FCC Test Report

Report No.:	RF160822E04
FCC ID:	KA2AP2610A1
Test Model:	DAP-2610
Received Date:	Aug. 22, 2016
Test Date:	Sep. 09 to 19, 2016
Issued Date:	Oct. 28, 2016
Applicant:	D-Link Corporation
Address:	No.289, Xinhu 3rd Rd., Neihu District, Taipei City 11494, 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 (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.

Testing Laboratory
2022

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Release Control Record

Issue No.	Description	Date Issued
RF160822E04	Original release.	Oct. 28, 2016

1 Certificate of Conformity

Product:	Wireless AC1300 Concurrent Dual Band PoE Access Point
Brand:	D-Link
Test Model:	DAP-2610
Sample Status:	ENGINEERING SAMPLE
Applicant:	D-Link Corporation
Test Date:	Sep. 09 to 19, 2016
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. 28, 2016

Wendy Wu / Specialist

Approved by : _____ , **Date:** Oct. 28, 2016

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 -6.67dB at 0.27891MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 2483.50MHz.
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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.43 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless AC1300 Concurrent Dual Band PoE Access Point
Brand	D-Link
Test Model	DAP-2610
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 12V from adapter or DC 48V from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
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): 11 802.11n (HT40): 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:** 861.713mW **Beamforming Mode:** 861.713mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 426.809mW **Beamforming Mode:** 426.809mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 459.267mW **Beamforming Mode:** 422.325mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. 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.		

2. The antenna provided to the EUT, please refer to the following table:

Antenna No	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency range (GHz ~ GHz)	Antenna Type	Connecter Type	Cable Length (mm)
Chain (1)	NA	290-20302	3.07	2.4~2.4835	PIFA	i-pex(MHF)	47
			3.46	5.15~5.85			
Chain (2)	NA	290-20301	2.85	2.4~2.4835	PIFA	i-pex(MHF)	81
			3.75	5.15~5.85			

3. The EUT must be supplied with a PoE or power adapter and following below table:

Adapter		
Brand	Model No.	Spec.
D-Link	AMS135-1201000FU	Input: 100-240V, 0.5A, 50/60Hz Output: 12V, 1A DC output cable (unshielded, 1.2m)
POE (test only not sale together and use only with adapter No.: MU24A5480050-A1)		
Brand	Model No.	Spec.
WAHSONIC	PE03G	12-48V, 1A
*** Adapter** (test only not sale together and use only with PoE)		
Brand	Model No.	Spec.
LEI	MU24A5480050-A1	Input: 100-240V, 50/60Hz, 0.7A Output: 48V, 0.5A DC output cable (unshielded, 1.2m)
From the above adapter and POE, the worst spurious emissions test was found in **POE**. Therefore only the test data of the modes were recorded in this report.		

4. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS 0~8, Nss=1	2TX	2RX
	MCS 0~8, Nss=2	2TX	2RX
802.11ac (VHT40)	MCS 0~9, Nss=1	2TX	2RX
	MCS 0~9, Nss=2	2TX	2RX
802.11ac (VHT80)	MCS 0~9, Nss=1	2TX	2RX
	MCS 0~9, Nss=2	2TX	2RX
Note: 1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.			

5. 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):

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):

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	
1	√	√	√	√	Power from POE
2	-	-	√	-	Power from adapter

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: 1. The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-plane**.
2. "-"means no effect.

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 Mdoe					
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 Mdoe					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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 Mdoe					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

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 Mdoe					
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 Mdoe (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:

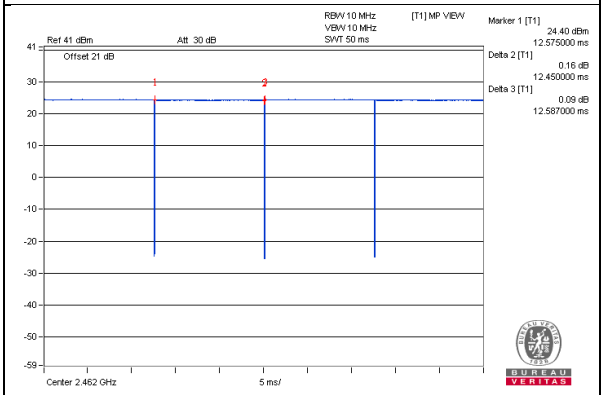
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	26deg. C, 68%RH	120Vac, 60Hz	Andy Ho
RE<1G	24deg. C, 72%RH	120Vac, 60Hz	Andy Ho
PLC	25deg. C, 75%RH	120Vac, 60Hz	Barry Lee
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

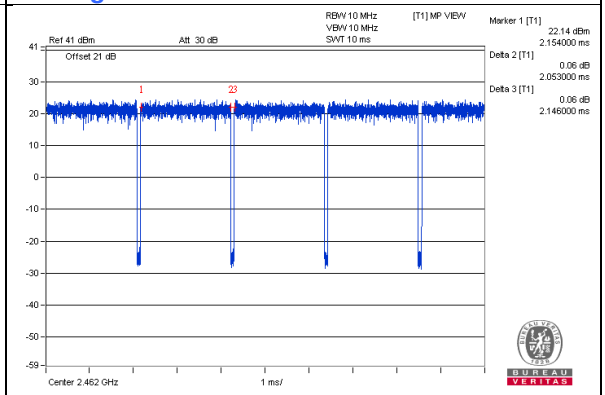
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.45/12.587 = 0.989
802.11g: Duty cycle = 2.053/2.146 = 0.957, Duty factor = 10 * log(1/0.957) = 0.19
802.11n (HT20): Duty cycle = 4.988/5.085 = 0.981
802.11n (HT40): Duty cycle = 2.425/2.51 = 0.966, Duty factor = 10 * log(1/0.966) = 0.15

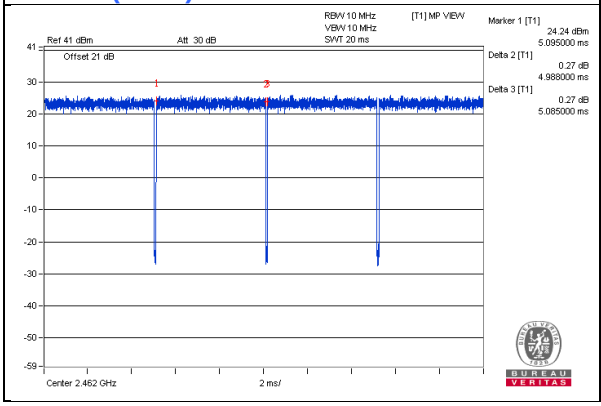
802.11b



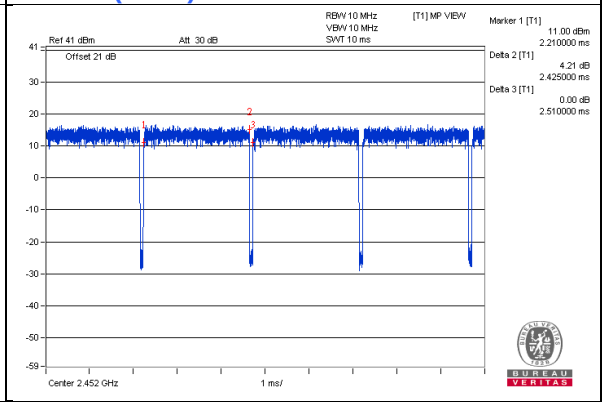
802.11g



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	PP27L	7YLB32S	FCC DoC	Provided by Lab
B.	POE	WAHSONIC	PE03G	NA	NA	Supplied by client

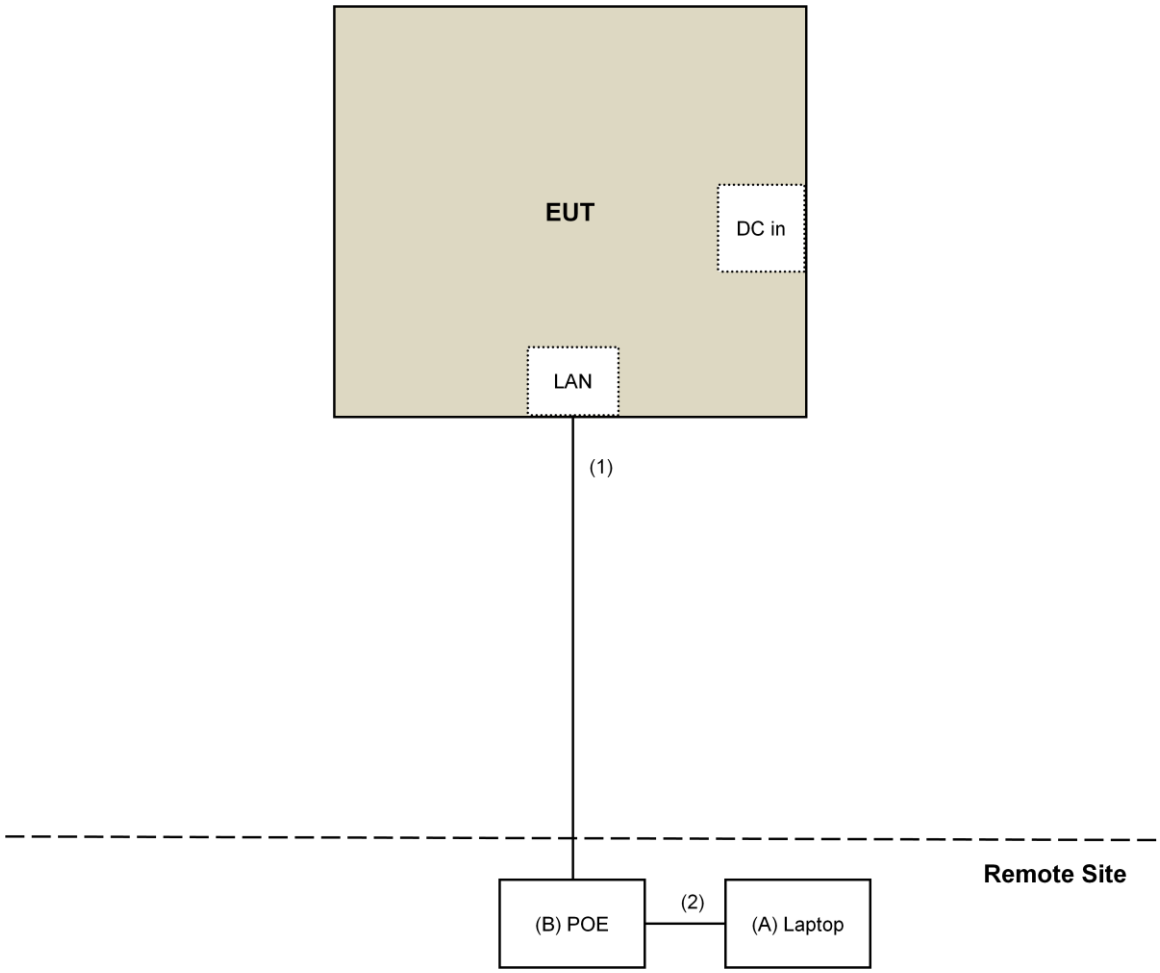
Note:

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

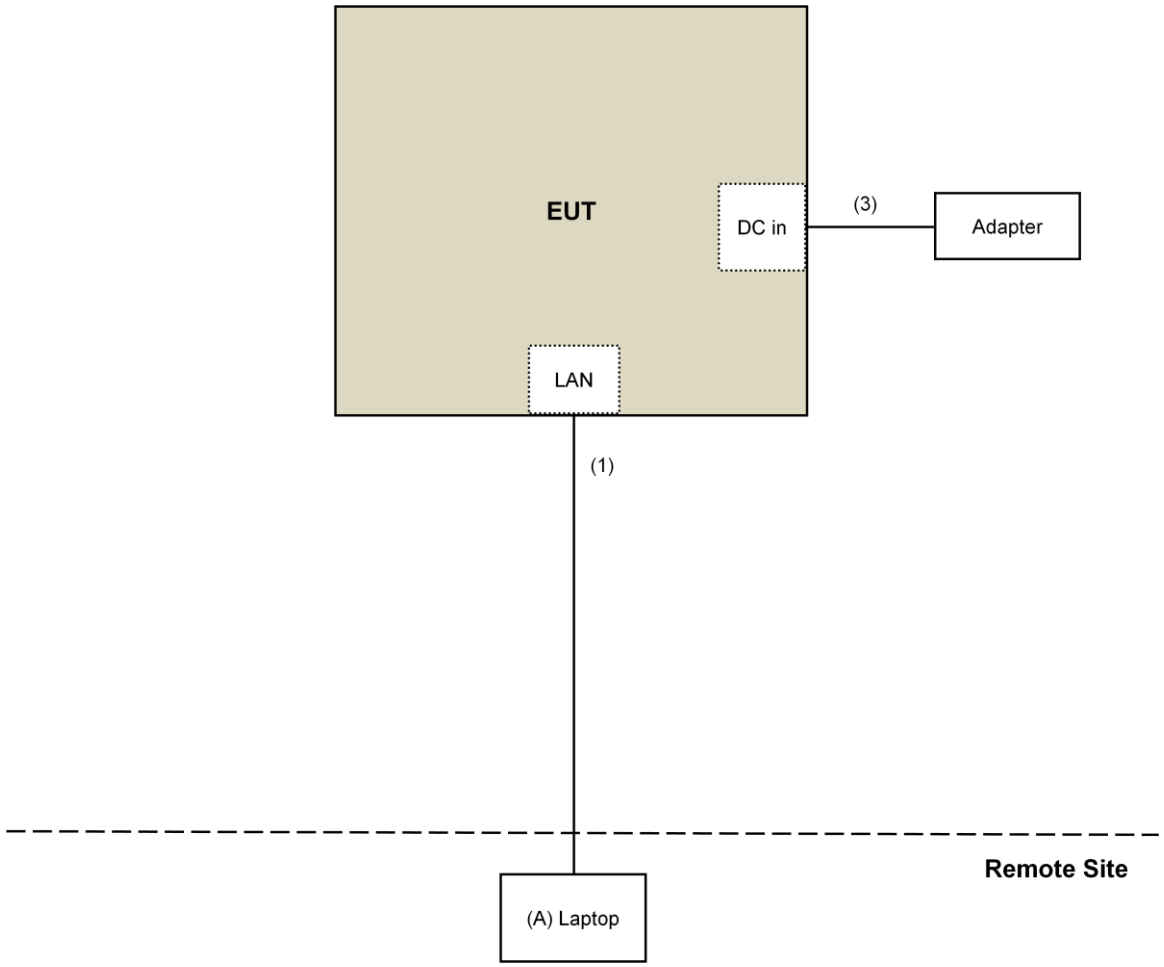
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	3	No	0	Provided by Lab
3.	DC Cable	1	1.2	No	0	Supplied by client

3.4.1 Configuration of System under Test

Mode 1:



Mode 2:



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 20dB 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, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 11, 2015	Nov. 10, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 02, 2016	Apr. 01, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 19, 2015	Sep. 18, 2016
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. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36441/2	Jan. 16, 2016	Jan. 15, 2017
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

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: Sep. 09, 2016

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:

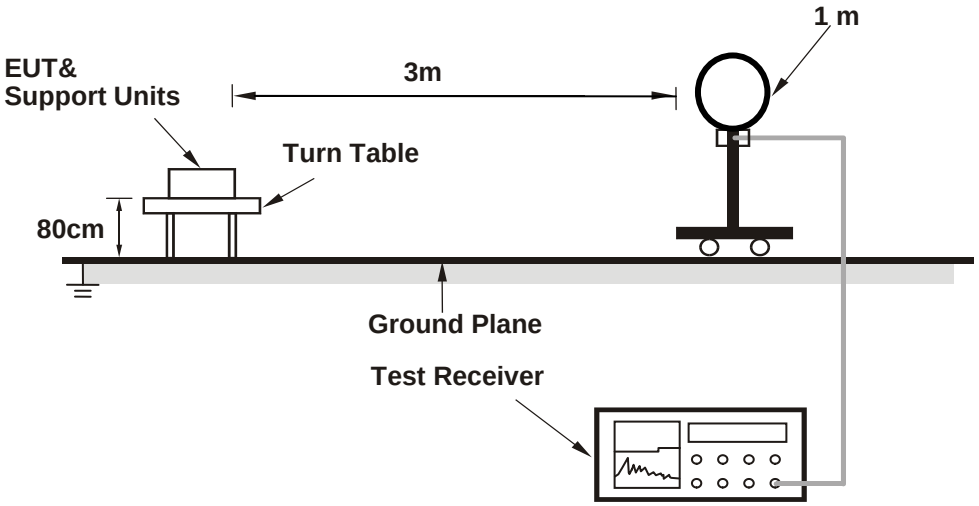
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

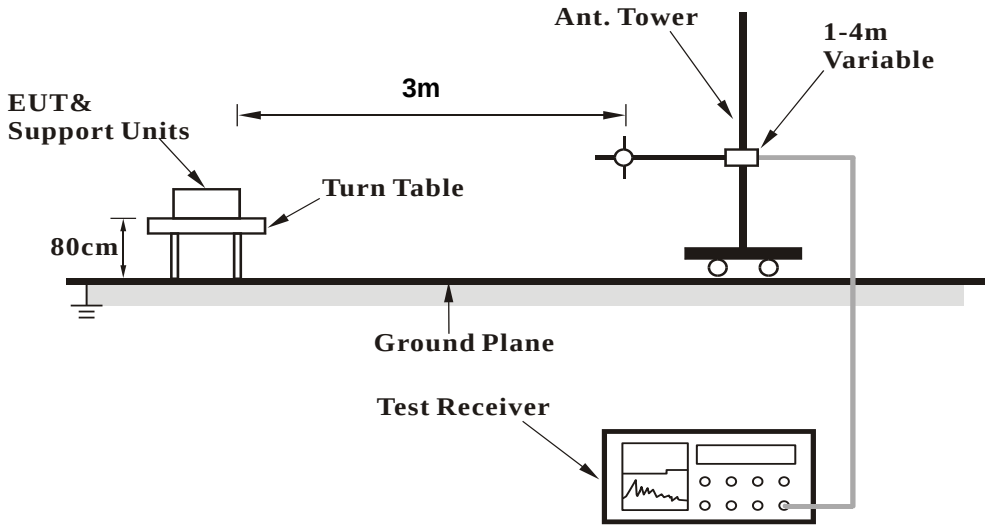
No deviation.

4.1.5 Test Setup

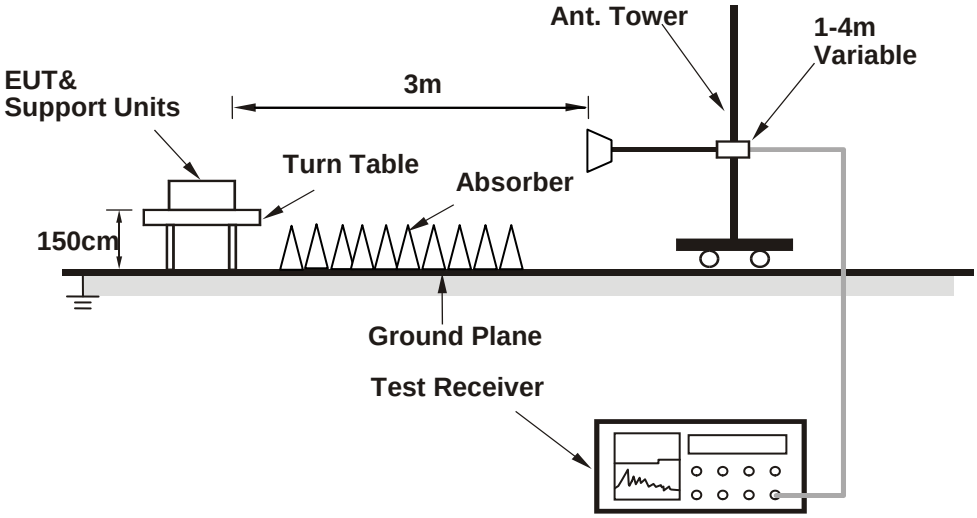
For Radiated emission below 30MHz



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. Contorlling software (QDART.exe Ver 3.0.187.0) 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	57.4 PK	74.0	-16.6	1.06 H	360	63.0	-5.6
2	2390.00	41.1 AV	54.0	-12.9	1.06 H	360	46.7	-5.6
3	*2412.00	112.3 PK			1.06 H	360	117.8	-5.5
4	*2412.00	109.7 AV			1.06 H	360	115.2	-5.5
5	4824.00	48.7 PK	74.0	-25.3	1.50 H	18	47.8	0.9
6	4824.00	46.8 AV	54.0	-7.2	1.50 H	18	45.9	0.9
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	55.2 PK	74.0	-18.8	2.00 V	360	60.8	-5.6
2	2390.00	46.6 AV	54.0	-7.4	2.00 V	360	52.2	-5.6
3	*2412.00	111.8 PK			2.00 V	360	117.3	-5.5
4	*2412.00	109.6 AV			2.00 V	360	115.1	-5.5
5	4824.00	53.3 PK	74.0	-20.7	3.07 V	21	52.4	0.9
6	4824.00	51.8 AV	54.0	-2.2	3.07 V	21	50.9	0.9

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
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	56.2 PK	74.0	-17.8	1.91 H	328	61.8	-5.6
2	2390.00	43.0 AV	54.0	-11.0	1.91 H	328	48.6	-5.6
3	*2437.00	112.4 PK			1.91 H	328	117.8	-5.4
4	*2437.00	109.8 AV			1.91 H	328	115.2	-5.4
5	2483.50	55.8 PK	74.0	-18.2	1.91 H	328	61.1	-5.3
6	2483.50	40.6 AV	54.0	-13.4	1.91 H	328	45.9	-5.3
7	4874.00	49.0 PK	74.0	-25.0	1.50 H	20	48.0	1.0
8	4874.00	46.9 AV	54.0	-7.1	1.50 H	20	45.9	1.0
9	7311.00	50.5 PK	74.0	-23.5	1.97 H	175	42.9	7.6
10	7311.00	44.5 AV	54.0	-9.5	1.97 H	175	36.9	7.6
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	2390.00	53.6 PK	74.0	-20.4	1.40 V	328	59.2	-5.6
2	2390.00	46.3 AV	54.0	-7.7	1.40 V	328	51.9	-5.6
3	*2437.00	112.5 PK			1.40 V	328	117.9	-5.4
4	*2437.00	110.2 AV			1.40 V	328	115.6	-5.4
5	2483.50	53.2 PK	74.0	-20.8	1.40 V	328	58.5	-5.3
6	2483.50	44.8 AV	54.0	-9.2	1.40 V	328	50.1	-5.3
7	4874.00	53.4 PK	74.0	-20.6	3.02 V	18	52.4	1.0
8	4874.00	51.9 AV	54.0	-2.1	3.02 V	18	50.9	1.0
9	7311.00	48.9 PK	74.0	-25.1	1.52 V	358	41.3	7.6
10	7311.00	39.6 AV	54.0	-14.4	1.52 V	358	32.0	7.6

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	112.5 PK			2.84 H	14	117.8	-5.3
2	*2462.00	109.9 AV			2.84 H	14	115.2	-5.3
3	2483.50	54.5 PK	74.0	-19.5	2.84 H	14	59.8	-5.3
4	2483.50	46.1 AV	54.0	-7.9	2.84 H	14	51.4	-5.3
5	4924.00	49.0 PK	74.0	-25.0	1.48 H	33	47.7	1.3
6	4924.00	46.6 AV	54.0	-7.4	1.48 H	33	45.3	1.3
7	7386.00	50.6 PK	74.0	-23.4	1.97 H	164	42.9	7.7
8	7386.00	44.8 AV	54.0	-9.2	1.97 H	164	37.1	7.7
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	*2462.00	112.2 PK			1.07 V	322	117.5	-5.3
2	*2462.00	109.8 AV			1.07 V	322	115.1	-5.3
3	2483.50	56.6 PK	74.0	-17.4	1.07 V	322	61.9	-5.3
4	2483.50	44.6 AV	54.0	-9.4	1.07 V	322	49.9	-5.3
5	4924.00	52.0 PK	74.0	-22.0	3.16 V	19	50.7	1.3
6	4924.00	50.0 AV	54.0	-4.0	3.16 V	19	48.7	1.3
7	7386.00	48.8 PK	74.0	-25.2	1.53 V	344	41.1	7.7
8	7386.00	39.6 AV	54.0	-14.4	1.53 V	344	31.9	7.7

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.

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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	62.7 PK	74.0	-11.3	1.05 H	296	68.3	-5.6
2	2390.00	50.8 AV	54.0	-3.2	1.05 H	296	56.4	-5.6
3	*2412.00	112.1 PK			1.05 H	296	117.6	-5.5
4	*2412.00	101.6 AV			1.05 H	296	107.1	-5.5
5	2483.50	51.7 PK	74.0	-22.3	1.05 H	296	57.0	-5.3
6	2483.50	41.3 AV	54.0	-12.7	1.05 H	296	46.6	-5.3
7	4824.00	48.9 PK	74.0	-25.1	1.62 H	4	48.0	0.9
8	4824.00	46.8 AV	54.0	-7.2	1.62 H	4	45.9	0.9
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	66.0 PK	74.0	-8.0	1.05 V	326	71.6	-5.6
2	2390.00	53.1 AV	54.0	-0.9	1.05 V	326	58.7	-5.6
3	*2412.00	113.6 PK			1.05 V	326	119.1	-5.5
4	*2412.00	102.7 AV			1.05 V	326	108.2	-5.5
5	2483.50	51.3 PK	74.0	-22.7	1.05 V	326	56.6	-5.3
6	2483.50	40.5 AV	54.0	-13.5	1.05 V	326	45.8	-5.3
7	4824.00	53.0 PK	74.0	-21.0	3.03 V	39	52.1	0.9
8	4824.00	51.8 AV	54.0	-2.2	3.03 V	39	50.9	0.9

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
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	54.4 PK	74.0	-19.6	3.20 H	316	60.0	-5.6
2	2390.00	41.8 AV	54.0	-12.2	3.20 H	316	47.4	-5.6
3	*2437.00	116.0 PK			3.20 H	316	121.4	-5.4
4	*2437.00	105.3 AV			3.20 H	316	110.7	-5.4
5	2483.50	52.7 PK	74.0	-21.3	3.20 H	316	58.0	-5.3
6	2483.50	39.3 AV	54.0	-14.7	3.20 H	316	44.6	-5.3
7	4874.00	48.4 PK	74.0	-25.6	1.56 H	12	47.4	1.0
8	4874.00	46.5 AV	54.0	-7.5	1.56 H	12	45.5	1.0
9	7311.00	51.1 PK	74.0	-22.9	1.95 H	184	43.5	7.6
10	7311.00	44.9 AV	54.0	-9.1	1.95 H	184	37.3	7.6
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	2390.00	58.1 PK	74.0	-15.9	1.19 V	327	63.7	-5.6
2	2390.00	44.7 AV	54.0	-9.3	1.19 V	327	50.3	-5.6
3	*2437.00	116.8 PK			1.19 V	327	122.2	-5.4
4	*2437.00	106.0 AV			1.19 V	327	111.4	-5.4
5	2483.50	54.5 PK	74.0	-19.5	1.19 V	327	59.8	-5.3
6	2483.50	42.3 AV	54.0	-11.7	1.19 V	327	47.6	-5.3
7	4874.00	53.7 PK	74.0	-20.3	3.06 V	31	52.7	1.0
8	4874.00	52.3 AV	54.0	-1.7	3.06 V	31	51.3	1.0
9	7311.00	49.3 PK	74.0	-24.7	1.53 V	343	41.7	7.6
10	7311.00	40.0 AV	54.0	-14.0	1.53 V	343	32.4	7.6

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	112.4 PK			2.53 H	326	117.7	-5.3
2	*2462.00	103.8 AV			2.53 H	326	109.1	-5.3
3	2483.50	68.6 PK	74.0	-5.4	2.53 H	326	73.9	-5.3
4	**2483.50**	**53.8 AV**	**54.0**	**-0.2**	**2.53 H**	**326**	**59.1**	**-5.3**
5	4924.00	49.1 PK	74.0	-24.9	1.59 H	12	47.8	1.3
6	4924.00	46.9 AV	54.0	-7.1	1.59 H	12	45.6	1.3
7	7386.00	51.4 PK	74.0	-22.6	1.97 H	192	43.7	7.7
8	7386.00	45.4 AV	54.0	-8.6	1.97 H	192	37.7	7.7
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	*2462.00	113.5 PK			1.19 V	326	118.8	-5.3
2	*2462.00	103.4 AV			1.19 V	326	108.7	-5.3
3	2483.50	68.1 PK	74.0	-5.9	1.19 V	326	73.4	-5.3
4	2483.50	53.6 AV	54.0	-0.4	1.19 V	326	58.9	-5.3
5	4924.00	53.6 PK	74.0	-20.4	3.06 V	30	52.3	1.3
6	4924.00	51.9 AV	54.0	-2.1	3.06 V	30	50.6	1.3
7	7386.00	48.7 PK	74.0	-25.3	1.57 V	353	41.0	7.7
8	7386.00	39.6 AV	54.0	-14.4	1.57 V	353	31.9	7.7

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.

