FCC Test Report

Report No.:	RF180822E04
FCC ID:	XCNUBC1322
Test Model:	UBC1322
Received Date:	Sep. 03, 2018
Test Date:	Sep. 07 to 20, 2018
Issued Date:	Oct. 03, 2018
Applicant:	Ubee Interactive Corp.
Address:	10F-1, No. 5, Taiyuan 1st St. Jhubei Ci, Hsinchu County 302, Taiwan , R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Testing Laboratory
2022

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Release Control Record

Issue No.	Description	Date Issued
RF180822E04	Original release.	Oct. 03, 2018

1 Certificate of Conformity

Product:	Wireless eMTA
Brand:	Ubee
Test Model:	UBC1322
Applicant:	Ubee Interactive Corp.
Test Date:	Sep. 07 to 20, 2018
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 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:** Oct. 03, 2018

Claire Kuan / Specialist

Approved by : _____ , **Date:** Oct. 03, 2018

May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -22.29dB at 0.16172MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2388.50MHz, 2483.50MHz and 2485.60MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex (MHF) not a standard connector.

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	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.33 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.10 dB
	6GHz ~ 18GHz	4.85 dB
	18GHz ~ 40GHz	5.24 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless eMTA
Brand	Ubee
Test Model	UBC1322
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz 1024QAM for OFDM VHT (20/40/80) in 5GHz
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 600Mbps 802.11ac: up to 1733.3Mbps OFDM VHT (20/40/80) 1024QAM: up to 2166 Mbps
Operating Frequency	**2.4GHz:** 2.412GHz ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20), VHT20: 9 802.11n (HT40), 802.11ac (VHT40), VHT40: 4 802.11ac (VHT80), VHT80: 2
Output Power	**2.412 ~ 2.462GHz:** **CDD Mode:** 837.761 mW **Beamforming Mode:** 592.09mW **5.18 ~ 5.24GHz** **CDD Mode:** 454.978 mW **Beamforming Mode** 357.97mW **5.745 ~ 5.825GHz** **CDD Mode:** 995.226mW **Beamforming Mode:** 360.409mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter × 1
Data Cable Supplied	RJ45 Cable × 1 (Unshielded, 1.8m)

Note:

1. The EUT has below Ubee P/N, which are identical to each other in all aspects except for the followings:

Model Name	Ubee P/N	Difference
UBC1322	UBC1322AA	With MoCA, CPU 3390
	UBC1322BA	Without MoCA, CPU 3390

Note:
1. There are two versions for Model UBC1322, same PCBA, one is with MoCA, and the other is no MoCA.
2. From the above Ubee P/N, Ubee P/N: UBC1322AA was selected as representative Ubee P/N for the test and its data was recorded in this report.

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3. The EUT must be supplied from power adapter as the following table:

Brand	Model No.	Spec.
LEI	MU30AY120250-A1	Input: 100-240Vac, 800mA, 50/60Hz Output: 12Vdc, 2.5A DC output cable (Unshielded, 1.5m)

4. The antennas provided to the EUT, please refer to the following table:

Antenna No.	Transmitter Circuit	Ant. Net Gain (dBi)	Freq. range (GHz)	Ant. Type	Connecter Type	Cable Length (mm)
1	Chain 2	3.48	2.4~2.4835	Dipole	i-pex(MHF)	85
	Chain 1	4.08	5.15~5.85			
2	Chain 1	3.49	2.4~2.4835	Dipole	i-pex(MHF)	73
	Chain 2	4.49	5.15~5.85			
3	Chain 0	4.49	5.15~5.85	Dipole	i-pex(MHF)	42
4	Chain 0	3.49	2.4~2.4835	Dipole	i-pex(MHF)	81
	Chain 3	4.47	5.15~5.85			

5. The EUT incorporates a MIMO function

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	3TX	3RX
802.11g	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
VHT20 (Support 256QAM)	MCS 0~8, Nss=1	3TX	3RX
	MCS 0~8, Nss=2	3TX	3RX
	MCS 0~9, Nss=3	3TX	3RX
VHT40 (Support 256QAM)	MCS 0~9, Nss=1	3TX	3RX
	MCS 0~9, Nss=2	3TX	3RX
	MCS 0~9, Nss=3	3TX	3RX

5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS 16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS 16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11ac (VHT20)	MCS 0~8, Nss=1	4TX	4RX
	MCS 0~8, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~8, Nss=4	4TX	4RX
802.11ac (VHT40)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX
802.11ac (VHT80)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX
VHT20 (Support 1024QAM)	MCS 0~11, Nss=1	4TX	4RX
	MCS 0~11, Nss=2	4TX	4RX
	MCS 0~11, Nss=3	4TX	4RX
	MCS 0~11, Nss=4	4TX	4RX
VHT40 (Support 1024QAM)	MCS 0~11, Nss=1	4TX	4RX
	MCS 0~11, Nss=2	4TX	4RX
	MCS 0~11, Nss=3	4TX	4RX
	MCS 0~11, Nss=4	4TX	4RX
VHT80 (Support 1024QAM)	MCS 0~11, Nss=1	4TX	4RX
	MCS 0~11, Nss=2	4TX	4RX
	MCS 0~11, Nss=3	4TX	4RX
	MCS 0~11, Nss=4	4TX	4RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.

6. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20), VHT20:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

7 channels are provided for 802.11n (HT40), VHT40:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442
4	2427	8	2447
5	2432	9	2452
6	2437		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-plane**.

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 2, 6, 10, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	6	DSSS	DBPSK	1

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	**AVAILABLE CHANNEL**	**TESTED CHANNEL**	**MODULATION TECHNOLOGY**	**MODULATION TYPE**	**DATA RATE (Mbps)**
802.11b	1 to 11	1, 2, 6, 10, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5
Beamforming Mode (output power only)					
MODE	**AVAILABLE CHANNEL**	**TESTED CHANNEL**	**MODULATION TECHNOLOGY**	**MODULATION TYPE**	**DATA RATE (Mbps)**
802.11n (HT20)	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5

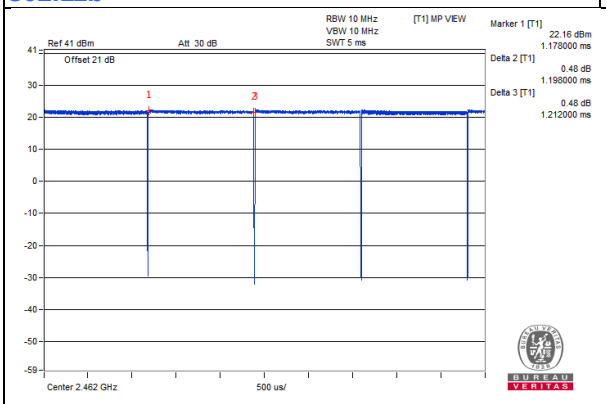
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Andy Ho
RE<1G	23deg. C, 68%RH	120Vac, 60Hz	Frank Chuang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Frank Chuang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

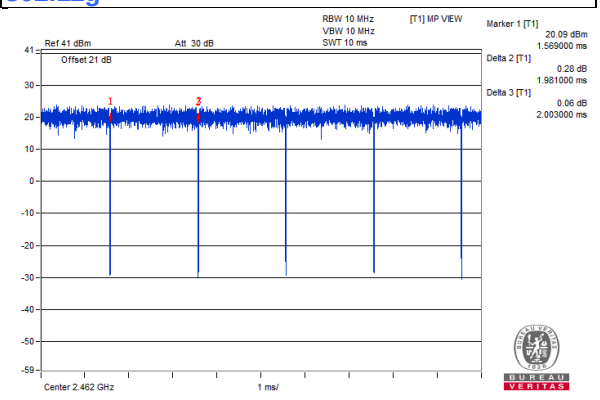
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11b: Duty cycle = 1.198/1.212 = 0.988
802.11g: Duty cycle = 1.981/2.003 = 0.989
802.11n (HT20): Duty cycle = 9.931/10.043 = 0.989
802.11n (HT40): Duty cycle = 4.91/5.008 = 0.98

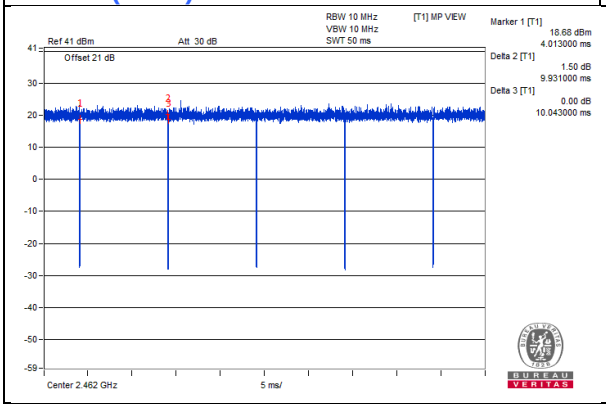
802.11b



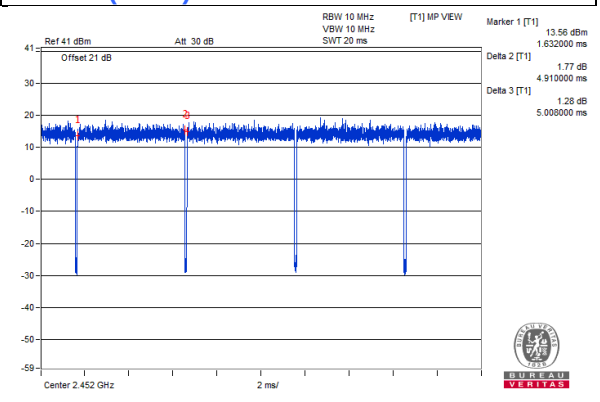
802.11g



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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.

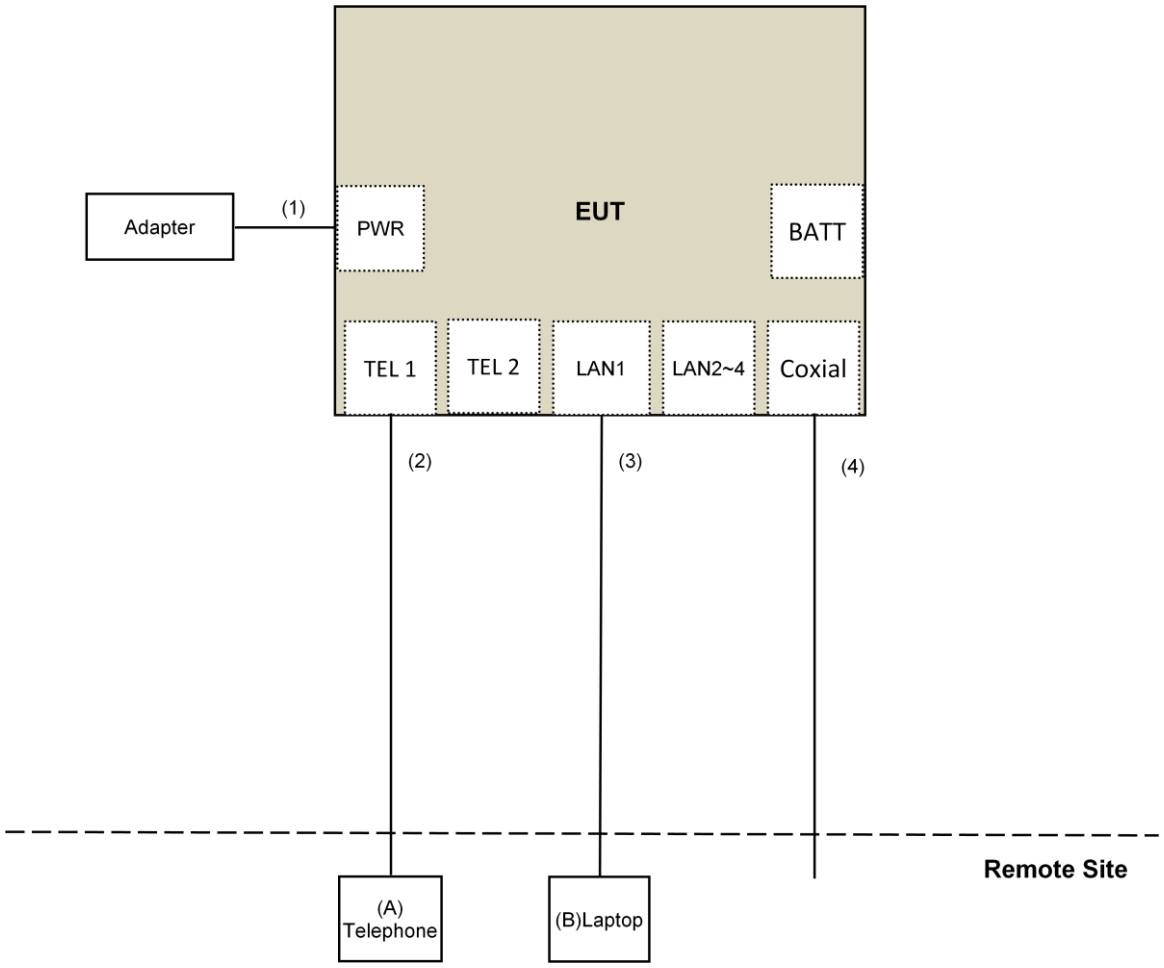
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Telephone	WONDER	WD-303	7C17KA04011	NA	Provided by Lab
B.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-11 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	Coaxial Cable	1	10	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test



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 C (15.247)
KDB 558074 D01 DTS Meas Guidance v05
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 30dB below the highest level of the desired power:

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.

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 09, 2017	Nov. 08, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-4-1	Mar. 21, 2018	Mar. 20, 2019
RF Cable	8D	966-4-2	Mar. 21, 2018	Mar. 20, 2019
RF Cable	8D	966-4-3	Mar. 21, 2018	Mar. 20, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier Mini-Circuits	ZVA-183-S+	AMP-ZVA-03	May 10, 2018	May 09, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	150318	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-5000	150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer Agilent	E4446A	MY48250254	Nov. 21, 2017	Nov. 20, 2018
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019

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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Sep. 07 to 20, 2018

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

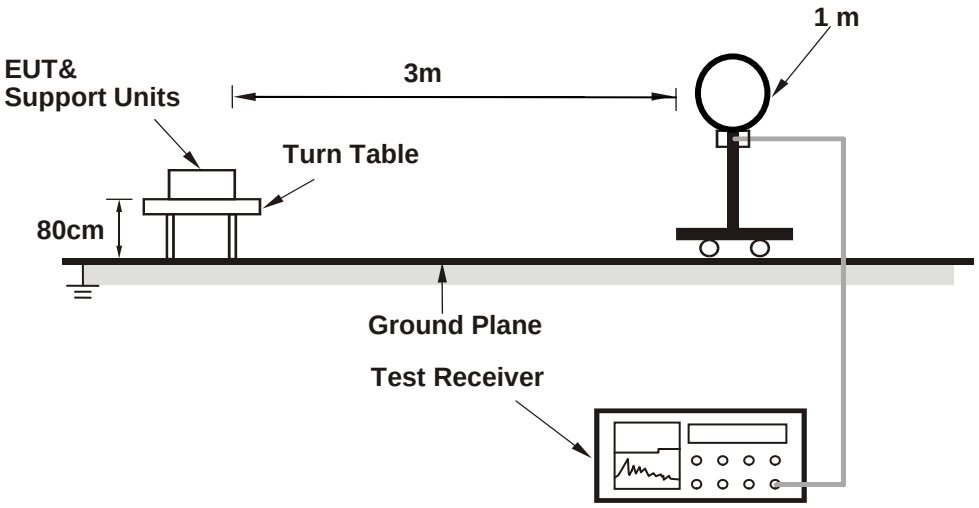
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

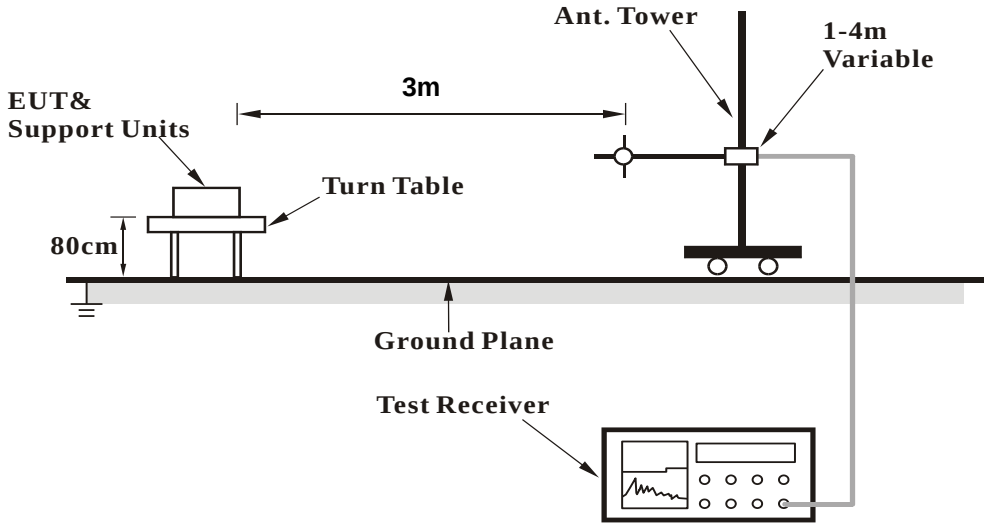
No deviation.

