

FCC Test Report

Report No.: RF170925E04

FCC ID: Q87-CG6350

Test Model: CG6350

Received Date: Sep. 25, 2017

Test Date: Oct. 23 to Nov. 01, 2017

Issued Date: Nov. 21, 2017

Applicant: Linksys LLC

Address: 121 Theory Drive Irvine California 92617 United States

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	9
3.2.1 Test Mode Applicability and Tested Channel Detail	10
3.3 Duty Cycle of Test Signal	12
3.4 Description of Support Units	13
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standards	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedures	18
4.1.4 Deviation from Test Standard	18
4.1.5 Test Setup	19
4.1.6 EUT Operating Conditions	20
4.1.7 Test Results (Mode 3)	21
4.1.8 Test Results (Mode 4)	34
4.2 Conducted Emission Measurement	47
4.2.1 Limits of Conducted Emission Measurement	47
4.2.2 Test Instruments	47
4.2.3 Test Procedures	48
4.2.4 Deviation from Test Standard	48
4.2.5 Test Setup	48
4.2.6 EUT Operating Conditions	48
4.2.7 Test Results (Mode 1)	49
4.2.8 Test Results (Mode 2)	51
4.2.9 Test Results (Mode 3)	53
4.2.10 Test Results (Mode 4)	55
4.3 6dB Bandwidth Measurement	57
4.3.1 Limits of 6dB Bandwidth Measurement	57
4.3.2 Test Setup	57
4.3.3 Test Instruments	57
4.3.4 Test Procedure	57
4.3.5 Deviation from Test Standard	57
4.3.6 EUT Operating Conditions	57
4.3.7 Test Result (Mode 3)	58
4.3.8 Test Result (Mode 4)	60
4.4 Occupied Bandwidth Measurement	62
4.4.1 Test Setup	62
4.4.2 Test Instruments	62
4.4.3 Test Procedure	62
4.4.4 Deviation from Test Standard	62
4.4.5 EUT Operating Conditions	62
4.4.6 Test Results (Mode 3)	63
4.4.7 Test Results (Mode 4)	65
4.5 Conducted Output Power Measurement	67
4.5.1 Limits of Conducted Output Power Measurement	67

4.5.2 Test Setup	67
4.5.3 Test Instruments	67
4.5.4 Test Procedures	67
4.5.5 Deviation from Test Standard	67
4.5.6 EUT Operating Conditions	67
4.5.7 Test Results	68
4.6 Power Spectral Density Measurement	70
4.6.1 Limits of Power Spectral Density Measurement	70
4.6.2 Test Setup	70
4.6.3 Test Instruments	70
4.6.4 Test Procedure	70
4.6.5 Deviation from Test Standard	70
4.6.6 EUT Operating Condition	70
4.6.7 Test Results	71
4.7 Conducted Out of Band Emission Measurement	74
4.7.1 Limits of Conducted Out of Band Emission Measurement	74
4.7.2 Test Setup	74
4.7.3 Test Instruments	74
4.7.4 Test Procedure	74
4.7.5 Deviation from Test Standard	74
4.7.6 EUT Operating Condition	74
4.7.7 Test Results	74
5 Pictures of Test Arrangements	83
Appendix – Information on the Testing Laboratories	84

Release Control Record

Issue No.	Description	Date Issued
RF170925E04	Original release.	Nov. 21, 2017

1 Certificate of Conformity

Product: D3 WiFi Gateway

Brand: Linksys

Test Model: CG6350

Sample Status: ENGINEERING SAMPLE

Applicant: Linksys LLC

Test Date: Oct. 23 to Nov. 01, 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 : Mary Ko , **Date:** Nov. 21, 2017
Mary Ko / Specialist

Approved by : May Chen , **Date:** Nov. 21, 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 -4.89dB at 0.51719MHz.
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 2390.00MHz, 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(U.FL) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.32 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.14 dB
	6GHz ~ 18GHz	5.04 dB
	18GHz ~ 40GHz	5.25 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	D3 WiFi Gateway
Brand	Linksys
Test Model	CG6350
Status of EUT	ENGINEERING SAMPLE
Driver version	1.0.00.005
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 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: 2.412 ~ 2.462GHz 5GHz: 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
Number of Channel	2.4GHz: 802.11b/g, 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: 564.108mW 5.18 ~ 5.24GHz: 939.469mW 5.745 ~ 5.825GHz: 156.806mW
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 EUT has two SKU, which are identical to each other in all aspects except for the following:

SKU	Brand (2.4GHz PA)	Model (2.4GHz PA)	Difference
SKU 1	RichWave	RTC7649	Main source
SKU 2	rfmd	RFFM8209	Second Source

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

Ant Set.	Brand	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type	*Cable Length
1	Airgain	N5X20B5-T-PK1-G1XST85BU	2.8	5.15~5.35	PCB	I-PEX(U.FL)	85
			4.1	5.47~5.725			
			5.0	5.725~5.85			
		N5X20SD-T-PK1-G1XST85BU	3.48	5.15~5.35	PCB	I-PEX(U.FL)	85
			3.48	5.47~5.725			
			3.48	5.725~5.85			
2	Airgain	N2420GS-T-PK1-B1XST210BU	1.6	2.4~2.49	PCB	I-PEX(U.FL)	210
		N2420GS-T-PK1-B1XST245BU	1.6	2.4~2.49	PCB	I-PEX(U.FL)	245

4. The EUT must be supplied with a power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.
1	LINKSYS	ADS0306-W120250	Input: 100-240V, 1.0A, 50/60Hz Output: 12V, 2.5A DC output cable (Unshielded, 1.5 m)
2	LINKSYS	MU30AY120250-A1	Input: 100-240V, 0.8A, 50/60Hz Output: 12V, 2.5A DC output cable (Unshielded, 1.5 m)

Note: From the above adapters, the worse emission was found in Adapter 2. Therefore only the test data of the mode was recorded in this report.

5. 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)	MCS0~8 Nss=1	2TX	2RX
	MCS0~8 Nss=2	2TX	2RX
802.11ac (VHT40)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX
802.11ac (VHT80)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX

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):

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 $\geq$ 1G	RE<1G	PLC	APCM	
1	-	-	√	-	SKU 1 with adapter 1
2	-	-	√	-	SKU 2 with adapter 1
3	√	√	√	√	SKU 1 with adapter 2
4	√	√	√	√	SKU 2 with adapter 2

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: “-” 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.

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.

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.

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.

SKU 1					
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
SKU 2 (Bandwidth only)					
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

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 62%RH	120Vac, 60Hz	Eason Tseng
	23deg. C, 64%RH		Rey Chen
RE<1G	23deg. C, 68%RH	120Vac, 60Hz	Rey Chen
PLC	24deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

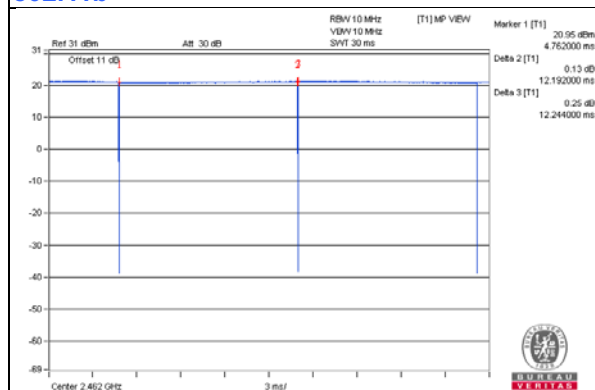
802.11b: Duty cycle = $12.192/12.244 = 0.996$

802.11g: Duty cycle = $2.024/2.075 = 0.975$, Duty factor = $10 * \log(1/0.975) = 0.11$

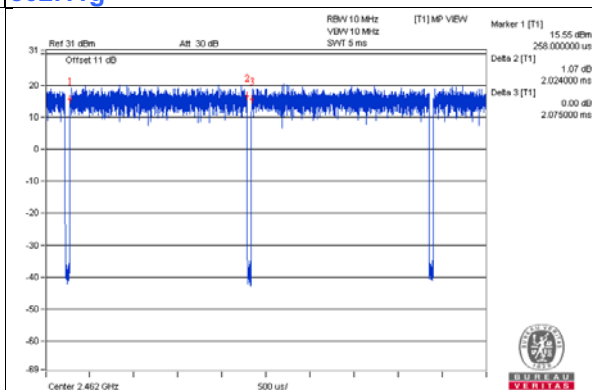
802.11n (HT20): Duty cycle = $1.888/1.956 = 0.965$, Duty factor = $10 * \log(1/0.965) = 0.15$

802.11n (HT40): Duty cycle = $2.406/2.446 = 0.984$

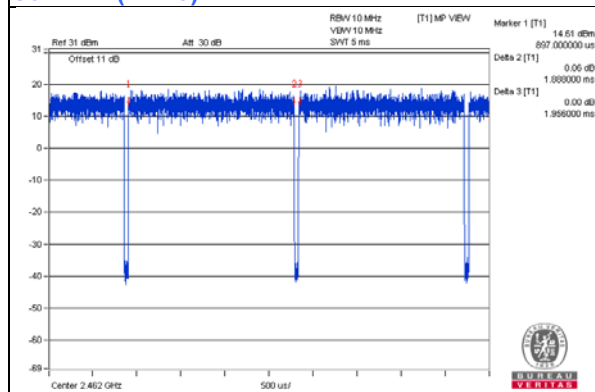
802.11b



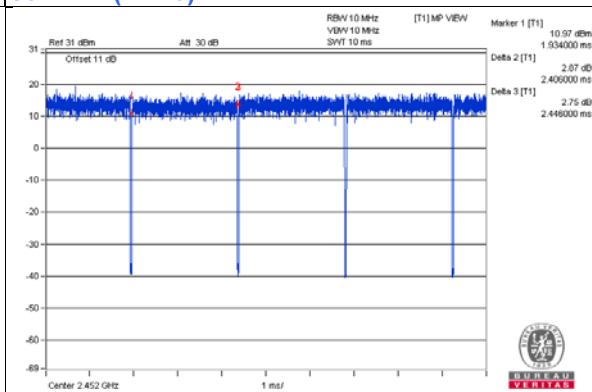
802.11g



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.

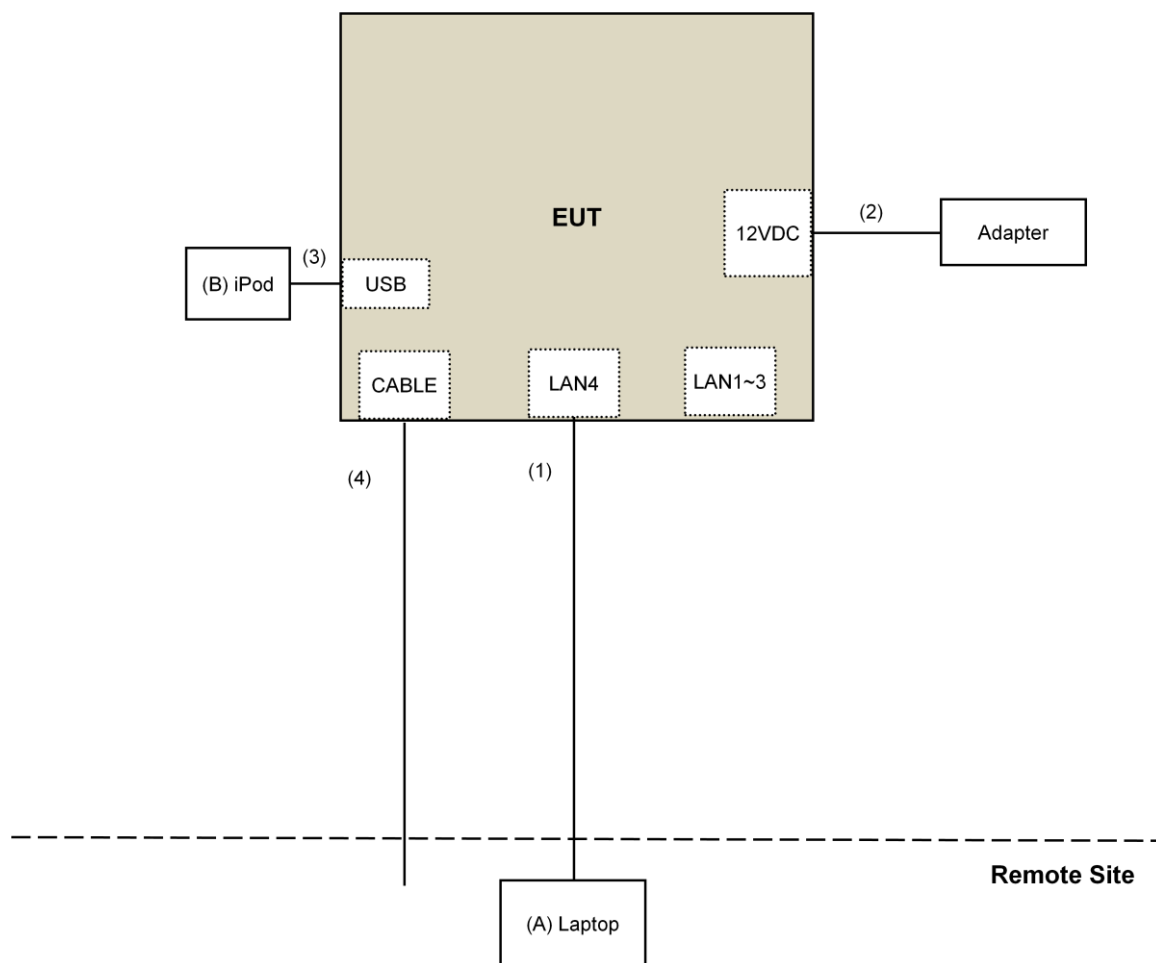
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	482T3R1	FCC DoC	Provided by Lab
B.	iPod	Apple	MD778TA/A	CC4JMFL0F4T1	NA	Provided by Lab

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.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	DC Cable	1	1.5	No	0	Supplied by client
3.	USB Cable	1	0.1	Yes	0	Provided by Lab
4.	Coaxial Cable	1	10	No	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 v04
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 Agilent	N9038A	MY50010156	July 12, 2017	July 11, 2018
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-05	May 06, 2017	May 05, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Dec. 29, 2016	Dec. 28, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 28, 2016	Dec. 27, 2017
Pre-Amplifier EMCI	EMC12630SE	980384	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160922 150317 150322	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Spectrum Analyzer Keysight	N9030A	MY54490679	July 25, 2017	July 24, 2018
Pre-Amplifier EMCI	EMC184045SE	980386	Feb. 02, 2017	Feb. 01, 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	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Spectrum Analyzer R&S	FSV40	100964	July 1, 2017	June 30, 2018
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018

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. 3.
4. The FCC Designation Number is TW2022.
5. Loop antenna was used for all emissions below 30 MHz.
6. The CANADA Site Registration No. is 20331-1
7. Tested Date: Oct. 31 to Nov. 01, 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 detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

