FCC Test Report

Equipment	:	**Wireless .11ac Smart Ultra-Broadband Gateway with Integrated Video Bridge**
Trade Name	:	**technicolor**
Model Number	:	**C2100T**
Product Code	:	**BAC2100T**
FCC ID	:	**RSE-C2100T**
Standard	:	**47 CFR FCC Part 15.407**
Operating Band	:	**5250 MHz – 5350 MHz** **5470 MHz – 5725 MHz**
FCC Classification	:	**UNII**
Applicant	:	**Technicolor Delivery Technologies Belgium**
	:	Prins Boudewijnlaan 47 B-2650 Edegem Belgium
Function	:	☐ **Outdoor AP;** ☒ **Indoor AP;** ☐ **Fixed P2P AP** ☐ **Portable Client**

The product sample received on Jun. 24, 2014 and completely tested on Jan. 18, 2015. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Kevin Liang / Assistant Manager

Testing Laboratory
1190

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Summary of Test Result

Applied Standard: 47 CFR FCC Part 15 Subpart E					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
3.1	15.407(b) (6)	AC Power Conducted Emissions	[dBuV]: 0.346461MHz 43.59 (Margin 5.46dB) - AV 44.71 (Margin 14.34dB) - QP	FCC 15.207	Complied
3.2	15.407(e)	Emission bandwidth	Bandwidth [MHz] 20M: 27.15 / 40M: 47.36 80M: 83.44	Information only	Complied
3.3	15.407 (a)(1/2/3)	Max Average Transmit Power	Power [dBm] 20M: 23.57 / 40M: 23.93 80M: 23.07	Power [dBm] 5250-5350MHz: 24 5470-5725MHz: 24	Complied
3.4	15.407 (a)(1/2/3)	Peak Power Spectral Density	PPSD [dBm/MHz] 20M: 10.99 / 40M: 8.58 80M: 4.81	PPSD [dBm/MHz]: 5250-5350MHz:11 5470-5725MHz:11	Complied
4.9	15.407 (b) (1/2/3/4/6)	Transmitter Unwanted Emissions	Restricted Bands [dBuV/m at 3m]: 15900MHz 52.60 (Margin 1.40dB) - AV 67.15 (Margin 6.85dB) - PK	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied
4.11	15.407 (b) (1/2/3/4/6)	Band Edge Measurement	Restricted Bands [dBuV/m at 3m]: 5350.20MHz 73.26 (Margin 0.74dB) - PK 53.86 (Margin 0.14dB) - AV	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied
6	15.407(g)	Frequency Stability	7.31ppm	Signal shall remain in-band	Complied

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	$\pm 8.5\times10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

Revision History

Report No.	Version	Description	Issued Date
FR462540AI	Rev. 02	Initial issue of report	Apr. 01, 2015
FR462540AI	Rev. 04	Revised test result of 26dB Emission bandwidth	Apr. 14, 2015
FR462540AI	Rev. 05	upgrade PSD of straddle channels	Aug. 13, 2015
FR462540AI	Rev. 06	upgrade power & PSD of straddle channels	Aug. 24, 2015
FR462540AI	Rev. 07	update radiated emissions measurement and add appendix D.	Oct. 06, 2015
FR462540AI	Rev. 08	Update emissions measurement test procedures	Oct. 19, 2015

1 General Description

1.1 Information

1.1.1 Equipment under Test

Equipment Name: Wireless .11ac Smart Ultra-Broadband Gateway with Integrated Video Bridge
Model Number: C2100T
Trade Name: technicolor
Product Code: BAC2100T
Power Supply: 1. Switching-Type, 12Vdc, 2.8A, Manufacturer: Ac Bel, Model: WAC011
P/N: DSL37288710
AC Power Cord: Wall-mount, 2pin
Hardware Version: LAB2

Interface Availability

Interface / Model	DC 12Vdc 2.8A	HPNA	Ethernet 10/100/ 1000Mbps	LAN/WAN 10/100/ 1000Mbps	USB 2. 0	FXS	DSL	WLAN IEEE 802.11a/b/g/n/ ac(2.4GHz2*2/ 5GHz 4*4)
C2100T	●	●	●(4 port)	●(1 port)	●(1 port)	●(2 port)	●(1 port)	●

● : Equipped
○ : Not Equipped

1.2 Application of standard

US Standard: 47 CFR FCC Part 15 Subpart E § 15.407

ANSI C63.4-2003

ANSI C63.10-2009

KDB662911 D01 Multiple Transmitter Output v02r01, 10/31/2013

KDB789033 D02 General UNII Test Procedures New Rules v01, 06/06/2014

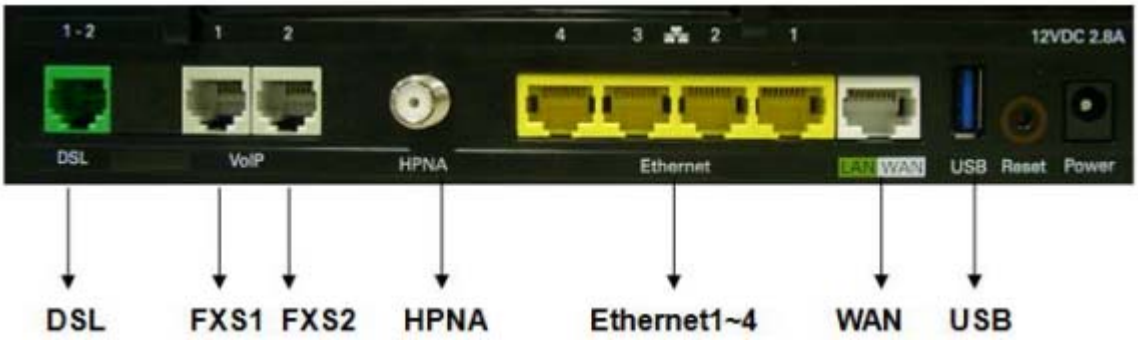
KDB644545 D03 Guidance for 802 11ac New Rules v01, 08/14/2014

1.3 Cabling Attached to the Equipment

Table 1- 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
DSL	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
Line 1/2	UTP Cat 3	2 meter	> 10 meter	1 meter flat cable	Internal
USB	STP	1 meter	< 3 meter	1 meter	Internal
HPNA	coaxial	2 meter	> 10 meter	10 meter	Internal
AC power					External

1.4 Panel Drawing



2 General Information

2.1 Product Details

Items	Description			
PRODUCT	Stand alone			
MODEL NO.	C2100T			
FCC ID	RSE- C2100T			
Power Type	From power adapter			
EUT Stage	■	Product Unit	□	Pre-Sample
ANTENNA TYPE	Please see Section 2.4			
Operating Band, Conducted power	**U-NII-1** 5150~5250MHz		□	IEEE 802.11a:
			□	IEEE 802.11n (20MHz):
			□	IEEE 802.11n (40MHz):
			□	IEEE 802.11ac (20MHz):
			□	IEEE 802.11ac (40MHz):
			□	IEEE 802.11ac (80MHz):
	U-NII-2A 5250~5350MHz		■	IEEE 802.11a: 21.94
			■	IEEE 802.11n (20MHz): 23.57
			■	IEEE 802.11n (40MHz): 23.93
			■	IEEE 802.11ac (20MHz): 23.57
			■	IEEE 802.11ac (40MHz): 23.93
			■	IEEE 802.11ac (80MHz): 23.07
	U-NII-2C 5470~ 5725 MHz		■	IEEE 802.11a: 21.45
			■	IEEE 802.11n (20MHz): 23.38
			■	IEEE 802.11n (40MHz): 23.47
			■	IEEE 802.11ac (20MHz): 23.38
			■	IEEE 802.11ac (40MHz): 23.47
			■	IEEE 802.11ac (80MHz): 21.85
	U-NII-3 5725~ 5850 MHz		□	IEEE 802.11a:
			□	IEEE 802.11n (20MHz):
			□	IEEE 802.11n (40MHz):
			□	IEEE 802.11ac (20MHz):
			□	IEEE 802.11ac (40MHz):
			□	IEEE 802.11ac (80MHz):
Product Type	For IEEE 802.11a: WLAN(4TX, 4RX) For IEEE 802.11n: WLAN(4TX, 4RX) For IEEE 802.11ac: WLAN (4TX, 4RX)			

Nominal Channel Bandwidth	20MHz / 40MHz/ 80MHz			
Modulation	802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11n: (BPSK / QPSK / 16QAM / 64QAM)See the below table. 802.11ac:(BPSK / QPSK / 16QAM / 64QAM/ 256QAM)See the below table			
Data Rate (Mbps)	11a mode :OFDM (6/9/12/18/24/36/48/54) 11n(20MHz) mode(MCS0~MCS23); 11n(40MHz) mode(MCS0~MCS23) 11ac(20MHz) mode (MCS0~MCS9 for Nss1~Nss4) 11ac(40MHz) mode (MCS0~MCS9 for Nss1~Nss4) 11ac(80MHz) mode (MCS0~MCS9 for Nss1~Nss4)			
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 LAN/WAN Port x 1 USB Host Port x 1 FXS Port x 2 DSL Port x 1 HPNA Port x 1(Coaxial type)			
Software Version	v36.7.1.23 support TPC function			
Associated Devices	Switching-Type DC power supply			

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 4 stream	MCS0	6.5	7.2	11n 40MHz 4 stream	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 4 stream	MCS8	13	14.4	11n 40MHz 4 stream	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 4 stream	MCS16	19.5	21.7	11n 40MHz 4 stream	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 4 stream	MCS24	26	28.9	11n 40MHz 4 stream	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 N_{SS} = 1	MCS0	6.5	7.2	11ac 40MHz N_{SS} = 1	MCS0	13.5	15.0	11ac 80MHz N_{SS} = 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(N_{CBPS}/N_{ES}, D_R) 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 N_{SS} = 2	MCS0	13.0	14.4	11ac 40MHz N_{SS} = 2	MCS0	27.0	30.0	11ac 80MHz N_{SS} = 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 N_{SS} = 3	MCS0	19.5	21.7	11ac 40MHz N_{SS} = 3	MCS0	40.5	45.0	11ac 80MHz N_{SS} = 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(N_{CBPS}/N_{ES}, D_R) 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 N_{SS} = 4	MCS0	26.0	28.9	11ac 40MHz N_{SS} = 4	MCS0	54.0	60.0	11ac 80MHz N_{SS} = 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.											

2.2 Transmit Operating Modes

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	□	1TX	□	2TX	□	3TX	■	4TX		
□	802.11n(20MHz)	Operating mode	□	1TX	□	2TX	□	3TX	■	4TX		
□	802.11n(40MHz)	Operating mode	□	1TX	□	2TX	□	3TX	■	4TX		
□	802.11ac(20MHz)	Operating mode	□	1TX	□	2TX	□	3TX	■	4TX		
□	802.11ac(40MHz)	Operating mode	□	1TX	□	2TX	□	3TX	■	4TX		
□	802.11ac(80MHz)	Operating mode	□	1TX	□	2TX	□	3TX	■	4TX		

For IEEE802.11n 20/40 MHz, MCS0~MCS31: 4TX only
For IEEE802.11ac 20/40/80 MHz, Nss1MCS0~Nss1MCS9: 1 Stream 4TX; Nss2MCS0~Nss2MCS9: 2 Stream 4TX; Nss3MCS0~Nss3MCS9: 3 Stream 4TX; Nss4MCS0~Nss4MCS9: 4 Stream 4TX

2.3 Accessories

Power	Brand	Model	Rating
Adapter	Ac Bel	WAC011	I/P: 100-240V~50-60Hz 1A; O/P: 12V⎓2.8A

2.4 Antenna Requirements

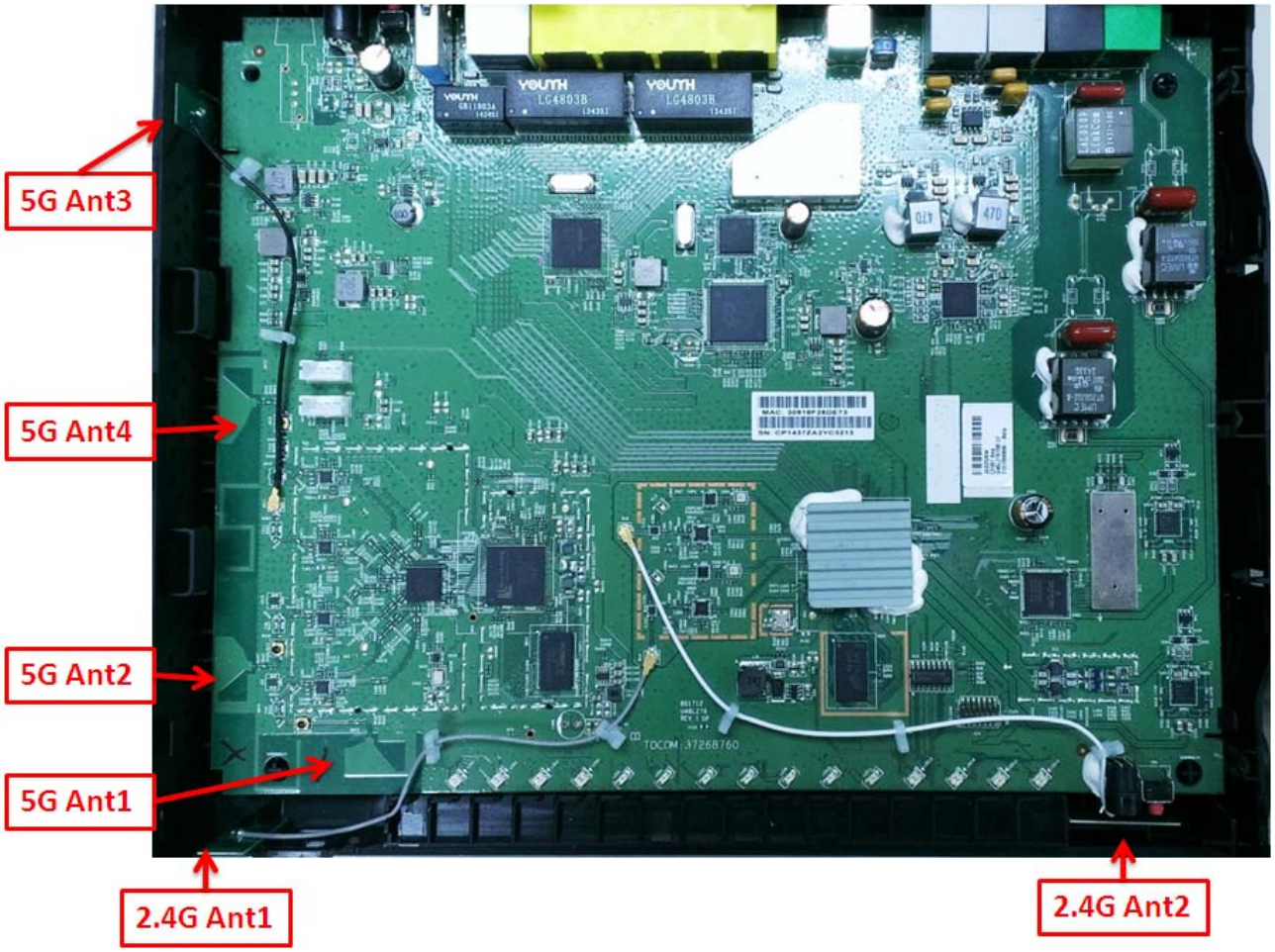
Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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.

2.5 Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector
1	-	NA	Print Antenna	NA
2	-	NA	Print Antenna	NA
3	M.gear	C107-511102-A	PCB Antenna	I-PEX
4	-	NA	Print Antenna	NA

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



Frequency	Maximum Gain (dBi) for CDD and TxBF mode					
	CDD mode (1 Stream 4 TX) for Power & PSD Gain			TxBF mode (2 Stream 4 TX) for Power & PSD Gain		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	6.10			3.25		
5190MHz		6.00			2.99	
5200MHz	6.08			3.26		
5210MHz			6.21			3.40
5230MHz		6.05			3.29	
5240MHz	6.16			3.51		
5260MHz	5.94			3.15		
5270MHz		5.84			3.04	
5290MHz			5.79			3.04
5300MHz	5.94			3.09		
5310MHz		6.11			3.44	
5320MHz	5.69			2.99		
5500MHz	6.48			3.53		
5510MHz		6.38			3.43	
5530MHz			6.35			3.41
5550MHz		6.35			3.39	
5580MHz	6.41			3.44		
5670MHz		6.69			3.72	
5690MHz			6.92			3.92
5700MHz	6.49			3.49		
5710MHz		7.09			4.09	
5720MHz	7.21			4.22		
5745MHz	6.95			3.96		
5755MHz		6.84			3.86	
5775MHz			6.80			3.83
5785MHz			6.30			3.32
5795MHz		6.77			3.78	
5825MHz	6.56			3.73		

Frequency	Maximum Gain (dBi) for TxBF mode					
	TxBF mode (3 Stream 4 TX) for Power & PSD Gain			TxBF mode (4 Stream 4 TX) for Power & PSD Gain		
	20 MHz	40 MHz	80MHz	20 MHz	40 MHz	80MHz
5180MHz	5.38			0.45		
5190MHz		5.48			0.61	
5200MHz	5.35			0.28		
5210MHz			5.50			0.43
5230MHz		5.43			0.33	
5240MHz	5.70			0.52		
5260MHz	5.28			0.45		
5270MHz		5.11			0.25	
5290MHz			5.24			0.30
5300MHz	5.35			0.10		
5310MHz		5.73			0.44	
5320MHz	5.27			0.52		
5500MHz	4.98			0.60		
5510MHz		4.93			0.49	
5530MHz			4.91			0.46
5550MHz		4.74			0.42	
5580MHz	4.74			0.47		
5670MHz		4.36			0.75	
5690MHz			5.08			0.98
5700MHz	4.41			0.53		
5710MHz		5.10			1.15	
5720MHz	5.19			1.26		
5745MHz	5.04			1.03		
5755MHz		4.83			0.90	
5775MHz			4.86			0.86
5785MHz			4.25			0.33
5795MHz		5.16			1.10	
5825MHz	5.33			1.07		

Maximum Correlated Directional Gain = 10 log[(10$^{G1/20}$ + 10$^{G2/20}$ + … + 10$^{GN/20}$)^2 / N$_{ANT}$] dBi

Maximum Uncorrelated Directional Gain = 10 log[(10$^{G1/10}$ + 10$^{G2/10}$ + … + 10$^{GN/10}$) / N$_{ANT}$] dBi

2.6 Table for Carrier Frequencies

22 channels are provided for 802.11a / 802.11n / 802.11ac (20MHz):

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	40	5200 MHz	48	5240 MHz
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	132	5660 MHz
	104	5520 MHz	136	5680 MHz
	108	5540 MHz	140	5700 MHz
	112	5560 MHz	144	5720 MHz
	116	5580 MHz	-	-
5725~5850 MHz Band 4	149	5745 MHz	161	5805 MHz
	153	5765 MHz	165	5825 MHz
	157	5785 MHz	-	-

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

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	38	5190 MHz	46	5230 MHz
5250~5350 MHz Band 2	54	5270 MHz	62	5310 MHz
5470~5725 MHz Band 3	102	5510 MHz	134	5670 MHz
	110	5550 MHz	142	5710 MHz
5725~5850 MHz Band 4	151	5755 MHz	159	5795 MHz

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

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	42	5210 MHz	138	5690 MHz
5250~5350 MHz Band 2	58	5290 MHz	-	-
5470~5725 MHz Band 3	106	5530 MHz	-	-
5725MHz ~ 5850 MHz Band 4	155	5775 MHz	-	-

2.7 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(80MHz)	OFDM/BPSK	106	Nss1 MCS0	1+2+3+4(CDD)
				Nss3 MCS0	1+2+3+4 (TxBF)
Emission bandwidth	11a	OFDM/BPSK	52/60/64 100/116/140/144	6Mbps	1+2+3+4(CDD)
	11ac(20MHz)		52/60/64 100/116/140/144	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(40MHz)		54/62 102/110/134/142	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(80MHz)		58 106/138	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
Maximum Peak Output Power Maximum Average Output Power	11a	OFDM/BPSK	52/60/64 100/116/140/144	6Mbps	1+2+3+4(CDD)
	11ac(20MHz)		52/60/64 100/116/140/144	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(40MHz)		54/62 102/110/134/142	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(80MHz)		58 106/138	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
Power Spectral Density	11a	OFDM/BPSK	52/60/64 100/116/140/144	6Mbps	1+2+3+4(CDD)
	11ac(20MHz)		52/60/64 100/116/140/144	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(40MHz)		54/62 102/110/134/142	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(80MHz)		58 106/138	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)

Unwanted emissions in the restricted bands Above 1GHz (Radiated)	11a	OFDM/BPSK	52/60/64 100/116/140/144	6Mbps	1+2+3+4(CDD)
	11ac(20MHz)		52/60/64 100/116/140/144	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(40MHz)		54/62 102/110/134/142	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(80MHz)		58 106/138	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
Unwanted Emission out of the restricted bands Above 1GHz (Radiated)	11a	OFDM/BPSK	52/60/64 100/116/140/144	6Mbps	1+2+3+4(CDD)
	11ac(20MHz)		52/60/64 100/116/140/144	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(40MHz)		54/62 102/110/134/142	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
	11ac(80MHz)		58 106/138	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
Radiated Emissions Below 1GHz(Radiated)	11ac(80MHz)	OFDM/BPSK	106	Nss1 MCS0	1+2+3+4(CDD)
				Nss2 MCS0	1+2+3+4 (TxBF)
				Nss3 MCS0	1+2+3+4 (TxBF)
Frequency Stability	20MHz	Un-modulation	52/60/64 100/116/140/144	-	1, 2, 3, 4
	40MHz		54/62 102/110/134/142	-	1, 2, 3, 4
	80MHz		58 106/138	-	1, 2, 3, 4

Note1: Power table of NSS 4 power table is the same with CDD mode and the Beamforming gain is 0 dBi for 4TX / NSS4 / 1+2+3+4 (TxBF).

Note2: For each modulation, Power of lowest data rate is highest.

2.8 Testing Location Information

Testing Location					
☒	HWA YA	ADD :	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.		
		TEL :	886-3-327-3456	FAX :	886-3-327-0973

Test Condition	Test Site No.	Test Engineer	Test Environment
AC Conduction	CO04-HY	Zeus Chen	24°C / 44%
RF Conducted	TH06-HY	Leo Cheng	23.2°C / 61%
Radiated Emission	03CH03-HY	Allen Lin	24.4°C / 61%

2.9 Table for 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					
Power Level	v36.7.1.23				
Worst Modulation Mode	**Number of Transmit Chains (NTX)**	**Frequency (MHz)**	**Maximum Output Power (dBm)**	**Power Setting**	**Data Rate / MCS**
802.11a (CDD)	1 stream 4TX	5260	21.94	16	6Mbps
802.11a (CDD)	1 stream 4TX	5300	21.92	16	6Mbps
802.11a (CDD)	1 stream 4TX	5320	21.78	16	6Mbps
802.11a (CDD)	1 stream 4TX	5500	21.41	16	6Mbps
802.11a (CDD)	1 stream 4TX	5580	21.45	16	6Mbps
802.11a (CDD)	1 stream 4TX	5700	21.31	15	6Mbps
802.11a (CDD)	1 stream 4TX	5720	20.36	15	6Mbps
802.11ac 20MHz (CDD)	1 stream 4TX	5260	21.93	16	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5300	22.15	16	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5320	21.82	16	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5500	21.77	16	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5580	21.56	16	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5700	21.29	15	Nss1MCS0 (6.5)
802.11ac 20MHz (CDD)	1 stream 4TX	5720	20.35	15	Nss1MCS0 (6.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5270	22.44	16	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5310	23.41	17	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5510	22.03	16	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5550	21.99	16	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5670	21.86	16	Nss1MCS0 (13.5)
802.11ac 40MHz (CDD)	1 stream 4TX	5710	21.15	15	Nss1MCS0 (13.5)
802.11ac 80MHz (CDD)	1 stream 4TX	5290	23.07	17	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5530	21.82	16	Nss1MCS0 (29.3)
802.11ac 80MHz (CDD)	1 stream 4TX	5690	21.32	16	Nss1MCS0 (29.3)

The Power Setting Parameter					
Power Level	v36.7.1.23				
Worst Modulation Mode	Number of Transmit Chains (NTX)	Frequency (MHz)	Maximum Output Power (dBm)	Power Setting	Data Rate / MCS
802.11ac 20MHz (TxBF)	2 stream 4TX	5260	22.81	17	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5300	22.92	17	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5320	22.82	17	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5500	23.17	17	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5580	23.12	17	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5700	22.01	15	Nss2MCS0(13.0)
802.11ac 20MHz (TxBF)	2 stream 4TX	5720	21.85	16	Nss2MCS0(13.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5270	23.93	17	Nss2MCS0(27.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5310	22.03	15	Nss2MCS0(27.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5510	23.43	16	Nss2MCS0(27.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5550	23.47	17	Nss2MCS0(27.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5670	22.52	16	Nss2MCS0(27.0)
802.11ac 40MHz (TxBF)	2 stream 4TX	5710	22.61	16	Nss2MCS0(27.0)
802.11ac 80MHz (TxBF)	2 stream 4TX	5290	22.68	16	Nss2MCS0(58.5)
802.11ac 80MHz (TxBF)	2 stream 4TX	5530	21.85	15	Nss2MCS0(58.5)
802.11ac 80MHz (TxBF)	2 stream 4TX	5690	22.28	16	Nss2MCS0(58.5)

The Power Setting Parameter					
Power Level	v36.7.1.23				
Worst Modulation Mode	Number of Transmit Chains (NTX)	Frequency (MHz)	Maximum Output Power (dBm)	Power Setting	Data Rate / MCS
802.11ac 20MHz (TxBF)	3 stream 4TX	5260	23.49	17	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5300	23.52	17	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5320	23.57	17	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5500	23.38	17	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5580	23.36	17	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5700	22.15	15	Nss3MCS0(19.5)
802.11ac 20MHz (TxBF)	3 stream 4TX	5720	22.11	16	Nss3MCS0(19.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5270	23.32	17	Nss3MCS0(40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5310	22.15	15	Nss3MCS0(40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5510	22.83	16	Nss3MCS0(40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5550	22.91	17	Nss3MCS0(40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5670	22.86	16	Nss3MCS0(40.5)
802.11ac 40MHz (TxBF)	3 stream 4TX	5710	22.95	16	Nss3MCS0(40.5)
802.11ac 80MHz (TxBF)	3 stream 4TX	5290	22.89	16	Nss3MCS0(87.8)
802.11ac 80MHz (TxBF)	3 stream 4TX	5530	21.50	15	Nss3MCS0(87.8)
802.11ac 80MHz (TxBF)	3 stream 4TX	5690	22.45	15	Nss3MCS0(87.8)

3 TEST RESULT

3.1 AC Power Line Conducted Emissions Measurement

3.1.1 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)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2 Measuring Instruments and Setting

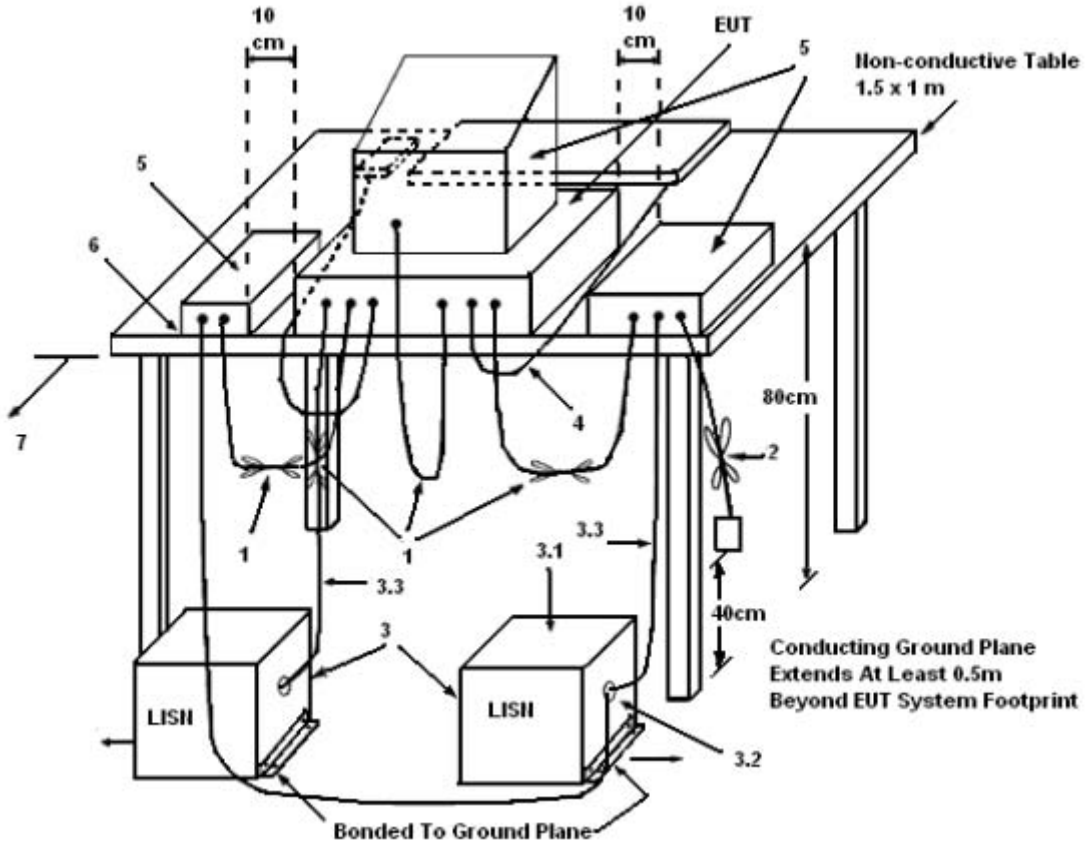
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

3.1.3 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.

3.1.4 Test Setup Layout



LEGEND:

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.

3.1.5 Test Deviation

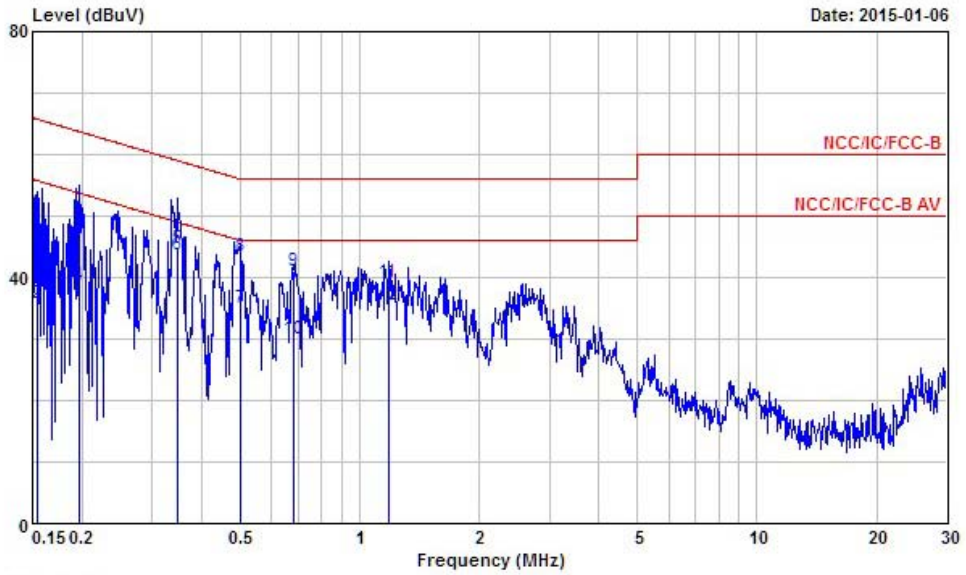
There is no deviation with the original standard.

