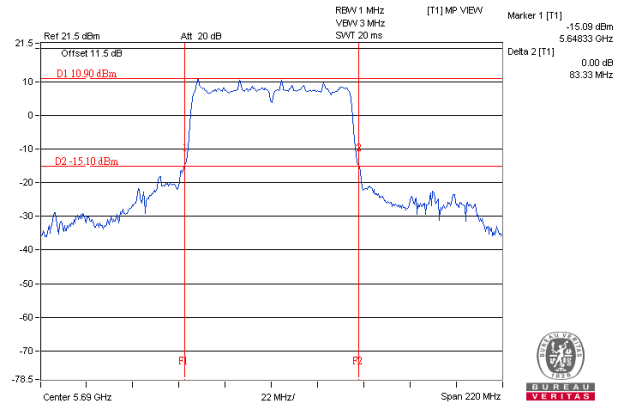
11ac (80MHz) 1S4T TXBF CH138 Chain2



11ac (80MHz) 1S4T TXBF CH138 Chain3



11ac (80MHz) 1S4T TXBF CH138 Chain4



11ac (40MHz) 1S4T CDD

CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
142	5710	33.72	3.48	33.48	3.48	33.48	3.60	33.48	3.48

11ac (40MHz) 1S4T TxBF

CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
142	5710	33.72	3.48	33.48	3.48	33.48	3.60	33.48	3.36

11ac (80MHz) 1S4T CDD

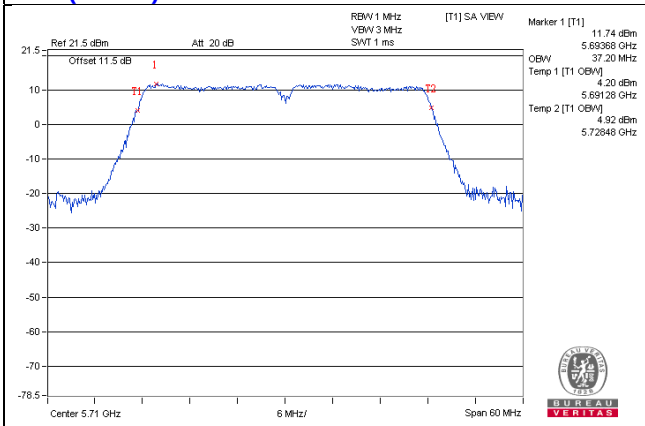
CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
138	5690	72.92	2.68	72.68	2.68	72.92	2.68	72.92	2.68

11ac (80MHz) 1S4T TxBF

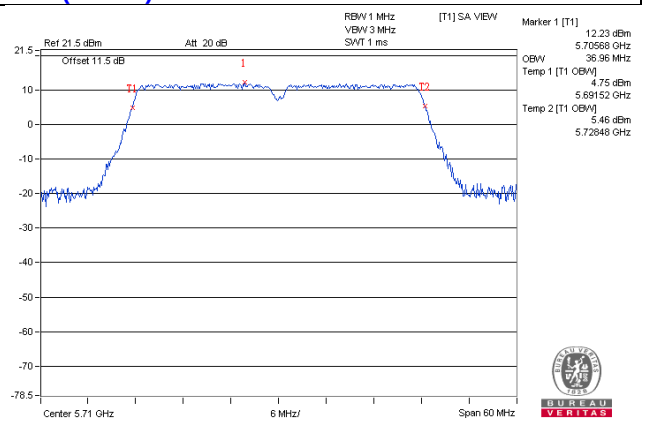
CHANNEL	FREQUENCY (MHz)	99% Occupied Bandwidth (MHz)							
		CHAIN 1		CHAIN 2		CHAIN 3		CHAIN 4	
		EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3	EBW_{2C}	EBW_3
138	5690	72.92	2.68	72.68	2.68	72.92	2.68	72.92	2.68

99% OCCUPIED BANDWIDTH SPECTRUM PLOT

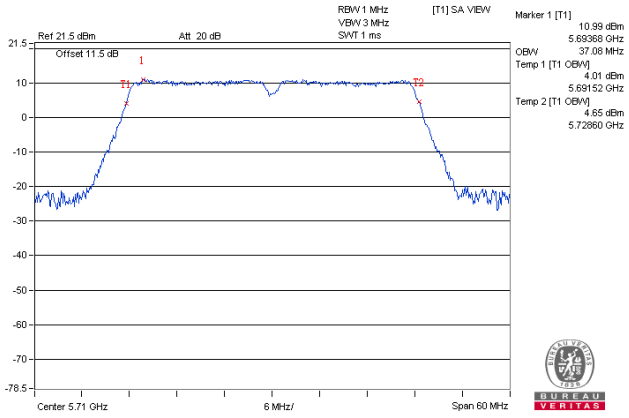
11ac (40MHz) 1S4T CDD CH142 Chain1



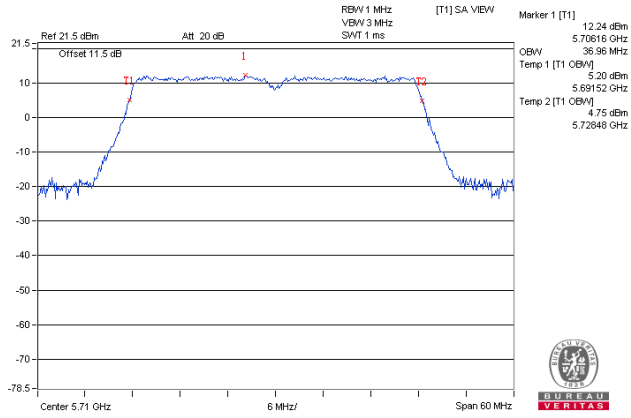
11ac (40MHz) 1S4T CDD CH142 Chain2



11ac (40MHz) 1S4T CDD CH142 Chain3

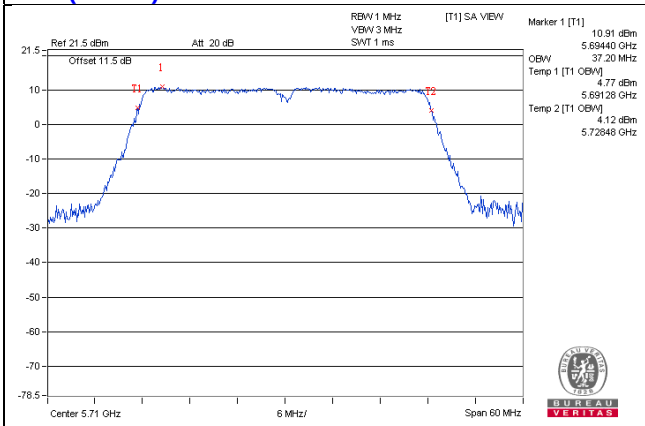


11ac (40MHz) 1S4T CDD CH142 Chain4

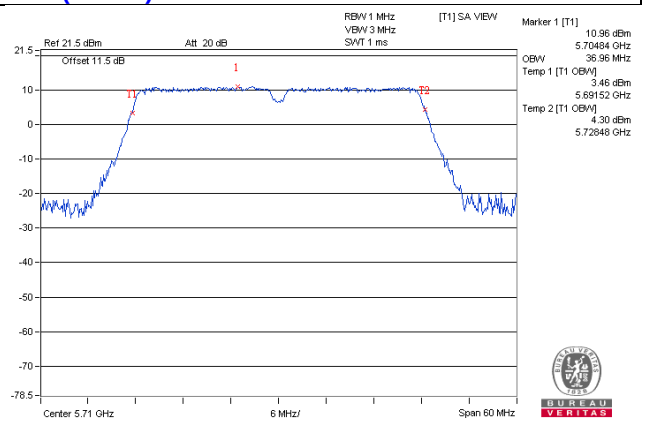


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

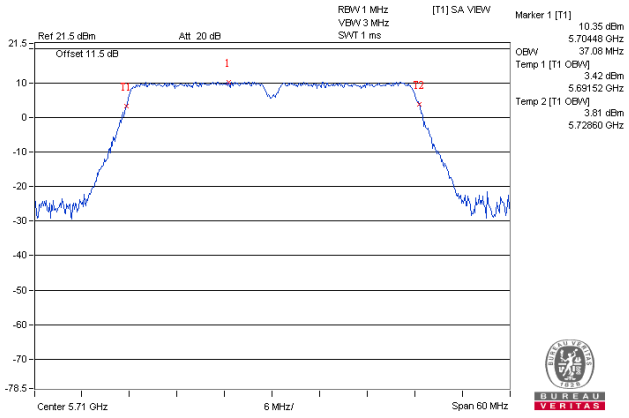
11ac (40MHz) 1S4T TXBF CH142 Chain1



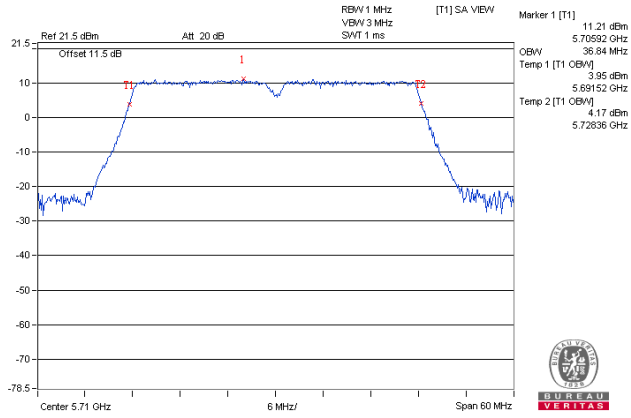
11ac (40MHz) 1S4T TXBF CH142 Chain2



11ac (40MHz) 1S4T TXBF CH142 Chain3

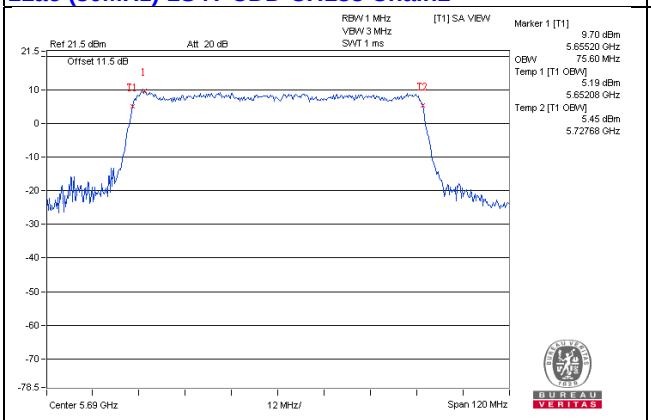


11ac (40MHz) 1S4T TXBF CH142 Chain4

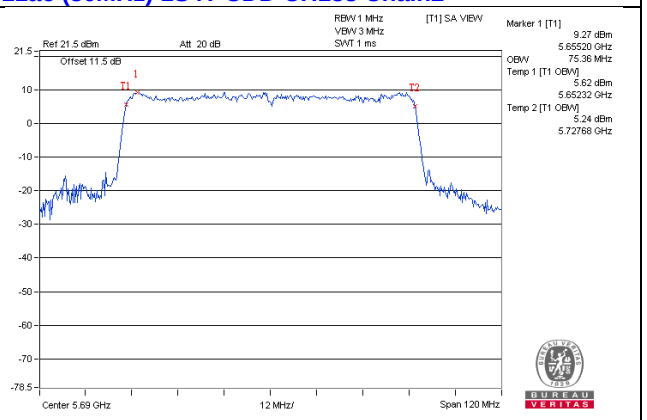


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

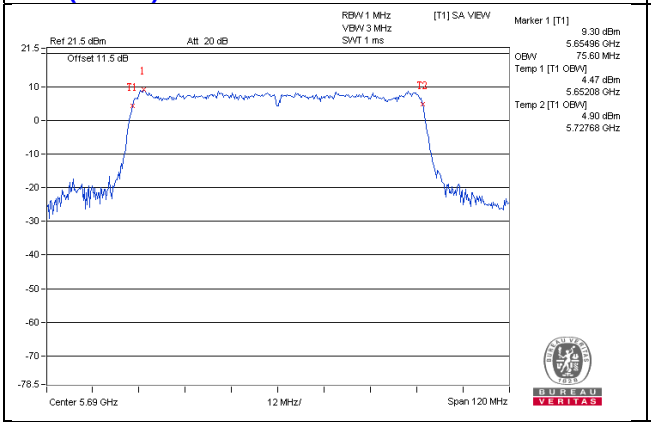
11ac (80MHz) 1S4T CDD CH138 Chain1



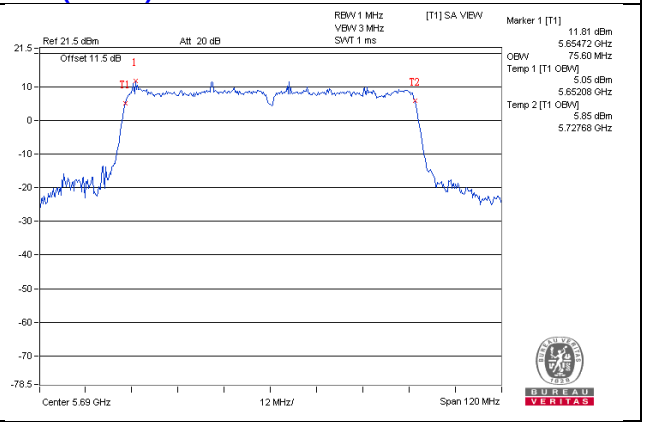
11ac (80MHz) 1S4T CDD CH138 Chain2



11ac (80MHz) 1S4T CDD CH138 Chain3

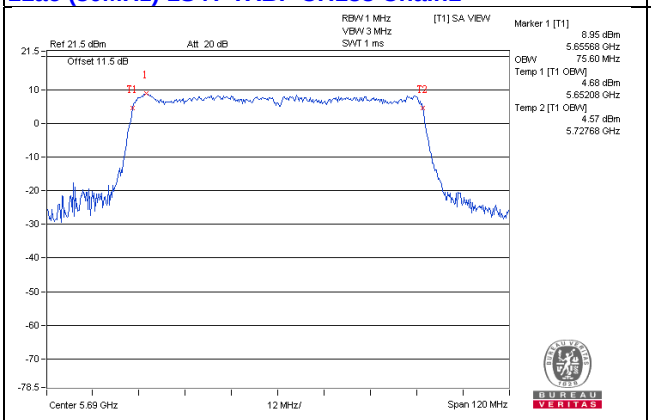


11ac (80MHz) 1S4T CDD CH138 Chain4

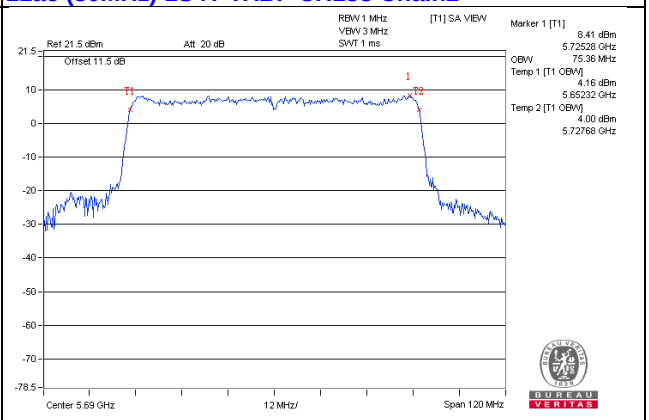


99% OCCUPIED BANDWIDTH SPECTRUM PLOT

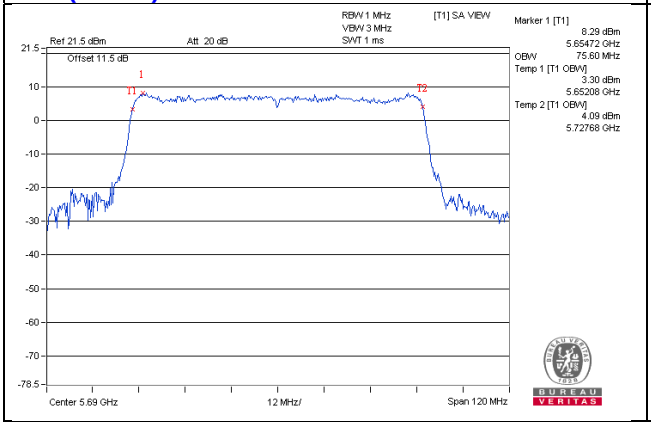
11ac (80MHz) 1S4T TXBF CH138 Chain1



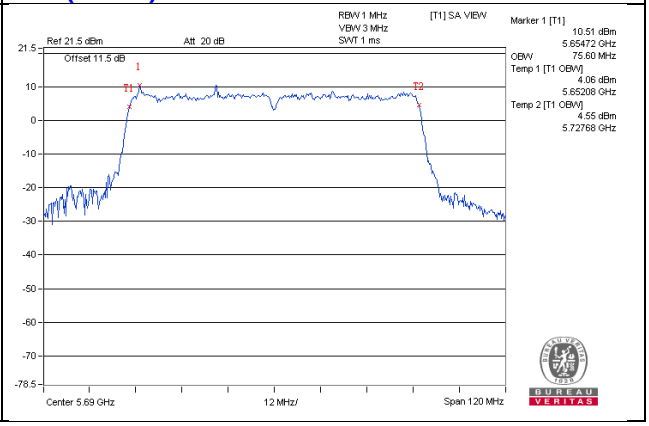
11ac (80MHz) 1S4T TXBF CH138 Chain2



11ac (80MHz) 1S4T TXBF CH138 Chain3



11ac (80MHz) 1S4T TXBF CH138 Chain4



4.5.2 Maximum Conducted Output Power Measurement for Band-Crossing Channel

4.5.2.1 Limit

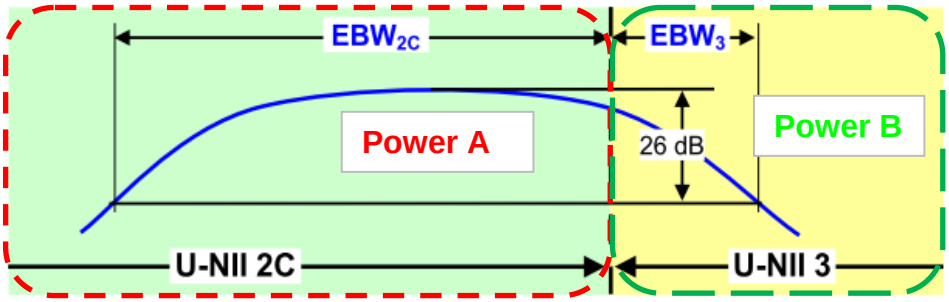
Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.



Emission Bandwidth (EBW) within a Band for Band-Crossing Signals

1. Limit was performed in accordance with KDB 644545 D03 Guidance for IEEE 802.11ac New Rules v01, in section “In-band emission limits (D)” , 8/14/2014
2. Power A: Limit based on EBW2c = 11+10log(EBW2c) when < 20MHz or 24dBm when > 20MHz (UNII-2C)
3. Power B: Limit based on EBW3 = 17+10log(EBW_3) when < 20MHz or 30dBm when > 20MHz (UNII-3)

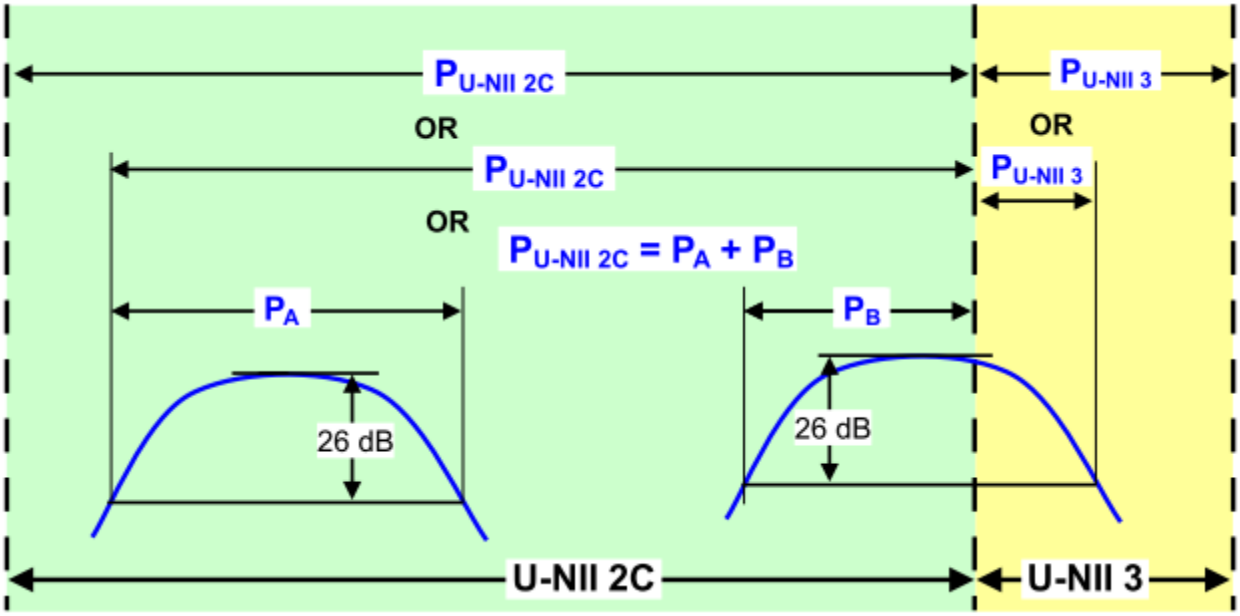
4.5.2.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal
RBW	1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Average
Number of points in sweep	≥ 2 Span / RBW
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

4.5.2.3 Test Procedures

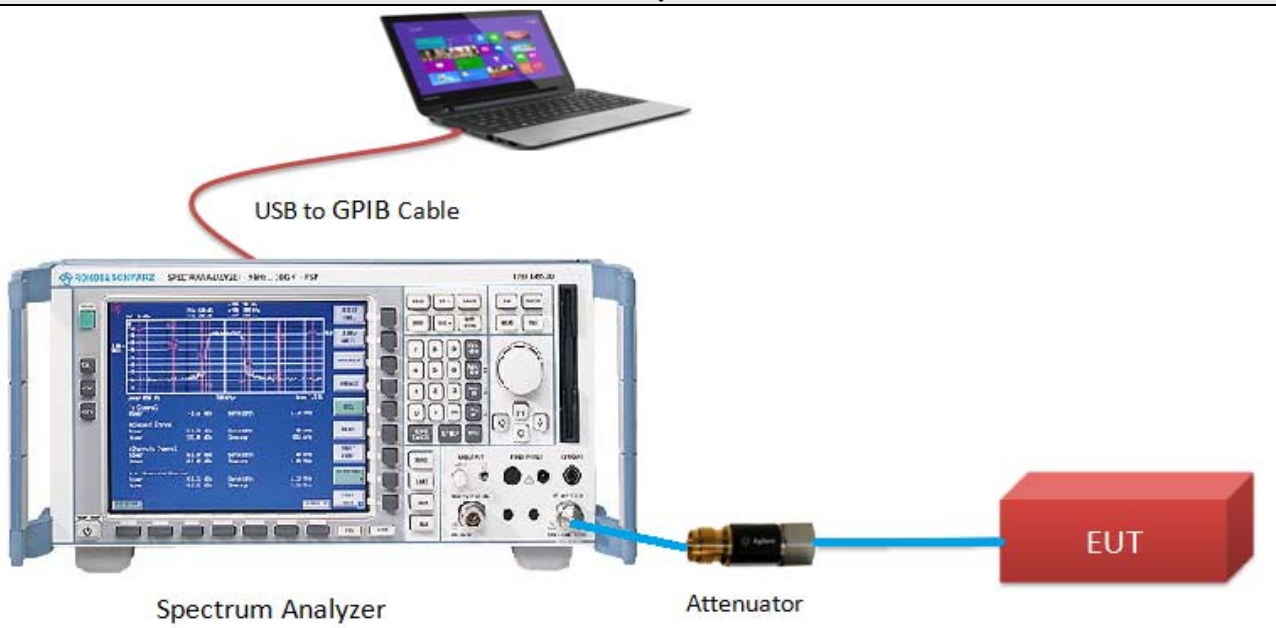
1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Measure the power of each spectrum segment by integrating across the EBW of that segment following the procedures of 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum conducted output power Method SA-2 (E)(2)(d)” , 05/02/2017.
3. Test was performed in accordance with KDB 644545 D03 Guidance for IEEE 802.11ac New Rules v01, in section “In-band emission limits (D)” , 8/14/2014
4. If an EBW extends across the boundary between two adjacent bands, the boundary frequency between the bands serves as one edge of the frequency range to be integrated. Integration across an entire U-NII band without regard to 26-dB points is also acceptable for determining conducted output power within that band.
5. Integrate over the band or integrate over a span including the 26-dB EBWs of transmission segments within the band or integrate over 26-dB EBW of each transmission segment in the band and sum.



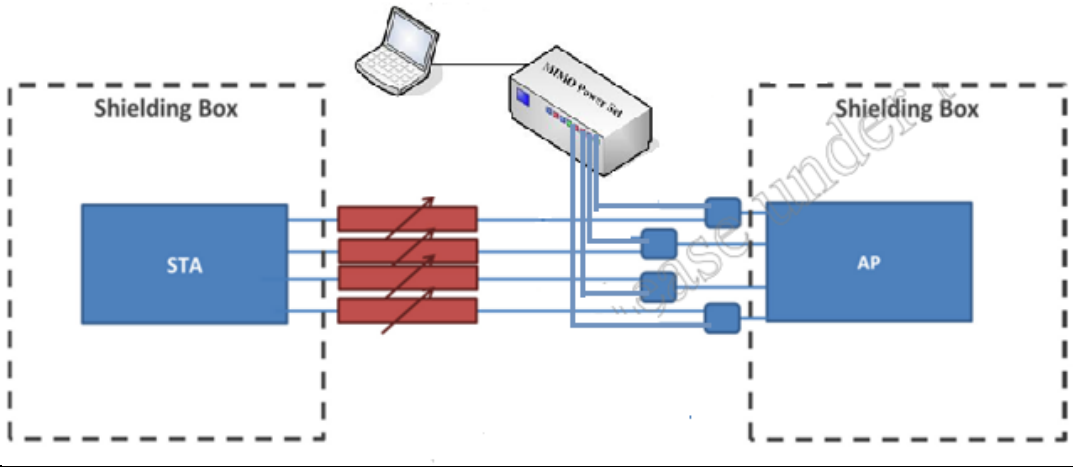
6. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.
7. Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle. Record the average power level.

4.5.2.4 Test Setup Layout

Setup



Transmit Power Control (TPC)



4.5.2.5 Test Deviation

There are no deviations with the original standard.

4.5.2.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.5.2.7 Test Results of Maximum Conducted Output Power

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

For U-NII-2C Band, 11ac (40MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
142	5710	16.61	17	15.83	17.07	22.68	3.85	24.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
142	5710	8.57	8.9	8.51	9.05	14.78	3.85	18.63	24.00	Pass

For U-NII-3 Band, 11ac (40MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
142	5710	5.91	6.21	5.23	5.84	11.83	3.85	30.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
142	5710	-1.61	-1.29	-1.33	-1.5	4.59	3.85	8.44	30.00	Pass

For U-NII-2C Band, 11ac (40MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
142	5710	15.69	16.14	15.3	15.75	21.75	6.18	23.82	Pass

Note: For 5710MHz(U-NII-2C): Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.18dBi > 6dBi, so the power limit shall be reduced to 24-(6.18-6) = 23.82dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
142	5710	6.38	7.62	7.48	7.00	13.17	6.18	19.35	24.00	Pass

For U-NII-3 Band, 11ac (40MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
142	5710	5.17	4.79	6.21	5.29	11.42	6.18	29.82	Pass

Note: For 5710MHz(U-NII-3) Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.18dBi > 6dBi, so the power limit shall be reduced to 30-(6.18-6) = 29.82dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
142	5710	-3.94	-2.21	-2.59	-3.34	3.05	6.18	9.23	30.00	Pass

For U-NII-2C Band, 11ac (80MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
138	5690	16.6	16.06	15.77	16.48	22.26	4.21	24.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
138	5690	10.08	9.76	9.64	10.57	16.05	4.21	20.26	24.00	Pass

For U-NII-3 Band, 11ac (80MHz) 1S4T CDD

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
138	5690	2.08	3.1	0.19	0.41	7.63	4.21	30.00	Pass

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
138	5690	-4.44	-4.75	-4.61	-4.44	1.46	4.21	5.67	30.00	Pass

For U-NII-2C Band, 11ac (80MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
138	5690	15.5	15.26	14.86	15.36	21.27	6.58	23.42	Pass

Note: For 5690MHz (U-NII-2C): Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.58dBi > 6dBi, so the power limit shall be reduced to 24-(6.58-6) = 23.42dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
138	5690	8.19	8.41	7.94	7.71	14.09	6.58	20.67	24.00	Pass

For U-NII-3 Band, 11ac (80MHz) 1S4T TxBF

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	MAX. Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4				
138	5690	2.08	1.91	-0.02	2.62	7.77	6.58	29.42	Pass

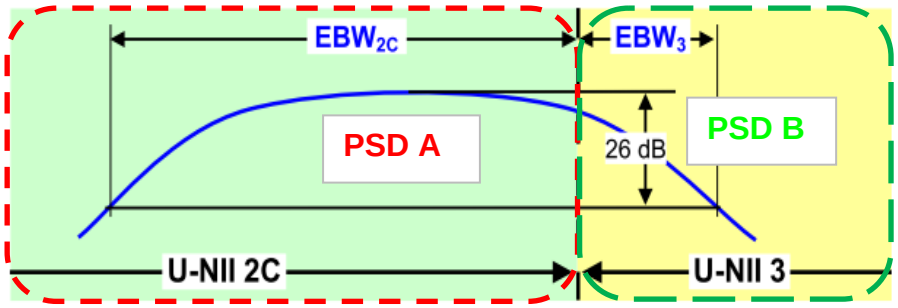
Note: For 5690MHz (U-NII-3): Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.58dBi > 6dBi, so the power limit shall be reduced to 30-(6.58-6) = 29.42dBm.

