FCC Test Report

Report No.:	RF170110E09
FCC ID:	PY316400363
Test Model:	R8000P
Series Model:	R7900P
Received Date:	Jan. 10, 2017
Test Date:	Jan. 20 to 25, 2017
Issued Date:	Feb. 17, 2017
Applicant:	NETGEAR, Inc.
Address:	350 East Plumeria Drive San Jose, CA 95134
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 (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
RF170110E09	Original release.	Feb. 17, 2017

1 Certificate of Conformity

Product:	Nighthawk X6S AC4000 Tri-band WiFi Router
Brand:	NETGEAR
Test Model:	R8000P
Series Model:	R7900P
Sample Status:	ENGINEERING SAMPLE
Applicant:	NETGEAR, Inc.
Test Date:	Jan. 20 to 25, 2017
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 : Wendy Wu , **Date:** Feb. 17, 2017

Wendy Wu / Specialist

Approved by : , **Date:** Feb. 17, 2017

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 -14.02dB at 0.48203MHz.
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 2483.50MHz, 2390.00MHz.
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	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.34 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.41 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	3.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Nighthawk X6S AC4000 Tri-band WiFi Router
Brand	NETGEAR
Test Model	R8000P
Series Model	R7900P
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	19Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 in 2.4GHz band
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 450Mbps 802.11ac: up to 1300Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz, 5.745 ~ 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): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** **CDD Mode** 988.566mW **Beamforming Mode** 831.536mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode** 641.289mW **Beamforming Mode** 641.289mW **5.745GHz ~ 5.825GHz:** **CDD Mode** 979.264mW **Beamforming Mode** 795.796mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The EUT has below model names, which are identical to each other in all aspects except for the following:

Brand	Model No.	Different
NETGEAR	R8000P	-
	R7900P	Remove one USB 2.0 port.

From the above models, model: **R8000P** was selected as representative model for the test and its data was recorded in this report.

2. Simultaneously transmission condition.

Condition	**Technology**	
1	WLAN (Radio 1) (2.4GHz + 5GHz-UNII-1)	WLAN (Radio 2) (5GHz-UNII-3)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3. The EUT must be supplied with a power adapter as following table:

No	Brand Name	Model No.	P/N	Spec.
1	NETGEAR	AD2003F10	332-10631-01	Input: 100-120Vac, 50/60Hz, 1.5A Output: 19Vdc, 3.16A DC output cable: 1.8m, unshielded

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

WLAN (Radio 1) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
1	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
2	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
3	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
WLAN (Radio 2) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
4	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		
5	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		
6	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		

5. The EUT incorporates a MIMO function.

For 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	MCS0~8 Nss=1	3TX	3RX
	MCS0~8 Nss=2	3TX	3RX
	MCS0~9 Nss=3	3TX	3RX
VHT40	MCS0~9 Nss=1	3TX	3RX
	MCS0~9 Nss=2	3TX	3RX
	MCS0~9 Nss=3	3TX	3RX
For 5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	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
802.11ac (VHT20)	MCS 0~8, Nss=1	3TX	3RX
	MCS 0~8, Nss=2	3TX	3RX
	MCS 0~9, Nss=3	3TX	3RX
802.11ac (VHT40)	MCS 0~9, Nss=1	3TX	3RX
	MCS 0~9, Nss=2	3TX	3RX
	MCS 0~9, Nss=3	3TX	3RX
802.11ac (VHT80)	MCS 0~9, Nss=1	3TX	3RX
	MCS 0~9, Nss=2	3TX	3RX
	MCS 0~9, Nss=3	3TX	3RX

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

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

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

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, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 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)
802.11g	1 to 11	6	OFDM	BPSK	6

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)
802.11g	1 to 11	6	OFDM	BPSK	6

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, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 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, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

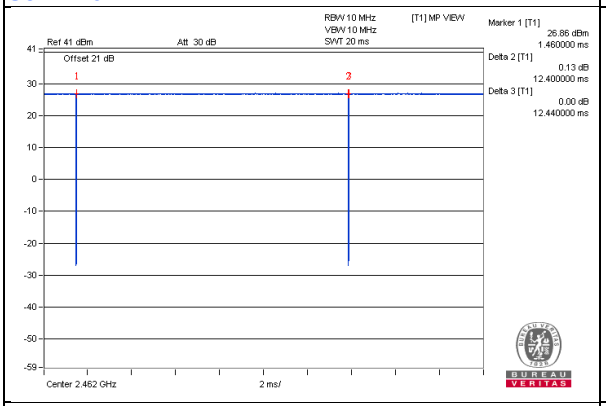
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	22deg. C, 64%RH	120Vac, 60Hz	Rey Chen
RE<1G	22deg. C, 64%RH	120Vac, 60Hz	Rey Chen
PLC	25deg. C, 75%RH	120Vac, 60Hz	Weiwei Lo
APCM	24deg. C, 65%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

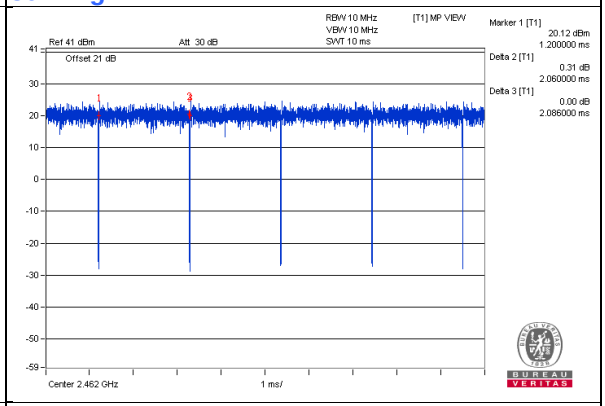
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.4/12.44 = 0.997
802.11g: Duty cycle = 2.06/2.086 = 0.988
802.11n (HT20): Duty cycle = 1.92/1.951 = 0.984
802.11n (HT40): Duty cycle = 0.941/0.973 = 0.967, Duty factor = 10 * log(1/0.967) = 0.15

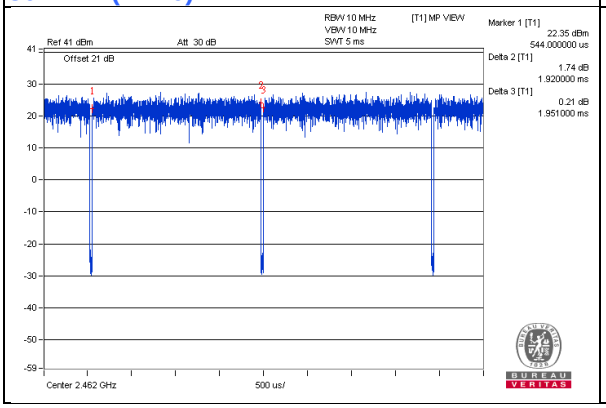
802.11b



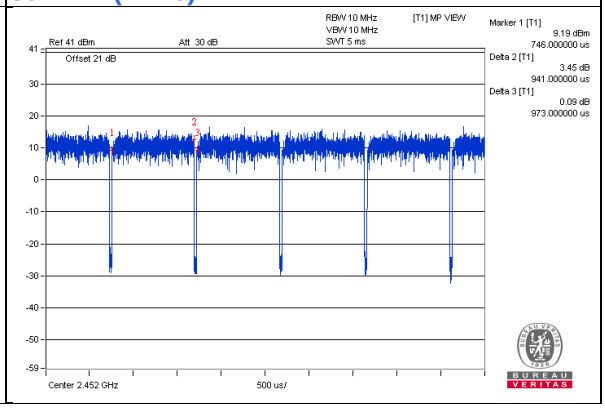
802.11g



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.

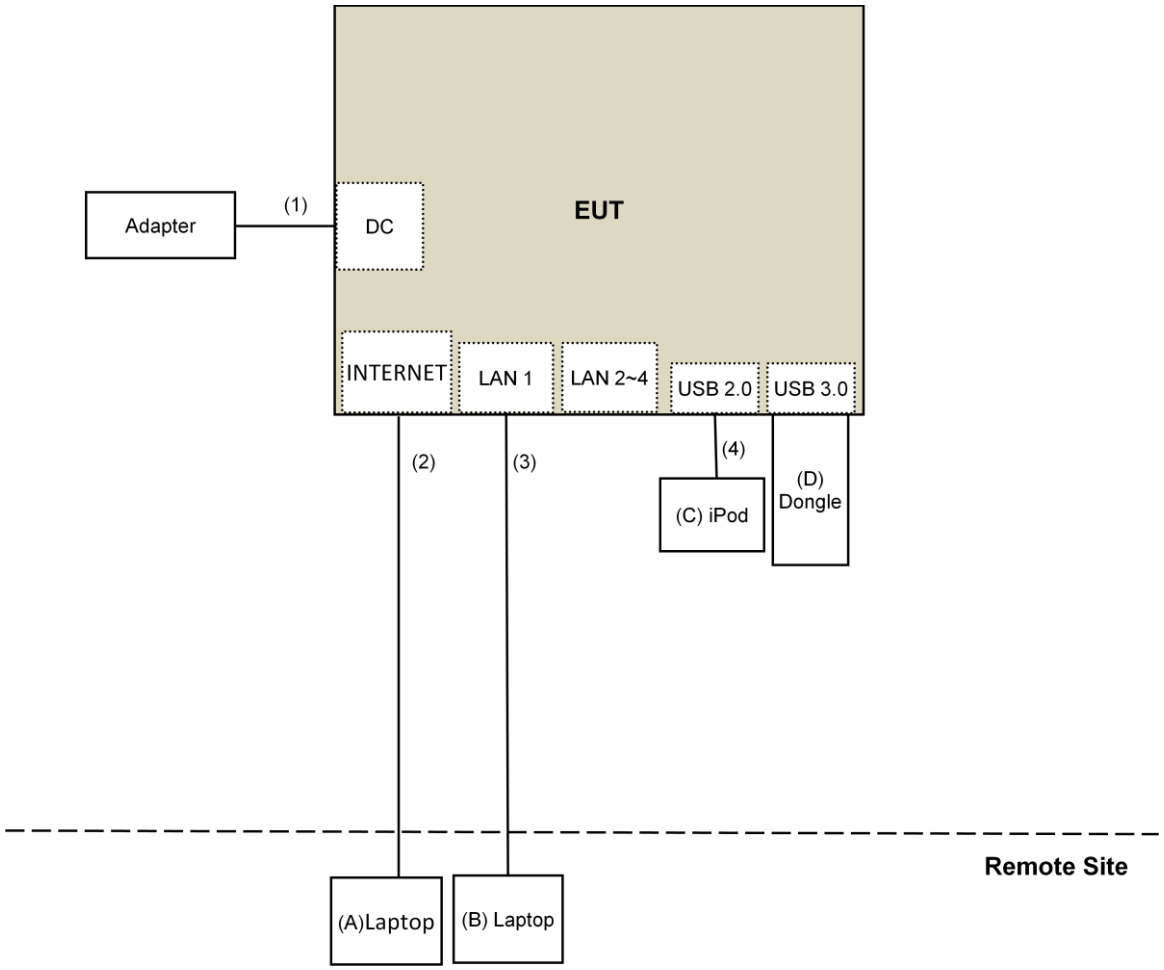
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6440	F9LYQ32	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	iPod	Apple	MD778TA/A	CC4JL03FF4T1	NA	Provided by Lab
D.	Dongel	Transcend	JetFlash 700	NA	NA	Provided by Lab

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	1.8	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	USB Cable	1	0.1	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 v03r05
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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 20, 2016	July 19, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Dec. 13, 2016	Dec. 12, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 02, 2016	Apr. 01, 2017
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 27, 2016	Dec. 26, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 18, 2016	Sep. 17, 2017
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150318 150323 150324	Mar. 30, 2016	Mar. 29, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 14, 2017	Jan. 13, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSv40	100964	June 28, 2016	June 27, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 4, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 4, 2017

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The 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 FCC Site Registration No. is 292998
5. The CANADA Site Registration No. is 20331-2
6 Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: Jan. 20 to 25, 2017

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. Both X and Y axes 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 detect 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:

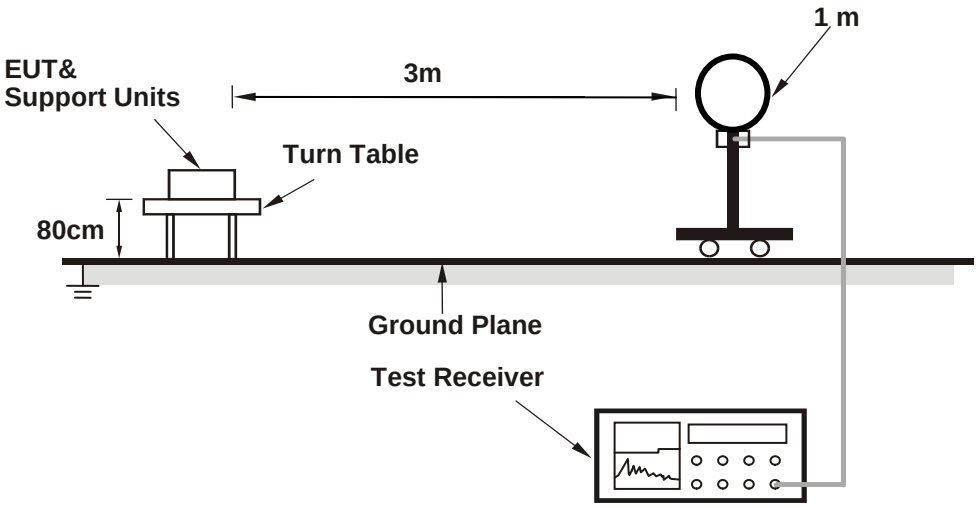
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

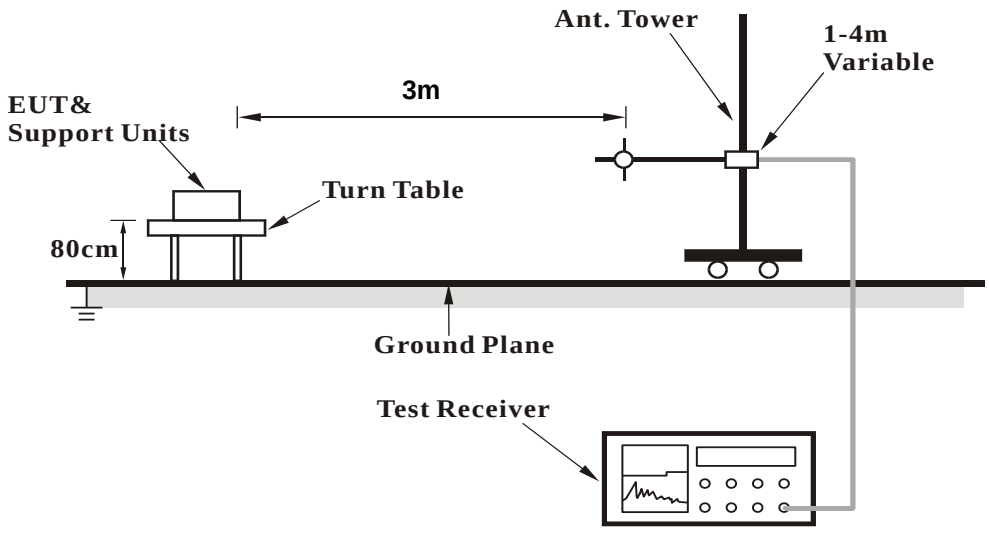
No deviation.