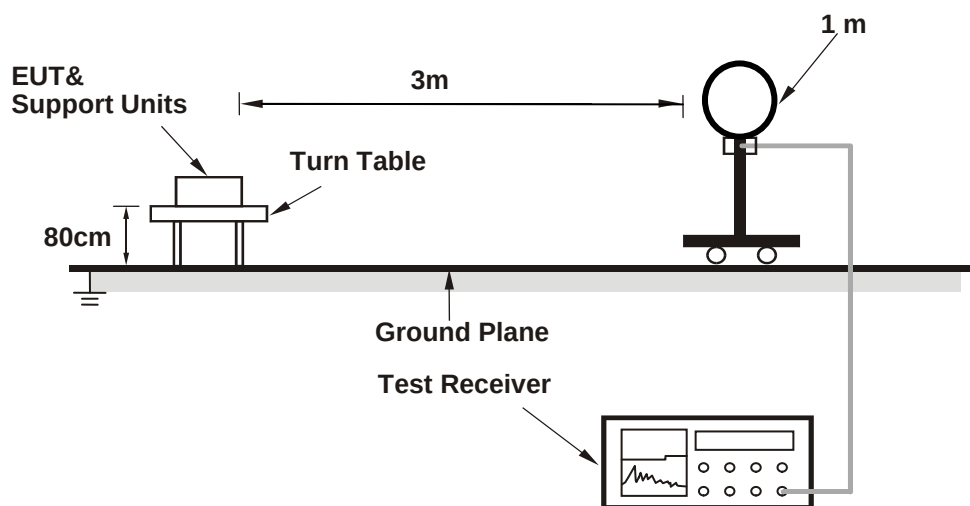
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) 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

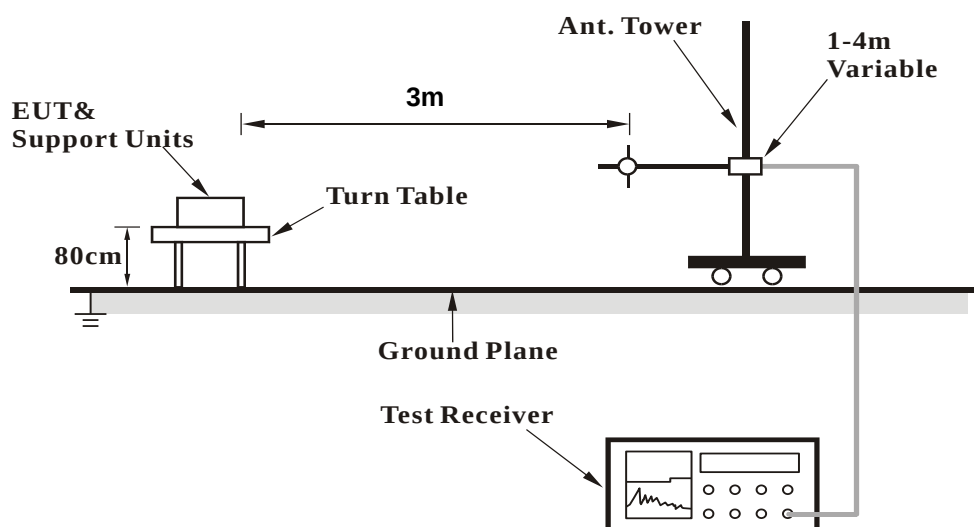
No deviation.

4.1.5 Test Setup

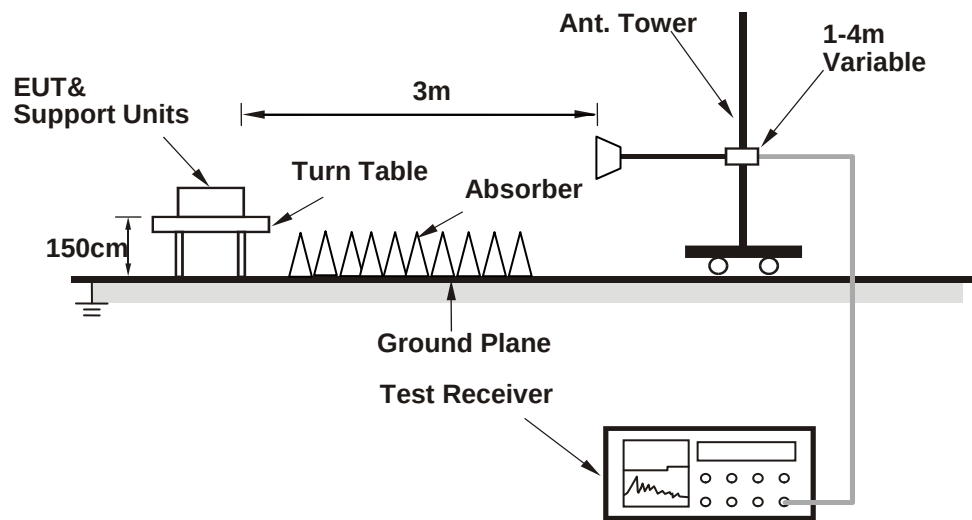
For Radiated emission below 30MHz



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

- Connected the EUT with the Laptop which is placed on remote site.
- Controlling software (Artgui.exe) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 3)

Above 1GHz DatapÉ

802.11b

CHANNEL	TX Channel 1	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	60.3 PK	74.0	-13.7	2.58 H	292	61.9	-1.6
2	2390.00	53.9 AV	54.0	-0.1	2.58 H	292	55.5	-1.6
3	*2412.00	110.2 PK			2.58 H	292	111.7	-1.5
4	*2412.00	108.1 AV			2.58 H	292	109.6	-1.5
5	4824.00	43.3 PK	74.0	-30.7	1.54 H	220	40.3	3.0
6	4824.00	40.6 AV	54.0	-13.4	1.54 H	220	37.6	3.0
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	2390.00	59.1 PK	74.0	-14.9	1.74 V	238	60.7	-1.6
2	2390.00	53.1 AV	54.0	-0.9	1.74 V	238	54.7	-1.6
3	*2412.00	107.9 PK			1.74 V	238	109.4	-1.5
4	*2412.00	105.5 AV			1.74 V	238	107.0	-1.5
5	4824.00	47.2 PK	74.0	-26.8	2.71 V	122	44.2	3.0
6	4824.00	45.3 AV	54.0	-8.7	2.71 V	122	42.3	3.0

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
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	*2437.00	111.9 PK			2.53 H	292	113.4	-1.5
2	*2437.00	109.5 AV			2.53 H	292	111.0	-1.5
3	4874.00	51.2 PK	74.0	-22.8	1.58 H	213	48.0	3.2
4	4874.00	48.7 AV	54.0	-5.3	1.58 H	213	45.5	3.2
5	7311.00	45.8 PK	74.0	-28.2	2.11 H	137	36.9	8.9
6	7311.00	35.3 AV	54.0	-18.7	2.11 H	137	26.4	8.9
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	*2437.00	109.4 PK			1.73 V	260	110.9	-1.5
2	*2437.00	106.9 AV			1.73 V	260	108.4	-1.5
3	4874.00	55.2 PK	74.0	-18.8	2.79 V	113	52.0	3.2
4	4874.00	53.8 AV	54.0	-0.2	2.79 V	113	50.6	3.2
5	7311.00	47.1 PK	74.0	-26.9	2.85 V	312	38.2	8.9
6	7311.00	35.6 AV	54.0	-18.4	2.85 V	312	26.7	8.9

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 11	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	*2462.00	111.7 PK			2.77 H	293	113.1	-1.4
2	*2462.00	109.6 AV			2.77 H	293	111.0	-1.4
3	2483.50	60.7 PK	74.0	-13.3	2.77 H	293	62.1	-1.4
4	2483.50	53.7 AV	54.0	-0.3	2.77 H	293	55.1	-1.4
5	4924.00	44.1 PK	74.0	-29.9	1.60 H	224	40.8	3.3
6	4924.00	41.5 AV	54.0	-12.5	1.60 H	224	38.2	3.3
7	7386.00	45.2 PK	74.0	-28.8	2.08 H	136	36.1	9.1
8	7386.00	34.9 AV	54.0	-19.1	2.08 H	136	25.8	9.1
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	*2462.00	109.3 PK			1.75 V	251	110.7	-1.4
2	*2462.00	107.0 AV			1.75 V	251	108.4	-1.4
3	2483.50	59.4 PK	74.0	-14.6	1.75 V	251	60.8	-1.4
4	2483.50	53.0 AV	54.0	-1.0	1.75 V	251	54.4	-1.4
5	4924.00	48.4 PK	74.0	-25.6	2.70 V	115	45.1	3.3
6	4924.00	46.4 AV	54.0	-7.6	2.70 V	115	43.1	3.3
7	7386.00	47.3 PK	74.0	-26.7	2.86 V	301	38.2	9.1
8	7386.00	36.1 AV	54.0	-17.9	2.86 V	301	27.0	9.1

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.

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.4 PK	74.0	-1.6	2.43 H	290	74.0	-1.6
2	2390.00	53.9 AV	54.0	-0.1	2.43 H	290	55.5	-1.6
3	*2412.00	108.9 PK			2.43 H	290	110.4	-1.5
4	*2412.00	99.9 AV			2.43 H	290	101.4	-1.5
5	4824.00	48.3 PK	74.0	-25.7	1.58 H	218	45.3	3.0
6	4824.00	35.5 AV	54.0	-18.5	1.58 H	218	32.5	3.0
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	2390.00	71.1 PK	74.0	-2.9	1.72 V	239	72.7	-1.6
2	2390.00	53.0 AV	54.0	-1.0	1.72 V	239	54.6	-1.6
3	*2412.00	106.5 PK			1.72 V	239	108.0	-1.5
4	*2412.00	97.4 AV			1.72 V	239	98.9	-1.5
5	4824.00	52.2 PK	74.0	-21.8	2.69 V	109	49.2	3.0
6	4824.00	39.6 AV	54.0	-14.4	2.69 V	109	36.6	3.0

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
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	66.2 PK	74.0	-7.8	3.10 H	298	67.8	-1.6
2	2390.00	49.2 AV	54.0	-4.8	3.10 H	298	50.8	-1.6
3	*2437.00	117.4 PK			3.10 H	298	118.9	-1.5
4	*2437.00	107.1 AV			3.10 H	298	108.6	-1.5
5	2483.50	71.0 PK	74.0	-3.0	3.10 H	298	72.4	-1.4
6	2483.50	53.1 AV	54.0	-0.9	3.10 H	298	54.5	-1.4
7	4874.00	52.6 PK	74.0	-21.4	1.55 H	226	49.4	3.2
8	4874.00	40.1 AV	54.0	-13.9	1.55 H	226	36.9	3.2
9	7311.00	45.8 PK	74.0	-28.2	2.10 H	132	36.9	8.9
10	7311.00	34.5 AV	54.0	-19.5	2.10 H	132	25.6	8.9

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	64.8 PK	74.0	-9.2	1.75 V	238	66.4	-1.6
2	2390.00	47.9 AV	54.0	-6.1	1.75 V	238	49.5	-1.6
3	*2437.00	114.8 PK			1.75 V	238	116.3	-1.5
4	*2437.00	104.5 AV			1.75 V	238	106.0	-1.5
5	2483.50	69.8 PK	74.0	-4.2	1.75 V	238	71.2	-1.4
6	2483.50	52.2 AV	54.0	-1.8	1.75 V	238	53.6	-1.4
7	4874.00	57.1 PK	74.0	-16.9	2.65 V	112	53.9	3.2
8	4874.00	44.5 AV	54.0	-9.5	2.65 V	112	41.3	3.2
9	7311.00	46.2 PK	74.0	-27.8	1.65 V	247	37.3	8.9
10	7311.00	34.9 AV	54.0	-19.1	1.65 V	247	26.0	8.9

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 11	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	*2462.00	109.2 PK			3.07 H	291	110.6	-1.4
2	*2462.00	100.6 AV			3.07 H	291	102.0	-1.4
3	2483.50	73.8 PK	74.0	-0.2	3.07 H	291	75.2	-1.4
4	2483.50	49.8 AV	54.0	-4.2	3.07 H	291	51.2	-1.4
5	4924.00	48.7 PK	74.0	-25.3	1.62 H	205	45.4	3.3
6	4924.00	35.9 AV	54.0	-18.1	1.62 H	205	32.6	3.3
7	7386.00	45.9 PK	74.0	-28.1	2.11 H	117	36.8	9.1
8	7386.00	34.6 AV	54.0	-19.4	2.11 H	117	25.5	9.1
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	*2462.00	106.7 PK			1.75 V	251	108.1	-1.4
2	*2462.00	98.1 AV			1.75 V	251	99.5	-1.4
3	2483.50	72.5 PK	74.0	-1.5	1.75 V	251	73.9	-1.4
4	2483.50	48.5 AV	54.0	-5.5	1.75 V	251	49.9	-1.4
5	4924.00	52.8 PK	74.0	-21.2	2.64 V	124	49.5	3.3
6	4924.00	39.9 AV	54.0	-14.1	2.64 V	124	36.6	3.3
7	7386.00	46.1 PK	74.0	-27.9	1.65 V	234	37.0	9.1
8	7386.00	34.8 AV	54.0	-19.2	1.65 V	234	25.7	9.1

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.