3.1.6 EUT Operation during Test

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

3.1.7 Results of AC Power Line Conducted Emissions Measurement

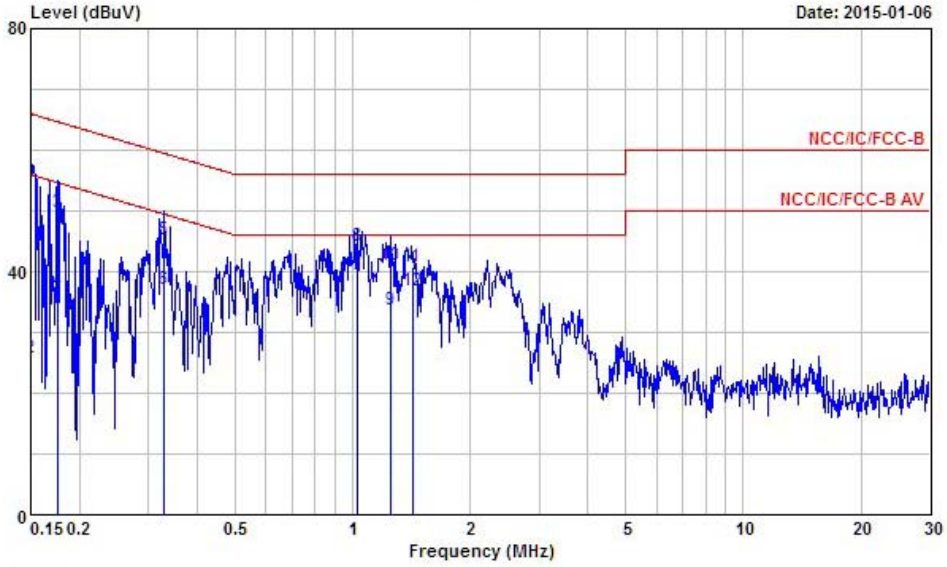
Temperature	24℃	Humidity	44%
Test Engineer	Zeus	PHASE	Line
Configuration	802.11ac 80MHz, 5530MHz, Nss1 MCS0,CDD, Ant.1+2+3+4		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1540270	50.66	-15.12	65.78	50.28	0.03	0.35	QP
2	0.1540270	35.79	-19.99	55.78	35.41	0.03	0.35	Average
3	0.1965370	49.12	-14.64	63.76	48.60	0.03	0.49	QP
4	0.1965370	38.56	-15.20	53.76	38.04	0.03	0.49	Average
5	0.3464610	44.71	-14.34	59.05	44.10	0.03	0.58	QP
6	@0.3464610	43.59	-5.46	49.05	42.98	0.03	0.58	Average
7	0.4993730	34.87	-11.14	46.01	34.18	0.04	0.65	Average
8	0.4993730	43.37	-12.64	56.01	42.68	0.04	0.65	QP
9	0.6826310	41.00	-15.00	56.00	40.23	0.05	0.72	QP
10	0.6826310	29.97	-16.03	46.00	29.20	0.05	0.72	Average
11	1.180	39.32	-16.68	56.00	38.46	0.06	0.80	QP
12	1.180	35.48	-10.52	46.00	34.62	0.06	0.80	Average

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

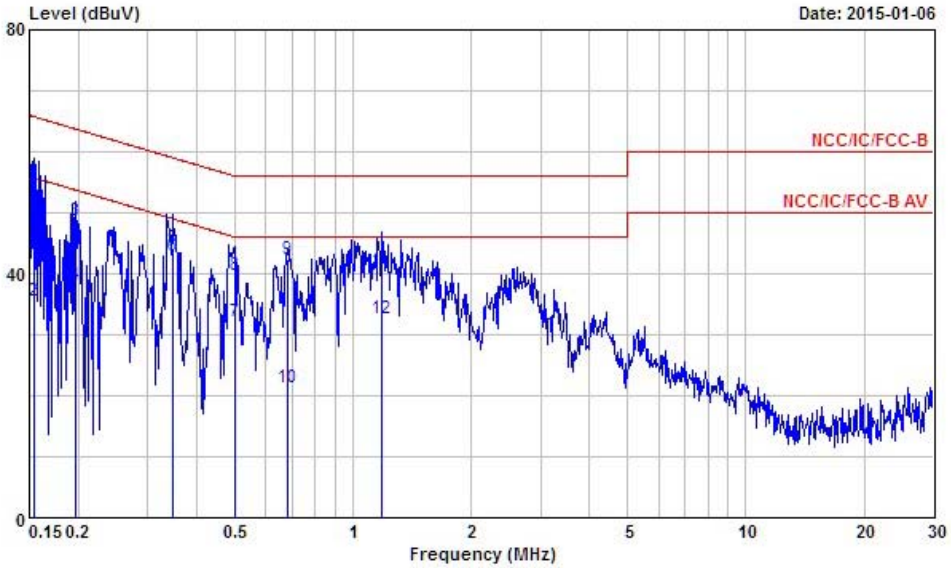
Temperature	24℃	Humidity	44%
Test Engineer	Zeus	PHASE	Neutral
Configuration	802.11ac 80MHz, 5530MHz, Nss1 MCS0,CDD, Ant.1+2+3+4		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1500000	56.33	-9.67	66.00	55.97	0.02	0.34	QP
2	0.1500000	25.84	-30.16	56.00	25.48	0.02	0.34	Average
3	0.1758420	49.72	-14.96	64.68	49.28	0.02	0.42	QP
4	0.1758420	36.92	-17.76	54.68	36.48	0.02	0.42	Average
5	0.3303280	45.20	-14.24	59.44	44.60	0.03	0.57	QP
6	0.3303280	37.17	-12.27	49.44	36.57	0.03	0.57	Average
7	1.030	39.55	-6.45	46.00	38.70	0.05	0.80	Average
8	1.030	44.32	-11.68	56.00	43.47	0.05	0.80	QP
9	1.250	33.65	-12.35	46.00	32.80	0.05	0.80	Average
10	1.250	41.07	-14.93	56.00	40.22	0.05	0.80	QP
11	1.420	40.88	-15.12	56.00	40.02	0.06	0.80	QP
12	1.420	36.87	-9.13	46.00	36.01	0.06	0.80	Average

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

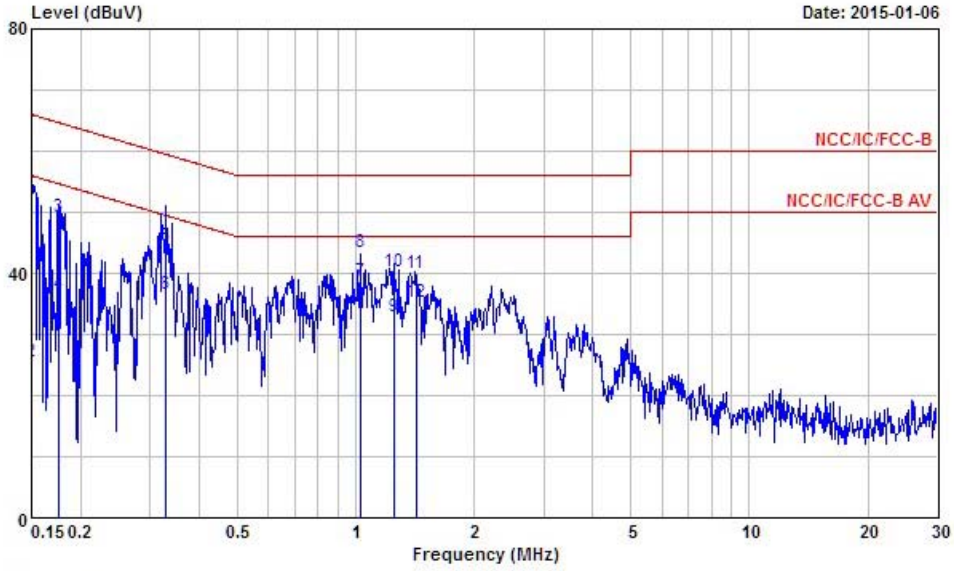
Temperature	24℃	Humidity	44%
Test Engineer	Zeus	PHASE	Line
Configuration	802.11ac 80MHz, 5530MHz, Nss3 MCS0, TxBF, Ant.1+2+3+4		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1540270	52.28	-13.50	65.78	51.90	0.03	0.35	QP
2	0.1540270	35.41	-20.37	55.78	35.03	0.03	0.35	Average
3	0.1965370	48.60	-15.16	63.76	48.08	0.03	0.49	QP
4	0.1965370	38.04	-15.72	53.76	37.52	0.03	0.49	Average
5	0.3464610	44.10	-14.95	59.05	43.49	0.03	0.58	QP
6	0.3464610	42.98	-6.07	49.05	42.37	0.03	0.58	Average
7	0.4993730	32.19	-13.82	46.01	31.50	0.04	0.65	Average
8	0.4993730	39.69	-16.32	56.01	39.00	0.04	0.65	QP
9	0.6826310	42.24	-13.76	56.00	41.47	0.05	0.72	QP
10	0.6826310	21.21	-24.79	46.00	20.44	0.05	0.72	Average
11	1.180	40.46	-15.54	56.00	39.60	0.06	0.80	QP
12	1.180	32.76	-13.24	46.00	31.90	0.06	0.80	Average

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

Temperature	24℃	Humidity	44%
Test Engineer	Zeus	PHASE	Neutral
Configuration	802.11ac 80MHz, 5530MHz, Nss3 MCS0, TxBF, Ant.1+2+3+4		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1500000	55.97	-10.03	66.00	55.61	0.02	0.34	QP
2	0.1500000	25.48	-30.52	56.00	25.12	0.02	0.34	Average
3	0.1758420	49.28	-15.40	64.68	48.84	0.02	0.42	QP
4	0.1758420	36.48	-18.20	54.68	36.04	0.02	0.42	Average
5	0.3303280	44.60	-14.84	59.44	44.00	0.03	0.57	QP
6	0.3303280	36.57	-12.87	49.44	35.97	0.03	0.57	Average
7	1.030	38.70	-7.30	46.00	37.85	0.05	0.80	Average
8	1.030	43.47	-12.53	56.00	42.62	0.05	0.80	QP
9	1.250	32.80	-13.20	46.00	31.95	0.05	0.80	Average
10	1.250	40.22	-15.78	56.00	39.37	0.05	0.80	QP
11	1.420	40.02	-15.98	56.00	39.16	0.06	0.80	QP
12	1.420	35.15	-10.85	46.00	34.29	0.06	0.80	Average

Note 1: The test was passed at the minimum margin that marked by the frame in the following data
Note 2: The emission levels of other frequencies were very low against the limit.
Note 3: Q.P. and AV. are abbreviations of quasi-peak and average individually.
Note 4: Corrected Reading (dBμV) = LISN Factor + Cable Loss + Read Level = Level
Note 5: Over Limit value = level - Limit value

3.2 Emission bandwidth Measurement

3.2.1 Limit

No restriction limits

3.2.2 26dB Bandwidth 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.

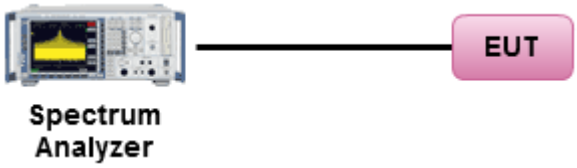
Power Meter Parameter	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	Approximately 1% of the emission bandwidth.
VB	> RBW.
Detector	peak
Trace	max hold
Sweep Time	Auto

3.2.3 Test Procedures

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 v01, in section “Emission bandwidth (C)(1)” , 06/06/2014
3. When measuring Emission bandwidth with multiple antenna systems, add every result of the values by mathematic formula.

3.2.4 Test Setup Layout

Maximum Conducted Output Power



3.2.5 Test Deviation

There are no deviation with the original standard.

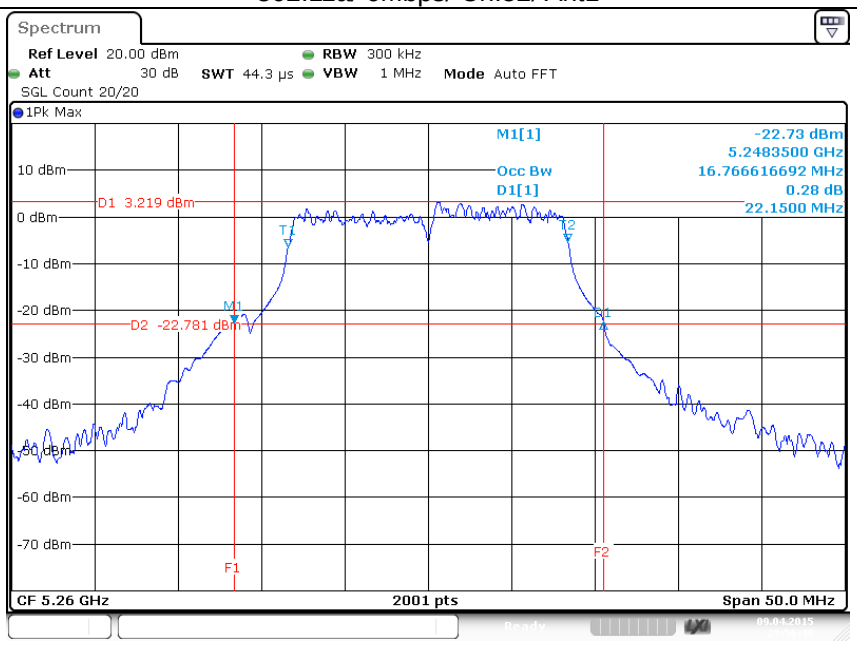
3.2.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7 Test Result for Emission bandwidth

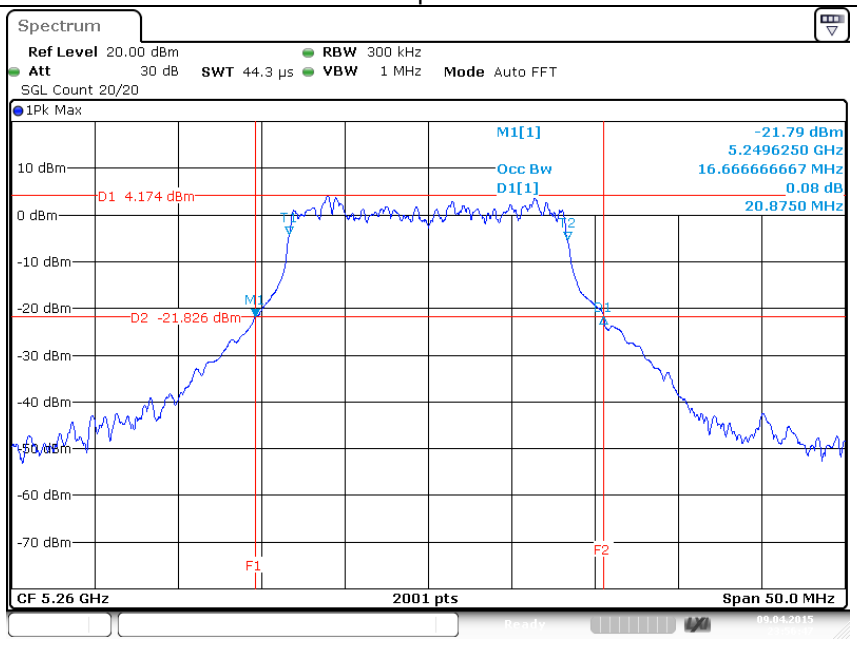
26dB Emission Bandwidth						
Worst Modulation Mode	Number of Transmit Chains (NTX)	Frequency (MHz)	26dB Emission Bandwidth			
			Ant1	Ant 2	Ant 3	Ant 4
802.11a (CDD)	1 stream 4TX	5260	22.15	20.87	22.75	21.82
802.11a (CDD)	1 stream 4TX	5300	22.30	22.52	21.32	22.40
802.11a (CDD)	1 stream 4TX	5320	20.27	20.87	22.30	21.10
802.11a (CDD)	1 stream 4TX	5500	21.62	21.12	21.85	22.50
802.11a (CDD)	1 stream 4TX	5580	22.05	20.67	20.65	20.90
802.11a (CDD)	1 stream 4TX	5700	20.12	23.35	20.97	20.97
802.11ac 20MHz (CDD)	1 stream 4TX	5260	21.72	22.97	21.82	21.62
802.11ac 20MHz (CDD)	1 stream 4TX	5300	23.45	22.57	21.87	22.80
802.11ac 20MHz (CDD)	1 stream 4TX	5320	21.35	21.92	22.90	21.40
802.11ac 20MHz (CDD)	1 stream 4TX	5500	22.27	21.25	22.02	21.80
802.11ac 20MHz (CDD)	1 stream 4TX	5580	22.70	22.67	21.80	21.07
802.11ac 20MHz (CDD)	1 stream 4TX	5700	22.57	21.87	23.57	21.25
802.11ac 40MHz (CDD)	1 stream 4TX	5270	43.12	42.76	43.16	42.72
802.11ac 40MHz (CDD)	1 stream 4TX	5310	42.96	43.16	42.80	42.60
802.11ac 40MHz (CDD)	1 stream 4TX	5510	43.28	42.40	43.08	42.44
802.11ac 40MHz (CDD)	1 stream 4TX	5550	43.16	42.80	43.28	42.52
802.11ac 40MHz (CDD)	1 stream 4TX	5670	43.16	43.52	43.20	42.16
802.11ac 80MHz (CDD)	1 stream 4TX	5290	81.92	79.68	81.60	80.56
802.11ac 80MHz (CDD)	1 stream 4TX	5530	82.40	80.72	81.76	82.88

802.11a/ 6Mbps/ Ch.52/ Ant1



Date: 9.APR.2015 23:56:40

802.11a/ 6Mbps/ Ch.52/ Ant2



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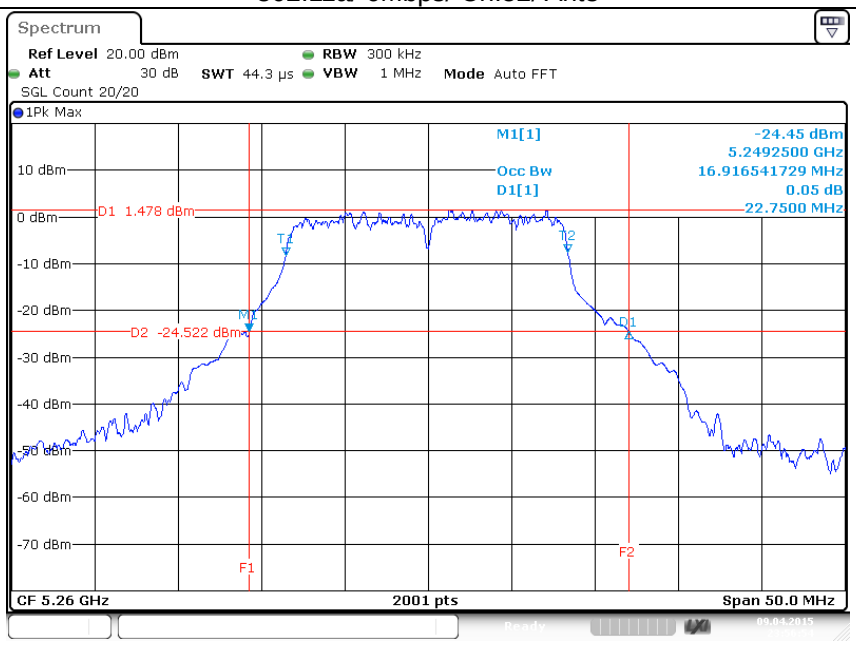
802.11a/ 6Mbps/ Ch.52/ Ant3



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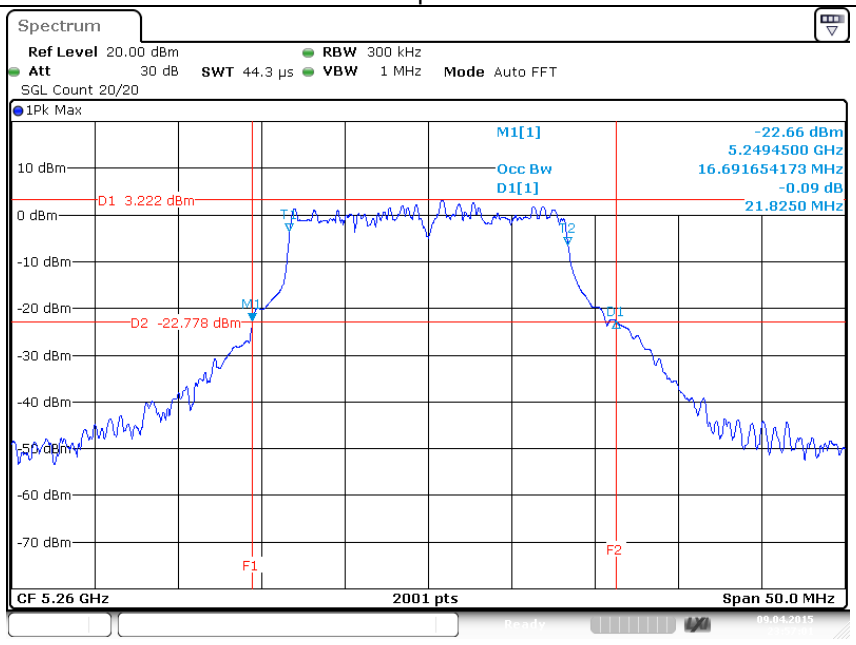

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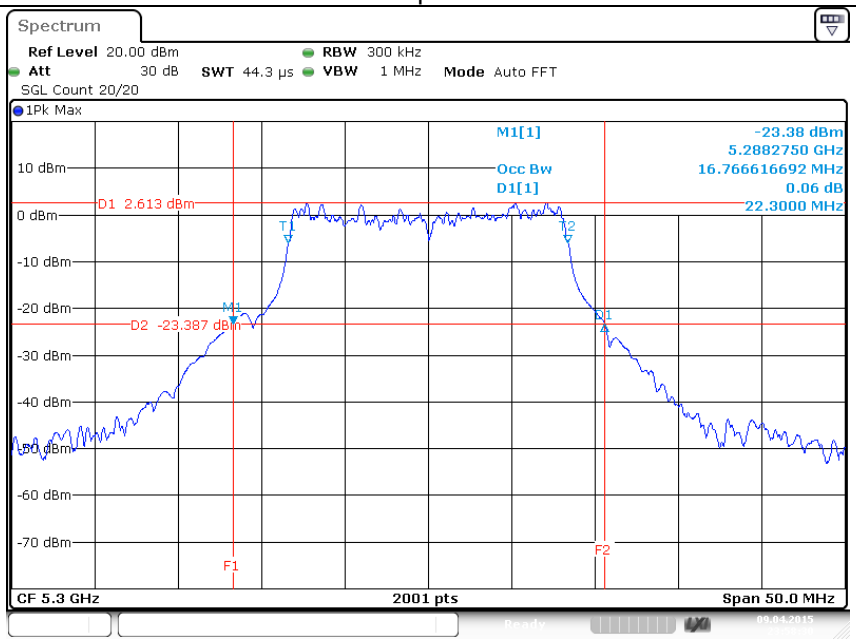

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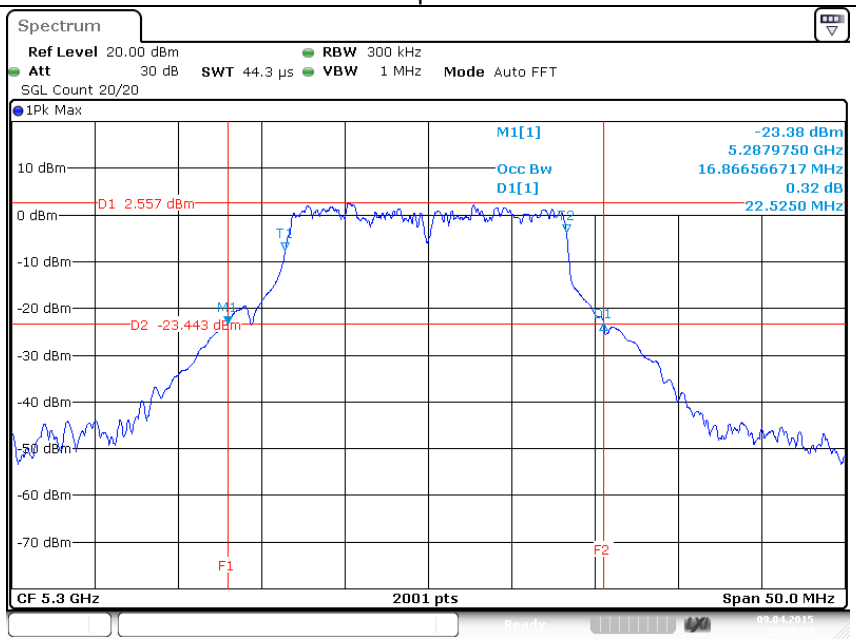

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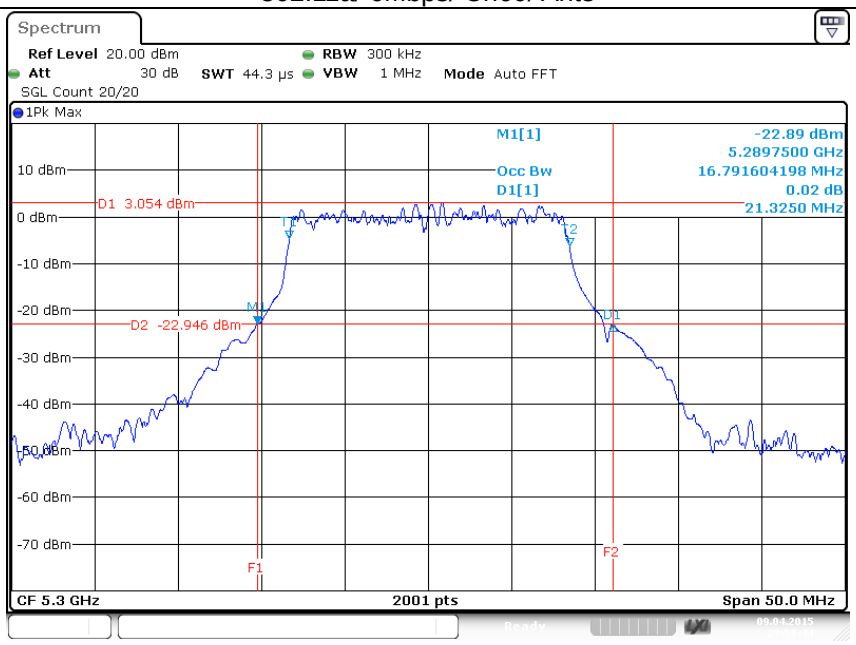
802.11a/ 6Mbps/ Ch60/ Ant3



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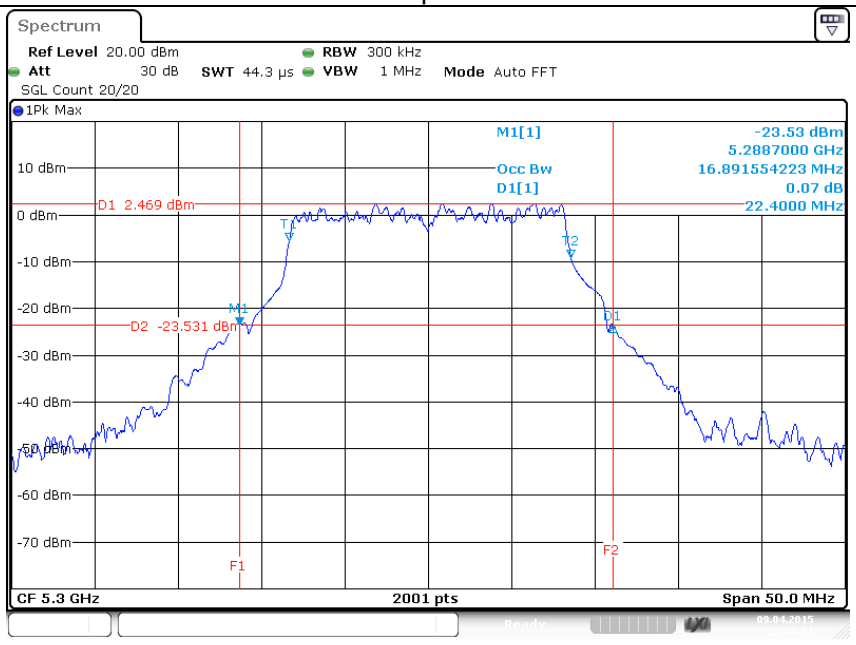
802.11a/ 6Mbps/ Ch60/ Ant4



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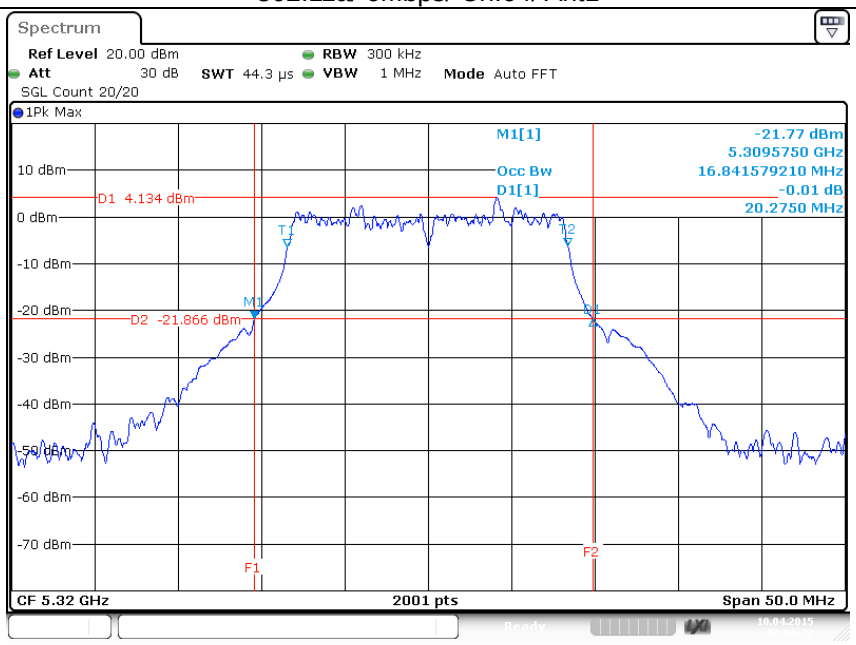
802.11a/ 6Mbps/ Ch.64/ Ant1