Channel	Frequency	Conducted Power (dBm)				Total Conducted Power (dBm)	Directional Gain(dBi)	TPC Low Power EIRP (dBm)	TPC Low Power EIRP Limit (dBm)	Result
		Chain1	Chain2	Chain3	Chain4					
138	5690	-7.23	-6.33	-6.12	-6.49	-0.50	6.58	6.08	30.00	Pass

4.5.3 Power Spectral Density Measurement for Band-Crossing Channel

4.5.3.1 Limit

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
		Mobile and Portable client device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz



Emission Bandwidth (EBW) within a Band for Band-Crossing Signals

1. Limit was performed in accordance with KDB 644545 D03 Guidance for IEEE 802.11ac New Rules v01, in section “In-band emission limits (D)” , 8/14/2014
2. PSD A: Limit based on EBW2c = 11dBm/ MHz
3. PSD B: Limit based on EBW3 = 30dBm/500kHz

4.5.3.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

For U-NII-2C Band

Spectrum Parameter Setting	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz
VBW	≥ 3 MHz
Detector	RMS
Trace	Average
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

For U-NII-3 Band

Spectrum Parameter Setting	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	300 kHz
VBW	≥ 3 RBW
Detector	RMS
Trace	Average
Sweep Time	Auto, trigger set to “free run”
Trace average	100 times

4.5.3.3 Test Procedure

1 The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.

2 For U-NII-1, U-NII-2A & U-NII-2C Bands, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum conducted output power (E)(2)(d) Method SA-2”, 05/02/2017.

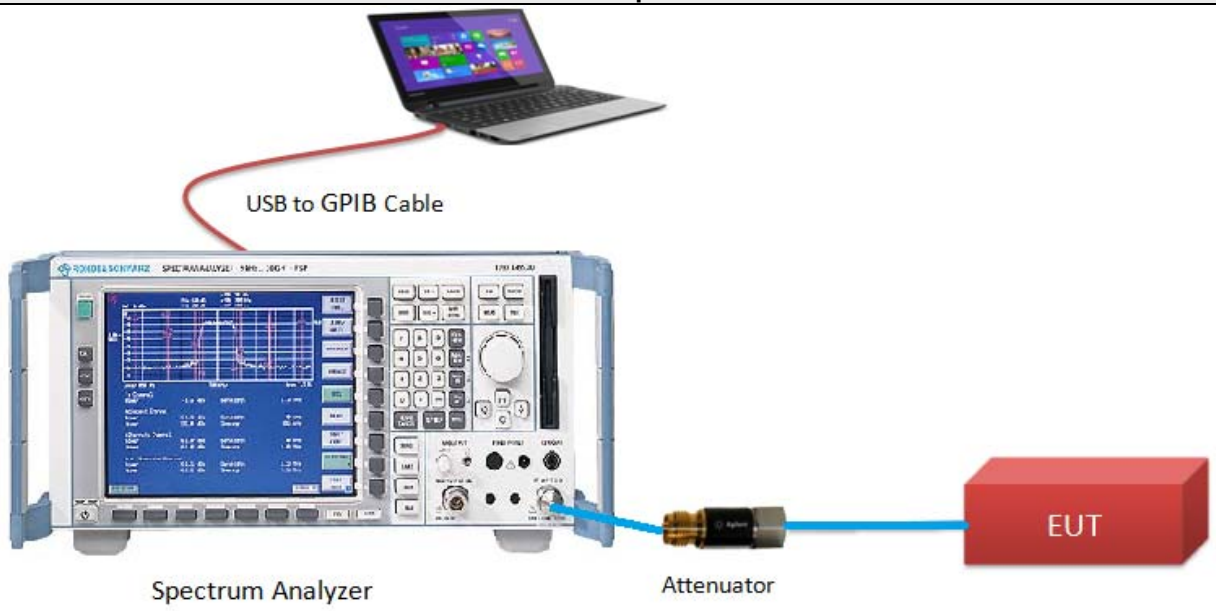
3 For U-NII-3 Band, PSD Measure was performed in accordance with 789033 D02 General UNII Test Procedures New Rules v01r04, in section “Maximum Power Spectral Density (F)(5)” , 05/02/2017

4 Multiple antenna systems was performed in accordance 662911 D01 Multiple Transmitter Output v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs (bin-by-bin summing).

5 When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum.

6 The summed spectrum value for each of the other frequency bins is computed in the same way.

4.5.3.4 Test Setup Layout

Setup


4.5.3.5 Test Deviation

There are no deviations with the original standard.

4.5.3.6 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.5.3.7 Test Results

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

For U-NII-2C Band, 11ac (40MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
142	5710	7.62	0.09	7.71	6.18	10.82	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

2. For 5710MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.18dBi > 6dBi, therefore the limit shall be reduced to 11-(6.18-6) = 10.82dBm.

For U-NII-3 Band, 11ac (40MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	Total PSD (dBm/ 300kHz)	Duty Factor (dB)	Total PSD with Duty Factor (dBm/300kHz)	Total PSD with Duty Factor (dBm/500kHz)	Directional Gain(dBi)	MAX. Limit (dBm/500kHz)	Result
142	5710	-2.23	0.09	-2.14	0.08	6.18	29.82	Pass

Note: 1. Total PSD (dBm/500kHz) = PSD(dBm/300kHz) + 2.22dB+ Duty Factor (dB)

2. For 5710MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 6.18dBi > 6dBi, therefore the limit shall be reduced to 30-(6.18-6) = 29.82dBm.

For U-NII-2C Band, 11ac (40MHz) 1S4T TxBF

Chan.	Chan. Freq. (MHz)	Total PSD (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
142	5710	6.32	6.18	10.82	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For 5710MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.18dBi > 6dBi, therefore the limit shall be reduced to 11-(6.18-6) = 10.82dBm.

For U-NII-3 Band, 11ac (40MHz) 1S4T TxBF

Chan.	Chan. Freq. (MHz)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	Directional Gain(dBi)	MAX. Limit (dBm/500kHz)	Result
142	5710	-2.97	-0.75	6.18	29.82	Pass

Note: 1. Total PSD (dBm/500kHz) = PSD(dBm/300kHz) + 2.22dB
2. For 5710MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.18dBi > 6dBi, therefore the limit shall be reduced to 30-(6.18-6) = 29.82dBm.

For U-NII-2C Band, 11ac (80MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
138	5690	5.35	0.27	5.62	6.58	10.42	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

2. For 5690MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.58dBi > 6dBi, therefore the limit shall be reduced to 11-(6.58-6) = 10.42dBm.

For U-NII-3 Band, 11ac (80MHz) 1S4T CDD

Chan.	Chan. Freq. (MHz)	Total PSD (dBm/ 300kHz)	Duty Factor (dB)	Total PSD with Duty Factor (dBm/300kHz)	Total PSD with Duty Factor (dBm/500kHz)	Directional Gain(dBi)	MAX. Limit (dBm/500kHz)	Result
138	5690	-5.05	0.27	-4.78	-2.56	6.58	29.42	Pass

Note: 1. Total PSD (dBm/500kHz) = PSD(dBm/300kHz) + 2.22dB+ Duty Factor (dB)

2. For 5775MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.58dBi > 6dBi, therefore the limit shall be reduced to 30-(6.58-6) = 29.42dBm.

For U-NII-2C Band, 11ac (80MHz) 1S4T TxBF

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Duty Factor (dB)	Total PSD with duty factor (dBm/MHz)	Directional Gain(dBi)	MAX. Limit (dBm/MHz)	Result
138	5690	4.31	0.27	4.58	6.58	10.42	Pass

Note: 1. Total PSD (dBm/MHz) = PSD(dBm/MHz) + Duty Factor (dB)

2. For 5690MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.58dBi > 6dBi, therefore the limit shall be reduced to 11-(6.58-6) = 10.42dBm.

For U-NII-3 Band, 11ac (80MHz) 1S4T TxBF

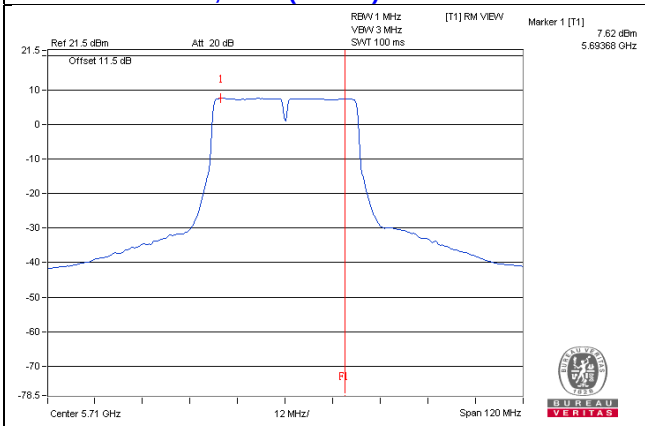
Chan.	Chan. Freq. (MHz)	Total PSD (dBm/ 300kHz)	Duty Factor (dB)	Total PSD with Duty Factor (dBm/300kHz)	Total PSD with Duty Factor (dBm/500kHz)	Directional Gain(dBi)	MAX. Limit (dBm/500kHz)	Result
155	5690	-5.47	0.27	-5.20	-2.98	6.58	29.42	Pass

Note: 1. Total PSD (dBm/500kHz) = PSD(dBm/300kHz) + 2.22dB+ Duty Factor (dB)

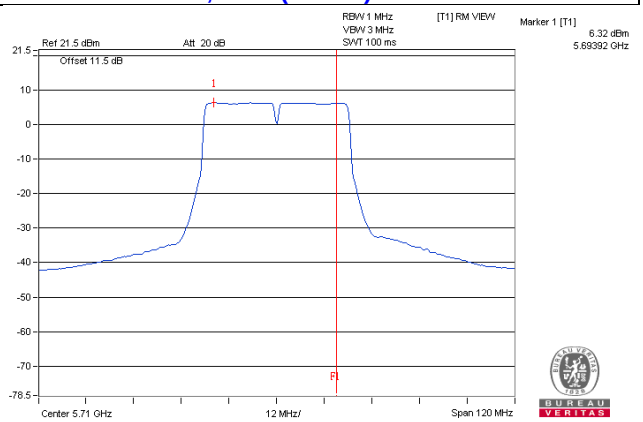
2. For 5690MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/4] = 6.58dBi > 6dBi, therefore the limit shall be reduced to 30-(6.58-6) = 29.42dBm.

PSD SPECTRUM PLOT

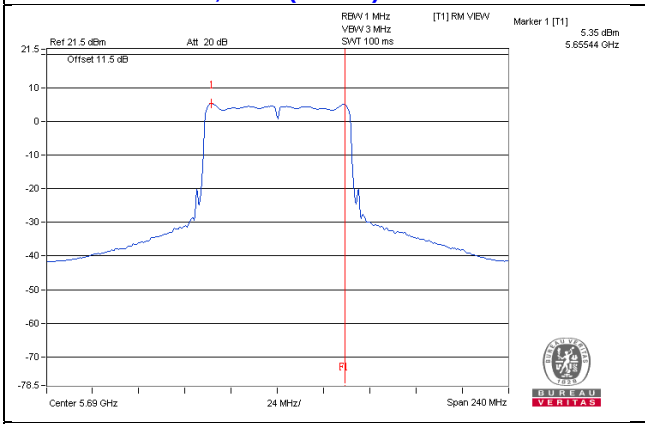
For U-NII-2C Band, 11ac (40MHz) 1S4T CDD CH142



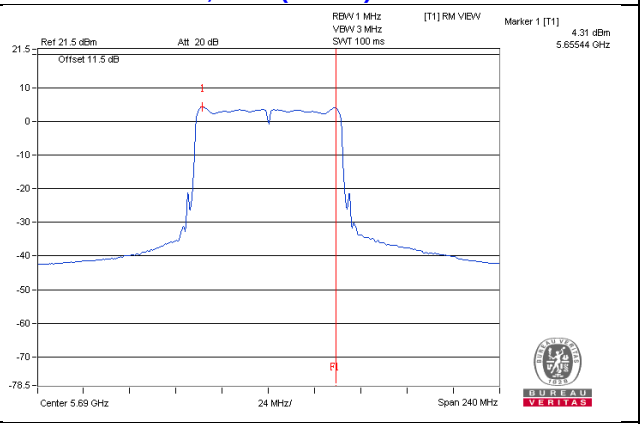
For U-NII-2C Band, 11ac (40MHz) 1S4T TXBF CH142



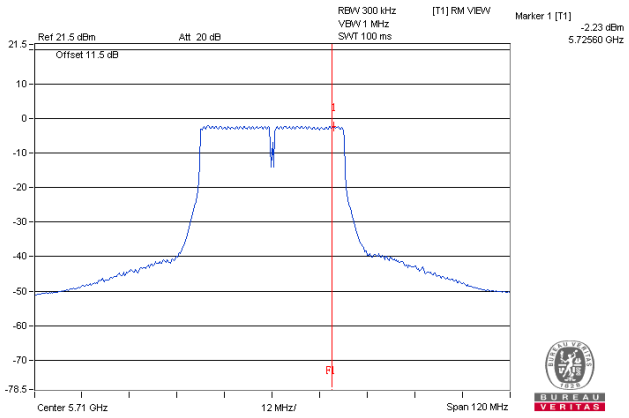
For U-NII-2C Band, 11ac (80MHz) 1S4T CDD CH138



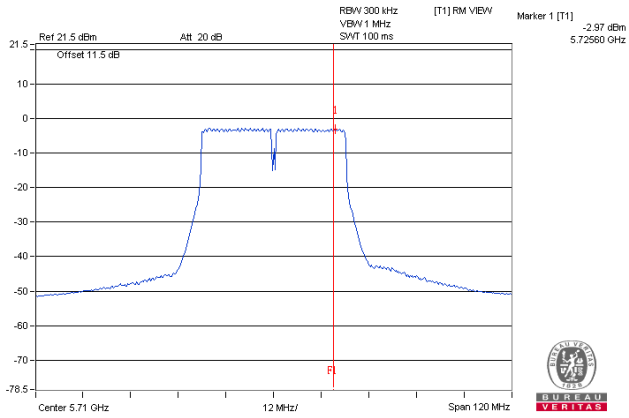
For U-NII-2C Band, 11ac (80MHz) 1S4T TXBF CH138



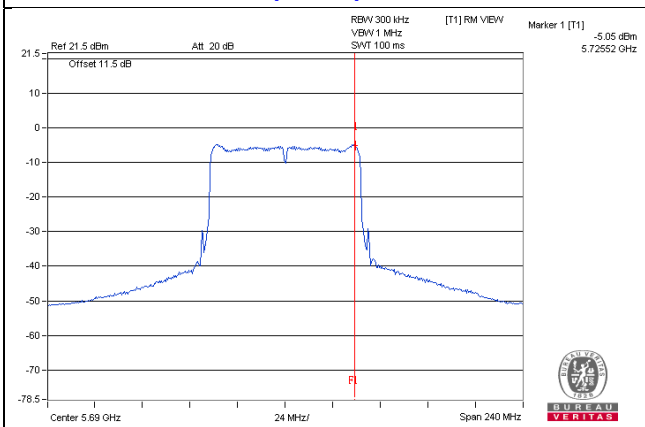
For U-NII-3 Band, 11ac (40MHz) 1S4T CDD CH142



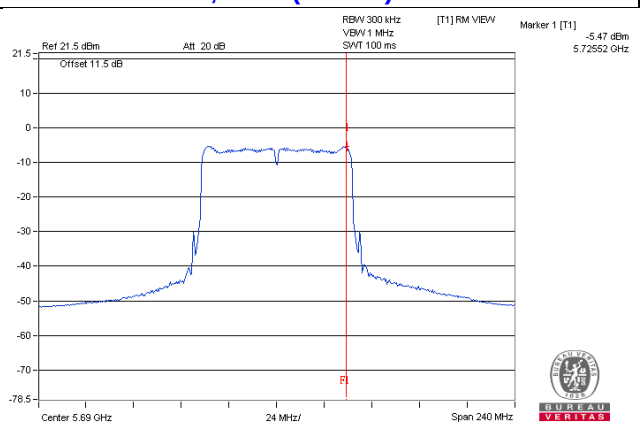
For U-NII-3 Band, 11ac (40MHz) 1S4T TXBF CH142



For U-NII-3 Band, 11ac (80MHz) 1S4T CDD CH138



For U-NII-3 Band, 11ac (80MHz) 1S4T TXBF CH138



4.6 Radiated Emission and Bandedge Measurement

4.6.1 Limits of Unwanted emissions in the restricted bands

Radiated emissions which fall within the restricted band specified on 15.205(a) must comply with the radiated emission limits specified as below table:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.6.2 Limits of Unwanted emissions out of the restricted bands

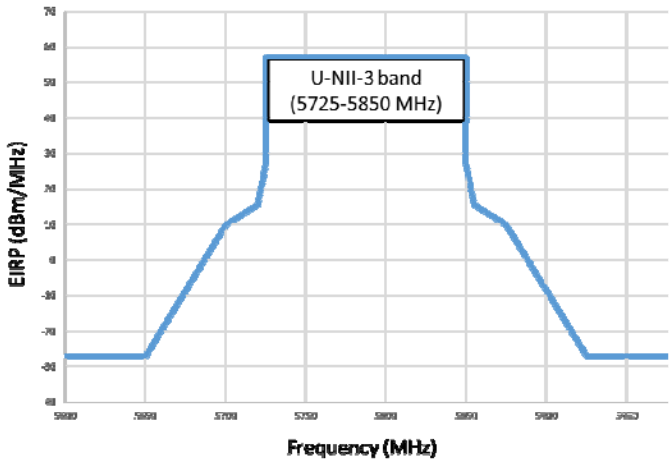
Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v01r04			Field Strength at 3m	
			PK:74 (dBμV/m)	AV:54 (dBμV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK:122.2 (dBμV/m) *4
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



15.407 new rule(FCC16-24)	
Frequency	Limit(dBm/MHz)
5460	-27
5650	-27
5700	10
5720	15.6
5725	27
5725	N/A
5850	
5850	27
5855	15.6
5875	10
5925	-27
7250	-27

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

4.6.3 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1GHz
Stop Frequency	10th Carrier Harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, Duty cycle ≧ 98% 1MHz / 10Hz for Average Duty cycle < 98% 1MHz / (1/T) for Average, where T is pulse time.
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak
Detector	Peak
Trace mode	Max Hold.

Note : According to KDB 789033 D02 v01 r04 G. 6. d) Method VB.

• As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.6.4 Test Procedures

1 Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

2 Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

3 The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.

4 For each suspected emissions, the antenna tower was scan (from 1 m to 4 m) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.

5 Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode

6 For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer for Duty ≥ 98%, 1MHz RBW and VBW is ≥ 1/T for average reading in spectrum analyzer for Duty < 98%.

7 When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

8 If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.

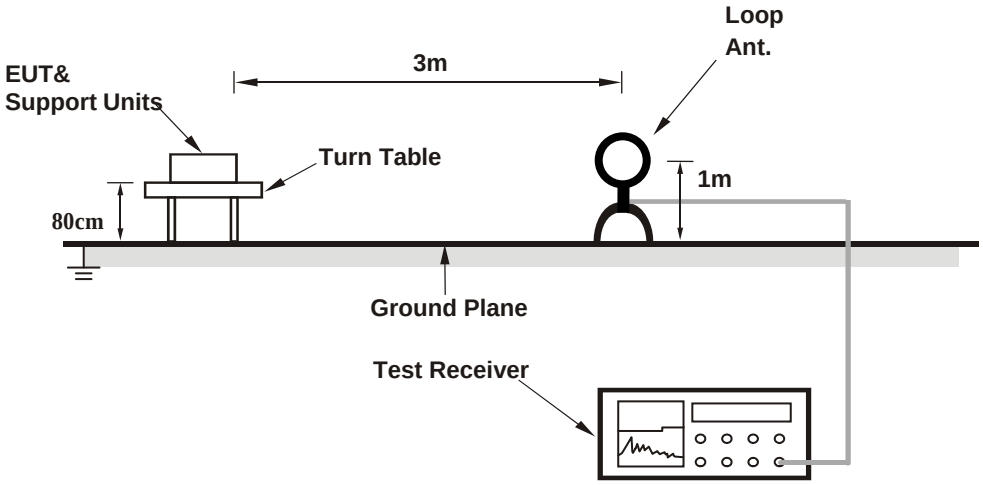
9 For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

10 As the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

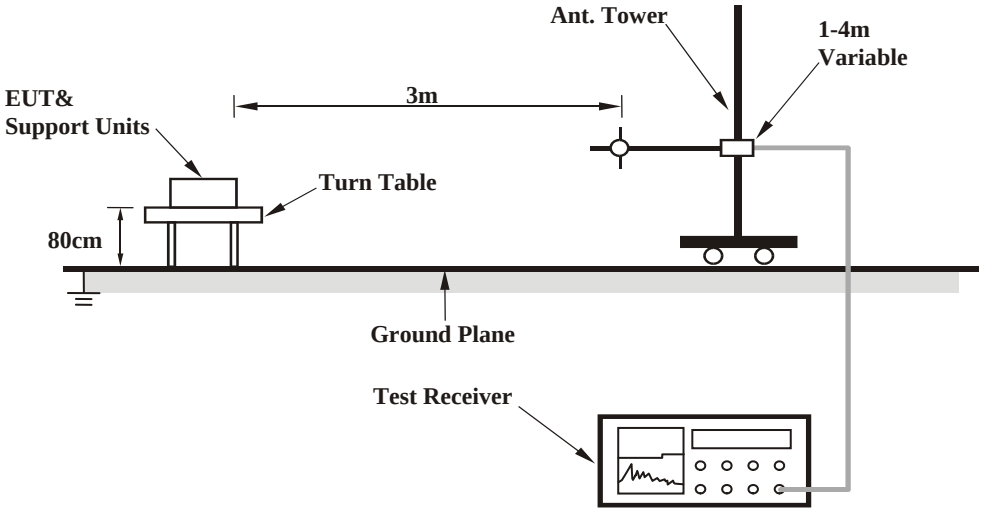
4.6.5 Test Setup Layout

Setup

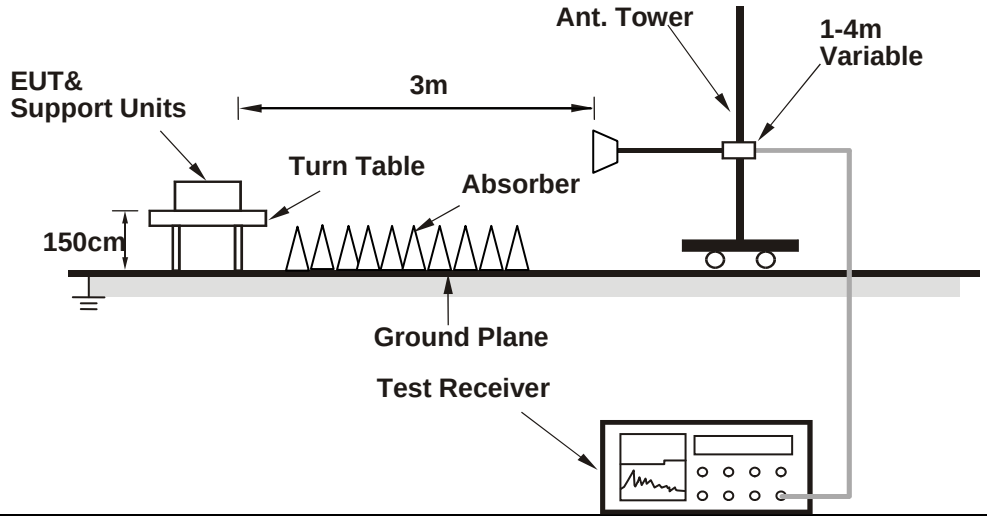
For Radiated Emissions below 1GHz (9kHz~30MHz)



For Radiated Emissions below 1GHz (30MHz~1GHz)



For Radiated Emissions above 1GHz



4.6.6 Test Deviation

There are no deviations with the original standard.

4.6.7 EUT Operating Conditions

The EUT was programmed to be in continuously transmitting mode.