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	62.4 PK	74.0	-11.6	1.46 H	358	68.0	-5.6
2	2390.00	49.5 AV	54.0	-4.5	1.46 H	358	55.1	-5.6
3	*2412.00	112.4 PK			1.46 H	358	117.9	-5.5
4	*2412.00	100.8 AV			1.46 H	358	106.3	-5.5
5	4824.00	47.2 PK	74.0	-26.8	1.58 H	11	46.3	0.9
6	4824.00	45.6 AV	54.0	-8.4	1.58 H	11	44.7	0.9
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	65.5 PK	74.0	-8.5	1.05 V	325	71.1	-5.6
2	2390.00	52.8 AV	54.0	-1.2	1.05 V	325	58.4	-5.6
3	*2412.00	111.6 PK			1.05 V	325	117.1	-5.5
4	*2412.00	100.3 AV			1.05 V	325	105.8	-5.5
5	4824.00	53.4 PK	74.0	-20.6	3.09 V	24	52.5	0.9
6	4824.00	51.6 AV	54.0	-2.4	3.09 V	24	50.7	0.9

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
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	*2437.00	114.5 PK			1.28 H	286	119.9	-5.4
2	*2437.00	103.3 AV			1.28 H	286	108.7	-5.4
3	4874.00	47.8 PK	74.0	-26.2	1.60 H	3	46.8	1.0
4	4874.00	46.0 AV	54.0	-8.0	1.60 H	3	45.0	1.0
5	7311.00	50.9 PK	74.0	-23.1	1.94 H	171	43.3	7.6
6	7311.00	45.0 AV	54.0	-9.0	1.94 H	171	37.4	7.6
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	*2437.00	116.0 PK			1.14 V	328	121.4	-5.4
2	*2437.00	104.5 AV			1.14 V	328	109.9	-5.4
3	4874.00	53.6 PK	74.0	-20.4	3.08 V	38	52.6	1.0
4	4874.00	52.0 AV	54.0	-2.0	3.08 V	38	51.0	1.0
5	7311.00	49.5 PK	74.0	-24.5	1.58 V	341	41.9	7.6
6	7311.00	40.2 AV	54.0	-13.8	1.58 V	341	32.6	7.6

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	112.4 PK			1.56 H	326	117.7	-5.3
2	*2462.00	100.7 AV			1.56 H	326	106.0	-5.3
3	2483.50	69.0 PK	74.0	-5.0	1.56 H	326	74.3	-5.3
4	2483.50	48.2 AV	54.0	-5.8	1.56 H	326	53.5	-5.3
5	4924.00	47.8 PK	74.0	-26.2	1.54 H	10	46.5	1.3
6	4924.00	46.2 AV	54.0	-7.8	1.54 H	10	44.9	1.3
7	7386.00	50.9 PK	74.0	-23.1	1.89 H	175	43.2	7.7
8	7386.00	44.9 AV	54.0	-9.1	1.89 H	175	37.2	7.7
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	*2462.00	113.0 PK			1.34 V	328	118.3	-5.3
2	*2462.00	101.8 AV			1.34 V	328	107.1	-5.3
3	2483.50	65.9 PK	74.0	-8.1	1.34 V	328	71.2	-5.3
4	2483.50	53.1 AV	54.0	-0.9	1.34 V	328	58.4	-5.3
5	4924.00	53.0 PK	74.0	-21.0	3.09 V	53	51.7	1.3
6	4924.00	51.6 AV	54.0	-2.4	3.09 V	53	50.3	1.3
7	7386.00	50.0 PK	74.0	-24.0	1.64 V	329	42.3	7.7
8	7386.00	40.7 AV	54.0	-13.3	1.64 V	329	33.0	7.7

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.

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	65.2 PK	74.0	-8.8	3.65 H	332	70.8	-5.6
2	2390.00	53.1 AV	54.0	-0.9	3.65 H	332	58.7	-5.6
3	*2422.00	106.1 PK			3.65 H	332	111.5	-5.4
4	*2422.00	96.5 AV			3.65 H	332	101.9	-5.4
5	4844.00	47.5 PK	74.0	-26.5	1.52 H	20	46.6	0.9
6	4844.00	45.9 AV	54.0	-8.1	1.52 H	20	45.0	0.9
7	7266.00	51.1 PK	74.0	-22.9	1.92 H	189	43.4	7.7
8	7266.00	44.9 AV	54.0	-9.1	1.92 H	189	37.2	7.7
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	2390.00	64.1 PK	74.0	-9.9	1.25 V	321	69.7	-5.6
2	2390.00	52.7 AV	54.0	-1.3	1.25 V	321	58.3	-5.6
3	*2422.00	106.2 PK			1.25 V	321	111.6	-5.4
4	*2422.00	96.6 AV			1.25 V	321	102.0	-5.4
5	4844.00	53.3 PK	74.0	-20.7	3.06 V	69	52.4	0.9
6	4844.00	52.0 AV	54.0	-2.0	3.06 V	69	51.1	0.9
7	7266.00	49.8 PK	74.0	-24.2	1.61 V	328	42.1	7.7
8	7266.00	40.4 AV	54.0	-13.6	1.61 V	328	32.7	7.7

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.

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	65.3 PK	74.0	-8.7	3.50 H	327	70.9	-5.6
2	2390.00	52.2 AV	54.0	-1.8	3.50 H	327	57.8	-5.6
3	*2437.00	109.2 PK			3.50 H	327	114.6	-5.4
4	*2437.00	99.5 AV			3.50 H	327	104.9	-5.4
5	2483.50	67.8 PK	74.0	-6.2	3.50 H	327	73.1	-5.3
6	2483.50	53.2 AV	54.0	-0.8	3.50 H	327	58.5	-5.3
7	4874.00	48.1 PK	74.0	-25.9	1.58 H	19	47.1	1.0
8	4874.00	46.6 AV	54.0	-7.4	1.58 H	19	45.6	1.0
9	7311.00	50.9 PK	74.0	-23.1	1.95 H	182	43.3	7.6
10	7311.00	44.9 AV	54.0	-9.1	1.95 H	182	37.3	7.6
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	2390.00	64.0 PK	74.0	-10.0	1.50 V	322	69.6	-5.6
2	2390.00	51.3 AV	54.0	-2.7	1.50 V	322	56.9	-5.6
3	*2437.00	108.7 PK			1.50 V	322	114.1	-5.4
4	*2437.00	99.0 AV			1.50 V	322	104.4	-5.4
5	2483.50	61.2 PK	74.0	-12.8	1.50 V	322	66.5	-5.3
6	2483.50	46.7 AV	54.0	-7.3	1.50 V	322	52.0	-5.3
7	4874.00	53.0 PK	74.0	-21.0	3.11 V	67	52.0	1.0
8	4874.00	51.9 AV	54.0	-2.1	3.11 V	67	50.9	1.0
9	7311.00	49.7 PK	74.0	-24.3	1.66 V	315	42.1	7.6
10	7311.00	40.5 AV	54.0	-13.5	1.66 V	315	32.9	7.6

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) 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	106.3 PK			3.10 H	312	111.7	-5.4
2	*2452.00	95.8 AV			3.10 H	312	101.2	-5.4
3	2483.50	65.5 PK	74.0	-8.5	1.16 H	312	70.8	-5.3
4	2483.50	52.9 AV	54.0	-1.1	1.16 H	312	58.2	-5.3
5	4904.00	48.6 PK	74.0	-25.4	1.60 H	18	47.4	1.2
6	4904.00	46.9 AV	54.0	-7.1	1.60 H	18	45.7	1.2
7	7356.00	50.9 PK	74.0	-23.1	1.99 H	192	43.2	7.7
8	7356.00	45.2 AV	54.0	-8.8	1.99 H	192	37.5	7.7
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	104.1 PK			1.30 V	322	109.5	-5.4
2	*2452.00	94.8 AV			1.30 V	322	100.2	-5.4
3	2483.50	64.0 PK	74.0	-10.0	1.11 V	322	69.3	-5.3
4	2483.50	51.2 AV	54.0	-2.8	1.11 V	322	56.5	-5.3
5	4904.00	52.8 PK	74.0	-21.2	3.07 V	77	51.6	1.2
6	4904.00	51.7 AV	54.0	-2.3	3.07 V	77	50.5	1.2
7	7356.00	49.8 PK	74.0	-24.2	1.59 V	322	42.1	7.7
8	7356.00	40.5 AV	54.0	-13.5	1.59 V	322	32.8	7.7

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:

802.11n (HT20)

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	37.76	30.8 QP	40.0	-9.2	1.05 H	115	40.0	-9.2
2	91.16	28.6 QP	43.5	-14.9	2.00 H	67	43.1	-14.5
3	140.46	25.7 QP	43.5	-17.8	2.00 H	280	34.6	-8.9
4	250.00	27.7 QP	46.0	-18.3	1.05 H	286	37.7	-10.0
5	532.82	25.6 QP	46.0	-20.4	1.50 H	190	27.9	-2.3
6	874.97	30.2 QP	46.0	-15.8	1.50 H	310	26.8	3.4
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	37.54	36.0 QP	40.0	-4.0	1.05 V	94	45.3	-9.3
2	58.76	34.8 QP	40.0	-5.2	1.05 V	182	43.8	-9.0
3	100.71	31.4 QP	43.5	-12.1	1.50 V	199	44.2	-12.8
4	176.37	26.6 QP	43.5	-16.9	1.05 V	114	36.4	-9.8
5	532.80	26.0 QP	46.0	-20.0	1.05 V	171	28.3	-2.3
6	886.34	28.5 QP	46.0	-17.5	1.50 V	176	25.0	3.5

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

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	100375	May 09, 2016	May 08, 2017
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK-8127	8127-522	Aug. 31, 2016	Aug. 30, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-003	Sep. 14, 2015	Sep. 13, 2016
50 ohms Terminator	N/A	EMC-03	Sep. 23, 2015	Sep. 22, 2016
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2015	Sep. 30, 2016
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. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: Sep. 09, 2016

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.

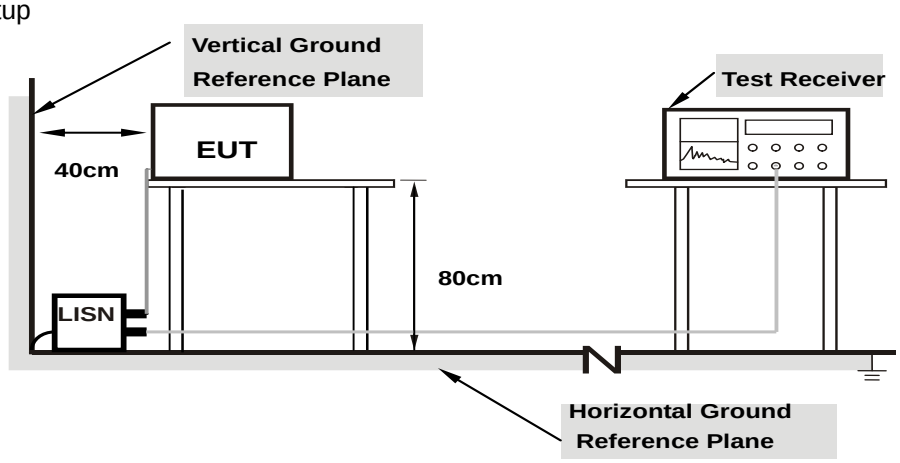
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

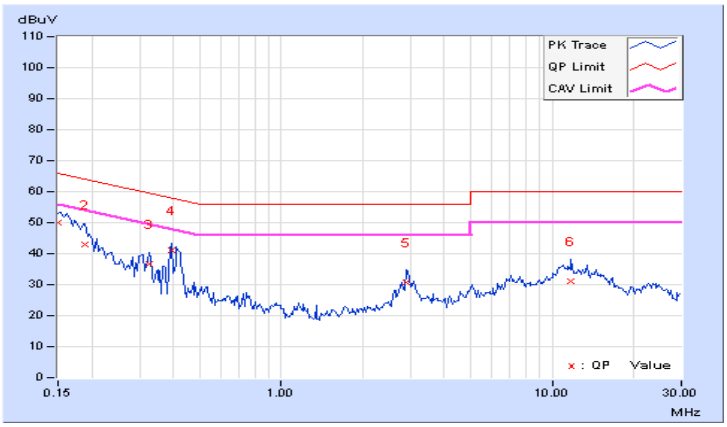
4.2.7 Test Results (Mode 1)

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	0.15000	10.30	39.80	26.57	50.10	36.87	66.00	56.00	-15.90	-19.13
2	0.18906	10.27	32.52	21.33	42.79	31.60	64.08	54.08	-21.29	-22.48
3	0.32578	10.27	26.42	22.28	36.69	32.55	59.56	49.56	-22.87	-17.01
4	0.39609	10.28	30.74	27.49	41.02	37.77	57.93	47.93	-16.91	-10.16
5	2.89453	10.38	20.34	10.62	30.72	21.00	56.00	46.00	-25.28	-25.00
6	11.72266	10.86	20.17	15.45	31.03	26.31	60.00	50.00	-28.97	-23.69

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.

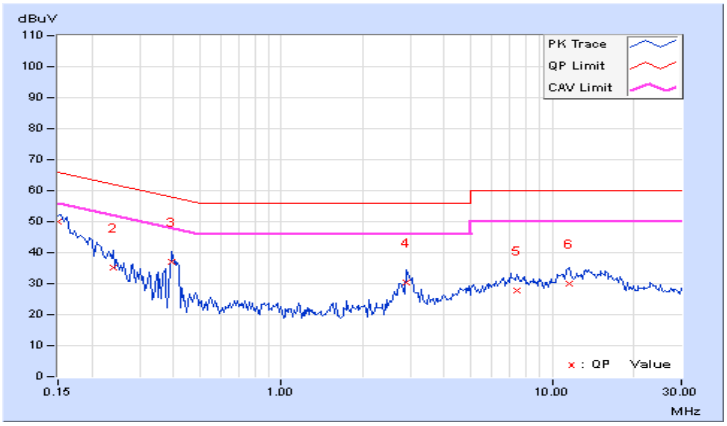


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	10.28	39.56	25.11	49.84	35.39	66.00	56.00	-16.16	-20.61
2	0.23984	10.25	25.09	12.11	35.34	22.36	62.10	52.10	-26.76	-29.74
3	0.39609	10.26	26.75	20.87	37.01	31.13	57.93	47.93	-20.92	-16.80
4	2.89063	10.35	20.00	11.75	30.35	22.10	56.00	46.00	-25.65	-23.90
5	7.46094	10.55	17.31	12.33	27.86	22.88	60.00	50.00	-32.14	-27.12
6	11.50391	10.71	19.30	14.48	30.01	25.19	60.00	50.00	-29.99	-24.81

REMARKS:

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



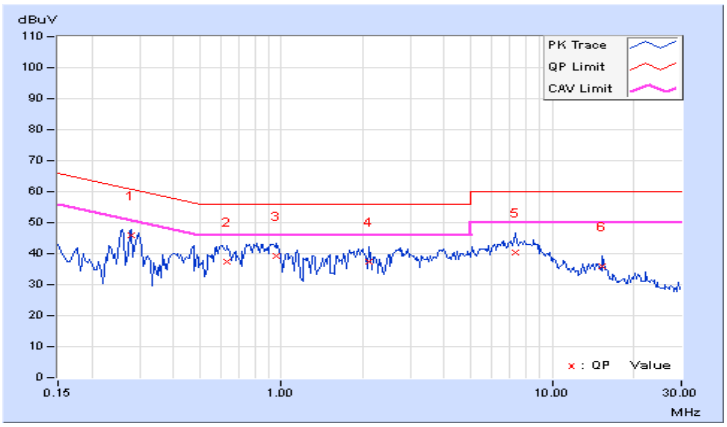
4.2.8 Test Results (Mode 2)

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	**0.27891**	**10.27**	**35.63**	**33.91**	**45.90**	**44.18**	**60.85**	**50.85**	**-14.95**	**-6.67**
2	0.63438	10.25	27.05	22.17	37.30	32.42	56.00	46.00	-18.70	-13.58
3	0.95859	10.21	29.07	24.27	39.28	34.48	56.00	46.00	-16.72	-11.52
4	2.09766	10.29	27.29	19.33	37.58	29.62	56.00	46.00	-18.42	-16.38
5	7.31641	10.63	29.56	22.46	40.19	33.09	60.00	50.00	-19.81	-16.91
6	15.32031	11.13	24.65	17.26	35.78	28.39	60.00	50.00	-24.22	-21.61

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.