4.1.5 Test Setup

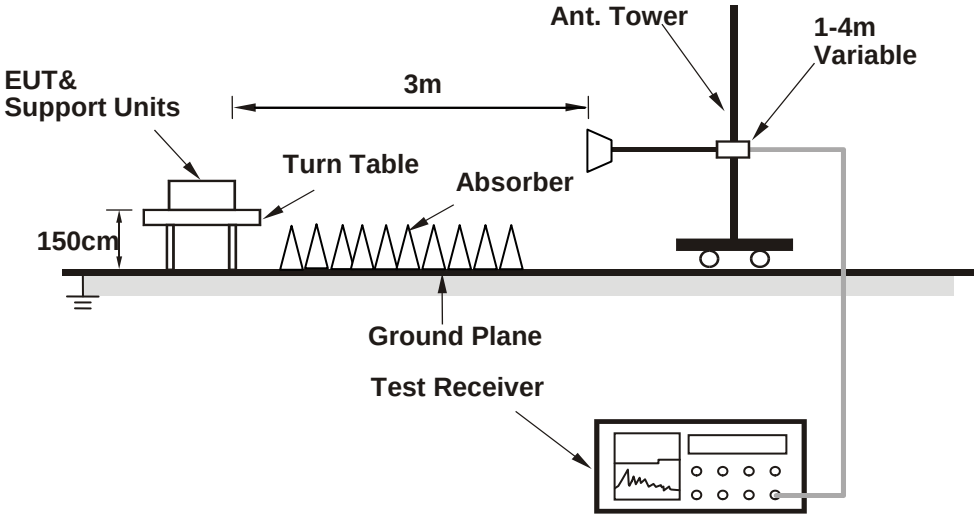
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop which is placed on remote site.
b. Controlling software (MTOOL [V3.0.0.6]) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data：

802.11b

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	60.8 PK	74.0	-13.2	2.02 H	262	63.0	-2.2
2	2390.00	53.5 AV	54.0	-0.5	2.02 H	262	55.7	-2.2
3	*2412.00	114.8 PK			2.02 H	262	117.2	-2.4
4	*2412.00	112.5 AV			2.02 H	262	114.9	-2.4
5	4824.00	48.7 PK	74.0	-25.3	1.43 H	61	46.9	1.8
6	4824.00	46.8 AV	54.0	-7.2	1.43 H	61	45.0	1.8
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	2390.00	57.6 PK	74.0	-16.4	1.42 V	67	59.8	-2.2
2	2390.00	50.2 AV	54.0	-3.8	1.42 V	67	52.4	-2.2
3	*2412.00	118.1 PK			1.42 V	67	120.5	-2.4
4	*2412.00	115.8 AV			1.42 V	67	118.2	-2.4
5	4824.00	48.3 PK	74.0	-25.7	1.61 V	125	46.5	1.8
6	4824.00	46.2 AV	54.0	-7.8	1.61 V	125	44.4	1.8

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 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	61.0 PK	74.0	-13.0	2.02 H	256	63.2	-2.2
2	2390.00	53.6 AV	54.0	-0.4	2.02 H	256	55.8	-2.2
3	*2417.00	116.2 PK			1.98 H	260	118.6	-2.4
4	*2417.00	113.8 AV			1.98 H	260	116.2	-2.4
5	4834.00	49.0 PK	74.0	-25.0	1.52 H	80	47.2	1.8
6	4834.00	47.0 AV	54.0	-7.0	1.52 H	80	45.2	1.8
7	7251.00	48.4 PK	74.0	-25.6	1.48 H	284	40.3	8.1
8	7251.00	41.8 AV	54.0	-12.2	1.48 H	284	33.7	8.1
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	2390.00	58.0 PK	74.0	-16.0	1.53 V	68	60.2	-2.2
2	2390.00	50.4 AV	54.0	-3.6	1.53 V	68	52.6	-2.2
3	*2417.00	109.3 PK			1.53 V	68	111.7	-2.4
4	*2417.00	107.0 AV			1.53 V	68	109.4	-2.4
5	4834.00	49.1 PK	74.0	-24.9	1.63 V	128	47.3	1.8
6	4834.00	46.6 AV	54.0	-7.4	1.63 V	128	44.8	1.8
7	7251.00	50.7 PK	74.0	-23.3	2.38 V	81	42.6	8.1
8	7251.00	46.1 AV	54.0	-7.9	2.38 V	81	38.0	8.1

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 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	56.0 PK	74.0	-18.0	2.20 H	265	58.2	-2.2
2	2390.00	44.6 AV	54.0	-9.4	2.20 H	265	46.8	-2.2
3	*2437.00	117.8 PK			2.20 H	265	120.4	-2.6
4	*2437.00	115.4 AV			2.20 H	265	118.0	-2.6
5	2483.50	58.1 PK	74.0	-15.9	2.20 H	265	60.5	-2.4
6	2483.50	46.5 AV	54.0	-7.5	2.20 H	265	48.9	-2.4
7	4874.00	49.6 PK	74.0	-24.4	1.47 H	77	47.6	2.0
8	4874.00	47.6 AV	54.0	-6.4	1.47 H	77	45.6	2.0
9	7311.00	48.5 PK	74.0	-25.5	1.52 H	302	40.1	8.4
10	7311.00	42.2 AV	54.0	-11.8	1.52 H	302	33.8	8.4
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	2390.00	54.0 PK	74.0	-20.0	1.51 V	68	56.2	-2.2
2	2390.00	42.7 AV	54.0	-11.3	1.51 V	68	44.9	-2.2
3	*2437.00	111.5 PK			1.51 V	68	114.1	-2.6
4	*2437.00	108.6 AV			1.51 V	68	111.2	-2.6
5	2483.50	54.9 PK	74.0	-19.1	1.51 V	68	57.3	-2.4
6	2483.50	43.7 AV	54.0	-10.3	1.51 V	68	46.1	-2.4
7	4874.00	50.2 PK	74.0	-23.8	1.74 V	128	48.2	2.0
8	4874.00	48.8 AV	54.0	-5.2	1.74 V	128	46.8	2.0
9	7311.00	51.2 PK	74.0	-22.8	2.41 V	105	42.8	8.4
10	7311.00	46.3 AV	54.0	-7.7	2.41 V	105	37.9	8.4

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 10	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2457.00	114.9 PK			2.19 H	264	117.5	-2.6
2	*2457.00	112.3 AV			2.19 H	264	114.9	-2.6
3	2483.50	61.0 PK	74.0	-13.0	2.19 H	264	63.4	-2.4
4	2483.50	53.7 AV	54.0	-0.3	2.19 H	264	56.1	-2.4
5	4914.00	48.7 PK	74.0	-25.3	1.45 H	69	46.7	2.0
6	4914.00	46.8 AV	54.0	-7.2	1.45 H	69	44.8	2.0
7	7371.00	48.0 PK	74.0	-26.0	1.46 H	294	39.4	8.6
8	7371.00	41.9 AV	54.0	-12.1	1.46 H	294	33.3	8.6
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	*2457.00	108.6 PK			1.52 V	64	111.2	-2.6
2	*2457.00	105.7 AV			1.52 V	64	108.3	-2.6
3	2483.50	58.1 PK	74.0	-15.9	1.52 V	64	60.5	-2.4
4	2483.50	50.5 AV	54.0	-3.5	1.52 V	64	52.9	-2.4
5	4914.00	49.4 PK	74.0	-24.6	1.65 V	110	47.4	2.0
6	4914.00	47.3 AV	54.0	-6.7	1.65 V	110	45.3	2.0
7	7371.00	50.7 PK	74.0	-23.3	2.41 V	89	42.1	8.6
8	7371.00	45.8 AV	54.0	-8.2	2.41 V	89	37.2	8.6

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 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	114.0 PK			1.92 H	298	116.6	-2.6
2	*2462.00	111.3 AV			1.92 H	298	113.9	-2.6
3	2483.50	61.1 PK	74.0	-12.9	1.92 H	298	63.5	-2.4
4	2483.50	53.5 AV	54.0	-0.5	1.92 H	298	55.9	-2.4
5	4924.00	48.4 PK	74.0	-25.6	1.48 H	76	46.4	2.0
6	4924.00	46.7 AV	54.0	-7.3	1.48 H	76	44.7	2.0
7	7386.00	48.3 PK	74.0	-25.7	1.48 H	289	39.7	8.6
8	7386.00	41.9 AV	54.0	-12.1	1.48 H	289	33.3	8.6
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	*2462.00	107.4 PK			1.48 V	56	110.0	-2.6
2	*2462.00	104.5 AV			1.48 V	56	107.1	-2.6
3	2483.50	57.8 PK	74.0	-16.2	1.48 V	56	60.2	-2.4
4	2483.50	50.2 AV	54.0	-3.8	1.48 V	56	52.6	-2.4
5	4924.00	49.2 PK	74.0	-24.8	1.66 V	126	47.2	2.0
6	4924.00	47.1 AV	54.0	-6.9	1.66 V	126	45.1	2.0
7	7386.00	50.5 PK	74.0	-23.5	2.41 V	102	41.9	8.6
8	7386.00	45.6 AV	54.0	-8.4	2.41 V	102	37.0	8.6

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.

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CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	70.5 PK	74.0	-3.5	1.56 H	294	72.7	-2.2
2	2390.00	53.6 AV	54.0	-0.4	1.56 H	294	55.8	-2.2
3	*2412.00	114.6 PK			1.56 H	294	117.0	-2.4
4	*2412.00	104.4 AV			1.56 H	294	106.8	-2.4
5	4824.00	48.1 PK	74.0	-25.9	1.52 H	91	46.3	1.8
6	4824.00	46.2 AV	54.0	-7.8	1.52 H	91	44.4	1.8
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	2390.00	57.9 PK	74.0	-16.1	1.52 V	45	60.1	-2.2
2	2390.00	50.2 AV	54.0	-3.8	1.52 V	45	52.4	-2.2
3	*2412.00	1078.0 PK			1.52 V	45	1080.4	-2.4
4	*2412.00	97.7 AV			1.52 V	45	100.1	-2.4
5	4824.00	49.4 PK	74.0	-24.6	1.71 V	123	47.6	1.8
6	4824.00	47.5 AV	54.0	-6.5	1.71 V	123	45.7	1.8

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 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	69.3 PK	74.0	-4.7	1.85 H	295	71.5	-2.2
2	2390.00	53.8 AV	54.0	-0.2	1.85 H	295	56.0	-2.2
3	*2417.00	117.5 PK			1.85 H	295	119.9	-2.4
4	*2417.00	107.5 AV			1.85 H	295	109.9	-2.4
5	4834.00	47.7 PK	74.0	-26.3	1.44 H	85	45.9	1.8
6	4834.00	46.2 AV	54.0	-7.8	1.44 H	85	44.4	1.8
7	7251.00	48.1 PK	74.0	-25.9	1.46 H	303	40.0	8.1
8	7251.00	41.5 AV	54.0	-12.5	1.46 H	303	33.4	8.1
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	2390.00	57.2 PK	74.0	-16.8	1.53 V	42	59.4	-2.2
2	2390.00	49.8 AV	54.0	-4.2	1.53 V	42	52.0	-2.2
3	*2417.00	110.6 PK			1.53 V	42	113.0	-2.4
4	*2417.00	100.8 AV			1.53 V	42	103.2	-2.4
5	4834.00	49.6 PK	74.0	-24.4	1.66 V	125	47.8	1.8
6	4834.00	47.5 AV	54.0	-6.5	1.66 V	125	45.7	1.8
7	7251.00	50.8 PK	74.0	-23.2	2.36 V	107	42.7	8.1
8	7251.00	46.1 AV	54.0	-7.9	2.36 V	107	38.0	8.1

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 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	67.8 PK	74.0	-6.2	1.84 H	297	70.0	-2.2
2	2390.00	50.8 AV	54.0	-3.2	1.84 H	297	53.0	-2.2
3	*2437.00	120.3 PK			1.84 H	297	122.9	-2.6
4	*2437.00	110.1 AV			1.84 H	297	112.7	-2.6
5	2483.50	64.2 PK	74.0	-9.8	1.84 H	297	66.6	-2.4
6	2483.50	49.3 AV	54.0	-4.7	1.84 H	297	51.7	-2.4
7	4874.00	48.7 PK	74.0	-25.3	1.47 H	71	46.7	2.0
8	4874.00	47.1 AV	54.0	-6.9	1.47 H	71	45.1	2.0
9	7311.00	48.7 PK	74.0	-25.3	1.53 H	284	40.3	8.4
10	7311.00	42.3 AV	54.0	-11.7	1.53 H	284	33.9	8.4
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	2390.00	54.1 PK	74.0	-19.9	1.44 V	53	56.3	-2.2
2	2390.00	42.6 AV	54.0	-11.4	1.44 V	53	44.8	-2.2
3	*2437.00	113.4 PK			1.44 V	53	116.0	-2.6
4	*2437.00	103.5 AV			1.44 V	53	106.1	-2.6
5	2483.50	55.3 PK	74.0	-18.7	1.44 V	53	57.7	-2.4
6	2483.50	43.9 AV	54.0	-10.1	1.44 V	53	46.3	-2.4
7	4874.00	50.0 PK	74.0	-24.0	1.70 V	138	48.0	2.0
8	4874.00	48.7 AV	54.0	-5.3	1.70 V	138	46.7	2.0
9	7311.00	51.4 PK	74.0	-22.6	2.46 V	115	43.0	8.4
10	7311.00	46.5 AV	54.0	-7.5	2.46 V	115	38.1	8.4

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 10	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2457.00	118.1 PK			1.84 H	299	120.7	-2.6
2	*2457.00	108.7 AV			1.84 H	299	111.3	-2.6
3	2483.50	73.5 PK	74.0	-0.5	1.84 H	299	75.9	-2.4
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.84 H**	**299**	**56.3**	**-2.4**
5	4914.00	47.9 PK	74.0	-26.1	1.53 H	62	45.9	2.0
6	4914.00	46.3 AV	54.0	-7.7	1.53 H	62	44.3	2.0
7	7371.00	48.1 PK	74.0	-25.9	1.48 H	294	39.5	8.6
8	7371.00	41.6 AV	54.0	-12.4	1.48 H	294	33.0	8.6
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	*2457.00	111.4 PK			1.44 V	71	114.0	-2.6
2	*2457.00	101.9 AV			1.44 V	71	104.5	-2.6
3	2483.50	57.6 PK	74.0	-16.4	1.44 V	71	60.0	-2.4
4	2483.50	50.2 AV	54.0	-3.8	1.44 V	71	52.6	-2.4
5	4914.00	49.3 PK	74.0	-24.7	1.70 V	133	47.3	2.0
6	4914.00	47.1 AV	54.0	-6.9	1.70 V	133	45.1	2.0
7	7371.00	50.3 PK	74.0	-23.7	2.45 V	111	41.7	8.6
8	7371.00	45.5 AV	54.0	-8.5	2.45 V	111	36.9	8.6

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 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	115.3 PK			1.84 H	295	117.9	-2.6
2	*2462.00	105.0 AV			1.84 H	295	107.6	-2.6
3	2483.50	70.5 PK	74.0	-3.5	1.84 H	295	72.9	-2.4
4	2483.50	53.7 AV	54.0	-0.3	1.84 H	295	56.1	-2.4
5	4924.00	48.2 PK	74.0	-25.8	1.52 H	84	46.2	2.0
6	4924.00	46.2 AV	54.0	-7.8	1.52 H	84	44.2	2.0
7	7386.00	48.2 PK	74.0	-25.8	1.50 H	287	39.6	8.6
8	7386.00	41.6 AV	54.0	-12.4	1.50 H	287	33.0	8.6
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	*2462.00	108.5 PK			1.44 V	46	111.1	-2.6
2	*2462.00	98.4 AV			1.44 V	46	101.0	-2.6
3	2483.50	57.6 PK	74.0	-16.4	1.44 V	46	60.0	-2.4
4	2483.50	49.8 AV	54.0	-4.2	1.44 V	46	52.2	-2.4
5	4924.00	49.3 PK	74.0	-24.7	1.65 V	122	47.3	2.0
6	4924.00	47.2 AV	54.0	-6.8	1.65 V	122	45.2	2.0
7	7386.00	50.4 PK	74.0	-23.6	2.40 V	89	41.8	8.6
8	7386.00	45.4 AV	54.0	-8.6	2.40 V	89	36.8	8.6

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.