4.1.5 Test Setup

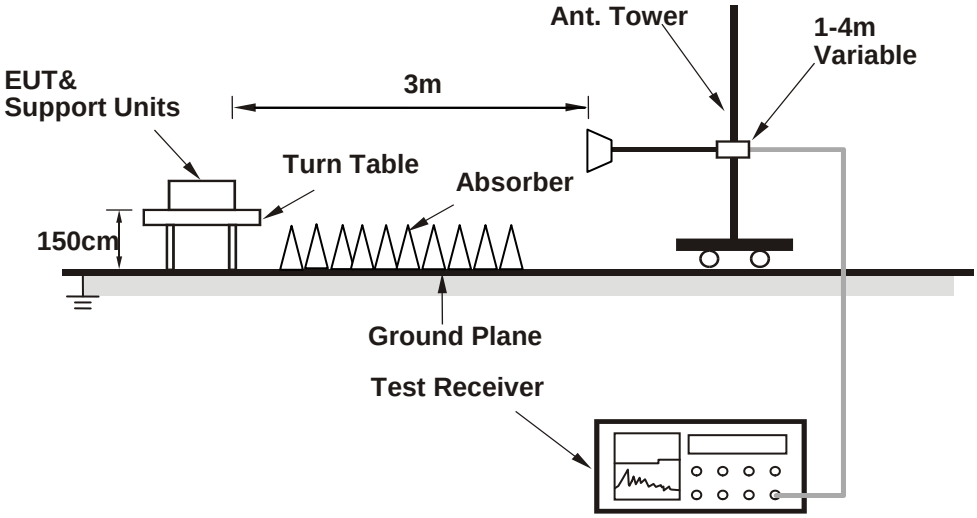
For Radiated emission below 30MHz



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. Contorlling software (Mtool 3.0.0.2) 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	61.3 PK	74.0	-12.7	2.09 H	253	65.0	-3.7
2	2390.00	53.7 AV	54.0	-0.3	2.09 H	253	57.4	-3.7
3	*2412.00	120.4 PK			2.09 H	253	124.0	-3.6
4	*2412.00	118.0 AV			2.09 H	253	121.6	-3.6
5	4824.00	49.4 PK	74.0	-24.6	1.21 H	179	47.3	2.1
6	4824.00	46.9 AV	54.0	-7.1	1.21 H	179	44.8	2.1
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	54.6 PK	74.0	-19.4	1.55 V	253	58.3	-3.7
2	2390.00	45.8 AV	54.0	-8.2	1.55 V	253	49.5	-3.7
3	*2412.00	113.9 PK			1.55 V	253	117.5	-3.6
4	*2412.00	111.4 AV			1.55 V	253	115.0	-3.6
5	4824.00	49.4 PK	74.0	-24.6	1.48 V	182	47.3	2.1
6	4824.00	46.0 AV	54.0	-8.0	1.48 V	182	43.9	2.1

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	56.7 PK	74.0	-17.3	2.24 H	266	60.4	-3.7
2	2390.00	53.0 AV	54.0	-1.0	2.24 H	266	56.7	-3.7
3	*2437.00	120.2 PK			2.24 H	266	123.7	-3.5
4	*2437.00	118.0 AV			2.24 H	266	121.5	-3.5
5	2483.50	53.6 PK	74.0	-20.4	2.24 H	266	57.0	-3.4
6	2483.50	42.2 AV	54.0	-11.8	2.24 H	266	45.6	-3.4
7	4874.00	49.8 PK	74.0	-24.2	1.20 H	189	47.5	2.3
8	4874.00	47.3 AV	54.0	-6.7	1.20 H	189	45.0	2.3
9	7311.00	47.6 PK	74.0	-26.4	1.65 H	301	39.1	8.5
10	7311.00	34.8 AV	54.0	-19.2	1.65 H	301	26.3	8.5
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	57.1 PK	74.0	-16.9	1.53 V	266	60.8	-3.7
2	2390.00	50.7 AV	54.0	-3.3	1.53 V	266	54.4	-3.7
3	*2437.00	113.7 PK			1.53 V	266	117.2	-3.5
4	*2437.00	111.4 AV			1.53 V	266	114.9	-3.5
5	2483.50	49.5 PK	74.0	-24.5	1.53 V	266	52.9	-3.4
6	2483.50	39.1 AV	54.0	-14.9	1.53 V	266	42.5	-3.4
7	4874.00	48.9 PK	74.0	-25.1	1.45 V	167	46.6	2.3
8	4874.00	41.2 AV	54.0	-12.8	1.45 V	167	38.9	2.3
9	7311.00	46.3 PK	74.0	-27.7	1.95 V	239	37.8	8.5
10	7311.00	33.3 AV	54.0	-20.7	1.95 V	239	24.8	8.5

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	120.2 PK			1.96 H	270	123.6	-3.4
2	*2462.00	117.5 AV			1.96 H	270	120.9	-3.4
3	2483.50	61.8 PK	74.0	-12.2	1.96 H	270	65.2	-3.4
4	2483.50	53.7 AV	54.0	-0.3	1.96 H	270	57.1	-3.4
5	4924.00	49.3 PK	74.0	-24.7	1.37 H	188	46.9	2.4
6	4924.00	46.1 AV	54.0	-7.9	1.37 H	188	43.7	2.4
7	7386.00	47.4 PK	74.0	-26.6	1.55 H	256	38.6	8.8
8	7386.00	34.4 AV	54.0	-19.6	1.55 H	256	25.6	8.8
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	*2462.00	114.8 PK			1.63 V	274	118.2	-3.4
2	*2462.00	112.2 AV			1.63 V	274	115.6	-3.4
3	2483.50	54.7 PK	74.0	-19.3	1.63 V	274	58.1	-3.4
4	2483.50	45.9 AV	54.0	-8.1	1.63 V	274	49.3	-3.4
5	4924.00	48.6 PK	74.0	-25.4	1.49 V	182	46.2	2.4
6	4924.00	45.7 AV	54.0	-8.3	1.49 V	182	43.3	2.4
7	7386.00	46.2 PK	74.0	-27.8	2.01 V	226	37.4	8.8
8	7386.00	33.2 AV	54.0	-20.8	2.01 V	226	24.4	8.8

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.

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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	70.1 PK	74.0	-3.9	2.01 H	262	73.8	-3.7
2	2390.00	53.6 AV	54.0	-0.4	2.01 H	262	57.3	-3.7
3	*2412.00	122.7 PK			2.01 H	262	126.3	-3.6
4	*2412.00	112.8 AV			2.01 H	262	116.4	-3.6
5	4824.00	51.6 PK	74.0	-22.4	1.39 H	139	49.5	2.1
6	4824.00	38.6 AV	54.0	-15.4	1.39 H	139	36.5	2.1
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	58.6 PK	74.0	-15.4	1.18 V	240	62.3	-3.7
2	2390.00	41.6 AV	54.0	-12.4	1.18 V	240	45.3	-3.7
3	*2412.00	116.2 PK			1.18 V	240	119.8	-3.6
4	*2412.00	106.2 AV			1.18 V	240	109.8	-3.6
5	4824.00	50.3 PK	74.0	-23.7	1.88 V	174	48.2	2.1
6	4824.00	37.6 AV	54.0	-16.4	1.88 V	174	35.5	2.1

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	67.7 PK	74.0	-6.3	1.98 H	255	71.4	-3.7
2	2390.00	50.0 AV	54.0	-4.0	1.98 H	255	53.7	-3.7
3	*2437.00	121.7 PK			1.98 H	255	125.2	-3.5
4	*2437.00	112.0 AV			1.98 H	255	115.5	-3.5
5	2483.50	60.7 PK	74.0	-13.3	1.98 H	255	64.1	-3.4
6	2483.50	45.4 AV	54.0	-8.6	1.98 H	255	48.8	-3.4
7	4874.00	51.9 PK	74.0	-22.1	1.42 H	146	49.6	2.3
8	4874.00	39.1 AV	54.0	-14.9	1.42 H	146	36.8	2.3
9	7311.00	51.2 PK	74.0	-22.8	1.36 H	122	42.7	8.5
10	7311.00	37.0 AV	54.0	-17.0	1.36 H	122	28.5	8.5
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	60.4 PK	74.0	-13.6	1.16 V	254	64.1	-3.7
2	2390.00	43.8 AV	54.0	-10.2	1.16 V	254	47.5	-3.7
3	*2437.00	117.4 PK			1.16 V	254	120.9	-3.5
4	*2437.00	107.8 AV			1.16 V	254	111.3	-3.5
5	2483.50	59.5 PK	74.0	-14.5	1.16 V	254	62.9	-3.4
6	2483.50	41.8 AV	54.0	-12.2	1.16 V	254	45.2	-3.4
7	4874.00	50.6 PK	74.0	-23.4	1.92 V	177	48.3	2.3
8	4874.00	38.1 AV	54.0	-15.9	1.92 V	177	35.8	2.3
9	7311.00	50.6 PK	74.0	-23.4	1.56 V	158	42.1	8.5
10	7311.00	36.5 AV	54.0	-17.5	1.56 V	158	28.0	8.5

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	119.3 PK			2.44 H	266	122.7	-3.4
2	*2462.00	109.8 AV			2.44 H	266	113.2	-3.4
3	2483.50	68.2 PK	74.0	-5.8	2.44 H	266	71.6	-3.4
4	2483.50	53.8 AV	54.0	-0.2	2.44 H	266	57.2	-3.4
5	4924.00	52.2 PK	74.0	-21.8	1.37 H	147	49.8	2.4
6	4924.00	39.2 AV	54.0	-14.8	1.37 H	147	36.8	2.4
7	7386.00	51.4 PK	74.0	-22.6	1.37 H	130	42.6	8.8
8	7386.00	36.9 AV	54.0	-17.1	1.37 H	130	28.1	8.8
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	*2462.00	112.8 PK			1.14 V	263	116.2	-3.4
2	*2462.00	103.2 AV			1.14 V	263	106.6	-3.4
3	2483.50	59.4 PK	74.0	-14.6	1.14 V	263	62.8	-3.4
4	2483.50	41.4 AV	54.0	-12.6	1.14 V	263	44.8	-3.4
5	4924.00	50.0 PK	74.0	-24.0	1.98 V	178	47.6	2.4
6	4924.00	37.6 AV	54.0	-16.4	1.98 V	178	35.2	2.4
7	7386.00	50.3 PK	74.0	-23.7	1.62 V	143	41.5	8.8
8	7386.00	36.5 AV	54.0	-17.5	1.62 V	143	27.7	8.8

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.