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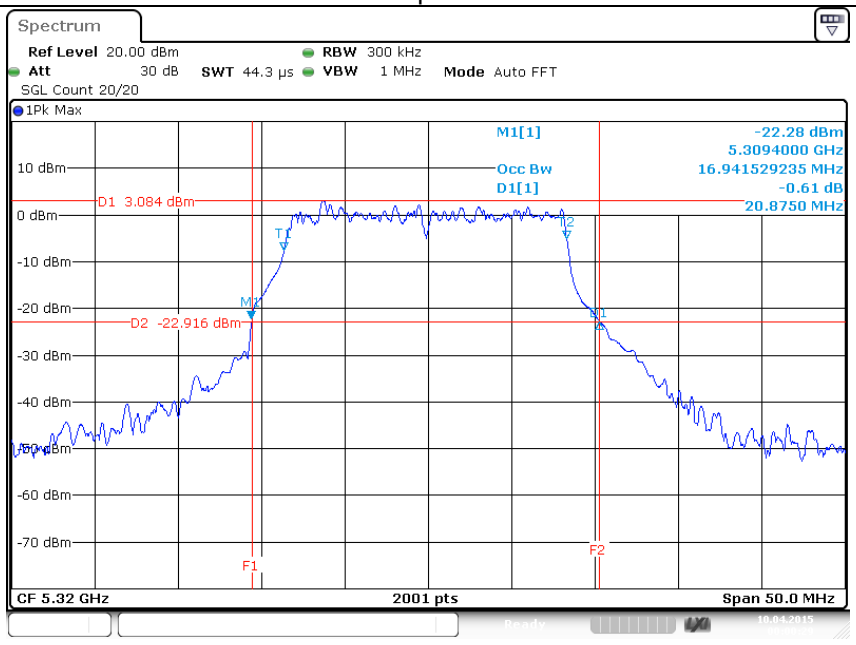
802.11a/ 6Mbps/ Ch.64/ Ant2



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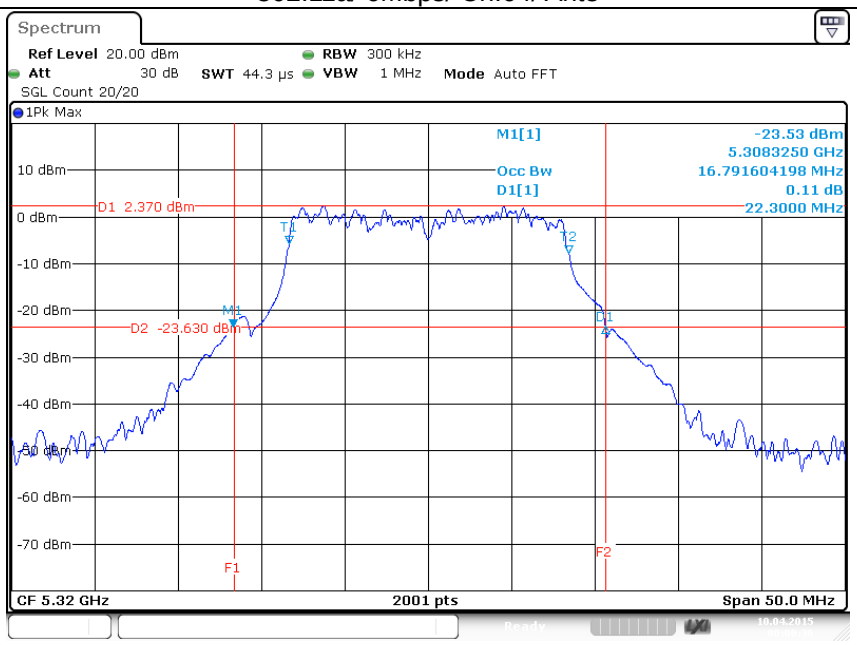

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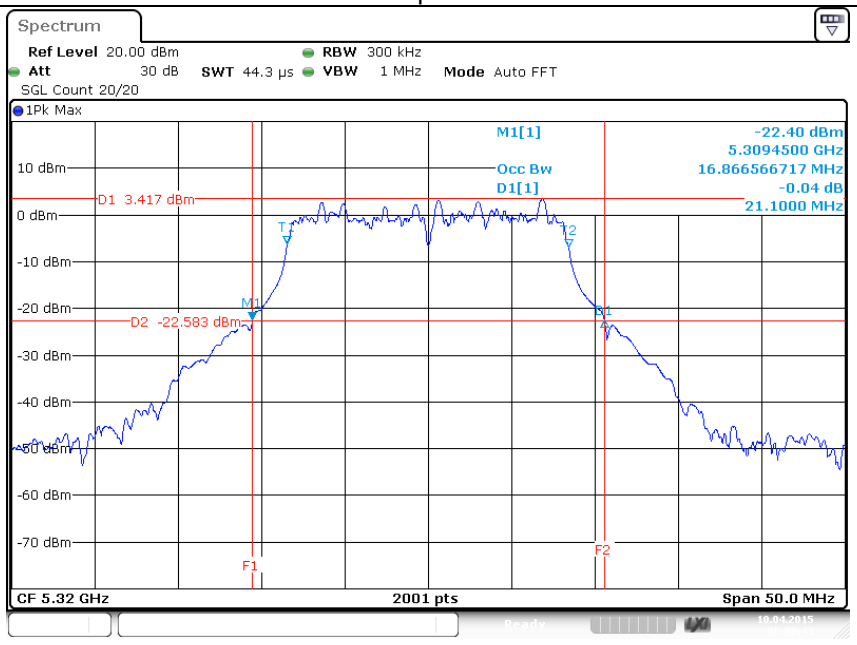
802.11a/ 6Mbps/ Ch.64/ Ant4



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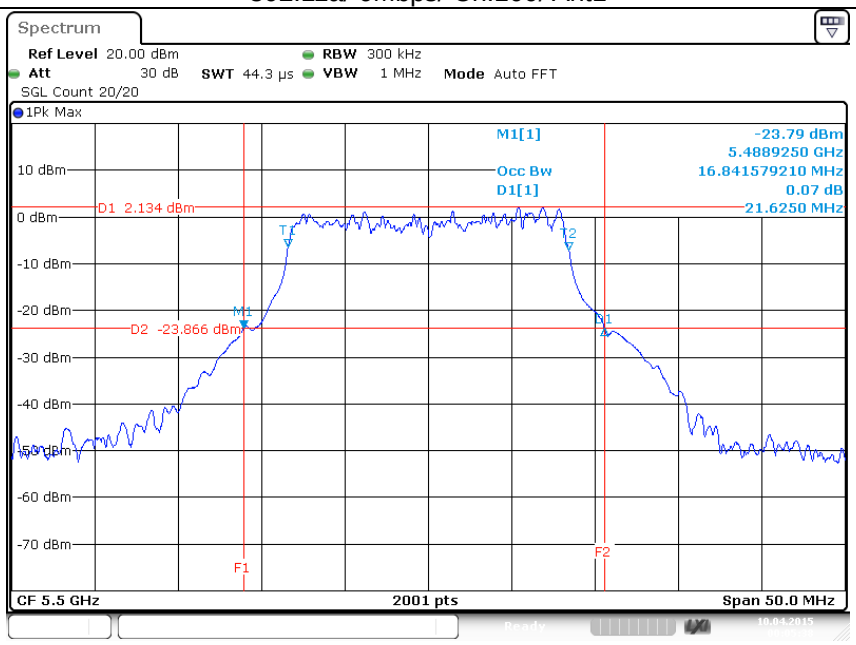

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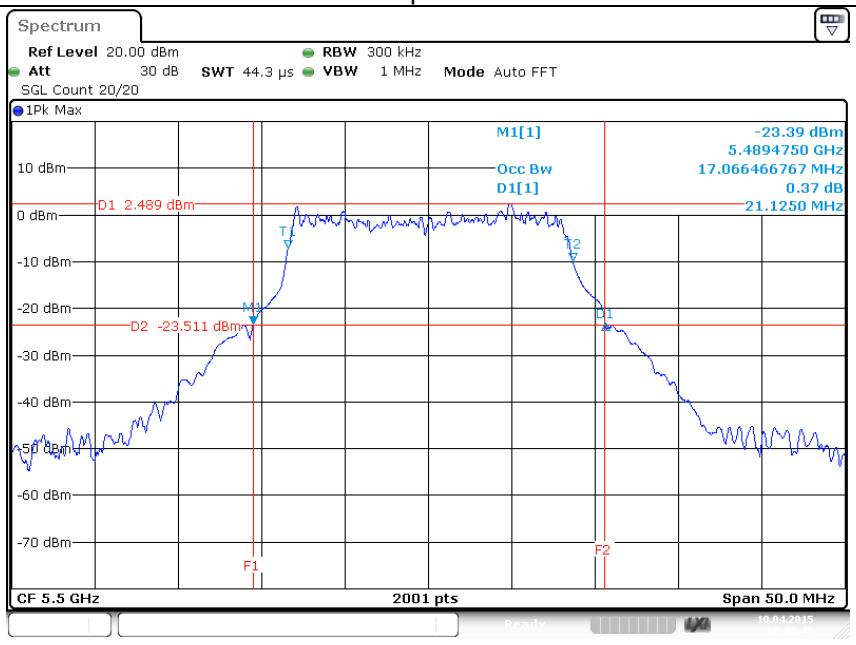
802.11a/ 6Mbps/ Ch.100/ Ant2



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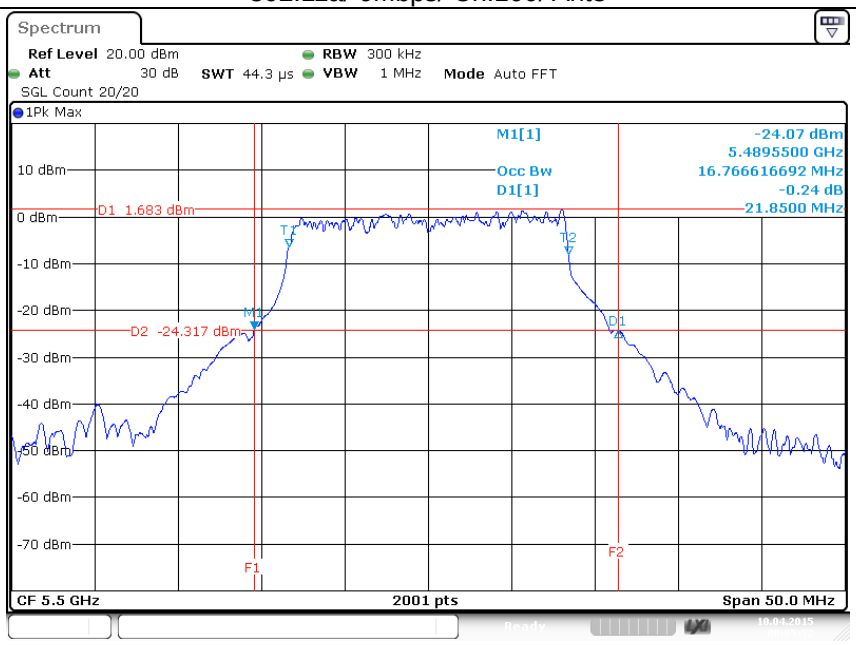

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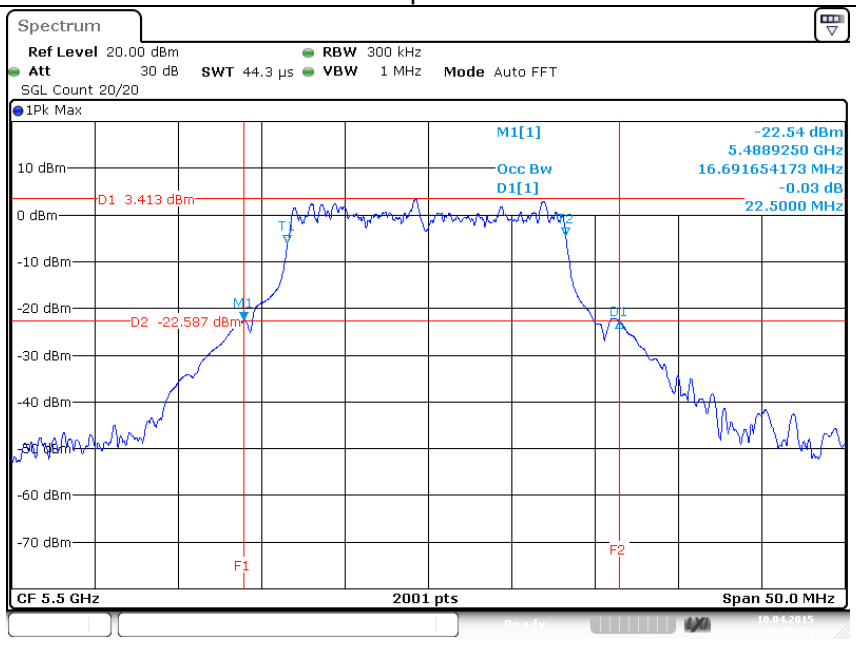

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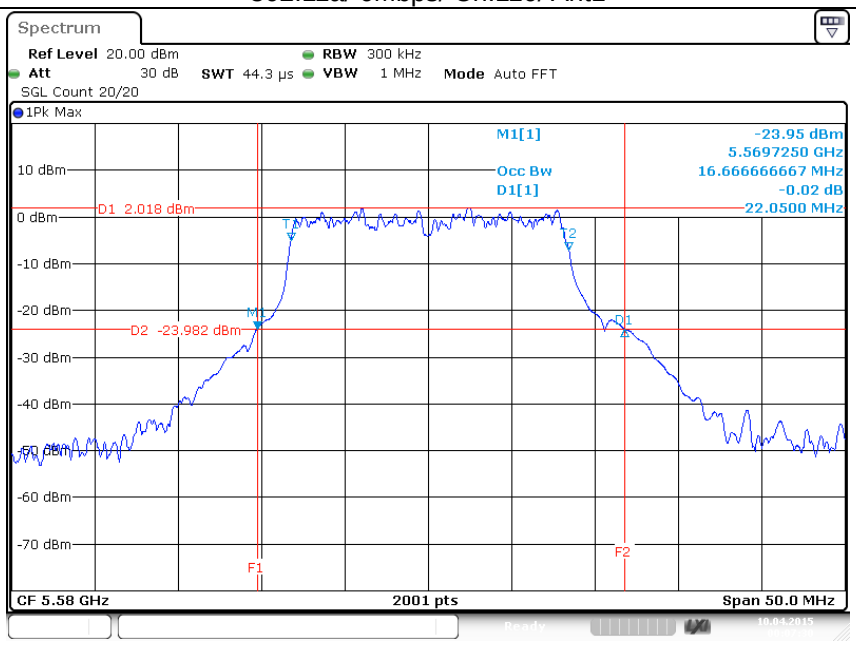

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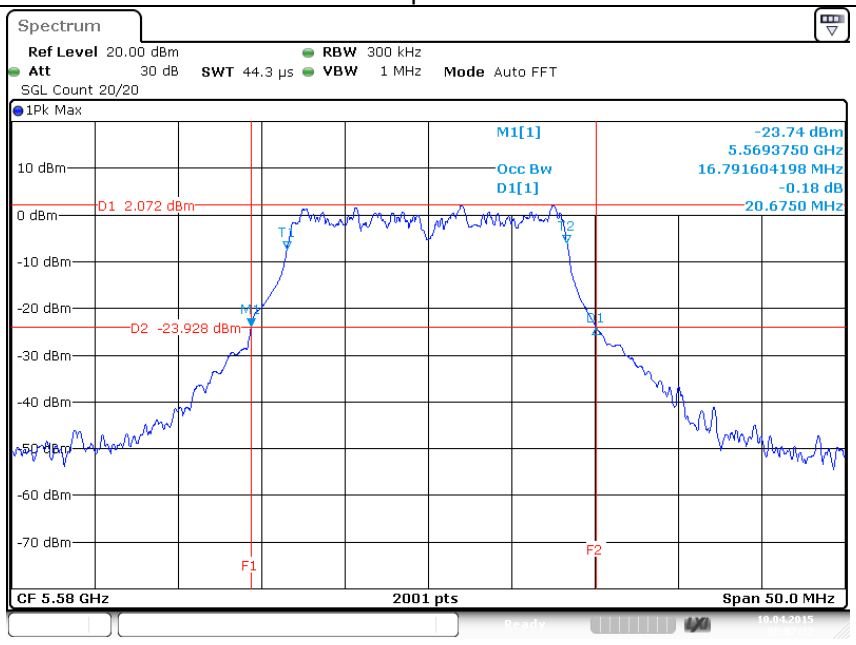

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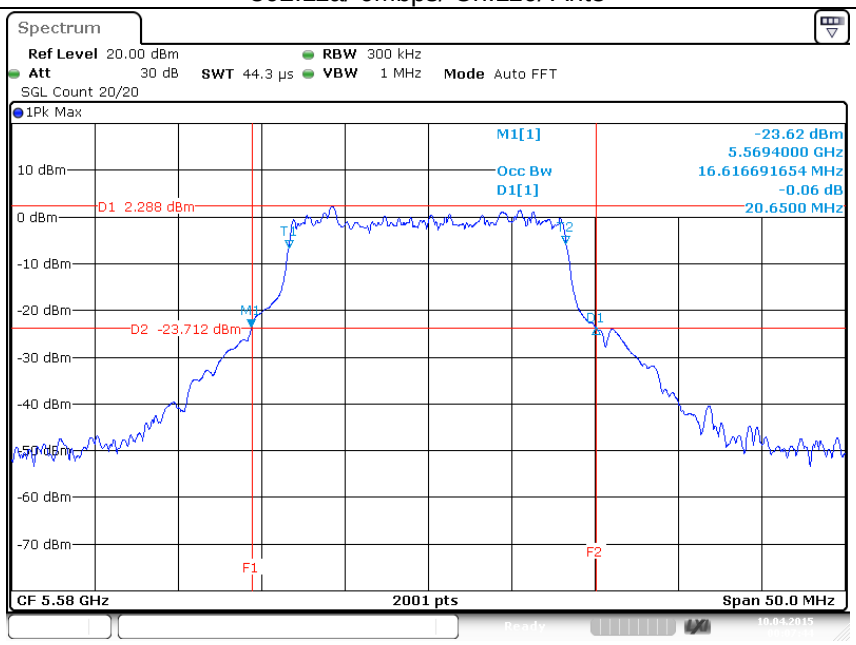

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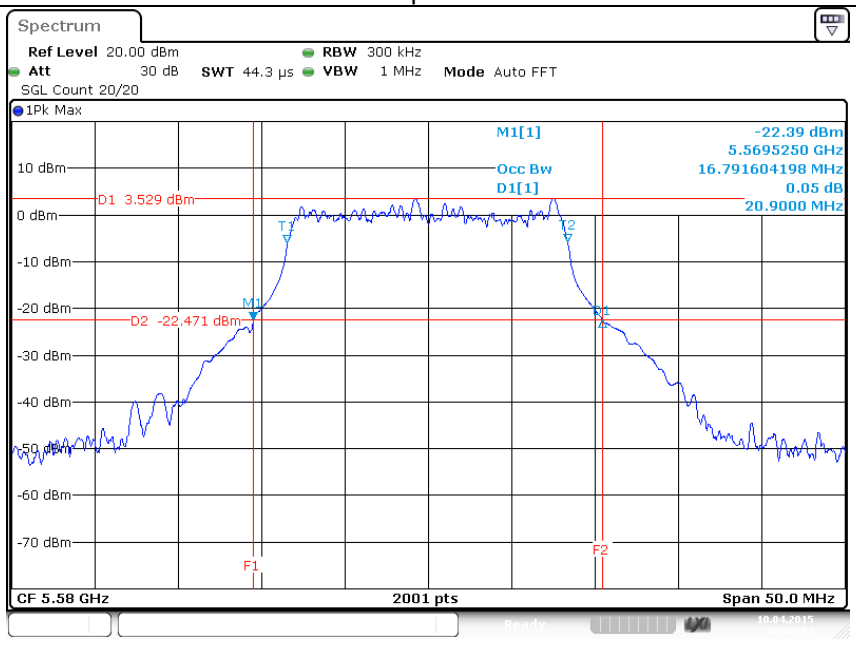

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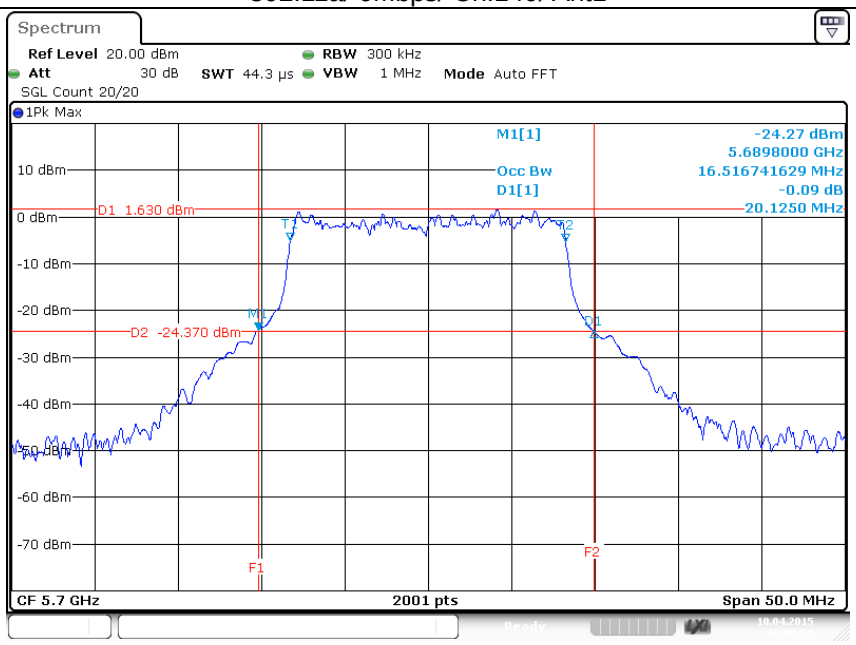
802.11a/ 6Mbps/ Ch.140/ Ant1



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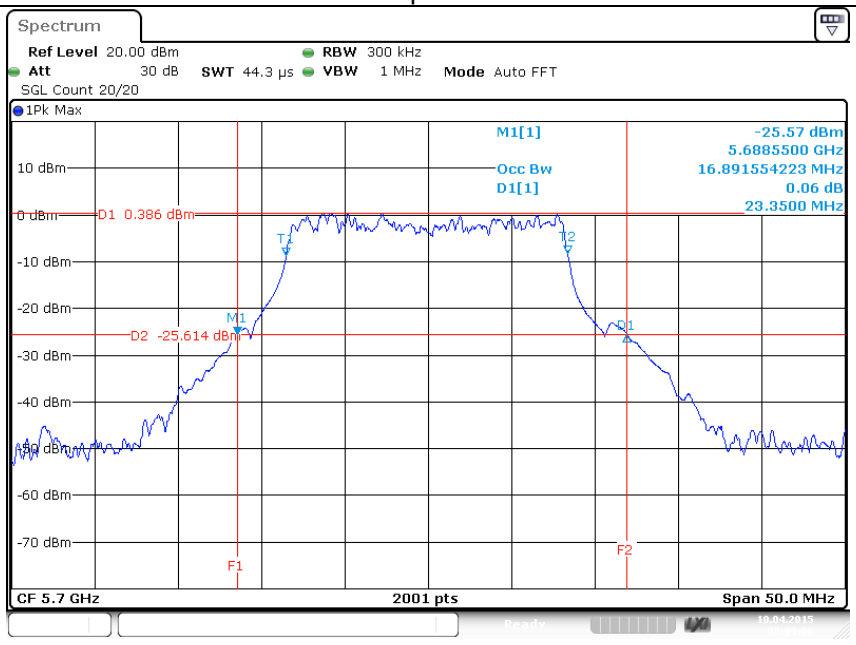
802.11a/ 6Mbps/ Ch.140/ Ant2



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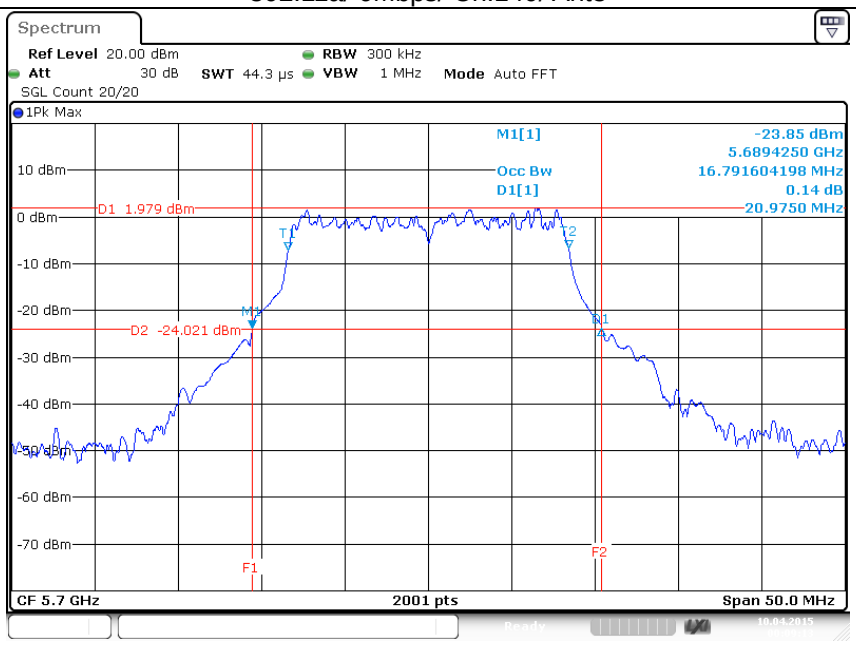
802.11a/ 6Mbps/ Ch.140/ Ant3



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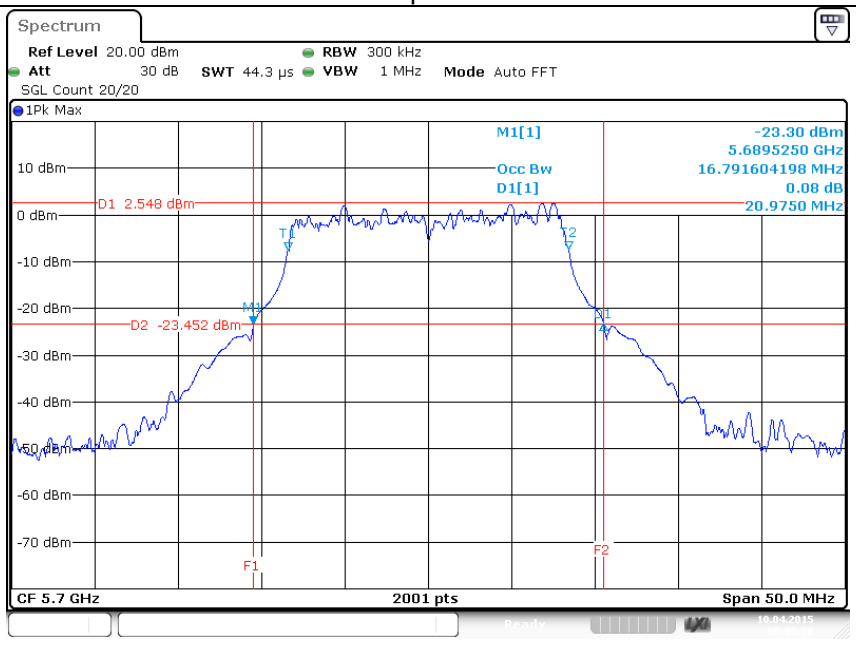
802.11a/ 6Mbps/ Ch.140/ Ant4



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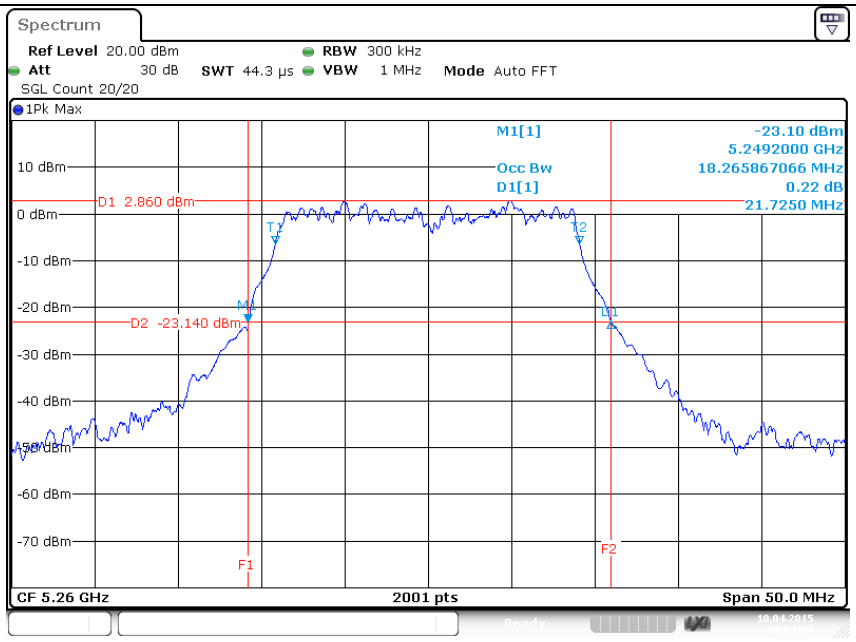
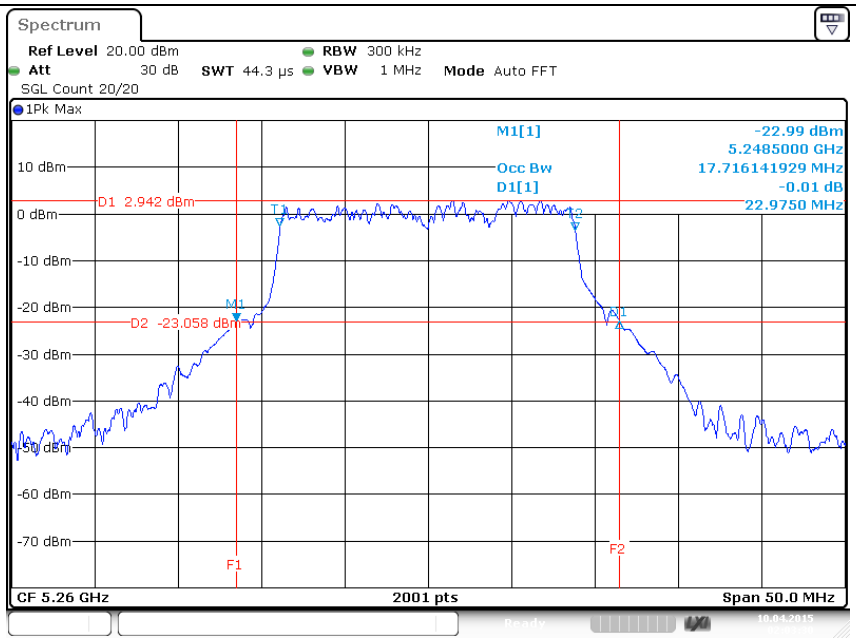
802.11ac 20MHz/ Nss1 MCS0/ Ch.52/ Ant1