4.6.8 Test Results of Radiated Emissions and Bandedge

Temperature	25°C	Humidity	69%
Test Engineer	Bond Tseng		

Radiated Emissions Range 9kHz~30MHz

The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

Radiated Emissions Range 30MHz~1GHz

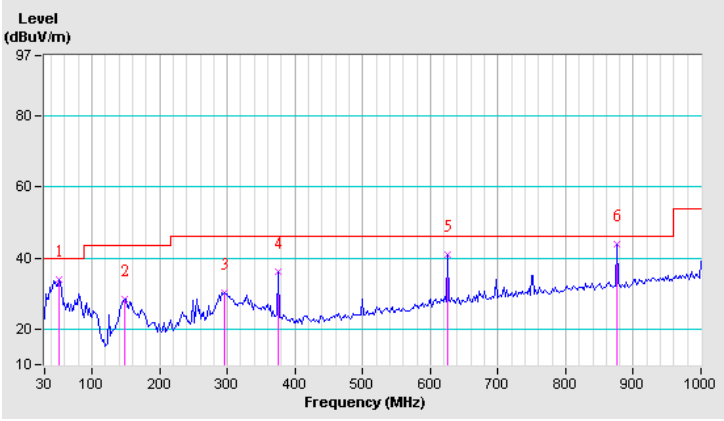
802.11ac (40MHz)

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	51.34	33.8 QP	40.0	-6.2	1.25 H	27	47.70	-13.90
2	148.34	28.4 QP	43.5	-15.1	1.50 H	288	41.70	-13.30
3	295.78	30.3 QP	46.0	-15.7	1.00 H	271	41.50	-11.20
4	375.32	36.2 QP	46.0	-9.8	1.50 H	261	45.60	-9.40
5	625.58	40.9 QP	46.0	-5.1	2.00 H	223	43.90	-3.00
6	**875.84**	**43.9 QP**	**46.0**	**-2.1**	**1.25 H**	**212**	**41.70**	**2.20**

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

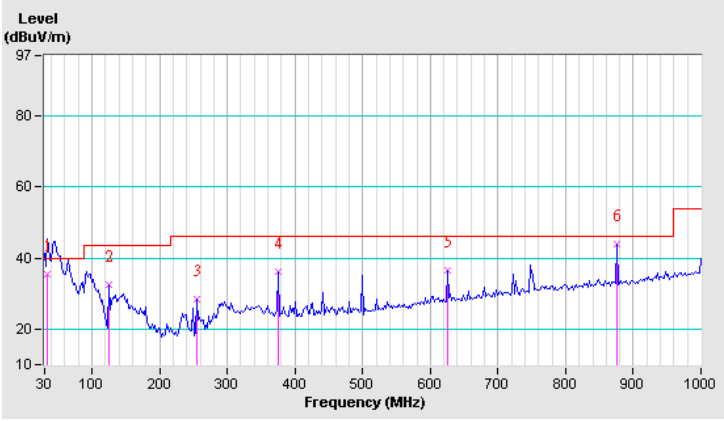


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.88	35.4 QP	40.0	-4.6	1.25 V	306	50.90	-15.50
2	125.06	32.6 QP	43.5	-10.9	1.25 V	31	48.00	-15.40
3	255.04	28.5 QP	46.0	-17.5	1.50 V	204	41.60	-13.10
4	375.32	36.1 QP	46.0	-9.9	1.25 V	167	45.50	-9.40
5	625.58	36.7 QP	46.0	-9.3	1.01 V	224	39.70	-3.00
6	875.84	43.9 QP	46.0	-2.1	1.01 V	195	41.70	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



Radiated Emission Range 1GHz~10th Harmonic

CDD Mode

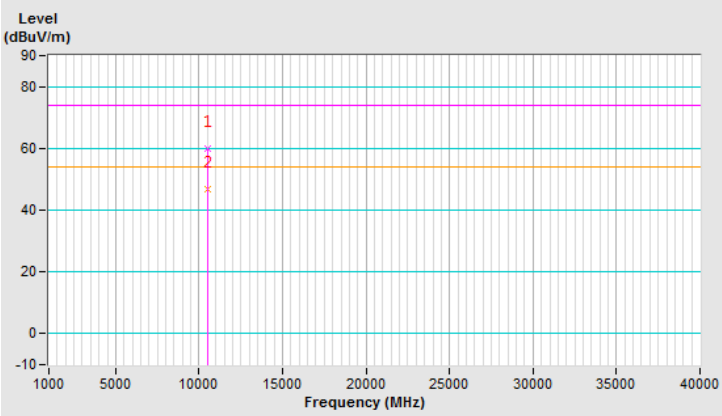
802.11ac (40MHz) 1S4T CDD MCS0

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10540.00	59.9 PK	74.0	-14.1	1.52 H	177	45.70	14.20
2	#10540.00	46.6 AV	54.0	-7.4	1.52 H	177	32.40	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

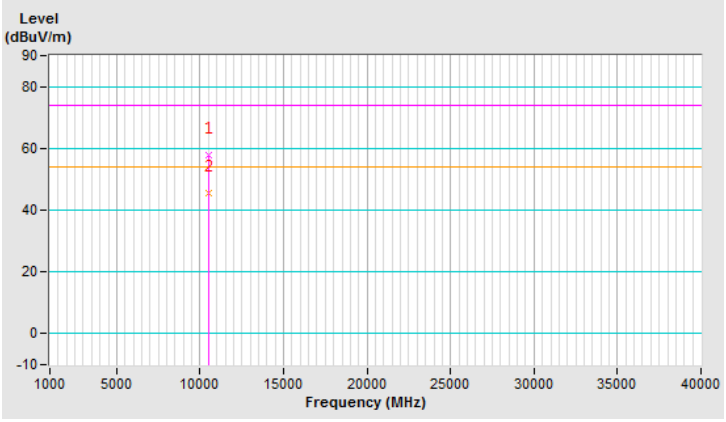


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10540.00	58.0 PK	74.0	-16.0	2.66 V	171	43.80	14.20
2	#10540.00	45.3 AV	54.0	-8.7	2.66 V	171	31.10	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

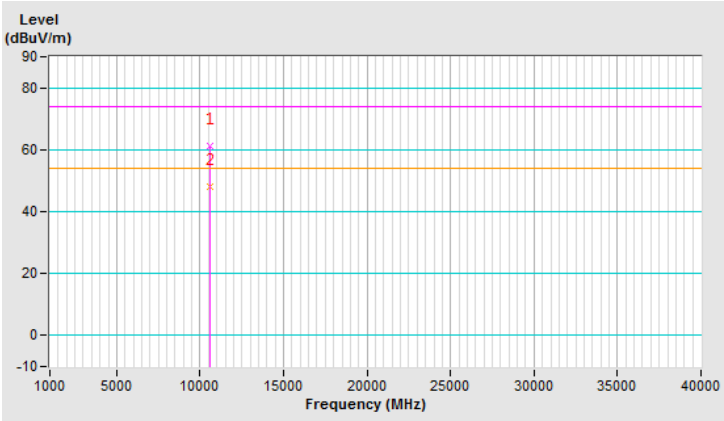


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10620.00	61.1 PK	74.0	-12.9	1.48 H	266	46.70	14.40
2	10620.00	48.2 AV	54.0	-5.8	1.48 H	266	33.80	14.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

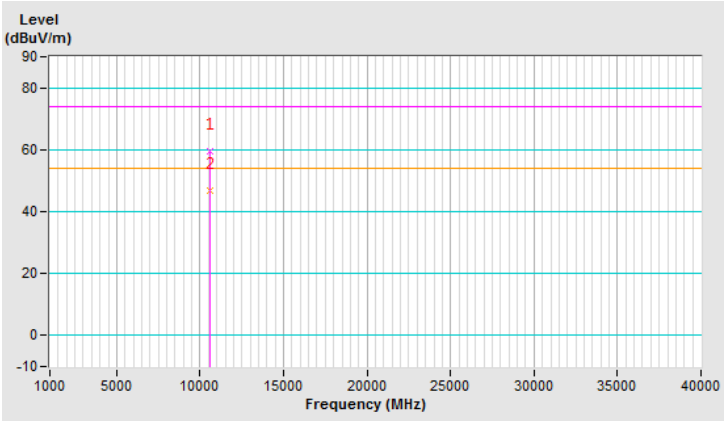


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10620.00	59.5 PK	74.0	-14.5	1.53 V	174	45.10	14.40
2	10620.00	46.8 AV	54.0	-7.2	1.53 V	174	32.40	14.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

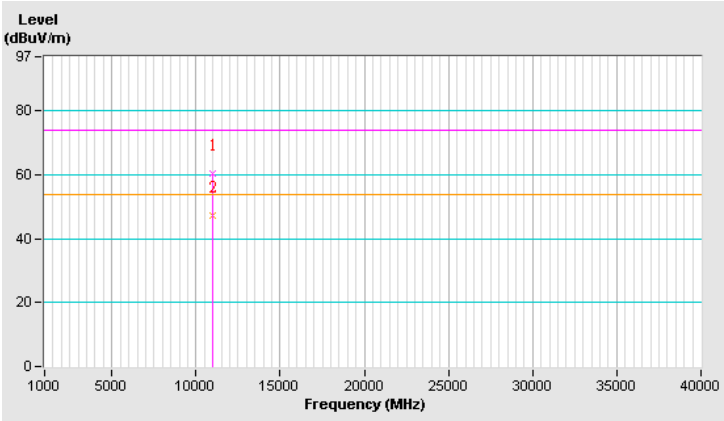


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11020.00	60.6 PK	74.0	-13.4	1.73 H	62	44.70	15.90
2	11020.00	47.4 AV	54.0	-6.6	1.73 H	62	31.50	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

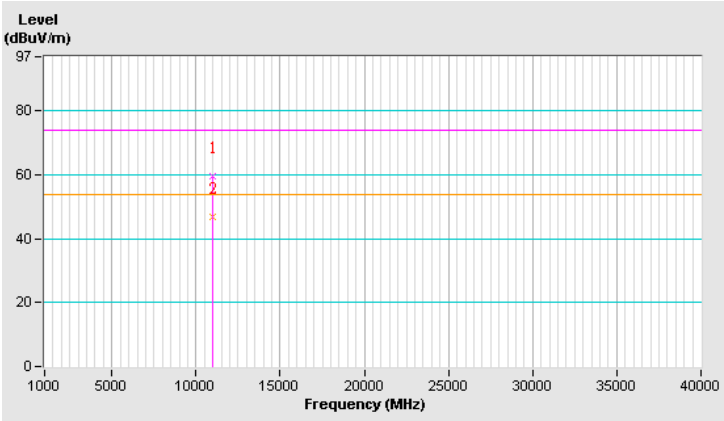


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11020.00	59.8 PK	74.0	-14.2	1.32 V	74	43.90	15.90
2	11020.00	46.7 AV	54.0	-7.3	1.32 V	74	30.80	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

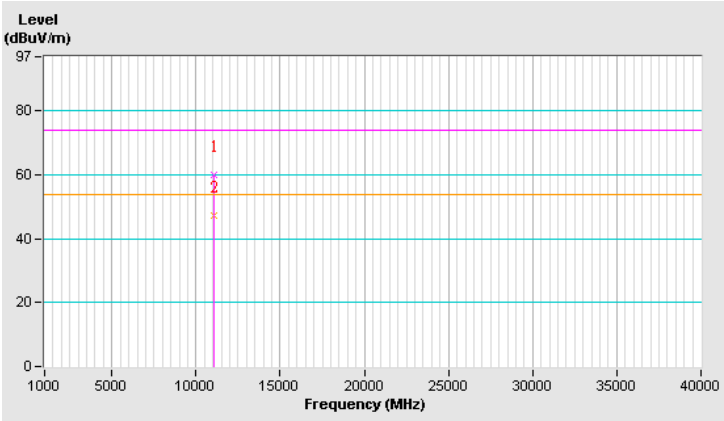


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11100.00	60.0 PK	74.0	-14.0	2.21 H	67	44.60	15.40
2	11100.00	47.4 AV	54.0	-6.6	2.21 H	67	32.00	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

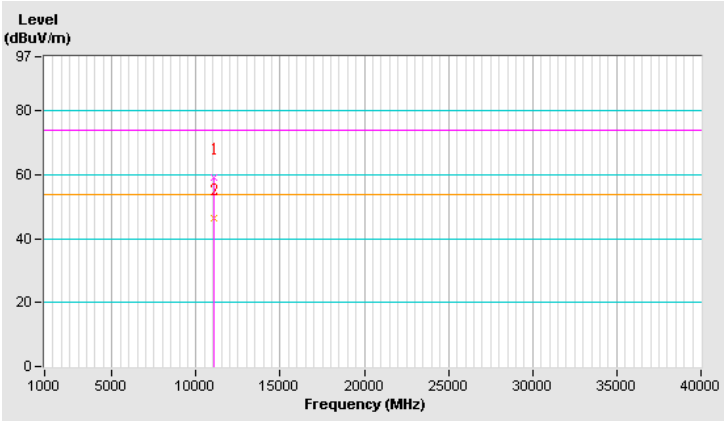


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11100.00	59.3 PK	74.0	-14.7	1.52 V	166	43.90	15.40
2	11100.00	46.3 AV	54.0	-7.7	1.52 V	166	30.90	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

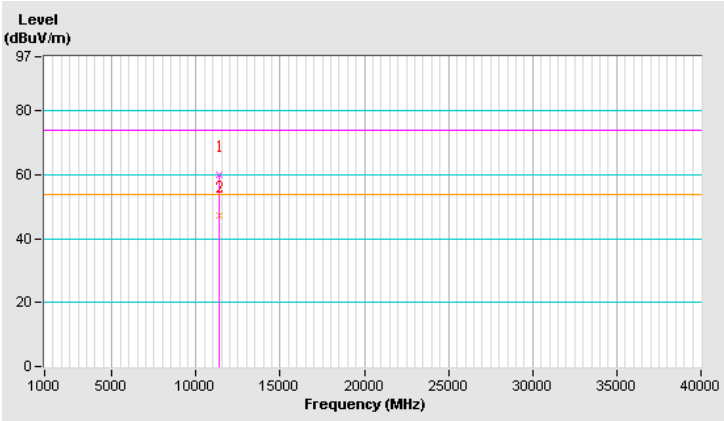


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11340.00	60.1 PK	74.0	-13.9	1.59 H	66	44.70	15.40
2	11340.00	47.1 AV	54.0	-6.9	1.59 H	66	31.70	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

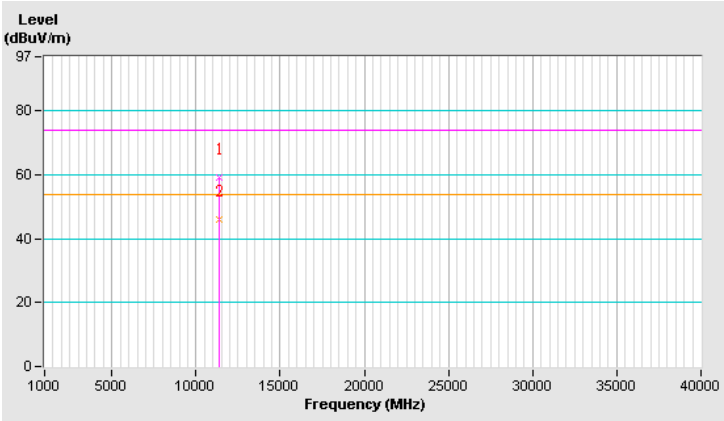


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11340.00	59.3 PK	74.0	-14.7	1.85 V	224	43.90	15.40
2	11340.00	45.9 AV	54.0	-8.1	1.85 V	224	30.50	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

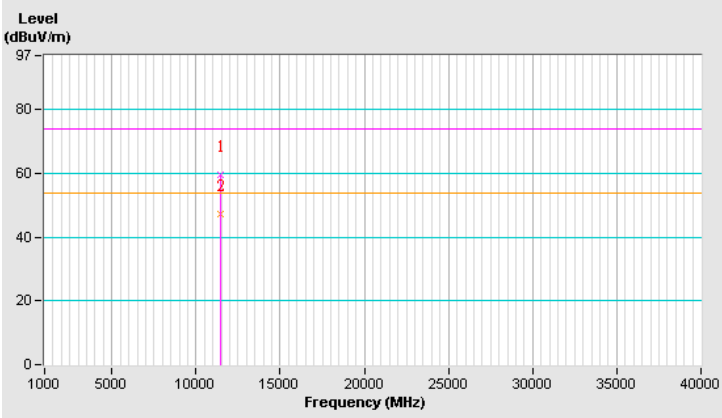


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11420.00	59.7 PK	74.0	-14.3	1.92 H	147	44.90	14.80
2	11420.00	47.3 AV	54.0	-6.7	1.92 H	147	32.50	14.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

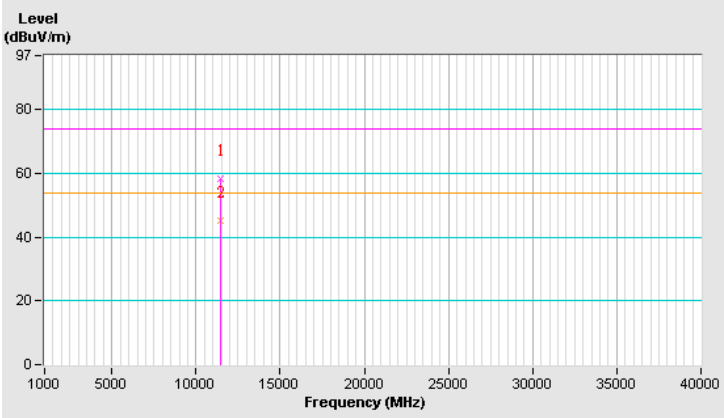


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11420.00	58.4 PK	74.0	-15.6	1.89 V	145	43.60	14.80
2	11420.00	45.2 AV	54.0	-8.8	1.89 V	145	30.40	14.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



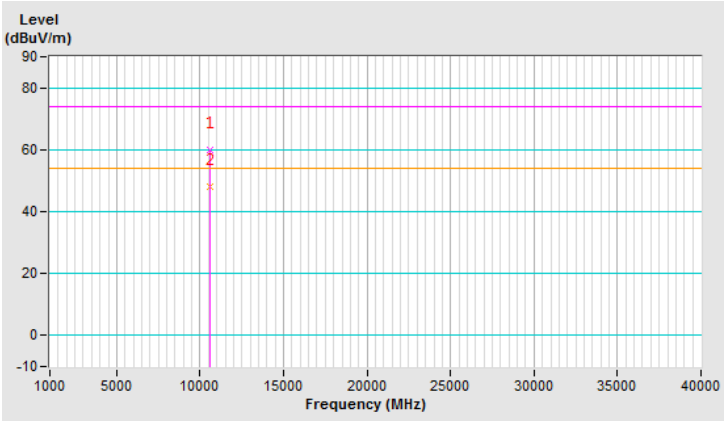
802.11ac (80MHz) 1S4T CDD MCS0

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10580.00	60.0 PK	74.0	-14.0	2.35 H	172	45.80	14.20
2	#10580.00	48.0 AV	54.0	-6.0	2.35 H	172	33.80	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

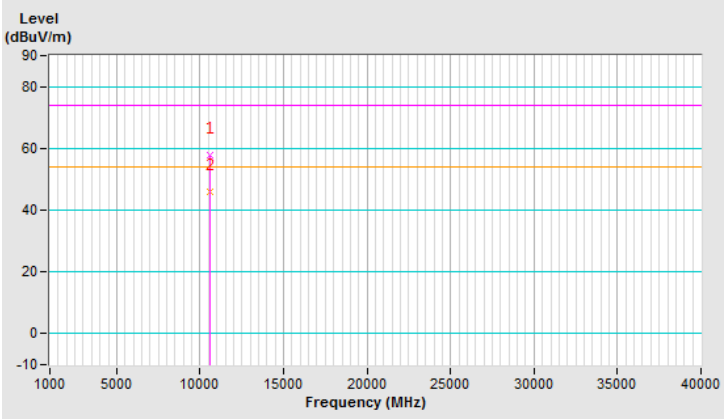


CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10580.00	58.0 PK	74.0	-16.0	1.72 V	126	43.80	14.20
2	#10580.00	45.9 AV	54.0	-8.1	1.72 V	126	31.70	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

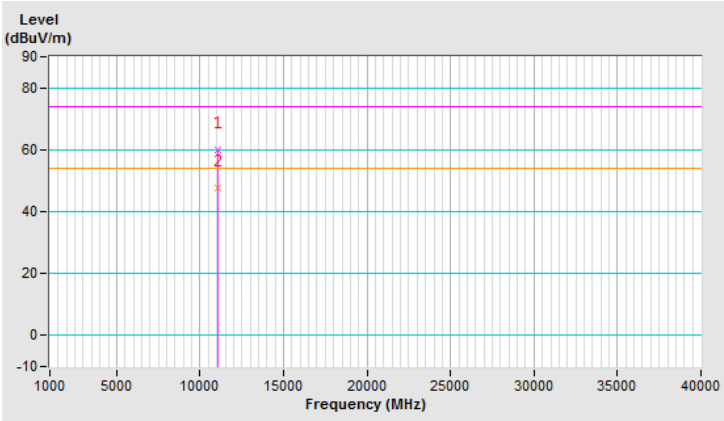


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11060.00	59.8 PK	74.0	-14.2	1.57 H	126	44.10	15.70
2	11060.00	47.5 AV	54.0	-6.5	1.57 H	126	31.80	15.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

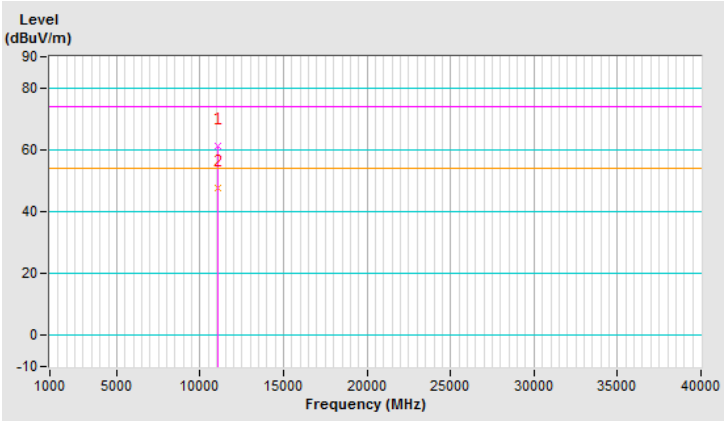


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11060.00	61.2 PK	74.0	-12.8	1.57 V	12	45.50	15.70
2	11060.00	47.8 AV	54.0	-6.2	1.57 V	12	32.10	15.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

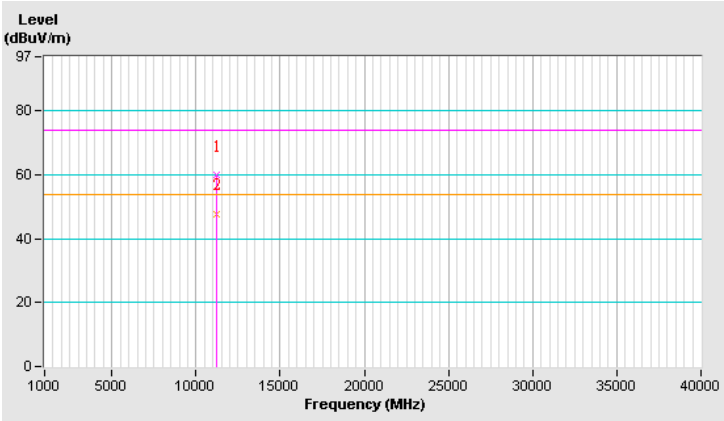


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11220.00	60.0 PK	74.0	-14.0	1.44 H	33	44.70	15.30
2	11220.00	47.9 AV	54.0	-6.1	1.44 H	33	32.60	15.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

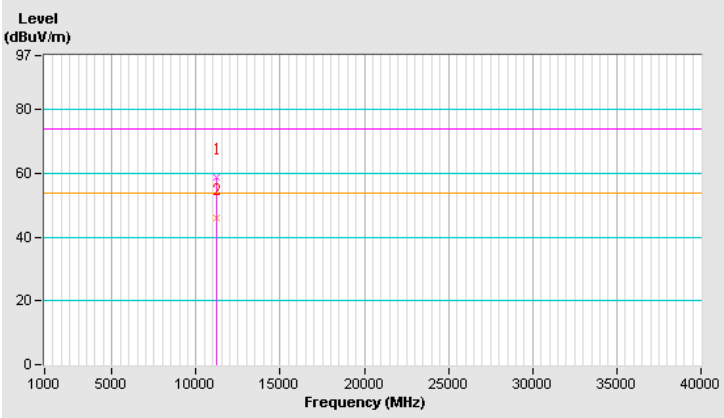


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11220.00	58.9 PK	74.0	-15.1	1.59 V	266	43.60	15.30
2	11220.00	46.1 AV	54.0	-7.9	1.59 V	266	30.80	15.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

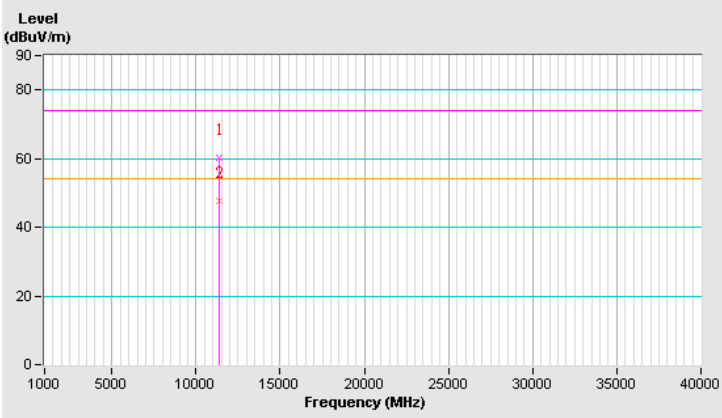


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11380.00	60.3 PK	74.0	-13.7	1.14 H	56	45.30	15.00
2	11380.00	47.7 AV	54.0	-6.3	1.14 H	56	32.70	15.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

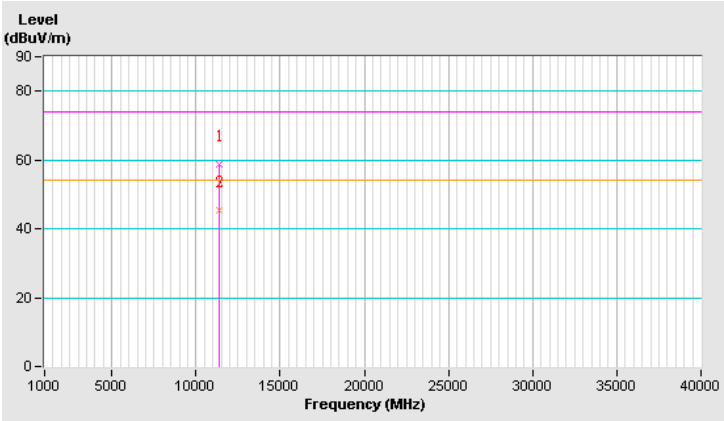


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11380.00	58.8 PK	74.0	-15.2	1.66 V	174	43.80	15.00
2	11380.00	45.5 AV	54.0	-8.5	1.66 V	174	30.50	15.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



TxBF Mode

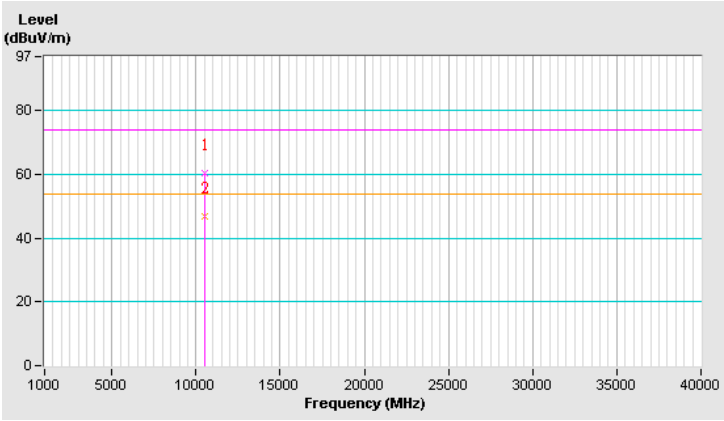
802.11ac (40MHz) 1S4T TxBF MCS0

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10540.00	60.5 PK	74.0	-13.5	1.63 H	247	46.30	14.20
2	#10540.00	47.0 AV	54.0	-7.0	1.63 H	247	32.80	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

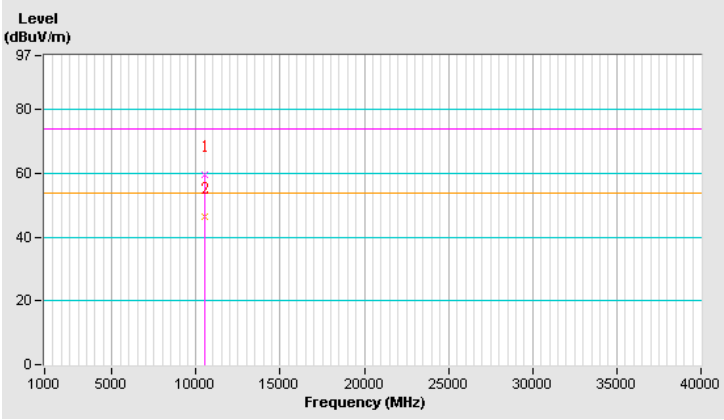


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10540.00	59.8 PK	74.0	-14.2	2.23 V	168	45.60	14.20
2	#10540.00	46.6 AV	54.0	-7.4	2.23 V	168	32.40	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

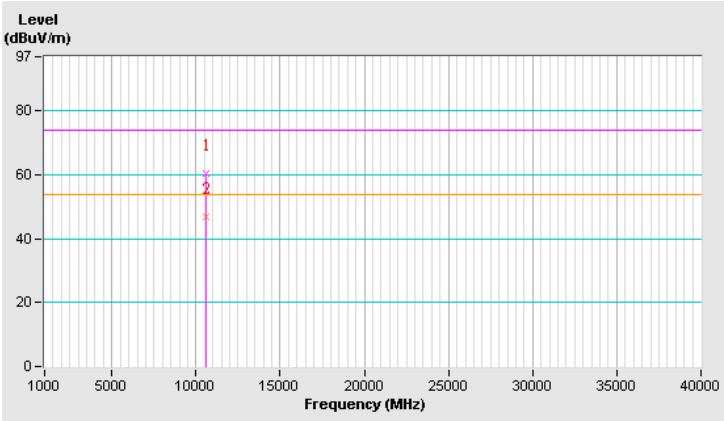


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10620.00	60.4 PK	74.0	-13.6	1.55 H	239	46.00	14.40
2	10620.00	46.9 AV	54.0	-7.1	1.55 H	239	32.50	14.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

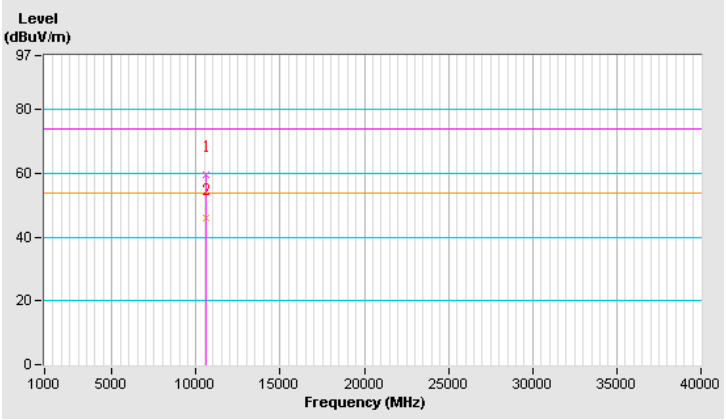


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	10620.00	59.7 PK	74.0	-14.3	2.16 V	156	45.30	14.40
2	10620.00	46.1 AV	54.0	-7.9	2.16 V	156	31.70	14.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