802.11n (HT20)

CHANNEL	TX Channel 1	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	73.7 PK	74.0	-0.3	2.94 H	299	75.3	-1.6
2	2390.00	53.9 AV	54.0	-0.1	2.94 H	299	55.5	-1.6
3	*2412.00	109.2 PK			2.94 H	299	110.7	-1.5
4	*2412.00	99.5 AV			2.94 H	299	101.0	-1.5
5	4824.00	48.2 PK	74.0	-25.8	1.57 H	210	45.2	3.0
6	4824.00	35.4 AV	54.0	-18.6	1.57 H	210	32.4	3.0
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	2390.00	72.5 PK	74.0	-1.5	1.76 V	239	74.1	-1.6
2	2390.00	53.1 AV	54.0	-0.9	1.76 V	239	54.7	-1.6
3	*2412.00	107.2 PK			1.76 V	239	108.7	-1.5
4	*2412.00	96.8 AV			1.76 V	239	98.3	-1.5
5	4824.00	52.2 PK	74.0	-21.8	2.65 V	114	49.2	3.0
6	4824.00	39.7 AV	54.0	-14.3	2.65 V	114	36.7	3.0

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
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	68.2 PK	74.0	-5.8	3.11 H	296	69.8	-1.6
2	2390.00	51.6 AV	54.0	-2.4	3.11 H	296	53.2	-1.6
3	*2437.00	116.1 PK			3.11 H	296	117.6	-1.5
4	*2437.00	106.8 AV			3.11 H	296	108.3	-1.5
5	2483.50	72.4 PK	74.0	-1.6	3.11 H	296	73.8	-1.4
6	2483.50	53.9 AV	54.0	-0.1	3.11 H	296	55.3	-1.4
7	4874.00	52.0 PK	74.0	-22.0	1.59 H	228	48.8	3.2
8	4874.00	39.7 AV	54.0	-14.3	1.59 H	228	36.5	3.2
9	7311.00	46.1 PK	74.0	-27.9	2.08 H	129	37.2	8.9
10	7311.00	34.7 AV	54.0	-19.3	2.08 H	129	25.8	8.9

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	67.9 PK	74.0	-6.1	1.63 V	228	69.5	-1.6
2	2390.00	51.4 AV	54.0	-2.6	1.63 V	228	53.0	-1.6
3	*2437.00	115.2 PK			1.63 V	228	116.7	-1.5
4	*2437.00	104.1 AV			1.63 V	228	105.6	-1.5
5	2483.50	72.1 PK	74.0	-1.9	1.63 V	228	73.5	-1.4
6	2483.50	53.1 AV	54.0	-0.9	1.63 V	228	54.5	-1.4
7	4874.00	56.6 PK	74.0	-17.4	2.65 V	108	53.4	3.2
8	4874.00	44.0 AV	54.0	-10.0	2.65 V	108	40.8	3.2
9	7311.00	46.5 PK	74.0	-27.5	1.67 V	261	37.6	8.9
10	7311.00	35.0 AV	54.0	-19.0	1.67 V	261	26.1	8.9

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 11	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	*2462.00	109.9 PK			3.04 H	293	111.3	-1.4
2	*2462.00	100.4 AV			3.04 H	293	101.8	-1.4
3	2483.50	73.9 PK	74.0	-0.1	3.04 H	293	75.3	-1.4
4	2483.50	51.5 AV	54.0	-2.5	3.04 H	293	52.9	-1.4
5	4924.00	49.2 PK	74.0	-24.8	1.56 H	190	45.9	3.3
6	4924.00	36.1 AV	54.0	-17.9	1.56 H	190	32.8	3.3
7	7386.00	45.6 PK	74.0	-28.4	2.07 H	116	36.5	9.1
8	7386.00	34.5 AV	54.0	-19.5	2.07 H	116	25.4	9.1
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	*2462.00	107.5 PK			1.78 V	244	108.9	-1.4
2	*2462.00	97.8 AV			1.78 V	244	99.2	-1.4
3	2483.50	72.5 PK	74.0	-1.5	1.78 V	244	73.9	-1.4
4	2483.50	50.4 AV	54.0	-3.6	1.78 V	244	51.8	-1.4
5	4924.00	53.3 PK	74.0	-20.7	2.65 V	109	50.0	3.3
6	4924.00	40.1 AV	54.0	-13.9	2.65 V	109	36.8	3.3
7	7386.00	46.2 PK	74.0	-27.8	1.61 V	238	37.1	9.1
8	7386.00	34.6 AV	54.0	-19.4	1.61 V	238	25.5	9.1

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.

802.11n (HT40)

CHANNEL	TX Channel 3	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	71.4 PK	74.0	-2.6	2.87 H	290	73.0	-1.6
2	2390.00	53.9 AV	54.0	-0.1	2.87 H	290	55.5	-1.6
3	*2422.00	104.2 PK			2.87 H	290	105.8	-1.6
4	*2422.00	94.7 AV			2.87 H	290	96.3	-1.6
5	4844.00	44.3 PK	74.0	-29.7	1.64 H	239	41.2	3.1
6	4844.00	33.5 AV	54.0	-20.5	1.64 H	239	30.4	3.1
7	7266.00	45.6 PK	74.0	-28.4	2.11 H	138	36.7	8.9
8	7266.00	34.4 AV	54.0	-19.6	2.11 H	138	25.5	8.9
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	70.4 PK	74.0	-3.6	1.83 V	233	72.0	-1.6
2	2390.00	52.8 AV	54.0	-1.2	1.83 V	233	54.4	-1.6
3	*2422.00	101.8 PK			1.83 V	233	103.4	-1.6
4	*2422.00	92.1 AV			1.83 V	233	93.7	-1.6
5	4844.00	45.5 PK	74.0	-28.5	2.65 V	122	42.4	3.1
6	4844.00	34.9 AV	54.0	-19.1	2.65 V	122	31.8	3.1
7	7266.00	47.2 PK	74.0	-26.8	1.69 V	272	38.3	8.9
8	7266.00	35.5 AV	54.0	-18.5	1.69 V	272	26.6	8.9

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	65.5 PK	74.0	-8.5	3.06 H	295	67.1	-1.6
2	2390.00	48.1 AV	54.0	-5.9	3.06 H	295	49.7	-1.6
3	*2437.00	108.2 PK			3.06 H	295	109.7	-1.5
4	*2437.00	98.4 AV			3.06 H	295	99.9	-1.5
5	2483.50	73.9 PK	74.0	-0.1	3.06 H	295	75.3	-1.4
6	2483.50	53.6 AV	54.0	-0.4	3.06 H	295	55.0	-1.4
7	4874.00	45.3 PK	74.0	-28.7	1.68 H	224	42.1	3.2
8	4874.00	34.5 AV	54.0	-19.5	1.68 H	224	31.3	3.2
9	7311.00	45.8 PK	74.0	-28.2	2.14 H	139	36.9	8.9
10	7311.00	34.6 AV	54.0	-19.4	2.14 H	139	25.7	8.9

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	64.4 PK	74.0	-9.6	1.85 V	244	66.0	-1.6
2	2390.00	46.9 AV	54.0	-7.1	1.85 V	244	48.5	-1.6
3	*2437.00	105.8 PK			1.85 V	244	107.3	-1.5
4	*2437.00	95.9 AV			1.85 V	244	97.4	-1.5
5	2483.50	72.7 PK	74.0	-1.3	1.85 V	244	74.1	-1.4
6	2483.50	52.5 AV	54.0	-1.5	1.85 V	244	53.9	-1.4
7	4874.00	49.5 PK	74.0	-24.5	2.70 V	115	46.3	3.2
8	4874.00	38.3 AV	54.0	-15.7	2.70 V	115	35.1	3.2
9	7311.00	47.2 PK	74.0	-26.8	1.62 V	246	38.3	8.9
10	7311.00	35.5 AV	54.0	-18.5	1.62 V	246	26.6	8.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	105.6 PK			3.77 H	296	107.1	-1.5
2	*2452.00	95.5 AV			3.77 H	296	97.0	-1.5
3	2483.50	73.9 PK	74.0	-0.1	3.77 H	296	75.3	-1.4
4	2483.50	53.7 AV	54.0	-0.3	3.77 H	296	55.1	-1.4
5	4904.00	44.5 PK	74.0	-29.5	1.68 H	236	41.3	3.2
6	4904.00	34.0 AV	54.0	-20.0	1.68 H	236	30.8	3.2
7	7356.00	46.3 PK	74.0	-27.7	2.03 H	122	37.2	9.1
8	7356.00	35.0 AV	54.0	-19.0	2.03 H	122	25.9	9.1
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	*2452.00	103.1 PK			1.85 V	218	104.6	-1.5
2	*2452.00	93.0 AV			1.85 V	218	94.5	-1.5
3	2483.50	72.6 PK	74.0	-1.4	1.85 V	218	74.0	-1.4
4	2483.50	52.5 AV	54.0	-1.5	1.85 V	218	53.9	-1.4
5	4904.00	44.9 PK	74.0	-29.1	2.66 V	122	41.7	3.2
6	4904.00	34.5 AV	54.0	-19.5	2.66 V	122	31.3	3.2
7	7356.00	46.8 PK	74.0	-27.2	1.69 V	275	37.7	9.1
8	7356.00	35.4 AV	54.0	-18.6	1.69 V	275	26.3	9.1

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.

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	44.92	27.2 QP	40.0	-12.8	1.50 H	341	35.4	-8.2
2	125.10	32.4 QP	43.5	-11.1	1.50 H	177	42.1	-9.7
3	337.15	34.6 QP	46.0	-11.4	2.50 H	178	41.1	-6.5
4	375.33	34.5 QP	46.0	-11.5	1.50 H	50	40.4	-5.9
5	625.10	34.3 QP	46.0	-11.7	2.50 H	187	34.9	-0.6
6	875.20	36.2 QP	46.0	-9.8	2.50 H	290	33.6	2.6
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	62.30	34.4 QP	40.0	-5.6	1.50 V	327	43.7	-9.3
2	125.20	33.7 QP	43.5	-9.8	2.50 V	187	43.4	-9.7
3	336.12	31.2 QP	46.0	-14.8	2.00 V	111	37.7	-6.5
4	375.50	30.3 QP	46.0	-15.7	1.50 V	203	36.2	-5.9
5	625.42	33.8 QP	46.0	-12.2	2.00 V	225	34.4	-0.6
6	944.42	32.0 QP	46.0	-14.0	1.00 V	188	28.2	3.8

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. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

4.1.8 Test Results (Mode 4)

Above 1GHz DatapÉ

802.11b

CHANNEL	TX Channel 1	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	2386.00	57.3 PK	74.0	-16.7	2.27 H	282	58.9	-1.6
2	2386.00	52.3 AV	54.0	-1.7	2.27 H	282	53.9	-1.6
3	*2412.00	108.0 PK			2.27 H	282	109.5	-1.5
4	*2412.00	105.8 AV			2.27 H	282	107.3	-1.5
5	4824.00	52.6 PK	74.0	-21.4	1.87 H	128	49.6	3.0
6	4824.00	51.9 AV	54.0	-2.1	1.87 H	128	48.9	3.0
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	2386.00	53.0 PK	74.0	-21.0	1.64 V	196	54.6	-1.6
2	2386.00	42.1 AV	54.0	-11.9	1.64 V	196	43.7	-1.6
3	*2412.00	106.7 PK			1.64 V	196	108.2	-1.5
4	*2412.00	105.4 AV			1.64 V	196	106.9	-1.5
5	4824.00	46.7 PK	74.0	-27.3	1.50 V	51	43.7	3.0
6	4824.00	44.7 AV	54.0	-9.3	1.50 V	51	41.7	3.0

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
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	2353.00	53.5 PK	74.0	-20.5	2.05 H	288	55.2	-1.7
2	2353.00	42.3 AV	54.0	-11.7	2.05 H	288	44.0	-1.7
3	*2437.00	108.3 PK			2.05 H	288	109.8	-1.5
4	*2437.00	106.1 AV			2.05 H	288	107.6	-1.5
5	2483.50	54.9 PK	74.0	-19.1	2.05 H	288	56.3	-1.4
6	2483.50	41.6 AV	54.0	-12.4	2.05 H	288	43.0	-1.4
7	4874.00	52.9 PK	74.0	-21.1	1.49 H	139	49.7	3.2
8	4874.00	51.9 AV	54.0	-2.1	1.49 H	139	48.7	3.2
9	7311.00	47.5 PK	74.0	-26.5	2.20 H	124	38.6	8.9
10	7311.00	42.2 AV	54.0	-11.8	2.20 H	124	33.3	8.9

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	2353.00	53.2 PK	74.0	-20.8	1.56 V	201	54.9	-1.7
2	2353.00	42.1 AV	54.0	-11.9	1.56 V	201	43.8	-1.7
3	*2437.00	107.7 PK			1.56 V	201	109.2	-1.5
4	*2437.00	105.0 AV			1.56 V	201	106.5	-1.5
5	2483.50	55.2 PK	74.0	-18.8	1.56 V	201	56.6	-1.4
6	2483.50	41.9 AV	54.0	-12.1	1.56 V	201	43.3	-1.4
7	4874.00	46.8 PK	74.0	-27.2	2.76 V	112	43.6	3.2
8	4874.00	44.9 AV	54.0	-9.1	2.76 V	112	41.7	3.2
9	7311.00	44.8 PK	74.0	-29.2	2.76 V	316	35.9	8.9
10	7311.00	33.9 AV	54.0	-20.1	2.76 V	316	25.0	8.9

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 11	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	*2462.00	106.8 PK			2.01 H	284	108.2	-1.4
2	*2462.00	104.5 AV			2.01 H	284	105.9	-1.4
3	2483.50	58.9 PK	74.0	-15.1	2.01 H	284	60.3	-1.4
4	2483.50	51.6 AV	54.0	-2.4	2.01 H	284	53.0	-1.4
5	4924.00	51.6 PK	74.0	-22.4	1.47 H	129	48.3	3.3
6	4924.00	50.6 AV	54.0	-3.4	1.47 H	129	47.3	3.3
7	7386.00	46.6 PK	74.0	-27.4	2.15 H	138	37.5	9.1
8	7386.00	41.2 AV	54.0	-12.8	2.15 H	138	32.1	9.1
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	*2462.00	105.8 PK			1.60 V	212	107.2	-1.4
2	*2462.00	104.1 AV			1.60 V	212	105.5	-1.4
3	2483.50	52.9 PK	74.0	-21.1	1.60 V	212	54.3	-1.4
4	2483.50	41.7 AV	54.0	-12.3	1.60 V	212	43.1	-1.4
5	4924.00	45.5 PK	74.0	-28.5	2.70 V	100	42.2	3.3
6	4924.00	43.6 AV	54.0	-10.4	2.70 V	100	40.3	3.3
7	7386.00	43.9 PK	74.0	-30.1	2.80 V	307	34.8	9.1
8	7386.00	32.9 AV	54.0	-21.1	2.80 V	307	23.8	9.1

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.