802.11n (HT20)

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	69.9 PK	74.0	-4.1	1.95 H	290	72.1	-2.2
2	2390.00	53.7 AV	54.0	-0.3	1.95 H	290	55.9	-2.2
3	*2412.00	113.1 PK			1.95 H	290	115.5	-2.4
4	*2412.00	103.2 AV			1.95 H	290	105.6	-2.4
5	4824.00	48.4 PK	74.0	-25.6	1.49 H	65	46.6	1.8
6	4824.00	46.5 AV	54.0	-7.5	1.49 H	65	44.7	1.8
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	2390.00	58.6 PK	74.0	-15.4	1.51 V	72	60.8	-2.2
2	2390.00	50.7 AV	54.0	-3.3	1.51 V	72	52.9	-2.2
3	*2412.00	106.9 PK			1.51 V	72	109.3	-2.4
4	*2412.00	96.6 AV			1.51 V	72	99.0	-2.4
5	4824.00	48.9 PK	74.0	-25.1	1.62 V	131	47.1	1.8
6	4824.00	46.9 AV	54.0	-7.1	1.62 V	131	45.1	1.8

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 2	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	2390.00	72.8 PK	74.0	-1.2	3.52 H	284	75.0	-2.2
2	2390.00	53.8 AV	54.0	-0.2	3.52 H	284	56.0	-2.2
3	*2417.00	118.8 PK			3.52 H	284	121.2	-2.4
4	*2417.00	108.1 AV			3.52 H	284	110.5	-2.4
5	4834.00	49.1 PK	74.0	-24.9	1.45 H	89	47.3	1.8
6	4834.00	47.1 AV	54.0	-6.9	1.45 H	89	45.3	1.8
7	7251.00	47.9 PK	74.0	-26.1	1.48 H	278	39.8	8.1
8	7251.00	41.5 AV	54.0	-12.5	1.48 H	278	33.4	8.1
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	2390.00	57.3 PK	74.0	-16.7	1.45 V	47	59.5	-2.2
2	2390.00	49.9 AV	54.0	-4.1	1.45 V	47	52.1	-2.2
3	*2417.00	112.0 PK			1.45 V	47	114.4	-2.4
4	*2417.00	101.3 AV			1.45 V	47	103.7	-2.4
5	4834.00	49.6 PK	74.0	-24.4	1.71 V	126	47.8	1.8
6	4834.00	47.3 AV	54.0	-6.7	1.71 V	126	45.5	1.8
7	7251.00	49.8 PK	74.0	-24.2	2.37 V	99	41.7	8.1
8	7251.00	45.1 AV	54.0	-8.9	2.37 V	99	37.0	8.1

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 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	2390.00	62.6 PK	74.0	-11.4	2.94 H	273	64.8	-2.2
2	2390.00	48.9 AV	54.0	-5.1	2.94 H	273	51.1	-2.2
3	*2437.00	119.0 PK			2.94 H	273	121.6	-2.6
4	*2437.00	108.1 AV			2.94 H	273	110.7	-2.6
5	2483.50	59.1 PK	74.0	-14.9	2.94 H	273	61.5	-2.4
6	2483.50	45.6 AV	54.0	-8.4	2.94 H	273	48.0	-2.4
7	4874.00	49.2 PK	74.0	-24.8	1.47 H	69	47.2	2.0
8	4874.00	47.2 AV	54.0	-6.8	1.47 H	69	45.2	2.0
9	7311.00	48.6 PK	74.0	-25.4	1.46 H	285	40.2	8.4
10	7311.00	41.9 AV	54.0	-12.1	1.46 H	285	33.5	8.4
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	2390.00	53.9 PK	74.0	-20.1	1.43 V	41	56.1	-2.2
2	2390.00	42.5 AV	54.0	-11.5	1.43 V	41	44.7	-2.2
3	*2437.00	112.4 PK			1.43 V	41	115.0	-2.6
4	*2437.00	101.5 AV			1.43 V	41	104.1	-2.6
5	2483.50	54.9 PK	74.0	-19.1	1.43 V	41	57.3	-2.4
6	2483.50	43.5 AV	54.0	-10.5	1.43 V	41	45.9	-2.4
7	4874.00	50.2 PK	74.0	-23.8	1.74 V	138	48.2	2.0
8	4874.00	48.9 AV	54.0	-5.1	1.74 V	138	46.9	2.0
9	7311.00	51.5 PK	74.0	-22.5	2.43 V	110	43.1	8.4
10	7311.00	46.5 AV	54.0	-7.5	2.43 V	110	38.1	8.4

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 10	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2457.00	117.5 PK			2.12 H	286	120.1	-2.6
2	*2457.00	107.2 AV			2.12 H	286	109.8	-2.6
3	**2483.50**	**73.9 PK**	**74.0**	**-0.1**	**2.12 H**	**286**	**76.3**	**-2.4**
4	2483.50	53.6 AV	54.0	-0.4	2.12 H	286	56.0	-2.4
5	4914.00	47.7 PK	74.0	-26.3	1.44 H	61	45.7	2.0
6	4914.00	46.3 AV	54.0	-7.7	1.44 H	61	44.3	2.0
7	7371.00	48.2 PK	74.0	-25.8	1.51 H	296	39.6	8.6
8	7371.00	42.0 AV	54.0	-12.0	1.51 H	296	33.4	8.6
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	*2457.00	110.9 PK			1.43 V	52	113.5	-2.6
2	*2457.00	100.6 AV			1.43 V	52	103.2	-2.6
3	2483.50	57.4 PK	74.0	-16.6	1.43 V	52	59.8	-2.4
4	2483.50	50.0 AV	54.0	-4.0	1.43 V	52	52.4	-2.4
5	4914.00	49.1 PK	74.0	-24.9	1.63 V	110	47.1	2.0
6	4914.00	47.1 AV	54.0	-6.9	1.63 V	110	45.1	2.0
7	7371.00	51.1 PK	74.0	-22.9	2.35 V	92	42.5	8.6
8	7371.00	46.1 AV	54.0	-7.9	2.35 V	92	37.5	8.6

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 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2462.00	112.2 PK			1.50 H	288	114.8	-2.6
2	*2462.00	101.9 AV			1.50 H	288	104.5	-2.6
3	2483.50	71.1 PK	74.0	-2.9	1.50 H	288	73.5	-2.4
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**1.50 H**	**288**	**56.3**	**-2.4**
5	4924.00	47.7 PK	74.0	-26.3	1.50 H	86	45.7	2.0
6	4924.00	46.0 AV	54.0	-8.0	1.50 H	86	44.0	2.0
7	7386.00	48.5 PK	74.0	-25.5	1.52 H	284	39.9	8.6
8	7386.00	42.2 AV	54.0	-11.8	1.52 H	284	33.6	8.6
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	*2462.00	105.7 PK			1.50 V	70	108.3	-2.6
2	*2462.00	95.3 AV			1.50 V	70	97.9	-2.6
3	2483.50	57.7 PK	74.0	-16.3	1.50 V	70	60.1	-2.4
4	2483.50	50.3 AV	54.0	-3.7	1.50 V	70	52.7	-2.4
5	4924.00	49.1 PK	74.0	-24.9	1.65 V	121	47.1	2.0
6	4924.00	46.7 AV	54.0	-7.3	1.65 V	121	44.7	2.0
7	7386.00	50.7 PK	74.0	-23.3	2.35 V	116	42.1	8.6
8	7386.00	46.0 AV	54.0	-8.0	2.35 V	116	37.4	8.6

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.

802.11n (HT40)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2388.50	69.2 PK	74.0	-4.8	2.92 H	282	71.4	-2.2
2	**2388.50**	**53.9 AV**	**54.0**	**-0.1**	**2.92 H**	**282**	**56.1**	**-2.2**
3	2390.00	64.1 PK	74.0	-9.9	2.92 H	282	66.3	-2.2
4	2390.00	52.7 AV	54.0	-1.3	2.92 H	282	54.9	-2.2
5	*2422.00	109.8 PK			2.92 H	282	112.3	-2.5
6	*2422.00	99.9 AV			2.92 H	282	102.4	-2.5
7	4844.00	48.5 PK	74.0	-25.5	1.53 H	70	46.7	1.8
8	4844.00	46.9 AV	54.0	-7.1	1.53 H	70	45.1	1.8
9	7266.00	47.9 PK	74.0	-26.1	1.52 H	292	39.7	8.2
10	7266.00	41.6 AV	54.0	-12.4	1.52 H	292	33.4	8.2
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	2388.50	57.5 PK	74.0	-16.5	1.48 V	52	59.7	-2.2
2	2388.50	49.9 AV	54.0	-4.1	1.48 V	52	52.1	-2.2
3	2390.00	54.8 PK	74.0	-19.2	1.48 V	52	57.0	-2.2
4	2390.00	46.6 AV	54.0	-7.4	1.48 V	52	48.8	-2.2
5	*2422.00	103.2 PK			1.48 V	52	105.7	-2.5
6	*2422.00	93.1 AV			1.48 V	52	95.6	-2.5
7	4844.00	48.7 PK	74.0	-25.3	1.66 V	136	46.9	1.8
8	4844.00	46.7 AV	54.0	-7.3	1.66 V	136	44.9	1.8
9	7266.00	50.3 PK	74.0	-23.7	2.47 V	102	42.1	8.2
10	7266.00	45.4 AV	54.0	-8.6	2.47 V	102	37.2	8.2

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 4	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	2388.90	68.6 PK	74.0	-5.4	1.95 H	297	70.8	-2.2
2	2388.90	53.8 AV	54.0	-0.2	1.95 H	297	56.0	-2.2
3	2390.00	60.3 PK	74.0	-13.7	1.95 H	297	62.5	-2.2
4	2390.00	49.0 AV	54.0	-5.0	1.95 H	297	51.2	-2.2
5	*2427.00	110.1 PK			1.95 H	297	112.6	-2.5
6	*2427.00	100.2 AV			1.95 H	297	102.7	-2.5
7	4854.00	47.8 PK	74.0	-26.2	1.52 H	74	45.9	1.9
8	4854.00	46.2 AV	54.0	-7.8	1.52 H	74	44.3	1.9
9	7281.00	48.4 PK	74.0	-25.6	1.48 H	281	40.1	8.3
10	7281.00	42.1 AV	54.0	-11.9	1.48 H	281	33.8	8.3
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	2388.90	57.4 PK	74.0	-16.6	1.52 V	64	59.6	-2.2
2	2388.90	49.7 AV	54.0	-4.3	1.52 V	64	51.9	-2.2
3	2390.00	54.9 PK	74.0	-19.1	1.52 V	64	57.1	-2.2
4	2390.00	46.2 AV	54.0	-7.8	1.52 V	64	48.4	-2.2
5	*2427.00	103.6 PK			1.52 V	64	106.1	-2.5
6	*2427.00	93.7 AV			1.52 V	64	96.2	-2.5
7	4854.00	49.6 PK	74.0	-24.4	1.70 V	114	47.7	1.9
8	4854.00	47.3 AV	54.0	-6.7	1.70 V	114	45.4	1.9
9	7281.00	50.7 PK	74.0	-23.3	2.37 V	87	42.4	8.3
10	7281.00	45.6 AV	54.0	-8.4	2.37 V	87	37.3	8.3

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 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	2390.00	69.8 PK	74.0	-4.2	2.92 H	278	72.0	-2.2
2	2390.00	53.8 AV	54.0	-0.2	2.92 H	278	56.0	-2.2
3	*2437.00	113.2 PK			2.92 H	278	115.8	-2.6
4	*2437.00	102.5 AV			2.92 H	278	105.1	-2.6
5	2483.50	71.1 PK	74.0	-2.9	2.92 H	278	73.5	-2.4
6	2483.50	51.2 AV	54.0	-2.8	2.92 H	278	53.6	-2.4
7	4874.00	48.4 PK	74.0	-25.6	1.47 H	65	46.4	2.0
8	4874.00	46.5 AV	54.0	-7.5	1.47 H	65	44.5	2.0
9	7311.00	48.7 PK	74.0	-25.3	1.50 H	296	40.3	8.4
10	7311.00	42.3 AV	54.0	-11.7	1.50 H	296	33.9	8.4
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	2390.00	53.7 PK	74.0	-20.3	1.53 V	56	55.9	-2.2
2	2390.00	42.3 AV	54.0	-11.7	1.53 V	56	44.5	-2.2
3	*2437.00	106.4 PK			1.53 V	56	109.0	-2.6
4	*2437.00	95.6 AV			1.53 V	56	98.2	-2.6
5	2483.50	55.6 PK	74.0	-18.4	1.53 V	56	58.0	-2.4
6	2483.50	44.2 AV	54.0	-9.8	1.53 V	56	46.6	-2.4
7	4874.00	49.5 PK	74.0	-24.5	1.70 V	118	47.5	2.0
8	4874.00	47.5 AV	54.0	-6.5	1.70 V	118	45.5	2.0
9	7311.00	51.0 PK	74.0	-23.0	2.42 V	98	42.6	8.4
10	7311.00	46.0 AV	54.0	-8.0	2.42 V	98	37.6	8.4

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 8	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	*2447.00	108.8 PK			1.53 H	290	111.4	-2.6
2	*2447.00	98.1 AV			1.53 H	290	100.7	-2.6
3	2483.50	71.0 PK	74.0	-3.0	1.53 H	290	73.4	-2.4
4	2483.50	53.7 AV	54.0	-0.3	1.53 H	290	56.1	-2.4
5	4894.00	47.7 PK	74.0	-26.3	1.52 H	69	45.6	2.1
6	4894.00	46.0 AV	54.0	-8.0	1.52 H	69	43.9	2.1
7	7341.00	48.7 PK	74.0	-25.3	1.46 H	302	40.1	8.6
8	7341.00	42.3 AV	54.0	-11.7	1.46 H	302	33.7	8.6
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	*2447.00	102.0 PK			1.51 V	52	104.6	-2.6
2	*2447.00	91.2 AV			1.51 V	52	93.8	-2.6
3	2483.50	57.9 PK	74.0	-16.1	1.51 V	52	60.3	-2.4
4	2483.50	50.5 AV	54.0	-3.5	1.51 V	52	52.9	-2.4
5	4894.00	49.1 PK	74.0	-24.9	1.66 V	116	47.0	2.1
6	4894.00	46.7 AV	54.0	-7.3	1.66 V	116	44.6	2.1
7	7341.00	50.2 PK	74.0	-23.8	2.42 V	92	41.6	8.6
8	7341.00	45.5 AV	54.0	-8.5	2.42 V	92	36.9	8.6

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 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2452.00	108.1 PK			3.29 H	241	110.7	-2.6
2	*2452.00	97.9 AV			3.29 H	241	100.5	-2.6
3	2483.50	60.3 PK	74.0	-13.7	3.29 H	241	62.7	-2.4
4	2483.50	50.7 AV	54.0	-3.3	3.29 H	241	53.1	-2.4
5	2485.60	69.3 PK	74.0	-4.7	3.29 H	241	71.7	-2.4
6	**2485.60**	**53.9 AV**	**54.0**	**-0.1**	**3.29 H**	**241**	**56.3**	**-2.4**
7	4904.00	46.7 PK	74.0	-27.3	1.50 H	66	44.7	2.0
8	4904.00	45.0 AV	54.0	-9.0	1.50 H	66	43.0	2.0
9	7356.00	48.6 PK	74.0	-25.4	1.51 H	282	40.0	8.6
10	7356.00	42.2 AV	54.0	-11.8	1.51 H	282	33.6	8.6
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	*2452.00	101.5 PK			1.42 V	41	104.1	-2.6
2	*2452.00	91.3 AV			1.42 V	41	93.9	-2.6
3	2483.50	56.3 PK	74.0	-17.7	1.42 V	41	58.7	-2.4
4	2483.50	47.6 AV	54.0	-6.4	1.42 V	41	50.0	-2.4
5	2485.60	58.1 PK	74.0	-15.9	1.42 V	41	60.5	-2.4
6	2485.60	50.6 AV	54.0	-3.4	1.42 V	41	53.0	-2.4
7	4904.00	48.9 PK	74.0	-25.1	1.72 V	131	46.9	2.0
8	4904.00	46.7 AV	54.0	-7.3	1.72 V	131	44.7	2.0
9	7356.00	50.7 PK	74.0	-23.3	2.40 V	94	42.1	8.6
10	7356.00	45.6 AV	54.0	-8.4	2.40 V	94	37.0	8.6

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.