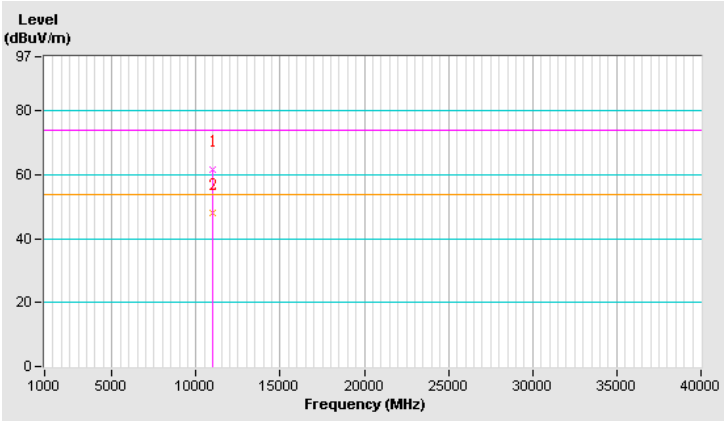


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11020.00	61.8 PK	74.0	-12.2	1.72 H	231	45.90	15.90
2	11020.00	48.1 AV	54.0	-5.9	1.72 H	231	32.20	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

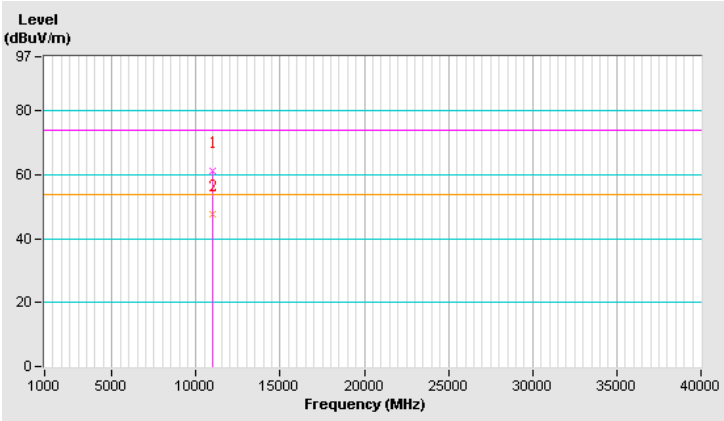


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11020.00	61.4 PK	74.0	-12.6	2.14 V	152	45.50	15.90
2	11020.00	47.7 AV	54.0	-6.3	2.14 V	152	31.80	15.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

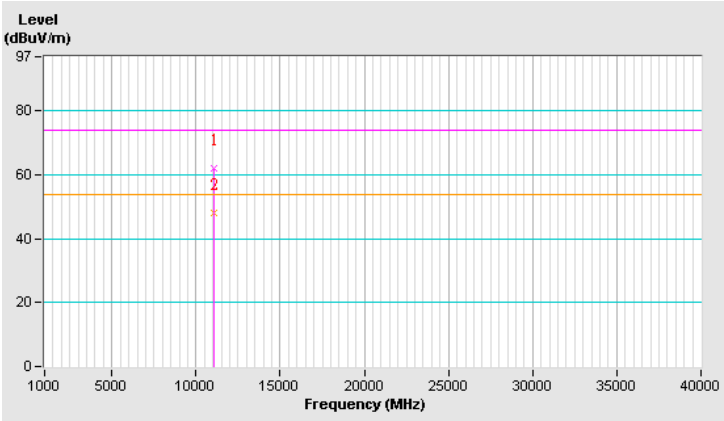


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11100.00	62.0 PK	74.0	-12.0	1.66 H	227	46.60	15.40
2	11100.00	48.1 AV	54.0	-5.9	1.66 H	227	32.70	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

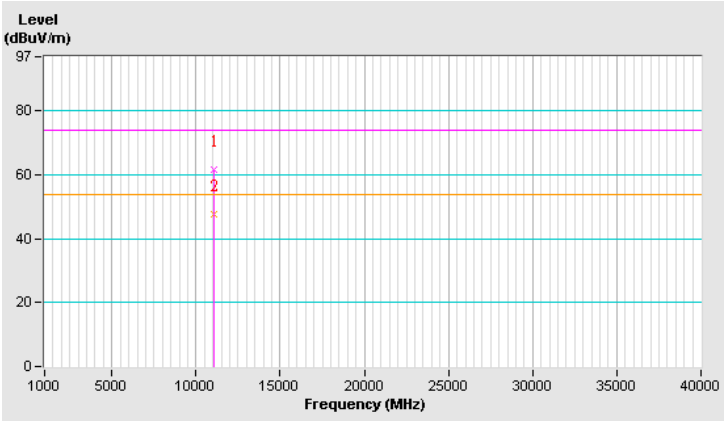


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11100.00	61.6 PK	74.0	-12.4	2.00 V	163	46.20	15.40
2	11100.00	47.8 AV	54.0	-6.2	2.00 V	163	32.40	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

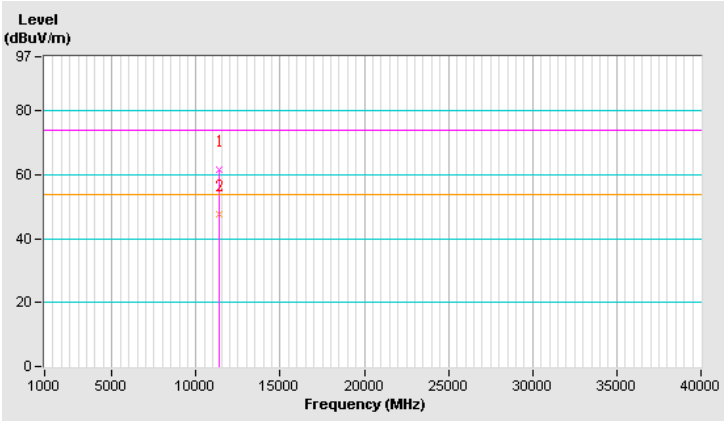


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11340.00	61.7 PK	74.0	-12.3	1.63 H	216	46.30	15.40
2	11340.00	47.8 AV	54.0	-6.2	1.63 H	216	32.40	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

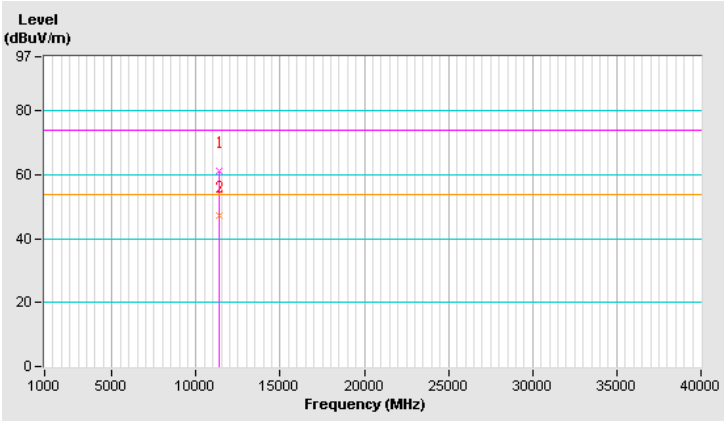


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11340.00	61.2 PK	74.0	-12.8	2.29 V	145	45.80	15.40
2	11340.00	47.4 AV	54.0	-6.6	2.29 V	145	32.00	15.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

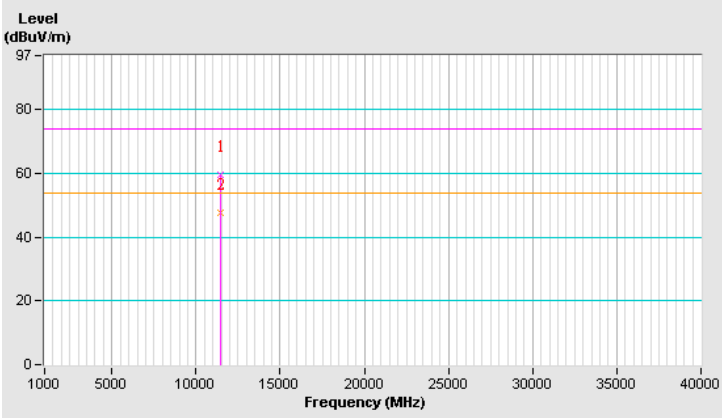


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11420.00	59.5 PK	74.0	-14.5	1.13 H	158	44.70	14.80
2	11420.00	47.7 AV	54.0	-6.3	1.13 H	158	32.90	14.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

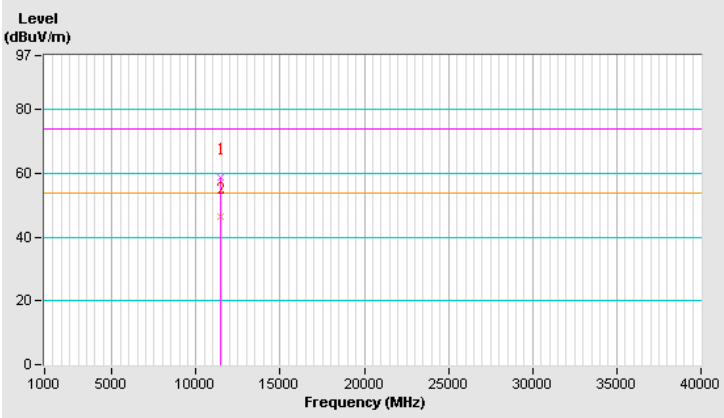


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11420.00	58.7 PK	74.0	-15.3	1.96 V	266	43.90	14.80
2	11420.00	46.5 AV	54.0	-7.5	1.96 V	266	31.70	14.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



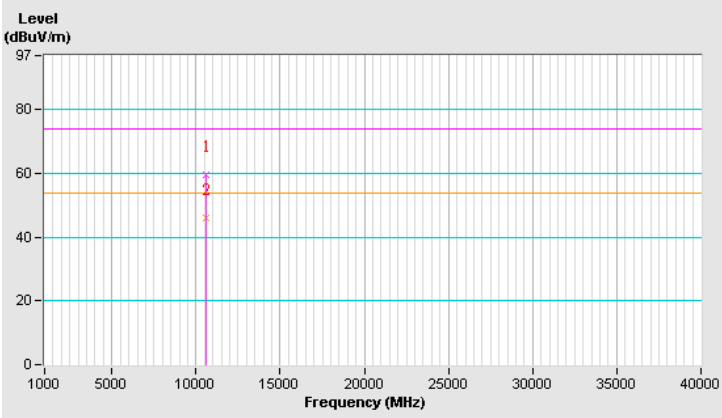
802.11ac (80MHz) 1S4T TxBF MCS0

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10580.00	59.4 PK	74.0	-14.6	1.63 H	248	45.20	14.20
2	#10580.00	46.2 AV	54.0	-7.8	1.63 H	248	32.00	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

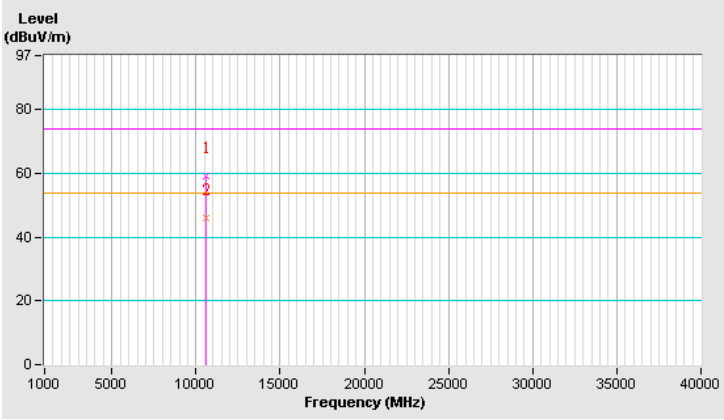


CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#10580.00	59.0 PK	74.0	-15.0	2.23 V	147	44.80	14.20
2	#10580.00	46.0 AV	54.0	-8.0	2.23 V	147	31.80	14.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " # ": The radiated frequency is out of the restricted band.

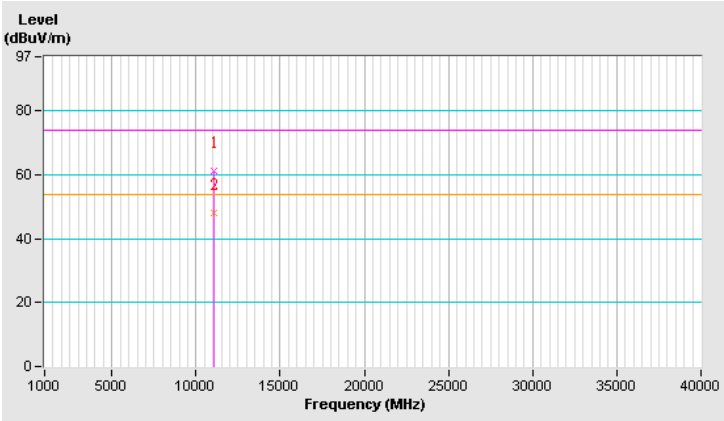


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11060.00	61.4 PK	74.0	-12.6	1.57 H	259	45.70	15.70
2	11060.00	48.0 AV	54.0	-6.0	1.57 H	259	32.30	15.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

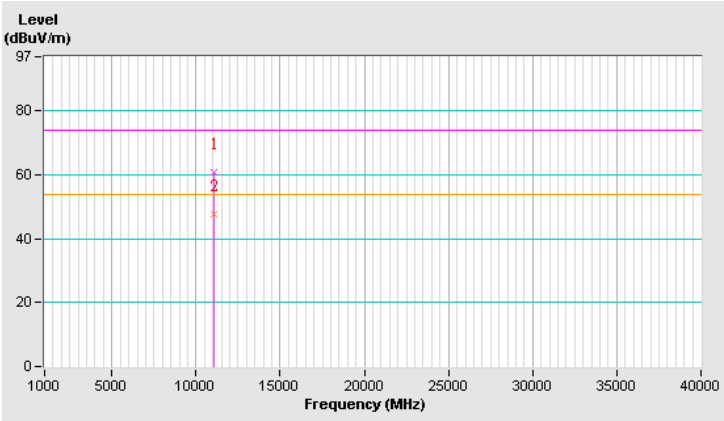


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11060.00	60.8 PK	74.0	-13.2	2.41 V	153	45.10	15.70
2	11060.00	47.7 AV	54.0	-6.3	2.41 V	153	32.00	15.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

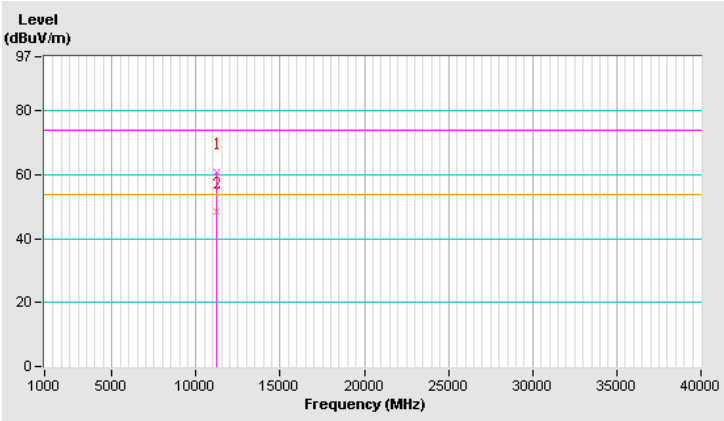


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11220.00	60.9 PK	74.0	-13.1	3.34 H	157	45.60	15.30
2	11220.00	48.4 AV	54.0	-5.6	3.34 H	157	33.10	15.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

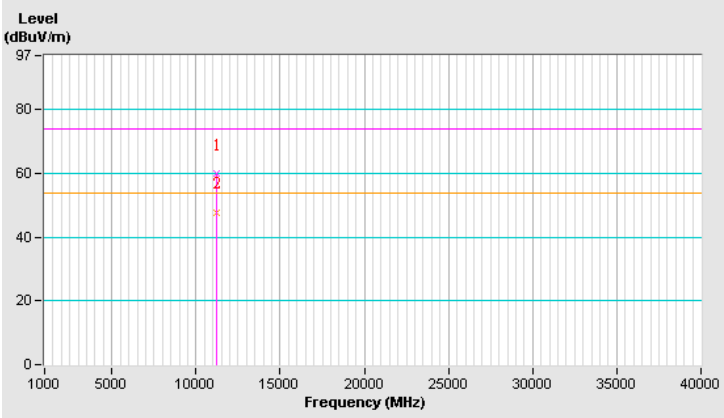


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11220.00	60.0 PK	74.0	-14.0	1.78 V	287	44.70	15.30
2	11220.00	47.9 AV	54.0	-6.1	1.78 V	287	32.60	15.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

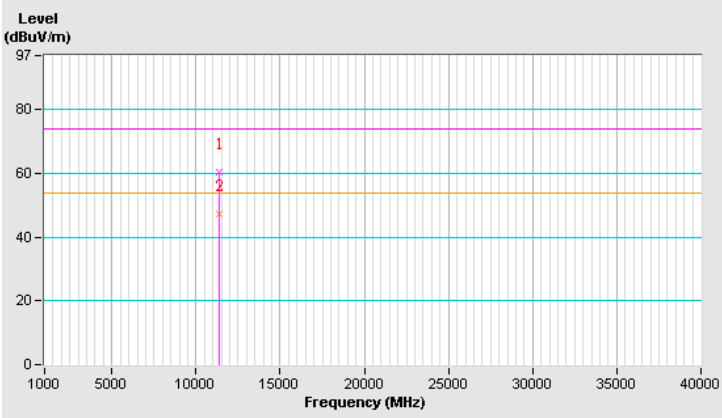


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11380.00	60.5 PK	74.0	-13.5	1.63 H	260	45.50	15.00
2	11380.00	47.2 AV	54.0	-6.8	1.63 H	260	32.20	15.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

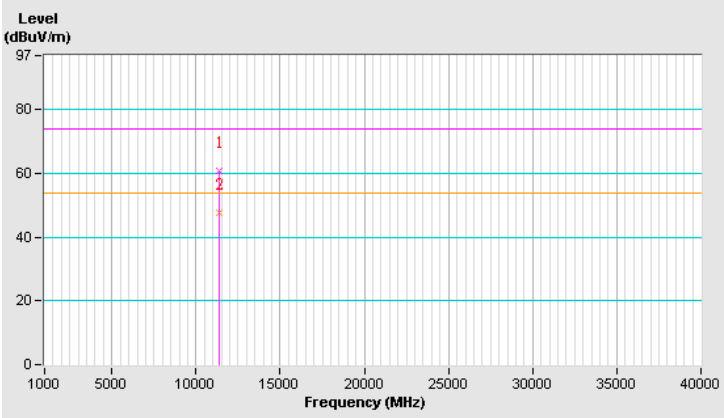


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	11380.00	60.9 PK	74.0	-13.1	1.53 V	243	45.90	15.00
2	11380.00	47.6 AV	54.0	-6.4	1.53 V	243	32.60	15.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



Radiated Band Edge and Fundamental Emissions

CDD Mode

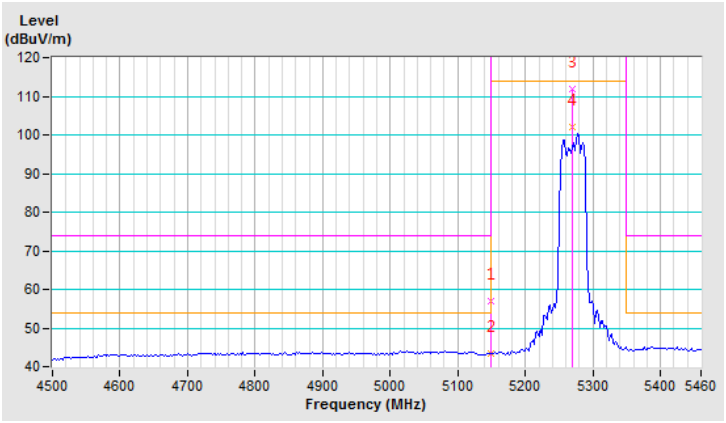
802.11ac (40MHz) 1S4T CDD Nss1 MCS0

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.9 PK	74.0	-17.1	3.67 H	177	55.20	1.70
2	5150.00	43.4 AV	54.0	-10.6	3.67 H	177	41.70	1.70
3	*5270.00	111.8 PK			3.67 H	177	72.60	39.20
4	*5270.00	102.2 AV			3.67 H	177	63.00	39.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

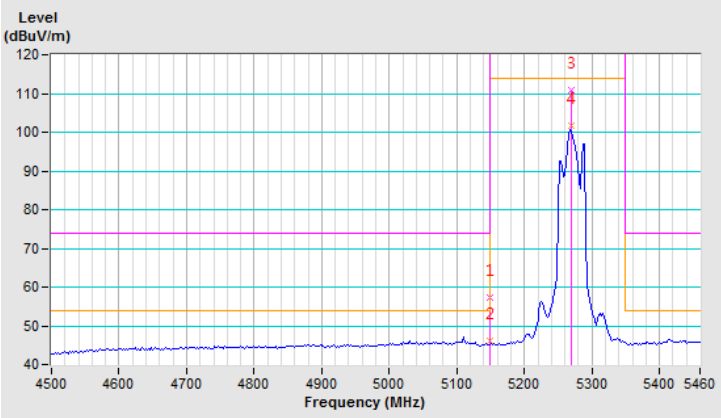


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.4 PK	74.0	-16.6	1.59 V	277	55.70	1.70
2	5150.00	46.1 AV	54.0	-7.9	1.59 V	277	44.40	1.70
3	*5270.00	110.8 PK			1.59 V	277	71.60	39.20
4	*5270.00	101.8 AV			1.59 V	277	62.60	39.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

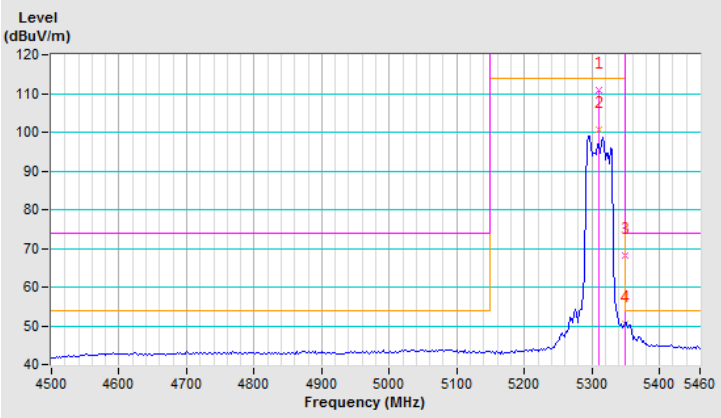


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	110.9 PK			2.00 H	188	71.70	39.20
2	*5310.00	100.8 AV			2.00 H	188	61.60	39.20
3	5350.00	68.2 PK	74.0	-5.8	2.00 H	188	66.00	2.20
4	5350.00	50.5 AV	54.0	-3.5	2.00 H	188	48.30	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

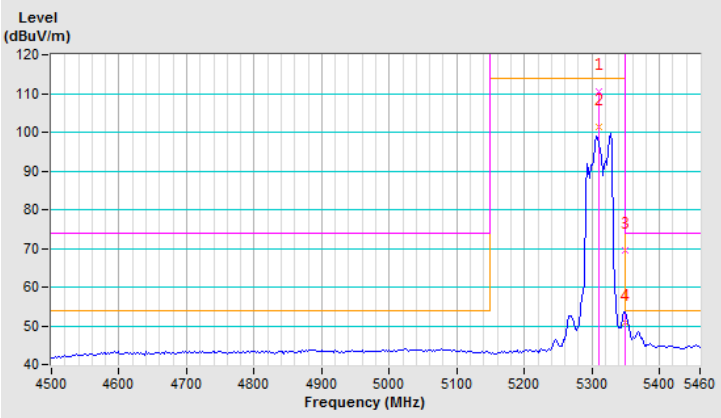


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	110.6 PK			1.61 V	63	71.40	39.20
2	*5310.00	101.3 AV			1.61 V	63	62.10	39.20
3	5350.00	69.6 PK	74.0	-4.4	1.61 V	63	67.40	2.20
4	5350.00	50.8 AV	54.0	-3.2	1.61 V	63	48.60	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

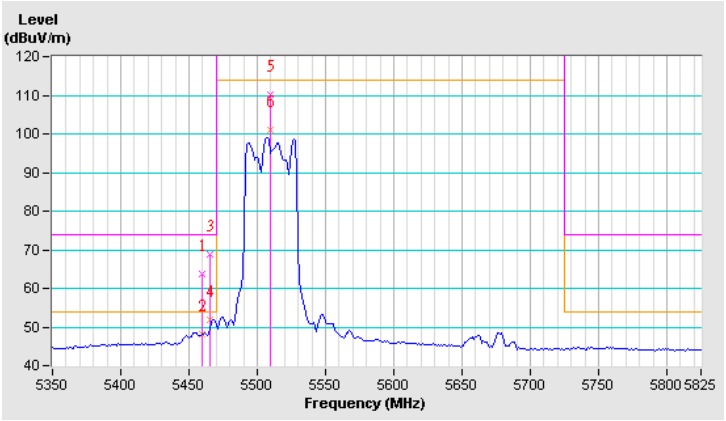


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.7 PK	74.0	-10.3	2.07 H	191	61.30	2.40
2	5460.00	48.1 AV	54.0	-5.9	2.07 H	191	45.70	2.40
3	#5465.00	68.9 PK	74.0	-5.1	2.07 H	191	66.50	2.40
4	#5465.00	51.9 AV	54.0	-2.1	2.07 H	191	49.50	2.40
5	*5510.00	110.1 PK			2.07 H	191	70.60	39.50
6	*5510.00	101.1 AV			2.07 H	191	61.60	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

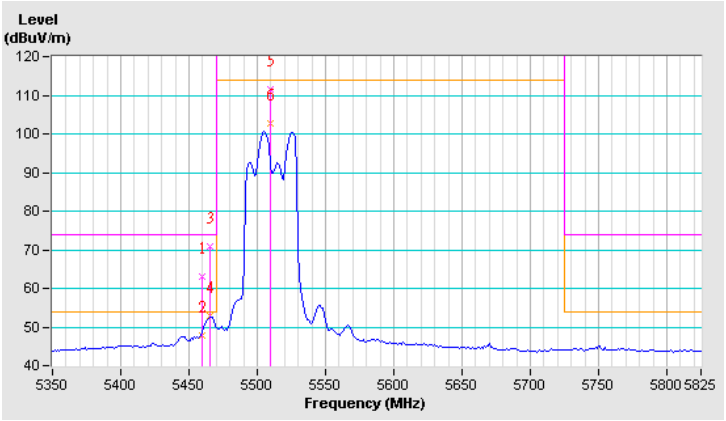


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.2 PK	74.0	-10.8	1.55 V	27	60.80	2.40
2	5460.00	47.8 AV	54.0	-6.2	1.55 V	27	45.40	2.40
3	#5465.00	70.7 PK	74.0	-3.3	1.55 V	27	68.30	2.40
4	#5465.00	52.9 AV	54.0	-1.1	1.55 V	27	50.50	2.40
5	*5510.00	111.5 PK			1.55 V	27	72.00	39.50
6	*5510.00	102.6 AV			1.55 V	27	63.10	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

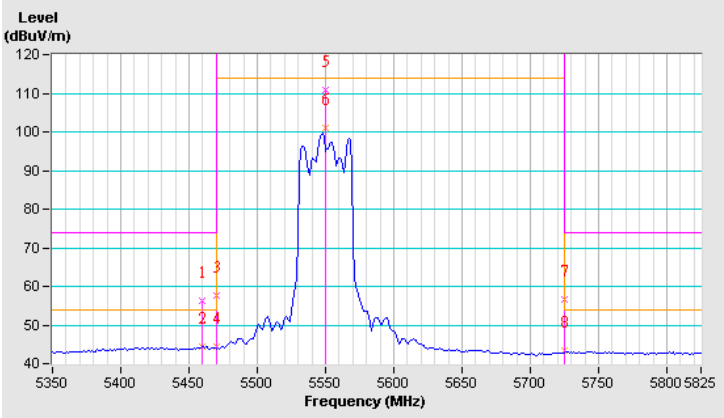


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.3 PK	74.0	-17.7	2.06 H	183	53.90	2.40
2	5460.00	44.4 AV	54.0	-9.6	2.06 H	183	42.00	2.40
3	#5470.00	57.7 PK	74.0	-16.3	2.06 H	183	55.30	2.40
4	#5470.00	44.3 AV	54.0	-9.7	2.06 H	183	41.90	2.40
5	*5550.00	110.8 PK			2.06 H	183	71.20	39.60
6	*5550.00	101.1 AV			2.06 H	183	61.50	39.60
7	#5725.00	56.6 PK	74.0	-17.4	2.06 H	183	53.80	2.80
8	#5725.00	43.5 AV	54.0	-10.5	2.06 H	183	40.70	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