802.11g

CHANNEL	TX Channel 1	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	71.8 PK	74.0	-2.2	2.00 H	292	73.4	-1.6
2	2390.00	51.9 AV	54.0	-2.1	2.00 H	292	53.5	-1.6
3	*2412.00	109.1 PK			1.98 H	279	110.6	-1.5
4	*2412.00	99.2 AV			1.98 H	279	100.7	-1.5
5	4824.00	48.6 PK	74.0	-25.4	1.48 H	140	45.6	3.0
6	4824.00	35.5 AV	54.0	-18.5	1.48 H	140	32.5	3.0
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	2390.00	71.7 PK	74.0	-2.3	1.93 V	245	73.3	-1.6
2	2390.00	51.8 AV	54.0	-2.2	1.93 V	245	53.4	-1.6
3	*2412.00	108.4 PK			1.90 V	257	109.9	-1.5
4	*2412.00	97.7 AV			1.90 V	257	99.2	-1.5
5	4824.00	51.9 PK	74.0	-22.1	2.74 V	100	48.9	3.0
6	4824.00	39.2 AV	54.0	-14.8	2.74 V	100	36.2	3.0

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
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	71.1 PK	74.0	-2.9	2.03 H	284	72.7	-1.6
2	2390.00	52.6 AV	54.0	-1.4	2.03 H	284	54.2	-1.6
3	*2437.00	115.8 PK			1.99 H	271	117.3	-1.5
4	*2437.00	105.4 AV			1.99 H	271	106.9	-1.5
5	2483.50	71.7 PK	74.0	-2.3	2.08 H	288	73.1	-1.4
6	2483.50	52.8 AV	54.0	-1.2	2.08 H	288	54.2	-1.4
7	4874.00	51.4 PK	74.0	-22.6	1.48 H	134	48.2	3.2
8	4874.00	39.1 AV	54.0	-14.9	1.48 H	134	35.9	3.2
9	7311.00	45.1 PK	74.0	-28.9	2.20 H	123	36.2	8.9
10	7311.00	33.9 AV	54.0	-20.1	2.20 H	123	25.0	8.9

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	71.5 PK	74.0	-2.5	1.96 V	243	73.1	-1.6
2	2390.00	52.5 AV	54.0	-1.5	1.96 V	243	54.1	-1.6
3	*2437.00	115.0 PK			1.90 V	247	116.5	-1.5
4	*2437.00	104.5 AV			1.90 V	247	106.0	-1.5
5	2483.50	72.8 PK	74.0	-1.2	1.89 V	238	74.2	-1.4
6	2483.50	52.9 AV	54.0	-1.1	1.89 V	238	54.3	-1.4
7	4874.00	56.3 PK	74.0	-17.7	2.75 V	92	53.1	3.2
8	4874.00	43.5 AV	54.0	-10.5	2.75 V	92	40.3	3.2
9	7311.00	45.2 PK	74.0	-28.8	2.84 V	303	36.3	8.9
10	7311.00	33.8 AV	54.0	-20.2	2.84 V	303	24.9	8.9

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 11	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	*2462.00	108.6 PK			2.06 H	285	110.0	-1.4
2	*2462.00	98.9 AV			2.06 H	285	100.3	-1.4
3	2483.50	72.5 PK	74.0	-1.5	1.95 H	274	73.9	-1.4
4	2483.50	52.8 AV	54.0	-1.2	1.95 H	274	54.2	-1.4
5	4924.00	47.7 PK	74.0	-26.3	1.51 H	138	44.4	3.3
6	4924.00	34.7 AV	54.0	-19.3	1.51 H	138	31.4	3.3
7	7386.00	44.9 PK	74.0	-29.1	2.24 H	130	35.8	9.1
8	7386.00	33.6 AV	54.0	-20.4	2.24 H	130	24.5	9.1
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	*2462.00	108.4 PK			1.96 V	224	109.8	-1.4
2	*2462.00	97.5 AV			1.96 V	224	98.9	-1.4
3	2483.50	72.6 PK	74.0	-1.4	1.88 V	227	74.0	-1.4
4	2483.50	52.8 AV	54.0	-1.2	1.88 V	227	54.2	-1.4
5	4924.00	51.5 PK	74.0	-22.5	2.74 V	114	48.2	3.3
6	4924.00	38.8 AV	54.0	-15.2	2.74 V	114	35.5	3.3
7	7386.00	44.9 PK	74.0	-29.1	2.85 V	317	35.8	9.1
8	7386.00	33.8 AV	54.0	-20.2	2.85 V	317	24.7	9.1

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.

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.8 PK	74.0	-1.2	2.01 H	278	74.4	-1.6
2	2390.00	52.5 AV	54.0	-1.5	2.01 H	278	54.1	-1.6
3	*2412.00	110.8 PK			2.01 H	278	112.3	-1.5
4	*2412.00	100.7 AV			2.01 H	278	102.2	-1.5
5	4824.00	48.7 PK	74.0	-25.3	1.46 H	136	45.7	3.0
6	4824.00	35.5 AV	54.0	-18.5	1.46 H	136	32.5	3.0
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	2390.00	72.9 PK	74.0	-1.1	1.91 V	241	74.5	-1.6
2	2390.00	52.9 AV	54.0	-1.1	1.91 V	241	54.5	-1.6
3	*2412.00	110.1 PK			1.91 V	241	111.6	-1.5
4	*2412.00	99.4 AV			1.91 V	241	100.9	-1.5
5	4824.00	52.3 PK	74.0	-21.7	2.66 V	96	49.3	3.0
6	4824.00	39.4 AV	54.0	-14.6	2.66 V	96	36.4	3.0

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
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	71.0 PK	74.0	-3.0	2.04 H	283	72.6	-1.6
2	2390.00	52.6 AV	54.0	-1.4	2.04 H	283	54.2	-1.6
3	*2437.00	115.8 PK			2.04 H	283	117.3	-1.5
4	*2437.00	105.3 AV			2.04 H	283	106.8	-1.5
5	2483.50	71.8 PK	74.0	-2.2	2.04 H	283	73.2	-1.4
6	2483.50	52.9 AV	54.0	-1.1	2.04 H	283	54.3	-1.4
7	4874.00	52.3 PK	74.0	-21.7	1.45 H	133	49.1	3.2
8	4874.00	40.1 AV	54.0	-13.9	1.45 H	133	36.9	3.2
9	7311.00	45.6 PK	74.0	-28.4	2.19 H	115	36.7	8.9
10	7311.00	34.6 AV	54.0	-19.4	2.19 H	115	25.7	8.9

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	71.8 PK	74.0	-2.2	1.94 V	233	73.4	-1.6
2	2390.00	52.7 AV	54.0	-1.3	1.94 V	233	54.3	-1.6
3	*2437.00	115.1 PK			1.94 V	233	116.6	-1.5
4	*2437.00	104.8 AV			1.94 V	233	106.3	-1.5
5	2483.50	72.2 PK	74.0	-1.8	1.94 V	233	73.6	-1.4
6	2483.50	52.9 AV	54.0	-1.1	1.94 V	233	54.3	-1.4
7	4874.00	57.2 PK	74.0	-16.8	2.64 V	114	54.0	3.2
8	4874.00	44.5 AV	54.0	-9.5	2.64 V	114	41.3	3.2
9	7311.00	45.5 PK	74.0	-28.5	2.82 V	316	36.6	8.9
10	7311.00	34.3 AV	54.0	-19.7	2.82 V	316	25.4	8.9

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 11	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	*2462.00	109.0 PK			2.00 H	281	110.4	-1.4
2	*2462.00	99.2 AV			2.00 H	281	100.6	-1.4
3	2483.50	72.8 PK	74.0	-1.2	2.00 H	281	74.2	-1.4
4	2483.50	52.3 AV	54.0	-1.7	2.00 H	281	53.7	-1.4
5	4924.00	48.5 PK	74.0	-25.5	1.44 H	128	45.2	3.3
6	4924.00	35.7 AV	54.0	-18.3	1.44 H	128	32.4	3.3
7	7386.00	46.0 PK	74.0	-28.0	2.20 H	113	36.9	9.1
8	7386.00	34.6 AV	54.0	-19.4	2.20 H	113	25.5	9.1
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	*2462.00	108.5 PK			1.92 V	230	109.9	-1.4
2	*2462.00	97.6 AV			1.92 V	230	99.0	-1.4
3	2483.50	72.9 PK	74.0	-1.1	1.92 V	230	74.3	-1.4
4	2483.50	52.6 AV	54.0	-1.4	1.92 V	230	54.0	-1.4
5	4924.00	52.8 PK	74.0	-21.2	2.66 V	88	49.5	3.3
6	4924.00	40.2 AV	54.0	-13.8	2.66 V	88	36.9	3.3
7	7386.00	46.0 PK	74.0	-28.0	2.83 V	314	36.9	9.1
8	7386.00	34.6 AV	54.0	-19.4	2.83 V	314	25.5	9.1

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.

802.11n (HT40)

CHANNEL	TX Channel 3	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	71.6 PK	74.0	-2.4	2.85 H	289	73.2	-1.6
2	2390.00	52.2 AV	54.0	-1.8	2.85 H	289	53.8	-1.6
3	*2422.00	106.9 PK			2.85 H	289	108.5	-1.6
4	*2422.00	96.5 AV			2.85 H	289	98.1	-1.6
5	4844.00	48.0 PK	74.0	-26.0	1.54 H	135	44.9	3.1
6	4844.00	35.1 AV	54.0	-18.9	1.54 H	135	32.0	3.1
7	7266.00	44.8 PK	74.0	-29.2	2.19 H	114	35.9	8.9
8	7266.00	33.8 AV	54.0	-20.2	2.19 H	114	24.9	8.9
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	72.9 PK	74.0	-1.1	2.05 V	228	74.5	-1.6
2	2390.00	52.9 AV	54.0	-1.1	2.05 V	228	54.5	-1.6
3	*2422.00	105.9 PK			2.05 V	228	107.5	-1.6
4	*2422.00	95.2 AV			2.05 V	228	96.8	-1.6
5	4844.00	51.4 PK	74.0	-22.6	2.66 V	104	48.3	3.1
6	4844.00	38.8 AV	54.0	-15.2	2.66 V	104	35.7	3.1
7	7266.00	44.9 PK	74.0	-29.1	2.82 V	292	36.0	8.9
8	7266.00	33.8 AV	54.0	-20.2	2.82 V	292	24.9	8.9

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	66.9 PK	74.0	-7.1	2.83 H	291	68.5	-1.6
2	2390.00	52.1 AV	54.0	-1.9	2.83 H	291	53.7	-1.6
3	*2437.00	107.6 PK			2.83 H	291	109.1	-1.5
4	*2437.00	97.6 AV			2.83 H	291	99.1	-1.5
5	2483.50	69.0 PK	74.0	-5.0	2.83 H	291	70.4	-1.4
6	2483.50	52.2 AV	54.0	-1.8	2.83 H	291	53.6	-1.4
7	4874.00	52.4 PK	74.0	-21.6	1.52 H	127	49.2	3.2
8	4874.00	39.8 AV	54.0	-14.2	1.52 H	127	36.6	3.2
9	7311.00	45.9 PK	74.0	-28.1	2.21 H	108	37.0	8.9
10	7311.00	34.6 AV	54.0	-19.4	2.21 H	108	25.7	8.9

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	67.2 PK	74.0	-6.8	2.11 V	23	68.8	-1.6
2	2390.00	52.0 AV	54.0	-2.0	2.11 V	23	53.6	-1.6
3	*2437.00	107.3 PK			2.11 V	231	108.8	-1.5
4	*2437.00	97.0 AV			2.11 V	231	98.5	-1.5
5	2483.50	69.2 PK	74.0	-4.8	2.11 V	231	70.6	-1.4
6	2483.50	52.3 AV	54.0	-1.7	2.11 V	231	53.7	-1.4
7	4874.00	57.0 PK	74.0	-17.0	2.65 V	115	53.8	3.2
8	4874.00	44.2 AV	54.0	-9.8	2.65 V	115	41.0	3.2
9	7311.00	46.4 PK	74.0	-27.6	2.80 V	292	37.5	8.9
10	7311.00	35.1 AV	54.0	-18.9	2.80 V	292	26.2	8.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	107.3 PK			2.84 H	297	108.8	-1.5
2	*2452.00	95.6 AV			2.84 H	297	97.1	-1.5
3	2483.50	72.6 PK	74.0	-1.4	2.84 H	297	74.0	-1.4
4	2483.50	53.9 AV	54.0	-0.1	2.84 H	297	55.3	-1.4
5	4904.00	48.6 PK	74.0	-25.4	1.50 H	138	45.4	3.2
6	4904.00	35.6 AV	54.0	-18.4	1.50 H	138	32.4	3.2
7	7356.00	45.7 PK	74.0	-28.3	2.16 H	102	36.6	9.1
8	7356.00	34.2 AV	54.0	-19.8	2.16 H	102	25.1	9.1
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	*2452.00	106.1 PK			2.12 V	232	107.6	-1.5
2	*2452.00	95.6 AV			2.12 V	232	97.1	-1.5
3	2483.50	70.6 PK	74.0	-3.4	2.12 V	232	72.0	-1.4
4	2483.50	53.3 AV	54.0	-0.7	2.12 V	232	54.7	-1.4
5	4904.00	52.7 PK	74.0	-21.3	2.66 V	98	49.5	3.2
6	4904.00	40.1 AV	54.0	-13.9	2.66 V	98	36.9	3.2
7	7356.00	46.3 PK	74.0	-27.7	2.79 V	307	37.2	9.1
8	7356.00	35.0 AV	54.0	-19.0	2.79 V	307	25.9	9.1

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.

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	44.82	26.2 QP	40.0	-13.8	1.00 H	192	34.4	-8.2
2	125.21	33.5 QP	43.5	-10.0	2.00 H	257	43.2	-9.7
3	337.45	32.2 QP	46.0	-13.8	2.00 H	337	38.7	-6.5
4	375.25	32.7 QP	46.0	-13.3	1.00 H	155	38.6	-5.9
5	625.20	33.5 QP	46.0	-12.5	2.00 H	78	34.1	-0.6
6	875.30	36.5 QP	46.0	-9.5	2.50 H	86	33.9	2.6
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	62.30	34.1 QP	40.0	-5.9	2.00 V	211	43.4	-9.3
2	125.11	35.9 QP	43.5	-7.6	3.00 V	155	45.6	-9.7
3	336.32	32.7 QP	46.0	-13.3	1.50 V	201	39.2	-6.5
4	375.40	31.0 QP	46.0	-15.0	1.00 V	129	36.9	-5.9
5	625.32	34.3 QP	46.0	-11.7	2.50 V	178	34.9	-0.6
6	944.42	32.3 QP	46.0	-13.7	1.50 V	214	28.5	3.8

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. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

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 03, 2017	June 02, 2018
50 ohms Terminator	N/A	EMC-02	Sep. 22, 2017	Sep. 21, 2018
RF Cable	5D-FB	COCCAB-001	Sep. 29, 2017	Sep. 28, 2018
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 18, 2017	June 17, 2018
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: Oct. 23, 2017

4.2.3 Test Procedures

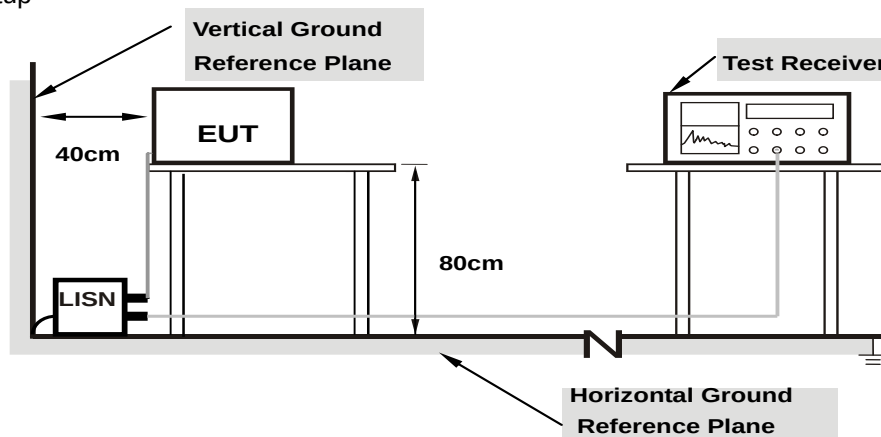
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

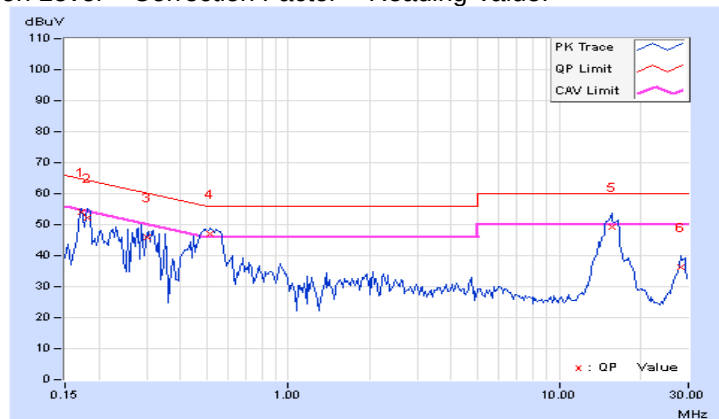
4.2.7 Test Results (Mode 1)

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

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17344	9.71	44.31	34.03	54.02	43.74	64.79	54.79	-10.77	-11.05
2	0.18125	9.72	42.57	27.76	52.29	37.48	64.43	54.43	-12.14	-16.95
3	0.30109	9.74	36.22	26.71	45.96	36.45	60.21	50.21	-14.25	-13.76
4	0.51719	9.73	37.42	31.38	47.15	41.11	56.00	46.00	-8.85	-4.89
5	15.63281	9.92	39.33	33.45	49.25	43.37	60.00	50.00	-10.75	-6.63
6	28.01953	10.03	26.26	19.60	36.29	29.63	60.00	50.00	-23.71	-20.37

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.