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	68.8 PK	74.0	-5.2	2.58 H	255	72.5	-3.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**2.58 H**	**255**	**57.6**	**-3.7**
3	*2412.00	118.6 PK			2.58 H	255	122.2	-3.6
4	*2412.00	108.6 AV			2.58 H	255	112.2	-3.6
5	4824.00	45.9 PK	74.0	-28.1	1.00 H	133	43.8	2.1
6	4824.00	34.8 AV	54.0	-19.2	1.00 H	133	32.7	2.1
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	59.7 PK	74.0	-14.3	1.15 V	283	63.4	-3.7
2	2390.00	41.8 AV	54.0	-12.2	1.15 V	283	45.5	-3.7
3	*2412.00	112.1 PK			1.15 V	283	115.7	-3.6
4	*2412.00	102.0 AV			1.15 V	283	105.6	-3.6
5	4824.00	50.3 PK	74.0	-23.7	1.92 V	167	48.2	2.1
6	4824.00	37.7 AV	54.0	-16.3	1.92 V	167	35.6	2.1

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	64.8 PK	74.0	-9.2	2.55 H	268	68.5	-3.7
2	2390.00	48.1 AV	54.0	-5.9	2.55 H	268	51.8	-3.7
3	*2437.00	123.0 PK			2.55 H	268	126.5	-3.5
4	*2437.00	112.7 AV			2.55 H	268	116.2	-3.5
5	2483.50	63.7 PK	74.0	-10.3	2.55 H	268	67.1	-3.4
6	2483.50	46.2 AV	54.0	-7.8	2.55 H	268	49.6	-3.4
7	4874.00	46.3 PK	74.0	-27.7	1.00 H	144	44.0	2.3
8	4874.00	35.2 AV	54.0	-18.8	1.00 H	144	32.9	2.3
9	7311.00	46.0 PK	74.0	-28.0	1.66 H	312	37.5	8.5
10	7311.00	33.1 AV	54.0	-20.9	1.66 H	312	24.6	8.5
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	59.6 PK	74.0	-14.4	1.16 V	273	63.3	-3.7
2	2390.00	43.0 AV	54.0	-11.0	1.16 V	273	46.7	-3.7
3	*2437.00	116.5 PK			1.16 V	273	120.0	-3.5
4	*2437.00	106.1 AV			1.16 V	273	109.6	-3.5
5	2483.50	57.8 PK	74.0	-16.2	1.16 V	273	61.2	-3.4
6	2483.50	40.3 AV	54.0	-13.7	1.16 V	273	43.7	-3.4
7	4874.00	50.5 PK	74.0	-23.5	1.97 V	170	48.2	2.3
8	4874.00	37.8 AV	54.0	-16.2	1.97 V	170	35.5	2.3
9	7311.00	51.1 PK	74.0	-22.9	1.53 V	157	42.6	8.5
10	7311.00	36.8 AV	54.0	-17.2	1.53 V	157	28.3	8.5

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	119.6 PK			2.50 H	265	123.0	-3.4
2	*2462.00	110.0 AV			2.50 H	265	113.4	-3.4
3	2483.50	71.0 PK	74.0	-3.0	2.50 H	265	74.4	-3.4
4	2483.50	53.7 AV	54.0	-0.3	2.50 H	265	57.1	-3.4
5	4924.00	46.5 PK	74.0	-27.5	1.02 H	140	44.1	2.4
6	4924.00	35.7 AV	54.0	-18.3	1.02 H	140	33.3	2.4
7	7386.00	46.0 PK	74.0	-28.0	1.62 H	310	37.2	8.8
8	7386.00	32.9 AV	54.0	-21.1	1.62 H	310	24.1	8.8
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	*2462.00	113.1 PK			1.17 V	281	116.5	-3.4
2	*2462.00	103.4 AV			1.17 V	281	106.8	-3.4
3	2483.50	59.1 PK	74.0	-14.9	1.17 V	281	62.5	-3.4
4	2483.50	41.6 AV	54.0	-12.4	1.17 V	281	45.0	-3.4
5	4924.00	50.4 PK	74.0	-23.6	1.91 V	158	48.0	2.4
6	4924.00	37.5 AV	54.0	-16.5	1.91 V	158	35.1	2.4
7	7386.00	51.3 PK	74.0	-22.7	1.55 V	165	42.5	8.8
8	7386.00	37.2 AV	54.0	-16.8	1.55 V	165	28.4	8.8

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.

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	2390.00	69.2 PK	74.0	-4.8	2.32 H	251	72.9	-3.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**2.32 H**	**251**	**57.6**	**-3.7**
3	*2422.00	108.7 PK			2.32 H	251	112.3	-3.6
4	*2422.00	98.0 AV			2.32 H	251	101.6	-3.6
5	4844.00	46.2 PK	74.0	-27.8	1.01 H	142	43.9	2.3
6	4844.00	35.4 AV	54.0	-18.6	1.01 H	142	33.1	2.3
7	7266.00	46.1 PK	74.0	-27.9	1.57 H	313	37.6	8.5
8	7266.00	33.2 AV	54.0	-20.8	1.57 H	313	24.7	8.5
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	59.6 PK	74.0	-14.4	1.22 V	270	63.3	-3.7
2	2390.00	41.4 AV	54.0	-12.6	1.22 V	270	45.1	-3.7
3	*2422.00	102.3 PK			1.22 V	270	105.9	-3.6
4	*2422.00	91.5 AV			1.22 V	270	95.1	-3.6
5	4844.00	50.7 PK	74.0	-23.3	1.99 V	183	48.4	2.3
6	4844.00	37.8 AV	54.0	-16.2	1.99 V	183	35.5	2.3
7	7266.00	51.0 PK	74.0	-23.0	1.49 V	151	42.5	8.5
8	7266.00	36.9 AV	54.0	-17.1	1.49 V	151	28.4	8.5

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	70.0 PK	74.0	-4.0	2.50 H	254	73.7	-3.7
2	**2390.00**	**53.9 AV**	**54.0**	**-0.1**	**2.50 H**	**254**	**57.6**	**-3.7**
3	*2437.00	113.8 PK			2.50 H	254	117.3	-3.5
4	*2437.00	102.6 AV			2.50 H	254	106.1	-3.5
5	2483.50	68.8 PK	74.0	-5.2	2.50 H	254	72.2	-3.4
6	2483.50	50.6 AV	54.0	-3.4	2.50 H	254	54.0	-3.4
7	4874.00	45.8 PK	74.0	-28.2	1.03 H	130	43.5	2.3
8	4874.00	35.2 AV	54.0	-18.8	1.03 H	130	32.9	2.3
9	7311.00	46.5 PK	74.0	-27.5	1.55 H	323	38.0	8.5
10	7311.00	33.6 AV	54.0	-20.4	1.55 H	323	25.1	8.5
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	59.6 PK	74.0	-14.4	1.21 V	278	63.3	-3.7
2	2390.00	43.0 AV	54.0	-11.0	1.21 V	278	46.7	-3.7
3	*2437.00	107.3 PK			1.21 V	278	110.8	-3.5
4	*2437.00	96.0 AV			1.21 V	278	99.5	-3.5
5	2483.50	57.6 PK	74.0	-16.4	1.21 V	278	61.0	-3.4
6	2483.50	40.0 AV	54.0	-14.0	1.21 V	278	43.4	-3.4
7	4874.00	51.2 PK	74.0	-22.8	2.04 V	194	48.9	2.3
8	4874.00	38.2 AV	54.0	-15.8	2.04 V	194	35.9	2.3
9	7311.00	51.2 PK	74.0	-22.8	1.48 V	136	42.7	8.5
10	7311.00	37.2 AV	54.0	-16.8	1.48 V	136	28.7	8.5

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) 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	*2452.00	110.1 PK			2.49 H	265	113.5	-3.4
2	*2452.00	97.6 AV			2.49 H	265	101.0	-3.4
3	2483.50	68.4 PK	74.0	-5.6	2.49 H	265	71.8	-3.4
4	**2483.50**	**53.9 AV**	**54.0**	**-0.1**	**2.49 H**	**265**	**57.3**	**-3.4**
5	4904.00	45.2 PK	74.0	-28.8	1.00 H	129	42.8	2.4
6	4904.00	34.9 AV	54.0	-19.1	1.00 H	129	32.5	2.4
7	7356.00	46.6 PK	74.0	-27.4	1.58 H	332	37.9	8.7
8	7356.00	33.8 AV	54.0	-20.2	1.58 H	332	25.1	8.7
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	103.6 PK			1.21 V	290	107.0	-3.4
2	*2452.00	91.0 AV			1.21 V	290	94.4	-3.4
3	2483.50	59.4 PK	74.0	-14.6	1.21 V	290	62.8	-3.4
4	2483.50	42.8 AV	54.0	-11.2	1.21 V	290	46.2	-3.4
5	4904.00	51.1 PK	74.0	-22.9	2.06 V	205	48.7	2.4
6	4904.00	38.2 AV	54.0	-15.8	2.06 V	205	35.8	2.4
7	7356.00	51.0 PK	74.0	-23.0	1.47 V	145	42.3	8.7
8	7356.00	37.0 AV	54.0	-17.0	1.47 V	145	28.3	8.7

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:

802.11g

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	97.22	34.0 QP	43.5	-9.5	3.00 H	114	47.3	-13.3
2	153.04	31.0 QP	43.5	-12.5	2.00 H	77	39.2	-8.2
3	187.58	31.7 QP	43.5	-11.8	1.00 H	279	42.5	-10.8
4	250.00	28.4 QP	46.0	-17.6	2.00 H	0	38.1	-9.7
5	352.19	29.0 QP	46.0	-17.0	1.00 H	100	35.6	-6.6
6	1000.00	38.8 QP	54.0	-15.2	2.00 H	292	33.8	5.0
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	70.18	35.3 QP	40.0	-4.7	2.00 V	360	45.5	-10.2
2	186.78	26.4 QP	43.5	-17.1	2.00 V	249	37.1	-10.7
3	283.44	23.8 QP	46.0	-22.2	2.00 V	104	31.9	-8.1
4	332.91	27.6 QP	46.0	-18.4	2.00 V	179	34.5	-6.9
5	562.34	29.5 QP	46.0	-16.5	1.00 V	66	31.2	-1.7
6	1000.00	40.7 QP	54.0	-13.3	1.00 V	0	35.7	5.0

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	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
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 Shielded Room No. 1.
3 Tested Date: Jan. 20, 2017

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.

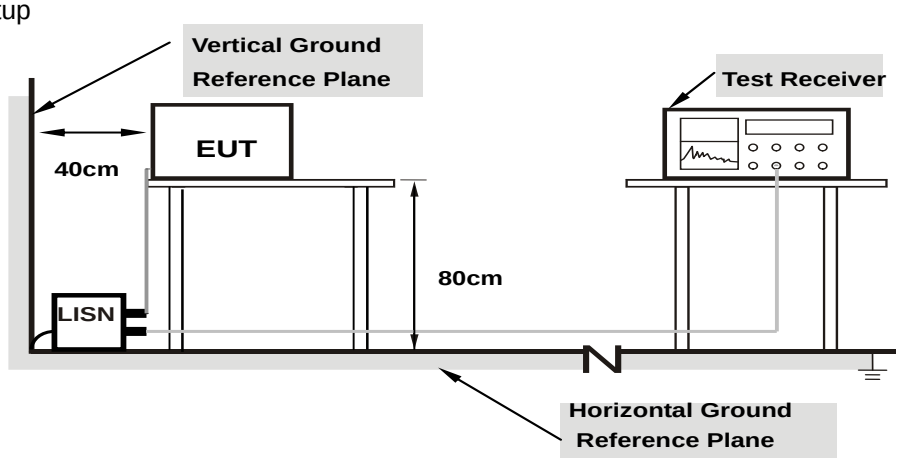
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

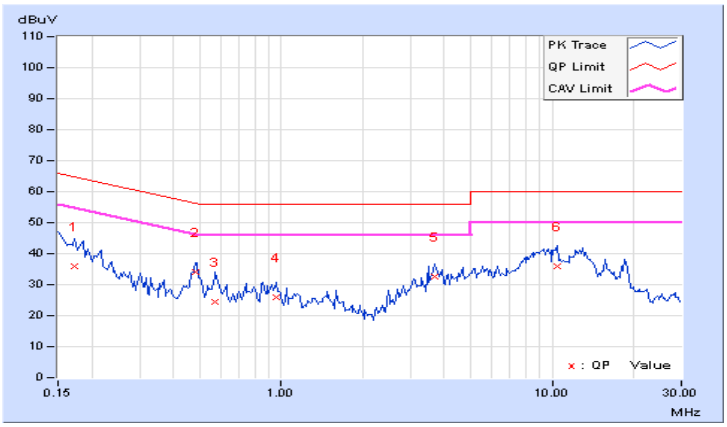
4.2.7 Test Results

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	0.17344	10.19	25.87	10.59	36.06	20.78	64.79	54.79	-28.73	-34.01
2	**0.48203**	**10.23**	**23.94**	**22.05**	**34.17**	**32.28**	**56.30**	**46.30**	**-22.13**	**-14.02**
3	0.57188	10.23	14.13	10.95	24.36	21.18	56.00	46.00	-31.64	-24.82
4	0.96250	10.26	15.56	11.26	25.82	21.52	56.00	46.00	-30.18	-24.48
5	3.69531	10.24	22.25	13.82	32.49	24.06	56.00	46.00	-23.51	-21.94
6	10.39844	10.59	25.42	19.63	36.01	30.22	60.00	50.00	-23.99	-19.78

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.

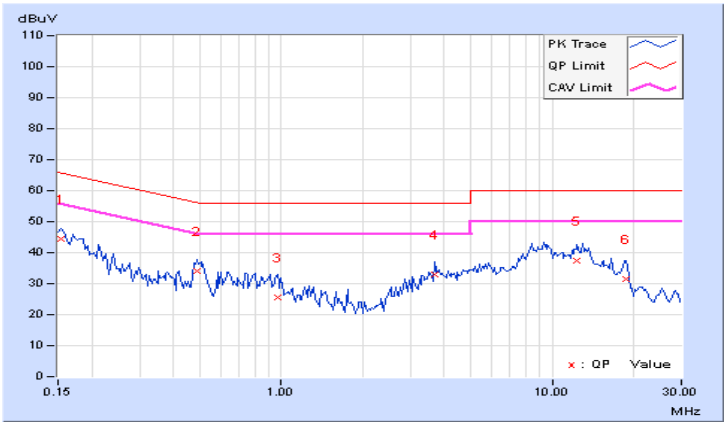


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15391	10.18	34.34	24.34	44.52	34.52	65.79	55.79	-21.27	-21.27
2	0.48984	10.21	23.82	18.02	34.03	28.23	56.17	46.17	-22.14	-17.94
3	0.97031	10.23	15.50	10.58	25.73	20.81	56.00	46.00	-30.27	-25.19
4	3.69922	10.18	22.86	15.26	33.04	25.44	56.00	46.00	-22.96	-20.56
5	12.39844	10.68	26.85	21.31	37.53	31.99	60.00	50.00	-22.47	-18.01
6	18.67188	11.04	20.38	14.96	31.42	26.00	60.00	50.00	-28.58	-24.00

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.