Below 1GHz Data:

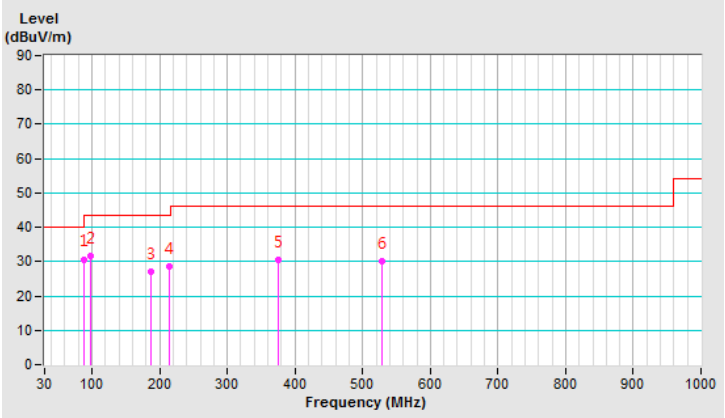
802.11b

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	87.88	30.7 QP	40.0	-9.3	2.00 H	50	44.3	-13.6
2	97.42	31.6 QP	43.5	-11.9	2.00 H	72	44.3	-12.7
3	186.17	27.1 QP	43.5	-16.4	2.00 H	311	37.3	-10.2
4	214.81	28.7 QP	43.5	-14.8	1.00 H	110	39.9	-11.2
5	375.00	30.5 QP	46.0	-15.5	1.00 H	47	35.3	-4.8
6	529.43	30.0 QP	46.0	-16.0	1.50 H	256	31.3	-1.3

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

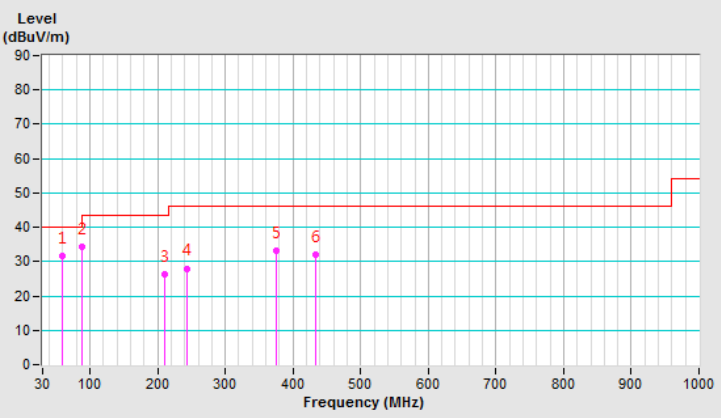


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	58.15	31.8 QP	40.0	-8.2	1.00 V	169	39.9	-8.1
2	87.45	34.4 QP	40.0	-5.6	1.50 V	360	48.0	-13.6
3	210.08	26.4 QP	43.5	-17.1	1.00 V	356	37.5	-11.1
4	243.42	28.0 QP	46.0	-18.0	1.50 V	360	37.2	-9.2
5	375.00	33.3 QP	46.0	-12.7	2.00 V	0	38.1	-4.8
6	434.10	32.0 QP	46.0	-14.0	1.50 V	68	34.9	-2.9

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Nov. 01, 2017	Oct. 31, 2018
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Nov. 15, 2017	Nov. 14, 2018
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 04, 2018	June 03, 2019
50 ohms Terminator	N/A	EMC-02	Sep. 22, 2017	Sep. 21, 2018
RF Cable	5D-FB	COCCAB-001	Sep. 29, 2017	Sep. 28, 2018
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 16, 2018	Mar. 15, 2019
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:
1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: Sep. 07, 2018

4.2.3 Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

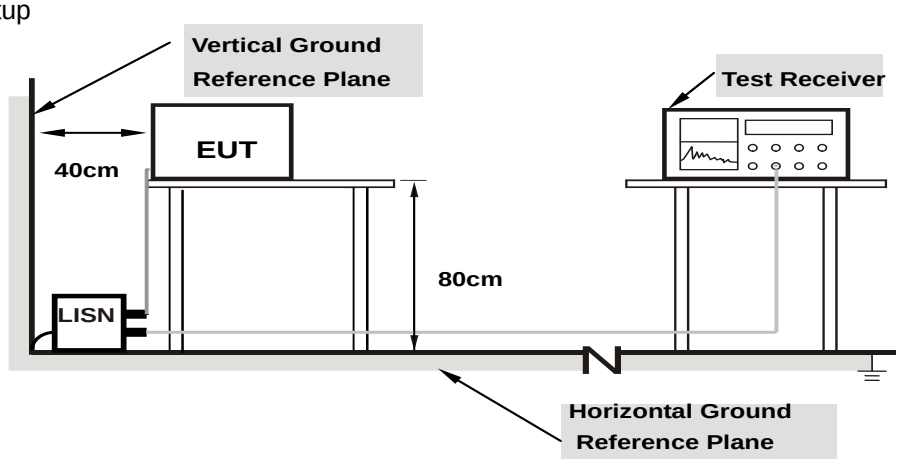
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

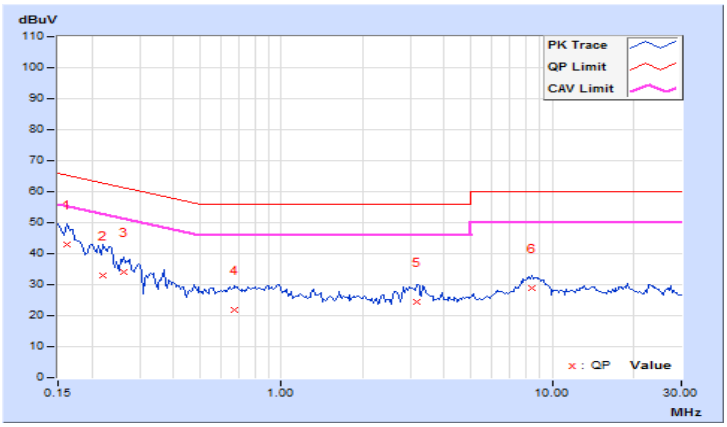
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.16172**	**10.05**	**33.04**	**17.84**	**43.09**	**27.89**	**65.38**	**55.38**	**-22.29**	**-27.49**
2	0.22031	10.08	22.96	10.07	33.04	20.15	62.81	52.81	-29.77	-32.66
3	0.26328	10.09	23.92	15.07	34.01	25.16	61.33	51.33	-27.32	-26.17
4	0.67344	10.14	11.77	0.48	21.91	10.62	56.00	46.00	-34.09	-35.38
5	3.18359	10.29	14.17	4.41	24.46	14.70	56.00	46.00	-31.54	-31.30
6	8.42188	10.61	18.24	13.29	28.85	23.90	60.00	50.00	-31.15	-26.10

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

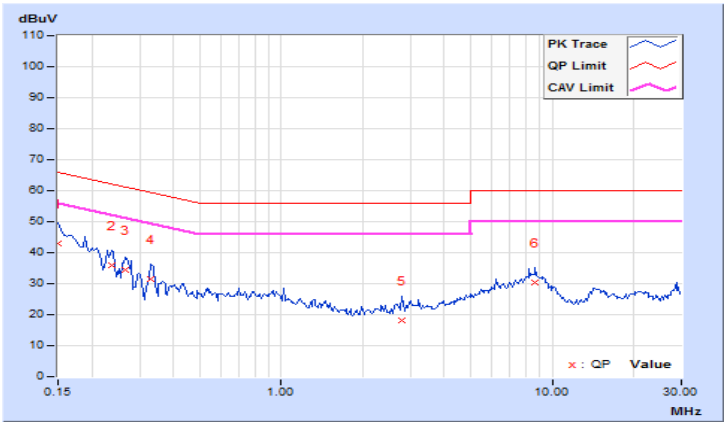


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.95	33.07	16.22	43.02	26.17	66.00	56.00	-22.98	-29.83
2	0.23594	9.98	25.99	15.20	35.97	25.18	62.24	52.24	-26.27	-27.06
3	0.26719	9.99	24.43	16.16	34.42	26.15	61.20	51.20	-26.78	-25.05
4	0.32969	10.00	21.59	16.20	31.59	26.20	59.46	49.46	-27.87	-23.26
5	2.79688	10.14	7.97	-0.64	18.11	9.50	56.00	46.00	-37.89	-36.50
6	8.67578	10.46	19.86	14.97	30.32	25.43	60.00	50.00	-29.68	-24.57

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

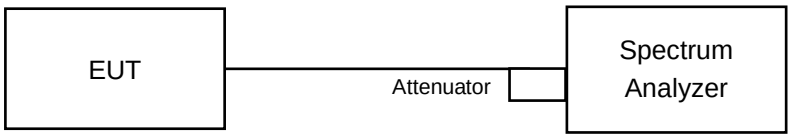


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	8.61	8.61	8.17	0.5	Pass
2	2417	8.59	8.56	9.06	0.5	Pass
6	2437	9.14	9.55	9.09	0.5	Pass
10	2457	8.65	8.65	8.66	0.5	Pass
11	2462	8.60	8.63	8.58	0.5	Pass

802.11g

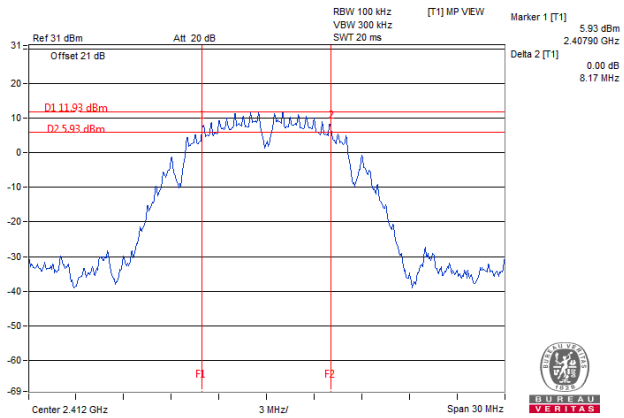
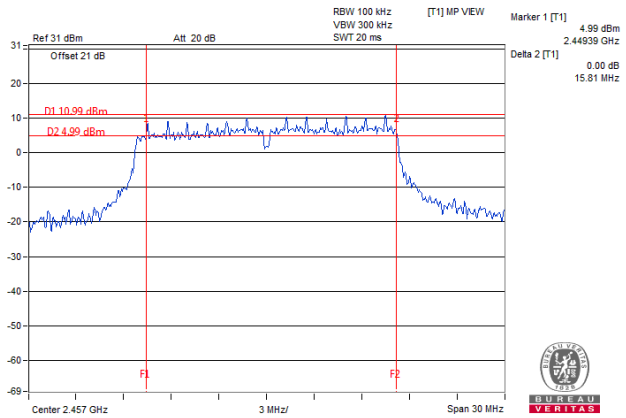
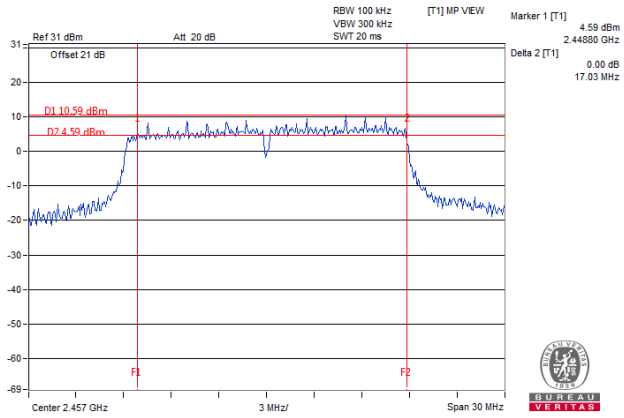
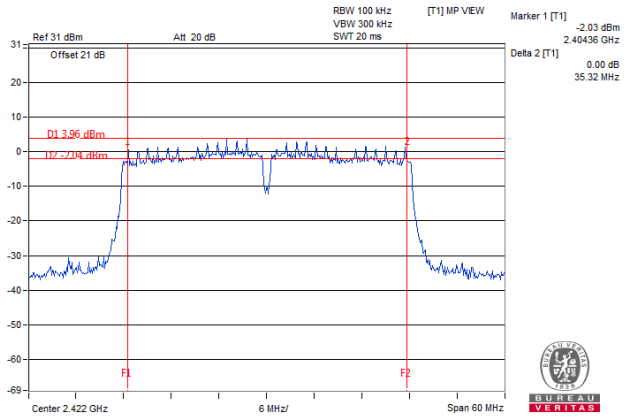
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	16.39	16.42	16.44	0.5	Pass
2	2417	16.37	16.38	16.40	0.5	Pass
6	2437	16.40	16.40	16.44	0.5	Pass
10	2457	16.12	15.81	16.38	0.5	Pass
11	2462	16.37	16.37	16.38	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	17.60	17.65	17.64	0.5	Pass
2	2417	17.55	17.61	17.63	0.5	Pass
6	2437	17.63	17.64	17.67	0.5	Pass
10	2457	17.36	17.63	17.03	0.5	Pass
11	2462	17.40	17.67	17.65	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
3	2422	35.33	35.38	35.32	0.5	Pass
4	2427	35.94	35.79	36.03	0.5	Pass
6	2437	36.55	36.51	36.55	0.5	Pass
8	2447	35.79	36.57	36.50	0.5	Pass
9	2452	35.99	36.50	36.51	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH1	**802.11g / Chain 1 : CH10**
	
802.11n (HT20) / Chain 2 : CH10	**802.11n (HT40) / Chain 2 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