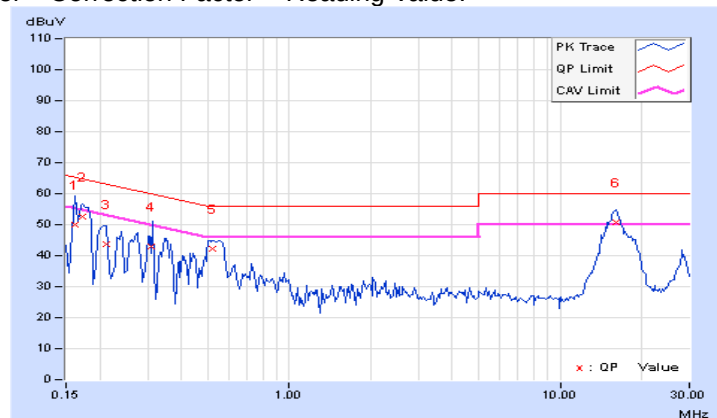


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16172	9.71	40.33	19.25	50.04	28.96	65.38	55.38	-15.34	-26.42
2	0.17344	9.72	42.86	33.52	52.58	43.24	64.79	54.79	-12.21	-11.55
3	0.21250	9.74	34.11	20.62	43.85	30.36	63.11	53.11	-19.26	-22.75
4	0.30994	9.72	33.26	25.86	42.98	35.58	59.97	49.97	-16.99	-14.39
5	0.52109	9.71	32.60	24.22	42.31	33.93	56.00	46.00	-13.69	-12.07
6	15.99609	10.11	40.50	34.86	50.61	44.97	60.00	50.00	-9.39	-5.03

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.



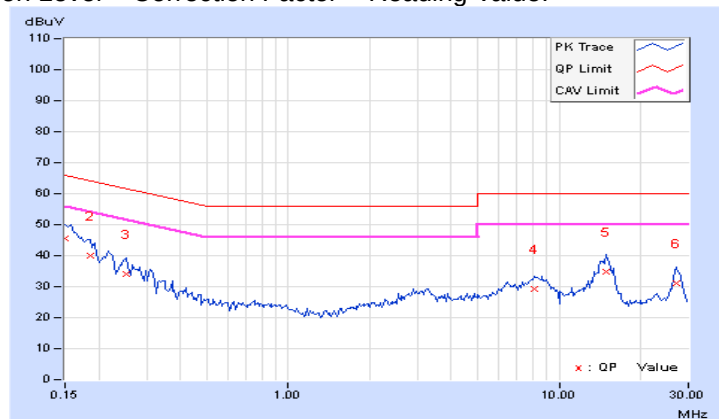
4.2.8 Test Results (Mode 2)

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

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.67	35.72	22.48	45.39	32.15	66.00	56.00	-20.61	-23.85
2	0.18516	9.73	30.21	19.25	39.94	28.98	64.25	54.25	-24.31	-25.27
3	0.25156	9.75	24.25	13.77	34.00	23.52	61.71	51.71	-27.71	-28.19
4	8.12891	9.87	19.46	13.94	29.33	23.81	60.00	50.00	-30.67	-26.19
5	14.98828	9.91	24.94	19.07	34.85	28.98	60.00	50.00	-25.15	-21.02
6	27.05469	10.02	21.26	13.67	31.28	23.69	60.00	50.00	-28.72	-26.31

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.

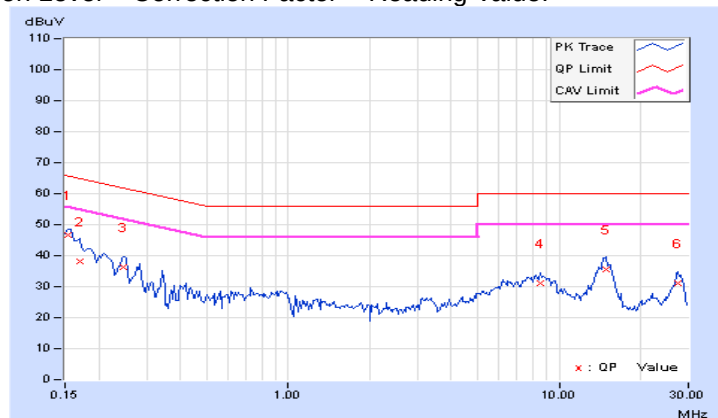


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.70	36.82	24.38	46.52	34.08	65.79	55.79	-19.27	-21.71
2	0.16953	9.72	28.28	12.89	38.00	22.61	64.98	54.98	-26.98	-32.37
3	0.24766	9.73	26.44	19.10	36.17	28.83	61.84	51.84	-25.67	-23.01
4	8.51563	9.93	21.05	15.43	30.98	25.36	60.00	50.00	-29.02	-24.64
5	14.89453	10.08	25.37	19.61	35.45	29.69	60.00	50.00	-24.55	-20.31
6	27.59375	10.31	20.77	15.74	31.08	26.05	60.00	50.00	-28.92	-23.95

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.



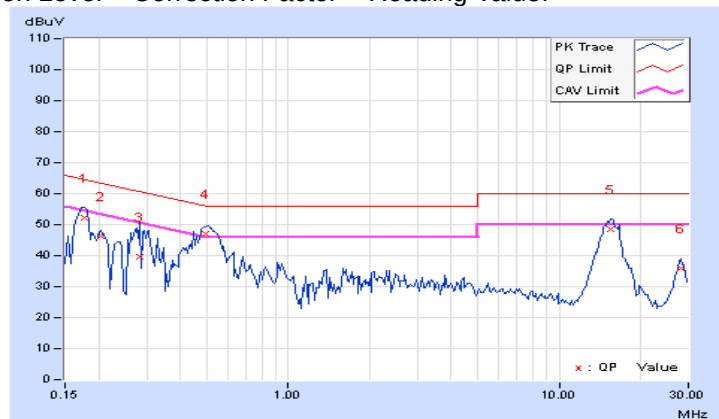
4.2.9 Test Results (Mode 3)

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

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	9.71	42.61	35.33	52.32	45.04	64.61	54.61	-12.29	-9.57
2	0.20469	9.75	36.61	31.59	46.36	41.34	63.42	53.42	-17.06	-12.08
3	0.28281	9.75	29.77	11.61	39.52	21.36	60.73	50.73	-21.21	-29.37
4	0.49375	9.74	37.37	26.76	47.11	36.50	56.10	46.10	-8.99	-9.60
5	15.42969	9.92	38.59	32.85	48.51	42.77	60.00	50.00	-11.49	-7.23
6	28.18359	10.04	25.84	19.42	35.88	29.46	60.00	50.00	-24.12	-20.54

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.

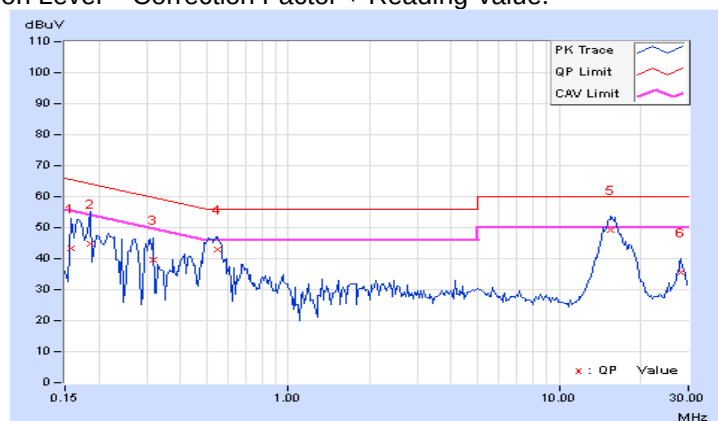


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.71	33.73	17.65	43.44	27.36	65.58	55.58	-22.14	-28.22
2	0.18516	9.73	34.99	27.70	44.72	37.43	64.25	54.25	-19.53	-16.82
3	0.31797	9.72	29.92	18.12	39.64	27.84	59.76	49.76	-20.12	-21.92
4	0.54844	9.71	33.42	24.65	43.13	34.36	56.00	46.00	-12.87	-11.64
5	15.51563	10.10	39.17	33.40	49.27	43.50	60.00	50.00	-10.73	-6.50
6	28.09375	10.32	25.25	18.94	35.57	29.26	60.00	50.00	-24.43	-20.74

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.



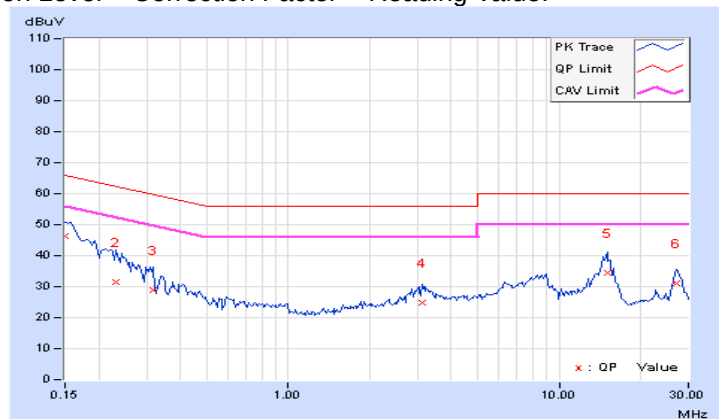
4.2.10 Test Results (Mode 4)

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

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.67	36.74	23.25	46.41	32.92	66.00	56.00	-19.59	-23.08
2	0.23203	9.75	21.75	4.89	31.50	14.64	62.38	52.38	-30.88	-37.74
3	0.31797	9.74	19.11	5.77	28.85	15.51	59.76	49.76	-30.91	-34.25
4	3.12500	9.84	15.11	6.89	24.95	16.73	56.00	46.00	-31.05	-29.27
5	15.03516	9.92	24.54	18.80	34.46	28.72	60.00	50.00	-25.54	-21.28
6	27.14063	10.02	20.99	13.54	31.01	23.56	60.00	50.00	-28.99	-26.44

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. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.70	36.49	24.12	46.19	33.82	66.00	56.00	-19.81	-22.18
2	0.16562	9.71	32.09	18.12	41.80	27.83	65.18	55.18	-23.38	-27.35
3	0.30625	9.72	14.47	4.47	24.19	14.19	60.07	50.07	-35.88	-35.88
4	8.36719	9.93	20.39	15.25	30.32	25.18	60.00	50.00	-29.68	-24.82
5	15.03516	10.09	25.96	19.92	36.05	30.01	60.00	50.00	-23.95	-19.99
6	27.21094	10.31	21.11	13.61	31.42	23.92	60.00	50.00	-28.58	-26.08

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.

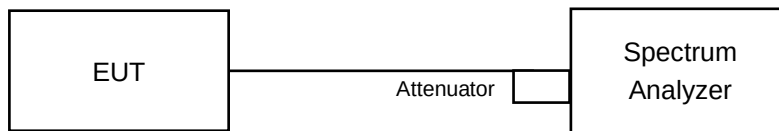


4.3 6dB Bandwidth Measurement

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

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result (Mode 3)

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	10.12	10.14	0.5	PASS
6	2437	10.05	10.13	0.5	PASS
11	2462	10.13	10.11	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	15.81	16.43	0.5	PASS
6	2437	15.80	16.37	0.5	PASS
11	2462	16.39	16.38	0.5	PASS

802.11n (HT20)

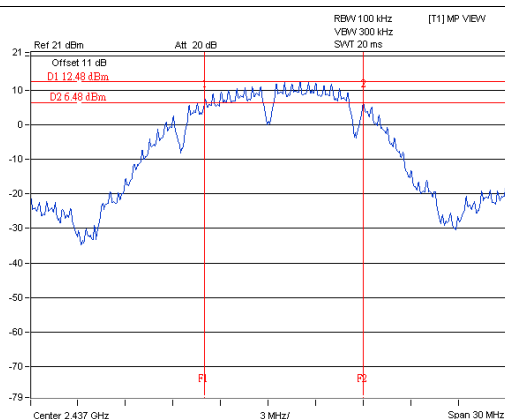
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.40	17.63	0.5	Pass
6	2437	16.41	17.35	0.5	Pass
11	2462	17.70	17.66	0.5	Pass

802.11n (HT40)

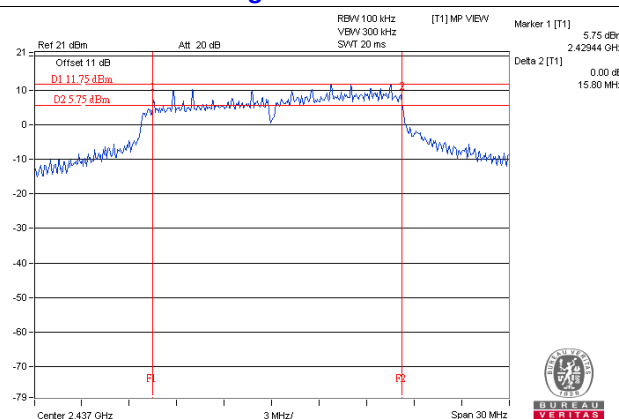
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	36.53	36.26	0.5	Pass
6	2437	35.25	36.41	0.5	Pass
9	2452	35.22	36.54	0.5	Pass

Spectrum Plot of Worst Value

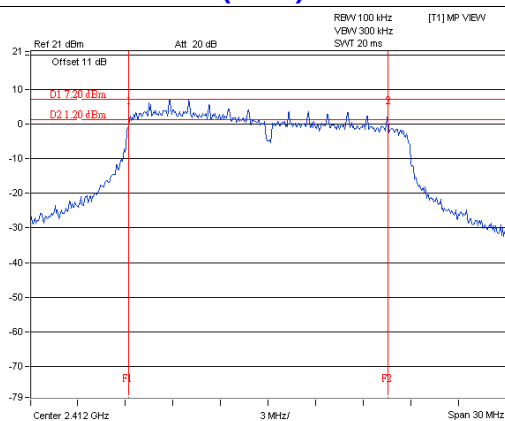
802.11b / Chain 0 : CH6



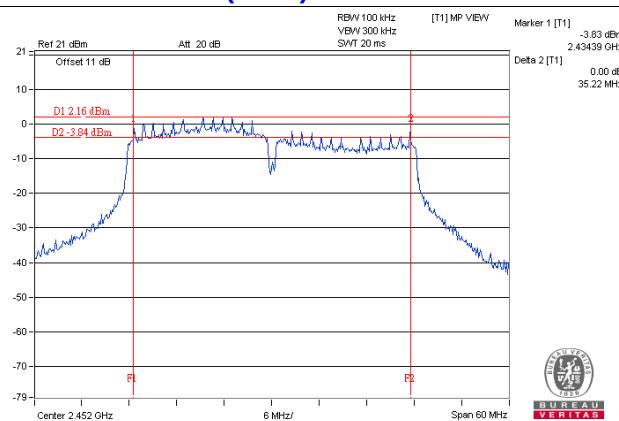
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0 : CH1