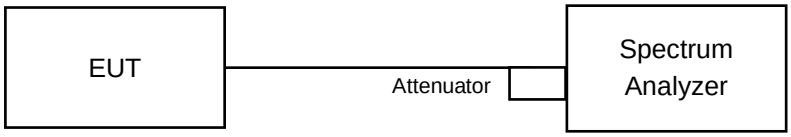


4.3 6dB Bandwidth Measurement

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 fromTest 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

CDD Mode

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	7.14	8.07	7.59	0.5	PASS
6	2437	7.60	7.60	8.07	0.5	PASS
11	2462	7.61	8.07	7.60	0.5	PASS

802.11g

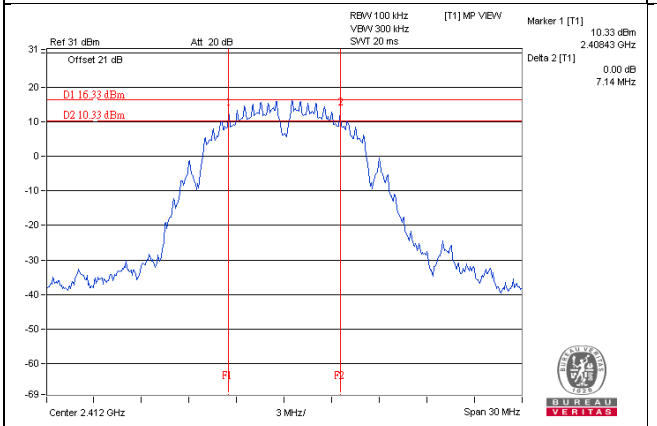
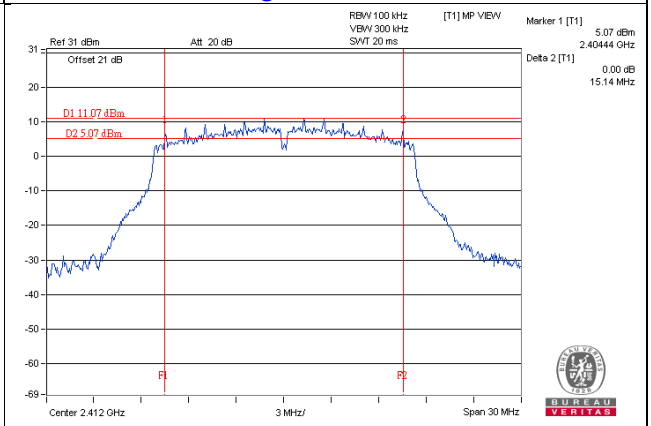
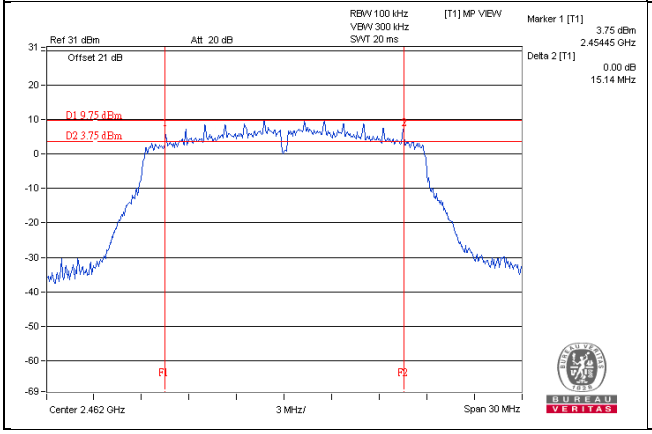
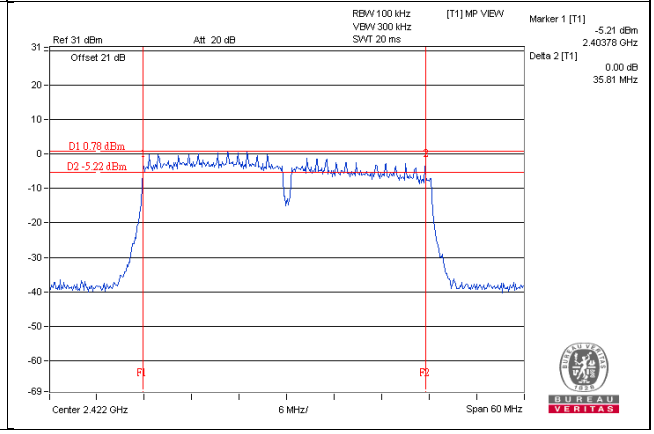
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	15.14	15.15	15.14	0.5	PASS
6	2437	15.50	15.72	15.76	0.5	PASS
11	2462	15.48	15.51	15.19	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
1	2412	15.16	15.75	15.40	0.5	Pass
6	2437	16.11	16.36	15.77	0.5	Pass
11	2462	15.14	16.32	15.98	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	35.87	35.86	35.81	0.5	Pass
6	2437	36.00	35.90	35.99	0.5	Pass
9	2452	36.53	36.59	36.54	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 0 : CH1**
	
802.11n (HT20) / Chain 0 : CH11	**802.11n (HT40) / Chain 2 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

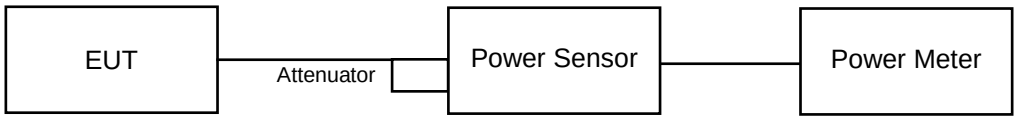
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

An average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average power sensor. Record the power level.

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	24.96	24.53	24.75	895.659	29.52	30	Pass
6	2437	25.15	24.91	25.32	977.491	29.90	30	Pass
11	2462	24.58	23.94	24.54	819.266	29.13	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	22.16	22.03	22.13	487.33	26.88	30	Pass
6	2437	25.36	25.03	25.14	988.566	29.95	30	Pass
11	2462	21.69	21.11	21.83	429.098	26.33	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	21.09	21.21	21.12	390.079	25.91	30	Pass
6	2437	25.28	25.07	25.06	979.28	29.91	30	Pass
11	2462	21.26	20.85	21.17	386.197	25.87	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	14.53	14.45	14.56	84.816	19.28	30	Pass
6	2437	18.45	18.03	18.46	203.663	23.09	30	Pass
9	2452	14.71	14.48	14.83	88.043	19.45	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	21.09	21.21	21.12	390.079	25.91	29.47	Pass
6	2437	24.54	24.32	24.42	831.536	29.20	29.47	Pass
11	2462	21.26	20.85	21.17	386.197	25.87	29.47	Pass

NOTE: Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi , so the power limit shall be reduced to 30-(6.53-6) = 29.47dBm.

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	14.53	14.45	14.56	84.816	19.28	29.47	Pass
6	2437	18.45	18.03	18.46	203.663	23.09	29.47	Pass
9	2452	14.71	14.48	14.83	88.043	19.45	29.47	Pass

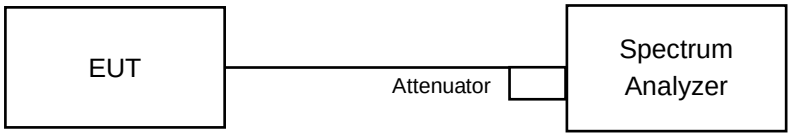
NOTE: Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi , so the power limit shall be reduced to 30-(6.53-6) = 29.47dBm.

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm.

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

For 802.11b, 802.11g and 802.11n (HT20)

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.

For 802.11n (HT40)

a) Measure the duty cycle (x).
b) Set instrument center frequency to DTS channel center frequency.
c) Set span to at least 1.5 times the OBW.
d) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz..
e) Set VBW ≥3 x RBW.
f) Detector = power averaging (RMS) or sample detector (when RMS not available).
g) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
h) Sweep time = auto couple.
i) Do not use sweep triggering. Allow sweep to “free run”.
j) Employ trace averaging (RMS) mode over a minimum of 100 traces.
k) Use the peak marker function to determine the maximum amplitude level.
l) Add 10 log (1/x), where x is the duty cycle measured in step (a, to the measured PSD to compute the average PSD during the actual transmission time.

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	-3.89	4.77	0.88	7.47	Pass
	6	2437	-5.48	4.77	-0.71	7.47	Pass
	11	2462	-5.66	4.77	-0.89	7.47	Pass
1	1	2412	-6.54	4.77	-1.77	7.47	Pass
	6	2437	-6.26	4.77	-1.49	7.47	Pass
	11	2462	-6.69	4.77	-1.92	7.47	Pass
2	1	2412	-6.44	4.77	-1.67	7.47	Pass
	6	2437	-5.74	4.77	-0.97	7.47	Pass
	11	2462	-6.95	4.77	-2.18	7.47	Pass

Note: 1. Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi, so the power density limit shall be reduced to 8-(6.53-6) = 7.47dBm.

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	-7.14	4.77	-2.37	7.47	Pass
	6	2437	-5.50	4.77	-0.73	7.47	Pass
	11	2462	-8.93	4.77	-4.16	7.47	Pass
1	1	2412	-9.02	4.77	-4.25	7.47	Pass
	6	2437	-6.56	4.77	-1.79	7.47	Pass
	11	2462	-9.47	4.77	-4.70	7.47	Pass
2	1	2412	-6.57	4.77	-1.80	7.47	Pass
	6	2437	-5.33	4.77	-0.56	7.47	Pass
	11	2462	-9.29	4.77	-4.52	7.47	Pass

Note: 1. Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi, so the power density limit shall be reduced to 8-(6.53-6) = 7.47dBm.

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	-11.49	4.77	-6.72	7.47	Pass
	6	2437	-7.79	4.77	-3.02	7.47	Pass
	11	2462	-11.86	4.77	-7.09	7.47	Pass
1	1	2412	-10.68	4.77	-5.91	7.47	Pass
	6	2437	-8.09	4.77	-3.32	7.47	Pass
	11	2462	-12.19	4.77	-7.42	7.47	Pass
2	1	2412	-11.17	4.77	-6.40	7.47	Pass
	6	2437	-8.01	4.77	-3.24	7.47	Pass
	11	2462	-10.93	4.77	-6.16	7.47	Pass

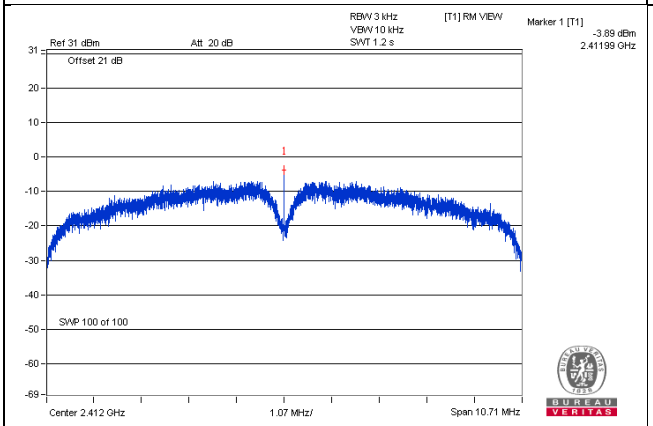
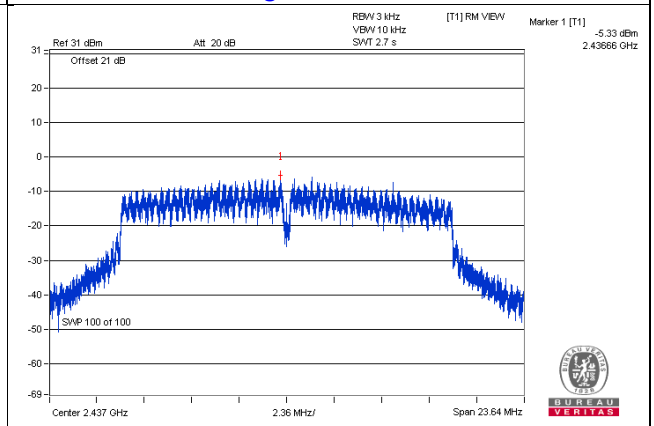
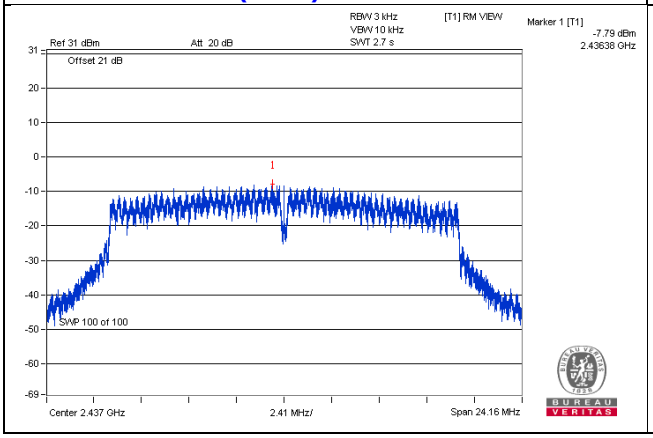
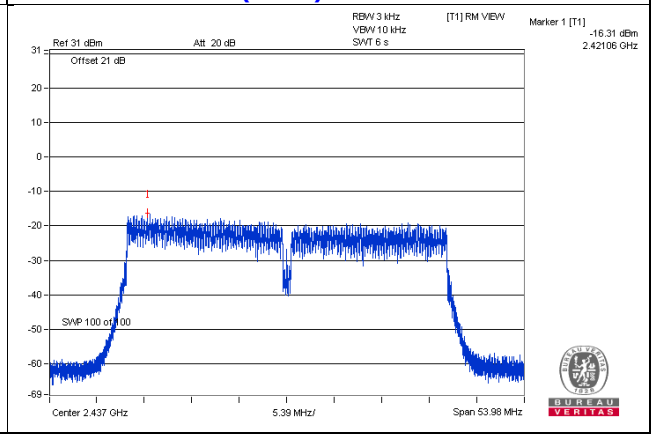
Note: 1. Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi, so the power density limit shall be reduced to 8-(6.53-6) = 7.47dBm.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=3) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-20.74	4.77	0.15	-15.82	7.47	Pass
	6	2437	-17.20	4.77	0.15	-12.28	7.47	Pass
	9	2452	-20.78	4.77	0.15	-15.86	7.47	Pass
1	3	2422	-20.21	4.77	0.15	-15.29	7.47	Pass
	6	2437	-16.81	4.77	0.15	-11.89	7.47	Pass
	9	2452	-21.29	4.77	0.15	-16.37	7.47	Pass
2	3	2422	-19.84	4.77	0.15	-14.92	7.47	Pass
	6	2437	-16.31	4.77	0.15	-11.39	7.47	Pass
	9	2452	-20.64	4.77	0.15	-15.72	7.47	Pass