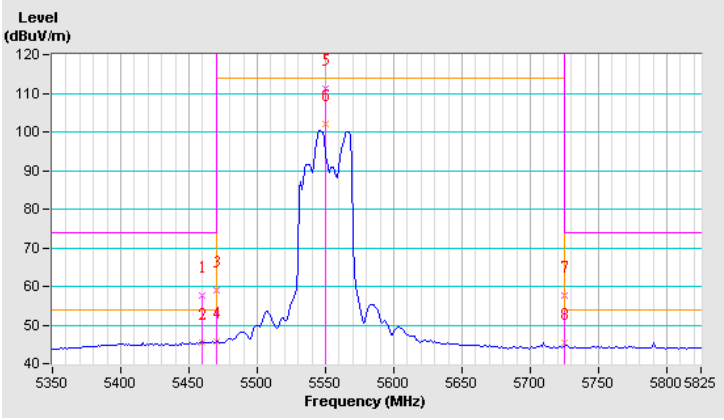


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.7 PK	74.0	-16.3	1.57 V	28	55.30	2.40
2	5460.00	45.5 AV	54.0	-8.5	1.57 V	28	43.10	2.40
3	#5470.00	59.0 PK	74.0	-15.0	1.57 V	28	56.60	2.40
4	#5470.00	45.8 AV	54.0	-8.2	1.57 V	28	43.40	2.40
5	*5550.00	111.3 PK			1.57 V	28	71.70	39.60
6	*5550.00	102.1 AV			1.57 V	28	62.50	39.60
7	#5725.00	57.6 PK	74.0	-16.4	1.57 V	28	54.80	2.80
8	#5725.00	45.3 AV	54.0	-8.7	1.57 V	28	42.50	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

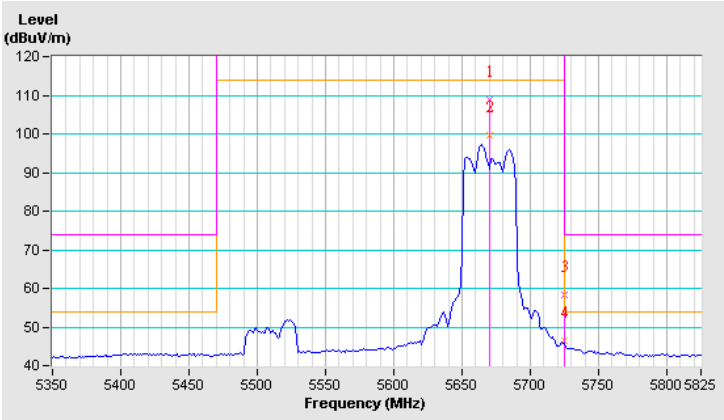


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	108.9 PK			2.90 H	193	69.10	39.80
2	*5670.00	99.6 AV			2.90 H	193	59.80	39.80
3	#5725.00	58.2 PK	74.0	-15.8	2.90 H	193	55.40	2.80
4	#5725.00	46.3 AV	54.0	-7.7	2.90 H	193	43.50	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

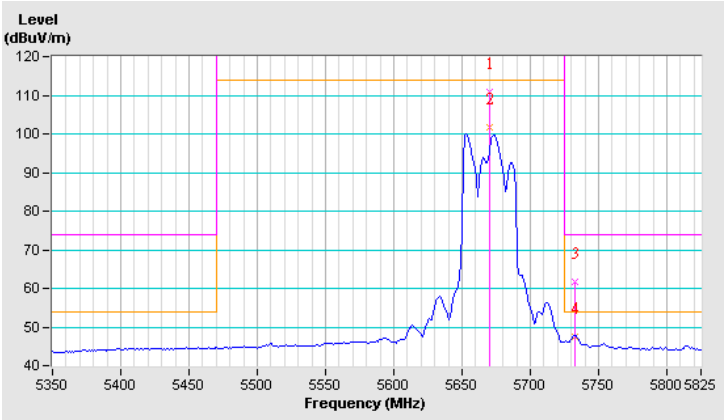


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	111.0 PK			1.38 V	94	71.20	39.80
2	*5670.00	101.7 AV			1.38 V	94	61.90	39.80
3	#5732.50	61.8 PK	74.0	-12.2	1.38 V	94	59.00	2.80
4	#5732.50	47.4 AV	54.0	-6.6	1.38 V	94	44.60	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

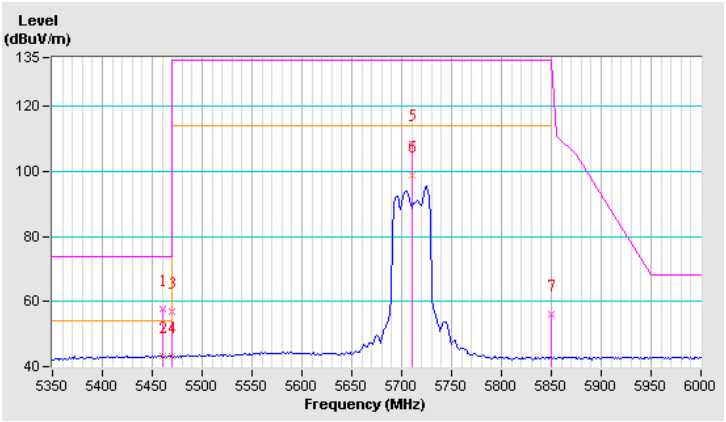


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.6 PK	74.0	-16.4	2.96 H	192	55.20	2.40
2	5460.00	43.1 AV	54.0	-10.9	2.96 H	192	40.70	2.40
3	#5470.00	56.9 PK	74.0	-17.1	2.96 H	192	54.50	2.40
4	#5470.00	43.1 AV	54.0	-10.9	2.96 H	192	40.70	2.40
5	*5710.00	108.6 PK			2.96 H	192	68.70	39.90
6	*5710.00	98.6 AV			2.96 H	192	58.70	39.90
7	#5850.00	56.0 PK	122.2	-66.2	2.96 H	192	53.10	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

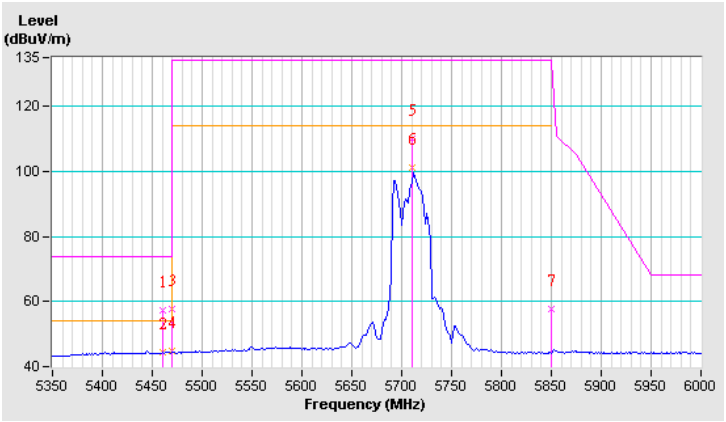


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.2 PK	74.0	-16.8	1.39 V	97	54.80	2.40
2	5460.00	44.6 AV	54.0	-9.4	1.39 V	97	42.20	2.40
3	#5470.00	57.6 PK	74.0	-16.4	1.39 V	97	55.20	2.40
4	#5470.00	44.7 AV	54.0	-9.3	1.39 V	97	42.30	2.40
5	*5710.00	110.1 PK			1.39 V	97	70.20	39.90
6	*5710.00	101.3 AV			1.39 V	97	61.40	39.90
7	#5850.00	57.8 PK	122.2	-64.4	1.39 V	97	54.90	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



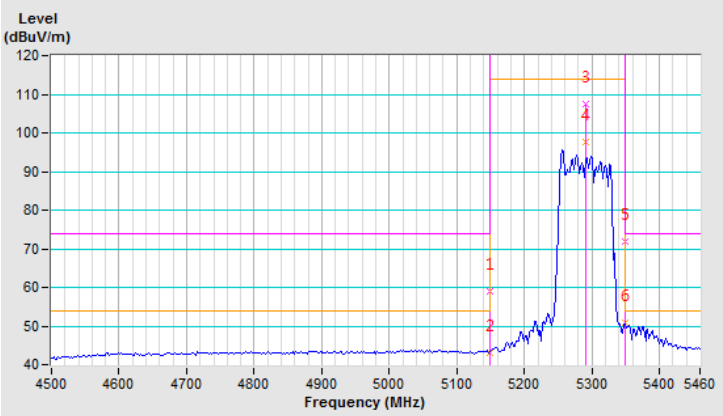
802.11ac (80MHz) 1S4T CDD Nss1 MCS0

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.9 PK	74.0	-15.1	3.36 H	179	57.20	1.70
2	5150.00	43.1 AV	54.0	-10.9	3.36 H	179	41.40	1.70
3	*5290.00	107.4 PK			3.36 H	179	68.20	39.20
4	*5290.00	97.6 AV			3.36 H	179	58.40	39.20
5	5350.00	72.0 PK	74.0	-2.0	3.36 H	179	69.80	2.20
6	5350.00	50.8 AV	54.0	-3.2	3.36 H	179	48.60	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

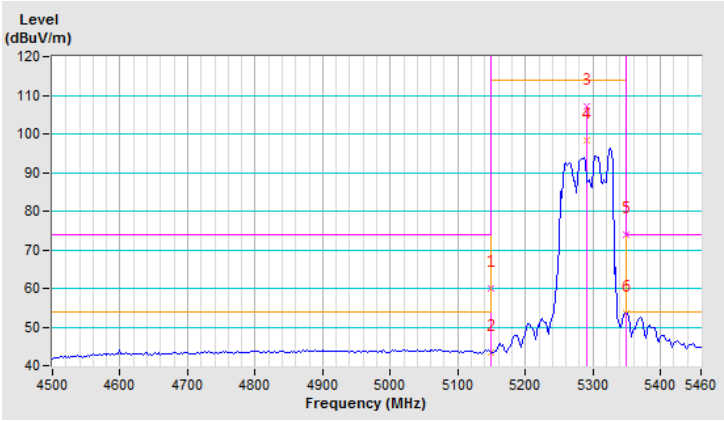


CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.0 PK	74.0	-14.0	1.69 V	79	58.30	1.70
2	5150.00	43.5 AV	54.0	-10.5	1.69 V	79	41.80	1.70
3	*5290.00	107.1 PK			1.69 V	79	67.90	39.20
4	*5290.00	98.2 AV			1.69 V	79	59.00	39.20
5	**5350.00**	**73.9 PK**	**74.0**	**-0.1**	**1.69 V**	**79**	**71.70**	**2.20**
6	5350.00	53.6 AV	54.0	-0.4	1.69 V	79	51.40	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

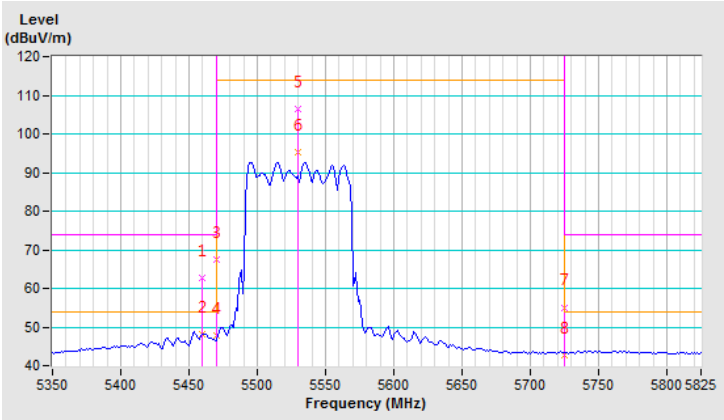


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.6 PK	74.0	-11.4	3.13 H	201	60.20	2.40
2	5460.00	48.3 AV	54.0	-5.7	3.13 H	201	45.90	2.40
3	#5470.00	67.5 PK	74.0	-6.5	3.13 H	201	65.10	2.40
4	#5470.00	47.9 AV	54.0	-6.1	3.13 H	201	45.50	2.40
5	*5530.00	106.5 PK			3.13 H	201	67.00	39.50
6	*5530.00	95.3 AV			3.13 H	201	55.80	39.50
7	#5725.00	55.1 PK	74.0	-18.9	3.13 H	201	52.30	2.80
8	#5725.00	42.8 AV	54.0	-11.2	3.13 H	201	40.00	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

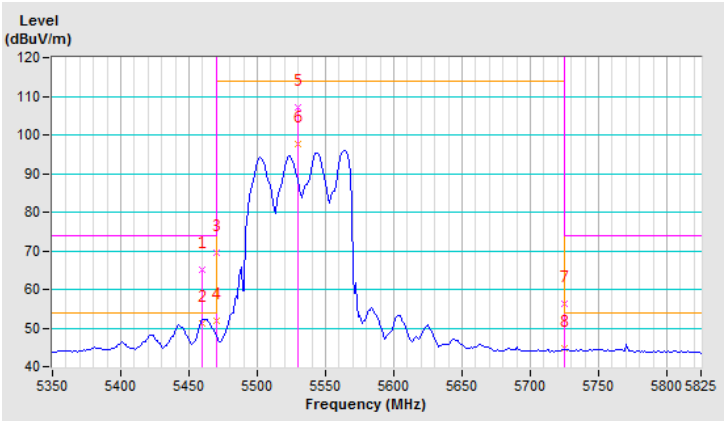


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.0 PK	74.0	-9.0	1.24 V	281	62.60	2.40
2	5460.00	51.3 AV	54.0	-2.7	1.24 V	281	48.90	2.40
3	#5470.00	69.5 PK	74.0	-4.5	1.24 V	281	67.10	2.40
4	#5470.00	51.9 AV	54.0	-2.1	1.24 V	281	49.50	2.40
5	*5530.00	107.2 PK			1.24 V	281	67.70	39.50
6	*5530.00	97.6 AV			1.24 V	281	58.10	39.50
7	#5725.00	56.4 PK	74.0	-17.6	1.24 V	281	53.60	2.80
8	#5725.00	44.6 AV	54.0	-9.4	1.24 V	281	41.80	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

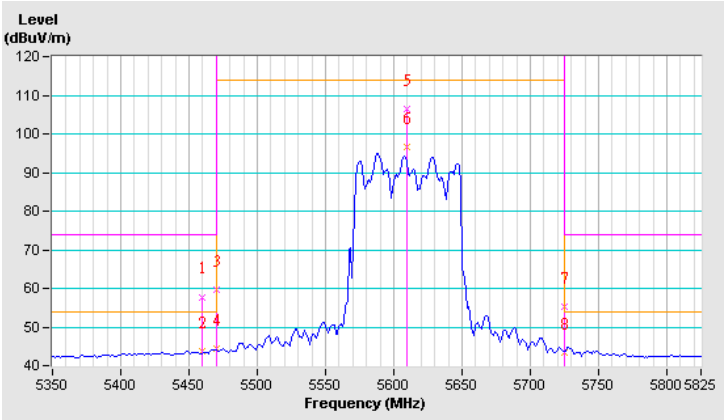


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.8 PK	74.0	-16.2	2.08 H	179	55.40	2.40
2	5460.00	43.8 AV	54.0	-10.2	2.08 H	179	41.40	2.40
3	#5470.00	59.5 PK	74.0	-14.5	2.08 H	179	57.10	2.40
4	#5470.00	44.4 AV	54.0	-9.6	2.08 H	179	42.00	2.40
5	*5610.00	106.5 PK			2.08 H	179	66.80	39.70
6	*5610.00	96.7 AV			2.08 H	179	57.00	39.70
7	#5725.00	55.3 PK	74.0	-18.7	2.08 H	179	52.50	2.80
8	#5725.00	43.5 AV	54.0	-10.5	2.08 H	179	40.70	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

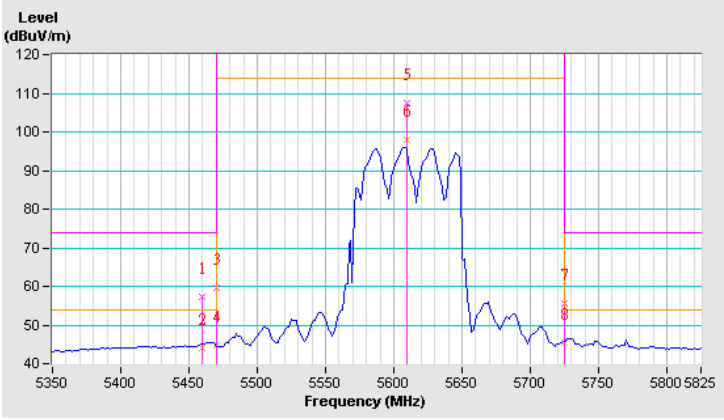


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.4 PK	74.0	-16.6	1.07 V	294	55.00	2.40
2	5460.00	44.0 AV	54.0	-10.0	1.07 V	294	41.60	2.40
3	#5470.00	59.7 PK	74.0	-14.3	1.07 V	294	57.30	2.40
4	#5470.00	44.8 AV	54.0	-9.2	1.07 V	294	42.40	2.40
5	*5610.00	107.4 PK			1.07 V	294	67.70	39.70
6	*5610.00	98.1 AV			1.07 V	294	58.40	39.70
7	#5725.00	55.7 PK	74.0	-18.3	1.07 V	294	52.90	2.80
8	#5725.00	45.4 AV	54.0	-8.6	1.07 V	294	42.60	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

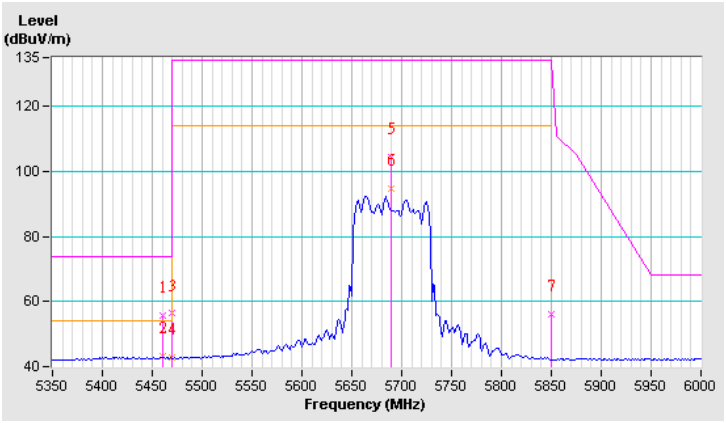


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.7 PK	74.0	-18.3	2.90 H	195	53.30	2.40
2	5460.00	43.1 AV	54.0	-10.9	2.90 H	195	40.70	2.40
3	#5470.00	56.3 PK	74.0	-17.7	2.90 H	195	53.90	2.40
4	#5470.00	42.9 AV	54.0	-11.1	2.90 H	195	40.50	2.40
5	*5690.00	104.6 PK			2.90 H	195	64.70	39.90
6	*5690.00	94.8 AV			2.90 H	195	54.90	39.90
7	#5850.00	56.2 PK	122.2	-66.0	2.90 H	195	53.30	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

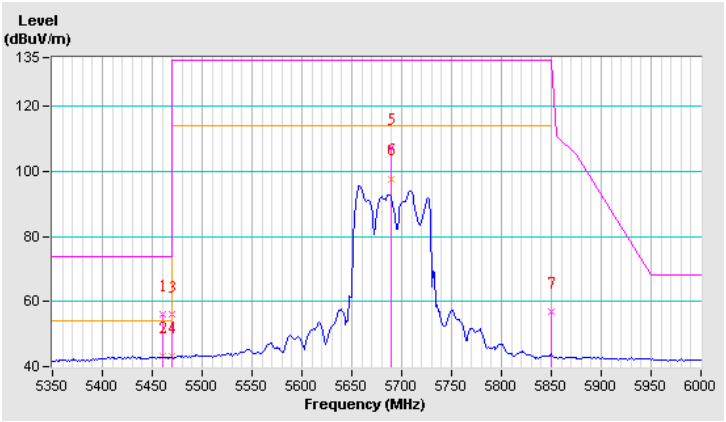


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.1 PK	74.0	-17.9	1.27 V	290	53.70	2.40
2	5460.00	43.3 AV	54.0	-10.7	1.27 V	290	40.90	2.40
3	#5470.00	55.9 PK	74.0	-18.1	1.27 V	290	53.50	2.40
4	#5470.00	43.2 AV	54.0	-10.8	1.27 V	290	40.80	2.40
5	*5690.00	107.4 PK			1.27 V	290	67.50	39.90
6	*5690.00	97.8 AV			1.27 V	290	57.90	39.90
7	#5850.00	57.0 PK	122.2	-65.2	1.27 V	290	54.10	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



TxBF Mode

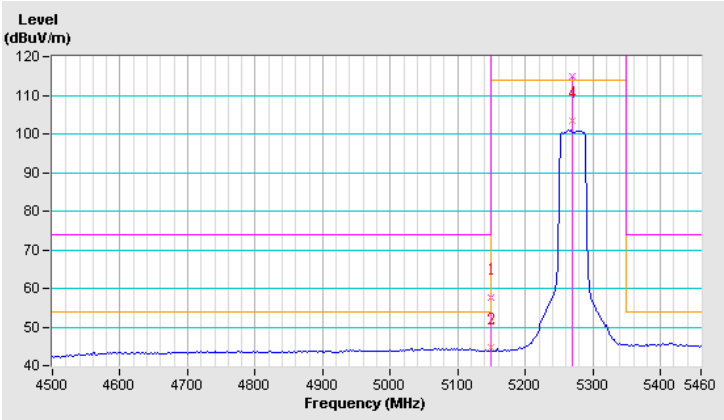
802.11ac (40MHz) 1S4T TxBF Nss1 MCS0

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	1.32 H	195	55.90	1.70
2	5150.00	44.8 AV	54.0	-9.2	1.32 H	195	43.10	1.70
3	*5270.00	115.0 PK			1.32 H	195	75.80	39.20
4	*5270.00	103.4 AV			1.32 H	195	64.20	39.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

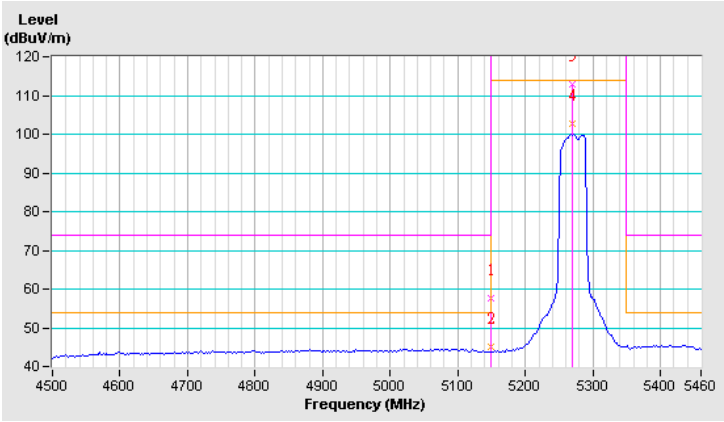


CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	3.38 V	71	55.90	1.70
2	5150.00	45.0 AV	54.0	-9.0	3.38 V	71	43.30	1.70
3	*5270.00	112.9 PK			3.38 V	71	73.70	39.20
4	*5270.00	102.6 AV			3.38 V	71	63.40	39.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

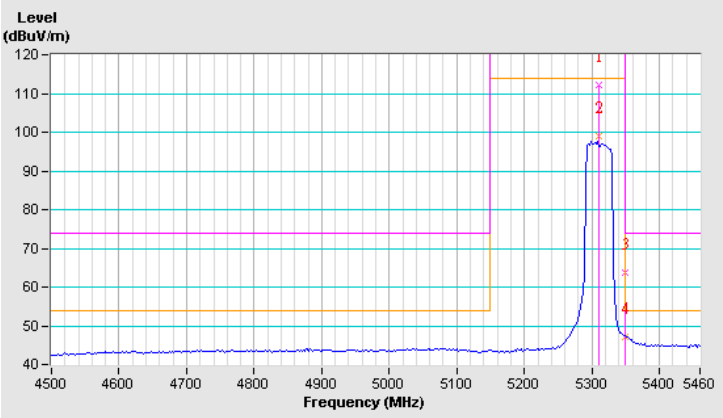


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	112.1 PK			1.34 H	183	72.90	39.20
2	*5310.00	99.0 AV			1.34 H	183	59.80	39.20
3	5350.00	63.7 PK	74.0	-10.3	1.34 H	183	61.50	2.20
4	5350.00	47.2 AV	54.0	-6.8	1.34 H	183	45.00	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

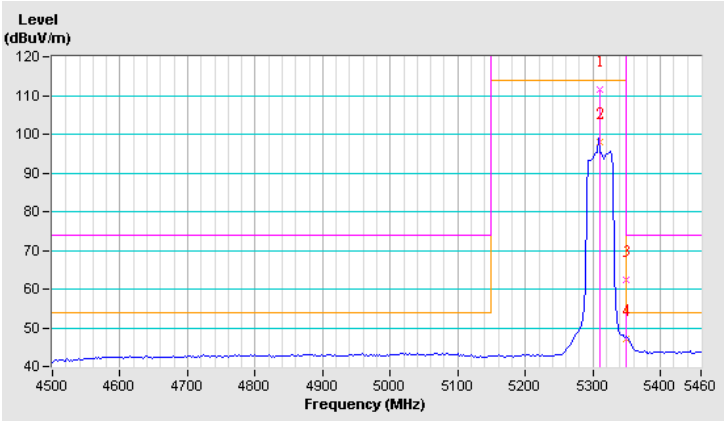


CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	111.6 PK			3.54 V	113	72.40	39.20
2	*5310.00	97.9 AV			3.54 V	113	58.70	39.20
3	5350.00	62.5 PK	74.0	-11.5	3.54 V	113	60.30	2.20
4	5350.00	47.0 AV	54.0	-7.0	3.54 V	113	44.80	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

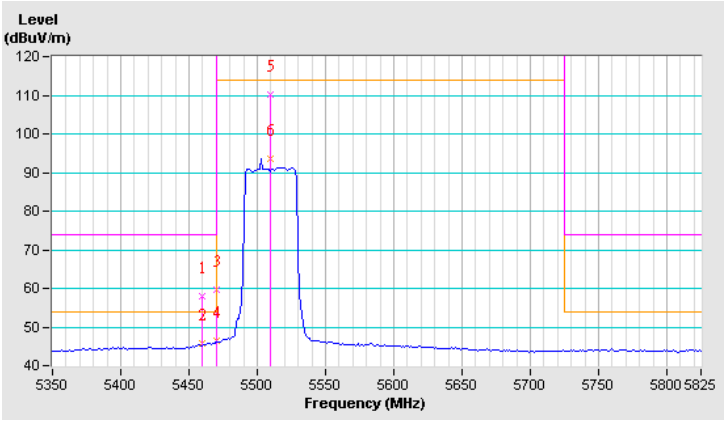


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.8 PK	74.0	-16.2	1.40 H	178	55.40	2.40
2	5460.00	45.6 AV	54.0	-8.4	1.40 H	178	43.20	2.40
3	#5470.00	59.6 PK	74.0	-14.4	1.40 H	178	57.20	2.40
4	#5470.00	46.4 AV	54.0	-7.6	1.40 H	178	44.00	2.40
5	*5510.00	110.3 PK			1.40 H	178	70.80	39.50
6	*5510.00	93.6 AV			1.40 H	178	54.10	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

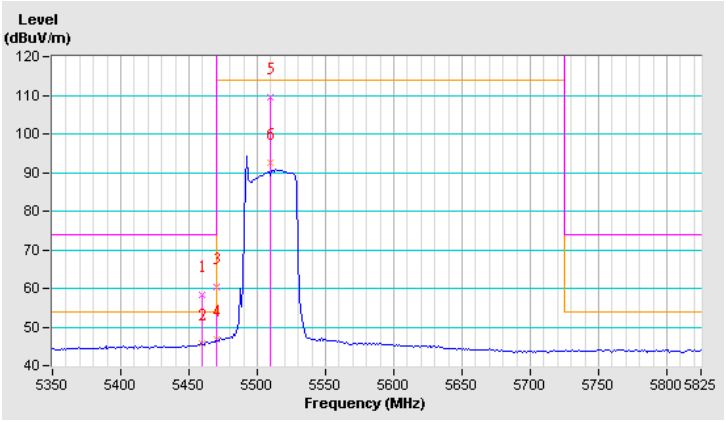


CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.4 PK	74.0	-15.6	3.36 V	135	56.00	2.40
2	5460.00	45.7 AV	54.0	-8.3	3.36 V	135	43.30	2.40
3	#5470.00	60.2 PK	74.0	-13.8	3.36 V	135	57.80	2.40
4	#5470.00	46.7 AV	54.0	-7.3	3.36 V	135	44.30	2.40
5	*5510.00	109.6 PK			3.36 V	135	70.10	39.50
6	*5510.00	92.4 AV			3.36 V	135	52.90	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