Date: 10.APR.2015 02:03:24

802.11ac 20MHz/ Nss1 MCS0/ Ch.52/ Ant2



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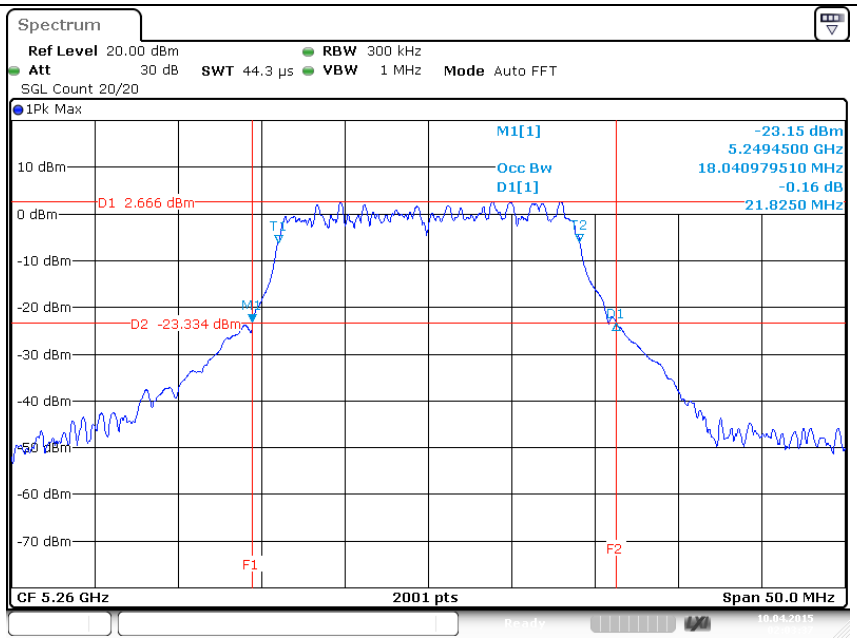
802.11ac 20MHz/ Nss1 MCS0/ Ch.52/ Ant3



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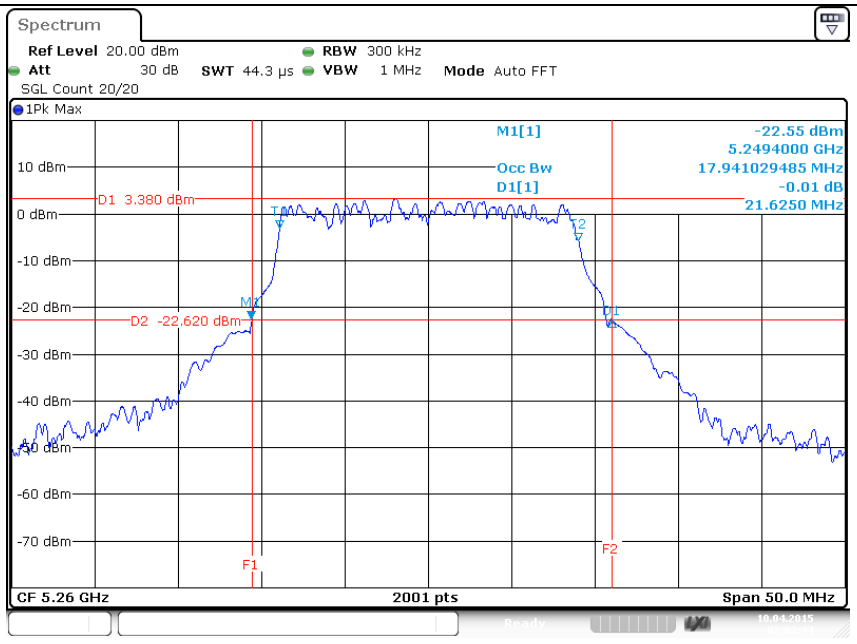

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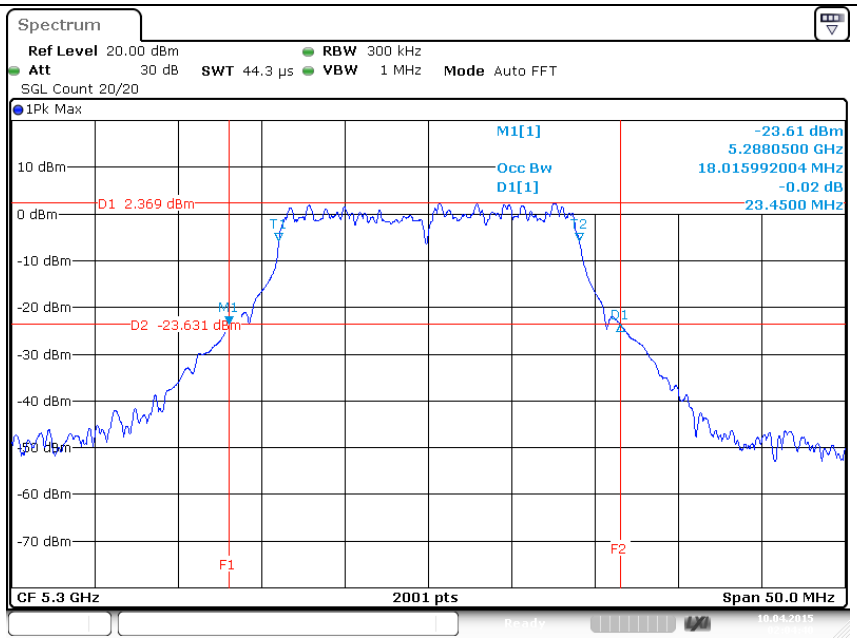

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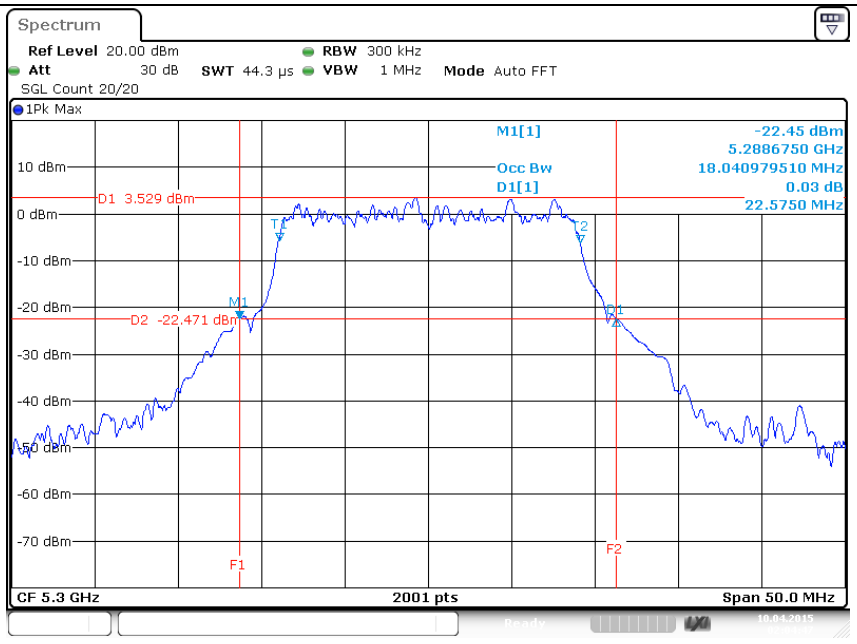

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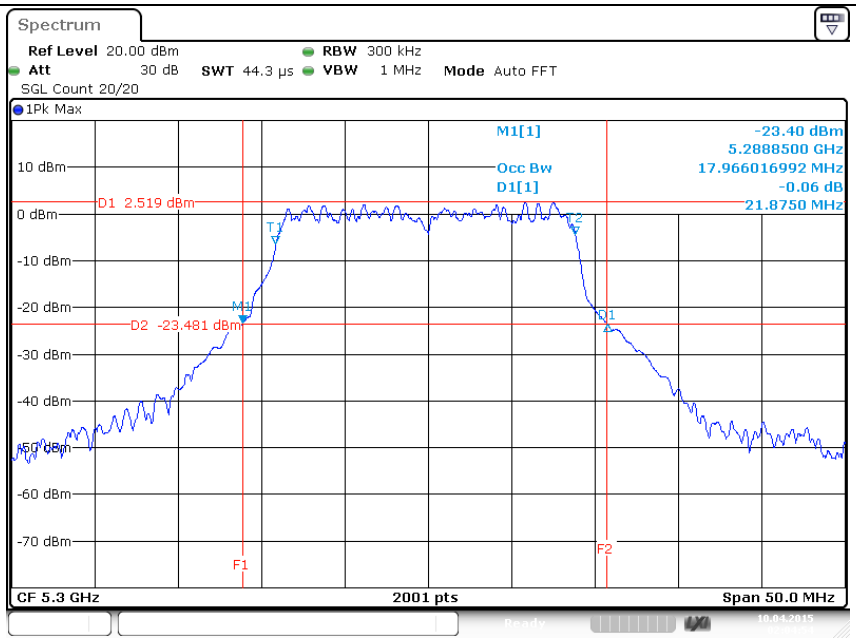
802.11ac 20MHz/ Nss1 MCS0/ Ch.60/ Ant3



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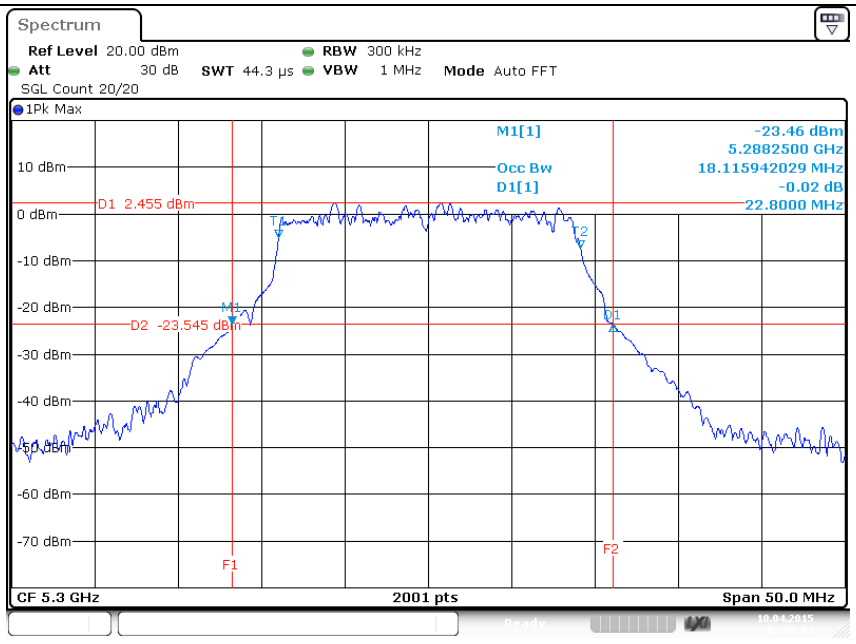
802.11ac 20MHz/ Nss1 MCS0/ Ch.60/ Ant4



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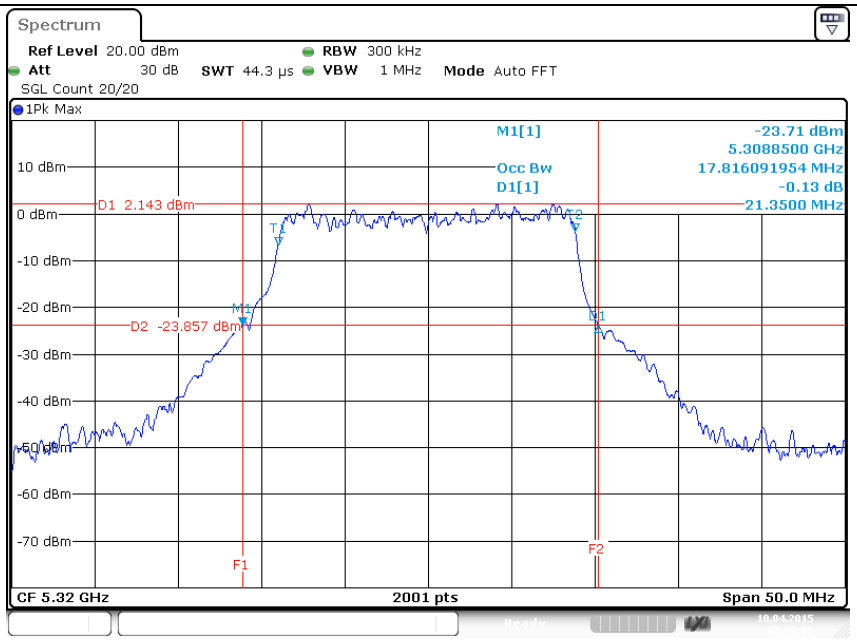

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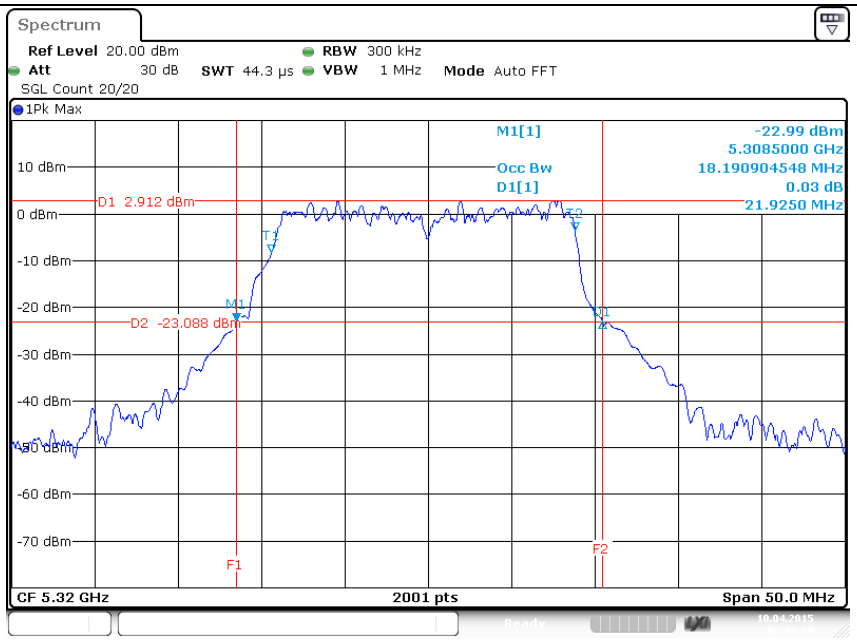
802.11ac 20MHz/ Nss1 MCS0/ Ch.64/ Ant2



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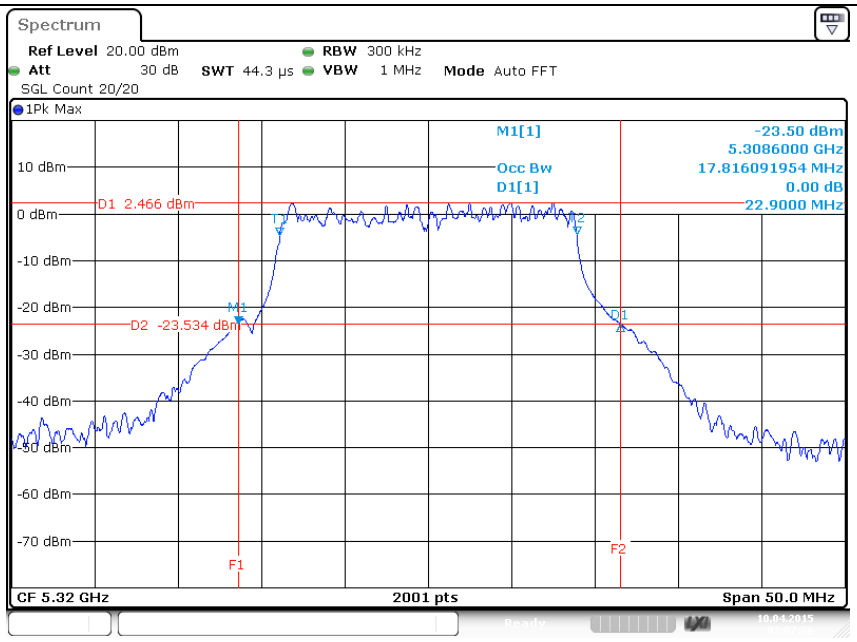
802.11ac 20MHz/ Nss1 MCS0/ Ch.64/ Ant3



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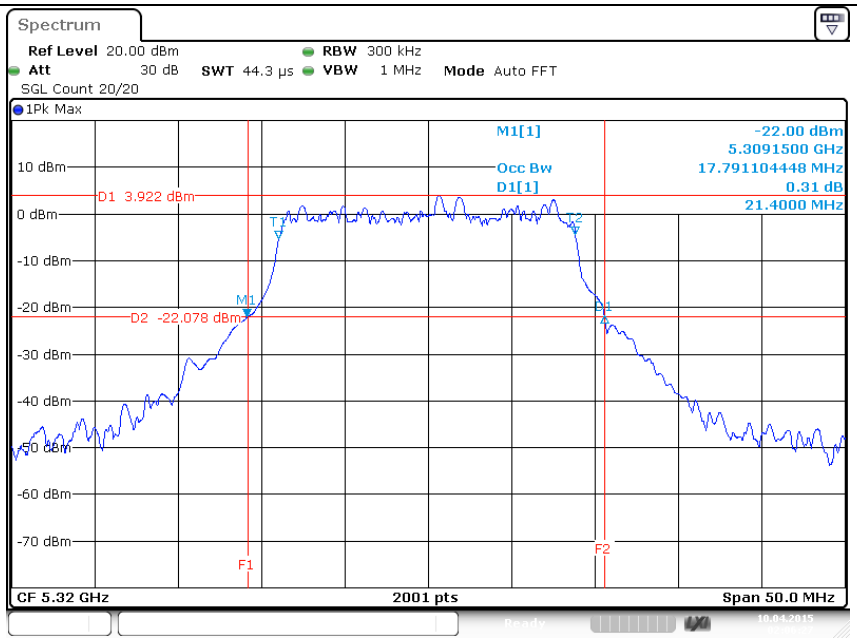
802.11ac 20MHz/ Nss1 MCS0/ Ch.64/ Ant4



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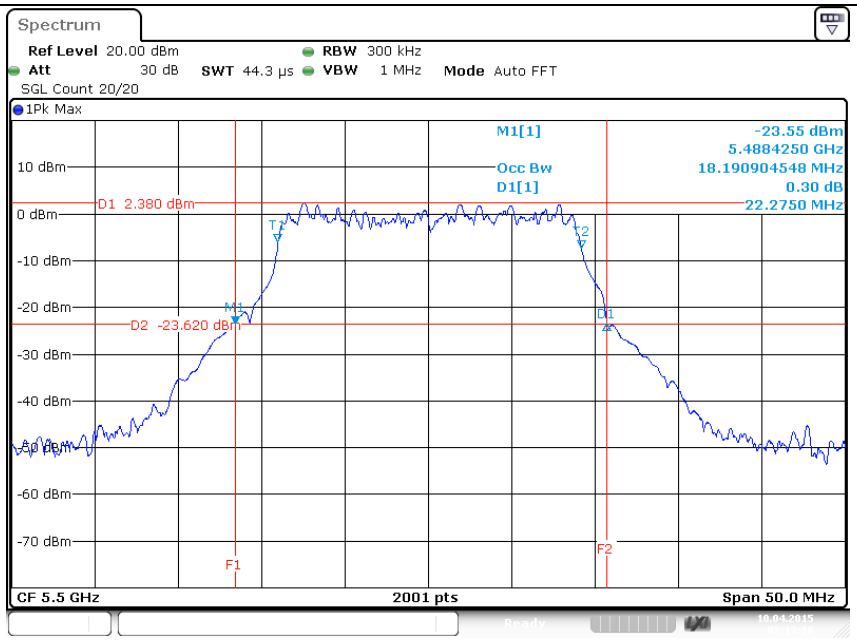
802.11ac 20MHz/ Nss1 MCS0/ Ch.100/ Ant1



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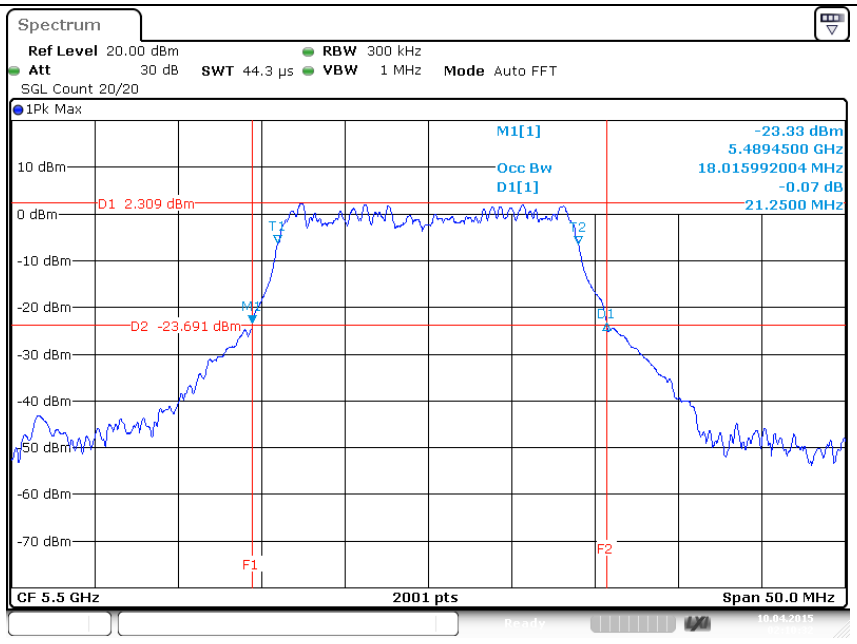
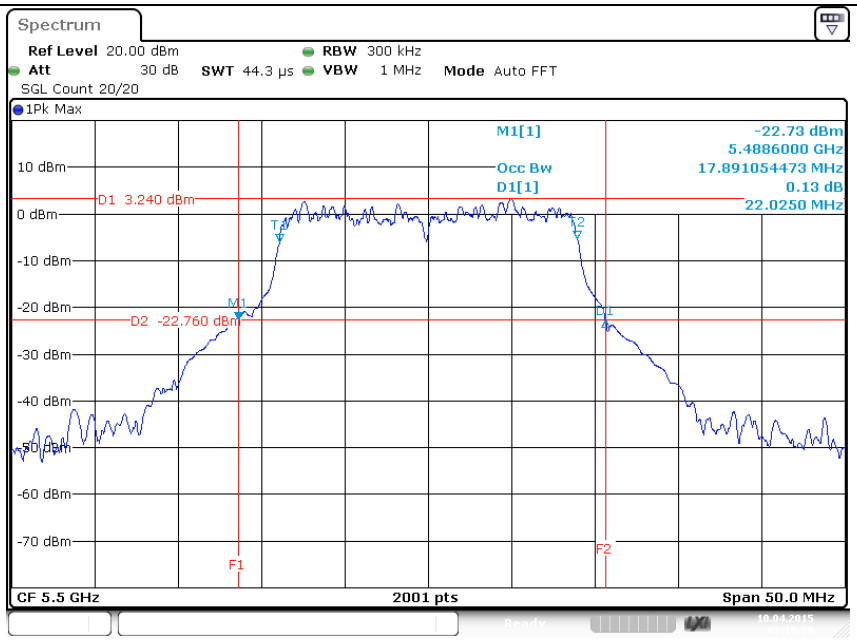