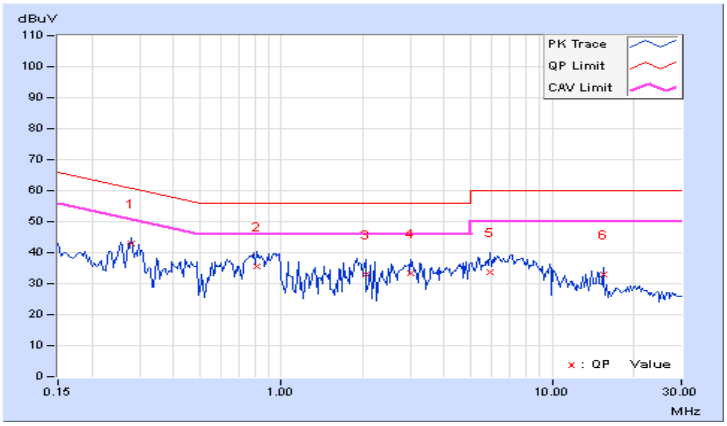


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.27891	10.25	32.55	28.50	42.80	38.75	60.85	50.85	-18.05	-12.10
2	0.81016	10.21	25.51	18.68	35.72	28.89	56.00	46.00	-20.28	-17.11
3	2.05469	10.27	22.73	13.96	33.00	24.23	56.00	46.00	-23.00	-21.77
4	3.00000	10.36	22.97	14.28	33.33	24.64	56.00	46.00	-22.67	-21.36
5	5.91016	10.51	23.15	14.12	33.66	24.63	60.00	50.00	-26.34	-25.37
6	15.44141	10.96	21.91	12.75	32.87	23.71	60.00	50.00	-27.13	-26.29

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.

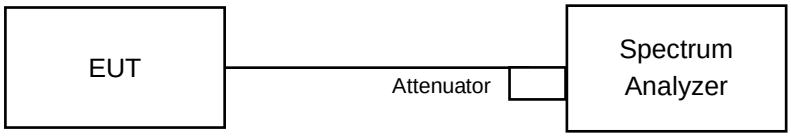


4.3 6dB Bandwidth Measurement

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP40	100060	May 11, 2016	May 10, 2017

NOTE:
1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Sep. 19, 2016

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

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	8.08	8.15	0.5	PASS
6	2437	8.12	8.12	0.5	PASS
11	2462	8.13	8.14	0.5	PASS

802.11g

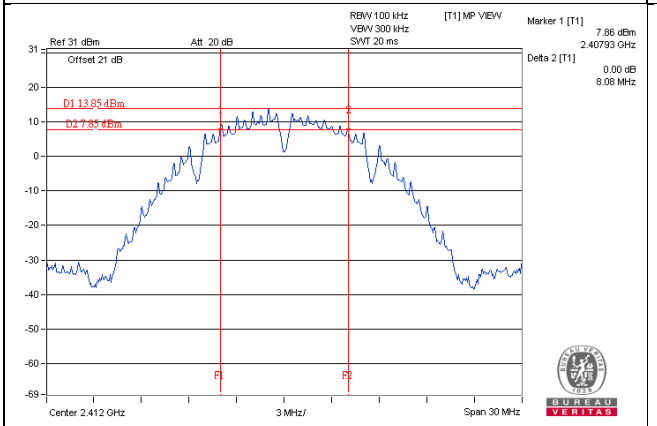
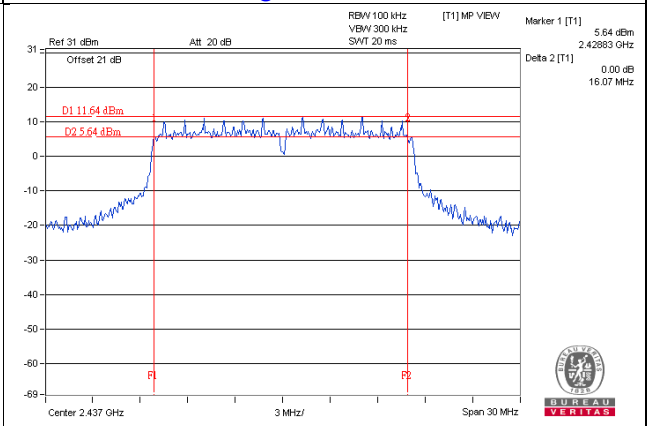
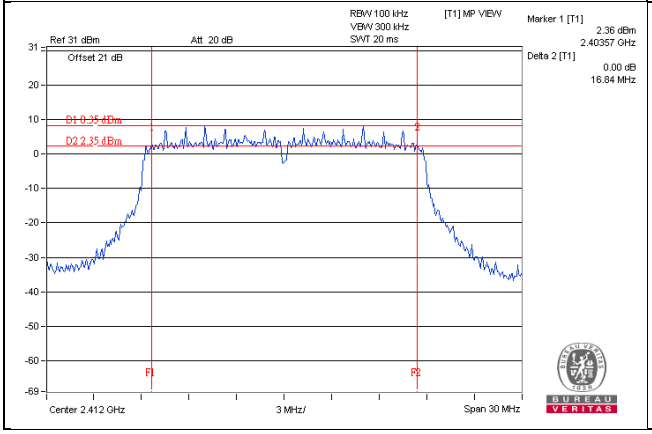
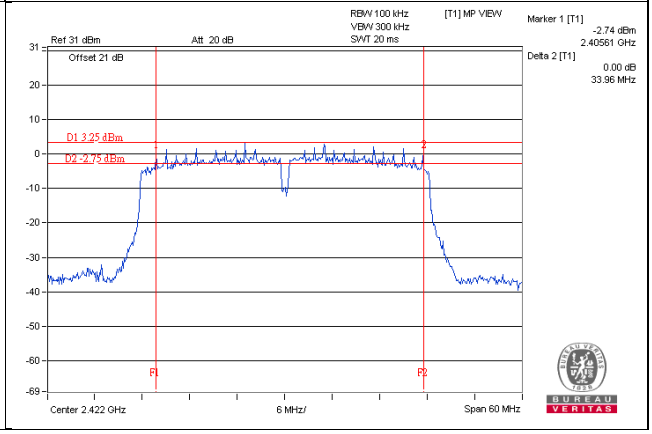
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.35	16.37	0.5	PASS
6	2437	16.07	16.34	0.5	PASS
11	2462	16.34	16.34	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.84	17.34	0.5	Pass
6	2437	17.30	17.32	0.5	Pass
11	2462	17.54	16.89	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	33.96	33.97	0.5	Pass
6	2437	35.16	35.22	0.5	Pass
9	2452	35.27	35.29	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH1	**802.11g / Chain 0 : CH6**
	
802.11n (HT20) / Chain 0 : CH1	**802.11n (HT40) / Chain 0 : CH3**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

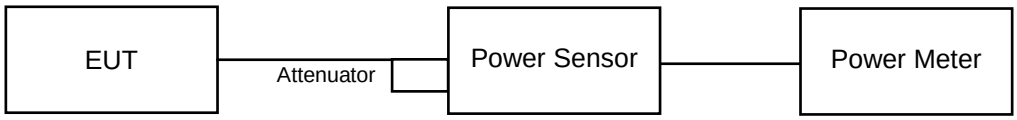
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
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 test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Sep. 19, 2016

4.4.4 Test Procedures

A peak / average power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak / 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

FOR PEAK POWER

802.11b

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	24.46	24.53	563.046	27.51	30	Pass
6	2437	24.32	24.58	557.474	27.46	30	Pass
11	2462	24.47	24.33	550.917	27.41	30	Pass

802.11g

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	24.43	24.60	565.735	27.53	30	Pass
6	2437	26.10	26.29	832.978	29.21	30	Pass
11	2462	25.05	25.21	651.784	28.14	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.31	24.39	489.078	26.89	30	Pass
6	2437	26.17	26.51	861.713	29.35	30	Pass
11	2462	24.94	25.06	632.516	28.01	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.59	22.70	367.761	25.66	30	Pass
6	2437	22.77	24.87	496.136	26.96	30	Pass
9	2452	21.66	21.52	288.461	24.60	30	Pass

FOR AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	22.24	22.27	336.149	25.27
6	2437	22.11	22.40	336.335	25.27
11	2462	22.29	22.17	334.25	25.24

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	19.05	19.15	162.577	22.11
6	2437	21.49	21.32	276.448	24.42
11	2462	20.10	19.95	201.184	23.04

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.77	18.61	147.947	21.70
6	2437	21.68	21.91	302.47	24.81
11	2462	19.89	19.65	189.756	22.78

802.11n (HT40)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	16.42	16.46	88.112	19.45
6	2437	19.38	19.33	172.4	22.37
9	2452	15.21	15.08	65.4	18.16

Beamforming Mode

FOR PEAK POWER

802.11n (HT20)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.31	24.39	489.078	26.89	30	Pass
6	2437	26.17	26.51	861.713	29.35	30	Pass
11	2462	24.94	25.06	632.516	28.01	30	Pass

Note: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 5.97dBi < 6dBi , so the power limit shall not be reduced.

802.11n (HT40)

Chan.	Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.59	22.70	367.761	25.66	30	Pass
6	2437	22.77	24.87	496.136	26.96	30	Pass
9	2452	21.66	21.52	288.461	24.60	30	Pass

Note: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 5.97dBi < 6dBi , so the power limit shall not be reduced.

FOR AVERAGE POWER

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.77	18.61	147.947	21.70
6	2437	21.68	21.91	302.47	24.81
11	2462	19.89	19.65	189.756	22.78

802.11n (HT40)

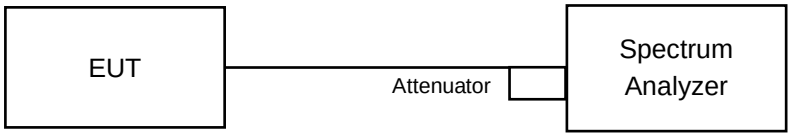
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	16.42	16.46	88.112	19.45
6	2437	19.38	19.33	172.4	22.37
9	2452	15.21	15.08	65.4	18.16

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP40	100060	May 11, 2016	May 10, 2017

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Sep. 19, 2016

4.5.4 Test Procedure

a. Set analyzer center frequency to DTS channel center frequency.
b. Set the span to 1.5 times the DTS bandwidth.
c. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

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=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-4.02	3.01	-1.01	8.00	Pass
	6	2437	-2.39	3.01	0.62	8.00	Pass
	11	2462	-4.63	3.01	-1.62	8.00	Pass
1	1	2412	-3.54	3.01	-0.53	8.00	Pass
	6	2437	-3.55	3.01	-0.54	8.00	Pass
	11	2462	-3.82	3.01	-0.81	8.00	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.97dBi < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.56	3.01	-6.55	8.00	Pass
	6	2437	-6.74	3.01	-3.73	8.00	Pass
	11	2462	-8.77	3.01	-5.76	8.00	Pass
1	1	2412	-9.46	3.01	-6.45	8.00	Pass
	6	2437	-6.09	3.01	-3.08	8.00	Pass
	11	2462	-7.33	3.01	-4.32	8.00	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.97dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT20)

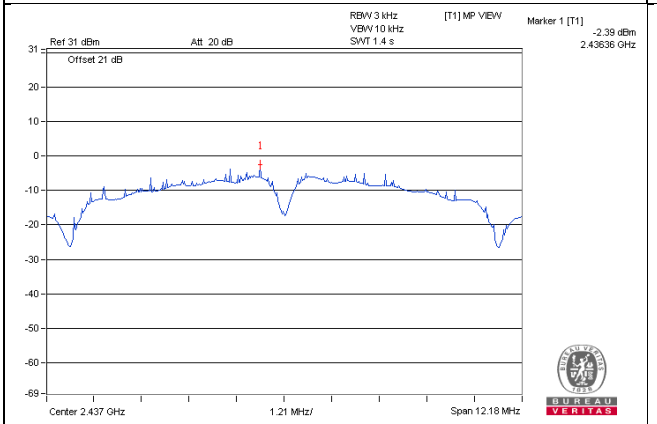
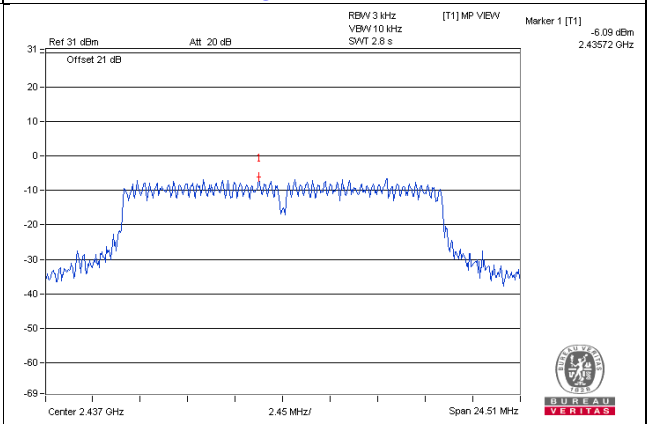
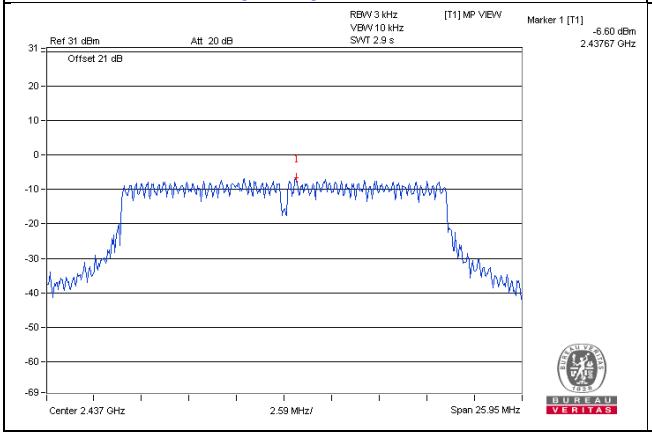
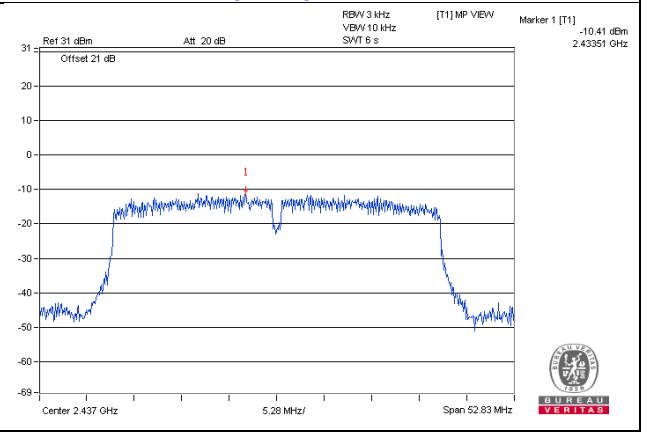
TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-9.54	3.01	-6.53	8.00	Pass
	6	2437	-6.60	3.01	-3.59	8.00	Pass
	11	2462	-7.82	3.01	-4.81	8.00	Pass
1	1	2412	-8.82	3.01	-5.81	8.00	Pass
	6	2437	-6.76	3.01	-3.75	8.00	Pass
	11	2462	-7.85	3.01	-4.84	8.00	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.97dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-13.60	3.01	-10.59	8.00	Pass
	6	2437	-11.29	3.01	-8.28	8.00	Pass
	9	2452	-14.18	3.01	-11.17	8.00	Pass
1	3	2422	-14.38	3.01	-11.37	8.00	Pass
	6	2437	-10.41	3.01	-7.40	8.00	Pass
	9	2452	-13.75	3.01	-10.74	8.00	Pass

Note: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.97dBi < 6dBi , so the power density limit shall not be reduced.