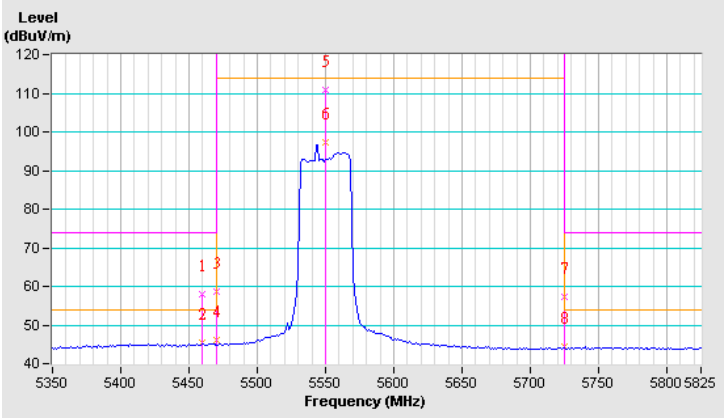


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.1 PK	74.0	-15.9	1.31 H	192	55.70	2.40
2	5460.00	45.4 AV	54.0	-8.6	1.31 H	192	43.00	2.40
3	#5470.00	58.6 PK	74.0	-15.4	1.31 H	192	56.20	2.40
4	#5470.00	46.1 AV	54.0	-7.9	1.31 H	192	43.70	2.40
5	*5550.00	110.7 PK			1.31 H	192	71.10	39.60
6	*5550.00	97.3 AV			1.31 H	192	57.70	39.60
7	#5725.00	57.4 PK	74.0	-16.6	1.31 H	192	54.60	2.80
8	#5725.00	44.5 AV	54.0	-9.5	1.31 H	192	41.70	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

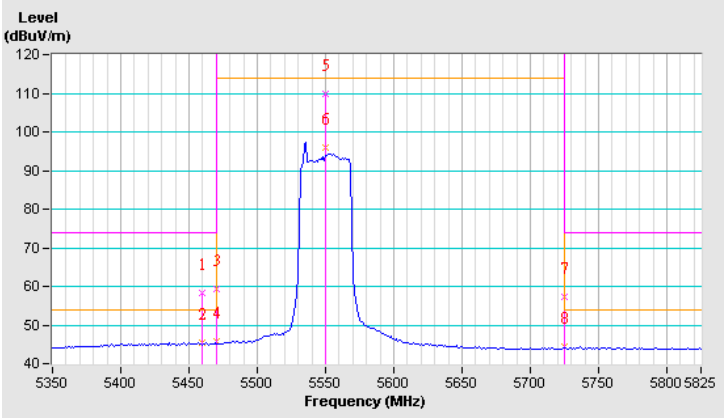


CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.4 PK	74.0	-15.6	3.42 V	132	56.00	2.40
2	5460.00	45.4 AV	54.0	-8.6	3.42 V	132	43.00	2.40
3	#5470.00	59.4 PK	74.0	-14.6	3.42 V	132	57.00	2.40
4	#5470.00	45.6 AV	54.0	-8.4	3.42 V	132	43.20	2.40
5	*5550.00	109.9 PK			3.42 V	132	70.30	39.60
6	*5550.00	96.1 AV			3.42 V	132	56.50	39.60
7	#5725.00	57.3 PK	74.0	-16.7	3.42 V	132	54.50	2.80
8	#5725.00	44.4 AV	54.0	-9.6	3.42 V	132	41.60	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

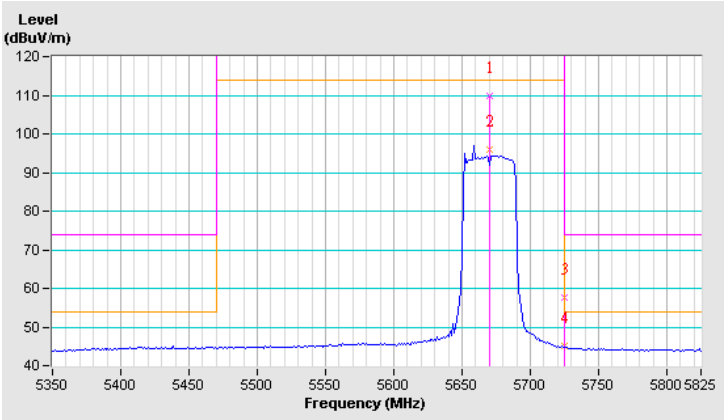


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	109.8 PK			1.42 H	190	70.00	39.80
2	*5670.00	96.1 AV			1.42 H	190	56.30	39.80
3	#5725.00	57.6 PK	74.0	-16.4	1.42 H	190	54.80	2.80
4	#5725.00	45.1 AV	54.0	-8.9	1.42 H	190	42.30	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

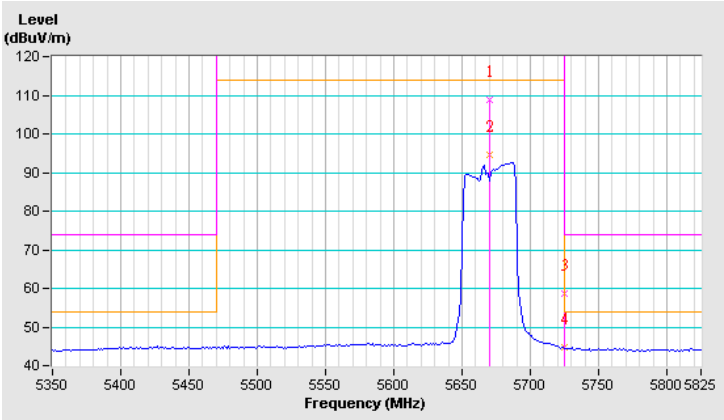


CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	108.8 PK			3.44 V	125	69.00	39.80
2	*5670.00	94.5 AV			3.44 V	125	54.70	39.80
3	#5725.00	58.5 PK	74.0	-15.5	3.44 V	125	55.70	2.80
4	#5725.00	44.8 AV	54.0	-9.2	3.44 V	125	42.00	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

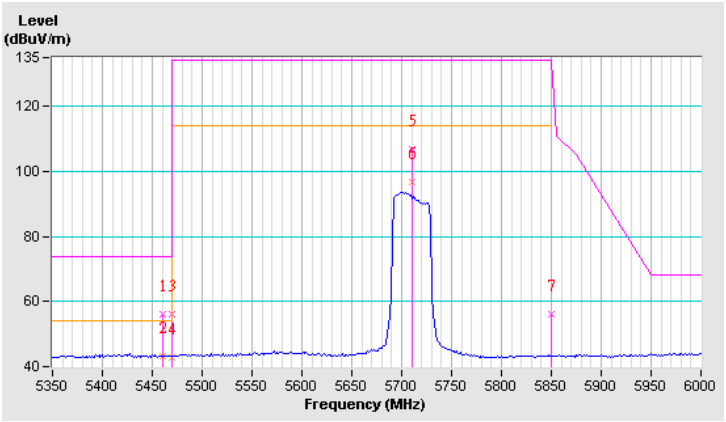


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.0 PK	74.0	-18.0	1.51 H	323	53.60	2.40
2	5460.00	43.1 AV	54.0	-10.9	1.51 H	323	40.70	2.40
3	#5470.00	56.0 PK	74.0	-18.0	1.51 H	323	53.60	2.40
4	#5470.00	42.9 AV	54.0	-11.1	1.51 H	323	40.50	2.40
5	*5710.00	106.8 PK			1.51 H	323	66.90	39.90
6	*5710.00	96.8 AV			1.51 H	323	56.90	39.90
7	#5850.00	56.0 PK	122.2	-66.2	1.51 H	323	53.10	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

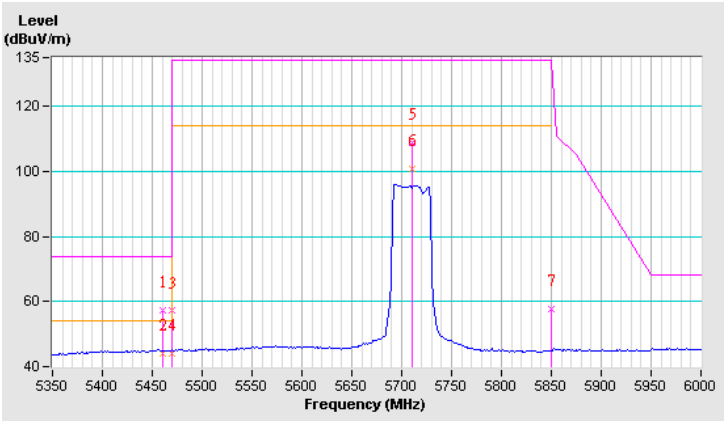


CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.3 PK	74.0	-16.7	1.47 V	285	54.90	2.40
2	5460.00	43.9 AV	54.0	-10.1	1.47 V	285	41.50	2.40
3	#5470.00	57.1 PK	74.0	-16.9	1.47 V	285	54.70	2.40
4	#5470.00	44.0 AV	54.0	-10.0	1.47 V	285	41.60	2.40
5	*5710.00	109.0 PK			1.47 V	285	69.10	39.90
6	*5710.00	100.7 AV			1.47 V	285	60.80	39.90
7	#5850.00	57.6 PK	122.2	-64.6	1.47 V	285	54.70	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



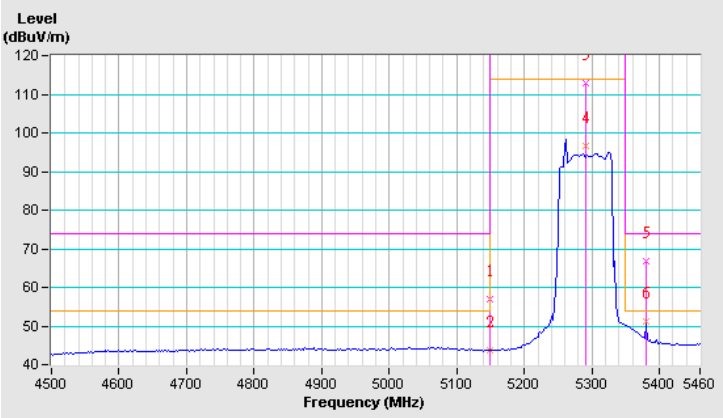
802.11ac (80MHz) 1S4T TxBF Nss1 MCS0

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.0 PK	74.0	-17.0	1.38 H	182	55.30	1.70
2	5150.00	43.7 AV	54.0	-10.3	1.38 H	182	42.00	1.70
3	*5290.00	113.0 PK			1.38 H	182	73.80	39.20
4	*5290.00	96.6 AV			1.38 H	182	57.40	39.20
5	5380.00	66.7 PK	74.0	-7.3	1.38 H	182	64.50	2.20
6	5380.00	51.1 AV	54.0	-2.9	1.38 H	182	48.90	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

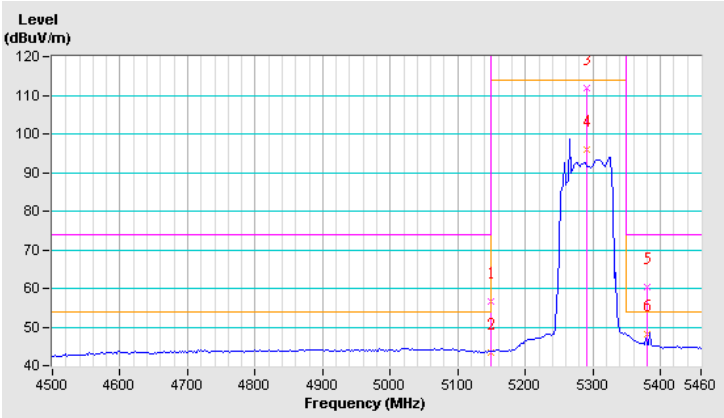


CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.7 PK	74.0	-17.3	3.54 V	113	55.00	1.70
2	5150.00	43.3 AV	54.0	-10.7	3.54 V	113	41.60	1.70
3	*5290.00	111.7 PK			3.54 V	113	72.50	39.20
4	*5290.00	95.9 AV			3.54 V	113	56.70	39.20
5	5380.00	60.4 PK	74.0	-13.6	3.54 V	113	58.20	2.20
6	5380.00	48.2 AV	54.0	-5.8	3.54 V	113	46.00	2.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

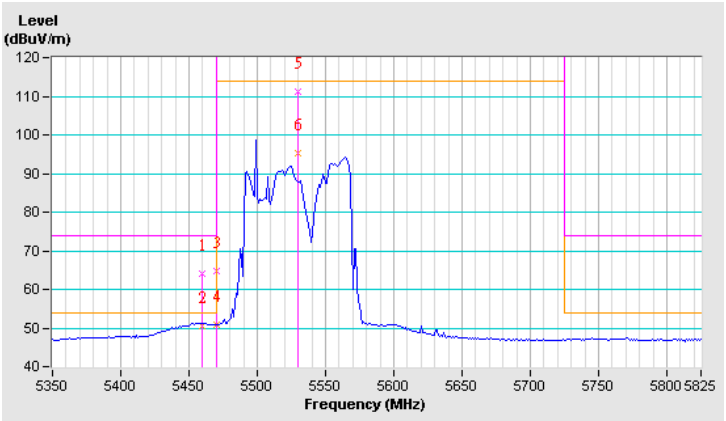


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.1 PK	74.0	-9.9	1.36 H	179	61.70	2.40
2	5460.00	50.4 AV	54.0	-3.6	1.36 H	179	48.00	2.40
3	#5470.00	64.9 PK	74.0	-9.1	1.36 H	179	62.50	2.40
4	#5470.00	50.9 AV	54.0	-3.1	1.36 H	179	48.50	2.40
5	*5530.00	111.3 PK			1.36 H	179	71.80	39.50
6	*5530.00	95.3 AV			1.36 H	179	55.80	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

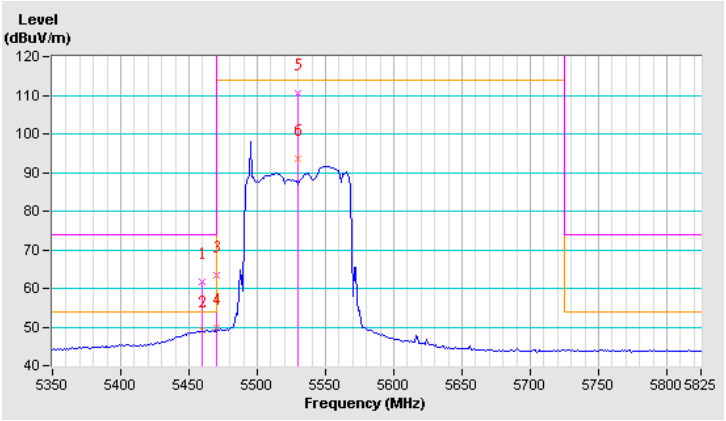


CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.8 PK	74.0	-12.2	3.29 V	134	59.40	2.40
2	5460.00	49.3 AV	54.0	-4.7	3.29 V	134	46.90	2.40
3	#5470.00	63.3 PK	74.0	-10.7	3.29 V	134	60.90	2.40
4	#5470.00	49.7 AV	54.0	-4.3	3.29 V	134	47.30	2.40
5	*5530.00	110.4 PK			3.29 V	134	70.90	39.50
6	*5530.00	93.7 AV			3.29 V	134	54.20	39.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

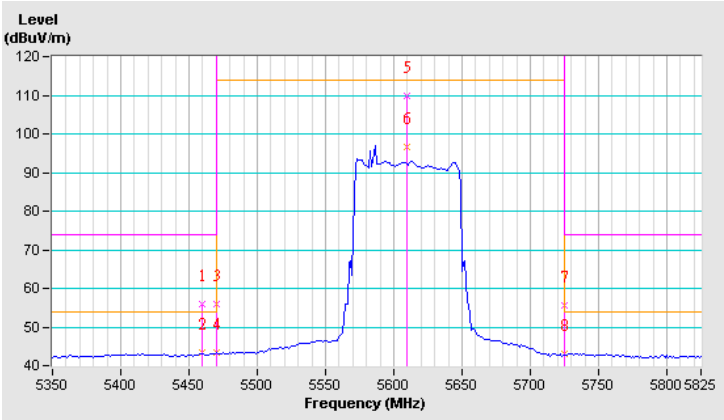


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.9 PK	74.0	-18.1	2.03 H	185	53.50	2.40
2	5460.00	43.3 AV	54.0	-10.7	2.03 H	185	40.90	2.40
3	#5470.00	55.9 PK	74.0	-18.1	2.03 H	185	53.50	2.40
4	#5470.00	43.3 AV	54.0	-10.7	2.03 H	185	40.90	2.40
5	*5610.00	109.8 PK			2.03 H	185	70.10	39.70
6	*5610.00	96.5 AV			2.03 H	185	56.80	39.70
7	#5725.00	55.6 PK	74.0	-18.4	2.03 H	185	52.80	2.80
8	#5725.00	42.9 AV	54.0	-11.1	2.03 H	185	40.10	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

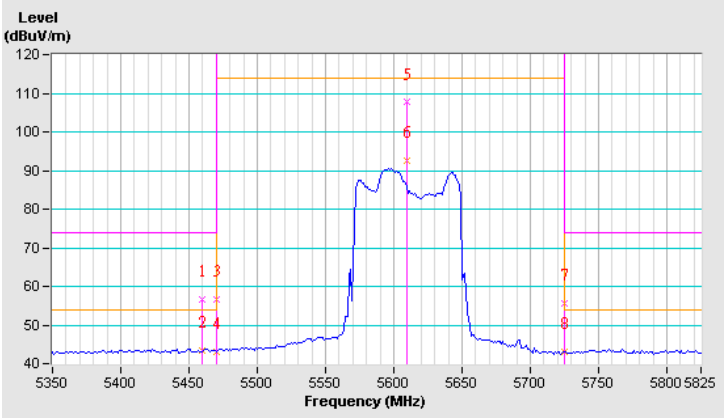


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.6 PK	74.0	-17.4	3.11 V	24	54.20	2.40
2	5460.00	43.4 AV	54.0	-10.6	3.11 V	24	41.00	2.40
3	#5470.00	56.6 PK	74.0	-17.4	3.11 V	24	54.20	2.40
4	#5470.00	43.2 AV	54.0	-10.8	3.11 V	24	40.80	2.40
5	*5610.00	107.6 PK			3.11 V	24	67.90	39.70
6	*5610.00	92.4 AV			3.11 V	24	52.70	39.70
7	#5725.00	55.5 PK	74.0	-18.5	3.11 V	24	52.70	2.80
8	#5725.00	43.0 AV	54.0	-11.0	3.11 V	24	40.20	2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

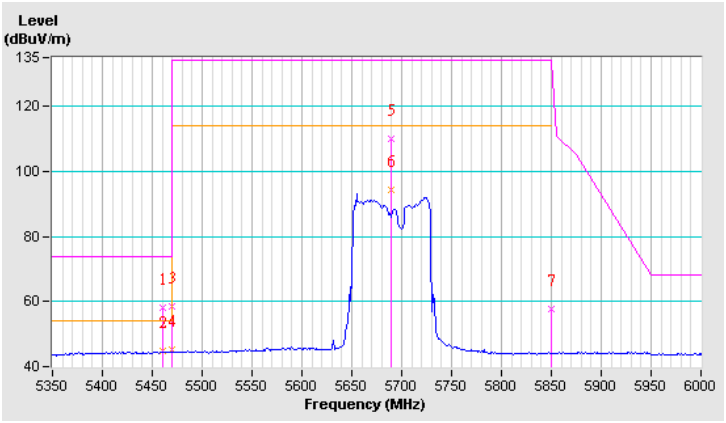


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.3 PK	74.0	-15.7	1.25 H	185	55.90	2.40
2	5460.00	44.8 AV	54.0	-9.2	1.25 H	185	42.40	2.40
3	#5470.00	58.4 PK	74.0	-15.6	1.25 H	185	56.00	2.40
4	#5470.00	45.1 AV	54.0	-8.9	1.25 H	185	42.70	2.40
5	*5690.00	109.9 PK			1.25 H	185	70.00	39.90
6	*5690.00	94.4 AV			1.25 H	185	54.50	39.90
7	#5850.00	57.7 PK	122.2	-64.5	1.25 H	185	54.80	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

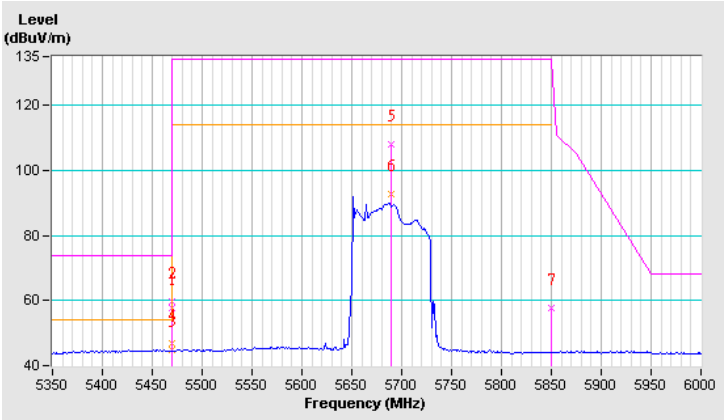


CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	57.9 PK	74.0	-16.1	3.43 V	127	55.50	2.40
2	#5470.00	59.7 PK	74.0	-14.3	3.43 V	127	57.30	2.40
3	#5470.00	44.9 AV	54.0	-9.1	3.43 V	127	42.50	2.40
4	#5470.00	46.8 AV	54.0	-7.2	3.43 V	127	44.40	2.40
5	*5690.00	107.9 PK			3.43 V	127	68.00	39.90
6	*5690.00	92.6 AV			3.43 V	127	52.70	39.90
7	#5850.00	57.6 PK	122.2	-64.6	3.43 V	127	54.70	2.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.



4.7 Frequency Stability Measurement

4.7.1 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or ±20ppm (IEEE 802.11n specification).

4.7.2 Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer and receiver.

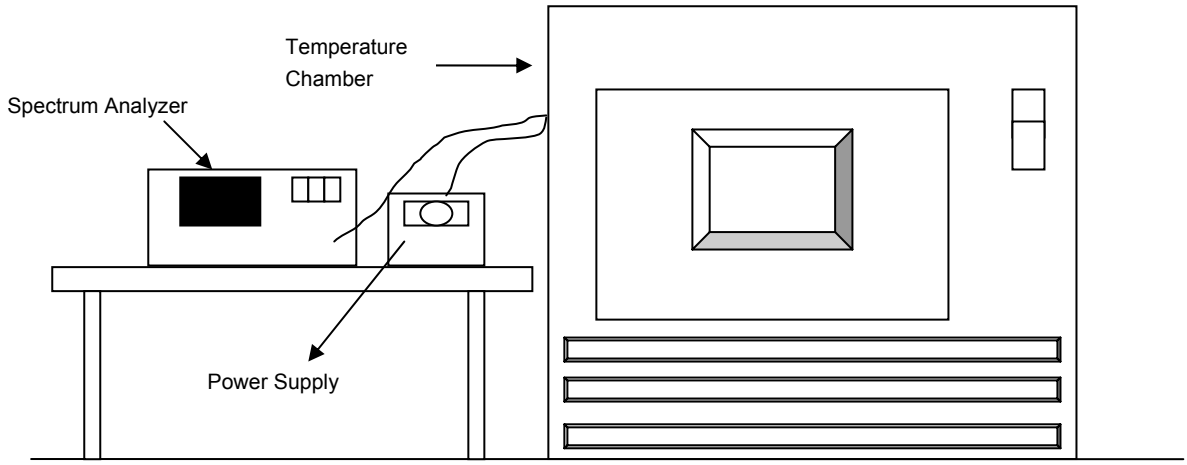
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

4.7.3 Test Procedure

1 The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2 The EUT was programmed to be in continuously un-modulation transmitting mode.
3 Set the spectrum analyzer span to view the entire un-modulation emissions bandwidth.
4 Turn the EUT on and couple its output to a spectrum analyzer.
5 Turn the EUT off and set the chamber to the highest temperature specified.
6 Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7 Extreme temperature rule is -30°C~50°C.
8 Repeat step 4 and 5 with the temperature chamber set to the lowest temperature.
9 The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.7.4 Test Setup Layout

Setup



4.7.5 Test Deviation

There are no deviations with the original standard.