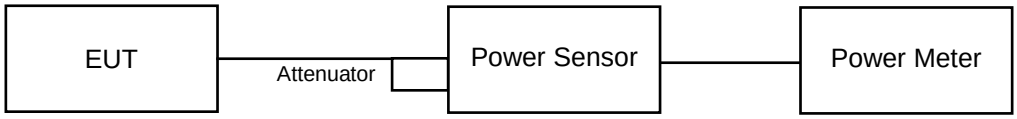
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

Per KDB 662911 D01 Multiple Transmitter Output 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.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

CDD mode

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	20.32	20.45	20.35	326.957	25.14	30	Pass
2	2417	21.23	21.35	21.21	401.327	26.03	30	Pass
6	2437	24.71	24.52	24.13	837.761	29.23	30	Pass
10	2457	20.02	20.23	20.04	306.826	24.87	30	Pass
11	2462	19.23	19.45	19.36	258.156	24.12	30	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	17.13	17.11	17.20	155.527	21.92	30	Pass
2	2417	21.12	21.25	21.06	390.416	25.92	30	Pass
6	2437	23.94	23.86	23.35	707.234	28.50	30	Pass
10	2457	21.53	21.45	21.46	421.829	26.25	30	Pass
11	2462	18.32	18.45	18.28	205.202	23.12	30	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	16.53	16.66	16.74	138.529	21.42	30	Pass
2	2417	22.84	22.53	22.57	552.087	27.42	30	Pass
6	2437	24.35	24.36	23.95	793.481	29.00	30	Pass
10	2457	21.52	21.63	21.35	423.91	26.27	30	Pass
11	2462	16.75	16.81	16.66	141.633	21.51	30	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
3	2422	17.21	17.06	17.11	154.822	21.90	30	Pass
4	2427	17.43	17.23	17.05	158.879	22.01	30	Pass
6	2437	19.76	19.62	19.57	276.819	24.42	30	Pass
8	2447	16.21	15.94	15.97	120.584	20.81	30	Pass
9	2452	15.32	15.15	15.26	100.349	20.02	30	Pass

Beamforming mode

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
1	2412	16.53	16.66	16.74	138.529	21.42	27.74	Pass
2	2417	22.84	22.53	22.57	552.087	27.42	27.74	Pass
6	2437	23.12	22.98	22.75	592.09	27.72	27.74	Pass
10	2457	21.52	21.63	21.35	423.91	26.27	27.74	Pass
11	2462	16.75	16.81	16.66	141.633	21.51	27.74	Pass

Note: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$)^2 / 3] = 8.26dBi > 6dBi , so the power limit shall be reduced to 30-(8.26-6) = 27.74dBm.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)			Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
3	2422	17.21	17.06	17.11	154.822	21.90	27.74	Pass
4	2427	17.43	17.23	17.05	158.879	22.01	27.74	Pass
6	2437	19.76	19.62	19.57	276.819	24.42	27.74	Pass
8	2447	16.21	15.94	15.97	120.584	20.81	27.74	Pass
9	2452	15.32	15.15	15.26	100.349	20.02	27.74	Pass

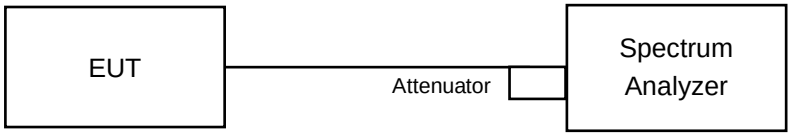
Note: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$)^2 / 3] = 8.26dBi > 6dBi , so the power limit shall be reduced to 30-(8.26-6) = 27.74dBm.

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a. Set instrument center frequency to DTS channel center frequency.
b. Set span to at least 1.5 times the OBW.
c. Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
d. Set VBW ≥3 x RBW.
e. Detector = power averaging (RMS) or sample detector (when RMS not available).
f. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g. Sweep time = auto couple.
h. Employ trace averaging (RMS) mode over a minimum of 100 traces.
i. Use the peak marker function to determine the maximum amplitude level.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-10.96	4.77	-6.19	5.74	Pass
	2	2417	-9.66	4.77	-4.89	5.74	Pass
	6	2437	-5.57	4.77	-0.80	5.74	Pass
	10	2457	-9.56	4.77	-4.79	5.74	Pass
	11	2462	-11.94	4.77	-7.17	5.74	Pass
1	1	2412	-10.33	4.77	-5.56	5.74	Pass
	2	2417	-9.36	4.77	-4.59	5.74	Pass
	6	2437	-6.28	4.77	-1.51	5.74	Pass
	10	2457	-11.14	4.77	-6.37	5.74	Pass
	11	2462	-11.37	4.77	-6.60	5.74	Pass
2	1	2412	-10.50	4.77	-5.73	5.74	Pass
	2	2417	-8.80	4.77	-4.03	5.74	Pass
	6	2437	-7.60	4.77	-2.83	5.74	Pass
	10	2457	-11.76	4.77	-6.99	5.74	Pass
	11	2462	-10.79	4.77	-6.02	5.74	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 8.26dBi > 6dBi , so the power density limit shall be reduced to 8-(8.26-6) = 5.74dBm.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-14.55	4.77	-9.78	5.74	Pass
	2	2417	-10.32	4.77	-5.55	5.74	Pass
	6	2437	-6.89	4.77	-2.12	5.74	Pass
	10	2457	-8.53	4.77	-3.76	5.74	Pass
	11	2462	-12.82	4.77	-8.05	5.74	Pass
1	1	2412	-12.55	4.77	-7.78	5.74	Pass
	2	2417	-9.24	4.77	-4.47	5.74	Pass
	6	2437	-7.63	4.77	-2.86	5.74	Pass
	10	2457	-10.83	4.77	-6.06	5.74	Pass
	11	2462	-12.70	4.77	-7.93	5.74	Pass
2	1	2412	-13.47	4.77	-8.70	5.74	Pass
	2	2417	-9.27	4.77	-4.50	5.74	Pass
	6	2437	-8.21	4.77	-3.44	5.74	Pass
	10	2457	-10.71	4.77	-5.94	5.74	Pass
	11	2462	-11.00	4.77	-6.23	5.74	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 8.26dBi > 6dBi , so the power density limit shall be reduced to 8-(8.26-6) = 5.74dBm.

802.11n (HT20)

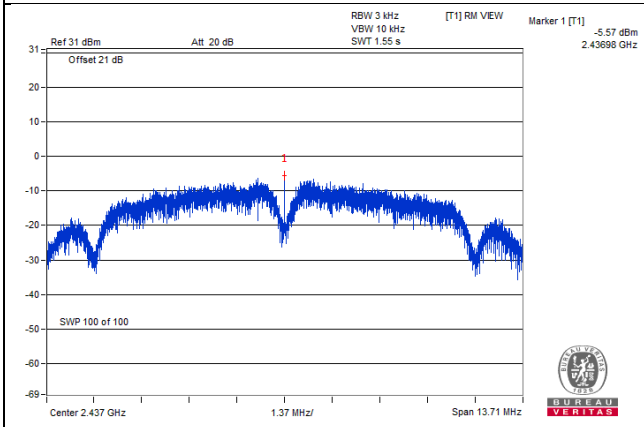
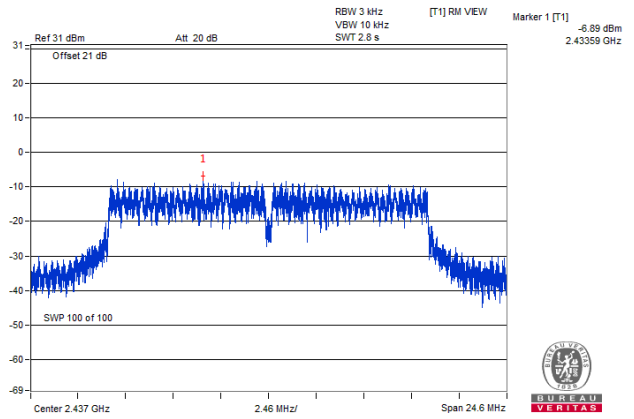
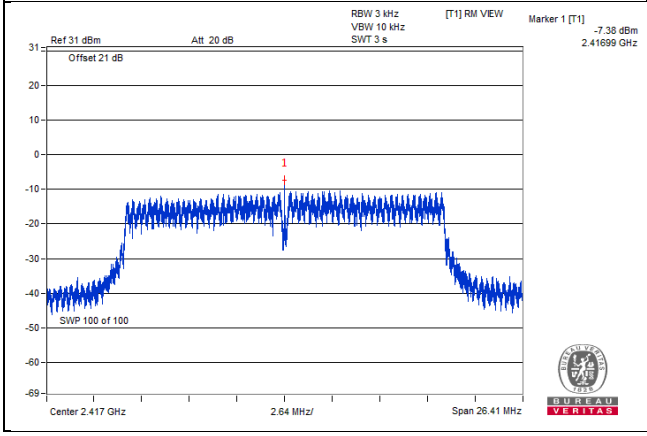
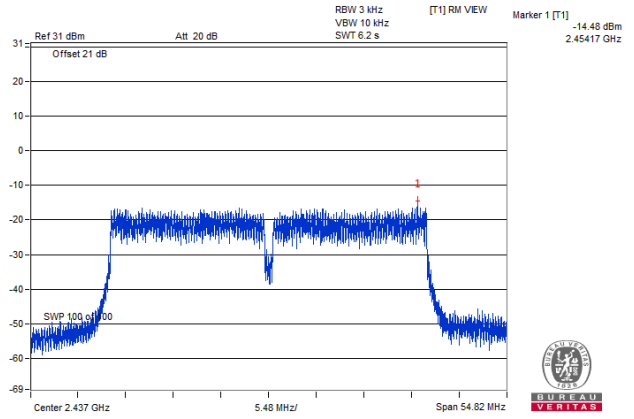
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.62	4.77	-11.85	5.74	Pass
	2	2417	-11.90	4.77	-7.13	5.74	Pass
	6	2437	-9.05	4.77	-4.28	5.74	Pass
	10	2457	-11.09	4.77	-6.32	5.74	Pass
	11	2462	-16.13	4.77	-11.36	5.74	Pass
1	1	2412	-14.42	4.77	-9.65	5.74	Pass
	2	2417	-7.38	4.77	-2.61	5.74	Pass
	6	2437	-7.88	4.77	-3.11	5.74	Pass
	10	2457	-10.31	4.77	-5.54	5.74	Pass
	11	2462	-15.99	4.77	-11.22	5.74	Pass
2	1	2412	-17.20	4.77	-12.43	5.74	Pass
	2	2417	-10.56	4.77	-5.79	5.74	Pass
	6	2437	-10.26	4.77	-5.49	5.74	Pass
	10	2457	-11.75	4.77	-6.98	5.74	Pass
	11	2462	-15.36	4.77	-10.59	5.74	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 8.26dBi > 6dBi , so the power density limit shall be reduced to 8-(8.26-6) = 5.74dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=3) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-18.15	4.77	-13.38	5.74	Pass
	4	2427	-18.51	4.77	-13.74	5.74	Pass
	6	2437	-14.48	4.77	-9.71	5.74	Pass
	8	2447	-17.59	4.77	-12.82	5.74	Pass
	9	2452	-19.87	4.77	-15.10	5.74	Pass
1	3	2422	-18.34	4.77	-13.57	5.74	Pass
	4	2427	-18.02	4.77	-13.25	5.74	Pass
	6	2437	-15.82	4.77	-11.05	5.74	Pass
	8	2447	-18.64	4.77	-13.87	5.74	Pass
	9	2452	-19.97	4.77	-15.20	5.74	Pass
2	3	2422	-18.52	4.77	-13.75	5.74	Pass
	4	2427	-18.57	4.77	-13.80	5.74	Pass
	6	2437	-16.20	4.77	-11.43	5.74	Pass
	8	2447	-18.89	4.77	-14.12	5.74	Pass
	9	2452	-19.80	4.77	-15.03	5.74	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2$ / 3] = 8.26dBi > 6dBi , so the power density limit shall be reduced to 8-(8.26-6) = 5.74dBm.

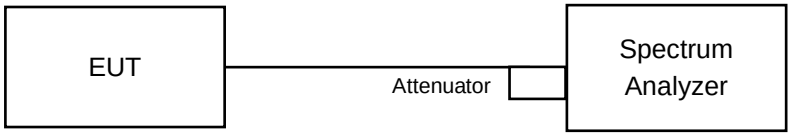
Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH6	**802.11g / Chain 0 : CH6**
	
802.11n (HT20) / Chain 1 : CH2	**802.11n (HT40) / Chain 0 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 30dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