Note: 1. Directional gain = 1.76dBi + 10log(3) = 6.53dBi > 6dBi, so the power density limit shall be reduced to 8-(6.53-6) = 7.47dBm.

2. Refer to section 3.3 for duty cycle spectrum plot.

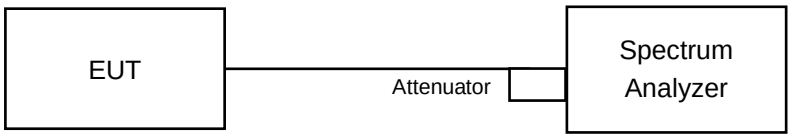
Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 2 : CH6**
	
802.11n (HT20) / Chain 0 : CH6	**802.11n (HT40) / Chain 2 : CH6**
	

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

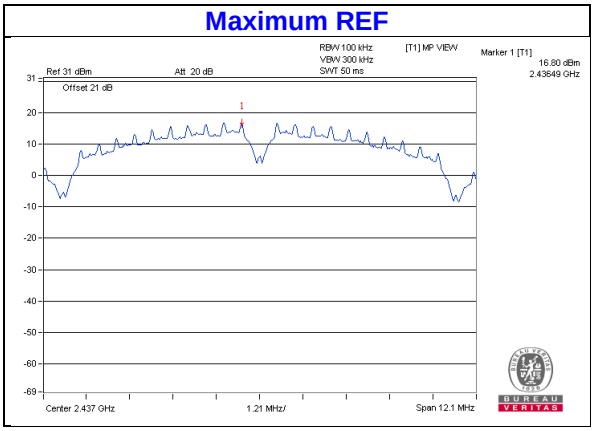
Same as Item 4.3.6

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.