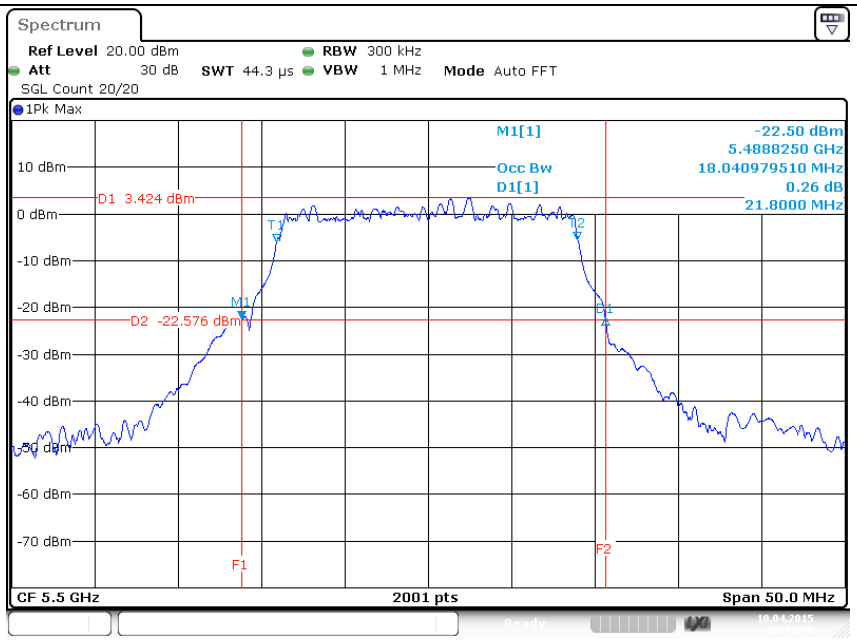
Date: 10.APR.2015 02:10:32

802.11ac 20MHz/ Nss1 MCS0/ Ch.100/ Ant3



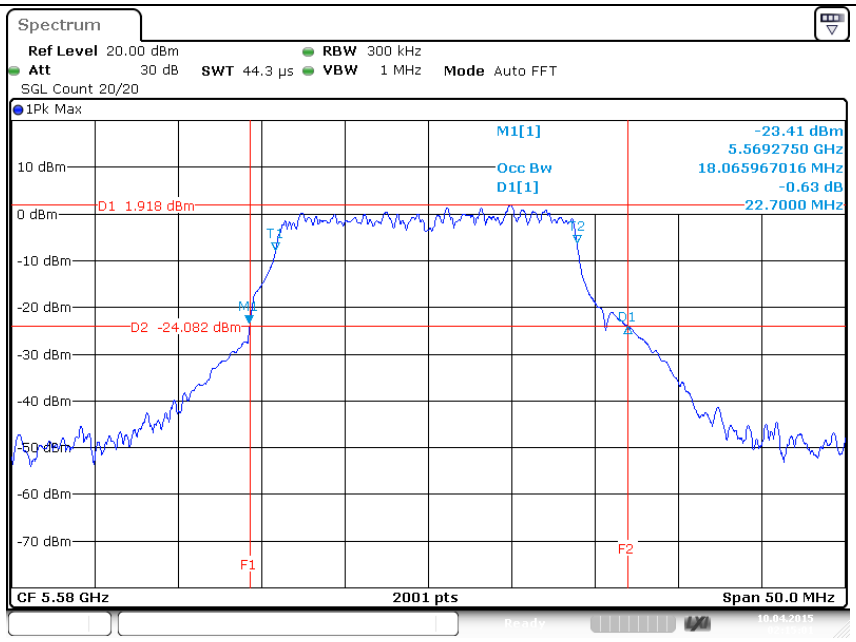
Date: 10.APR.2015 02:10:39

802.11ac 20MHz/ Nss1 MCS0/ Ch.100/ Ant4



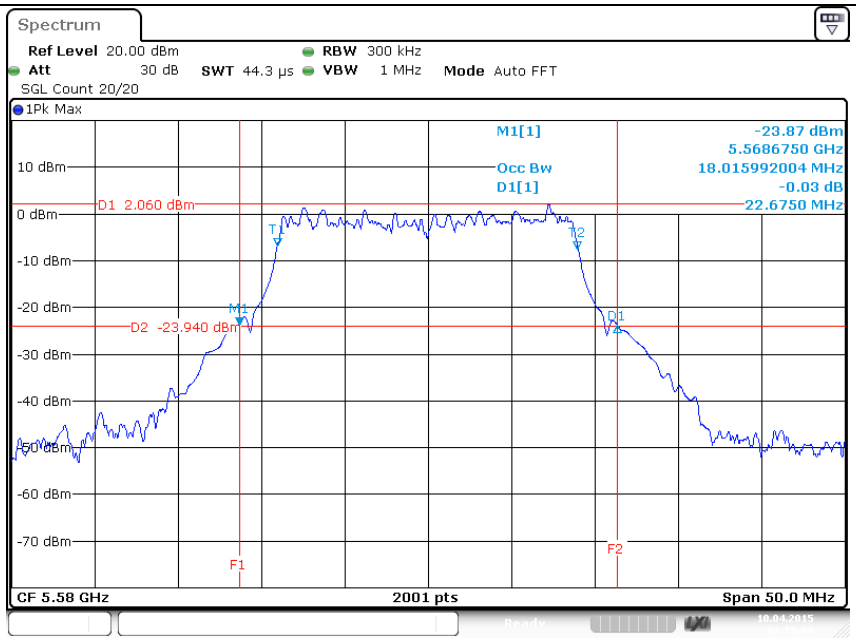
Date: 10.APR.2015 02:11:46

802.11ac 20MHz/ Nss1 MCS0/ Ch.116/ Ant1



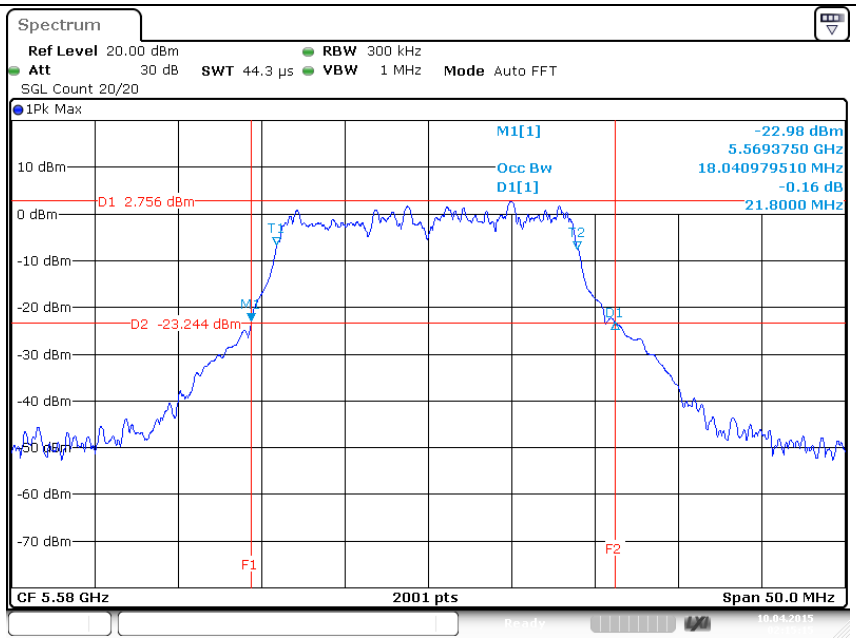
Date: 10.APR.2015 02:15:01

802.11ac 20MHz/ Nss1 MCS0/ Ch.116/ Ant2



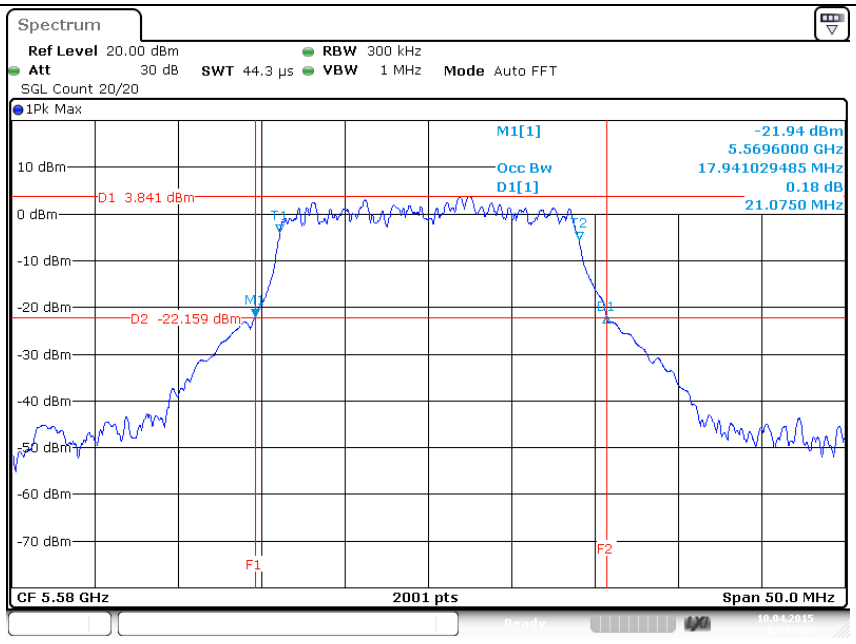
Date: 10.APR.2015 02:15:08

802.11ac 20MHz/ Nss1 MCS0/ Ch.116/ Ant3



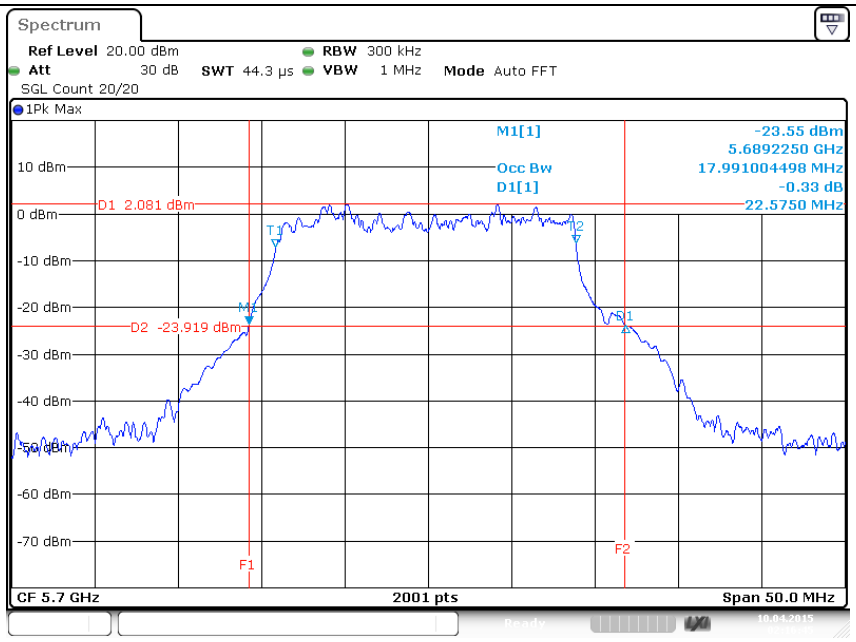
Date: 10.APR.2015 02:15:15

802.11ac 20MHz/ Nss1 MCS0/ Ch.116/ Ant4



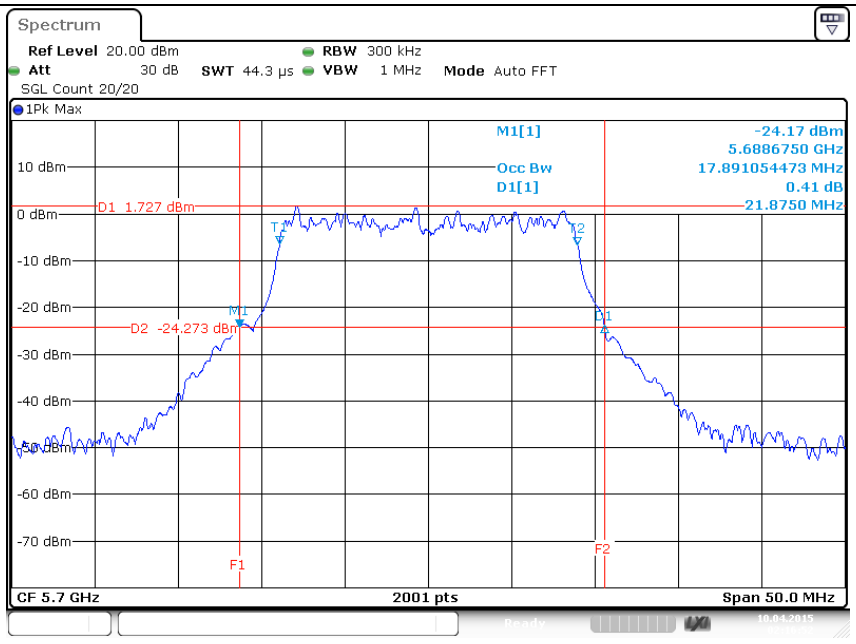
Date: 10.APR.2015 02:15:22

802.11ac 20MHz/ Nss1 MCS0/ Ch.140/ Ant1



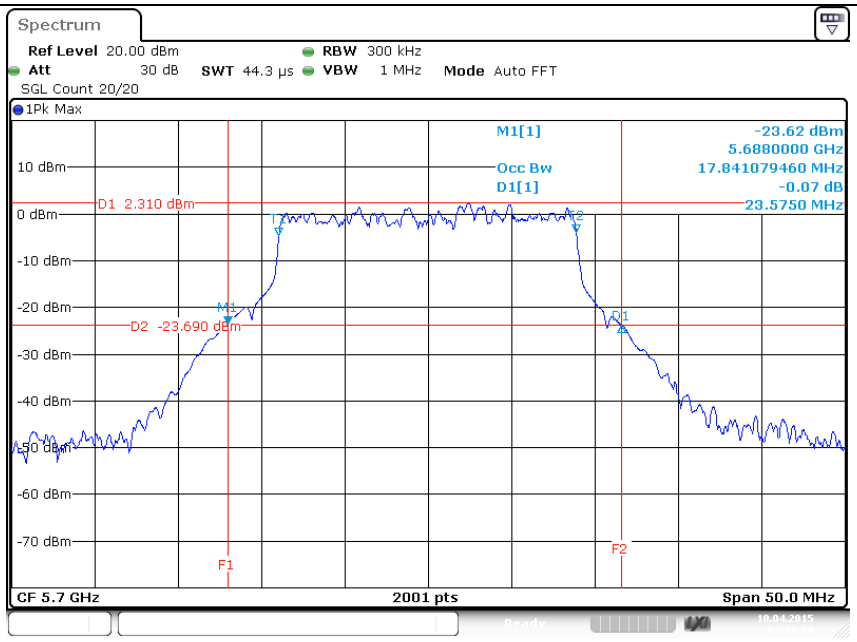
Date: 10.APR.2015 02:16:45

802.11ac 20MHz/ Nss1 MCS0/ Ch.140/ Ant2



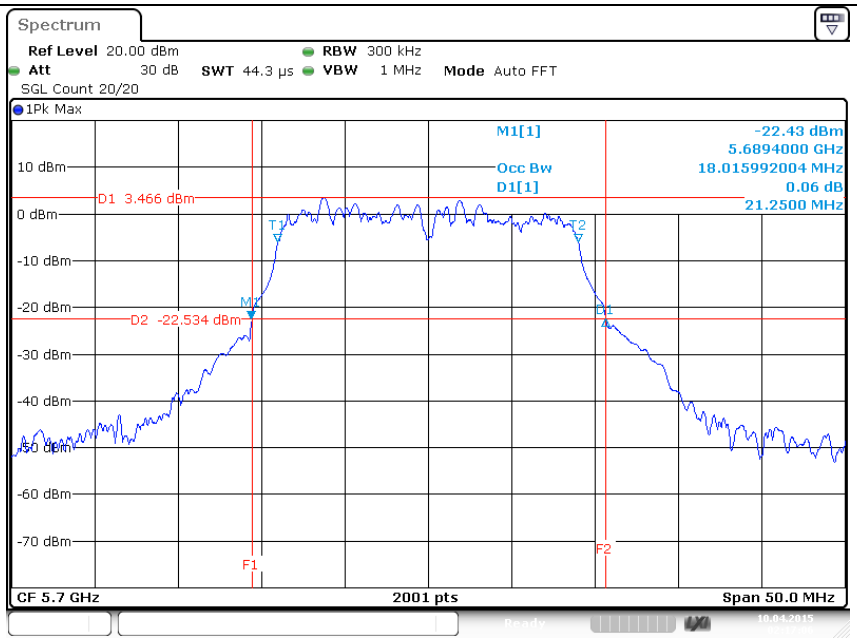
Date: 10.APR.2015 02:16:52

802.11ac 20MHz/ Nss1 MCS0/ Ch.140/ Ant3



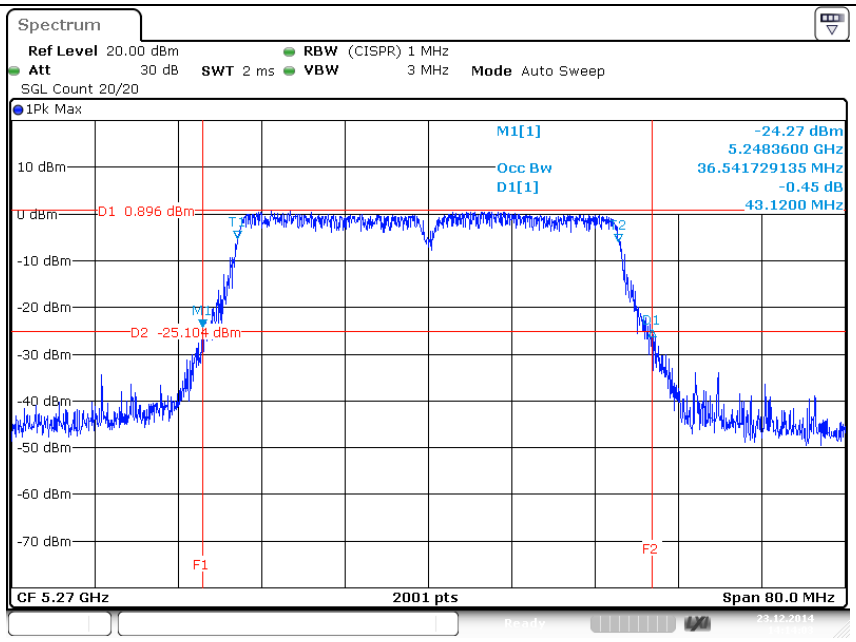
Date: 10.APR.2015 02:16:59

802.11ac 20MHz/ Nss1 MCS0/ Ch.140/ Ant4



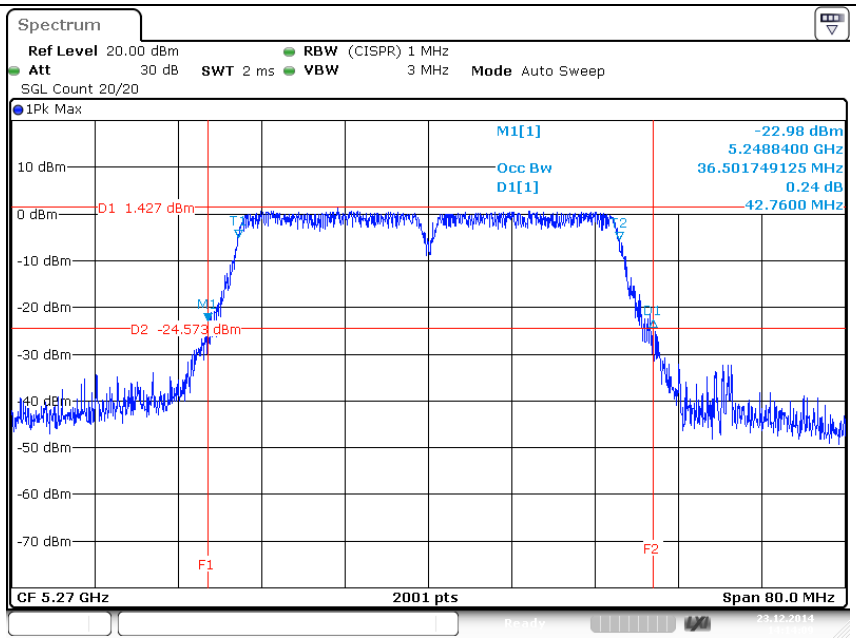
Date: 10.APR.2015 02:17:06

802.11ac 40MHz/ Nss1 MCS0/ Ch.54/ Ant1



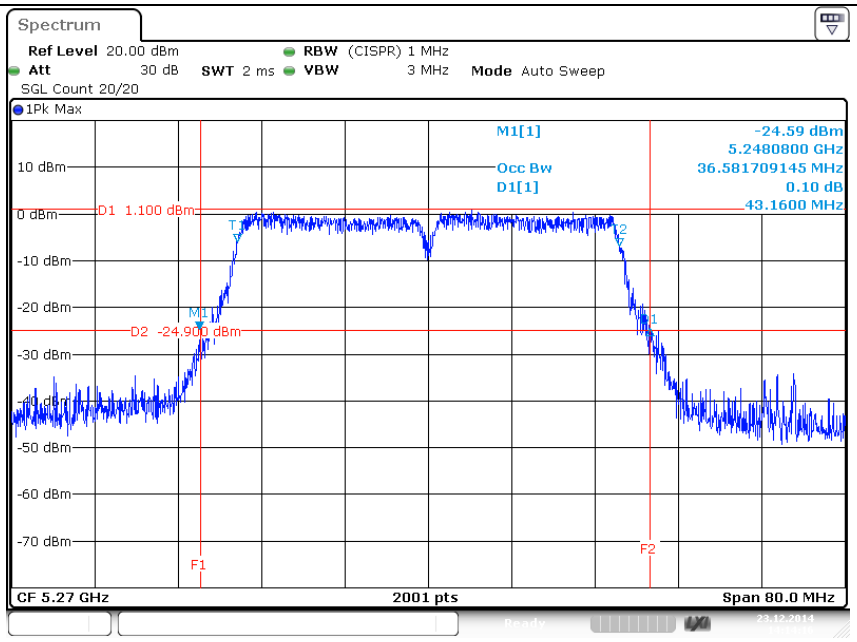
Date: 23.DEC.2014 14:14:03

802.11ac 40MHz/ Nss1 MCS0/ Ch.54/ Ant2



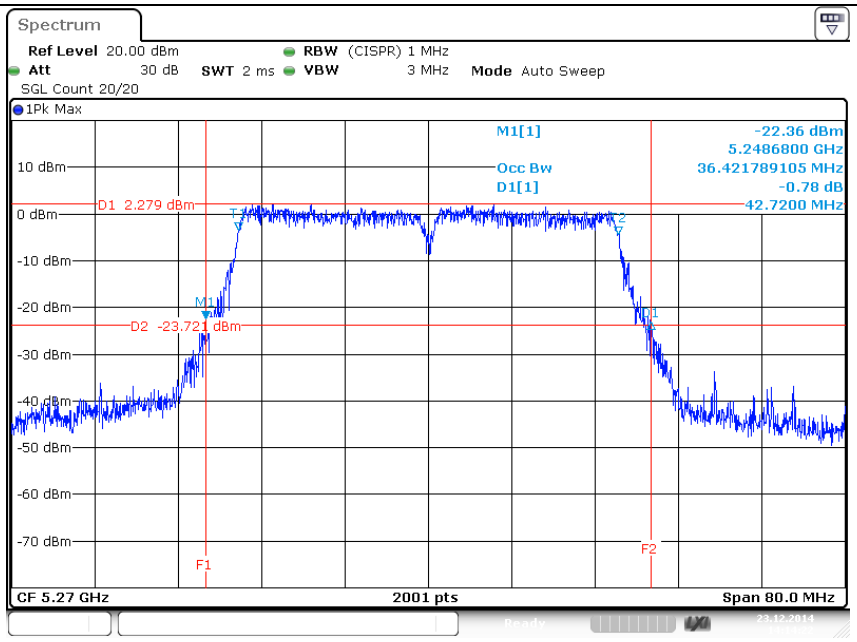
Date: 23.DEC.2014 14:14:09

802.11ac 40MHz/ Nss1 MCS0/ Ch.54/ Ant3



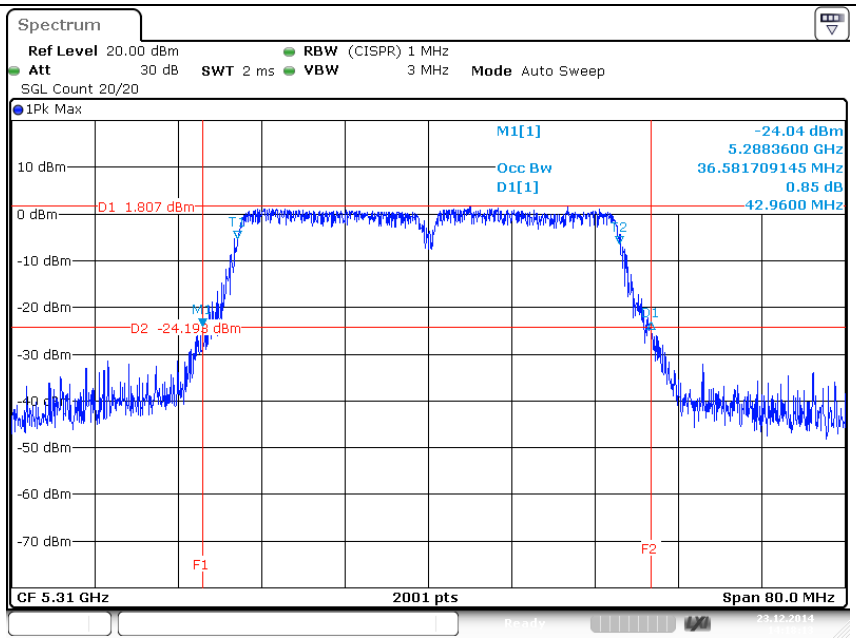
Date: 23.DEC.2014 14:14:16

802.11ac 40MHz/ Nss1 MCS0/ Ch.54/ Ant4



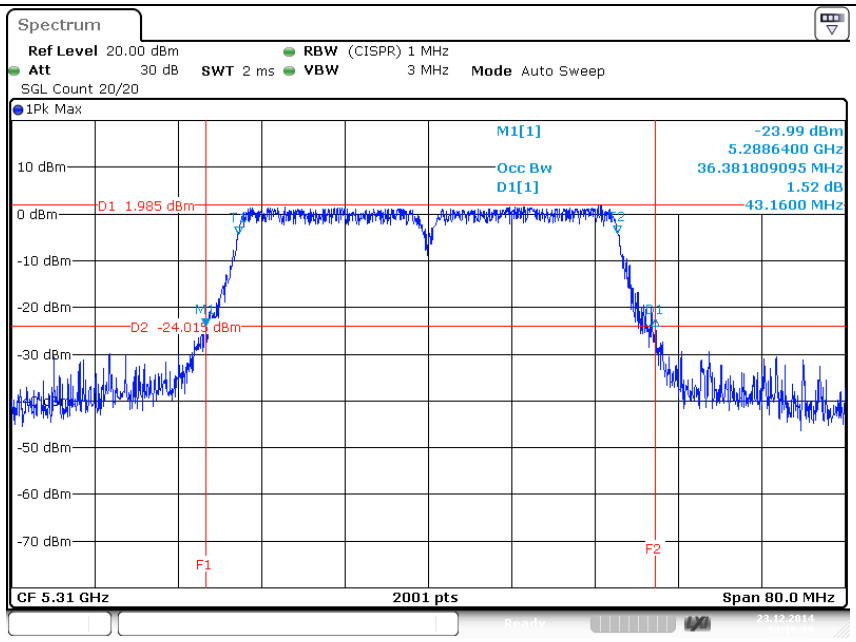
Date: 23.DEC.2014 14:14:22

802.11ac 40MHz/ Nss1 MCS0/ Ch.62/ Ant1



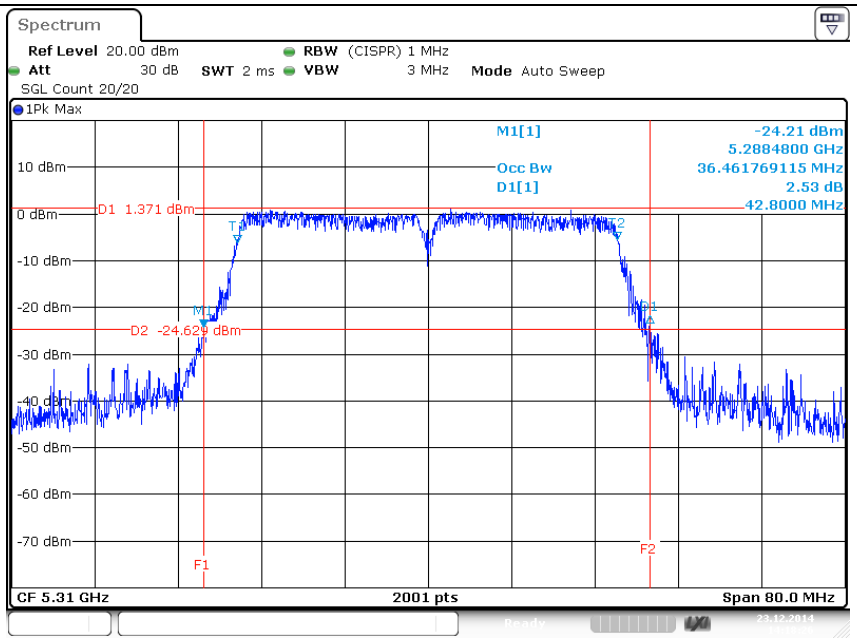
Date: 23.DEC.2014 14:18:13

802.11ac 40MHz/ Nss1 MCS0/ Ch.62/ Ant2



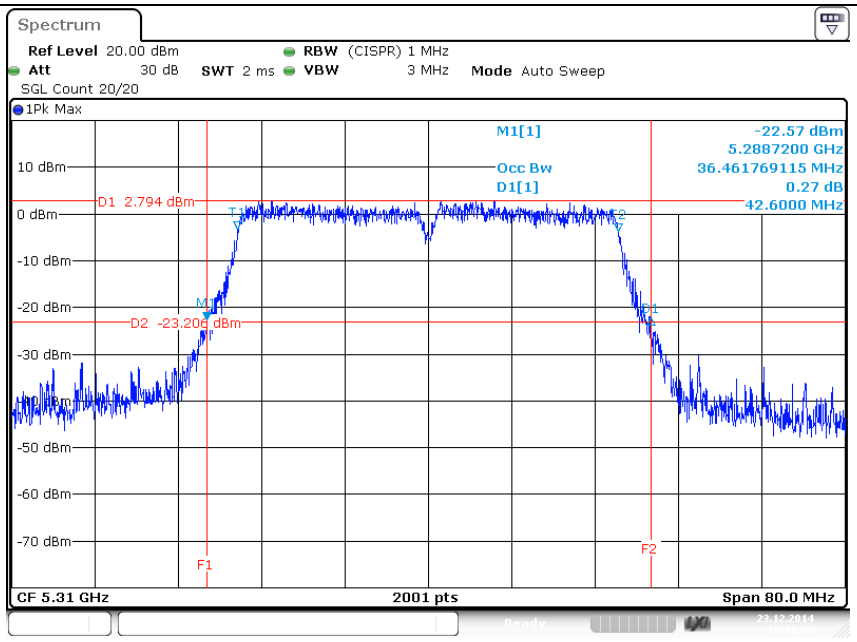
Date: 23.DEC.2014 14:18:19

802.11ac 40MHz/ Nss1 MCS0/ Ch.62/ Ant3



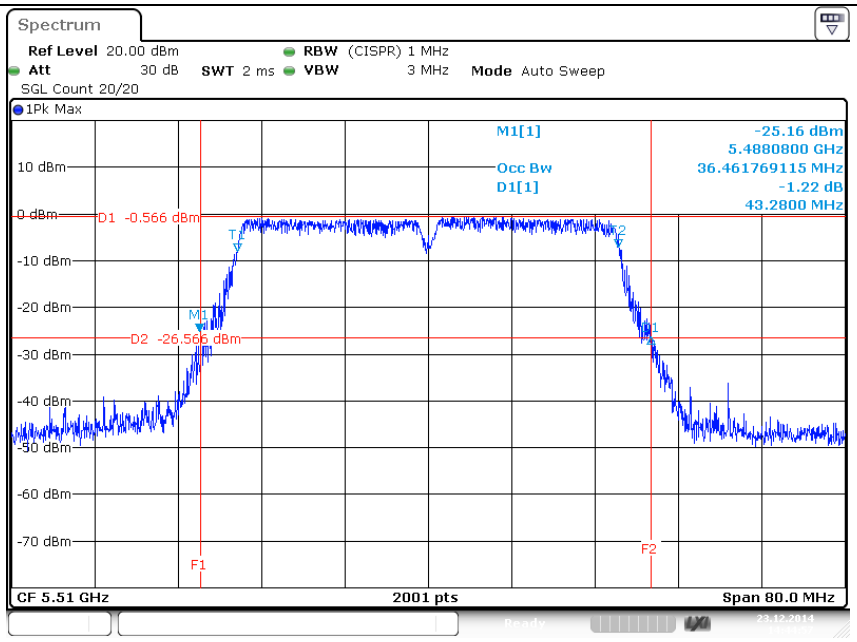
Date: 23.DEC.2014 14:18:26

802.11ac 40MHz/ Nss1 MCS0/ Ch.62/ Ant4



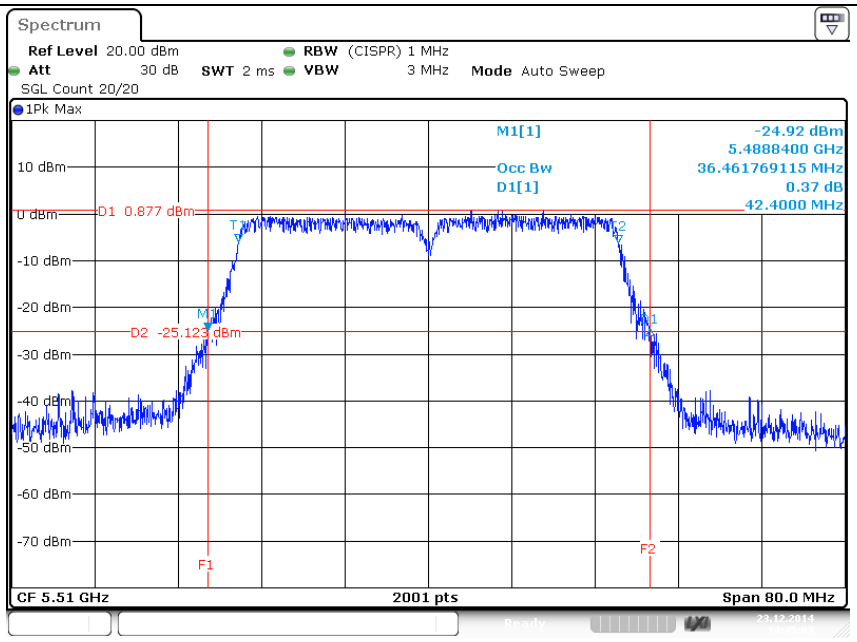
Date: 23.DEC.2014 14:18:32

802.11ac 40MHz/ Nss1 MCS0/ Ch.102/ Ant1



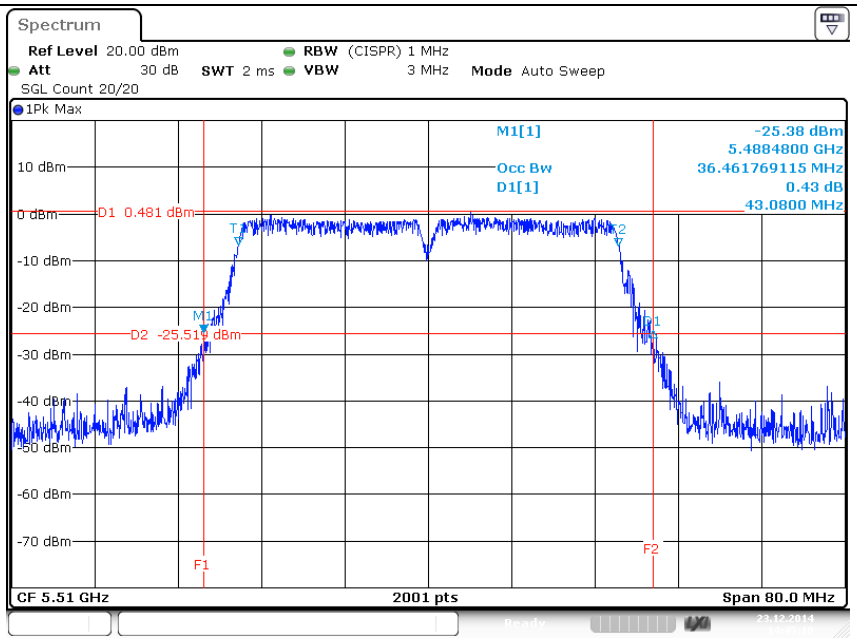
Date: 23.DEC.2014 14:44:57

802.11ac 40MHz/ Nss1 MCS0/ Ch.102/ Ant2



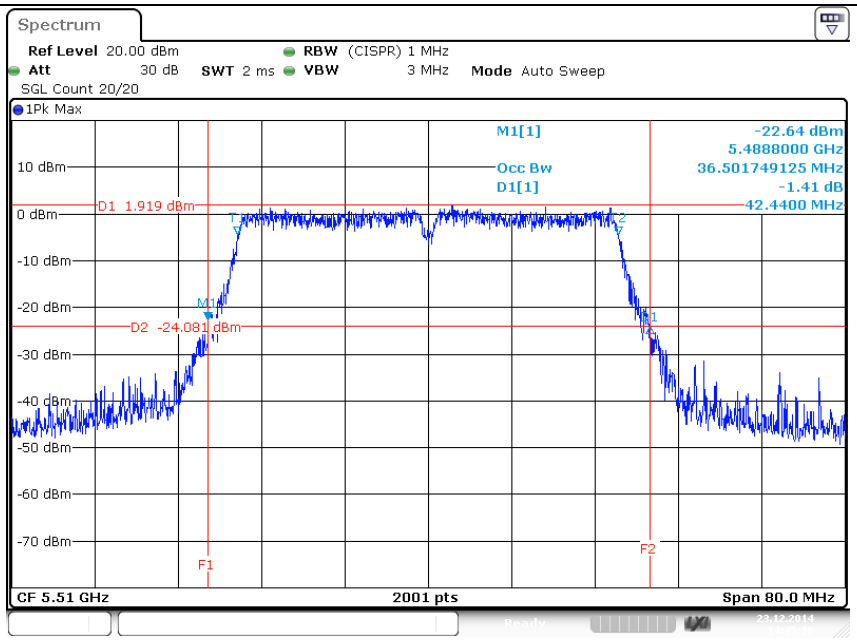
Date: 23.DEC.2014 14:45:03

802.11ac 40MHz/ Nss1 MCS0/ Ch.102/ Ant3



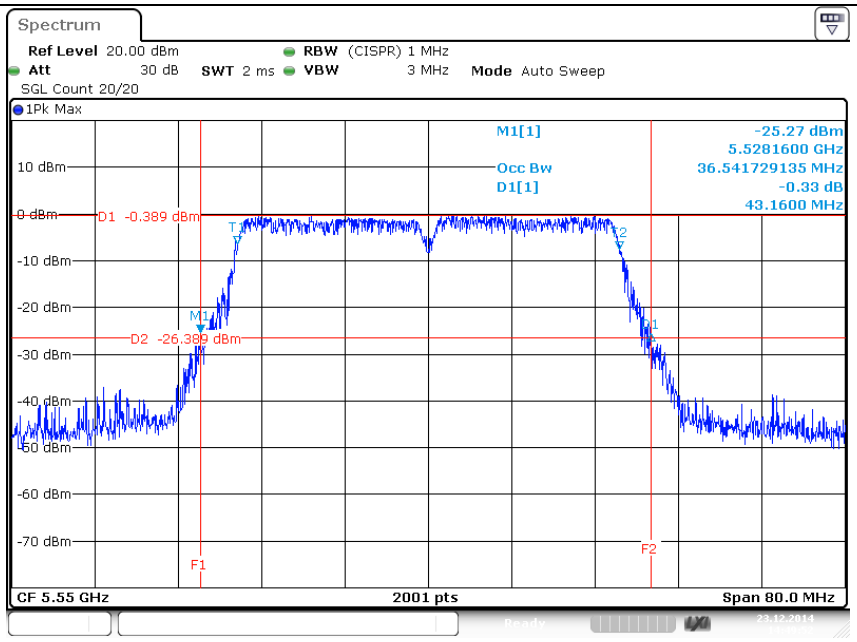
Date: 23.DEC.2014 14:45:10

802.11ac 40MHz/ Nss1 MCS0/ Ch.102/ Ant4



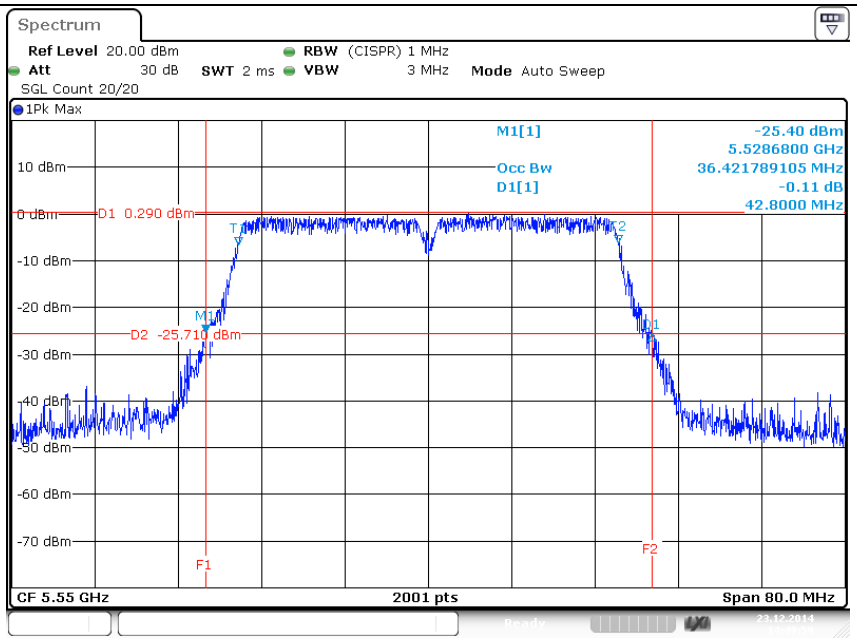
Date: 23.DEC.2014 14:45:16

802.11ac 40MHz/ Nss1 MCS0/ Ch.110/ Ant1



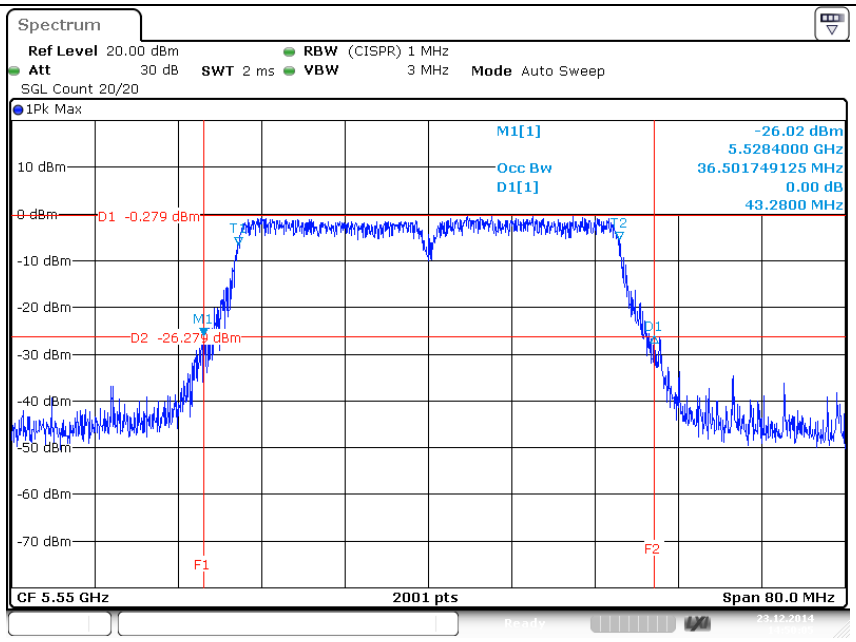