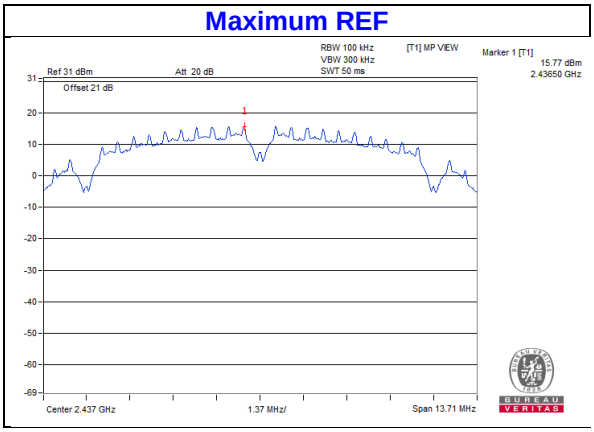
Same as Item 4.3.6

4.6.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

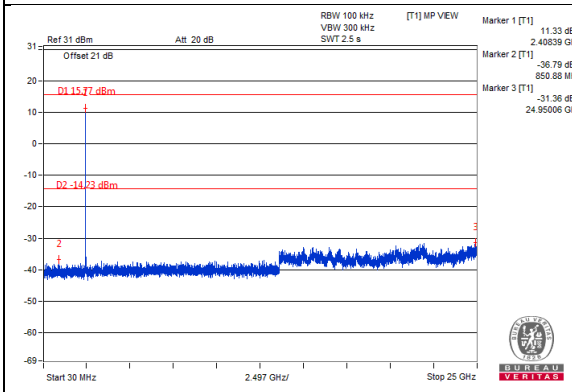
802.11b

Maximum REF

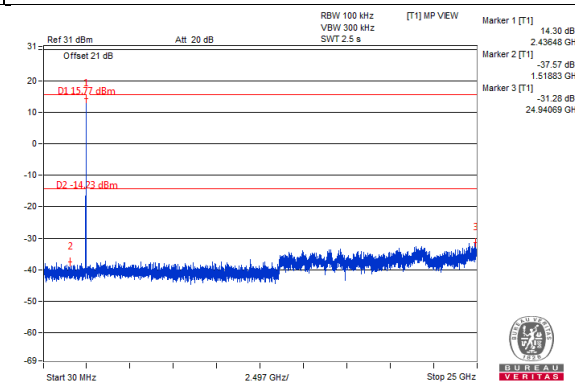


Chain 0

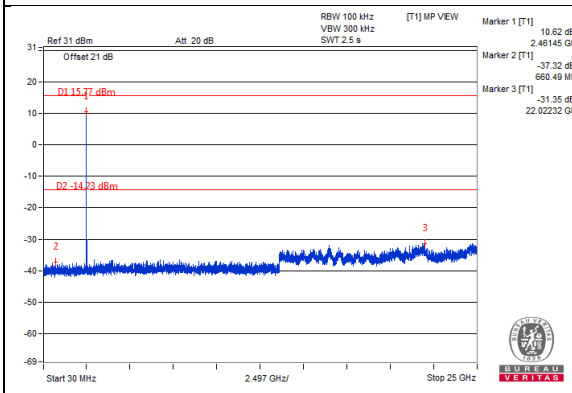
CH 1



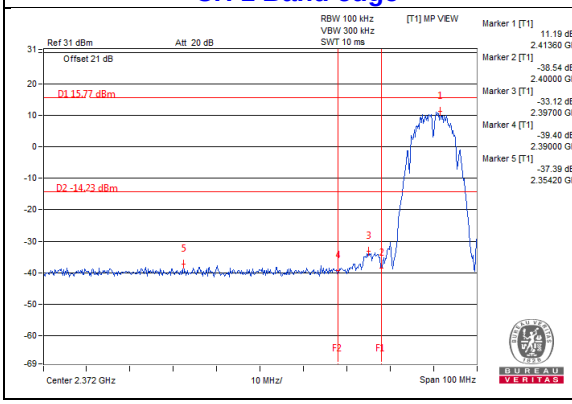
CH 6



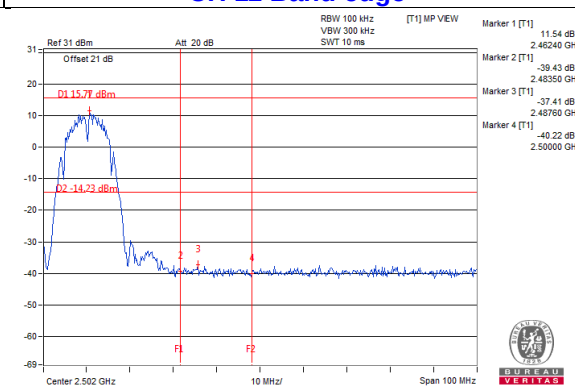
CH 11



CH 1 Band edge

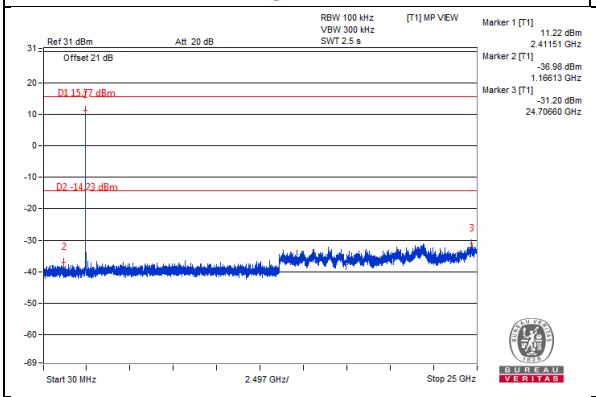


CH 11 Band edge

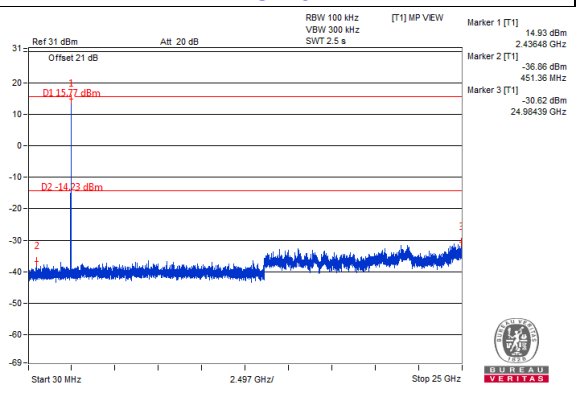


Chain 1

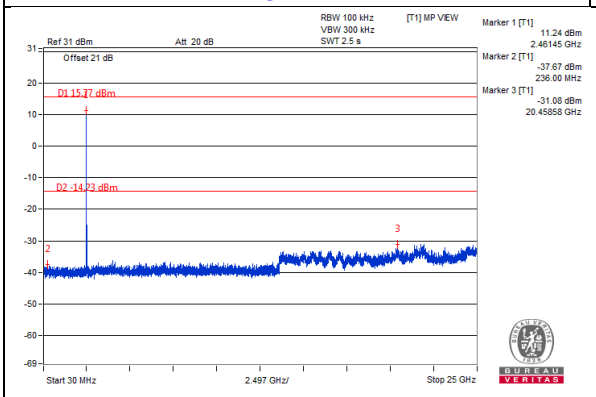
CH 1



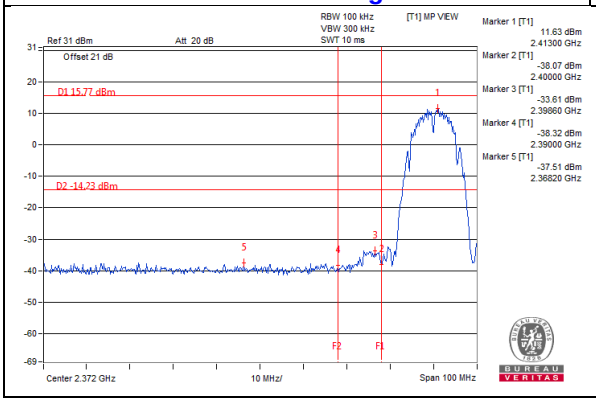
CH 6



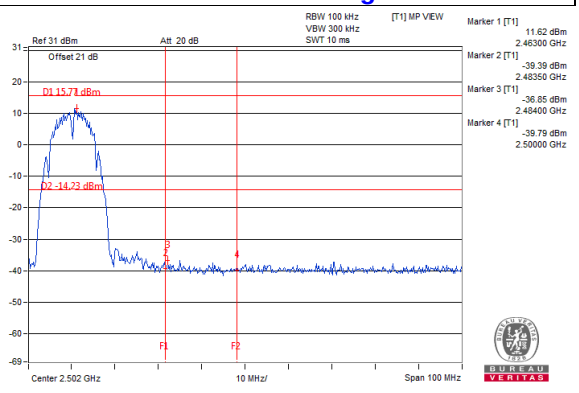
CH 11



CH 1 Band edge

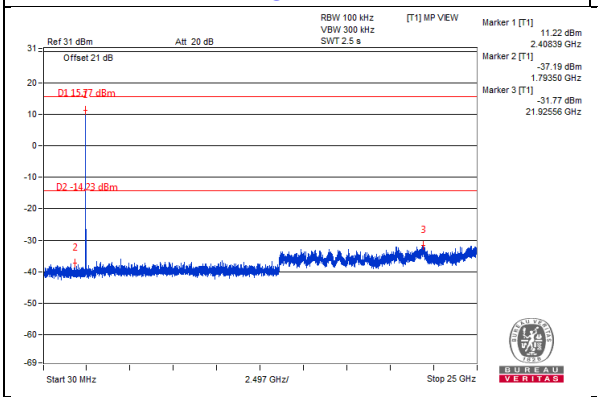


CH 11 Band edge

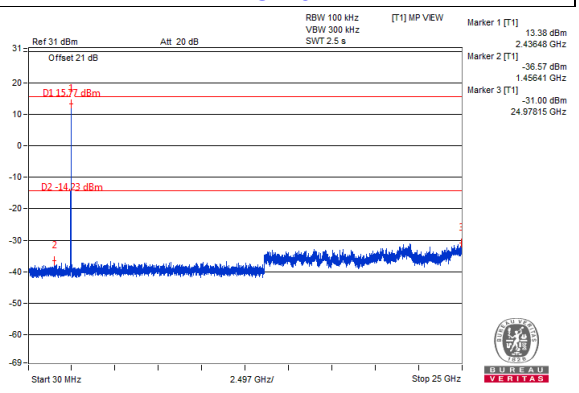


Chain 2

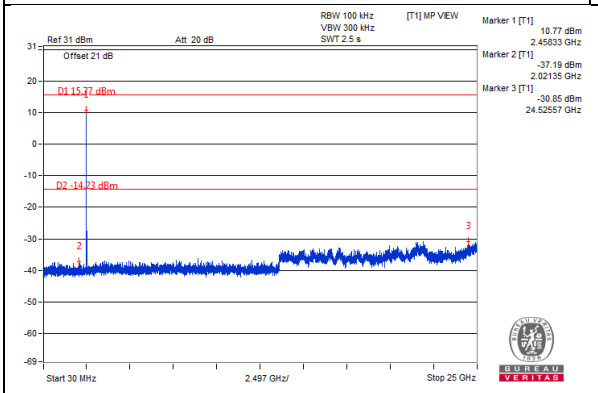
CH 1



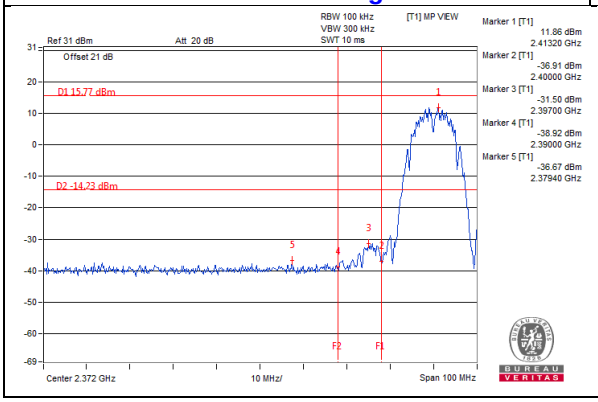
CH 6



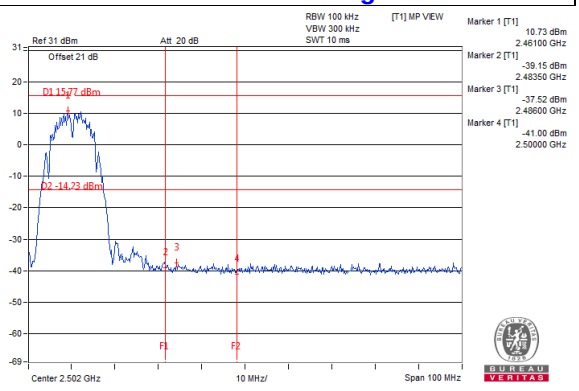
CH 11



CH 1 Band edge

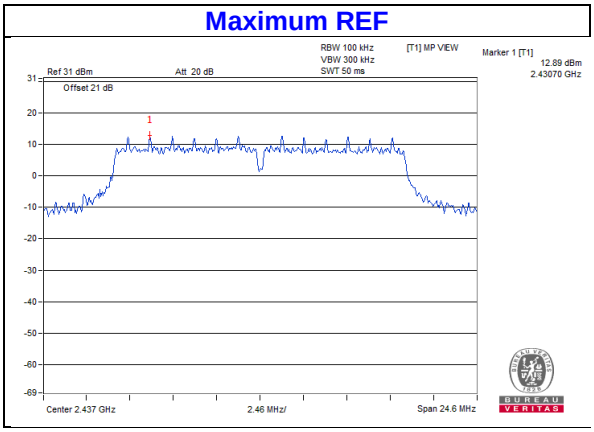


CH 11 Band edge



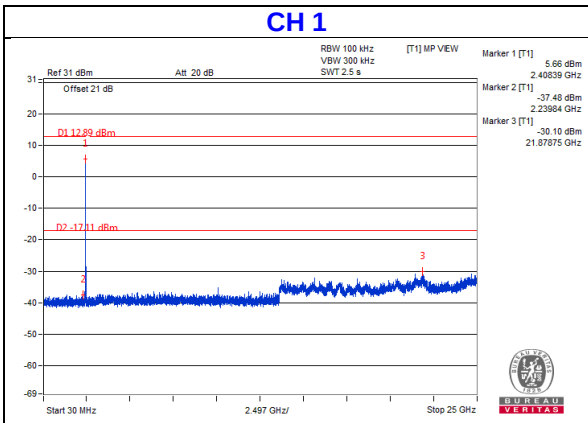
802.11g

Maximum REF

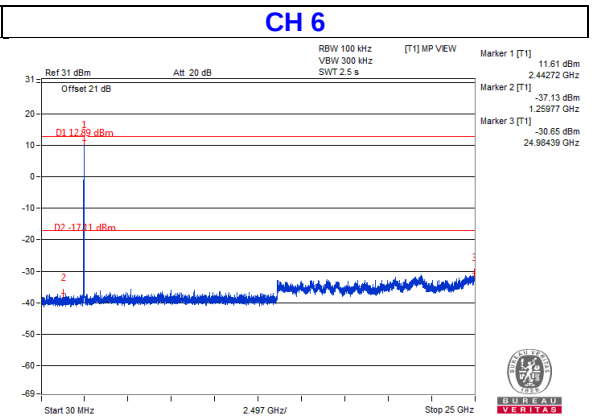


Chain 0

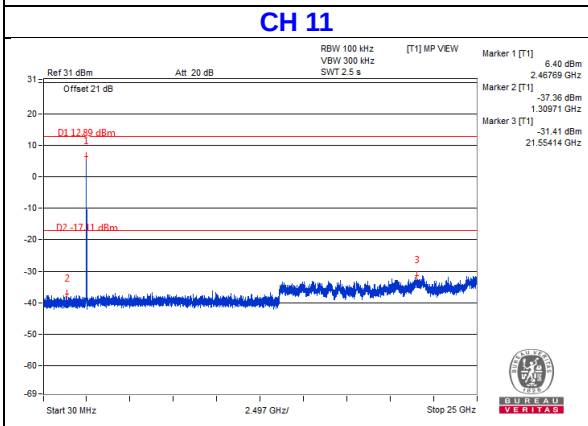
CH 1



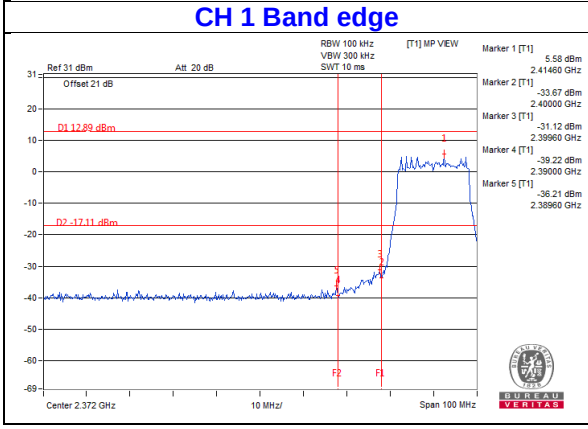
CH 6



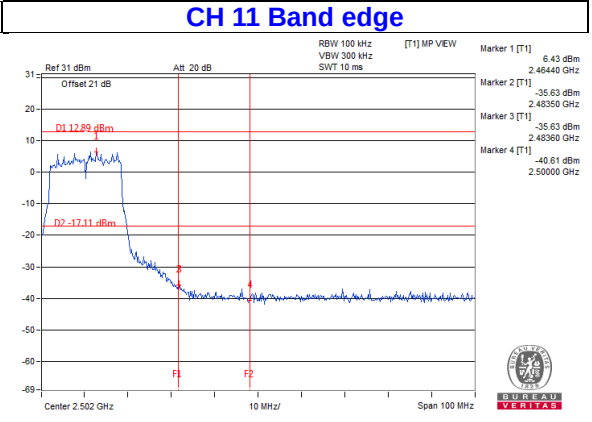