4.7.6 EUT Operating Conditions

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.7.7 Test Results

Temperature	25°C	Humidity	60%
Test Engineer	Leo Tsai		

Frequency Stability Versus Temp.									
Operating Frequency: 5270 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5270.0193	PASS	5270.022	PASS	5270.0219	PASS	5270.0227	PASS
40	120	5270.0216	PASS	5270.02	PASS	5270.0208	PASS	5270.0196	PASS
30	120	5269.9845	PASS	5269.9828	PASS	5269.9851	PASS	5269.9825	PASS
20	120	5270.0178	PASS	5270.0207	PASS	5270.022	PASS	5270.0223	PASS
10	120	5269.9774	PASS	5269.9779	PASS	5269.9769	PASS	5269.9769	PASS
0	120	5269.9761	PASS	5269.9788	PASS	5269.9739	PASS	5269.9785	PASS
-10	120	5269.9895	PASS	5269.9919	PASS	5269.9895	PASS	5269.9889	PASS
-20	120	5269.9934	PASS	5269.992	PASS	5269.994	PASS	5269.9921	PASS
-30	120	5270.0054	PASS	5270.0093	PASS	5270.0085	PASS	5270.0083	PASS
Max. Deviation (ppm)		-4.5	PASS	-4.2	PASS	-5.0	PASS	-4.4	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5270 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5270.0168	PASS	5270.0203	PASS	5270.0212	PASS	5270.0222	PASS
	120	5270.0178	PASS	5270.0207	PASS	5270.022	PASS	5270.0223	PASS
	102	5270.018	PASS	5270.021	PASS	5270.0224	PASS	5270.0219	PASS
Max. Deviation (ppm)		3.4	PASS	4.0	PASS	4.3	PASS	4.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5270 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5269.985	PASS	5269.9896	PASS	5269.989	PASS	5269.9876	PASS
40	120	5269.9945	PASS	5269.9943	PASS	5269.9958	PASS	5269.9951	PASS
30	120	5269.9824	PASS	5269.9817	PASS	5269.9843	PASS	5269.9827	PASS
20	120	5269.9928	PASS	5269.9963	PASS	5269.9942	PASS	5269.9949	PASS
10	120	5269.9848	PASS	5269.9858	PASS	5269.9878	PASS	5269.9872	PASS
0	120	5269.986	PASS	5269.9842	PASS	5269.9864	PASS	5269.9852	PASS
-10	120	5270.0055	PASS	5270.007	PASS	5270.0042	PASS	5270.0046	PASS
-20	120	5269.9895	PASS	5269.9889	PASS	5269.9847	PASS	5269.9874	PASS
-30	120	5270.0054	PASS	5270.0031	PASS	5270.0043	PASS	5270.0017	PASS
Max. Deviation (ppm)		-3.3	PASS	-3.5	PASS	-3.0	PASS	-3.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5270 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5269.9923	PASS	5269.9966	PASS	5269.9943	PASS	5269.9944	PASS
	120	5269.9928	PASS	5269.9963	PASS	5269.9942	PASS	5269.9949	PASS
	102	5269.9922	PASS	5269.996	PASS	5269.9936	PASS	5269.9954	PASS
Max. Deviation (ppm)		-15	PASS	-0.8	PASS	-1.2	PASS	-1.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5270 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5269.9885	PASS	5269.9860	PASS	5269.9858	PASS	5269.99	PASS
40	120	5270.0229	PASS	5270.0230	PASS	5270.0195	PASS	5270.0208	PASS
30	120	5269.9945	PASS	5269.9966	PASS	5269.9939	PASS	5269.9949	PASS
20	120	5270.0096	PASS	5270.0127	PASS	5270.0111	PASS	5270.0083	PASS
10	120	5269.9769	PASS	5269.9762	PASS	5269.976	PASS	5269.9795	PASS
0	120	5269.9976	PASS	5270.0000	PASS	5269.9991	PASS	5269.9958	PASS
-10	120	5269.984	PASS	5269.9824	PASS	5269.9833	PASS	5269.9798	PASS
-20	120	5270.0017	PASS	5270.0008	PASS	5270.0007	PASS	5270.0039	PASS
-30	120	5269.9878	PASS	5269.9867	PASS	5269.9895	PASS	5269.9893	PASS
Max. Deviation (ppm)		-4.4	PASS	-4.5	PASS	-4.6	PASS	-3.9	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5270 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5270.0095	PASS	5270.0128	PASS	5270.0102	PASS	5270.0079	PASS
	120	5270.0096	PASS	5270.0127	PASS	5270.0111	PASS	5270.0083	PASS
	102	5270.0106	PASS	5270.0131	PASS	5270.0121	PASS	5270.0079	PASS
Max. Deviation (ppm)		2.0	PASS	2.5	PASS	2.3	PASS	1.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5270 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5270.0201	PASS	5270.0181	PASS	5270.0193	PASS	5270.0167	PASS
40	120	5270.0242	PASS	5270.0223	PASS	5270.0212	PASS	5270.0227	PASS
30	120	5269.9944	PASS	5269.9958	PASS	5269.9931	PASS	5269.9963	PASS
20	120	5269.9776	PASS	5269.9783	PASS	5269.9791	PASS	5269.9794	PASS
10	120	5270.0098	PASS	5270.0105	PASS	5270.0105	PASS	5270.0111	PASS
0	120	5270.0103	PASS	5270.0134	PASS	5270.0124	PASS	5270.0098	PASS
-10	120	5270.0239	PASS	5270.0217	PASS	5270.025	PASS	5270.0249	PASS
-20	120	5270.0052	PASS	5270.0066	PASS	5270.006	PASS	5270.0081	PASS
-30	120	5270.0075	PASS	5270.0068	PASS	5270.0072	PASS	5270.0084	PASS
Max. Deviation (ppm)		4.6	PASS	4.2	PASS	4.7	PASS	4.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5270 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5269.9766	PASS	5269.9775	PASS	5269.9792	PASS	5269.9788	PASS
	120	5269.9776	PASS	5269.9783	PASS	5269.9791	PASS	5269.9794	PASS
	102	5269.9768	PASS	5269.9788	PASS	5269.9781	PASS	5269.979	PASS
Max. Deviation (ppm)		-4.4	PASS	-4.3	PASS	-4.2	PASS	-4.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5310 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5309.9941	PASS	5309.9987	PASS	5309.9952	PASS	5309.9947	PASS
40	120	5310.0032	PASS	5310.0055	PASS	5310.0059	PASS	5310.0035	PASS
30	120	5310.0103	PASS	5310.0121	PASS	5310.0112	PASS	5310.0122	PASS
20	120	5310.0099	PASS	5310.008	PASS	5310.0083	PASS	5310.0104	PASS
10	120	5310.0063	PASS	5310.0056	PASS	5310.003	PASS	5310.0069	PASS
0	120	5310.0128	PASS	5310.0178	PASS	5310.0161	PASS	5310.0127	PASS
-10	120	5309.9739	PASS	5309.9758	PASS	5309.9743	PASS	5309.9776	PASS
-20	120	5310.0201	PASS	5310.024	PASS	5310.0214	PASS	5310.0199	PASS
-30	120	5310.0154	PASS	5310.0134	PASS	5310.0116	PASS	5310.0124	PASS
Max. Deviation (ppm)		-4.9	PASS	-4.6	PASS	-4.8	PASS	-4.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5310 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5310.0096	PASS	5310.0075	PASS	5310.0072	PASS	5310.0102	PASS
	120	5310.0099	PASS	5310.008	PASS	5310.0083	PASS	5310.0104	PASS
	102	5310.0093	PASS	5310.0091	PASS	5310.0081	PASS	5310.0102	PASS
Max. Deviation (ppm)		1.9	PASS	1.7	PASS	1.6	PASS	2.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5310 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5309.9836	PASS	5309.9844	PASS	5309.9802	PASS	5309.9817	PASS
40	120	5309.9758	PASS	5309.9758	PASS	5309.9786	PASS	5309.9784	PASS
30	120	5309.9922	PASS	5309.9943	PASS	5309.9942	PASS	5309.9947	PASS
20	120	5309.9802	PASS	5309.9792	PASS	5309.9804	PASS	5309.9811	PASS
10	120	5309.9995	PASS	5309.9989	PASS	5309.9948	PASS	5309.998	PASS
0	120	5309.9769	PASS	5309.9785	PASS	5309.9753	PASS	5309.9755	PASS
-10	120	5310.0184	PASS	5310.0195	PASS	5310.0187	PASS	5310.0158	PASS
-20	120	5309.9914	PASS	5309.9926	PASS	5309.9906	PASS	5309.9951	PASS
-30	120	5309.9866	PASS	5309.9831	PASS	5309.9845	PASS	5309.9858	PASS
Max. Deviation (ppm)		-4.4	PASS	-4.6	PASS	-4.7	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5310 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5309.9794	PASS	5309.9788	PASS	5309.9803	PASS	5309.9817	PASS
	120	5309.9802	PASS	5309.9792	PASS	5309.9804	PASS	5309.9811	PASS
	102	5309.9795	PASS	5309.9783	PASS	5309.9803	PASS	5309.9817	PASS
Max. Deviation (ppm)		-3.9	PASS	-4.1	PASS	-3.7	PASS	-3.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5310 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5309.9997	PASS	5309.9975	PASS	5309.9974	PASS	5309.9973	PASS
40	120	5310.026	PASS	5310.0216	PASS	5310.0232	PASS	5310.0233	PASS
30	120	5309.9835	PASS	5309.9872	PASS	5309.9846	PASS	5309.9862	PASS
20	120	5309.991	PASS	5309.9888	PASS	5309.9885	PASS	5309.9882	PASS
10	120	5309.9921	PASS	5309.9928	PASS	5309.9925	PASS	5309.9942	PASS
0	120	5309.9967	PASS	5309.9978	PASS	5309.9984	PASS	5309.9977	PASS
-10	120	5309.9886	PASS	5309.9844	PASS	5309.9843	PASS	5309.9889	PASS
-20	120	5310.0235	PASS	5310.0214	PASS	5310.0234	PASS	5310.0244	PASS
-30	120	5309.9991	PASS	5310.0014	PASS	5309.9995	PASS	5310.0014	PASS
Max. Deviation (ppm)		4.9	PASS	4.1	PASS	4.4	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5310 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5309.99	PASS	5309.9894	PASS	5309.9894	PASS	5309.9888	PASS
	120	5309.991	PASS	5309.9888	PASS	5309.9885	PASS	5309.9882	PASS
	102	5309.9906	PASS	5309.9889	PASS	5309.9885	PASS	5309.9891	PASS
Max. Deviation (ppm)		-1.9	PASS	-2.1	PASS	-2.2	PASS	-2.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5310 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5309.9989	PASS	5309.9956	PASS	5309.9984	PASS	5309.998	PASS
40	120	5309.9757	PASS	5309.98	PASS	5309.9789	PASS	5309.977	PASS
30	120	5309.9899	PASS	5309.9904	PASS	5309.9928	PASS	5309.9953	PASS
20	120	5309.9845	PASS	5309.9874	PASS	5309.9892	PASS	5309.9852	PASS
10	120	5309.9834	PASS	5309.9818	PASS	5309.9819	PASS	5309.9823	PASS
0	120	5310.0174	PASS	5310.0183	PASS	5310.0187	PASS	5310.0176	PASS
-10	120	5310.0101	PASS	5310.0092	PASS	5310.0079	PASS	5310.0074	PASS
-20	120	5309.9795	PASS	5309.9749	PASS	5309.975	PASS	5309.9794	PASS
-30	120	5309.981	PASS	5309.9854	PASS	5309.9837	PASS	5309.9828	PASS
Max. Deviation (ppm)		-4.6	PASS	-4.7	PASS	-4.7	PASS	-4.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5310 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5309.9855	PASS	5309.9876	PASS	5309.9882	PASS	5309.9852	PASS
	120	5309.9845	PASS	5309.9874	PASS	5309.9892	PASS	5309.9852	PASS
	102	5309.9851	PASS	5309.9885	PASS	5309.9884	PASS	5309.9856	PASS
Max. Deviation (ppm)		-2.9	PASS	-2.4	PASS	-2.2	PASS	-2.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5510 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5510.009	PASS	5510.0075	PASS	5510.0092	PASS	5510.0112	PASS
40	120	5510.0133	PASS	5510.0135	PASS	5510.0153	PASS	5510.0138	PASS
30	120	5509.999	PASS	5510.0005	PASS	5510.0009	PASS	5509.9969	PASS
20	120	5509.9933	PASS	5509.9942	PASS	5509.9891	PASS	5509.9918	PASS
10	120	5510.0076	PASS	5510.0069	PASS	5510.0038	PASS	5510.0056	PASS
0	120	5509.9932	PASS	5509.996	PASS	5509.9975	PASS	5509.9958	PASS
-10	120	5509.9855	PASS	5509.9842	PASS	5509.9844	PASS	5509.9851	PASS
-20	120	5510.0198	PASS	5510.0194	PASS	5510.022	PASS	5510.018	PASS
-30	120	5510.0152	PASS	5510.0114	PASS	5510.0117	PASS	5510.0146	PASS
Max. Deviation (ppm)		3.6	PASS	3.5	PASS	4.0	PASS	3.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5510 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5509.9943	PASS	5509.9938	PASS	5509.9887	PASS	5509.9927	PASS
	120	5509.9933	PASS	5509.9942	PASS	5509.9891	PASS	5509.9918	PASS
	102	5509.9942	PASS	5509.9948	PASS	5509.9886	PASS	5509.9915	PASS
Max. Deviation (ppm)		-1.2	PASS	-1.1	PASS	-2.1	PASS	-1.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5510 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5510.0216	PASS	5510.0238	PASS	5510.0194	PASS	5510.0187	PASS
40	120	5510.0246	PASS	5510.0239	PASS	5510.024	PASS	5510.0242	PASS
30	120	5509.9861	PASS	5509.9884	PASS	5509.989	PASS	5509.9882	PASS
20	120	5510.0188	PASS	5510.0187	PASS	5510.015	PASS	5510.0186	PASS
10	120	5509.9996	PASS	5510.0019	PASS	5510.0003	PASS	5510.0039	PASS
0	120	5509.9915	PASS	5509.9907	PASS	5509.9932	PASS	5509.991	PASS
-10	120	5510.0129	PASS	5510.0172	PASS	5510.014	PASS	5510.0123	PASS
-20	120	5510.0086	PASS	5510.0061	PASS	5510.0077	PASS	5510.0065	PASS
-30	120	5510.0105	PASS	5510.0144	PASS	5510.0133	PASS	5510.0105	PASS
Max. Deviation (ppm)		4.5	PASS	4.3	PASS	4.4	PASS	4.4	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5510 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5510.0199	PASS	5510.0179	PASS	5510.014	PASS	5510.018	PASS
	120	5510.0188	PASS	5510.0187	PASS	5510.015	PASS	5510.0186	PASS
	102	5510.0178	PASS	5510.0194	PASS	5510.0153	PASS	5510.0197	PASS
Max. Deviation (ppm)		3.6	PASS	3.5	PASS	2.8	PASS	3.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5510 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5509.9949	PASS	5509.9898	PASS	5509.9927	PASS	5509.9923	PASS
40	120	5509.9769	PASS	5509.9804	PASS	5509.979	PASS	5509.9774	PASS
30	120	5510.0085	PASS	5510.012	PASS	5510.008	PASS	5510.0131	PASS
20	120	5509.9912	PASS	5509.9934	PASS	5509.9913	PASS	5509.9919	PASS
10	120	5510.0172	PASS	5510.0165	PASS	5510.0147	PASS	5510.0138	PASS
0	120	5509.9824	PASS	5509.9808	PASS	5509.9805	PASS	5509.98	PASS
-10	120	5510.0089	PASS	5510.0071	PASS	5510.0101	PASS	5510.0093	PASS
-20	120	5510.0244	PASS	5510.0218	PASS	5510.0214	PASS	5510.0223	PASS
-30	120	5510	PASS	5510.0002	PASS	5510.001	PASS	5510.0039	PASS
Max. Deviation (ppm)		4.4	PASS	4.0	PASS	3.9	PASS	-4.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5510 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5509.9907	PASS	5509.9941	PASS	5509.9904	PASS	5509.993	PASS
	120	5509.9912	PASS	5509.9934	PASS	5509.9913	PASS	5509.9919	PASS
	102	5509.9919	PASS	5509.9939	PASS	5509.9924	PASS	5509.9919	PASS
Max. Deviation (ppm)		-1.7	PASS	-1.2	PASS	-1.7	PASS	-1.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5510 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5510.0037	PASS	5510.003	PASS	5510.0073	PASS	5510.004	PASS
40	120	5510.0265	PASS	5510.0279	PASS	5510.0265	PASS	5510.0229	PASS
30	120	5510.0175	PASS	5510.0124	PASS	5510.0164	PASS	5510.0133	PASS
20	120	5510.0172	PASS	5510.0183	PASS	5510.0204	PASS	5510.0187	PASS
10	120	5510.0096	PASS	5510.008	PASS	5510.0065	PASS	5510.0075	PASS
0	120	5510.0137	PASS	5510.0145	PASS	5510.0109	PASS	5510.0156	PASS
-10	120	5509.9848	PASS	5509.9865	PASS	5509.9824	PASS	5509.9831	PASS
-20	120	5510.0246	PASS	5510.0217	PASS	5510.0208	PASS	5510.0232	PASS
-30	120	5509.9781	PASS	5509.9784	PASS	5509.9763	PASS	5509.9799	PASS
Max. Deviation (ppm)		4.8	PASS	5.1	PASS	4.8	PASS	4.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5510 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5510.0166	PASS	5510.0181	PASS	5510.0214	PASS	5510.0197	PASS
	120	5510.0172	PASS	5510.0183	PASS	5510.0204	PASS	5510.0187	PASS
	102	5510.0167	PASS	5510.0178	PASS	5510.0203	PASS	5510.0186	PASS
Max. Deviation (ppm)		3.1	PASS	3.3	PASS	3.9	PASS	3.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5550 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5549.986	PASS	5549.9887	PASS	5549.9857	PASS	5549.9857	PASS
40	120	5550.0113	PASS	5550.0144	PASS	5550.0111	PASS	5550.0111	PASS
30	120	5550.0008	PASS	5549.9964	PASS	5549.9963	PASS	5550.001	PASS
20	120	5550.0202	PASS	5550.0204	PASS	5550.0178	PASS	5550.02	PASS
10	120	5550.0026	PASS	5549.9976	PASS	5550.0012	PASS	5549.9976	PASS
0	120	5550.0067	PASS	5550.0061	PASS	5550.0073	PASS	5550.0081	PASS
-10	120	5549.994	PASS	5549.9961	PASS	5549.9965	PASS	5549.9953	PASS
-20	120	5550.0295	PASS	5550.0283	PASS	5550.0244	PASS	5550.0251	PASS
-30	120	5550.024	PASS	5550.0236	PASS	5550.021	PASS	5550.0247	PASS
Max. Deviation (ppm)		5.3	PASS	5.1	PASS	4.4	PASS	4.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5550 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5550.02	PASS	5550.0204	PASS	5550.0169	PASS	5550.0193	PASS
	120	5550.0202	PASS	5550.0204	PASS	5550.0178	PASS	5550.02	PASS
	102	5550.0206	PASS	5550.0206	PASS	5550.0184	PASS	5550.0205	PASS
Max. Deviation (ppm)		3.78	PASS	3.7	PASS	3.3	PASS	3.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5550 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5550.0038	PASS	5550.0064	PASS	5550.0052	PASS	5550.0022	PASS
40	120	5550.0223	PASS	5550.0229	PASS	5550.0228	PASS	5550.0219	PASS
30	120	5549.9962	PASS	5549.9961	PASS	5549.9934	PASS	5549.9941	PASS
20	120	5549.9836	PASS	5549.9797	PASS	5549.9814	PASS	5549.98	PASS
10	120	5549.9922	PASS	5549.9947	PASS	5549.9905	PASS	5549.9905	PASS
0	120	5550.0095	PASS	5550.0056	PASS	5550.0076	PASS	5550.0074	PASS
-10	120	5549.987	PASS	5549.9845	PASS	5549.9836	PASS	5549.9888	PASS
-20	120	5550.0235	PASS	5550.0258	PASS	5550.0263	PASS	5550.0257	PASS
-30	120	5550.0102	PASS	5550.0067	PASS	5550.0104	PASS	5550.0055	PASS
Max. Deviation (ppm)		4.2	PASS	4.6	PASS	4.7	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5550 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5549.9827	PASS	5549.98	PASS	5549.9809	PASS	5549.9803	PASS
	120	5549.9836	PASS	5549.9797	PASS	5549.9814	PASS	5549.98	PASS
	102	5549.9837	PASS	5549.9801	PASS	5549.9825	PASS	5549.9811	PASS
Max. Deviation (ppm)		-3.1	PASS	-3.7	PASS	-3.4	PASS	-3.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5550 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5550.0281	PASS	5550.0294	PASS	5550.0275	PASS	5550.0256	PASS
40	120	5549.9818	PASS	5549.9854	PASS	5549.9863	PASS	5549.9818	PASS
30	120	5550.0042	PASS	5550.005	PASS	5550.0069	PASS	5550.0062	PASS
20	120	5550.0028	PASS	5550.0009	PASS	5550.0018	PASS	5550.0047	PASS
10	120	5550.0137	PASS	5550.0144	PASS	5550.01	PASS	5550.0119	PASS
0	120	5550.0032	PASS	5550.0018	PASS	5550.0014	PASS	5550.0043	PASS
-10	120	5550.01	PASS	5550.0065	PASS	5550.0098	PASS	5550.0054	PASS
-20	120	5550.0225	PASS	5550.0211	PASS	5550.0193	PASS	5550.023	PASS
-30	120	5549.9933	PASS	5549.9925	PASS	5549.9947	PASS	5549.9926	PASS
Max. Deviation (ppm)		5.1	PASS	5.3	PASS	5.0	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5550 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5550.0022	PASS	5550.0009	PASS	5550.0027	PASS	5550.0038	PASS
	120	5550.0028	PASS	5550.0009	PASS	5550.0018	PASS	5550.0047	PASS
	102	5550.0031	PASS	5550.0008	PASS	5550.0009	PASS	5550.0054	PASS
Max. Deviation (ppm)		0.6	PASS	0.2	PASS	0.5	PASS	1.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5550 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5549.9894	PASS	5549.9845	PASS	5549.9843	PASS	5549.9852	PASS
40	120	5550.0134	PASS	5550.0173	PASS	5550.0148	PASS	5550.0179	PASS
30	120	5550.0286	PASS	5550.0254	PASS	5550.0283	PASS	5550.0258	PASS
20	120	5550.0128	PASS	5550.0133	PASS	5550.0161	PASS	5550.0156	PASS
10	120	5550.0059	PASS	5550.0066	PASS	5550.0072	PASS	5550.0079	PASS
0	120	5549.9861	PASS	5549.9877	PASS	5549.9853	PASS	5549.9863	PASS
-10	120	5550.0184	PASS	5550.0207	PASS	5550.0199	PASS	5550.0175	PASS
-20	120	5550.0099	PASS	5550.0065	PASS	5550.0082	PASS	5550.0103	PASS
-30	120	5550.0022	PASS	5550.0039	PASS	5550.0041	PASS	5550.0043	PASS
Max. Deviation (ppm)		5.2	PASS	4.6	PASS	5.1	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5550 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5550.0124	PASS	5550.013	PASS	5550.0156	PASS	5550.0153	PASS
	120	5550.0128	PASS	5550.0133	PASS	5550.0161	PASS	5550.0156	PASS
	102	5550.0133	PASS	5550.0136	PASS	5550.0165	PASS	5550.0154	PASS
Max. Deviation (ppm)		2.4	PASS	2.5	PASS	3.0	PASS	2.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5670 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5670.0226	PASS	5670.0213	PASS	5670.0228	PASS	5670.0213	PASS
40	120	5669.9822	PASS	5669.983	PASS	5669.9828	PASS	5669.9849	PASS
30	120	5669.995	PASS	5669.9962	PASS	5669.9979	PASS	5669.998	PASS
20	120	5670.019	PASS	5670.0202	PASS	5670.0211	PASS	5670.0217	PASS
10	120	5670.006	PASS	5670.0056	PASS	5670.0077	PASS	5670.0055	PASS
0	120	5670.0119	PASS	5670.0114	PASS	5670.009	PASS	5670.0136	PASS
-10	120	5670.0008	PASS	5670.001	PASS	5670.0001	PASS	5670.0022	PASS
-20	120	5670.0234	PASS	5670.0235	PASS	5670.0249	PASS	5670.0268	PASS
-30	120	5670.0123	PASS	5670.0126	PASS	5670.0161	PASS	5670.0161	PASS
Max. Deviation (ppm)		4.1	PASS	4.1	PASS	4.4	PASS	4.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5670 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5670.0194	PASS	5670.02	PASS	5670.0205	PASS	5670.0224	PASS
	120	5670.019	PASS	5670.0202	PASS	5670.0211	PASS	5670.0217	PASS
	102	5670.0198	PASS	5670.0203	PASS	5670.0219	PASS	5670.0216	PASS
Max. Deviation (ppm)		3.5	PASS	3.6	PASS	3.9	PASS	4.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5670 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5670.024	PASS	5670.0235	PASS	5670.0232	PASS	5670.026	PASS
40	120	5670.0235	PASS	5670.022	PASS	5670.0209	PASS	5670.0219	PASS
30	120	5669.9784	PASS	5669.9759	PASS	5669.9792	PASS	5669.9759	PASS
20	120	5670.0025	PASS	5669.9995	PASS	5670.0044	PASS	5670.0027	PASS
10	120	5669.9753	PASS	5669.9723	PASS	5669.971	PASS	5669.9742	PASS
0	120	5669.9746	PASS	5669.978	PASS	5669.9756	PASS	5669.9748	PASS
-10	120	5670.0225	PASS	5670.0204	PASS	5670.0201	PASS	5670.0239	PASS
-20	120	5669.9993	PASS	5669.9987	PASS	5669.9992	PASS	5669.9975	PASS
-30	120	5669.9761	PASS	5669.9766	PASS	5669.9767	PASS	5669.9744	PASS
Max. Deviation (ppm)		-4.5	PASS	-4.9	PASS	-5.1	PASS	4.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5670 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5670.0024	PASS	5669.9984	PASS	5670.005	PASS	5670.0033	PASS
	120	5670.0025	PASS	5669.9995	PASS	5670.0044	PASS	5670.0027	PASS
	102	5670.0032	PASS	5669.9985	PASS	5670.0036	PASS	5670.0037	PASS
Max. Deviation (ppm)		0.6	PASS	-0.3	PASS	0.9	PASS	0.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5670 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5669.9895	PASS	5669.9849	PASS	5669.986	PASS	5669.9903	PASS
40	120	5670.0039	PASS	5670.0036	PASS	5670.0036	PASS	5670.0058	PASS
30	120	5670.01	PASS	5670.0127	PASS	5670.0108	PASS	5670.0108	PASS
20	120	5670.0098	PASS	5670.014	PASS	5670.0139	PASS	5670.0137	PASS
10	120	5670.0162	PASS	5670.0164	PASS	5670.018	PASS	5670.0156	PASS
0	120	5669.9953	PASS	5669.9925	PASS	5669.9922	PASS	5669.996	PASS
-10	120	5670.0007	PASS	5670.0037	PASS	5670.0023	PASS	5670.0021	PASS
-20	120	5669.9945	PASS	5669.9979	PASS	5669.9981	PASS	5669.9974	PASS
-30	120	5670.014	PASS	5670.0143	PASS	5670.0134	PASS	5670.0144	PASS
Max. Deviation (ppm)		2.9	PASS	2.9	PASS	3.2	PASS	2.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5670 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5670.0097	PASS	5670.0136	PASS	5670.0131	PASS	5670.0126	PASS
	120	5670.0098	PASS	5670.014	PASS	5670.0139	PASS	5670.0137	PASS
	102	5670.0104	PASS	5670.0146	PASS	5670.0149	PASS	5670.0132	PASS
Max. Deviation (ppm)		1.8	PASS	2.6	PASS	2.6	PASS	2.4	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5670 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5669.9777	PASS	5669.9776	PASS	5669.9751	PASS	5669.9734	PASS
40	120	5669.9804	PASS	5669.9763	PASS	5669.981	PASS	5669.9797	PASS
30	120	5669.9759	PASS	5669.974	PASS	5669.9724	PASS	5669.9727	PASS
20	120	5669.9766	PASS	5669.9801	PASS	5669.9797	PASS	5669.9771	PASS
10	120	5669.9961	PASS	5669.9933	PASS	5669.9915	PASS	5669.9932	PASS
0	120	5670.0054	PASS	5670.005	PASS	5670.0102	PASS	5670.0061	PASS
-10	120	5670.0168	PASS	5670.0168	PASS	5670.0166	PASS	5670.0147	PASS
-20	120	5670.0061	PASS	5670.0028	PASS	5670.005	PASS	5670.0024	PASS
-30	120	5670.0013	PASS	5670.0014	PASS	5670.0003	PASS	5670	PASS
Max. Deviation (ppm)		-4.3	PASS	-4.6	PASS	-4.9	PASS	-4.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5670 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5669.9768	PASS	5669.9806	PASS	5669.9803	PASS	5669.9779	PASS
	120	5669.9766	PASS	5669.9801	PASS	5669.9797	PASS	5669.9771	PASS
	102	5669.9757	PASS	5669.9799	PASS	5669.9805	PASS	5669.9763	PASS
Max. Deviation (ppm)		-4.3	PASS	-3.5	PASS	-3.6	PASS	-4.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5710 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5710.0156	PASS	5710.0136	PASS	5710.0152	PASS	5710.0134	PASS
40	120	5710.0276	PASS	5710.0265	PASS	5710.026	PASS	5710.0302	PASS
30	120	5710.018	PASS	5710.0194	PASS	5710.0219	PASS	5710.0216	PASS
20	120	5709.9785	PASS	5709.9778	PASS	5709.9795	PASS	5709.9754	PASS
10	120	5710.0206	PASS	5710.0202	PASS	5710.0221	PASS	5710.0214	PASS
0	120	5710.0086	PASS	5710.0073	PASS	5710.006	PASS	5710.0052	PASS
-10	120	5710.0164	PASS	5710.0192	PASS	5710.0185	PASS	5710.019	PASS
-20	120	5709.9774	PASS	5709.9785	PASS	5709.9789	PASS	5709.9777	PASS
-30	120	5710	PASS	5709.9992	PASS	5710.0004	PASS	5710.0014	PASS
Max. Deviation (ppm)		4.8	PASS	4.6	PASS	4.6	PASS	5.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5710 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5709.9794	PASS	5709.9779	PASS	5709.98	PASS	5709.9744	PASS
	120	5709.9785	PASS	5709.9778	PASS	5709.9795	PASS	5709.9754	PASS
	102	5709.9775	PASS	5709.9774	PASS	5709.9801	PASS	5709.9747	PASS
Max. Deviation (ppm)		-3.9	PASS	-4.0	PASS	-3.6	PASS	-4.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5710 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5709.9812	PASS	5709.9802	PASS	5709.9786	PASS	5709.9824	PASS
40	120	5709.9757	PASS	5709.9778	PASS	5709.9748	PASS	5709.9779	PASS
30	120	5709.9794	PASS	5709.9816	PASS	5709.9834	PASS	5709.9813	PASS
20	120	5710.0255	PASS	5710.0244	PASS	5710.0281	PASS	5710.0284	PASS
10	120	5709.9875	PASS	5709.9901	PASS	5709.9852	PASS	5709.9877	PASS
0	120	5709.9914	PASS	5709.9913	PASS	5709.9864	PASS	5709.9868	PASS
-10	120	5709.9983	PASS	5709.9935	PASS	5709.9981	PASS	5709.9969	PASS
-20	120	5710.0209	PASS	5710.0215	PASS	5710.0227	PASS	5710.0219	PASS
-30	120	5710.0169	PASS	5710.0177	PASS	5710.0165	PASS	5710.019	PASS
Max. Deviation (ppm)		4.5	PASS	4.3	PASS	4.9	PASS	5.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5710 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5710.0262	PASS	5710.0236	PASS	5710.0278	PASS	5710.0275	PASS
	120	5710.0255	PASS	5710.0244	PASS	5710.0281	PASS	5710.0284	PASS
	102	5710.0251	PASS	5710.0255	PASS	5710.0279	PASS	5710.0294	PASS
Max. Deviation (ppm)		4.6	PASS	4.5	PASS	4.9	PASS	5.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5710 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5709.9953	PASS	5709.9947	PASS	5709.9947	PASS	5709.9982	PASS
40	120	5710.0175	PASS	5710.0211	PASS	5710.0157	PASS	5710.0158	PASS
30	120	5710.0085	PASS	5710.0088	PASS	5710.0093	PASS	5710.0108	PASS
20	120	5710.0072	PASS	5710.0064	PASS	5710.0055	PASS	5710.0038	PASS
10	120	5709.9836	PASS	5709.9802	PASS	5709.9818	PASS	5709.9839	PASS
0	120	5709.9737	PASS	5709.9739	PASS	5709.9777	PASS	5709.9754	PASS
-10	120	5709.9749	PASS	5709.9721	PASS	5709.9722	PASS	5709.9754	PASS
-20	120	5710.0071	PASS	5710.0119	PASS	5710.0124	PASS	5710.0081	PASS
-30	120	5710.0086	PASS	5710.0093	PASS	5710.0072	PASS	5710.0062	PASS
Max. Deviation (ppm)		-4.6	PASS	-4.9	PASS	-4.9	PASS	-4.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5710 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5710.0073	PASS	5710.0065	PASS	5710.0051	PASS	5710.0031	PASS
	120	5710.0072	PASS	5710.0064	PASS	5710.0055	PASS	5710.0038	PASS
	102	5710.0071	PASS	5710.0066	PASS	5710.0059	PASS	5710.0038	PASS
Max. Deviation (ppm)		1.3	PASS	1.2	PASS	1.0	PASS	0.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5710 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5710.0271	PASS	5710.024	PASS	5710.0288	PASS	5710.0276	PASS
40	120	5710.0073	PASS	5710.0056	PASS	5710.0045	PASS	5710.0046	PASS
30	120	5709.982	PASS	5709.9824	PASS	5709.9844	PASS	5709.9824	PASS
20	120	5709.9747	PASS	5709.9747	PASS	5709.9746	PASS	5709.9733	PASS
10	120	5709.9746	PASS	5709.9756	PASS	5709.9734	PASS	5709.9717	PASS
0	120	5709.9966	PASS	5709.9947	PASS	5709.995	PASS	5709.9945	PASS
-10	120	5710.0018	PASS	5710.0055	PASS	5710.0024	PASS	5710.0072	PASS
-20	120	5709.9926	PASS	5709.9947	PASS	5709.993	PASS	5709.9943	PASS
-30	120	5710.003	PASS	5710.0042	PASS	5710.0049	PASS	5710.0062	PASS
Max. Deviation (ppm)		-4.4	PASS	-4.4	PASS	5.0	PASS	-5.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5710 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5709.9742	PASS	5709.9741	PASS	5709.9735	PASS	5709.9735	PASS
	120	5709.9747	PASS	5709.9747	PASS	5709.9746	PASS	5709.9733	PASS
	102	5709.9755	PASS	5709.9755	PASS	5709.9751	PASS	5709.9744	PASS
Max. Deviation (ppm)		-4.5	PASS	-4.5	PASS	-4.6	PASS	-4.7	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5290 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5290.0107	PASS	5290.0131	PASS	5290.0102	PASS	5290.01	PASS
40	120	5289.9853	PASS	5289.9846	PASS	5289.984	PASS	5289.9832	PASS
30	120	5289.9856	PASS	5289.9823	PASS	5289.9852	PASS	5289.9822	PASS
20	120	5289.9881	PASS	5289.9907	PASS	5289.9887	PASS	5289.9897	PASS
10	120	5290.0054	PASS	5290.0027	PASS	5290.0021	PASS	5290.0024	PASS
0	120	5290.0137	PASS	5290.0181	PASS	5290.0147	PASS	5290.016	PASS
-10	120	5289.9787	PASS	5289.9789	PASS	5289.979	PASS	5289.9828	PASS
-20	120	5290.0148	PASS	5290.0153	PASS	5290.0126	PASS	5290.0157	PASS
-30	120	5290.0144	PASS	5290.0179	PASS	5290.0143	PASS	5290.0134	PASS
Max. Deviation (ppm)		-4.0	PASS	-4.0	PASS	-4.0	PASS	-3.4	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5290 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5289.9875	PASS	5289.9898	PASS	5289.9882	PASS	5289.9893	PASS
	120	5289.9881	PASS	5289.9907	PASS	5289.9887	PASS	5289.9897	PASS
	102	5289.9872	PASS	5289.9914	PASS	5289.9879	PASS	5289.989	PASS
Max. Deviation (ppm)		-2.4	PASS	-1.9	PASS	-2.3	PASS	-2.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5290 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5289.9947	PASS	5289.994	PASS	5289.9976	PASS	5289.9964	PASS
40	120	5290.0156	PASS	5290.0182	PASS	5290.0155	PASS	5290.0182	PASS
30	120	5289.9975	PASS	5289.9984	PASS	5289.9966	PASS	5289.9997	PASS
20	120	5290.0085	PASS	5290.0083	PASS	5290.007	PASS	5290.0084	PASS
10	120	5289.9866	PASS	5289.9866	PASS	5289.9858	PASS	5289.9839	PASS
0	120	5290.0204	PASS	5290.0182	PASS	5290.0215	PASS	5290.0213	PASS
-10	120	5290.006	PASS	5290.0026	PASS	5290.0056	PASS	5290.0034	PASS
-20	120	5289.9878	PASS	5289.9845	PASS	5289.9855	PASS	5289.985	PASS
-30	120	5290.0177	PASS	5290.021	PASS	5290.0205	PASS	5290.0182	PASS
Max. Deviation (ppm)		-3.9	PASS	4.0	PASS	4.1	PASS	4.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5290 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5290.0089	PASS	5290.0092	PASS	5290.006	PASS	5290.0082	PASS
	120	5290.0085	PASS	5290.0083	PASS	5290.007	PASS	5290.0084	PASS
	102	5290.0078	PASS	5290.0092	PASS	5290.007	PASS	5290.0084	PASS
Max. Deviation (ppm)		1.7	PASS	1.7	PASS	1.3	PASS	1.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5290 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5290.0115	PASS	5290.0113	PASS	5290.0104	PASS	5290.0121	PASS
40	120	5290.0104	PASS	5290.0084	PASS	5290.0068	PASS	5290.0083	PASS
30	120	5290.0142	PASS	5290.0138	PASS	5290.0139	PASS	5290.0142	PASS
20	120	5289.9809	PASS	5289.9842	PASS	5289.9821	PASS	5289.984	PASS
10	120	5289.9834	PASS	5289.9806	PASS	5289.9847	PASS	5289.98	PASS
0	120	5290.0075	PASS	5290.0073	PASS	5290.0071	PASS	5290.006	PASS
-10	120	5290.0069	PASS	5290.0106	PASS	5290.0102	PASS	5290.0086	PASS
-20	120	5290.0162	PASS	5290.0153	PASS	5290.0116	PASS	5290.0137	PASS
-30	120	5289.9954	PASS	5289.9931	PASS	5289.9954	PASS	5289.9917	PASS
Max. Deviation (ppm)		-3.6	PASS	-3.7	PASS	-3.4	PASS	-3.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5290 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5289.9812	PASS	5289.9834	PASS	5289.9811	PASS	5289.9848	PASS
	120	5289.9809	PASS	5289.9842	PASS	5289.9821	PASS	5289.984	PASS
	102	5289.9813	PASS	5289.9836	PASS	5289.9826	PASS	5289.984	PASS
Max. Deviation (ppm)		-3.6	PASS	-3.1	PASS	-3.6	PASS	-3.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5290 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5289.9983	PASS	5290.0003	PASS	5289.998	PASS	5290.0003	PASS
40	120	5289.997	PASS	5289.9975	PASS	5289.9952	PASS	5289.9963	PASS
30	120	5290.0074	PASS	5290.0065	PASS	5290.0059	PASS	5290.0105	PASS
20	120	5290.0044	PASS	5290.0075	PASS	5290.0057	PASS	5290.0046	PASS
10	120	5290.0042	PASS	5290.0069	PASS	5290.0079	PASS	5290.0047	PASS
0	120	5289.9977	PASS	5289.998	PASS	5290.0003	PASS	5290.0016	PASS
-10	120	5289.9787	PASS	5289.9812	PASS	5289.9788	PASS	5289.9795	PASS
-20	120	5289.9995	PASS	5290.0026	PASS	5290.0008	PASS	5289.9995	PASS
-30	120	5290.016	PASS	5290.0135	PASS	5290.0161	PASS	5290.0135	PASS
Max. Deviation (ppm)		-4.0	PASS	-3.6	PASS	-4.0	PASS	-3.9	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5290 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5290.0034	PASS	5290.0082	PASS	5290.0052	PASS	5290.0056	PASS
	120	5290.0044	PASS	5290.0075	PASS	5290.0057	PASS	5290.0046	PASS
	102	5290.0039	PASS	5290.0073	PASS	5290.0058	PASS	5290.0041	PASS
Max. Deviation (ppm)		0.8	PASS	1.6	PASS	1.1	PASS	1.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5530 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5530.0232	PASS	5530.0241	PASS	5530.0233	PASS	5530.0279	PASS
40	120	5530.0163	PASS	5530.0137	PASS	5530.0154	PASS	5530.0153	PASS
30	120	5530.026	PASS	5530.0221	PASS	5530.0258	PASS	5530.0219	PASS
20	120	5529.9961	PASS	5529.9954	PASS	5529.9965	PASS	5529.9918	PASS
10	120	5530.0136	PASS	5530.01	PASS	5530.0134	PASS	5530.0107	PASS
0	120	5529.989	PASS	5529.9906	PASS	5529.9904	PASS	5529.9919	PASS
-10	120	5529.9904	PASS	5529.9894	PASS	5529.9904	PASS	5529.988	PASS
-20	120	5529.9872	PASS	5529.991	PASS	5529.9903	PASS	5529.9887	PASS
-30	120	5530.0264	PASS	5530.0267	PASS	5530.0252	PASS	5530.0226	PASS
Max. Deviation (ppm)		4.8	PASS	4.8	PASS	4.7	PASS	5.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5530 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5529.9953	PASS	5529.9943	PASS	5529.9964	PASS	5529.9911	PASS
	120	5529.9961	PASS	5529.9954	PASS	5529.9965	PASS	5529.9918	PASS
	102	5529.996	PASS	5529.9949	PASS	5529.9976	PASS	5529.9919	PASS
Max. Deviation (ppm)		-0.8	PASS	-1.0	PASS	-0.7	PASS	-1.6	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5530 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5530.0292	PASS	5530.0276	PASS	5530.0268	PASS	5530.0279	PASS
40	120	5530.0085	PASS	5530.0074	PASS	5530.0062	PASS	5530.0061	PASS
30	120	5529.9996	PASS	5529.9994	PASS	5530.0021	PASS	5529.9998	PASS
20	120	5529.9745	PASS	5529.9754	PASS	5529.9741	PASS	5529.9759	PASS
10	120	5529.9999	PASS	5530.0001	PASS	5530.0007	PASS	5529.9995	PASS
0	120	5529.992	PASS	5529.9923	PASS	5529.9934	PASS	5529.9896	PASS
-10	120	5530.0071	PASS	5530.008	PASS	5530.0074	PASS	5530.0099	PASS
-20	120	5530.0045	PASS	5530.0049	PASS	5530.004	PASS	5530.0028	PASS
-30	120	5530.0179	PASS	5530.0171	PASS	5530.0172	PASS	5530.0164	PASS
Max. Deviation (ppm)		5.3	PASS	5.0	PASS	4.8	PASS	5.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5530 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5529.9754	PASS	5529.975	PASS	5529.9744	PASS	5529.9764	PASS
	120	5529.9745	PASS	5529.9754	PASS	5529.9741	PASS	5529.9759	PASS
	102	5529.9745	PASS	5529.9756	PASS	5529.9735	PASS	5529.975	PASS
Max. Deviation (ppm)		--4.6	PASS	-4.5	PASS	-4.8	PASS	-4.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5530 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5530.025	PASS	5530.0237	PASS	5530.0249	PASS	5530.0238	PASS
40	120	5530.0231	PASS	5530.0198	PASS	5530.0247	PASS	5530.0203	PASS
30	120	5529.9879	PASS	5529.9908	PASS	5529.99	PASS	5529.9874	PASS
20	120	5530.0169	PASS	5530.0208	PASS	5530.0186	PASS	5530.0175	PASS
10	120	5530.0188	PASS	5530.0148	PASS	5530.0195	PASS	5530.0158	PASS
0	120	5530.0209	PASS	5530.0202	PASS	5530.016	PASS	5530.0206	PASS
-10	120	5529.9864	PASS	5529.9828	PASS	5529.9868	PASS	5529.9861	PASS
-20	120	5530.0021	PASS	5530.0012	PASS	5530.006	PASS	5530.0055	PASS
-30	120	5530.0047	PASS	5530.0034	PASS	5530.0026	PASS	5530.0027	PASS
Max. Deviation (ppm)		4.5	PASS	4.3	PASS	4.5	PASS	4.3	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5530 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5530.0169	PASS	5530.0201	PASS	5530.0194	PASS	5530.0177	PASS
	120	5530.0169	PASS	5530.0208	PASS	5530.0186	PASS	5530.0175	PASS
	102	5530.0173	PASS	5530.0205	PASS	5530.0188	PASS	5530.0165	PASS
Max. Deviation (ppm)		3.1	PASS	3.8	PASS	3.5	PASS	3.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5530 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5530.0144	PASS	5530.0134	PASS	5530.0118	PASS	5530.0092	PASS
40	120	5530.0235	PASS	5530.0258	PASS	5530.0219	PASS	5530.0218	PASS
30	120	5529.9786	PASS	5529.9772	PASS	5529.9791	PASS	5529.979	PASS
20	120	5530.0115	PASS	5530.0128	PASS	5530.0085	PASS	5530.0114	PASS
10	120	5530.0091	PASS	5530.0091	PASS	5530.0077	PASS	5530.0112	PASS
0	120	5530.0139	PASS	5530.0139	PASS	5530.0163	PASS	5530.0158	PASS
-10	120	5530.0243	PASS	5530.029	PASS	5530.029	PASS	5530.0288	PASS
-20	120	5530.0276	PASS	5530.0238	PASS	5530.0264	PASS	5530.0281	PASS
-30	120	5530.0234	PASS	5530.0252	PASS	5530.0276	PASS	5530.0258	PASS
Max. Deviation (ppm)		5.0	PASS	5.2	PASS	5.2	PASS	5.2	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5530 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5530.0109	PASS	5530.012	PASS	5530.0075	PASS	5530.0105	PASS
	120	5530.0115	PASS	5530.0128	PASS	5530.0085	PASS	5530.0114	PASS
	102	5530.0118	PASS	5530.0128	PASS	5530.008	PASS	5530.0108	PASS
Max. Deviation (ppm)		2.1	PASS	2.3	PASS	1.5	PASS	2.1	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5610 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5609.9758	PASS	5609.9735	PASS	5609.9736	PASS	5609.9742	PASS
40	120	5609.9855	PASS	5609.9853	PASS	5609.985	PASS	5609.9865	PASS
30	120	5609.9875	PASS	5609.9847	PASS	5609.9864	PASS	5609.9841	PASS
20	120	5609.9708	PASS	5609.9722	PASS	5609.9713	PASS	5609.9705	PASS
10	120	5610.0271	PASS	5610.0277	PASS	5610.0272	PASS	5610.0271	PASS
0	120	5609.9779	PASS	5609.9794	PASS	5609.9758	PASS	5609.9762	PASS
-10	120	5610.011	PASS	5610.0125	PASS	5610.01	PASS	5610.011	PASS
-20	120	5610.004	PASS	5610.0072	PASS	5610.0036	PASS	5610.0035	PASS
-30	120	5610.0069	PASS	5610.0081	PASS	5610.0063	PASS	5610.0089	PASS
Max. Deviation (ppm)		4.8	PASS	-5.0	PASS	-5.1	PASS	4.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5610 MHz Chain1									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5609.9706	PASS	5609.9716	PASS	5609.9722	PASS	5609.9702	PASS
	120	5609.9708	PASS	5609.9722	PASS	5609.9713	PASS	5609.9705	PASS
	102	5609.9701	PASS	5609.9723	PASS	5609.9716	PASS	5609.9695	PASS
Max. Deviation (ppm)		-5.3	PASS	-5.1	PASS	-5.1	PASS	-5.4	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5610 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5610.0199	PASS	5610.0155	PASS	5610.0183	PASS	5610.0167	PASS
40	120	5609.9926	PASS	5609.9925	PASS	5609.9946	PASS	5609.9932	PASS
30	120	5609.9956	PASS	5609.9983	PASS	5609.9965	PASS	5609.9959	PASS
20	120	5609.978	PASS	5609.9827	PASS	5609.9799	PASS	5609.9793	PASS
10	120	5609.9793	PASS	5609.9815	PASS	5609.9789	PASS	5609.9788	PASS
0	120	5609.9992	PASS	5609.9945	PASS	5609.9958	PASS	5609.9957	PASS
-10	120	5609.9989	PASS	5610.0002	PASS	5609.9991	PASS	5610.0004	PASS
-20	120	5610.0107	PASS	5610.0075	PASS	5610.0096	PASS	5610.0055	PASS
-30	120	5610.0136	PASS	5610.0139	PASS	5610.0169	PASS	5610.0171	PASS
Max. Deviation (ppm)		-3.9	PASS	-3.3	PASS	-3.8	PASS	-3.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5610 MHz Chain2									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5609.9783	PASS	5609.9837	PASS	5609.9805	PASS	5609.9803	PASS
	120	5609.978	PASS	5609.9827	PASS	5609.9799	PASS	5609.9793	PASS
	102	5609.979	PASS	5609.9829	PASS	5609.9794	PASS	5609.9786	PASS
Max. Deviation (ppm)		-3.9	PASS	-3.1	PASS	-3.7	PASS	-3.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5610 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5609.9947	PASS	5609.9923	PASS	5609.9958	PASS	5609.9963	PASS
40	120	5610.027	PASS	5610.029	PASS	5610.0272	PASS	5610.0269	PASS
30	120	5610.0245	PASS	5610.0274	PASS	5610.0266	PASS	5610.025	PASS
20	120	5609.9838	PASS	5609.9833	PASS	5609.9828	PASS	5609.9831	PASS
10	120	5610.01	PASS	5610.0105	PASS	5610.0078	PASS	5610.0077	PASS
0	120	5610.0183	PASS	5610.0199	PASS	5610.0203	PASS	5610.0209	PASS
-10	120	5610.0265	PASS	5610.0262	PASS	5610.025	PASS	5610.0262	PASS
-20	120	5610.0168	PASS	5610.0171	PASS	5610.0157	PASS	5610.014	PASS
-30	120	5609.996	PASS	5609.9966	PASS	5609.9934	PASS	5609.9958	PASS
Max. Deviation (ppm)		4.8	PASS	5.2	PASS	4.8	PASS	4.8	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5610 MHz Chain3									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5609.9838	PASS	5609.9844	PASS	5609.9833	PASS	5609.9838	PASS
	120	5609.9838	PASS	5609.9833	PASS	5609.9828	PASS	5609.9831	PASS
	102	5609.9845	PASS	5609.9843	PASS	5609.9832	PASS	5609.9832	PASS
Max. Deviation (ppm)		-2.9	PASS	-3.0	PASS	-3.1	PASS	-3.0	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Temp.									
Operating Frequency: 5610 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
50	120	5609.9888	PASS	5609.9895	PASS	5609.9922	PASS	5609.9905	PASS
40	120	5610.0187	PASS	5610.02	PASS	5610.0177	PASS	5610.0194	PASS
30	120	5610.0000	PASS	5610.0018	PASS	5609.9979	PASS	5610.0004	PASS
20	120	5610.0076	PASS	5610.0078	PASS	5610.0097	PASS	5610.0101	PASS
10	120	5610.0222	PASS	5610.0269	PASS	5610.0264	PASS	5610.0251	PASS
0	120	5610.0056	PASS	5610.009	PASS	5610.0082	PASS	5610.0097	PASS
-10	120	5610.0096	PASS	5610.0088	PASS	5610.0095	PASS	5610.0081	PASS
-20	120	5609.999	PASS	5609.9989	PASS	5609.9999	PASS	5609.9973	PASS
-30	120	5610.0275	PASS	5610.0229	PASS	5610.0274	PASS	5610.0228	PASS
Max. Deviation (ppm)		4.9	PASS	4.8	PASS	4.9	PASS	4.5	PASS
IEEE Limit (ppm)		±20ppm							