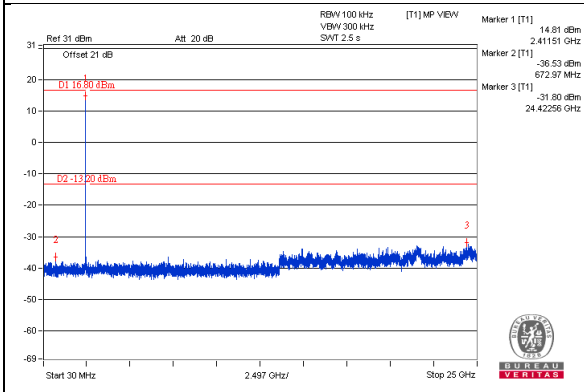
802.11b

Maximum REF

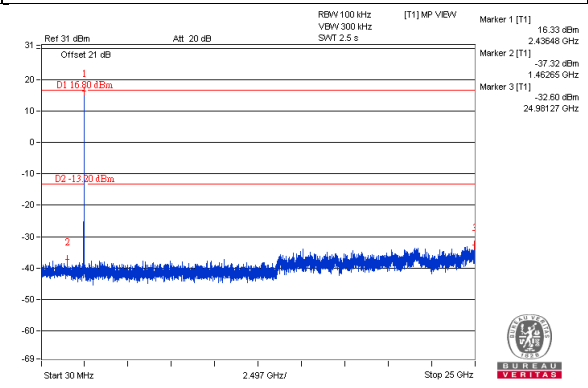


CHAIN 0

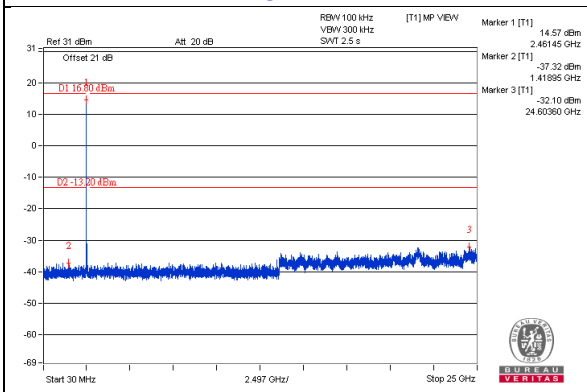
CH 1



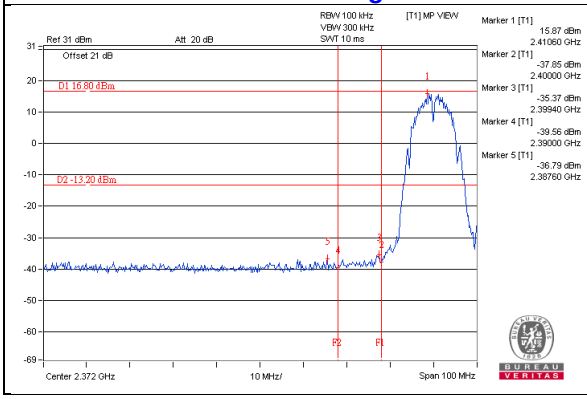
CH 6



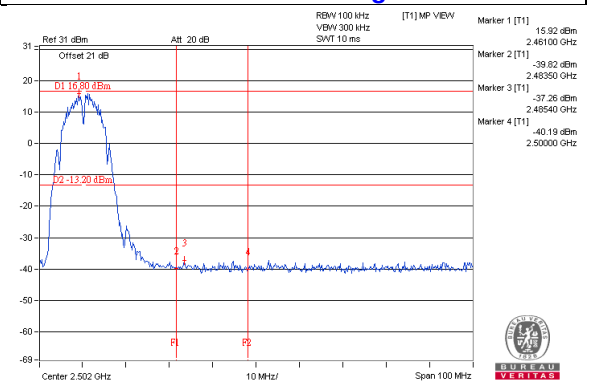
CH 11



CH 1 Band edge

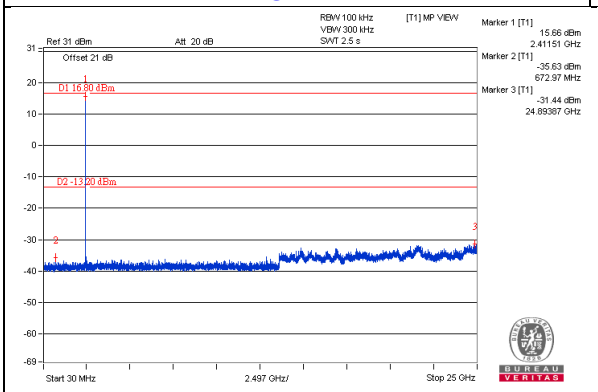


CH 11 Band edge

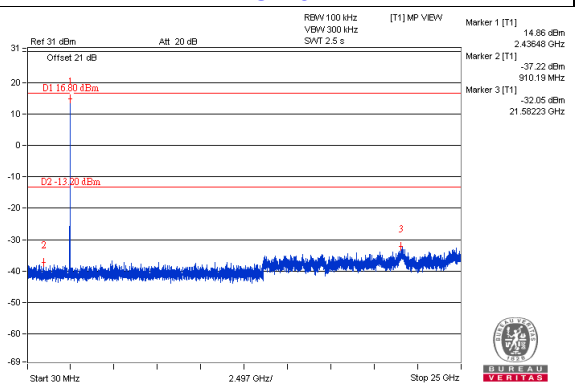


CHAIN 1

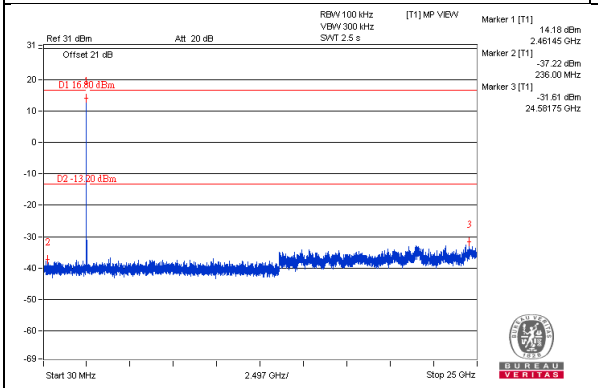
CH 1



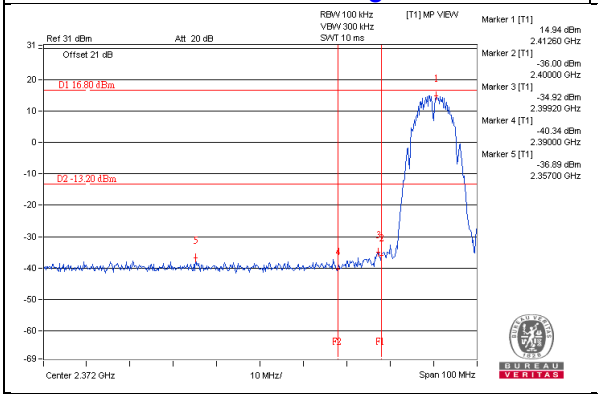
CH 6



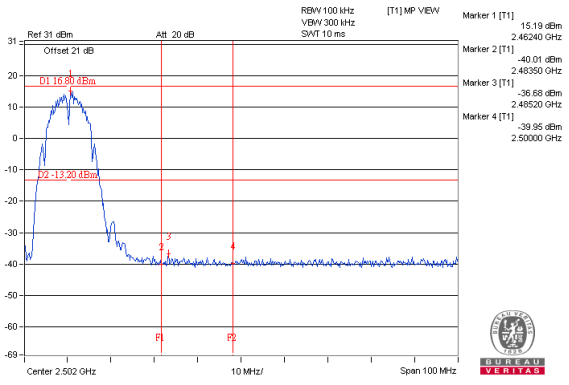
CH 11



CH 1 Band edge

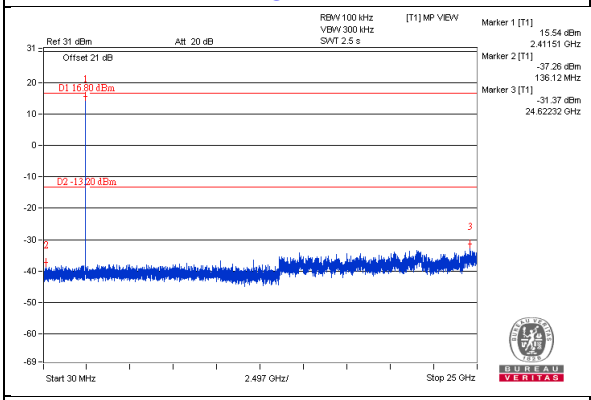


CH 11 Band edge

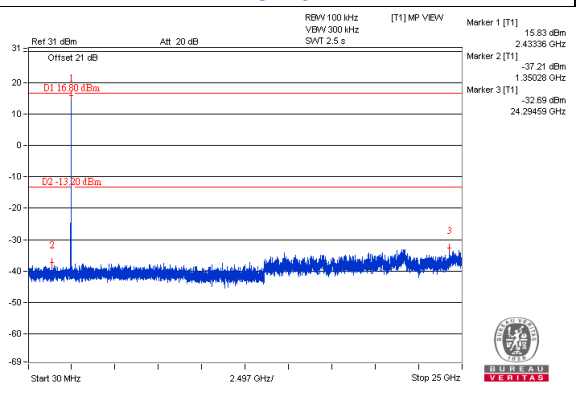


CHAIN 2

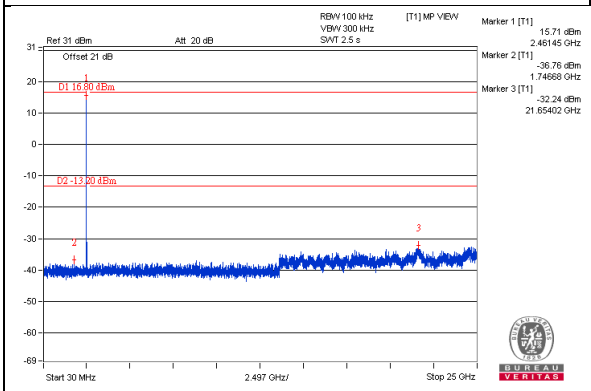
CH 1



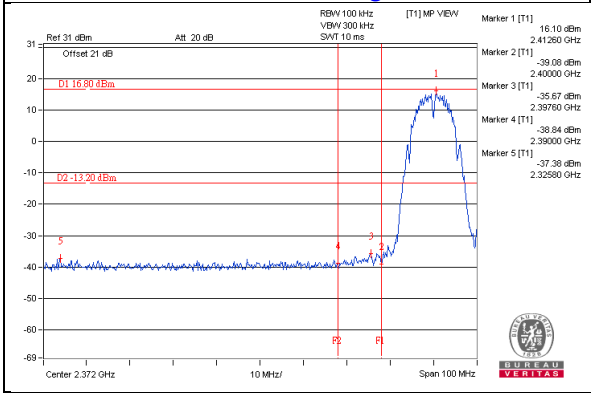
CH 6



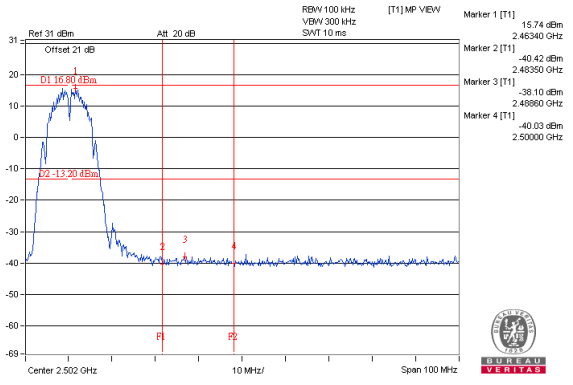
CH 11



CH 1 Band edge

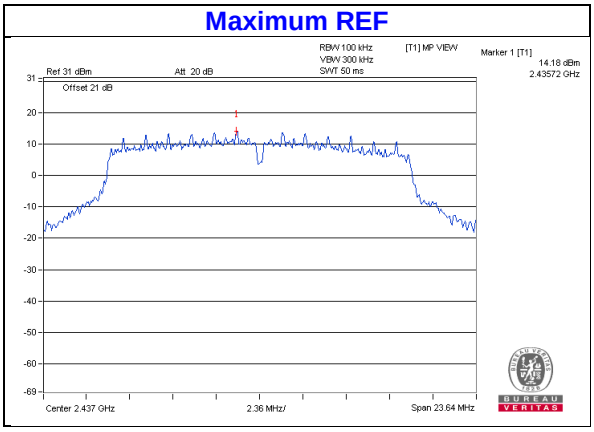


CH 11 Band edge



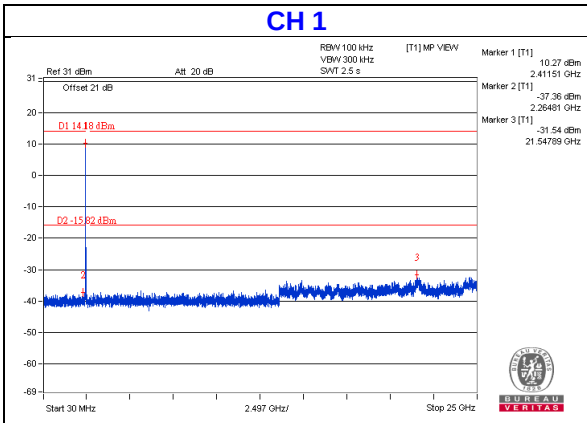
802.11g

Maximum REF

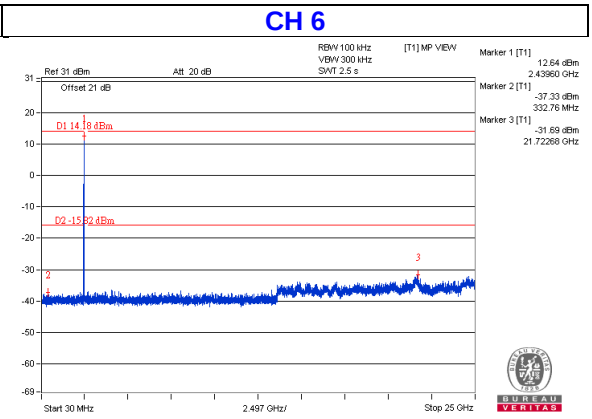


CHAIN 0

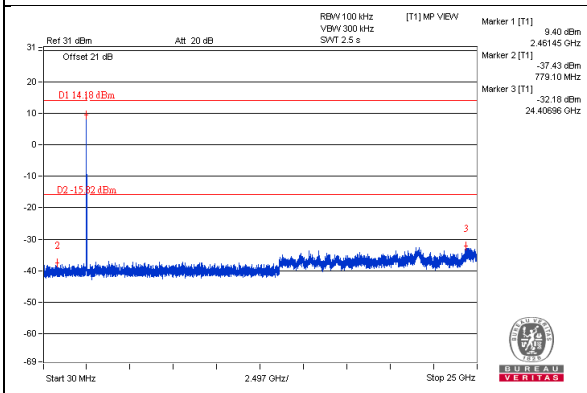
CH 1



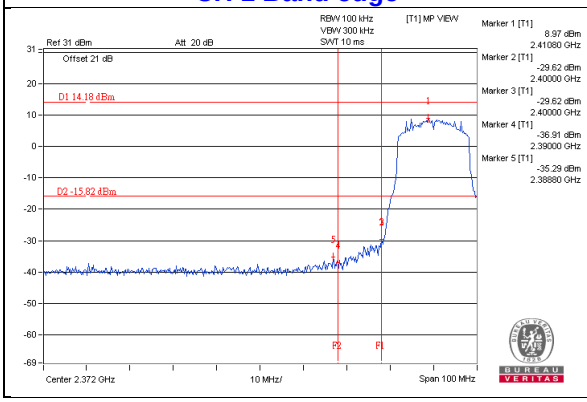
CH 6



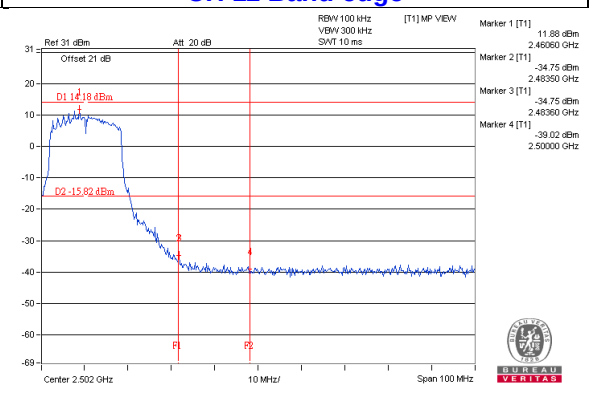
CH 11



CH 1 Band edge

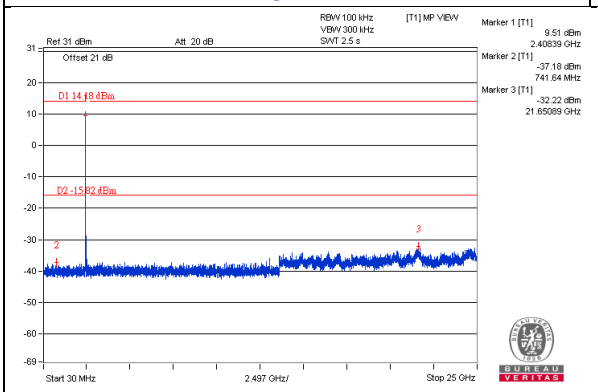