CH 11



CH 1 Band edge

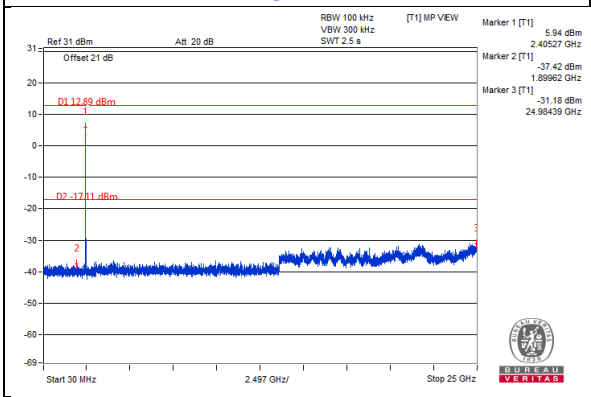


CH 11 Band edge

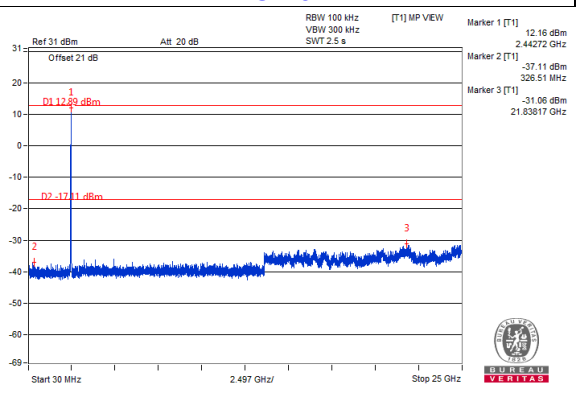


Chain 1

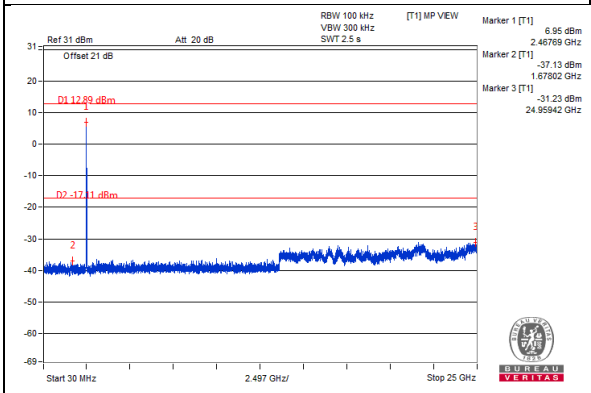
CH 1



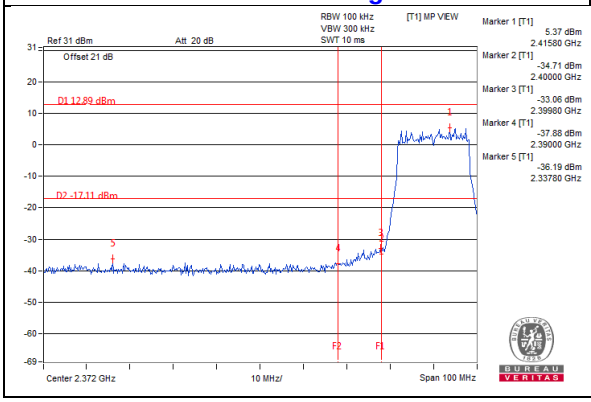
CH 6



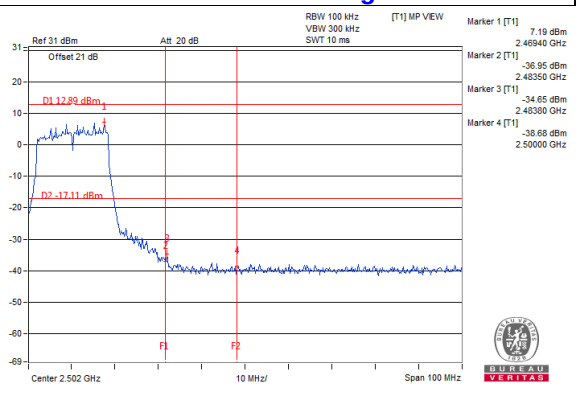
CH 11



CH 1 Band edge

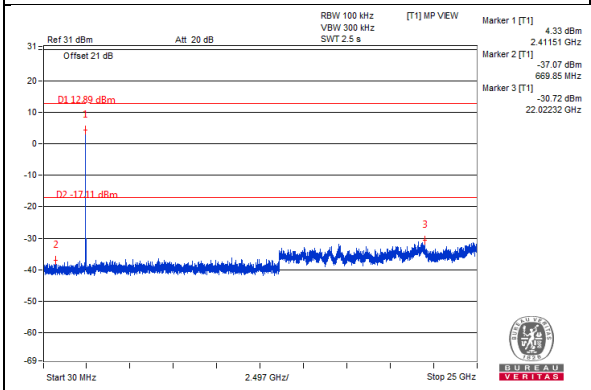


CH 11 Band edge

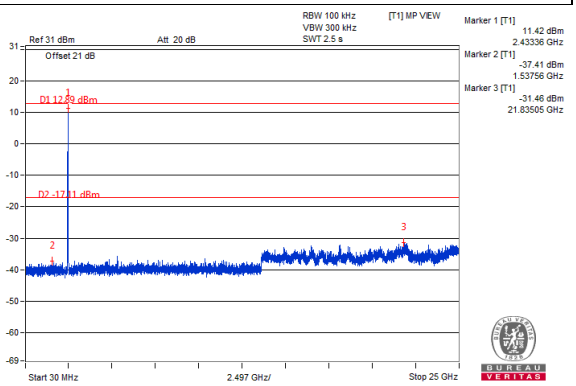


Chain 2

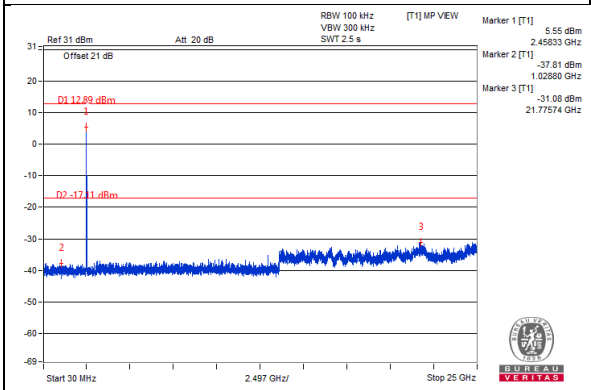
CH 1



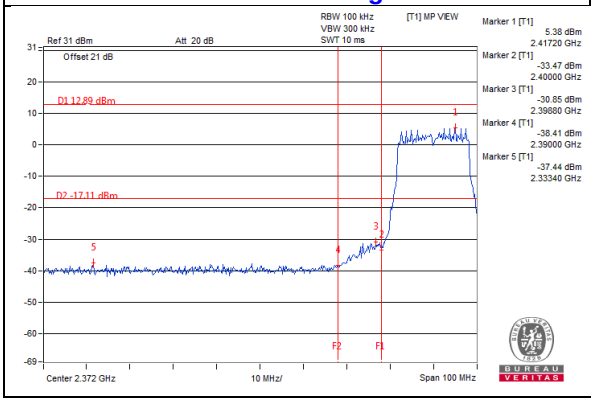
CH 6



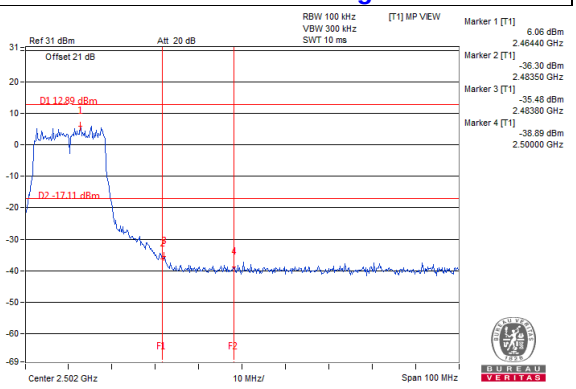
CH 11



CH 1 Band edge

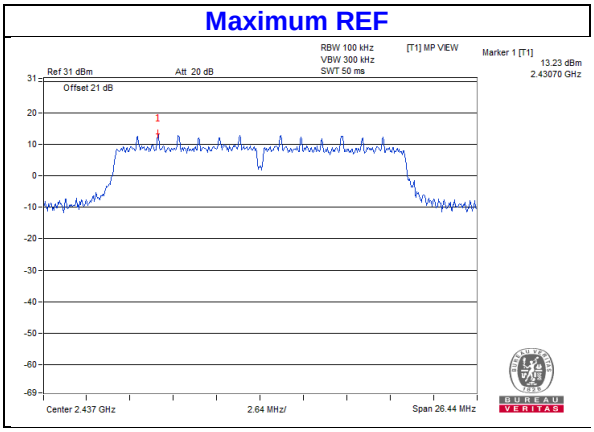


CH 11 Band edge



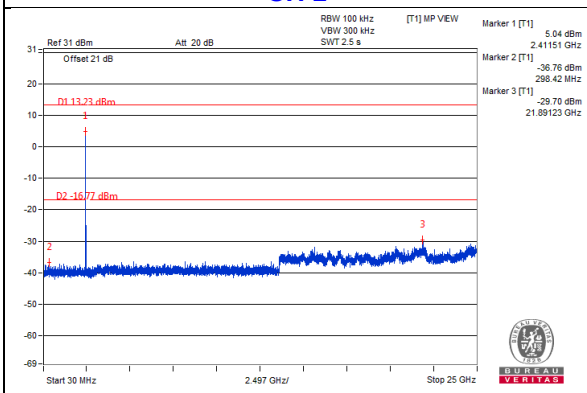
802.11n (HT20)

Maximum REF

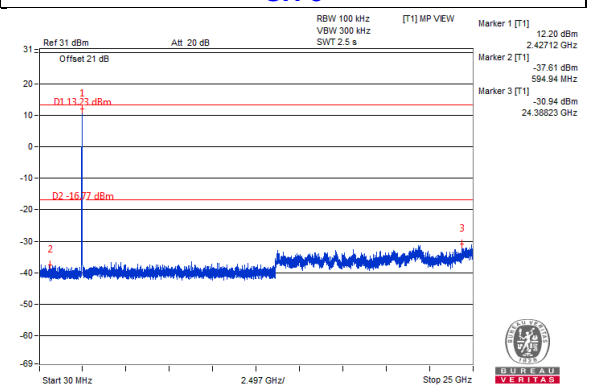


Chain 0

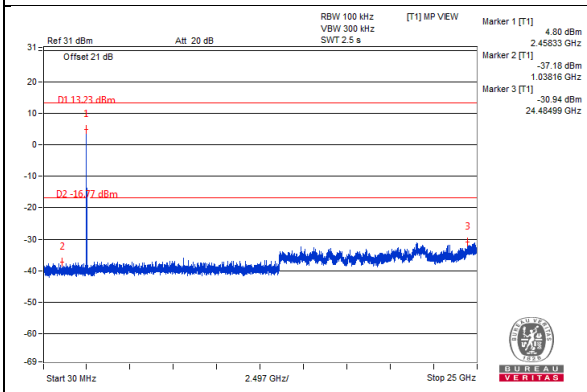
CH 1



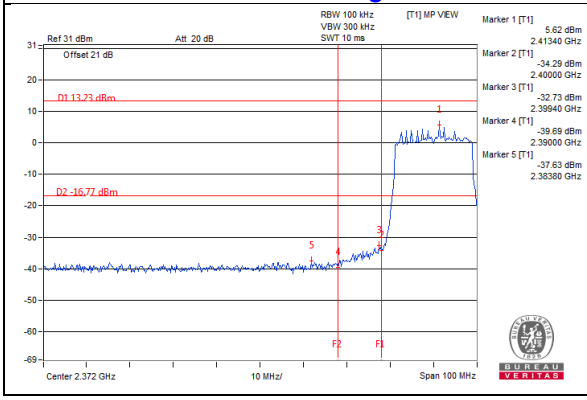
CH 6



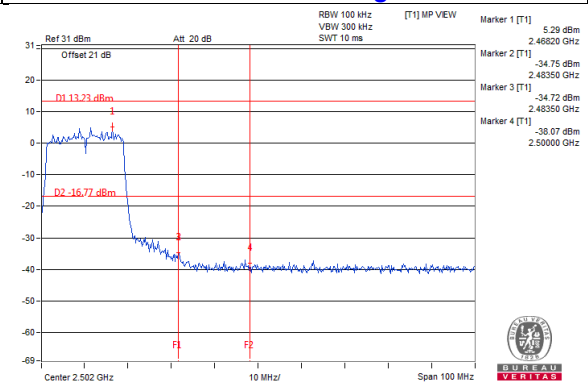
CH 11



CH 1 Band edge

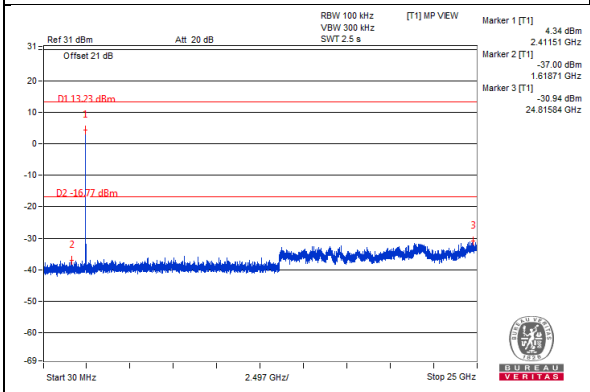


CH 11 Band edge

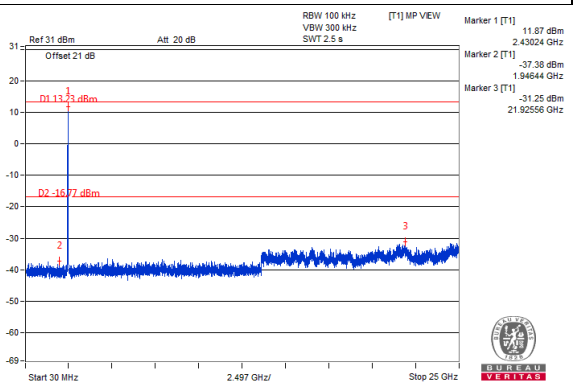


Chain 1

CH 1



CH 6



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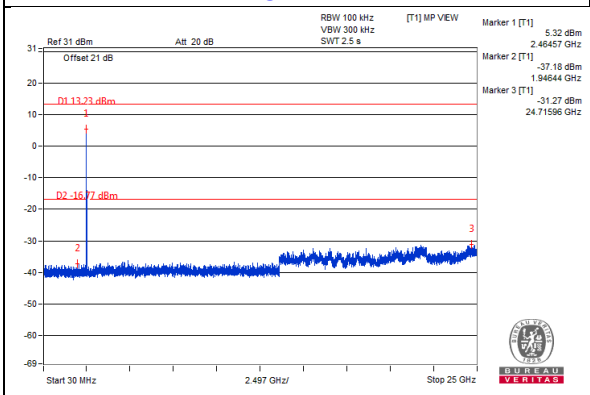
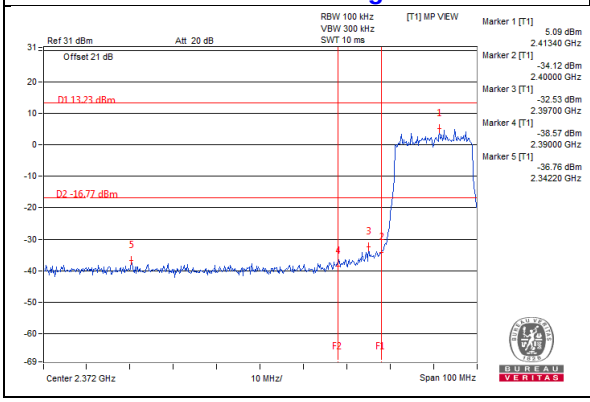
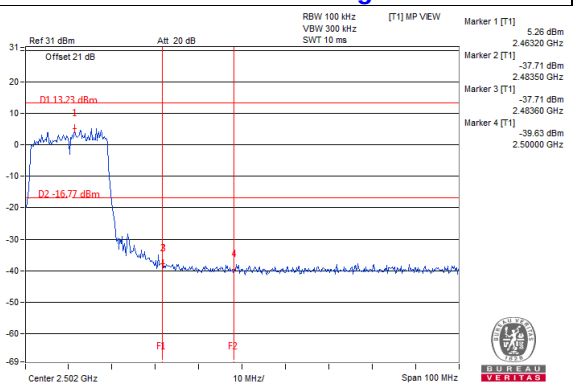