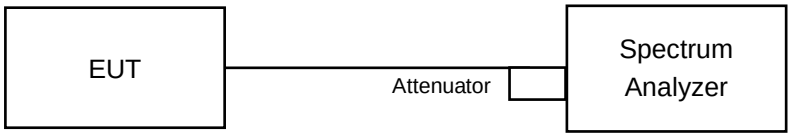
Spectrum Plot of Worst Value	
802.11b / Chain 0 : CH6	**802.11g / Chain 1 : CH6**
	
802.11n (HT20) / Chain 0 : CH6	**802.11n (HT40) / Chain 1 : CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 Test Setup



4.6.3 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP40	100060	May 11, 2016	May 10, 2017

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Sep. 19, 2016

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

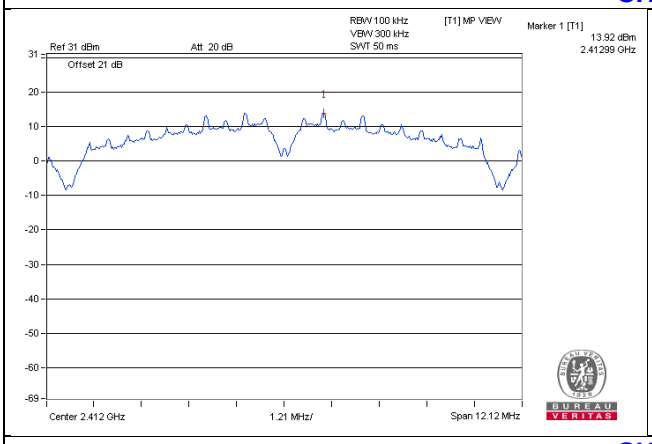
Same as Item 4.3.6

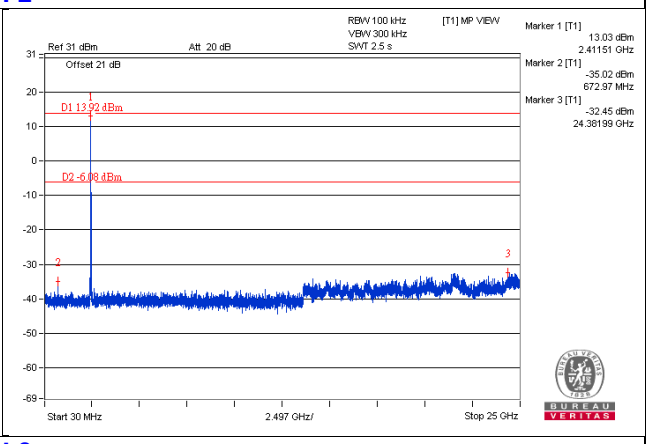
4.6.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