802.11n (HT40) / Chain 0 : CH9



4.3.8 Test Result (Mode 4)

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	10.14	10.12	0.5	PASS
6	2437	9.66	10.13	0.5	PASS
11	2462	10.09	10.11	0.5	PASS

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.44	16.43	0.5	PASS
6	2437	15.81	16.39	0.5	PASS
11	2462	16.13	16.39	0.5	PASS

802.11n (HT20)

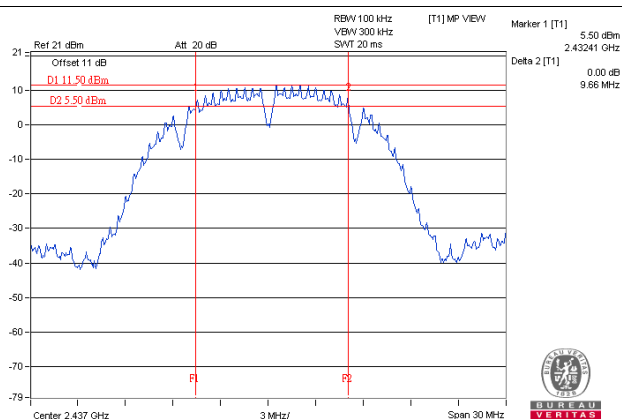
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.62	17.65	0.5	Pass
6	2437	16.42	17.64	0.5	Pass
11	2462	16.78	17.63	0.5	Pass

802.11n (HT40)

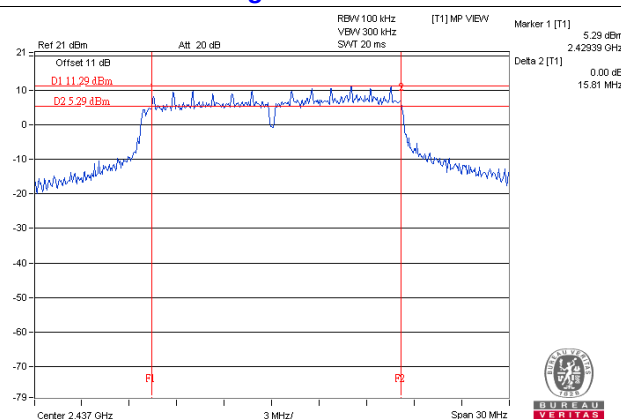
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.92	36.48	0.5	Pass
6	2437	35.96	36.54	0.5	Pass
9	2452	35.92	36.53	0.5	Pass

Spectrum Plot of Worst Value

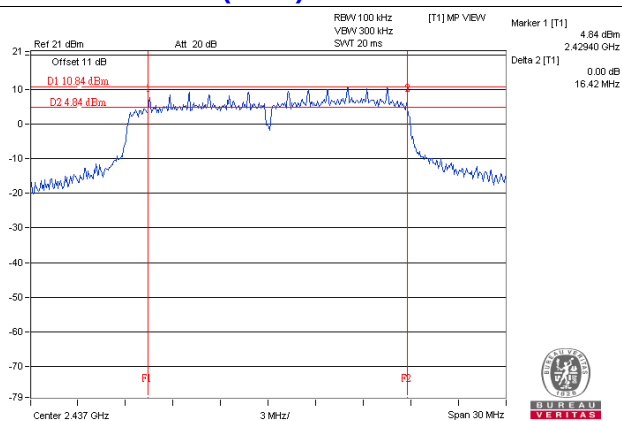
802.11b / Chain 0 : CH6



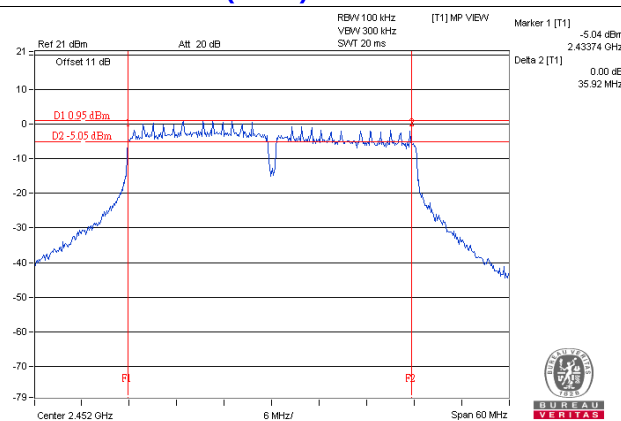
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0 : CH6

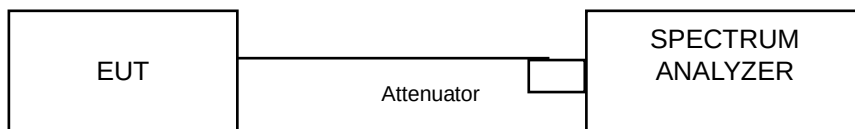


802.11n (HT40) / Chain 0 : CH9



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Deviation from Test Standard

No deviation.

4.4.5 EUT Operating Conditions

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

4.4.6 Test Results (Mode 3)

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	14.28	13.92
6	2437	14.40	14.16
11	2462	14.28	14.28

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	17.16	16.92
6	2437	24.36	24.96
11	2462	17.40	17.04

802.11n (HT20)

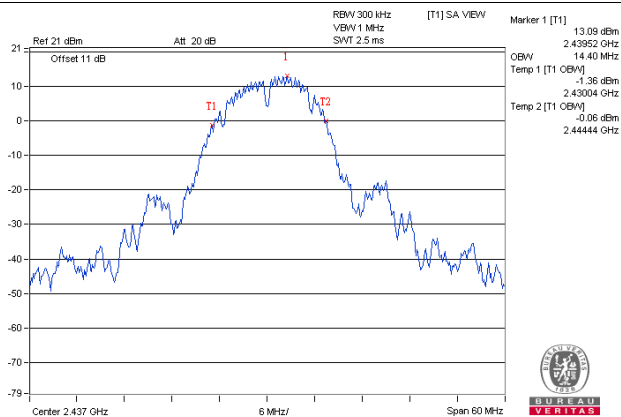
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	18.00	18.12
6	2437	25.56	24.84
11	2462	18.48	18.00

802.11n (HT40)

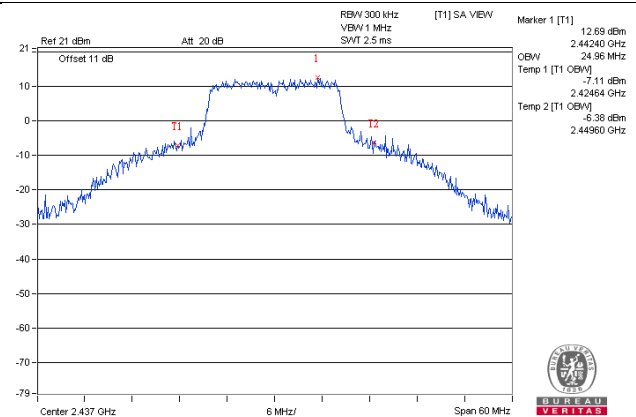
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
3	2422	39.12	37.68
6	2437	36.96	37.92
9	2452	36.96	37.68

Spectrum Plot of Worst Value

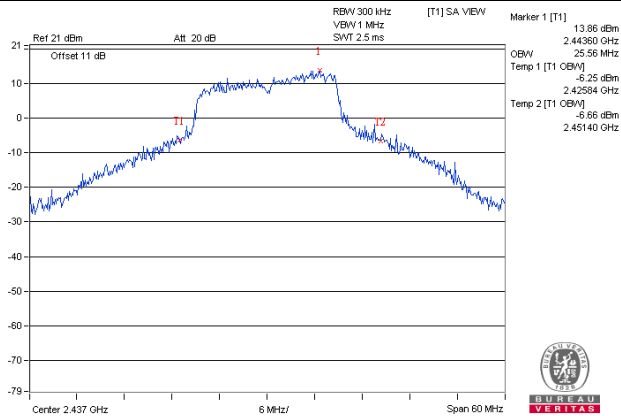
802.11b / Chain 0 : CH6



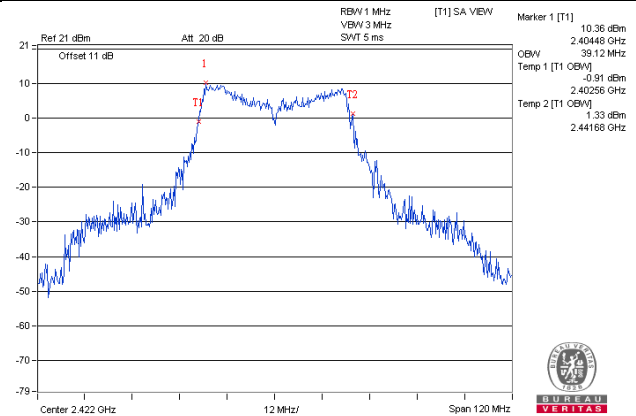
802.11g / Chain 1 : CH6



802.11n (HT20) / Chain 0 : CH6



802.11n (HT40) / Chain 0 : CH3



4.4.7 Test Results (Mode 4)

802.11b

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	13.92	13.92
6	2437	13.92	14.04
11	2462	14.04	13.92

802.11g

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	16.92	16.92
6	2437	18.36	17.64
11	2462	17.04	17.04

802.11n (HT20)

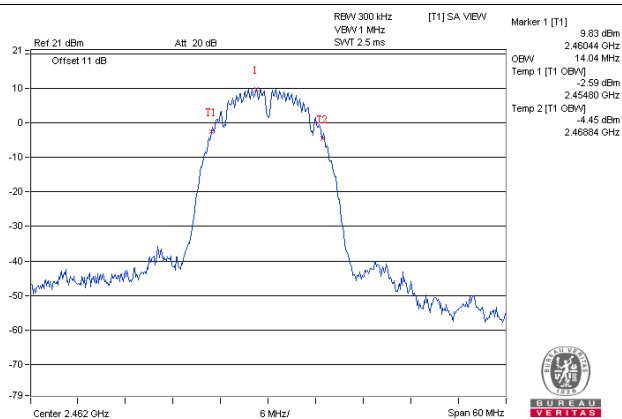
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
1	2412	18.00	18.24
6	2437	18.72	18.48
11	2462	18.12	18.00

802.11n (HT40)

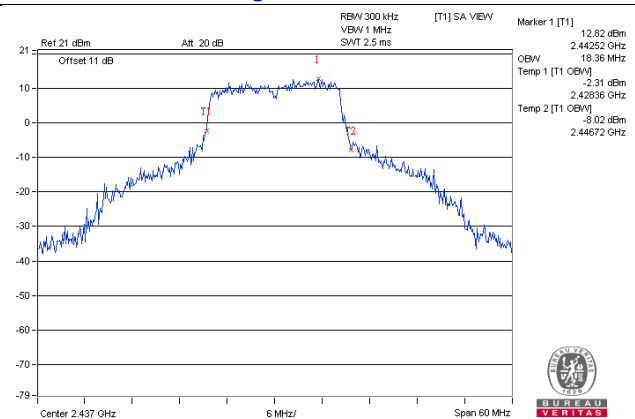
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
3	2422	37.92	37.92
6	2437	37.20	37.68
9	2452	36.96	37.92

Spectrum Plot of Worst Value

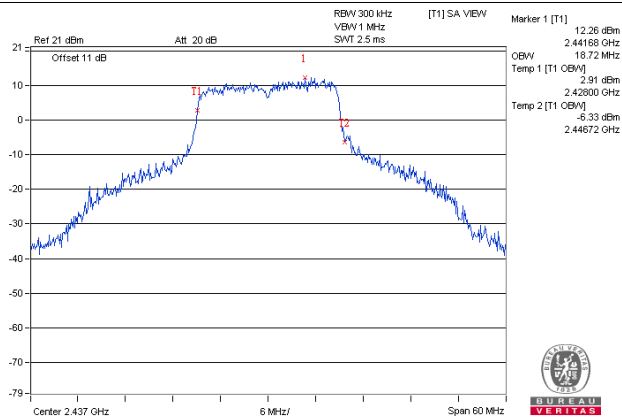
802.11b / Chain 0 : CH11



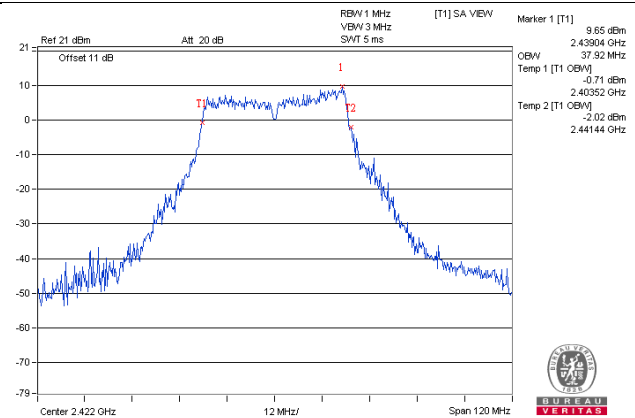
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0 : CH6



802.11n (HT40) / Chain 0 : CH3



4.5 Conducted Output Power Measurement

4.5.1 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,

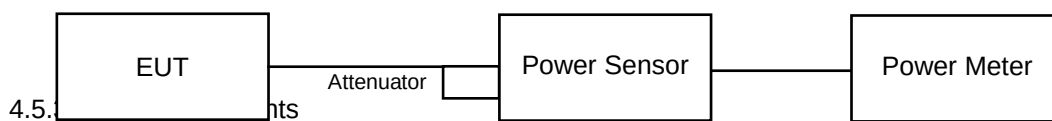
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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.

4.5.2 Test Setup



Refer to section 4.1.2 to get information of above instrument.

4.5.4 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as Item 4.3.6.