CH 1 Band edge

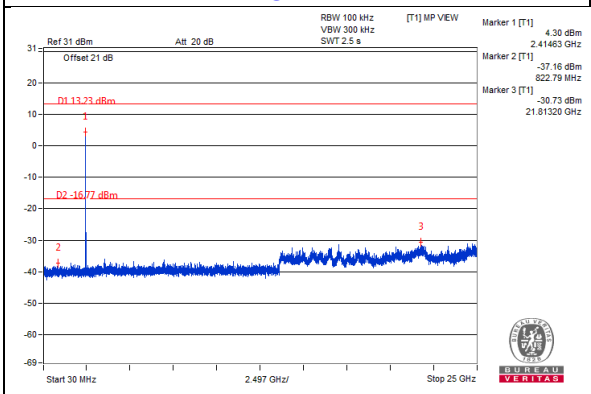


CH 11 Band edge

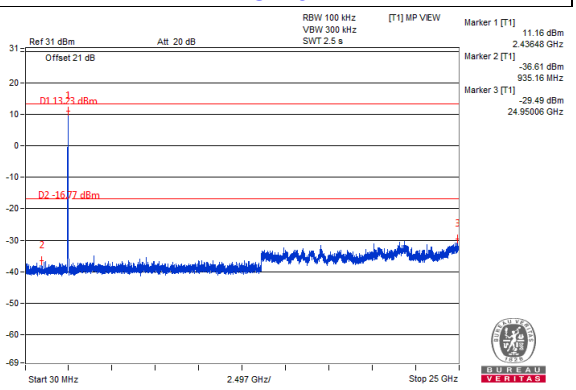


Chain 2

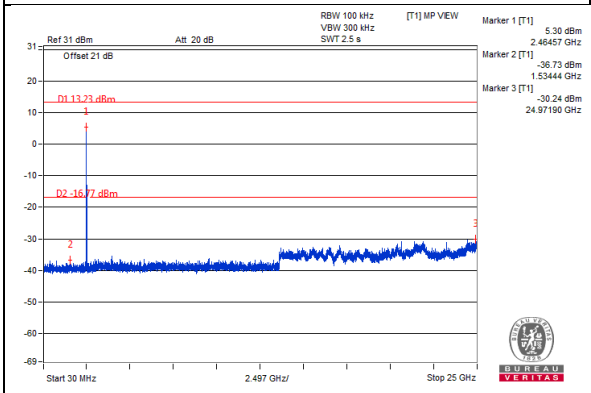
CH 1



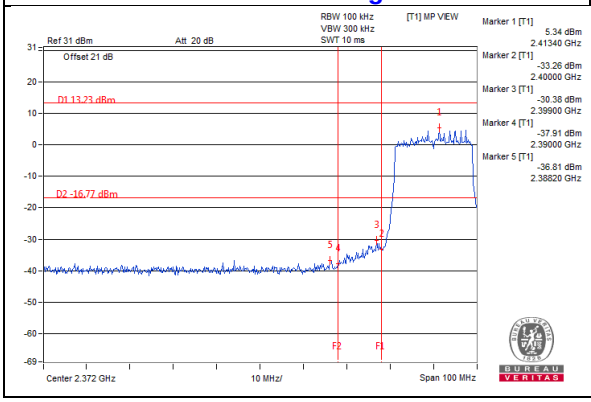
CH 6



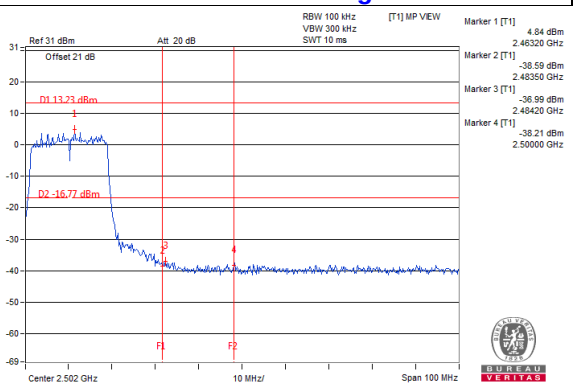
CH 11



CH 1 Band edge

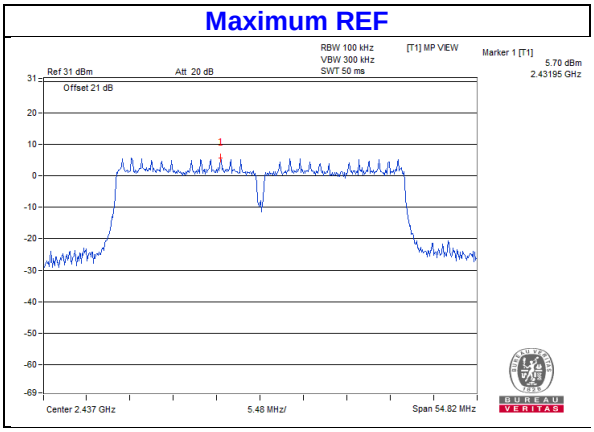


CH 11 Band edge



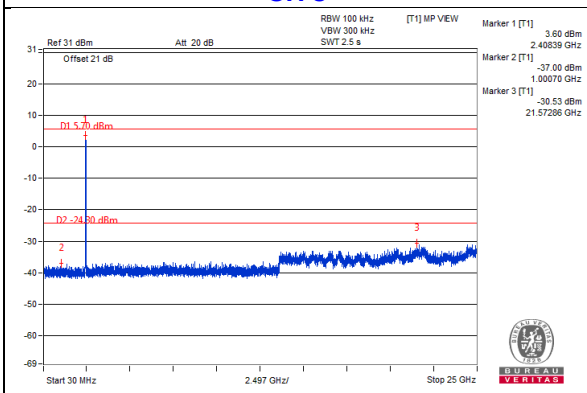
802.11n (HT40)

Maximum REF

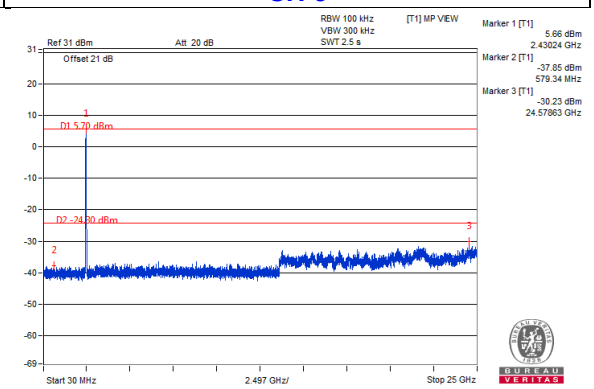


Chain 0

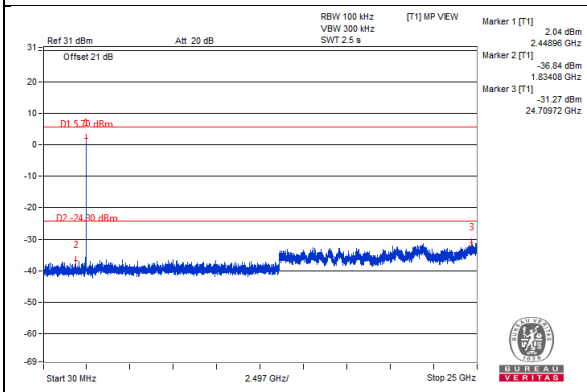
CH 3



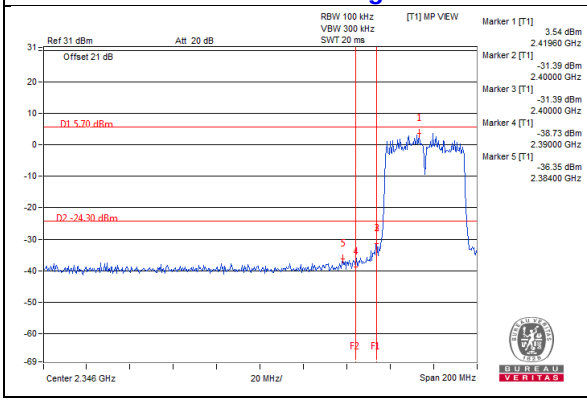
CH 6



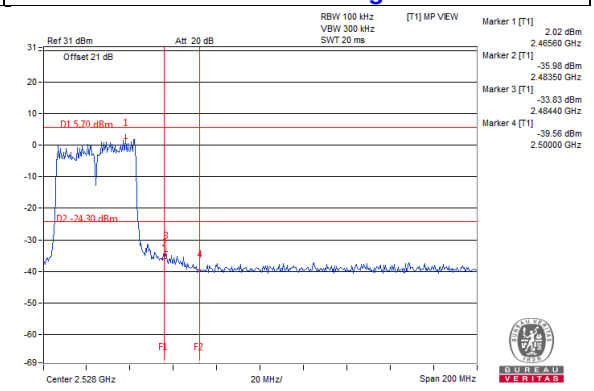
CH 9



CH 3 Band edge

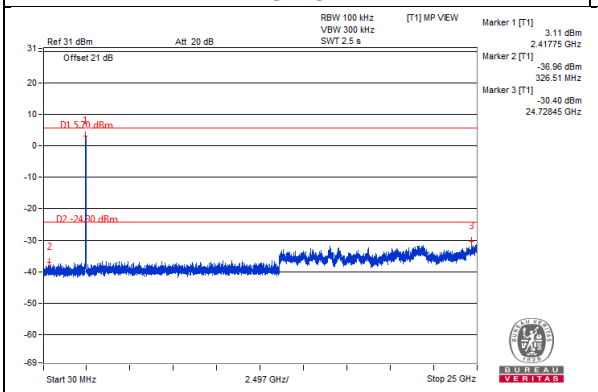


CH 9 Band edge

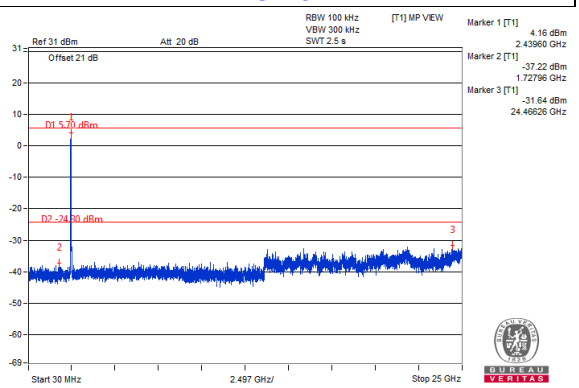


Chain 1

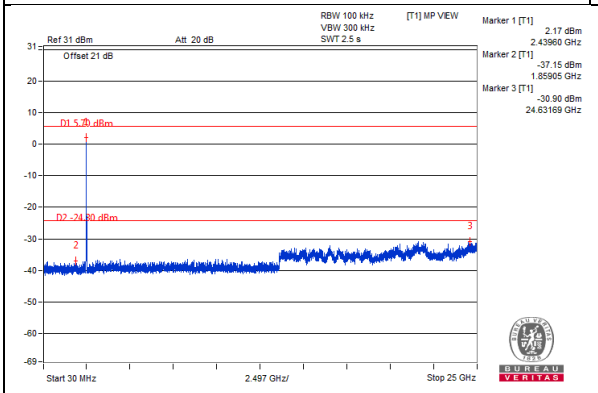
CH 3



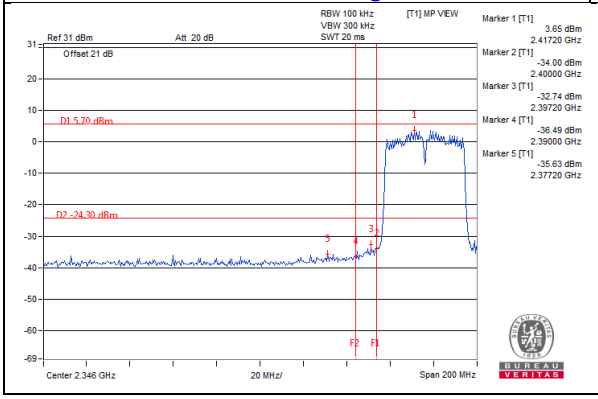
CH 6



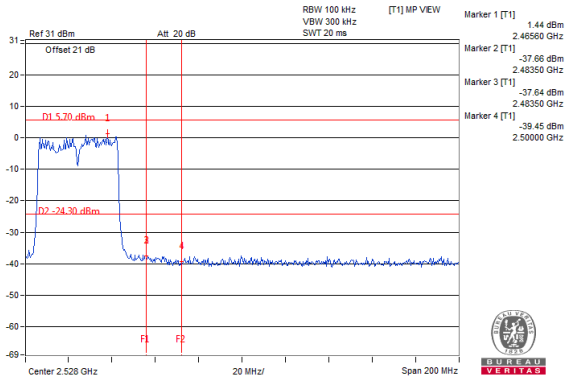
CH 9



CH 3 Band edge

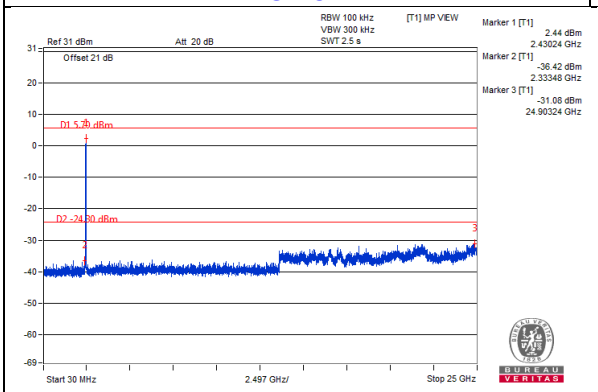


CH 9 Band edge

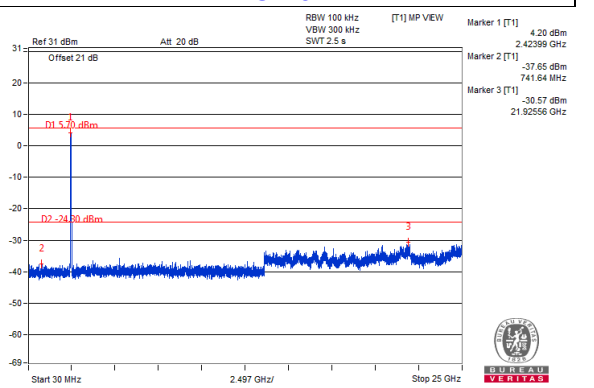


Chain 2

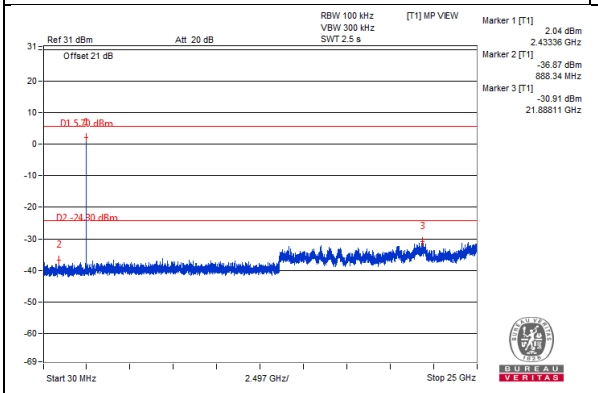
CH 3



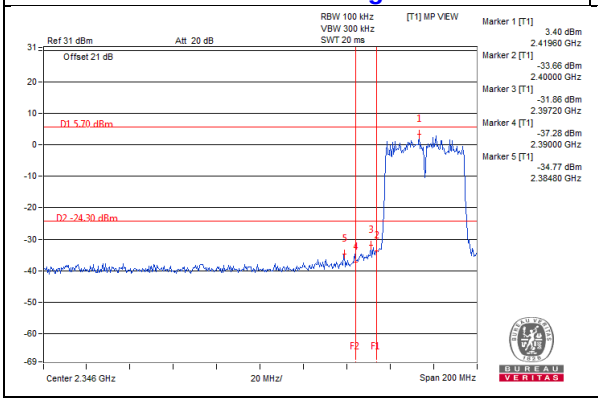
CH 6



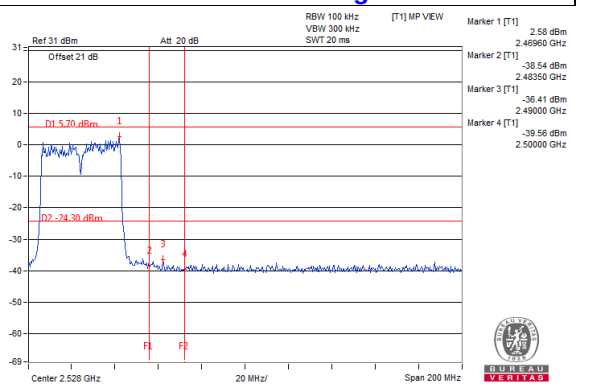
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Tel: 886-2-26052180
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Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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