Date: 23.DEC.2014 14:49:52

802.11ac 40MHz/ Nss1 MCS0/ Ch.110/ Ant2

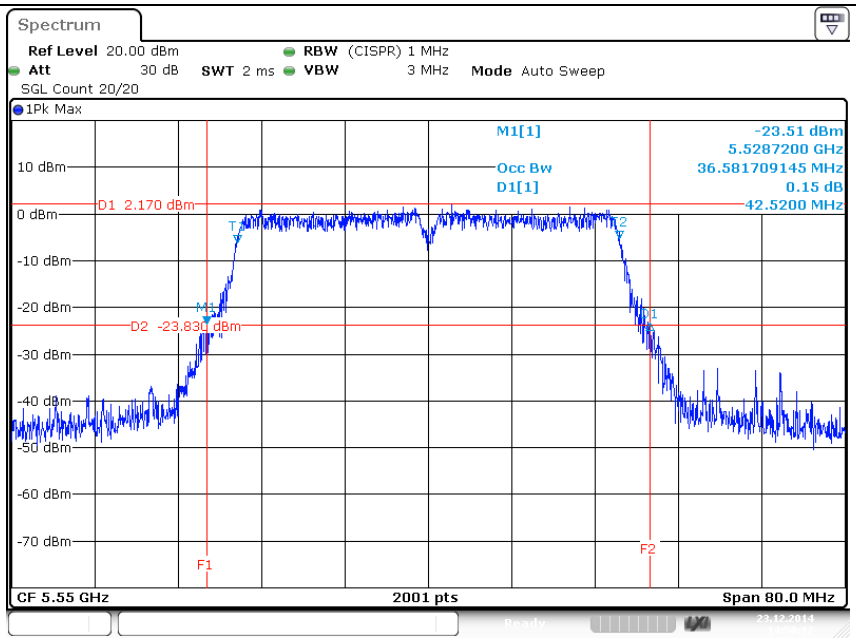


Date: 23.DEC.2014 14:49:59

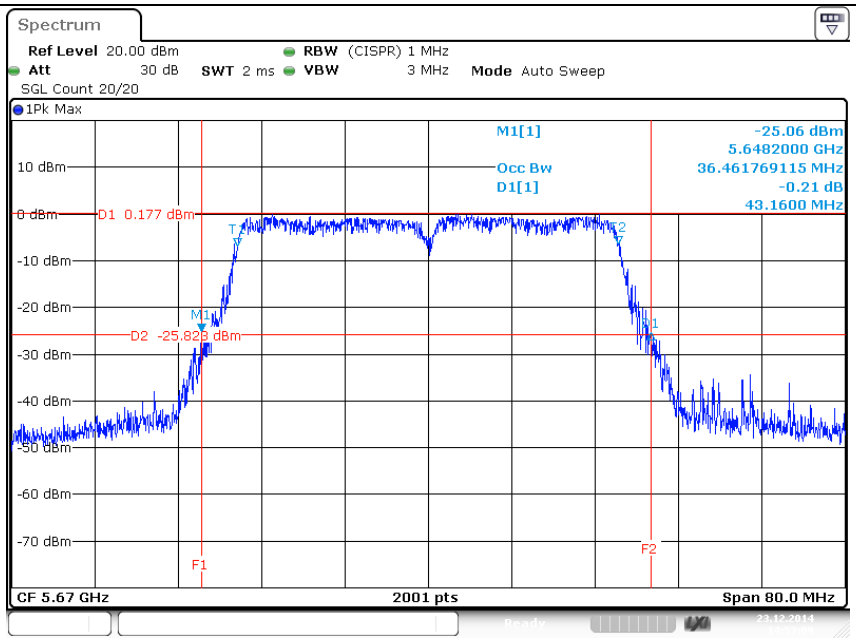
802.11ac 40MHz/ Nss1 MCS0/ Ch.110/ Ant3



802.11ac 40MHz/ Nss1 MCS0/ Ch.110/ Ant4

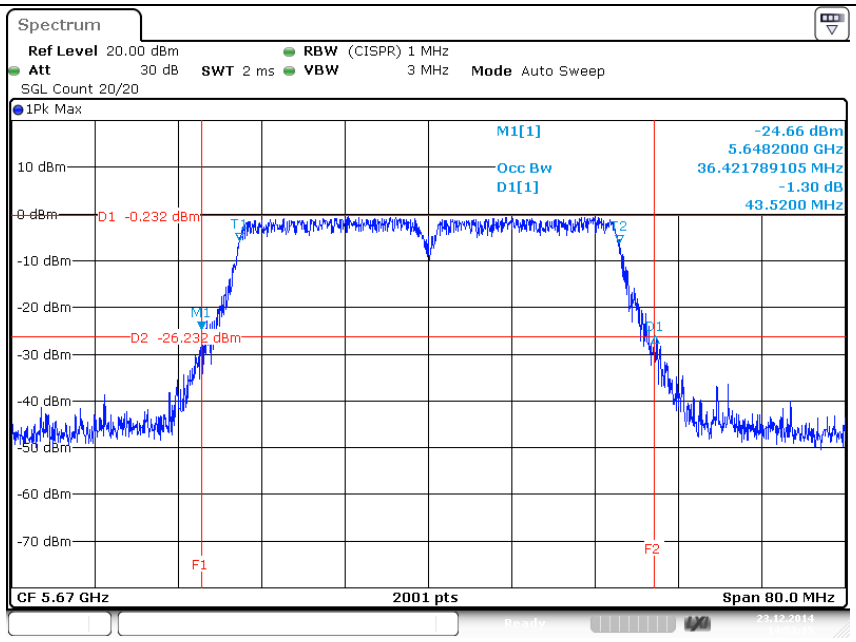


802.11ac 40MHz/ Nss1 MCS0/ Ch.134/ Ant1



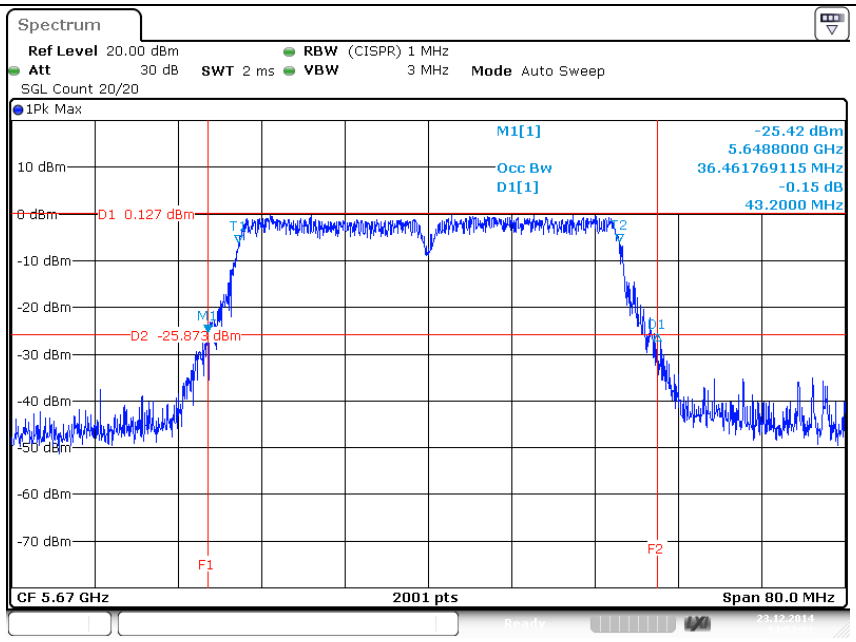
Date: 23.DEC.2014 14:53:09

802.11ac 40MHz/ Nss1 MCS0/ Ch.134/ Ant2



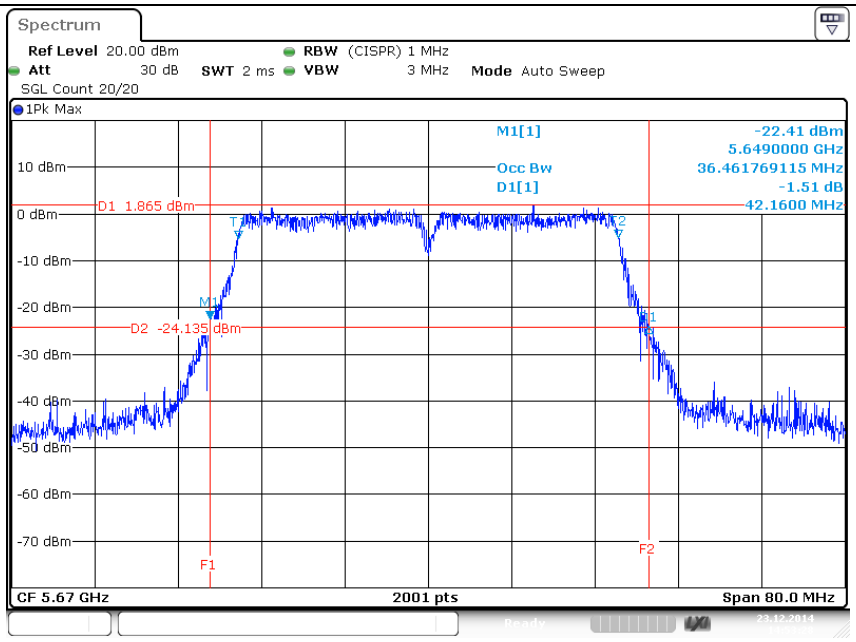
Date: 23.DEC.2014 14:53:15

802.11ac 40MHz/ Nss1 MCS0/ Ch.134/ Ant3



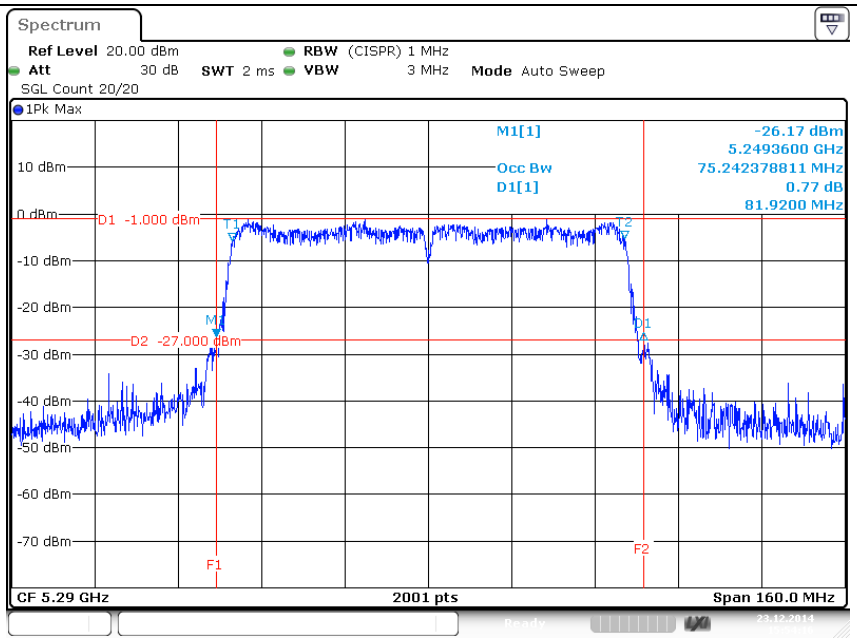
Date: 23.DEC.2014 14:53:21

802.11ac 40MHz/ Nss1 MCS0/ Ch.134/ Ant4



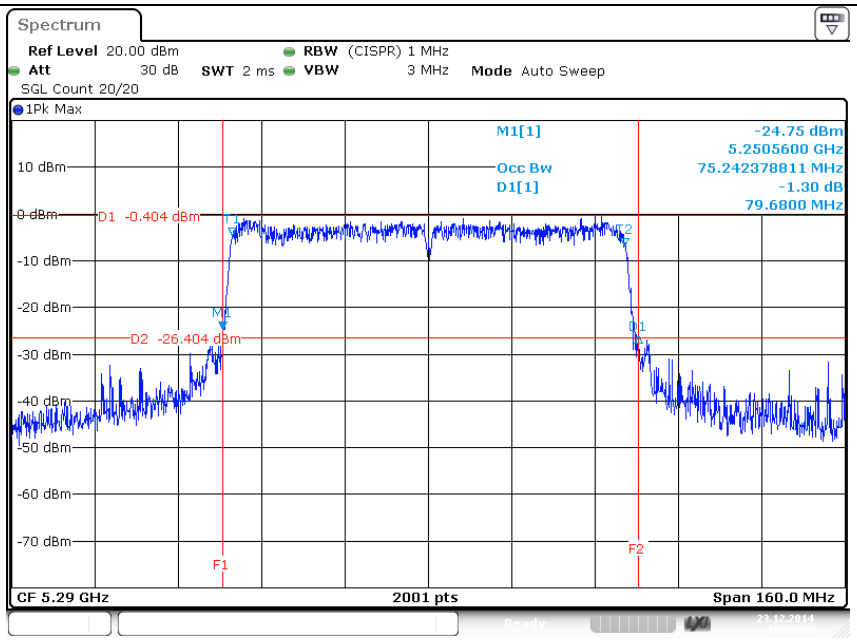
Date: 23.DEC.2014 14:53:28

802.11ac 80MHz/ Nss1 MCS0/ Ch.58/ Ant1



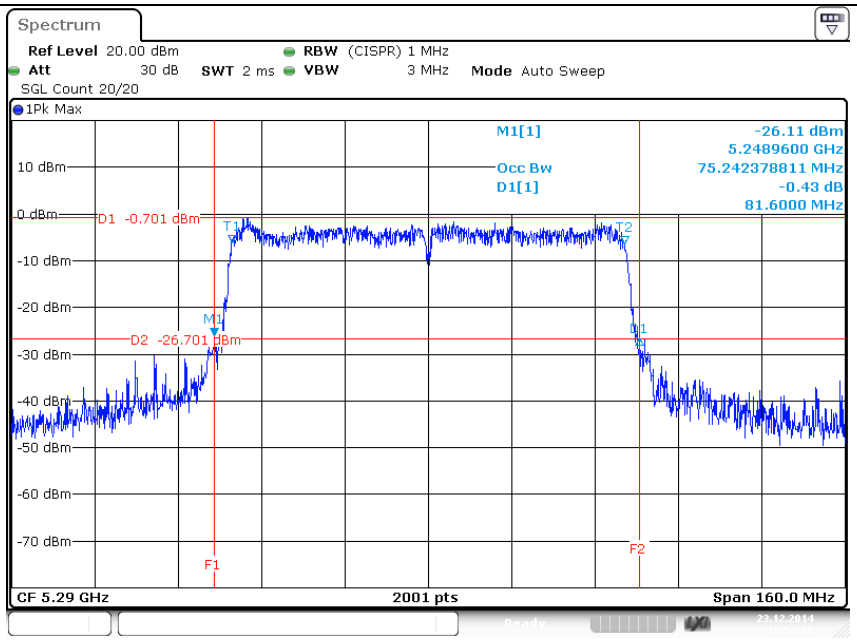
Date: 23.DEC.2014 15:54:16

802.11ac 80MHz/ Nss1 MCS0/ Ch.58/ Ant2



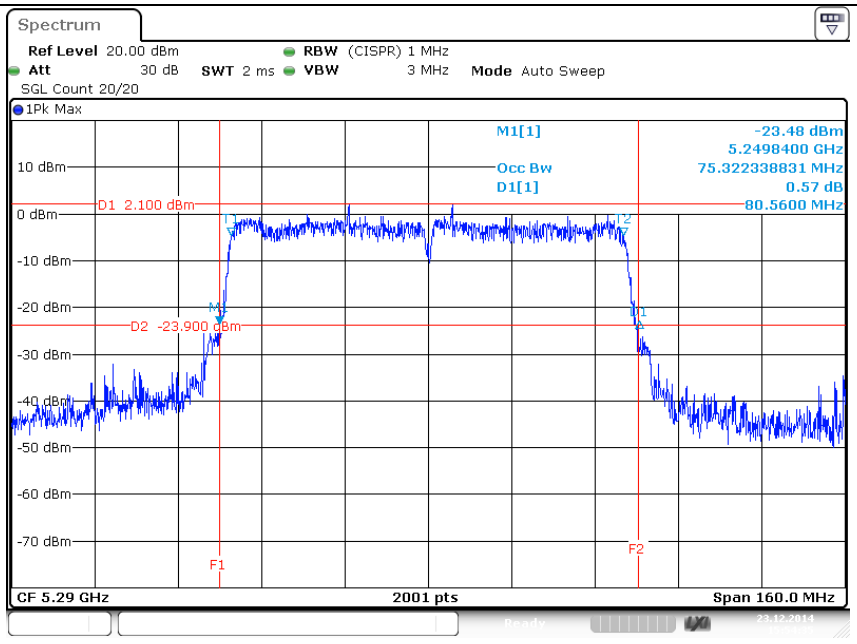
Date: 23.DEC.2014 15:54:22

802.11ac 80MHz/ Nss1 MCS0/ Ch.58/ Ant3



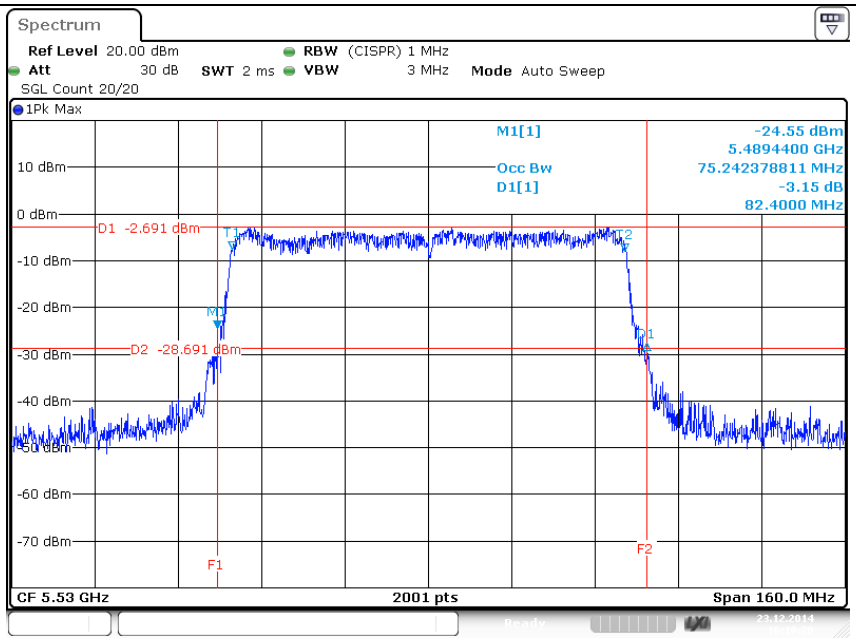
Date: 23.DEC.2014 15:54:28

802.11ac 80MHz/ Nss1 MCS0/ Ch.58/ Ant4



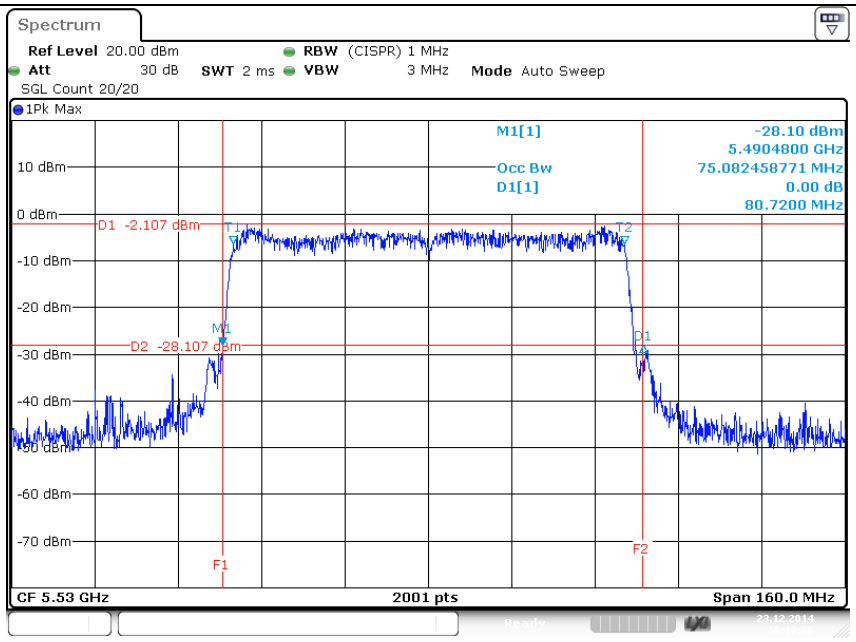
Date: 23.DEC.2014 15:54:35

802.11ac 80MHz/ Nss1 MCS0/ Ch.106/ Ant1



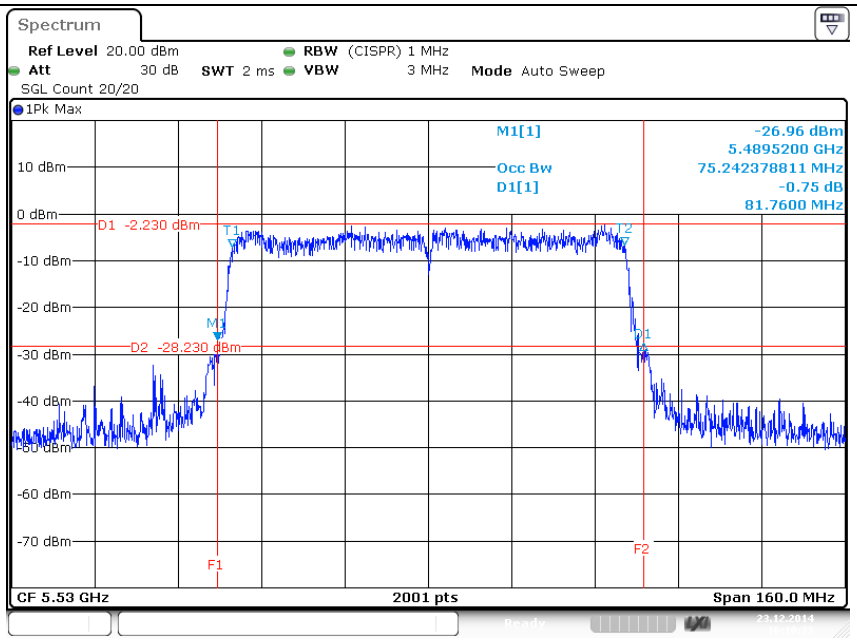
Date: 23.DEC.2014 16:10:20

802.11ac 80MHz/ Nss1 MCS0/ Ch.106/ Ant2



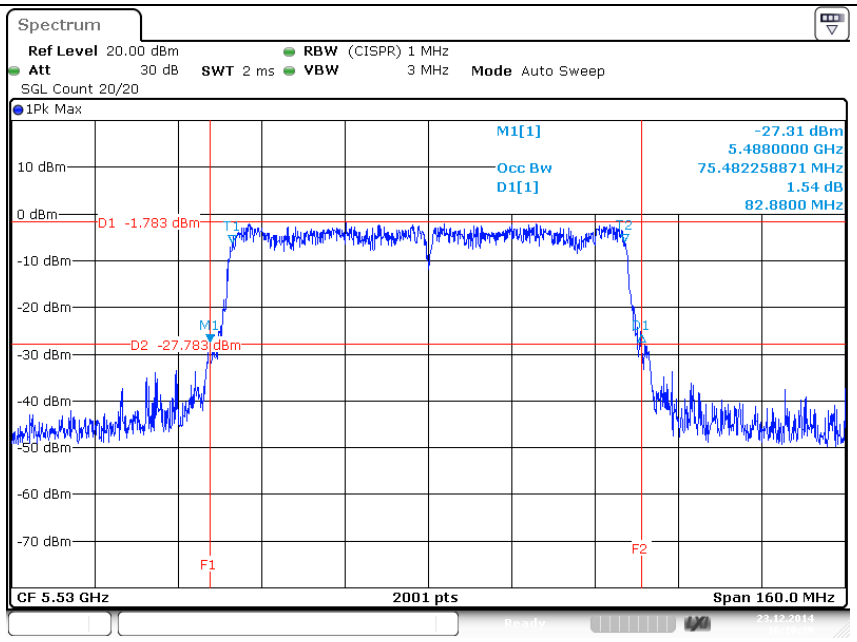
Date: 23.DEC.2014 16:10:26

802.11ac 80MHz/ Nss1 MCS0/ Ch.106/ Ant3



Date: 23.DEC.2014 16:10:33

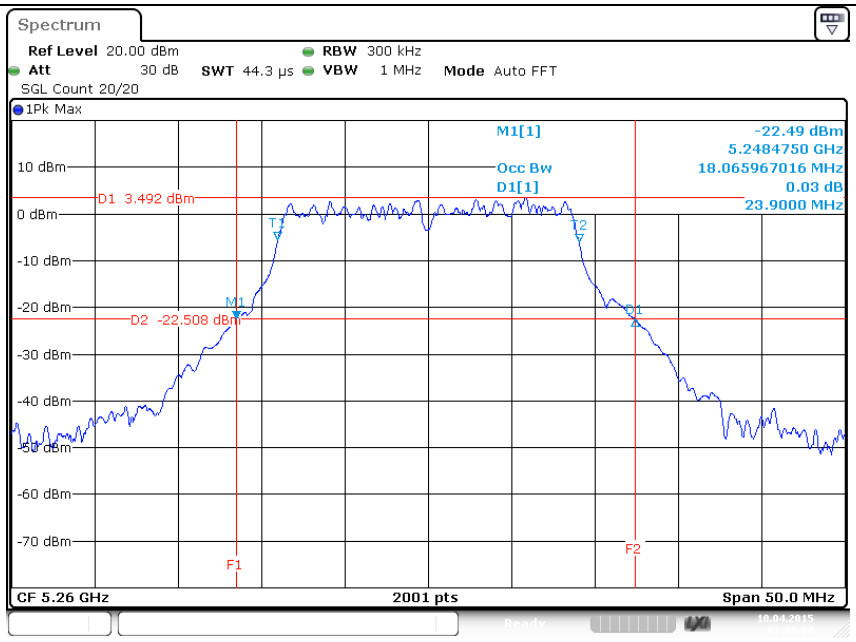
802.11ac 80MHz/ Nss1 MCS0/ Ch.106/ Ant4



Date: 23.DEC.2014 16:10:39

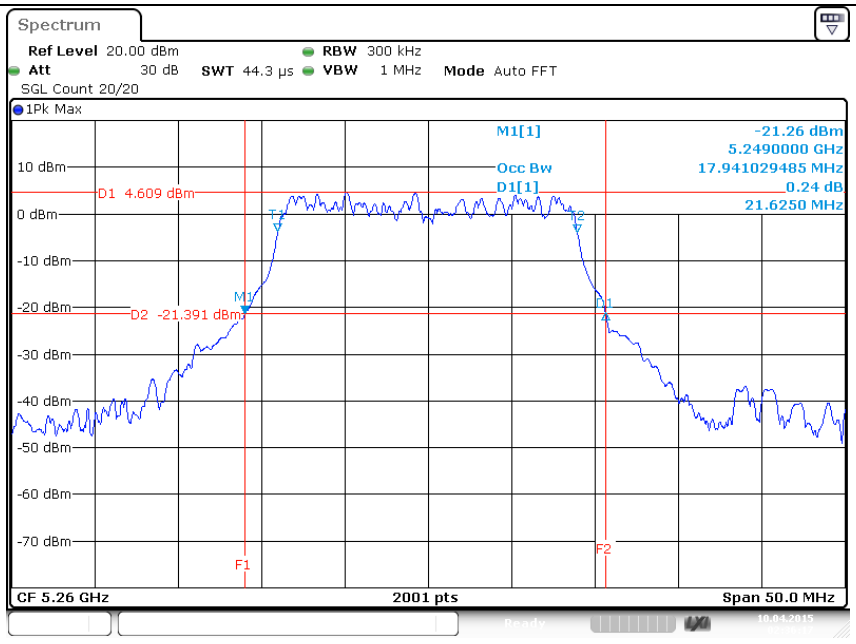
26dB Emission Bandwidth						
Worst Modulation Mode	Number of Transmit Chains (NTX)	Frequency (MHz)	26dB Emission Bandwidth			
			Ant1	Ant 2	Ant 3	Ant 4
802.11ac 20MHz (TXBF)	2 stream 4TX	5260	23.90	21.62	23.42	21.87
802.11ac 20MHz (TXBF)	2 stream 4TX	5300	21.90	23.17	23.00	22.85
802.11ac 20MHz (TXBF)	2 stream 4TX	5320	23.65	22.52	22.22	21.97
802.11ac 20MHz (TXBF)	2 stream 4TX	5500	22.20	23.00	22.67	22.22
802.11ac 20MHz (TXBF)	2 stream 4TX	5580	23.75	21.70	21.32	21.97
802.11ac 20MHz (TXBF)	2 stream 4TX	5700	22.30	22.30	22.47	21.32
802.11ac 40MHz (TXBF)	2 stream 4TX	5270	42.24	42.48	42.36	42.64
802.11ac 40MHz (TXBF)	2 stream 4TX	5310	42.68	42.12	43.00	42.80
802.11ac 40MHz (TXBF)	2 stream 4TX	5510	42.04	42.20	47.36	42.60
802.11ac 40MHz (TXBF)	2 stream 4TX	5550	41.44	42.16	42.00	42.88
802.11ac 40MHz (TXBF)	2 stream 4TX	5670	42.60	41.60	42.40	43.32
802.11ac 80MHz (TXBF)	2 stream 4TX	5290	80.64	81.28	82.24	83.44
802.11ac 80MHz (TXBF)	2 stream 4TX	5530	79.92	82.16	81.76	83.28