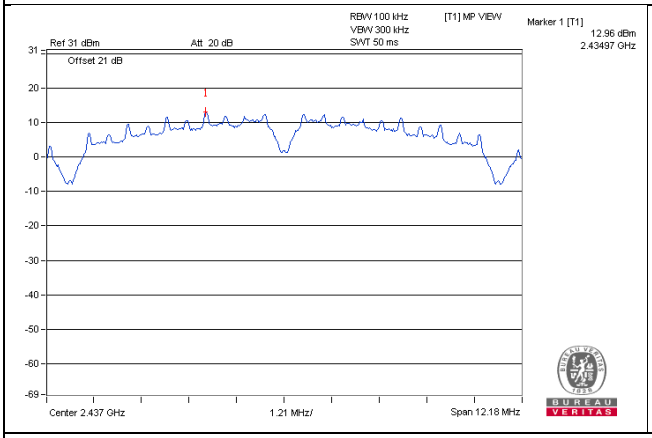
802.11b - CHAIN 0

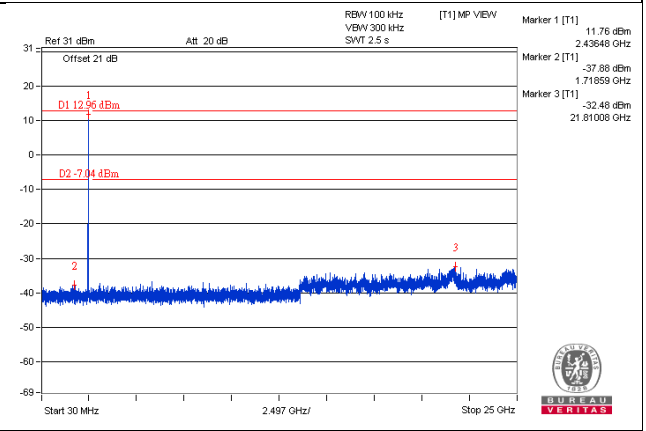
CH 1



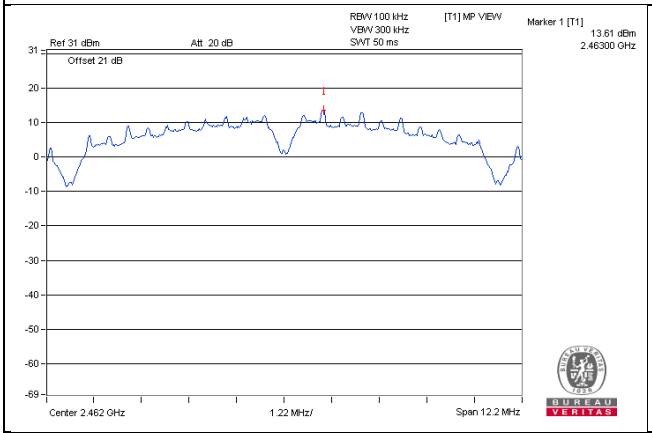


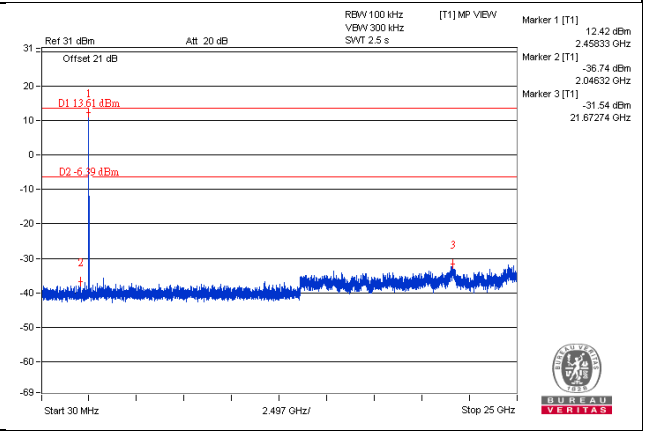
CH 6



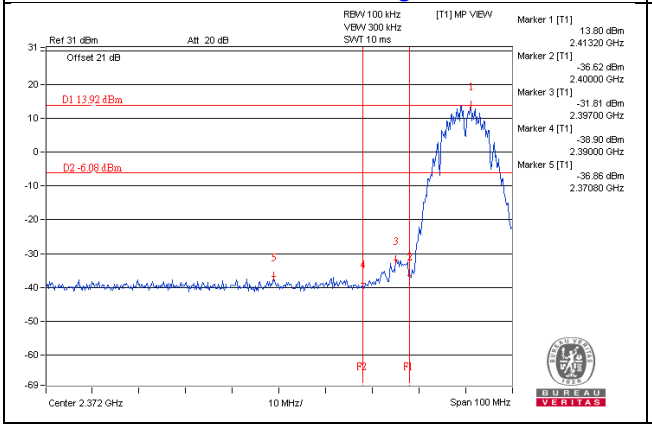


CH 11

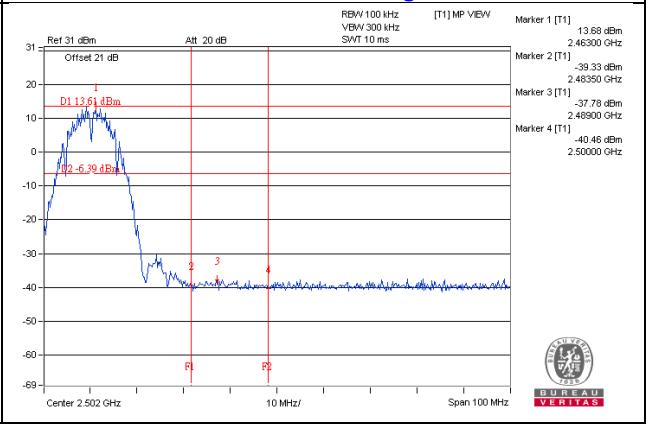




CH 1 Band edge

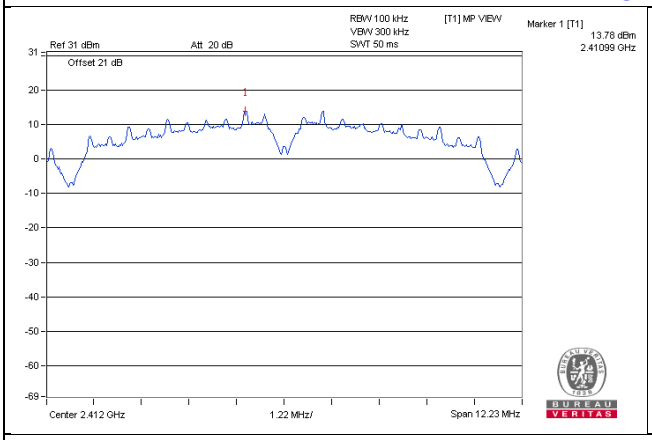


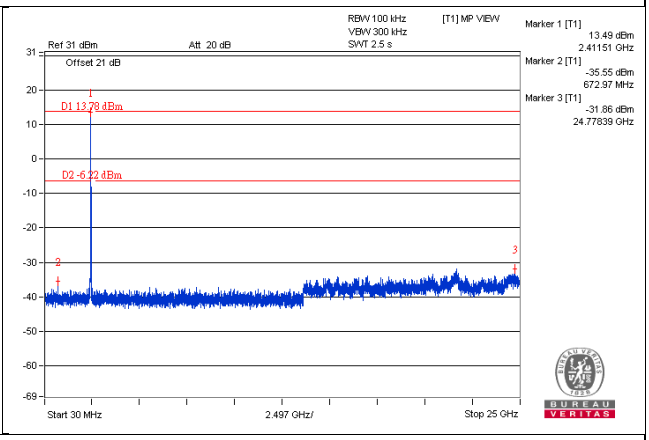
CH 11 Band edge



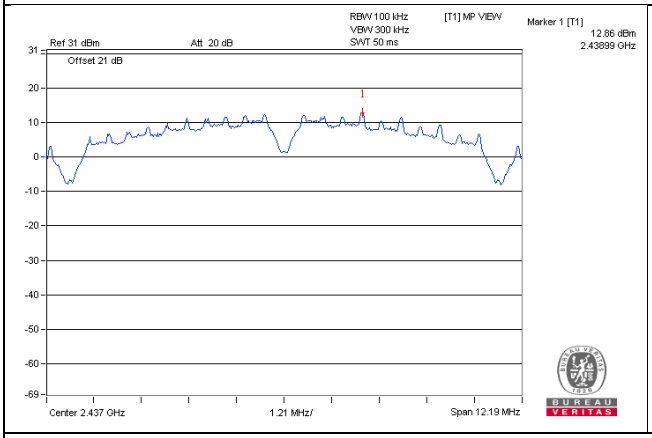
CHAIN 1

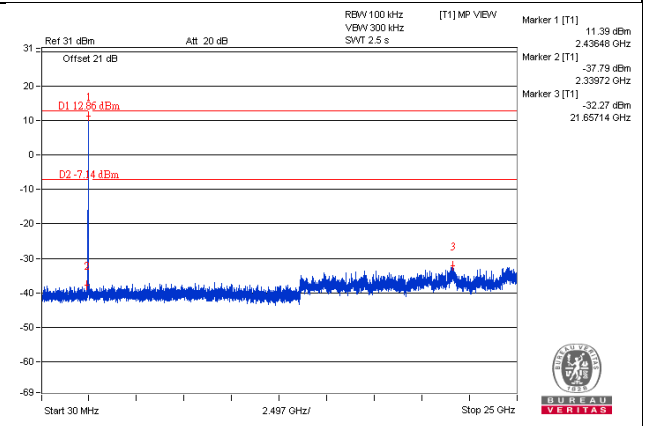
CH 1



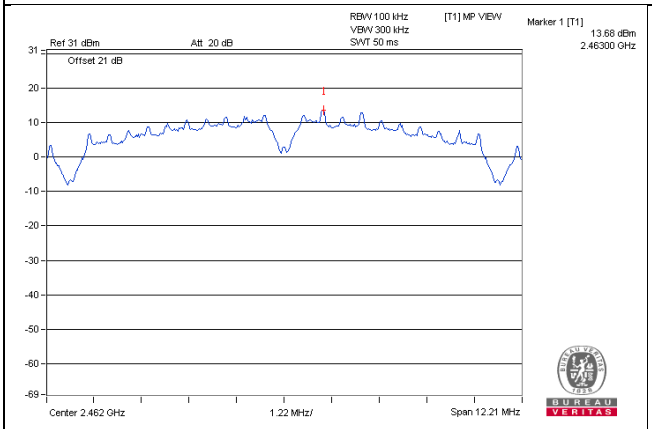


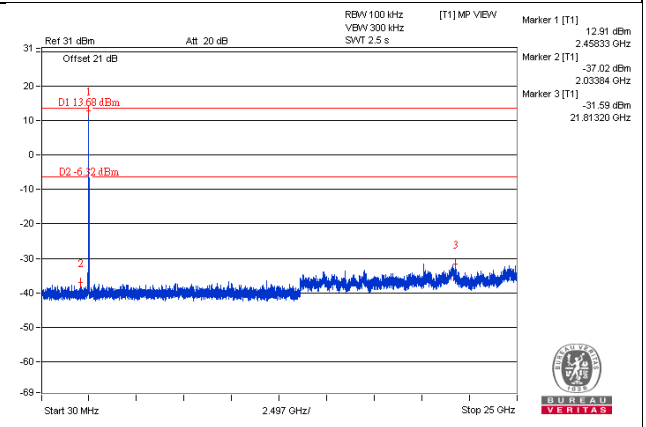
CH 6



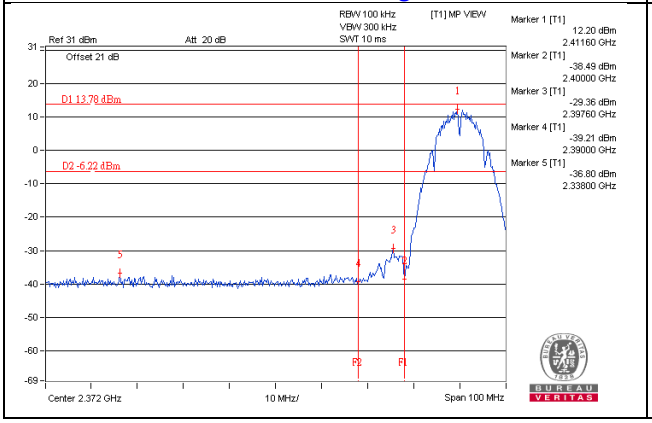


CH 11

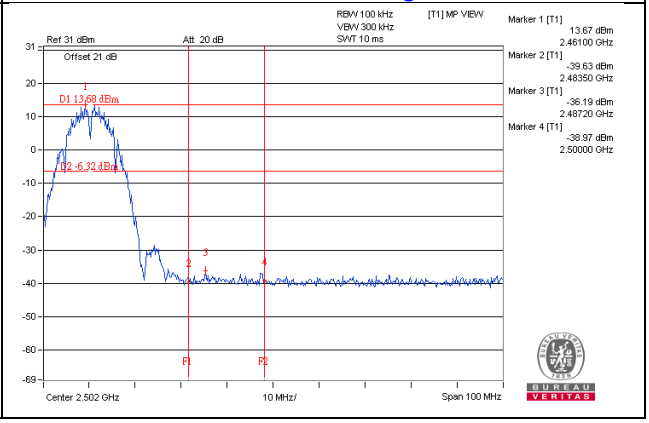




CH 1 Band edge

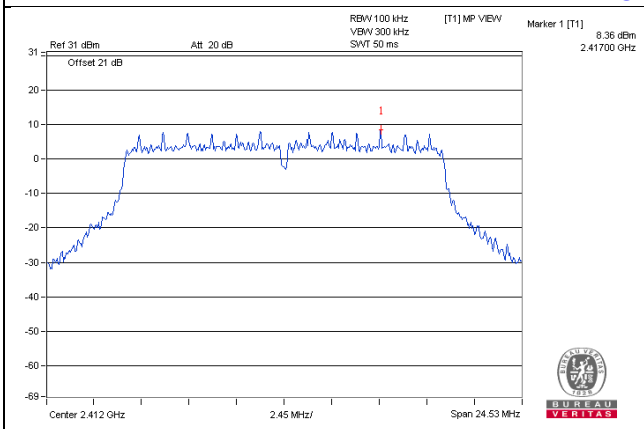


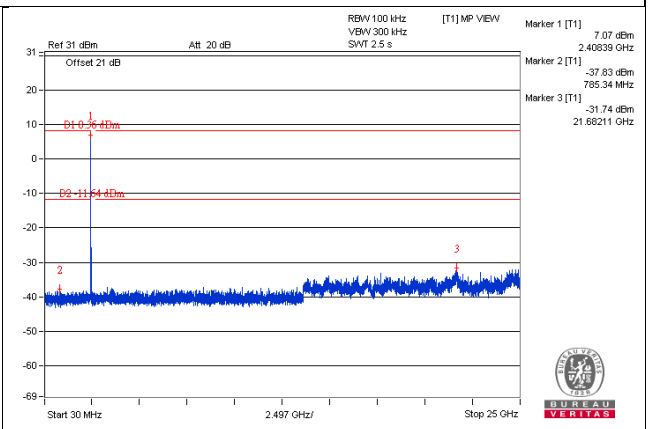
CH 11 Band edge



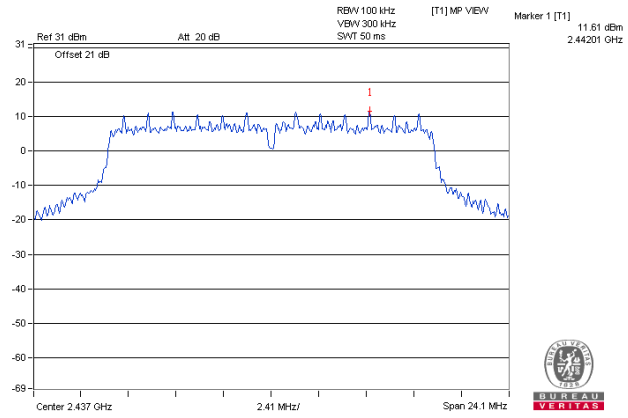
802.11g - CHAIN 0

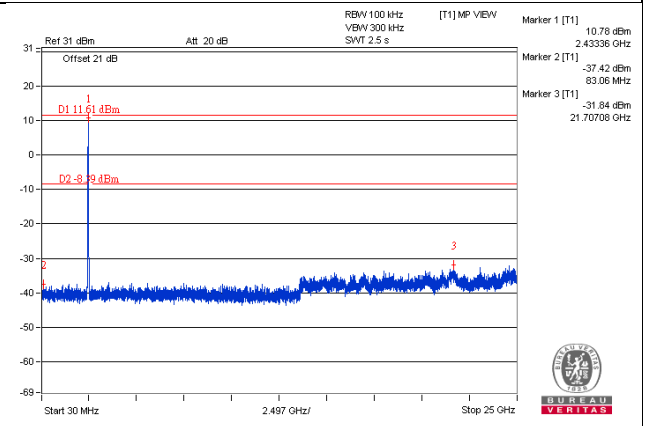
CH 1



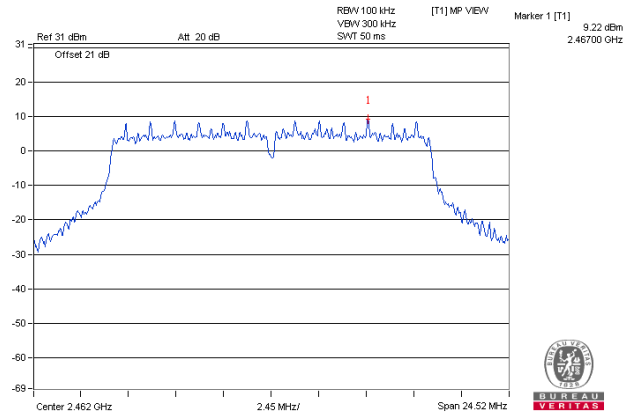


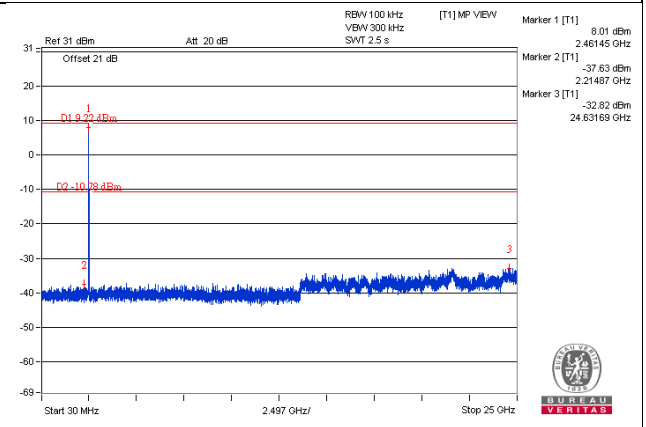
CH 6



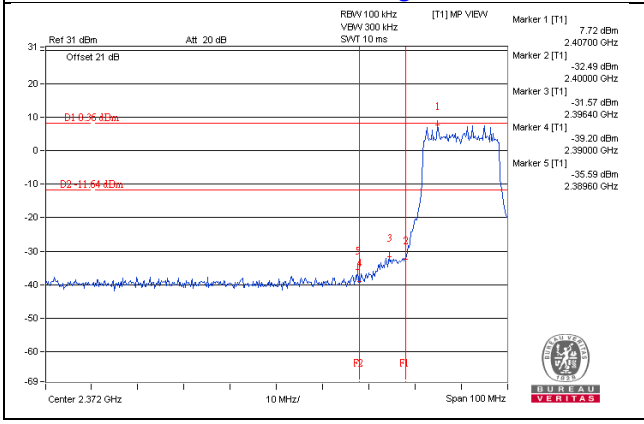


CH 11

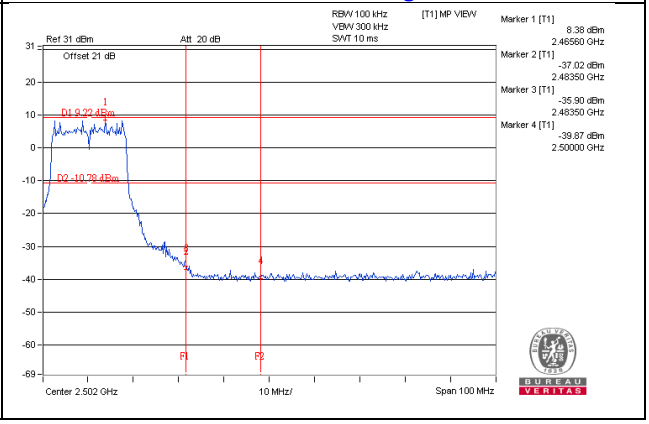




CH 1 Band edge