CH 11 Band edge

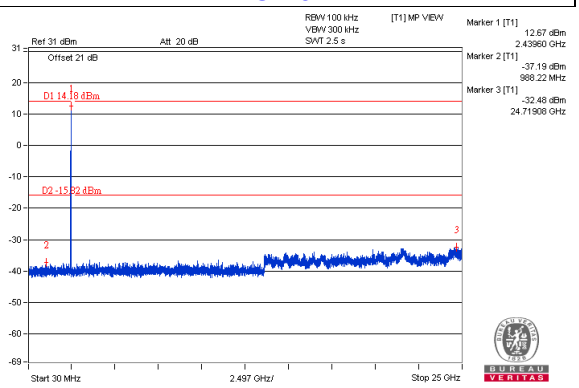


CHAIN 1

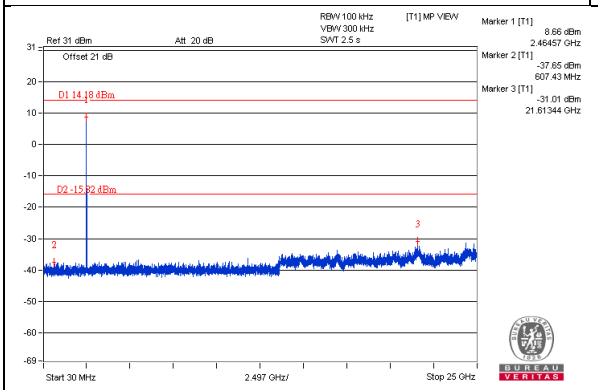
CH 1



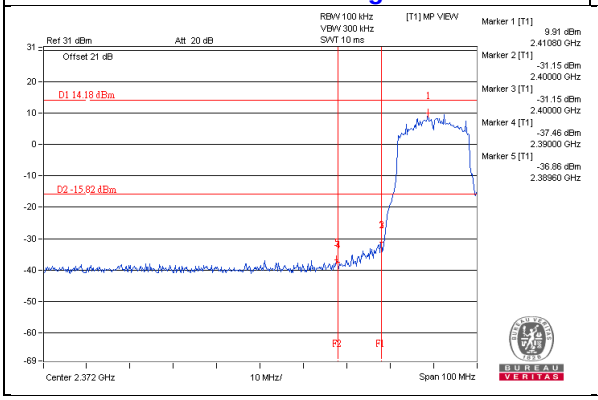
CH 6



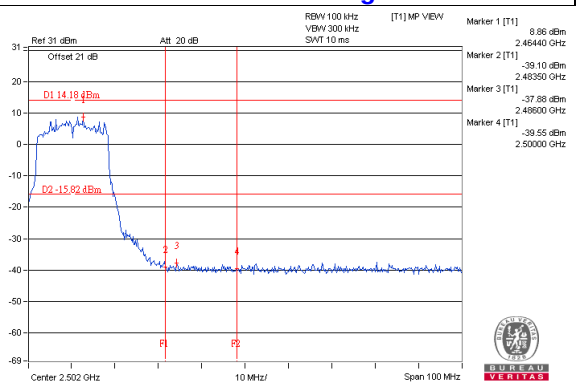
CH 11



CH 1 Band edge

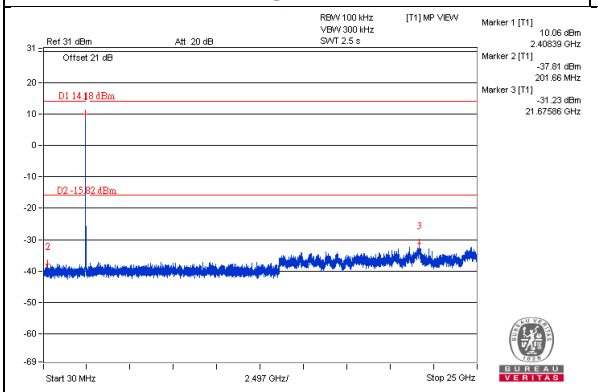


CH 11 Band edge

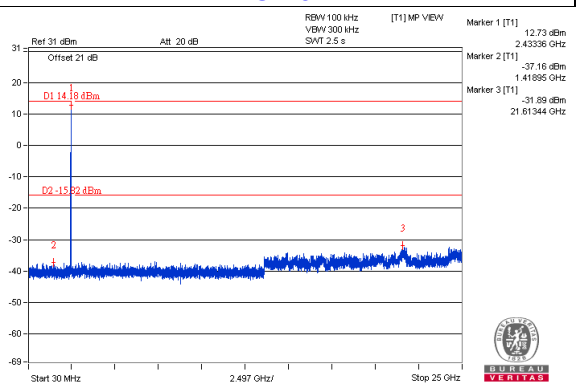


CHAIN 2

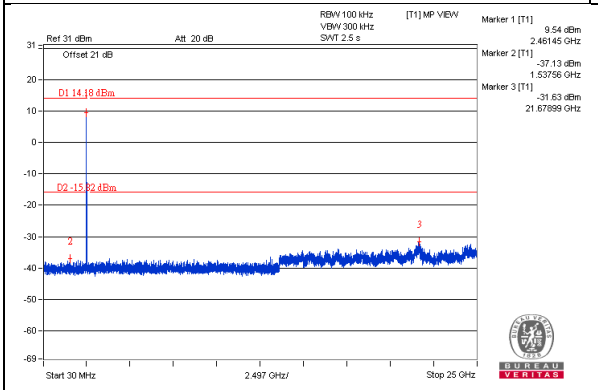
CH 1



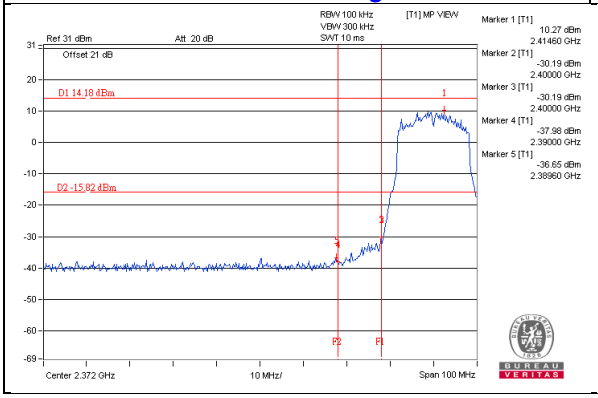
CH 6



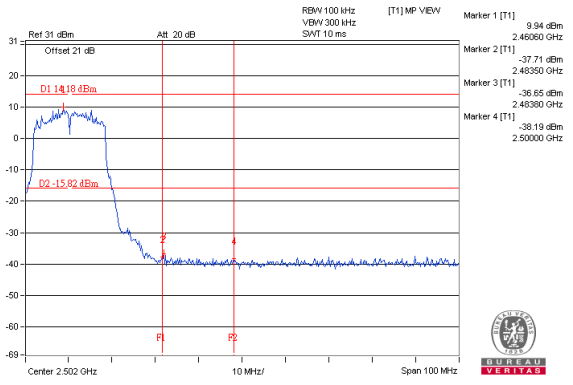
CH 11



CH 1 Band edge

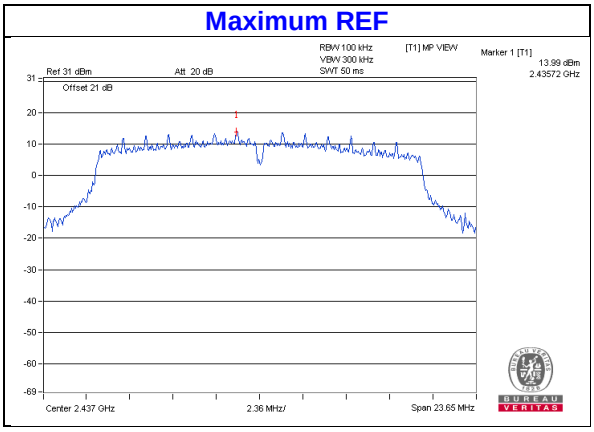


CH 11 Band edge



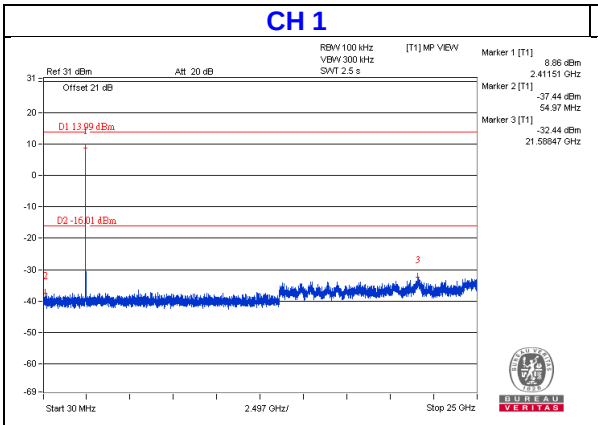
802.11n (HT20)

Maximum REF

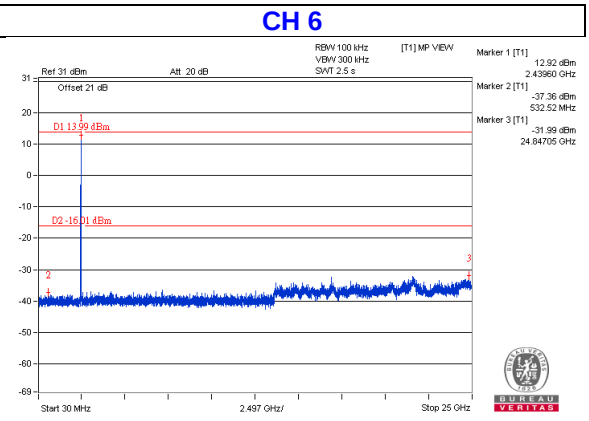


CHAIN 0

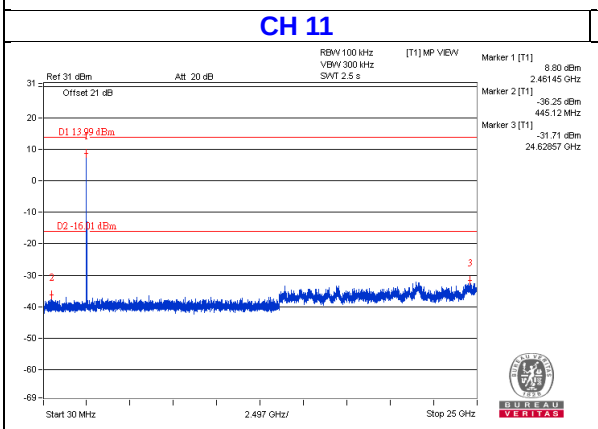
CH 1



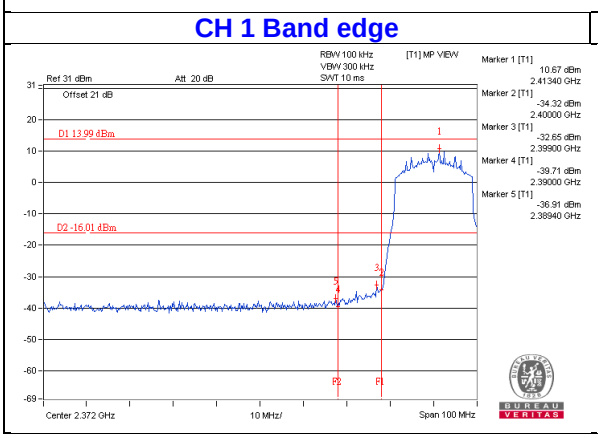
CH 6



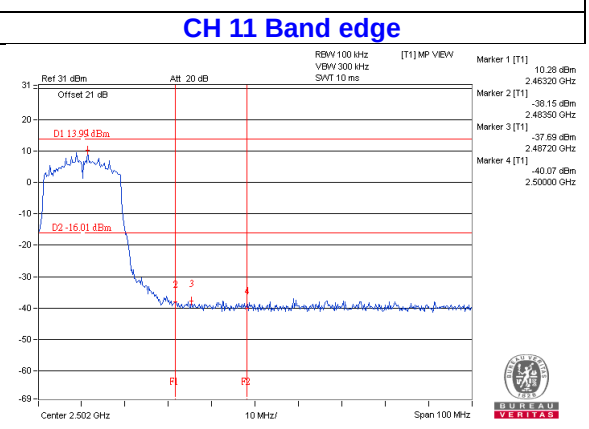
CH 11



CH 1 Band edge

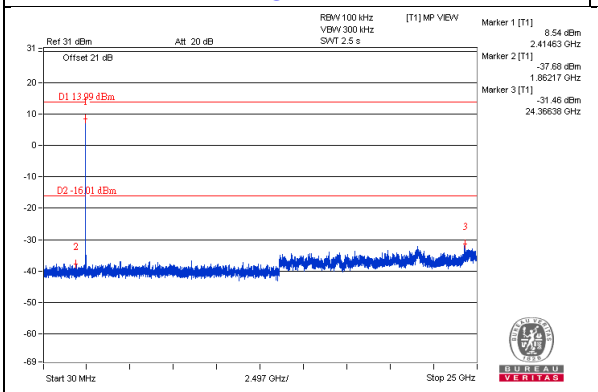


CH 11 Band edge

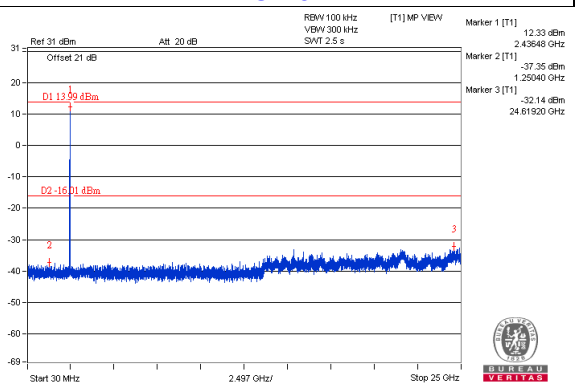


CHAIN 1

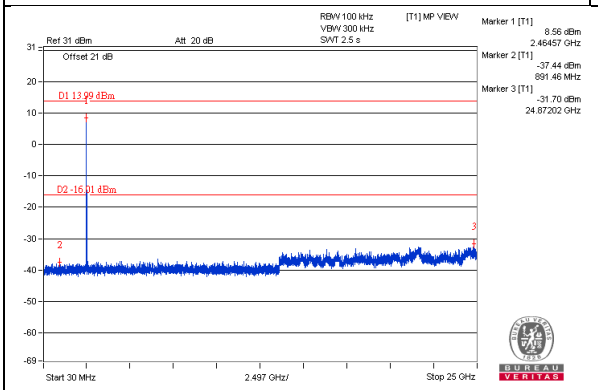
CH 1



CH 6



CH 11



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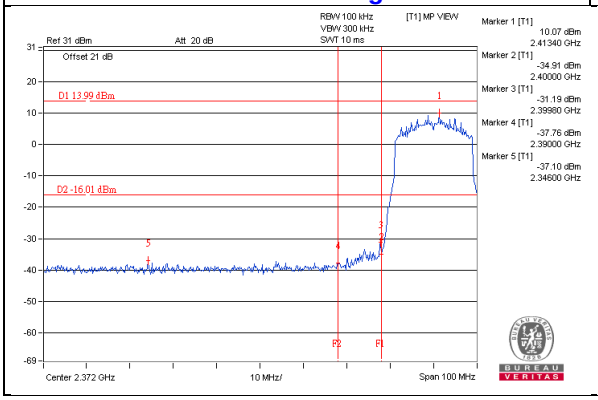
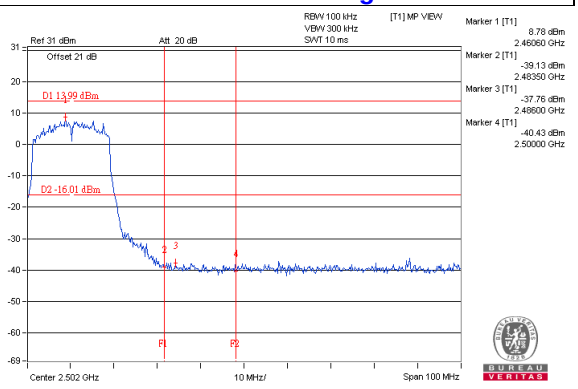
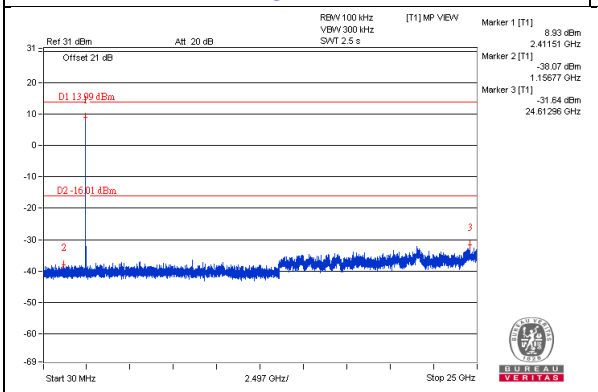