4.5.7 Test Results

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	23.31	21.01	340.472	25.32	30.00	Pass
6	2437	23.03	22.63	384.14	25.84	30.00	Pass
11	2462	21.07	22.35	299.729	24.77	30.00	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	24.12	22.88	452.315	26.55	30.00	Pass
6	2437	24.33	24.67	564.108	27.51	30.00	Pass
11	2462	23.06	23.06	404.604	26.07	30.00	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	24.16	21.51	402.194	26.04	30.00	Pass
6	2437	24.34	24.66	564.059	27.51	30.00	Pass
11	2462	21.91	22.71	341.877	25.34	30.00	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	24.68	21.51	435.344	26.39	30.00	Pass
6	2437	23.59	23.49	451.917	26.55	30.00	Pass
9	2452	24.55	22.12	448.032	26.51	30.00	Pass

FOR AVERAGE POWER

802.11b

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	21.63	18.85	222.282	23.47
6	2437	21.38	20.64	253.282	24.04
11	2462	18.92	20.48	189.669	22.78

802.11g

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	18.18	14.95	97.027	19.87
6	2437	21.76	21.59	294.18	24.69
11	2462	15.03	16.18	73.337	18.65

802.11n (HT20)

Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	16.88	13.59	71.609	18.55
6	2437	21.73	21.54	291.497	24.65
11	2462	13.83	15.05	56.144	17.49

802.11n (HT40)

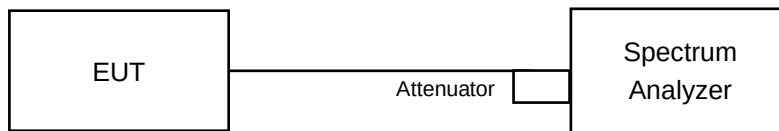
Chan.	Frequency (MHz)	Avg. Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	15.44	13.18	55.792	17.47
6	2437	16.91	17.01	99.325	19.97
9	2452	14.53	14.65	57.553	17.60

4.6 Power Spectral Density Measurement

4.6.1 Limits of Power Spectral Density Measurement

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

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

- 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: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times \text{RBW}$.
- 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Same as Item 4.3.6

4.6.7 Test Results

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	-2.03	3.01	0.98	8.00	Pass
	6	2437	-2.33	3.01	0.68	8.00	Pass
	11	2462	-4.92	3.01	-1.91	8.00	Pass
1	1	2412	-5.35	3.01	-2.34	8.00	Pass
	6	2437	-4.27	3.01	-1.26	8.00	Pass
	11	2462	-3.27	3.01	-0.26	8.00	Pass

Note: 1. Directional gain = $1.60\text{dBi} + 10\log(2) = 4.61\text{dBi} < 6\text{dBi}$, so the power density limit shall be not 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	-6.71	3.01	-3.70	8.00	Pass
	6	2437	-3.18	3.01	-0.17	8.00	Pass
	11	2462	-11.04	3.01	-8.03	8.00	Pass
1	1	2412	-10.87	3.01	-7.86	8.00	Pass
	6	2437	-4.54	3.01	-1.53	8.00	Pass
	11	2462	-10.80	3.01	-7.79	8.00	Pass

Note: 1. Directional gain = $1.60\text{dBi} + 10\log(2) = 4.61\text{dBi} < 6\text{dBi}$, so the power density limit shall be not 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	-8.60	3.01	-5.59	8.00	Pass
	6	2437	-3.58	3.01	-0.57	8.00	Pass
	11	2462	-10.91	3.01	-7.90	8.00	Pass
1	1	2412	-13.38	3.01	-10.37	8.00	Pass
	6	2437	-4.57	3.01	-1.56	8.00	Pass
	11	2462	-10.96	3.01	-7.95	8.00	Pass

Note: 1. Directional gain = $1.60\text{dBi} + 10\log(2) = 4.61\text{dBi} < 6\text{dBi}$, so the power density limit shall be not reduced.

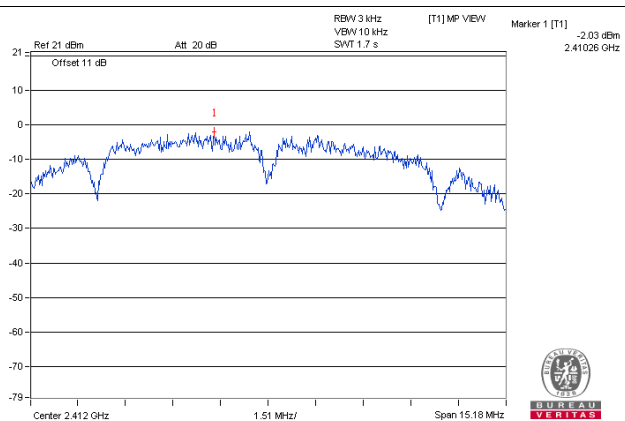
802.11n (HT40)

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	-10.47	3.01	-7.46	8.00	Pass
	6	2437	-9.90	3.01	-6.89	8.00	Pass
	9	2452	-13.01	3.01	-10.00	8.00	Pass
1	3	2422	-14.01	3.01	-11.00	8.00	Pass
	6	2437	-10.58	3.01	-7.57	8.00	Pass
	9	2452	-14.58	3.01	-11.57	8.00	Pass

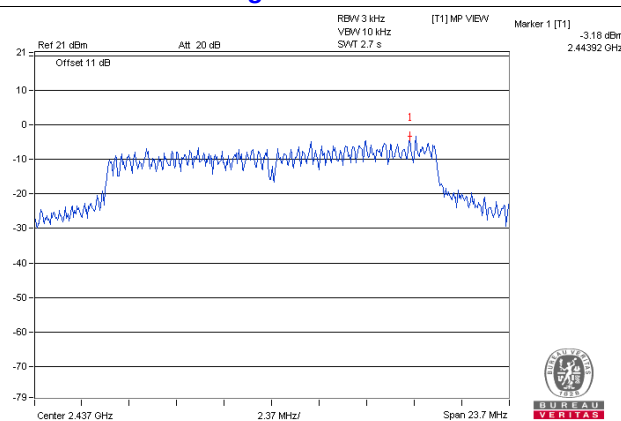
Note: 1. Directional gain = $1.60\text{dBi} + 10\log(2) = 4.61\text{dBi} < 6\text{dBi}$, so the power density limit shall be not reduced.

Spectrum Plot of Worst Value

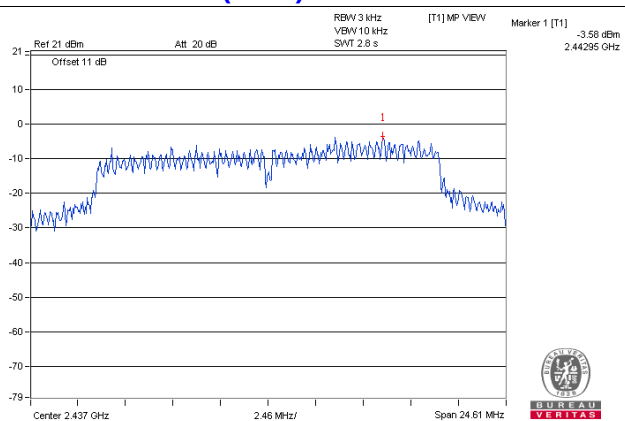
802.11b / Chain 0 : CH1



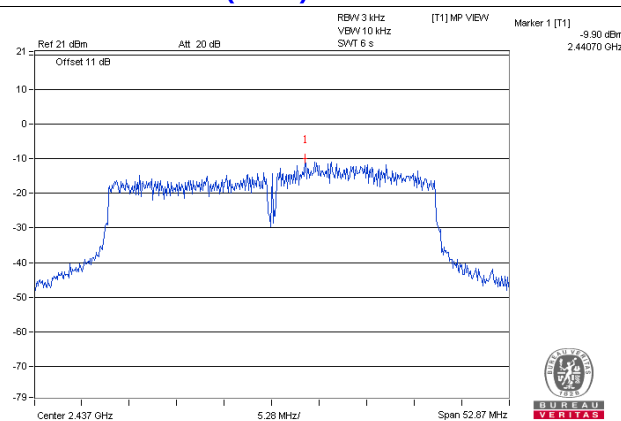
802.11g / Chain 0 : CH6



802.11n (HT20) / Chain 0 : CH6



802.11n (HT40) / Chain 0 : CH6

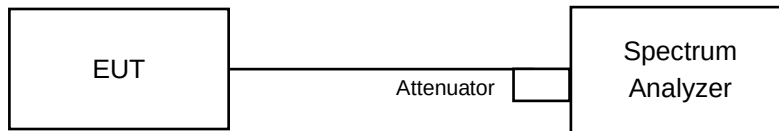


4.7 Conducted Out of Band Emission Measurement

4.7.1 Limits of Conducted Out of Band Emission Measurement

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

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 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 OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 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.

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

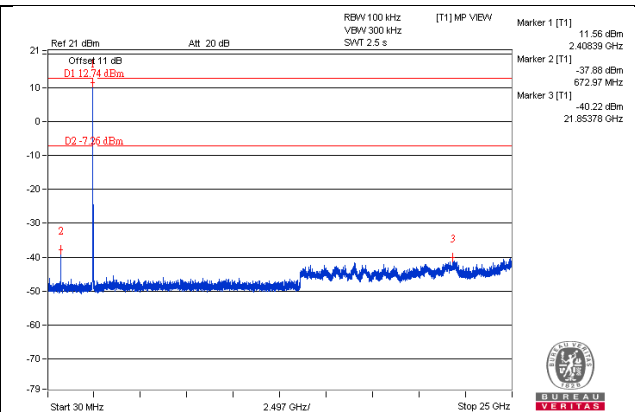
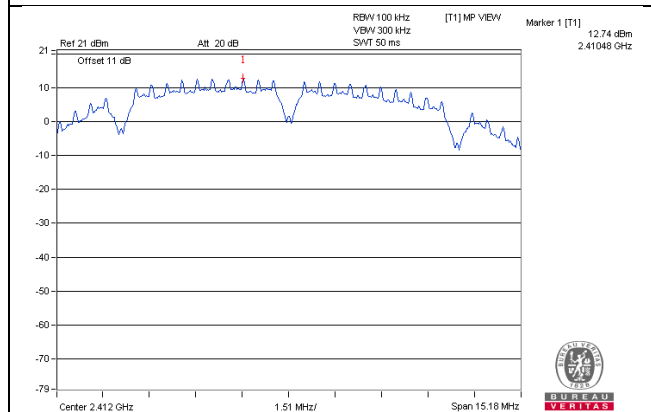
Same as Item 4.3.6

4.7.7 Test Results

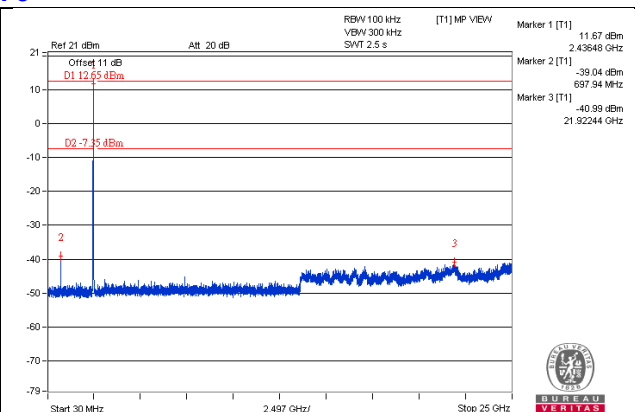
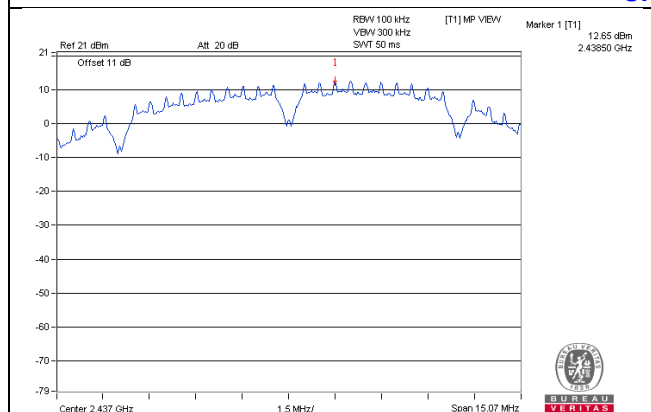
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB fset below D1. It shows compliance with the requirement.

802.11b CHAIN 0

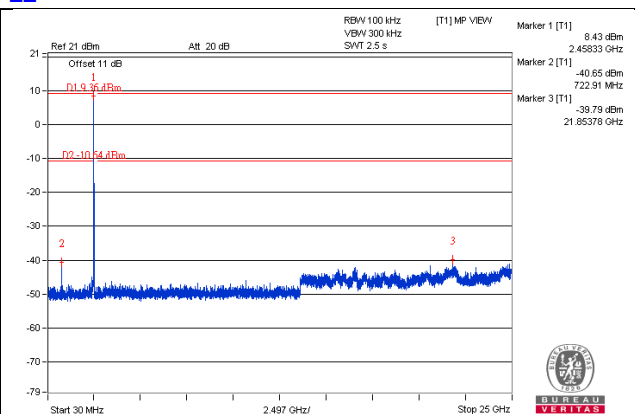
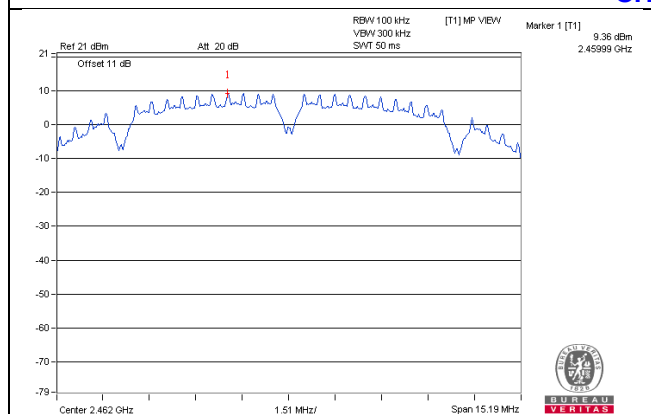
CH 1