Frequency Stability Versus Voltage									
Operating Frequency: 5610 MHz Chain4									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail	Measured Frequency (MHz)	Pass/ Fail
20	138	5610.0083	PASS	5610.0074	PASS	5610.01	PASS	5610.0102	PASS
	120	5610.0076	PASS	5610.0078	PASS	5610.0097	PASS	5610.0101	PASS
	102	5610.0075	PASS	5610.0073	PASS	5610.0087	PASS	5610.0096	PASS
Max. Deviation (ppm)		1.5	PASS	1.4	PASS	1.8	PASS	1.8	PASS
IEEE Limit (ppm)		±20ppm							

5 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS 30	100288	Aug. 18, 2016	Aug. 17, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 26, 2016	Jul. 25, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2040.

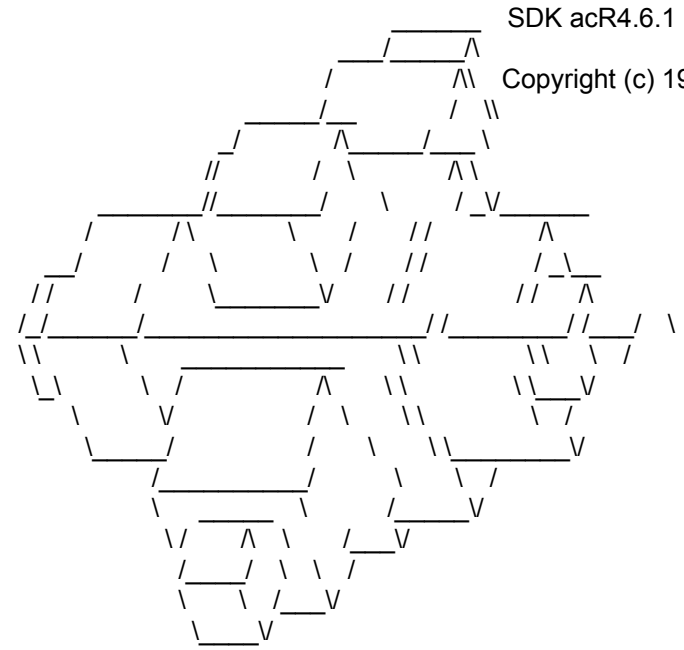
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY54450088	Jul. 20, 2016	Jul. 19, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Apr. 19, 2016	Apr. 18, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8449B	3008A01638	Feb. 26, 2016	Feb. 25, 2017
Preamplifier Agilent	8447D	2944A10638	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER+	SUCOFLEX 104	CABLE-CH9-02 (248780+MY13377)	Feb. 02, 2017	Feb. 01, 2018
			Feb. 02, 2017	Feb. 01, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-03 (274092)	Aug. 09, 2016	Aug. 08, 2017
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 09, 2016	Aug. 08, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 215374.
5. The IC Site Registration No. is IC 7450F-9.

Appendix A. List of Test Command

```
BusyBox v1.10.3 (2017-04-24 22:01:47 UTC) built-in shell (ash)
Enter 'help' for a list of built-in commands.

------------------------------------------------------------------------
```




```
------------------------------------------------------------------------
Hash quantenna :1caf470d9523f700470ae92864828e6dea28f285
Hash sdk_ac       :6ceaa4b86bc22eee9624a358f3b791339f0f1bd0

========================================================================
{Administrator}=>tch_get_env.sh SDK_VERSION
37.4.5.97
========================================================================

============================================
20MHz power table
============================================
{Administrator}=>call_qcsapi set_bw wifi0 20
radar start with regulatory us
complete
{Administrator}=>show_tx_power_table
Regulatory Region: us
                    TX Power
Channel     80M         40M         20M
    36        17          17          21
    36        17          17          21
    36        17          17          21
    36        17          17          21
    36        18          16          20
    36        18          16          20
    36        18          16          20
    36        18          16          20
    40        17          17          21
    40        17          17          21
```

40	17	17	21
40	17	17	21
40	18	16	21
40	18	16	21
40	18	16	21
40	18	16	21
44	17	21	21
44	17	21	21
44	17	21	21
44	17	21	21
44	18	21	21
44	18	21	21
44	18	21	21
44	18	21	21
48	17	21	21
48	17	21	21
48	17	21	21
48	17	21	21
48	18	21	21
48	18	21	21
48	18	21	21
48	18	21	21
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
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64	17	17	17
64	17	17	17
100	16	17	18
100	16	17	18
100	16	17	18
100	16	17	18
100	16	15	16
100	16	15	16

100	16	15	16
100	16	15	16
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104	16	15	16
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128	17	17	18
128	17	17	18
128	17	17	16
128	17	17	16
128	17	17	16
128	17	17	16
132	18	18	18
132	18	18	18

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157	21	21	21
157	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21

161	21	21	21
161	21	21	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21
165	-1	-1	21

==========
40MHz power table
==========
{Administrator}=>call_qcsapi set_bw wifi0 40
radar start with regulatory us
complete
{Administrator}=>show_tx_power_table
Regulatory Region: us

	TX Power		
Channel	80M	40M	20M
36	17	17	21
36	17	17	21
36	17	17	21
36	17	17	21
36	18	16	20
36	18	16	20
36	18	16	20
36	18	16	20
40	17	17	21
40	17	17	21
40	17	17	21
40	17	17	21
40	18	16	21
40	18	16	21
40	18	16	21
40	18	16	21
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44	18	21	21
44	18	21	21
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48	17	21	21
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48	17	21	21
48	18	21	21
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48	18	21	21
48	18	21	21
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18

52	17	18	18
52	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
56	17	18	18
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116	17	16	17
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144	18	17	18
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144	17	16	18
144	17	16	18

144	17	16	18
144	17	16	18
149	21	21	21
149	21	21	21
149	21	21	21
149	21	21	21
149	21	21	21
149	21	21	21
149	21	21	21
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157	21	21	21
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157	21	21	21
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157	21	21	21
157	21	21	21
157	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21
161	21	21	21

==========
80MHz power table
==========
{Administrator}=>call_qcsapi set_bw wifi0 80
radar start with regulatory us
complete
{Administrator}=>show_tx_power_table
Regulatory Region: us

	TX Power		
Channel	80M	40M	20M
36	17	17	21
36	17	17	21
36	17	17	21
36	17	17	21
36	18	16	20
36	18	16	20
36	18	16	20
36	18	16	20
40	17	17	21
40	17	17	21
40	17	17	21
40	17	17	21
40	18	16	21
40	18	16	21

40	18	16	21
40	18	16	21
44	17	21	21
44	17	21	21
44	17	21	21
44	17	21	21
44	18	21	21
44	18	21	21
44	18	21	21
44	18	21	21
48	17	21	21
48	17	21	21
48	17	21	21
48	17	21	21
48	18	21	21
48	18	21	21
48	18	21	21
48	18	21	21
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
52	17	18	18
56	17	18	18
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56	17	18	18
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56	17	18	18
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100	16	17	18
100	16	17	18
100	16	15	16
100	16	15	16
100	16	15	16
100	16	15	16
104	16	17	18
104	16	17	18

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104	16	15	16
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108	16	17	18
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112	16	17	18
112	16	17	18
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112	16	16	16
112	16	16	16
116	17	17	18
116	17	17	18
116	17	17	18
116	17	17	18
116	17	16	17
116	17	16	17
116	17	16	17
116	17	16	17
120	17	17	18
120	17	17	18
120	17	17	18
120	17	17	18
120	17	16	16
120	17	16	16
120	17	16	16
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```
=======================================
============TPC Script ===============
=======================================
{Administrator}=>cd /mnt/jffs2
{Administrator}=>ls
admin.conf                hostapd.deny.wifi2      tch_upgrade.conf
enable_autostart          httpd-disabled          tpc_eur_band2_new.sh
eth_macaddr               per_ssid_config.txt     wifi_mac_addrs
hostapd.conf              tch_cwmp_conf           wireless_conf.txt
hostapd.deny.wifi0        tch_monitor.conf        wireless_conf.txt.bak
hostapd.deny.wifi1        tch_ntp.conf

{Administrator}=>./tpc_eur_band2_new.sh



============================================
=====tpc_eur_band2_new_2.sh programming=====
============================================
#!/bin/sh
sleep_time=5
band2_ch="52"
band2_ch_max="144"
start_pow=18
threshold=-40

iwpriv wifi0 pppc 0
backoff_pow=$((start_pow-7))

#echo "Infinite loop [ hit CTRL+C to stop ]"
while true ;
do
        ch=`call_qcsapi get_channel wifi0`
        if [ "${ch}" -lt "${band2_ch}" -o "${ch}" -gt "${band2_ch_max}" ]; then
                continue
        fi

            cur_rssi="$(call_qcsapi get_rssi_dbm wifi0 0)"
            #echo "Current distance ${cur_rssi}dBm"
            if [ "${cur_rssi}" -lt "$((threshold + 1))" ]; then

                        #echo "set_tx_pow ${start_pow}"
                        set_tx_pow ${start_pow}
            else

                        #echo "set_tx_pow ${backoff_pow}"
                        set_tx_pow ${backoff_pow}
            fi

        #show_transmit_power
        #tell_pd_voltage_level
        sleep ${sleep_time}
done
```

Appendix B. Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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