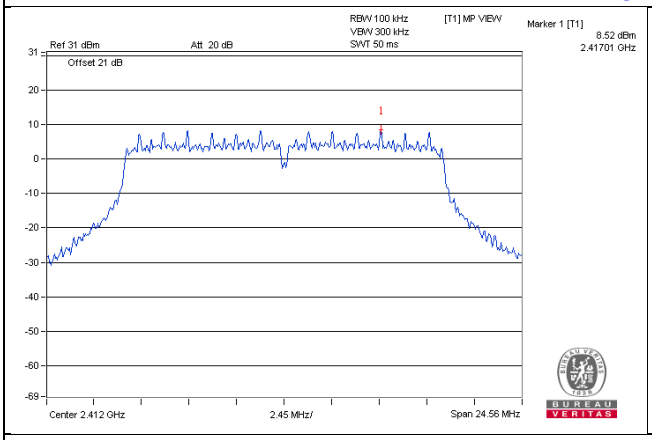


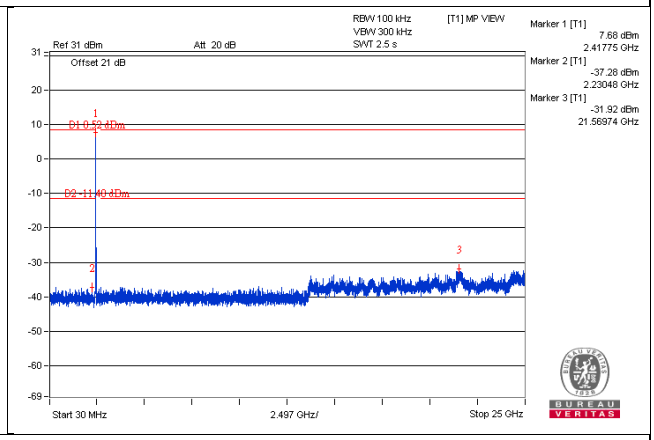
CH 11 Band edge



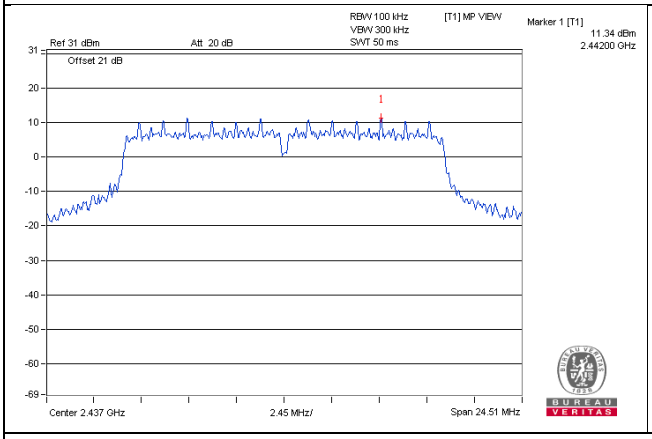
CHAIN 1

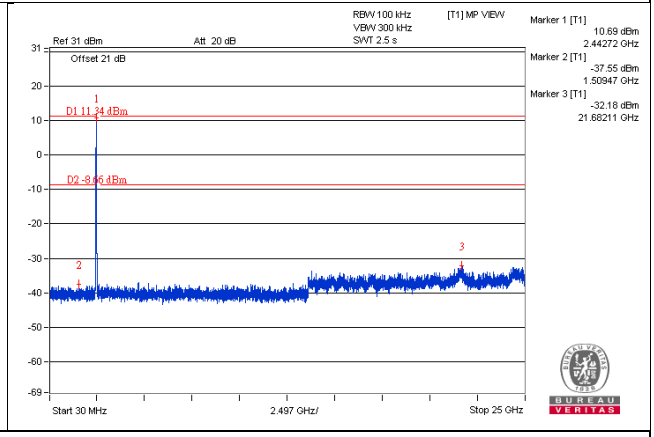
CH 1



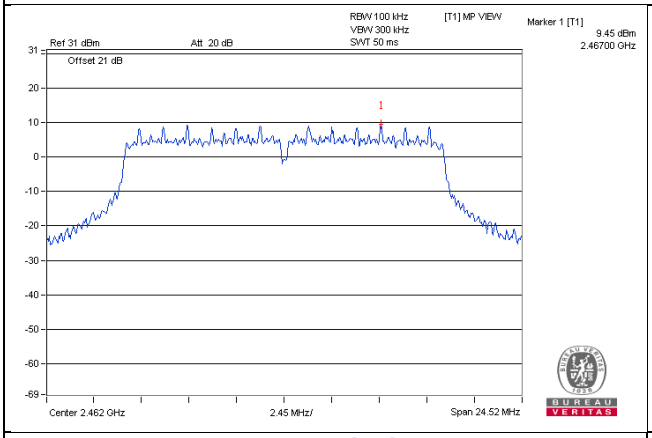


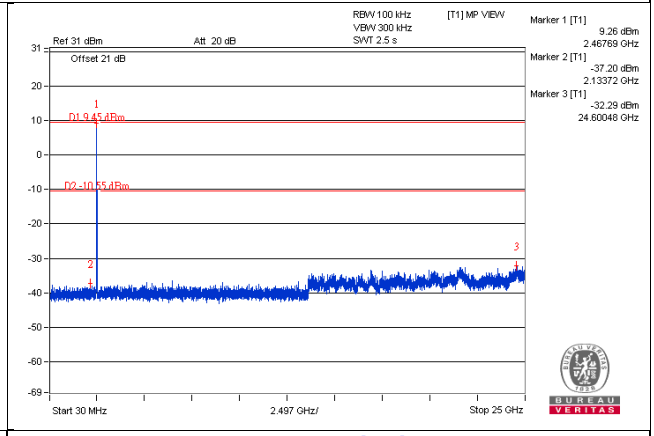
CH 6



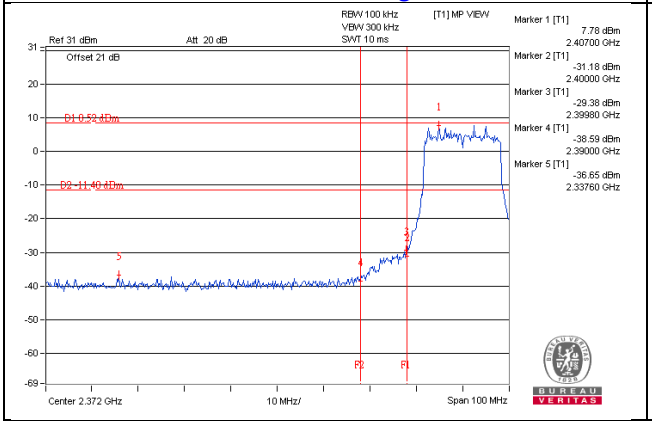


CH 11

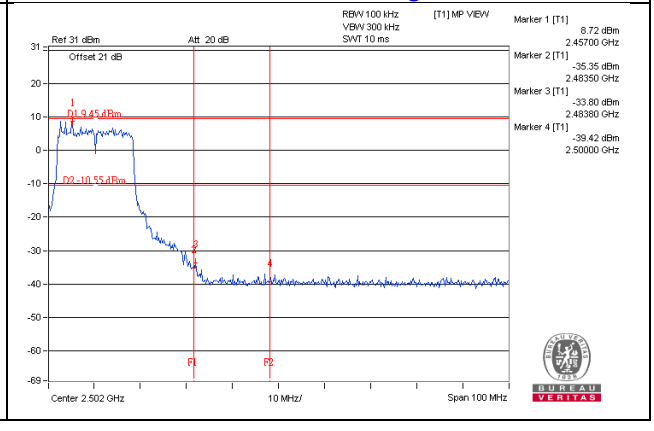




CH 1 Band edge

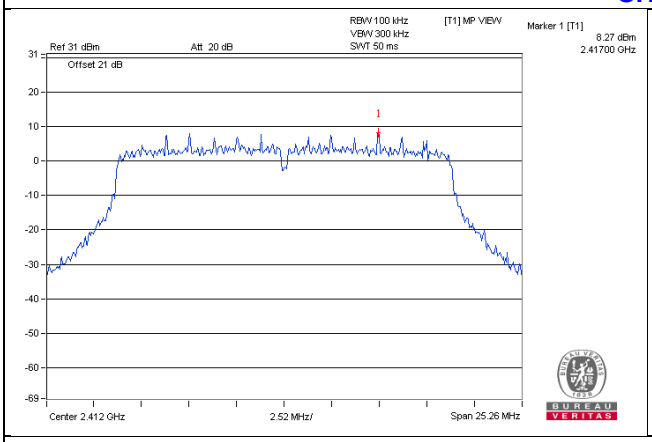


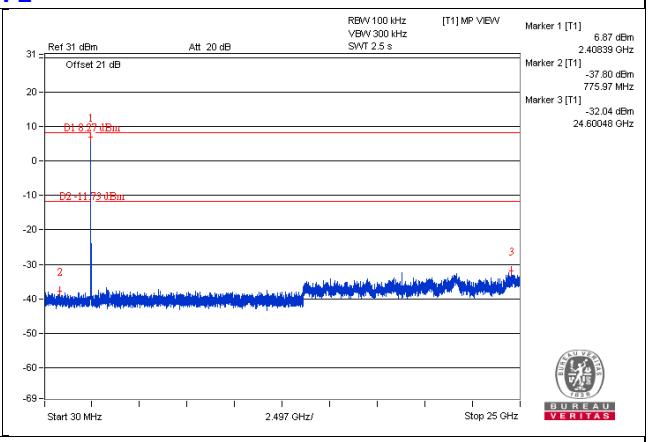
CH 11 Band edge



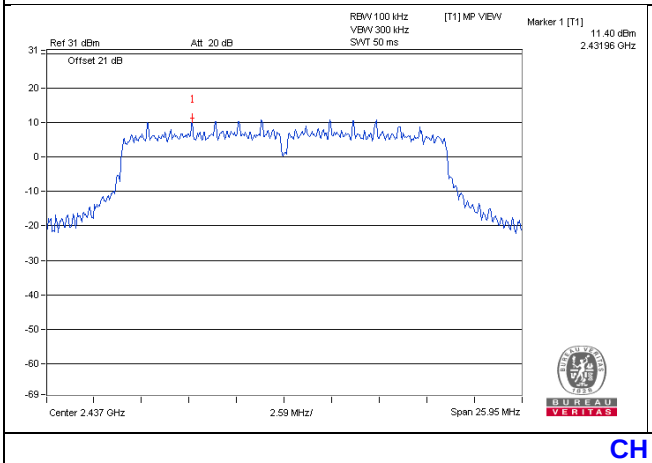
802.11n (HT20) - CHAIN 0

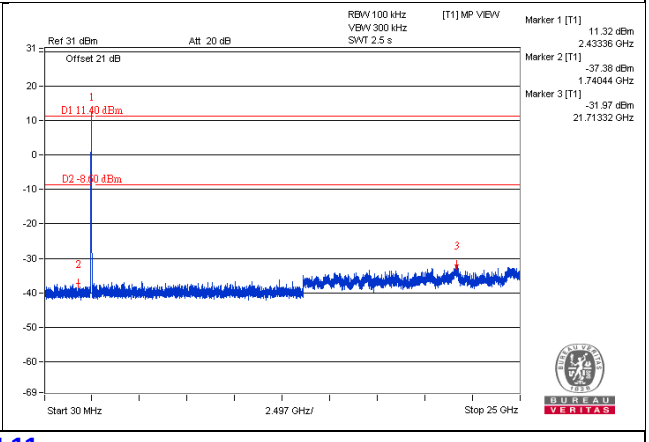
CH 1



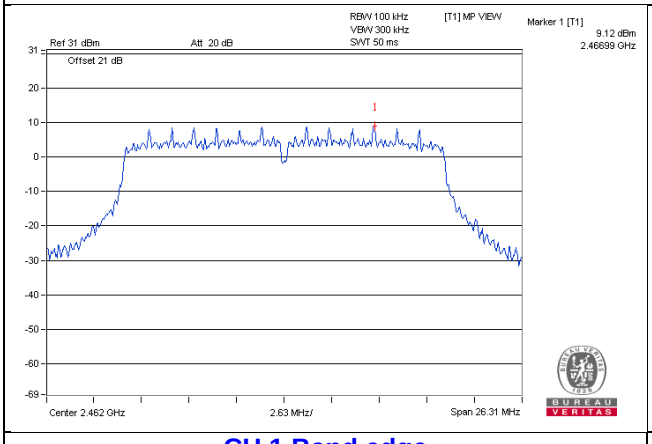


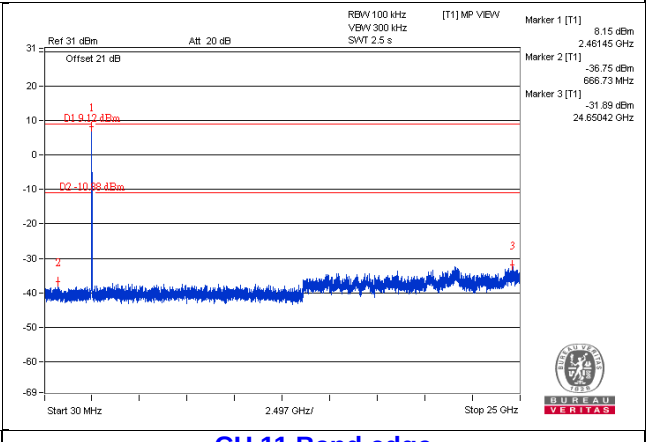
CH 6



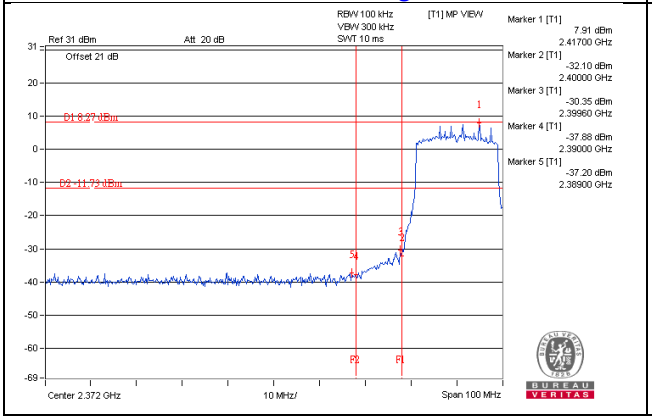


CH 11

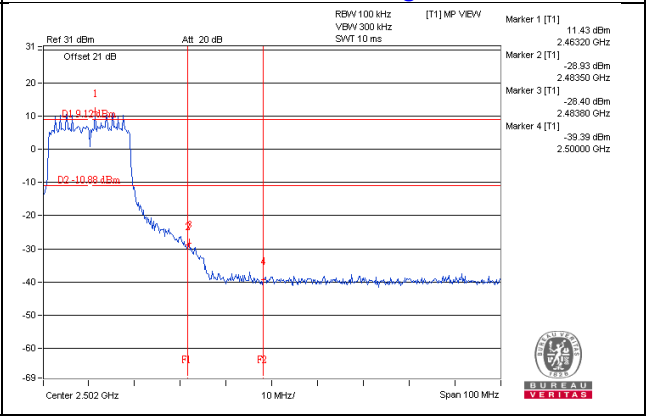




CH 1 Band edge

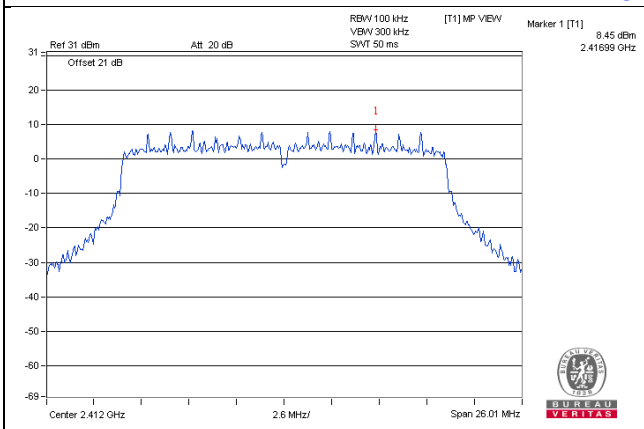


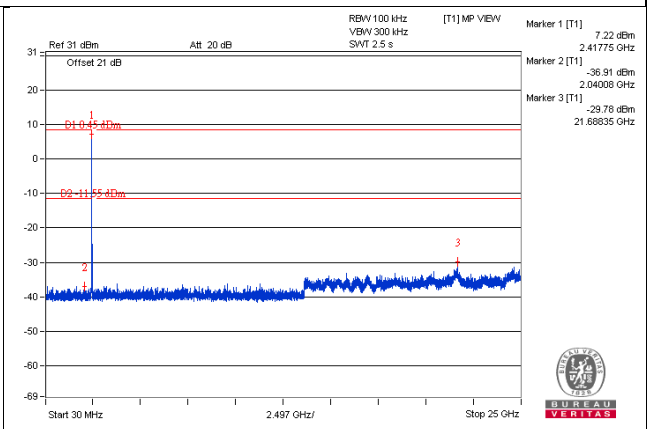
CH 11 Band edge



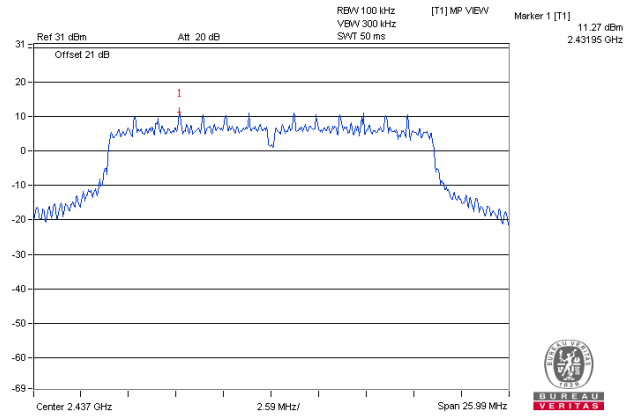
CHAIN 1

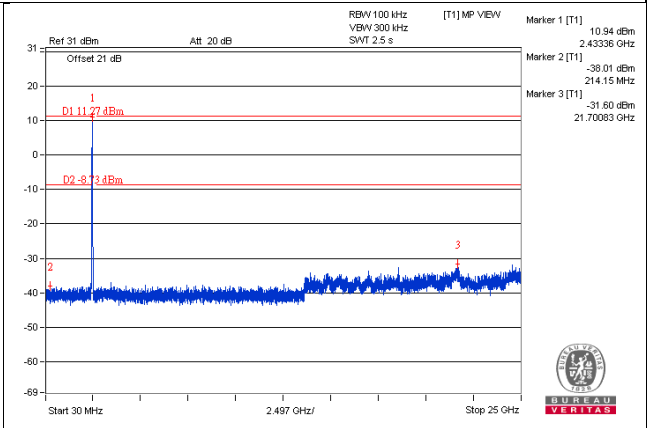
CH 1



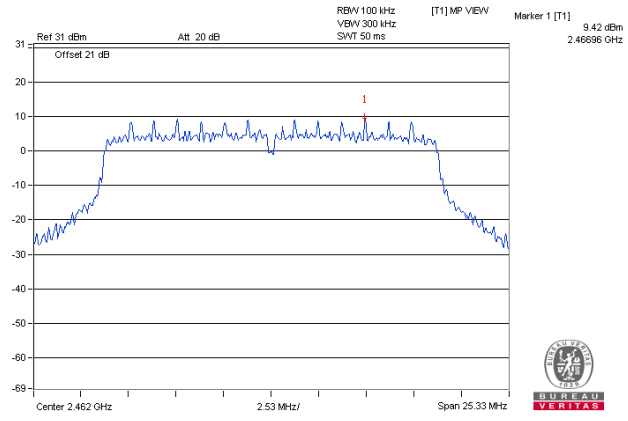


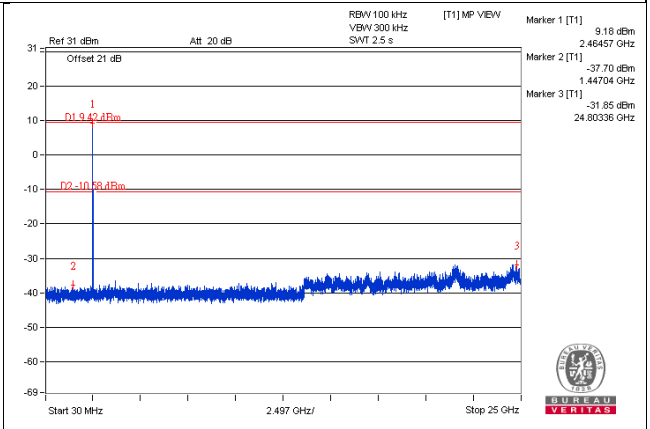
CH 6



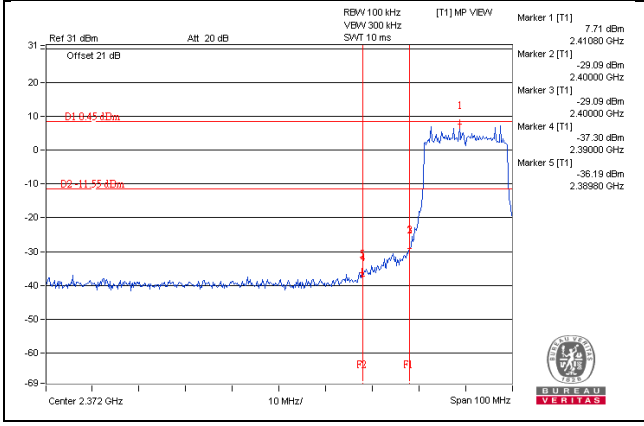