802.11ac 20MHz/ Nss2 MCS0/ Ch.52/ Ant1



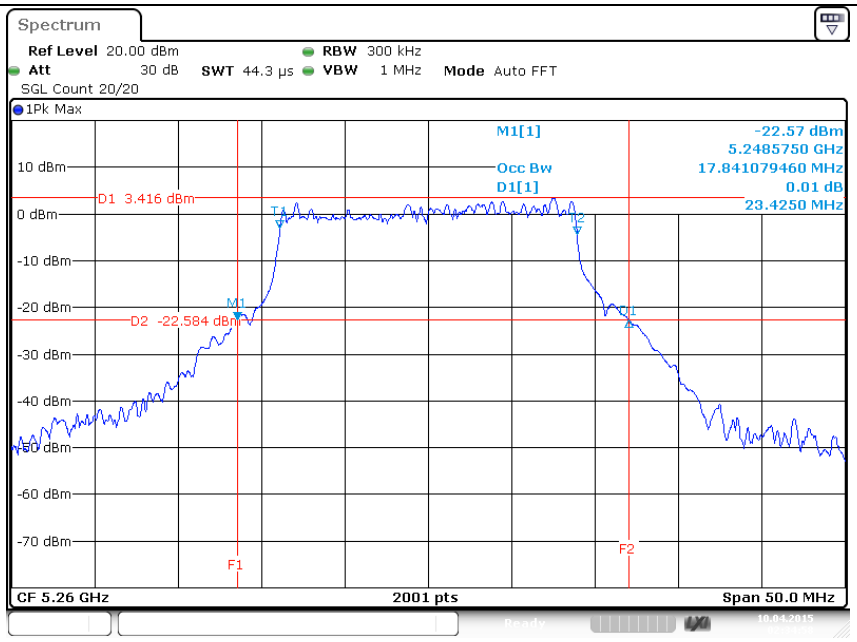
Date: 10.APR.2015 02:38:54

802.11ac 20MHz/ Nss2 MCS0/ Ch.52/ Ant2



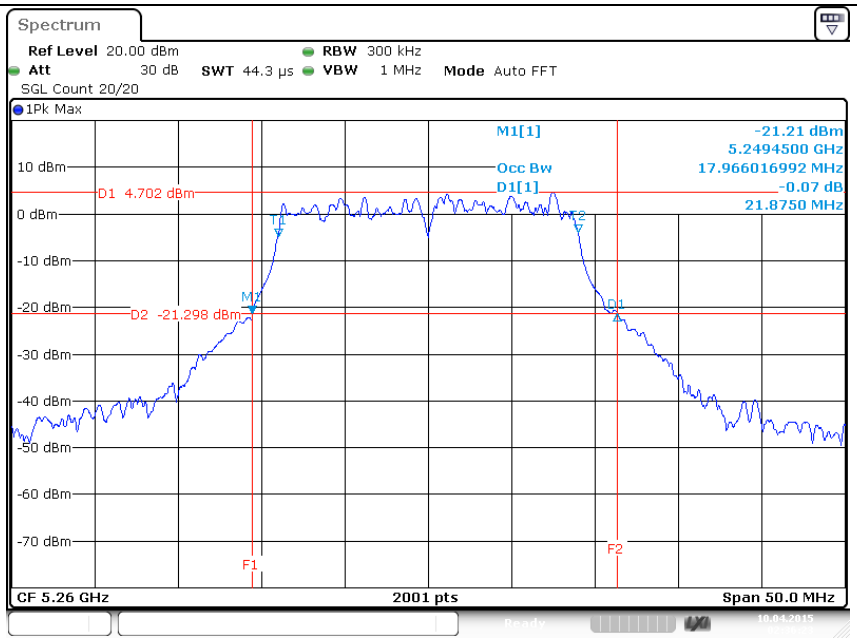
Date: 10.APR.2015 02:36:17

802.11ac 20MHz/ Nss2 MCS0/ Ch.52/ Ant3



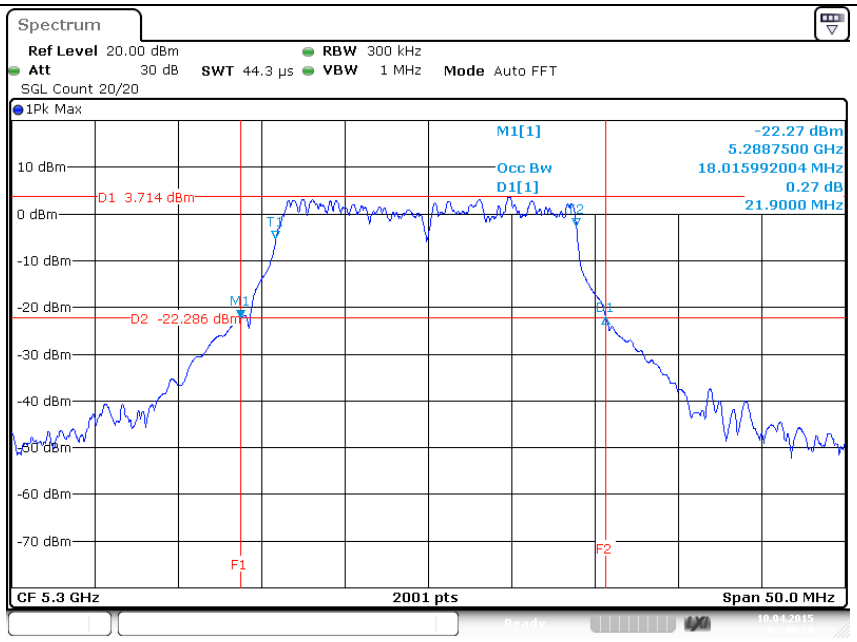
Date: 10.APR.2015 02:34:59

802.11ac 20MHz/ Nss2 MCS0/ Ch.52/ Ant4



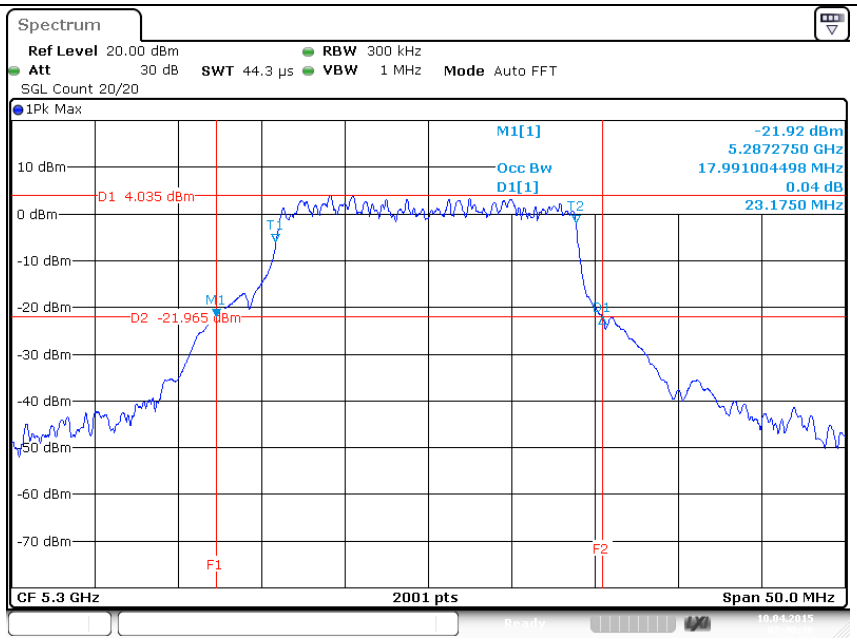
Date: 10.APR.2015 02:36:24

802.11ac 20MHz/ Nss2 MCS0/ Ch.60/ Ant1



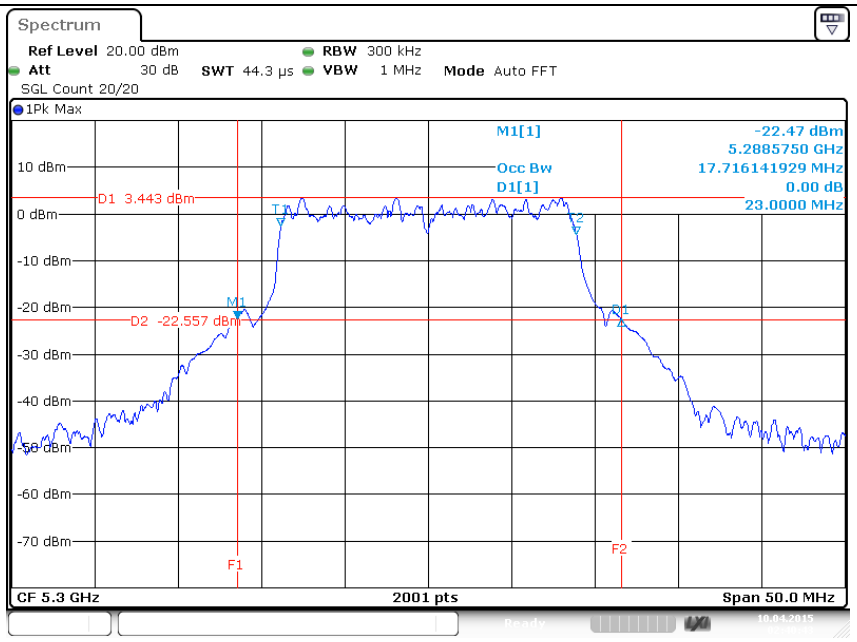
Date: 10.APR.2015 02:40:29

802.11ac 20MHz/ Nss2 MCS0/ Ch.60/ Ant2



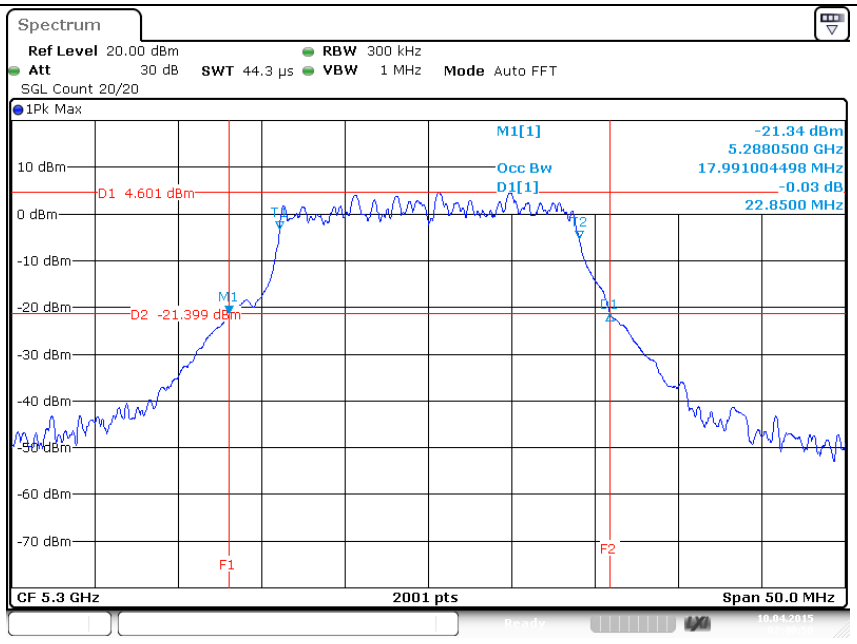
Date: 10.APR.2015 02:40:36

802.11ac 20MHz/ Nss2 MCS0/ Ch.60/ Ant3



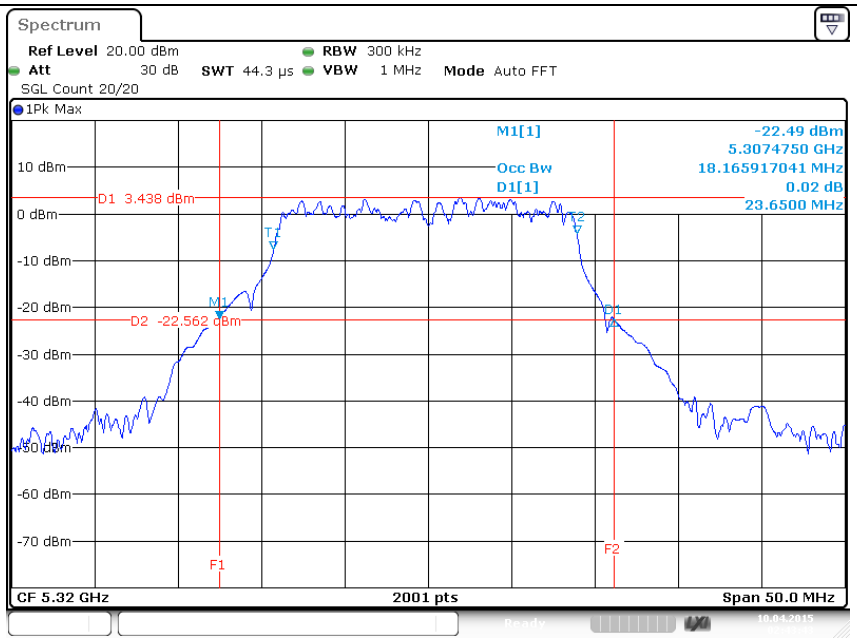
Date: 10.APR.2015 02:40:43

802.11ac 20MHz/ Nss2 MCS0/ Ch.60/ Ant4



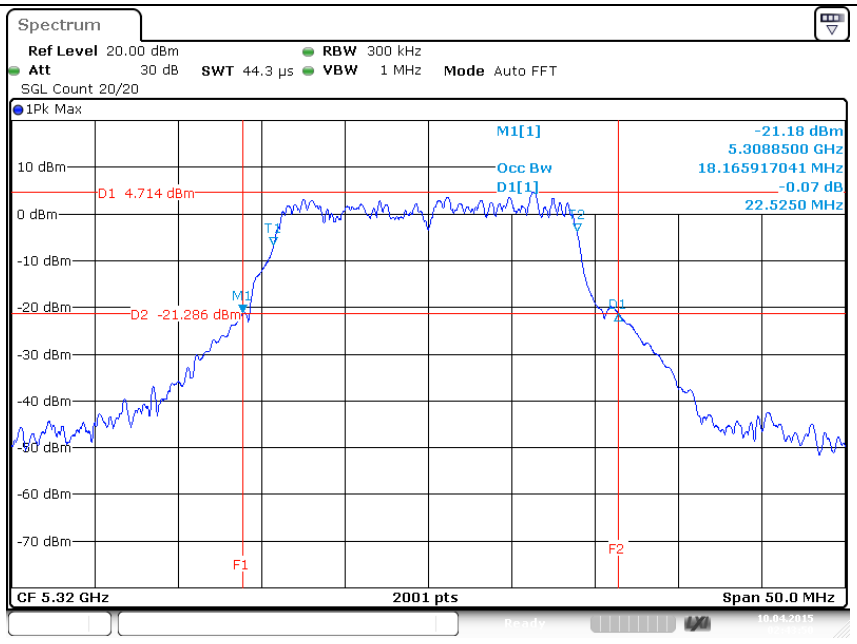
Date: 10.APR.2015 02:40:50

802.11ac 20MHz/ Nss2 MCS0/ Ch.64/ Ant1



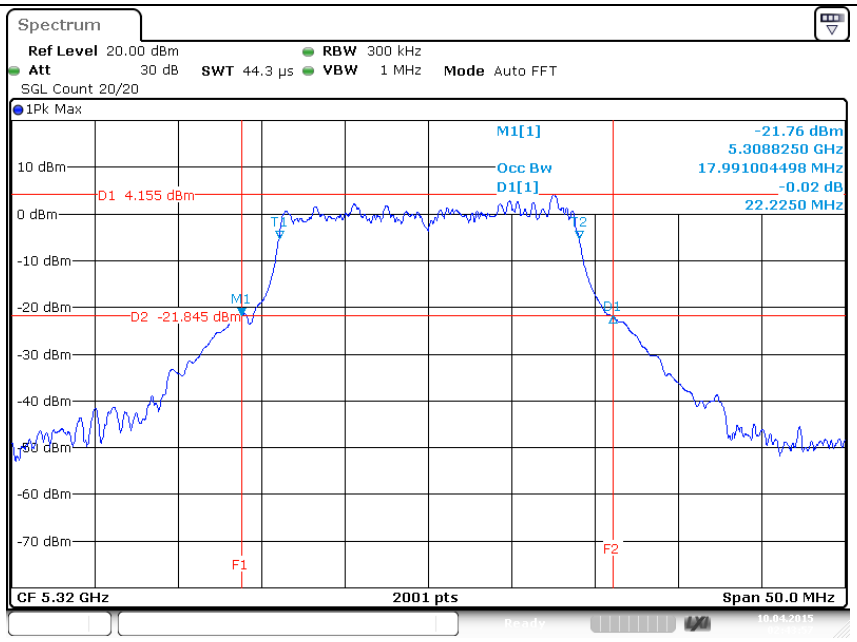
Date: 10.APR.2015 02:43:43

802.11ac 20MHz/ Nss2 MCS0/ Ch.64/ Ant2



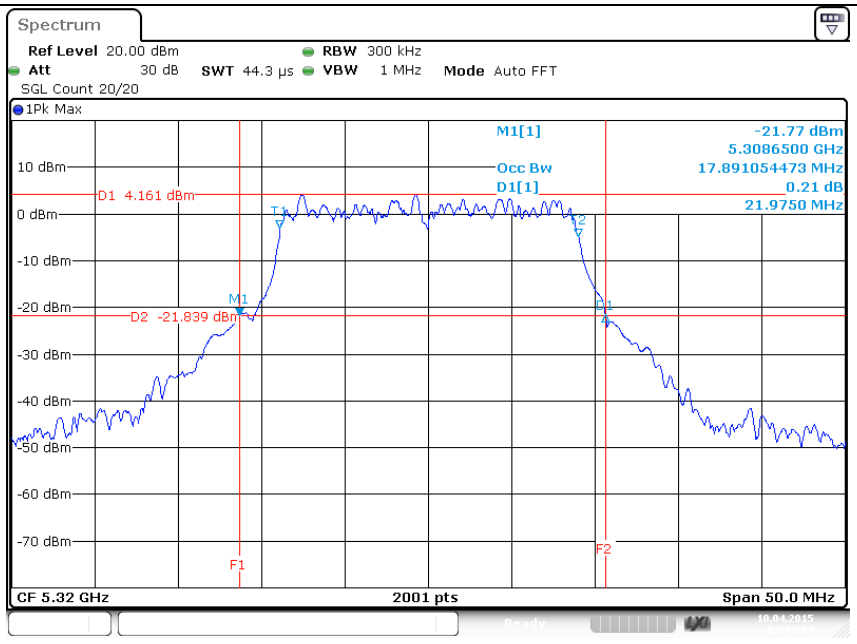
Date: 10.APR.2015 02:43:50

802.11ac 20MHz/ Nss2 MCS0/ Ch.64/ Ant3



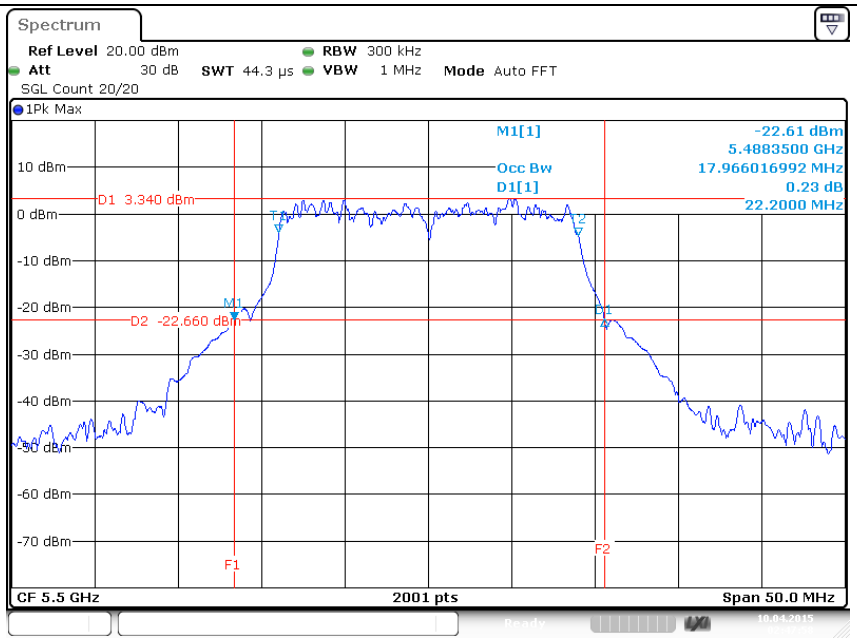
Date: 10.APR.2015 02:43:57

802.11ac 20MHz/ Nss2 MCS0/ Ch.64/ Ant4



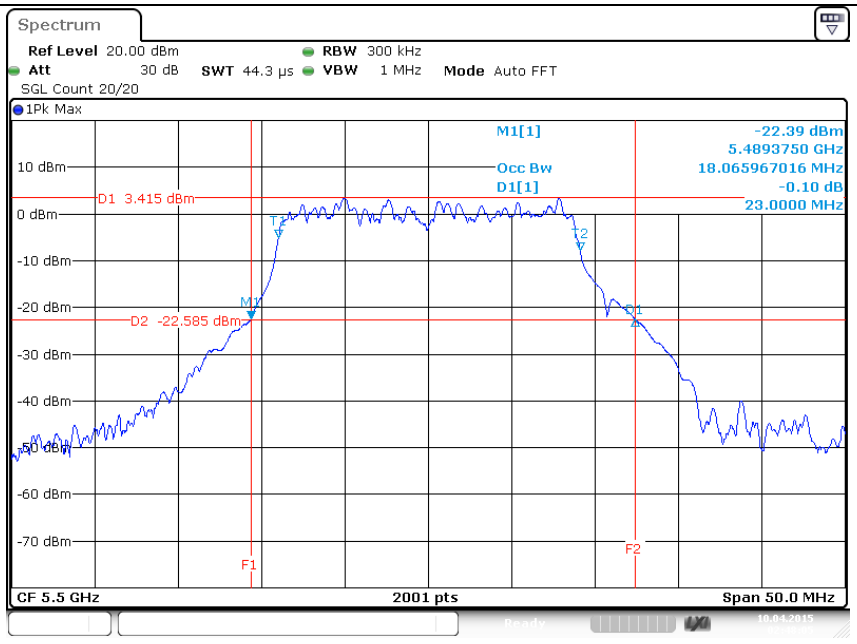
Date: 10.APR.2015 02:44:04

802.11ac 20MHz/ Nss2 MCS0/ Ch.100/ Ant1



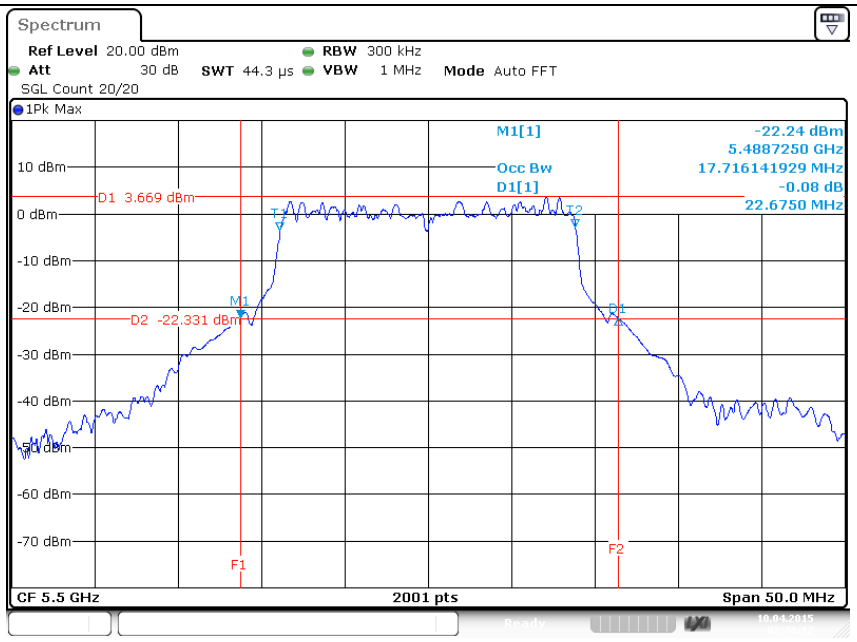
Date: 10.APR.2015 02:47:58

802.11ac 20MHz/ Nss2 MCS0/ Ch.100/ Ant2



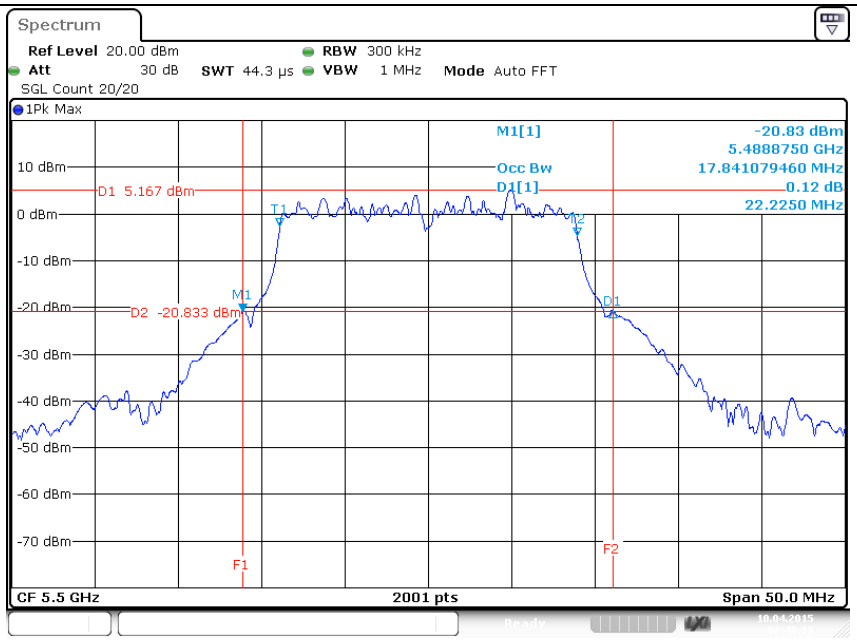
Date: 10.APR.2015 02:48:05

802.11ac 20MHz/ Nss2 MCS0/ Ch.100/ Ant3



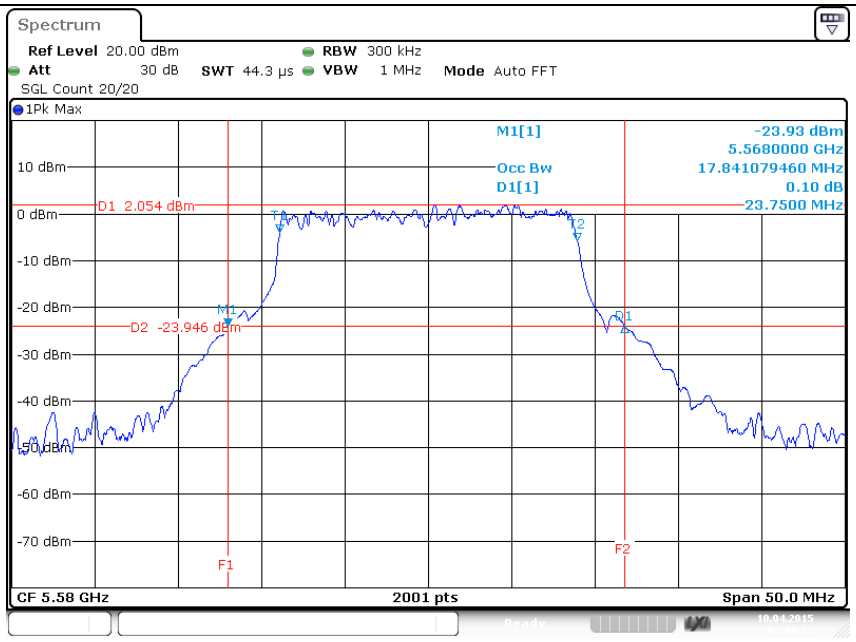
Date: 10.APR.2015 02:48:12

802.11ac 20MHz/ Nss2 MCS0/ Ch.100/ Ant4



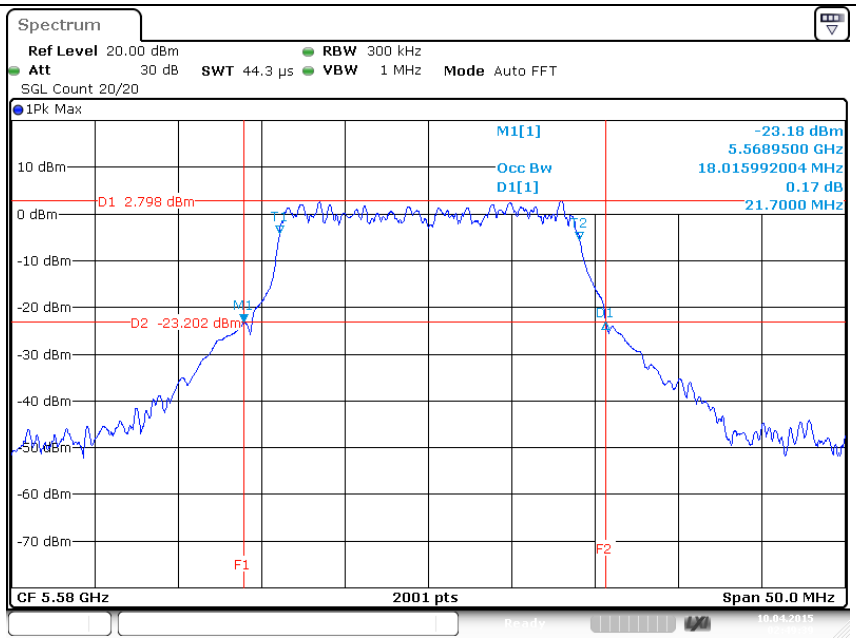