CH 11 Band edge

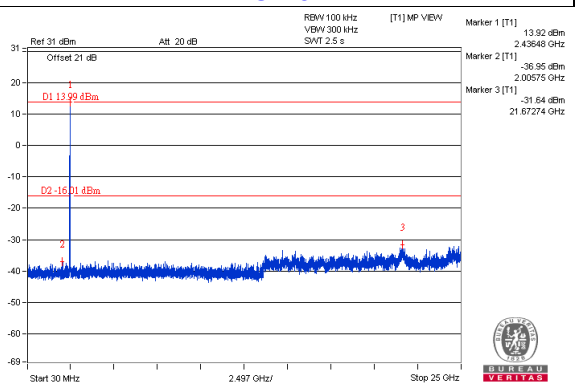


CHAIN 2

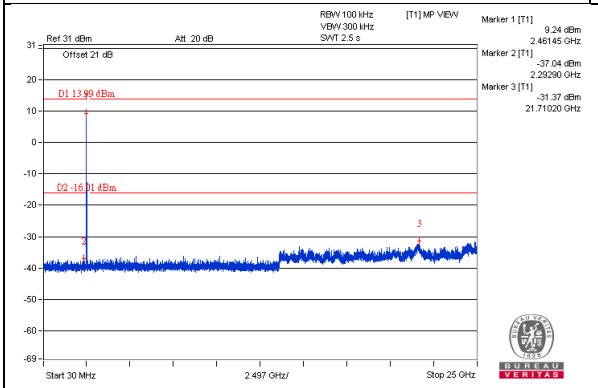
CH 1



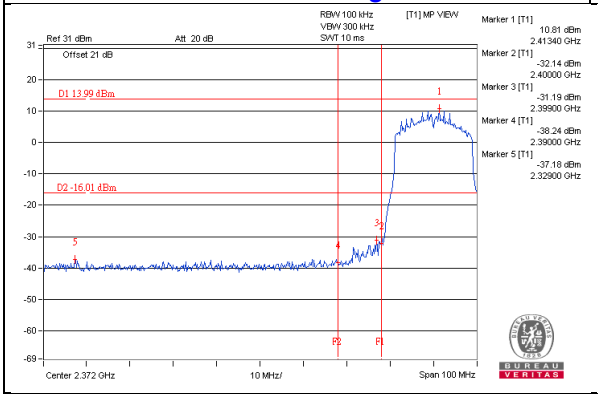
CH 6



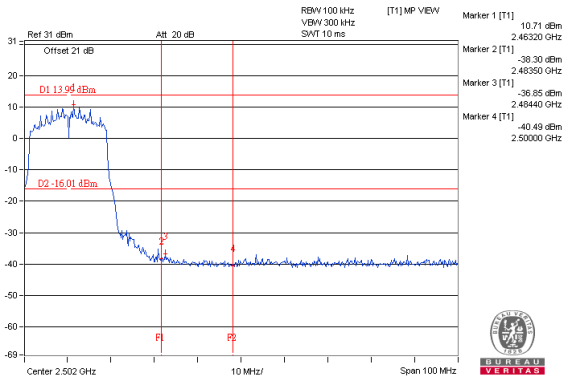
CH 11



CH 1 Band edge

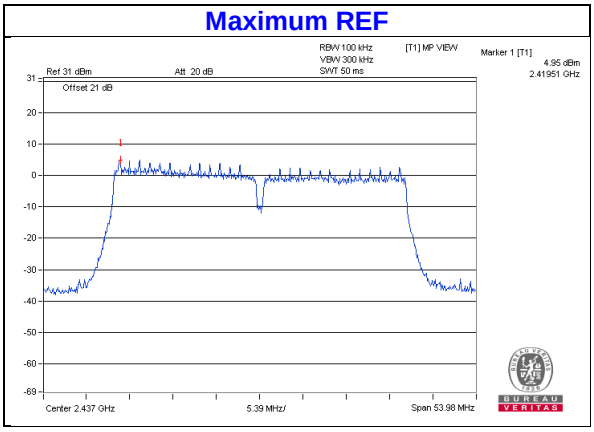


CH 11 Band edge



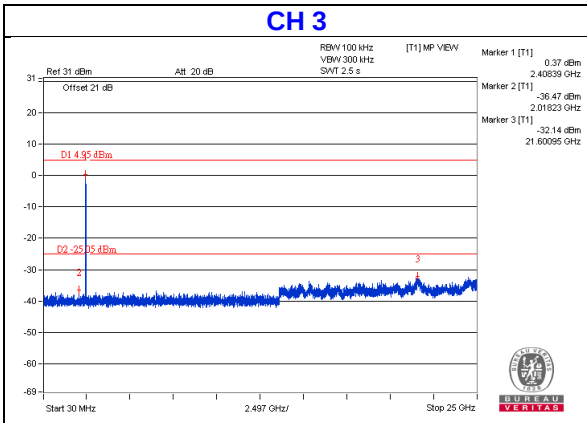
802.11n (HT40)

Maximum REF

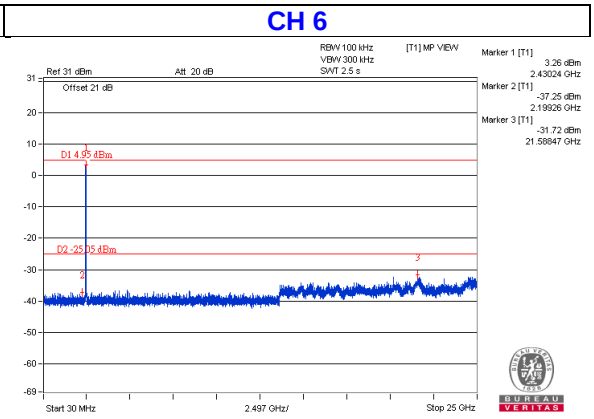


CHAIN 0

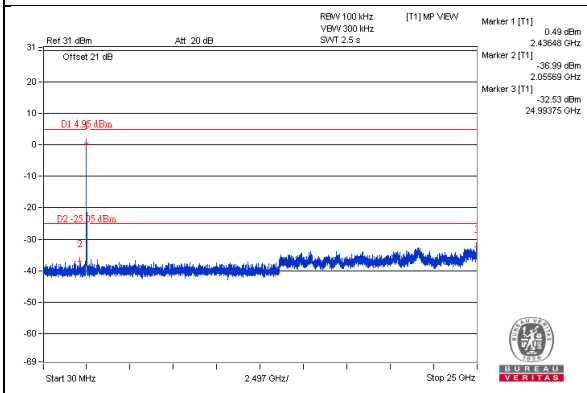
CH 3



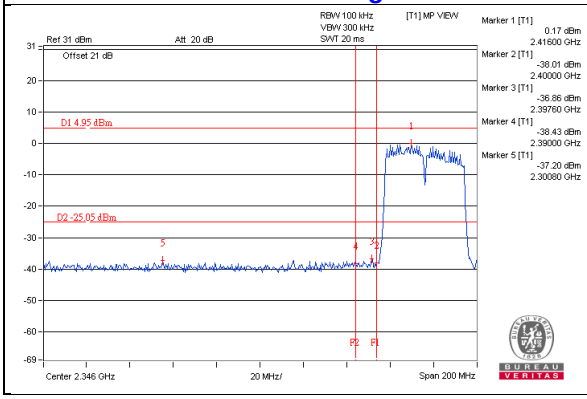
CH 6



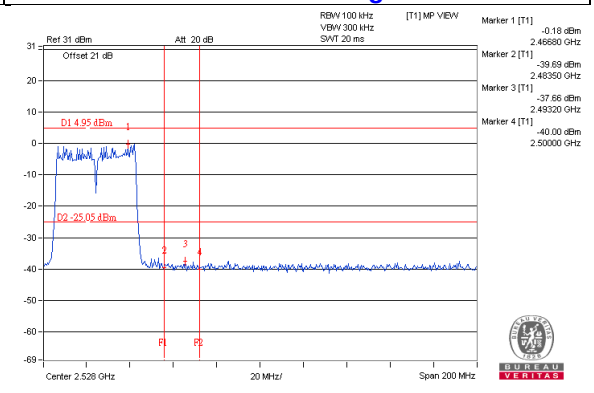
CH 9



CH 3 Band edge

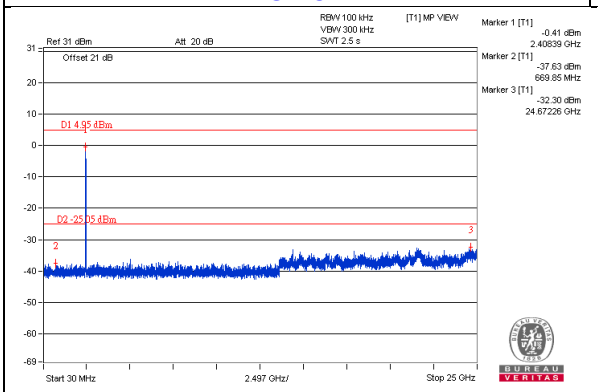


CH 9 Band edge

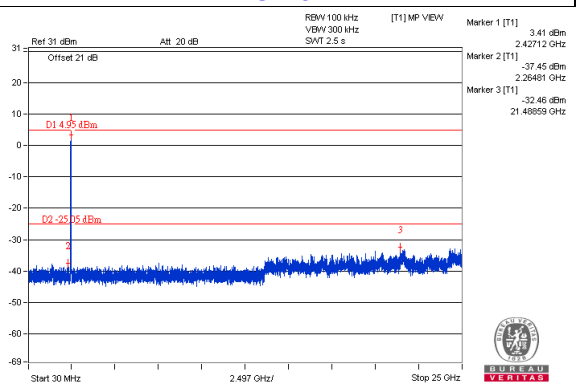


CHAIN 1

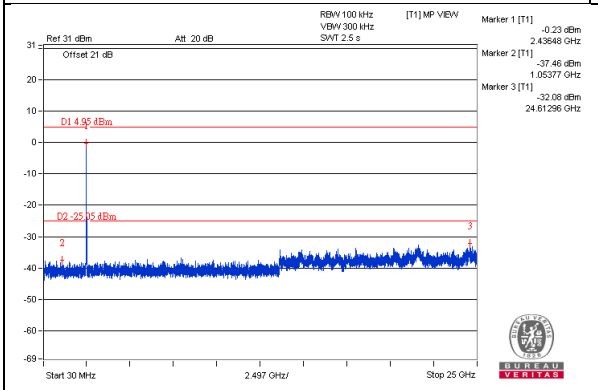
CH 3



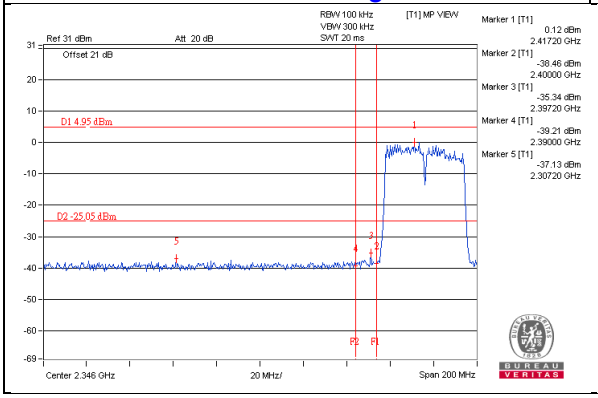
CH 6



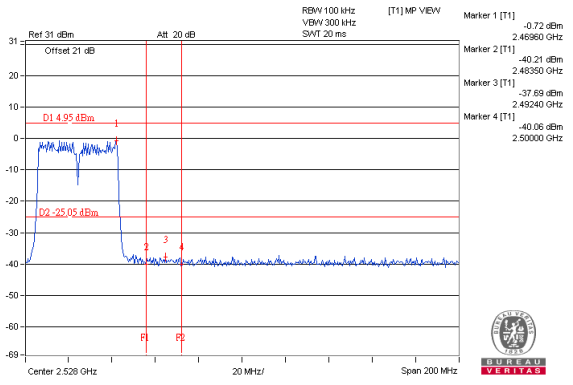
CH 9



CH 3 Band edge

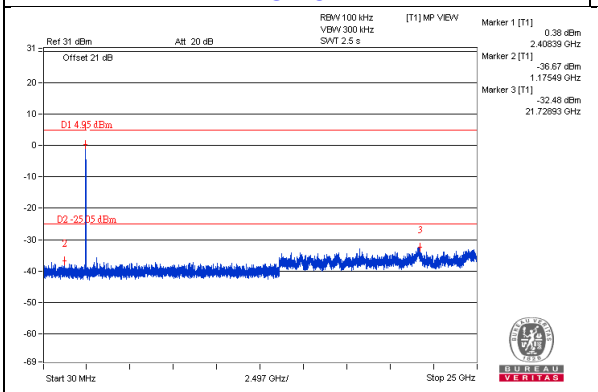


CH 9 Band edge

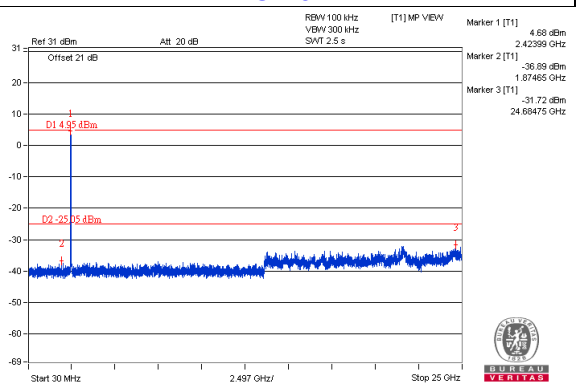


CHAIN 2

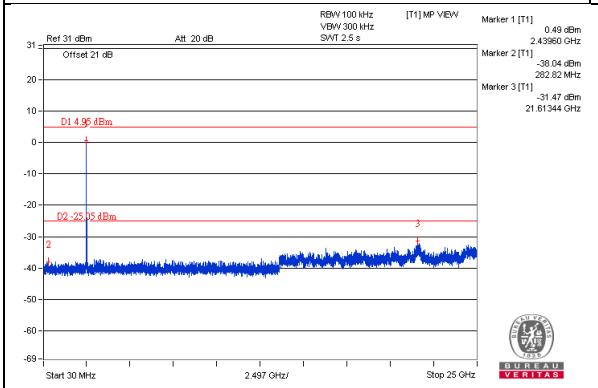
CH 3



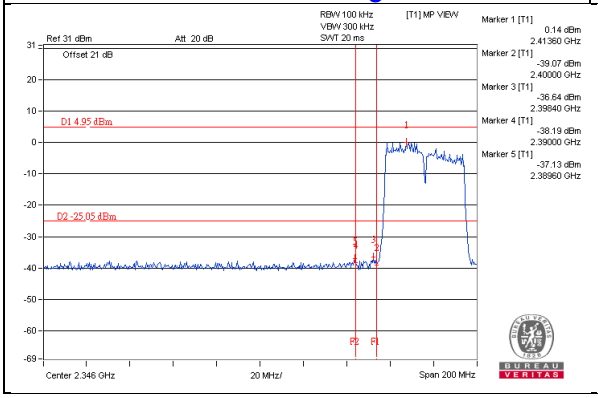
CH 6



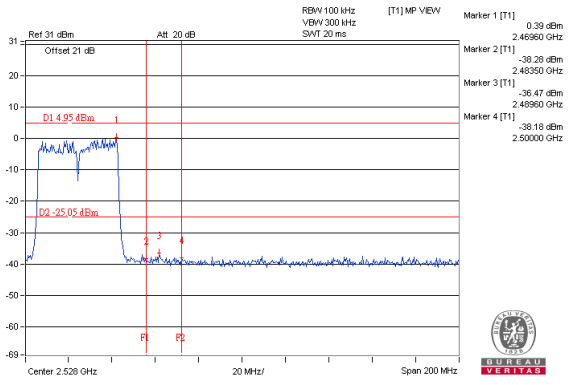
CH 9



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 accredited and approved according to ISO/IEC 17025.

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

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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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