CH 11

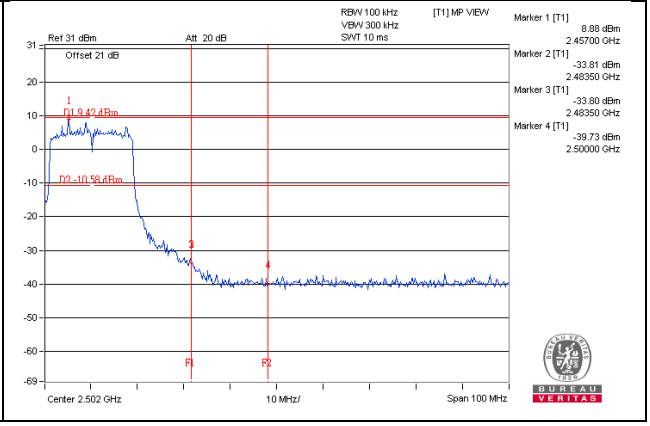




CH 1 Band edge

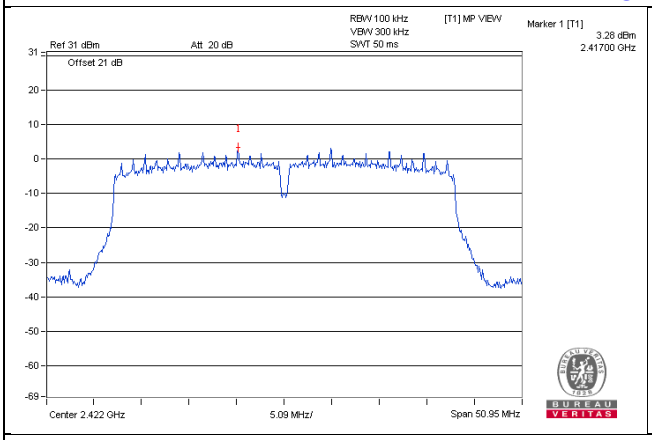


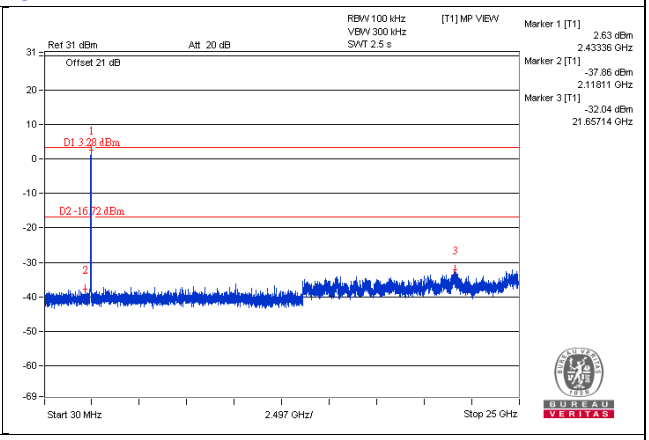
CH 11 Band edge



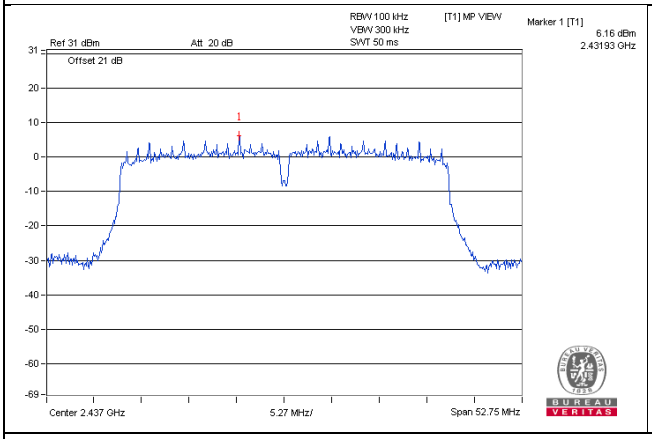
802.11n (HT40) - Chain 0

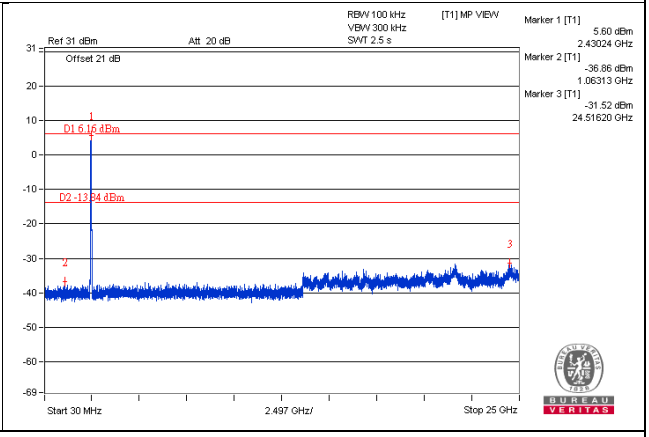
CH 3



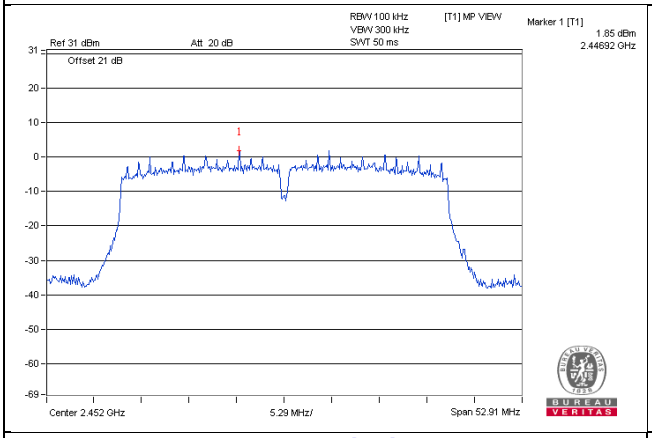


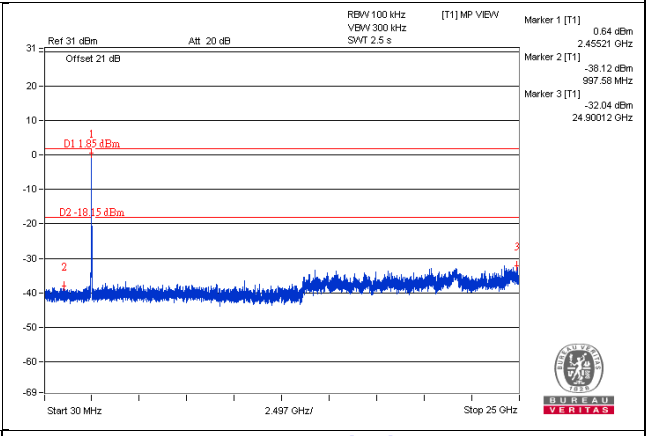
CH 6



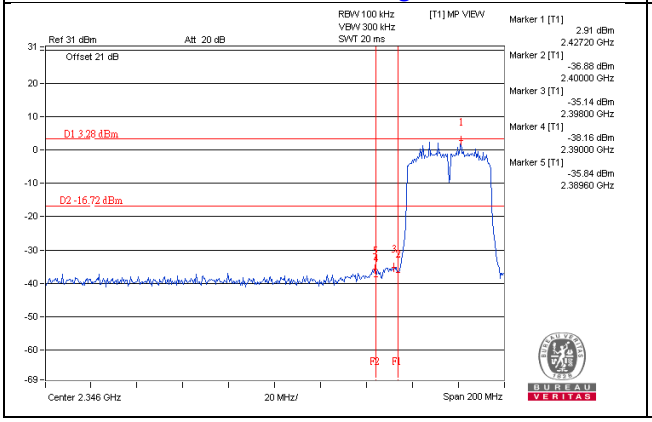


CH 9

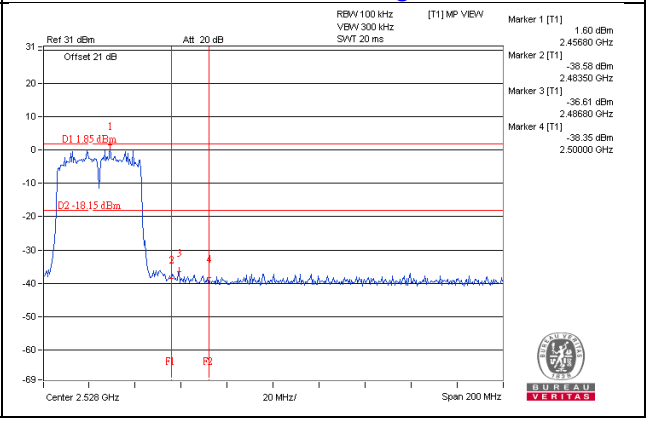




CH 3 Band edge

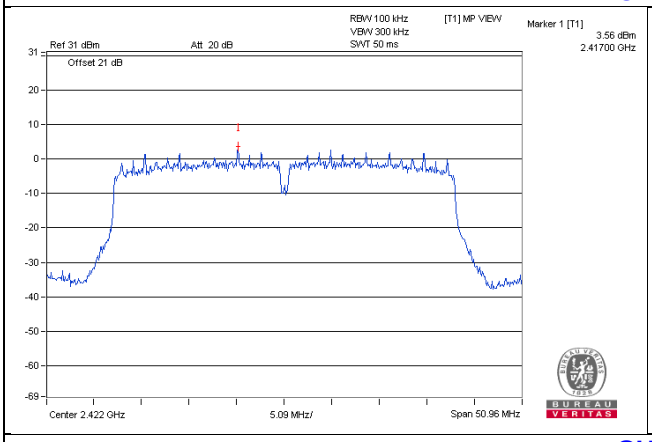


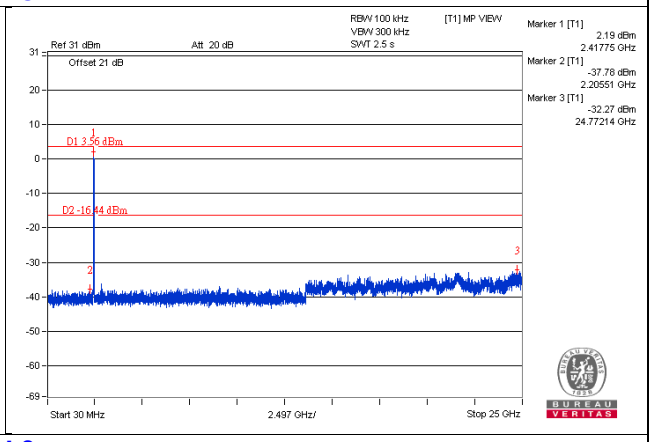
CH 9 Band edge



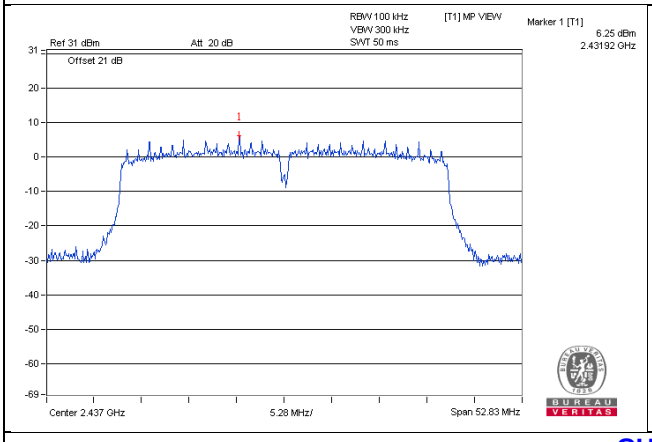
Chain 1

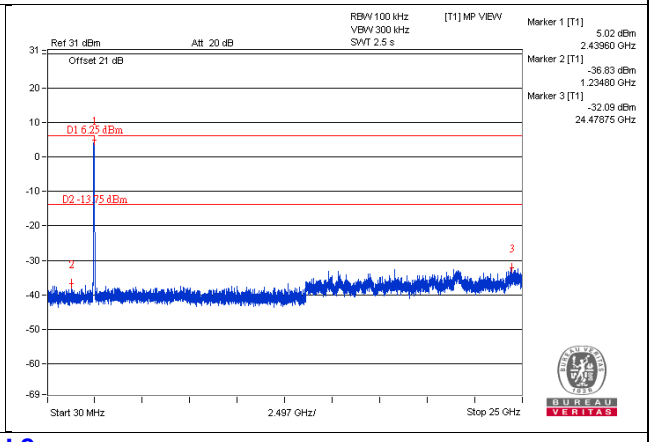
CH 3



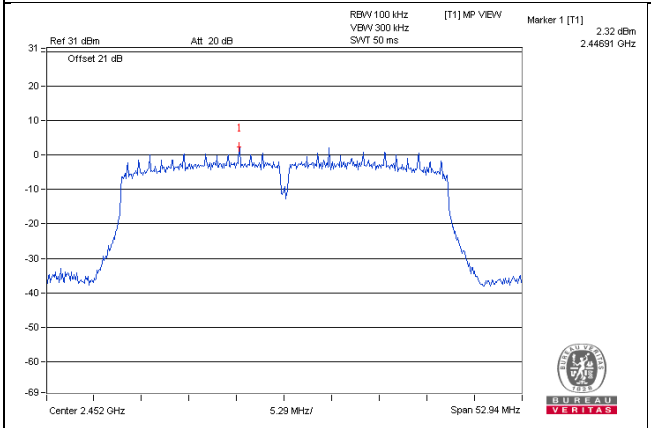


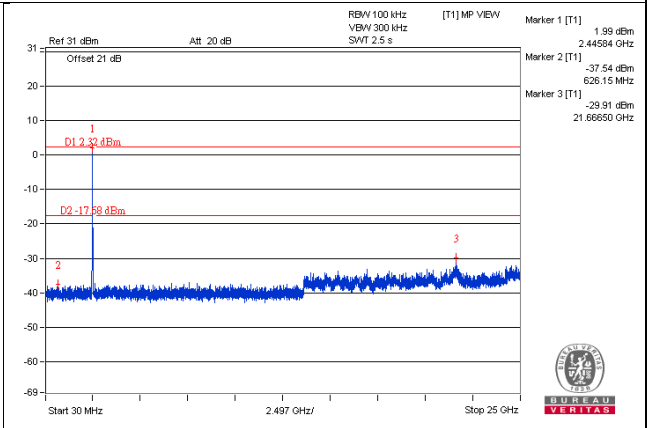
CH 6



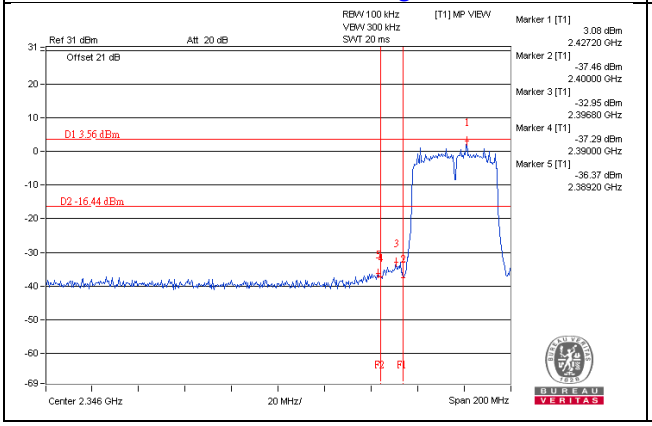


CH 9

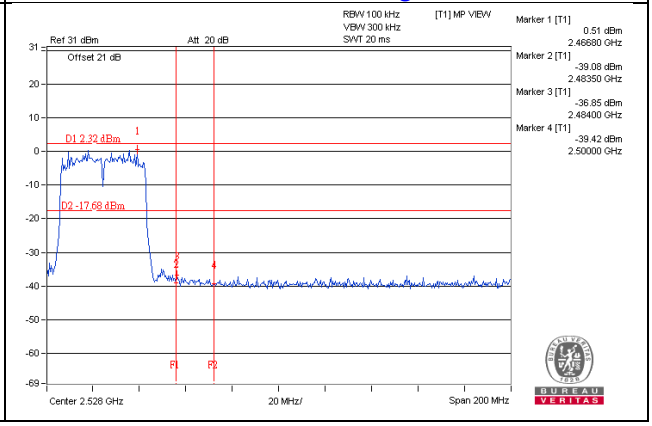




CH 3 Band edge



CH 9 Band edge



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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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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