Date: 10.APR.2015 02:48:19

802.11ac 20MHz/ Nss2 MCS0/ Ch.116/ Ant1



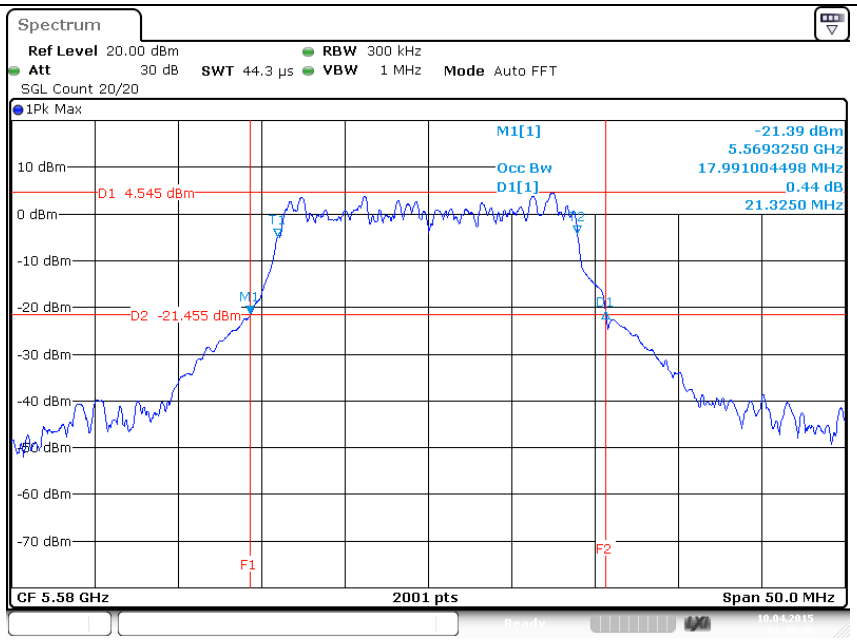
Date: 10.APR.2015 02:49:32

802.11ac 20MHz/ Nss2 MCS0/ Ch.116/ Ant2



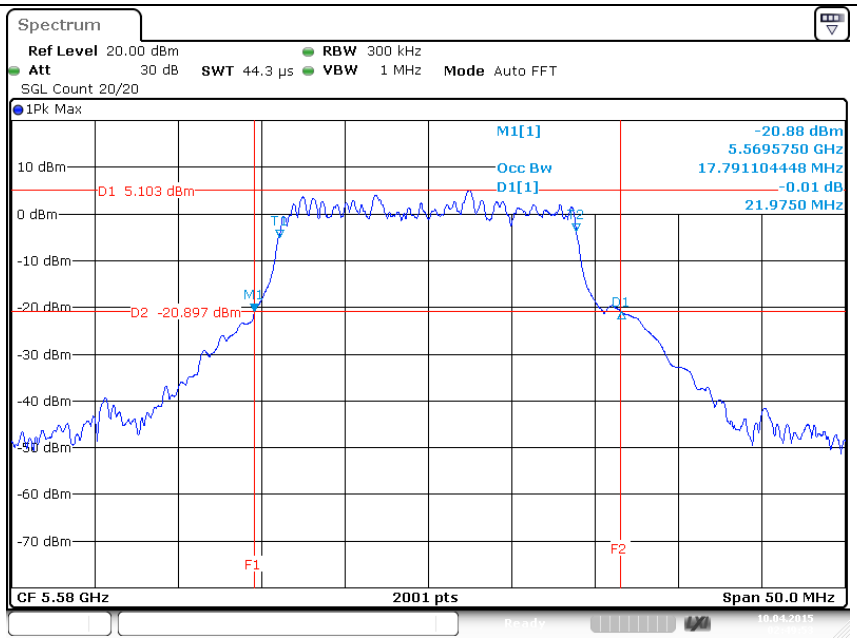
Date: 10.APR.2015 02:49:39

802.11ac 20MHz/ Nss2 MCS0/ Ch.116/ Ant3



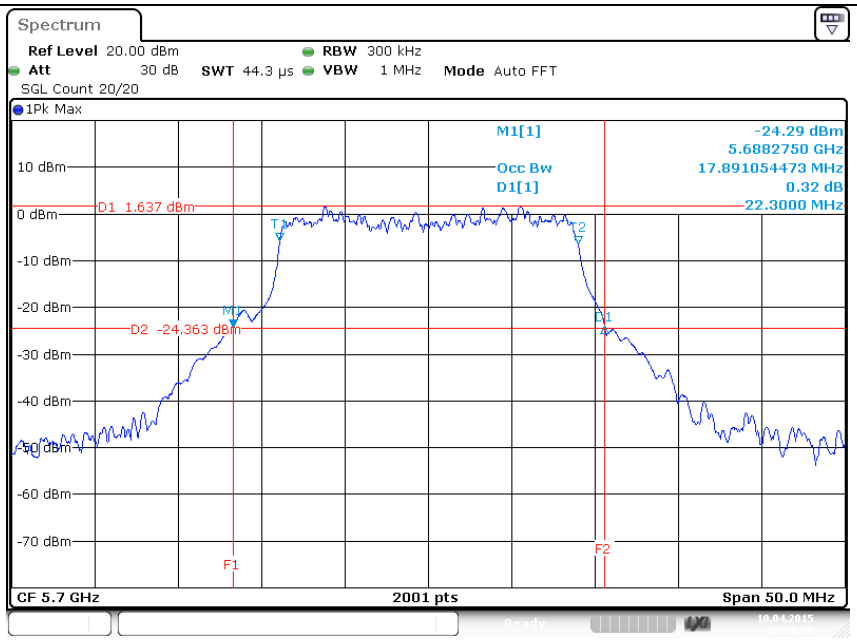
Date: 10.APR.2015 02:49:46

802.11ac 20MHz/ Nss2 MCS0/ Ch.116/ Ant4



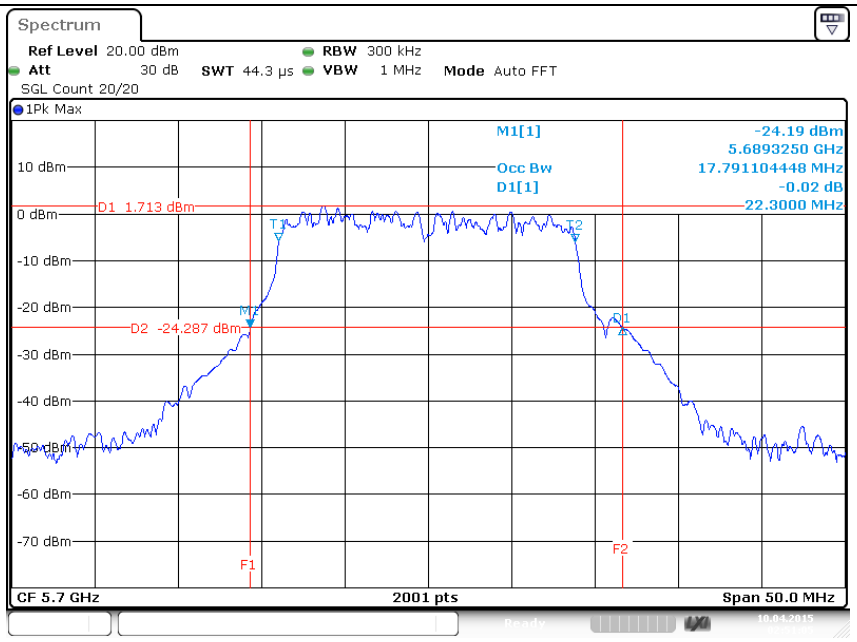
Date: 10.APR.2015 02:49:53

802.11ac 20MHz/ Nss2 MCS0/ Ch.140/ Ant1



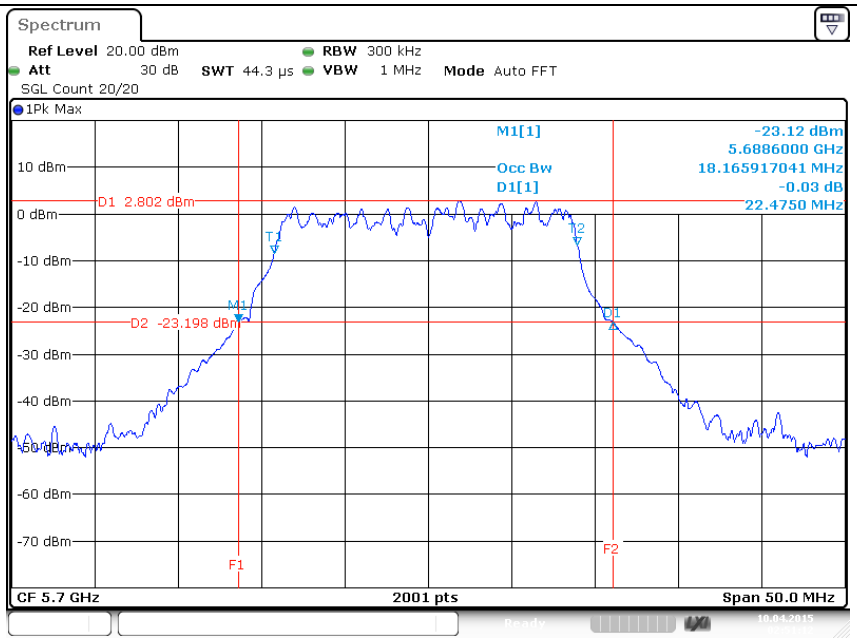
Date: 10.APR.2015 02:50:58

802.11ac 20MHz/ Nss2 MCS0/ Ch.140/ Ant2



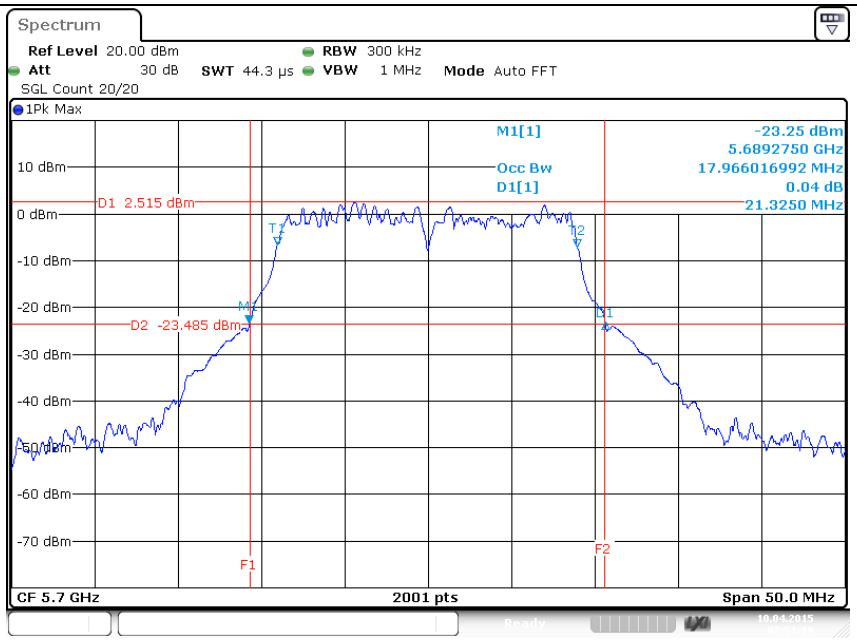
Date: 10.APR.2015 02:51:05

802.11ac 20MHz/ Nss2 MCS0/ Ch.140/ Ant3



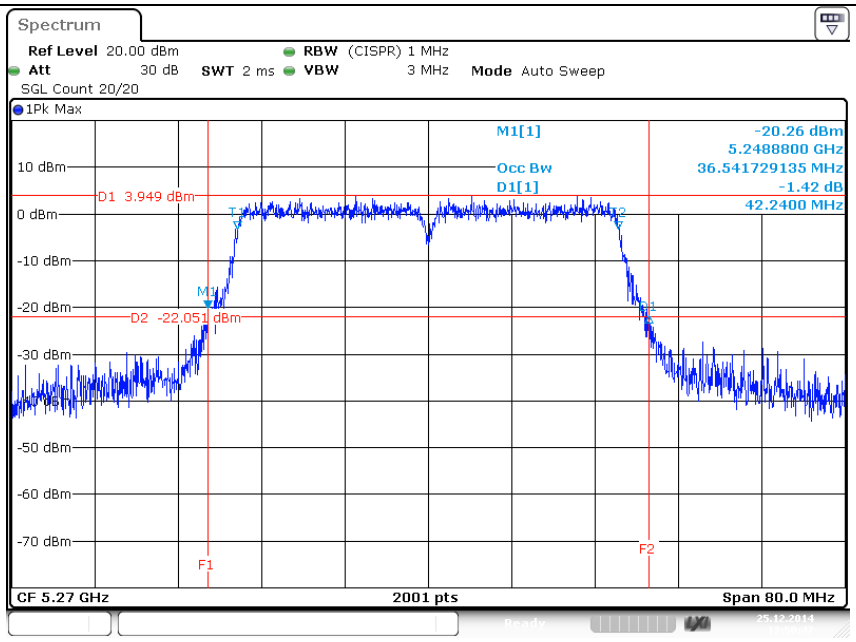
Date: 10.APR.2015 02:51:12

802.11ac 20MHz/ Nss2 MCS0/ Ch.140/ Ant4



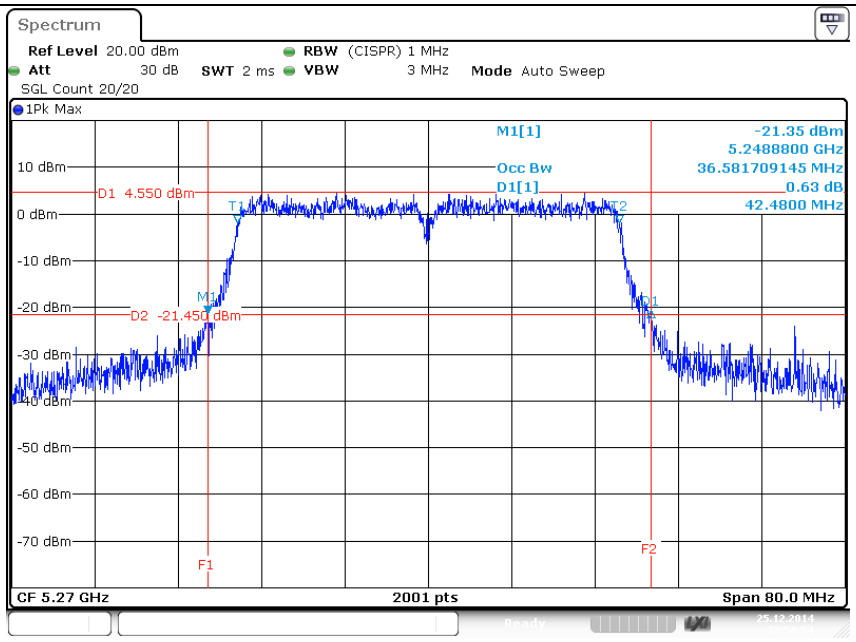
Date: 10.APR.2015 02:51:19

802.11ac 40MHz/ Nss2 MCS0/ Ch.54/ Ant1



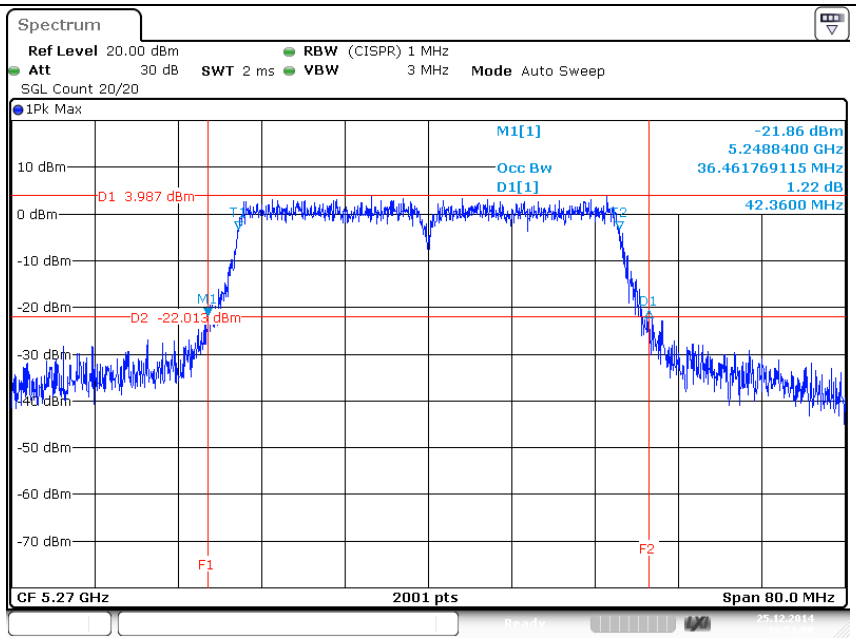
Date: 25.DEC.2014 13:50:47

802.11ac 40MHz/ Nss2 MCS0/ Ch.54/ Ant2



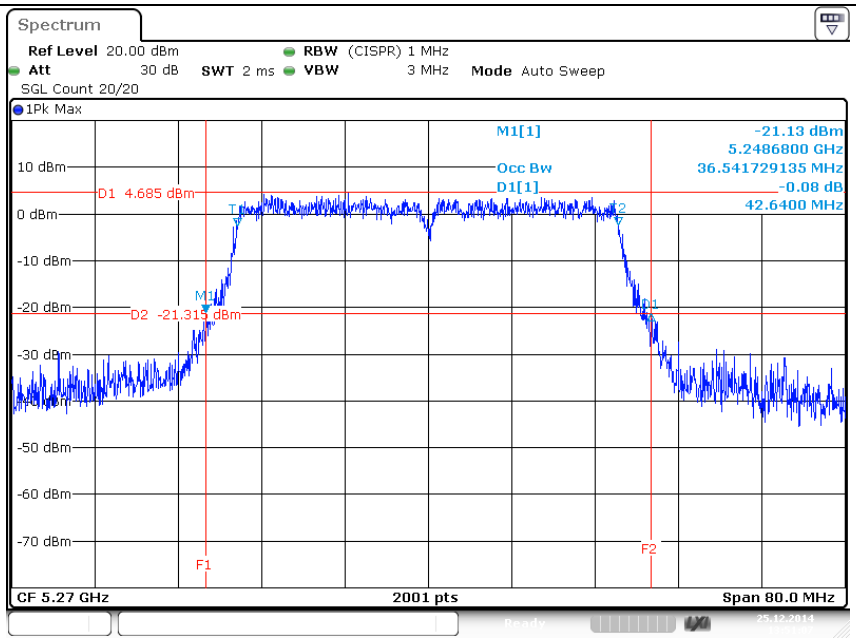
Date: 25.DEC.2014 13:50:54

802.11ac 40MHz/ Nss2 MCS0/ Ch.54/ Ant3



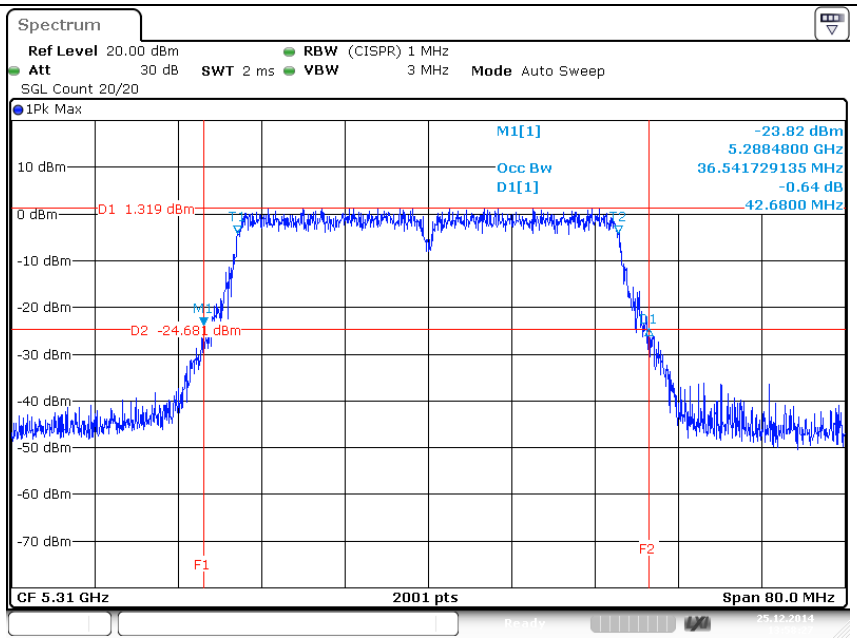
Date: 25.DEC.2014 13:51:00

802.11ac 40MHz/ Nss2 MCS0/ Ch.54/ Ant4



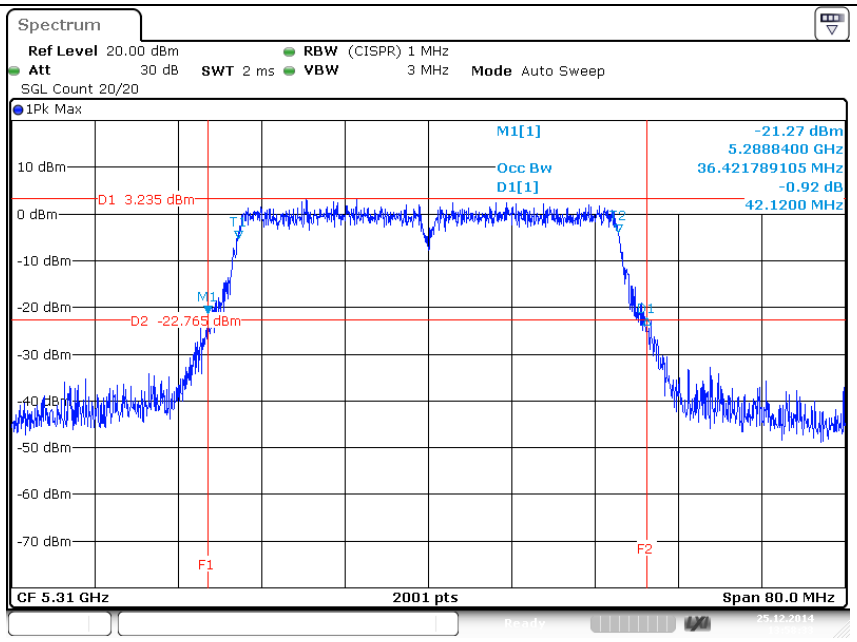
Date: 25.DEC.2014 13:51:07

802.11ac 40MHz/ Nss2 MCS0/ Ch.62/ Ant1



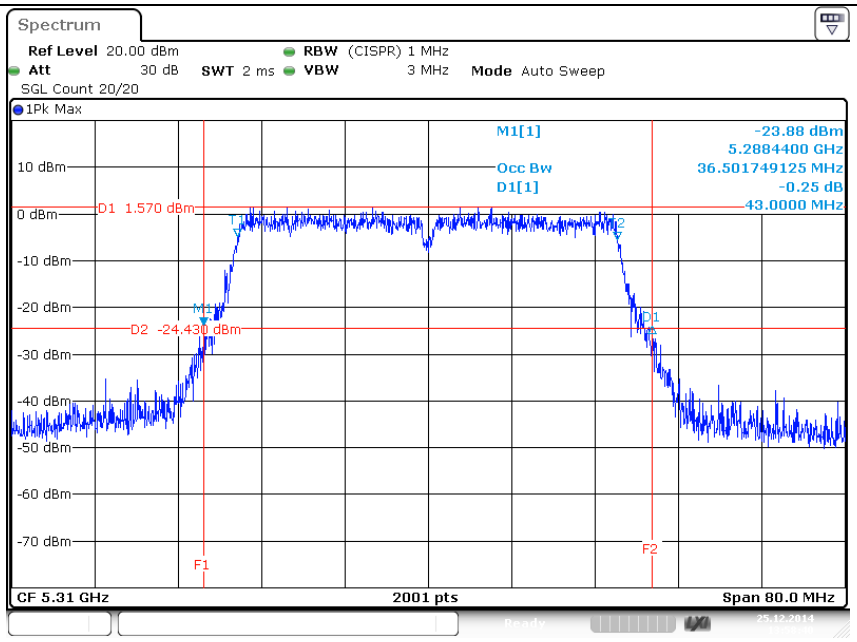
Date: 25.DEC.2014 13:58:27

802.11ac 40MHz/ Nss2 MCS0/ Ch.62/ Ant2



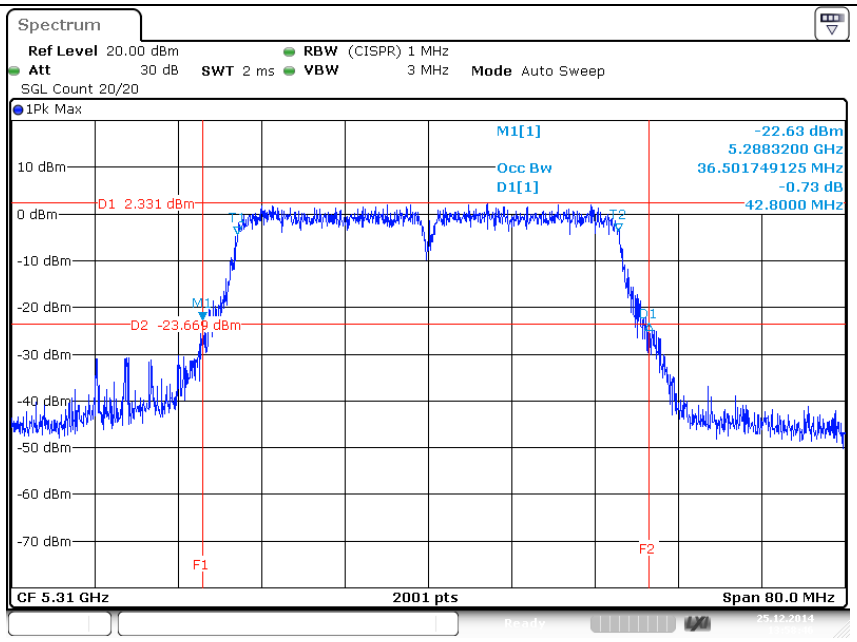
Date: 25.DEC.2014 13:58:33

802.11ac 40MHz/ Nss2 MCS0/ Ch.62/ Ant3



Date: 25.DEC.2014 13:58:39

802.11ac 40MHz/ Nss2 MCS0/ Ch.62/ Ant4



Date: 25.DEC.2014 13:58:46