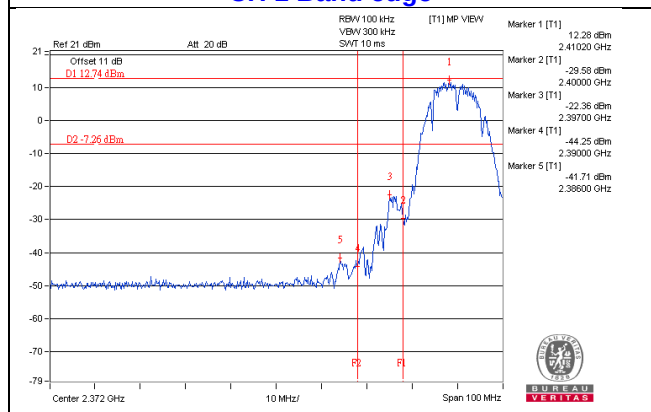
CH 6



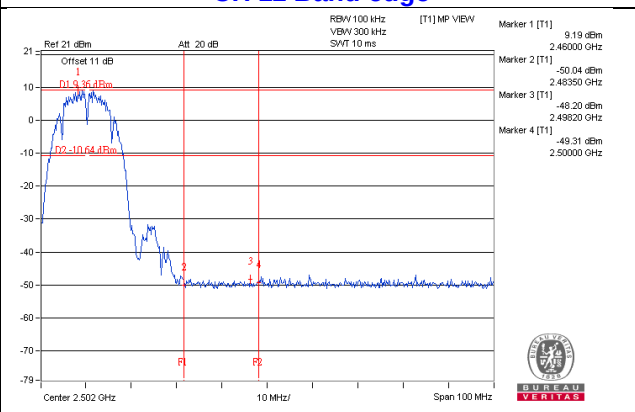
CH 11



CH 1 Band edge

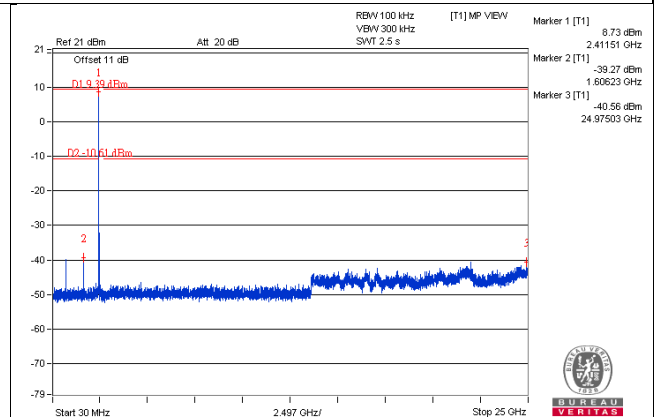
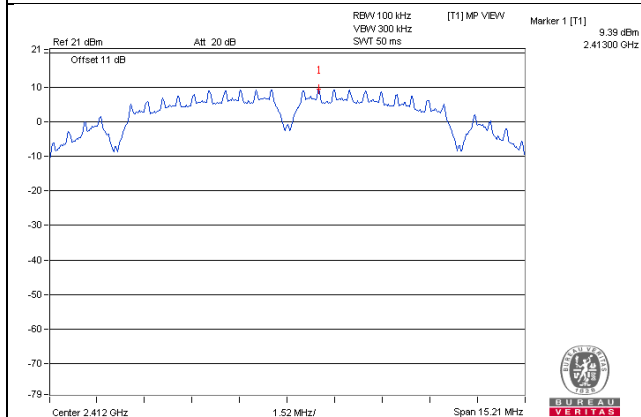


CH 11 Band edge

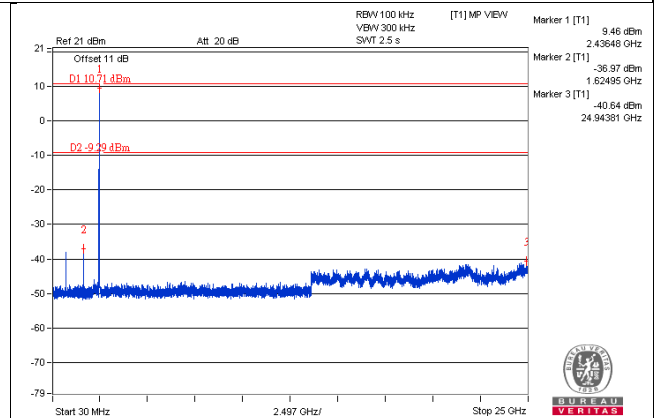
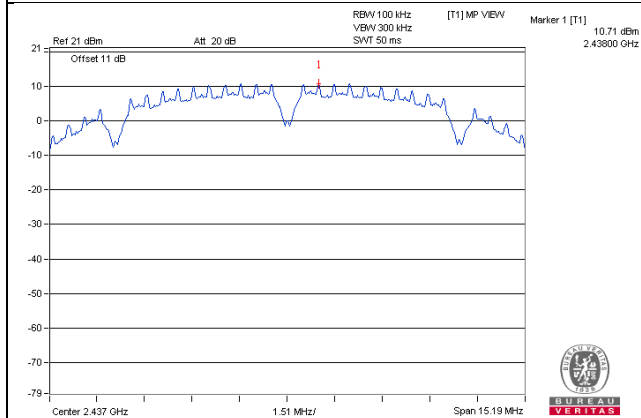


CHAIN 1

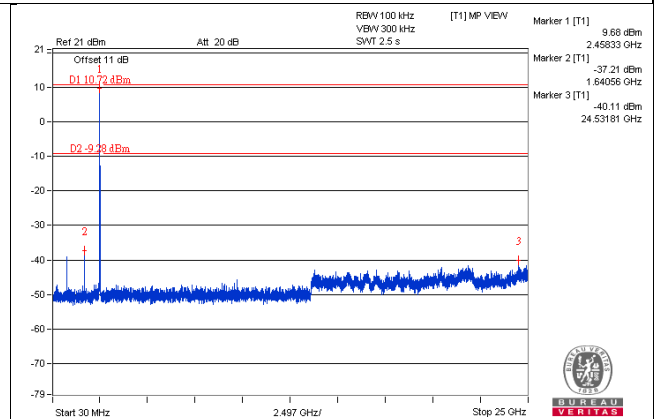
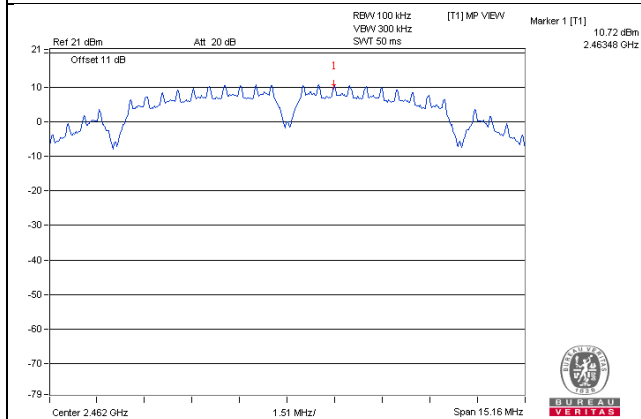
CH 1



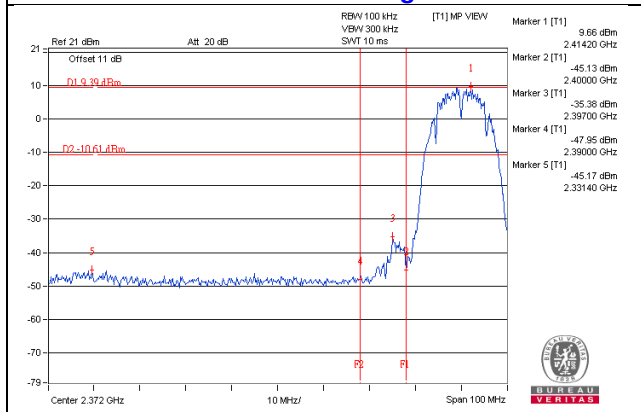
CH 6



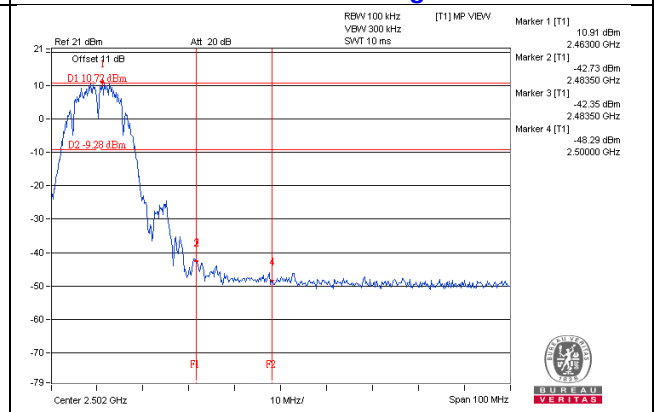
CH 11



CH 1 Band edge

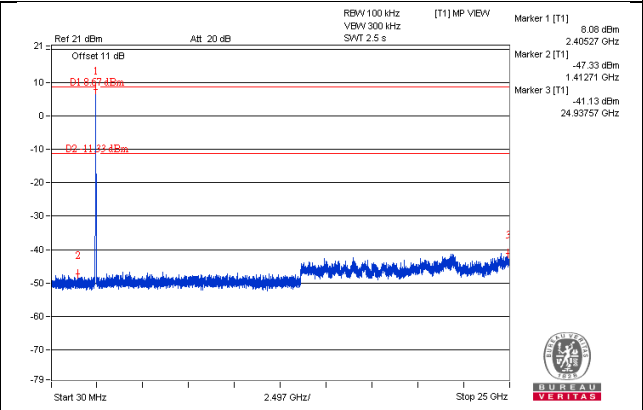
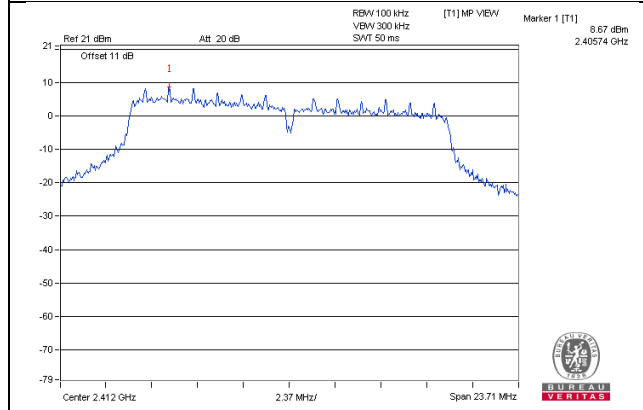


CH 11 Band edge

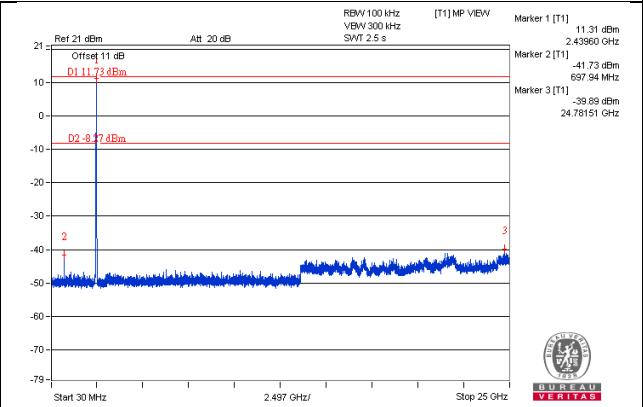
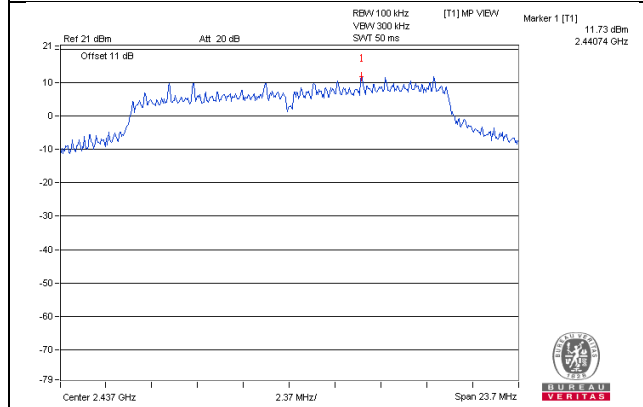


802.11g CHAIN 0

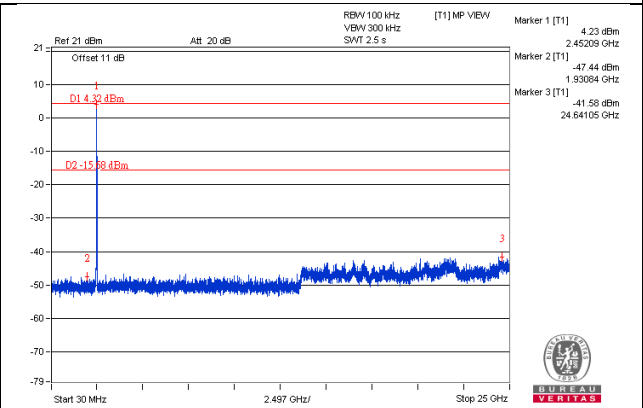
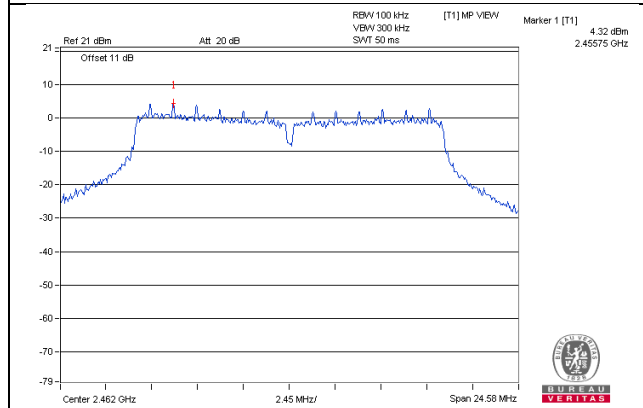
CH 1



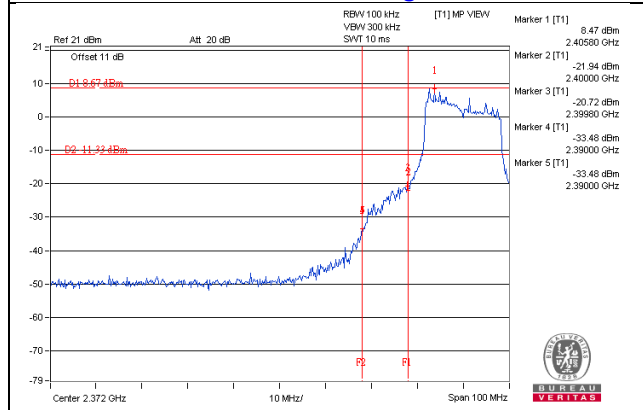
CH 6



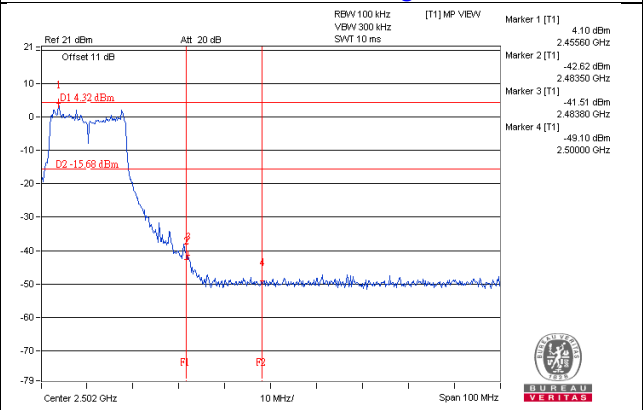
CH 11



CH 1 Band edge

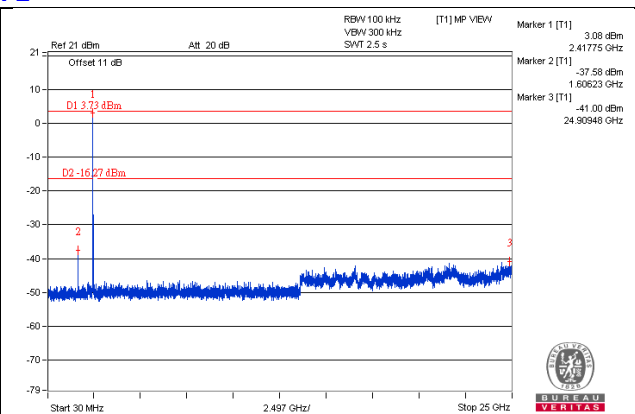
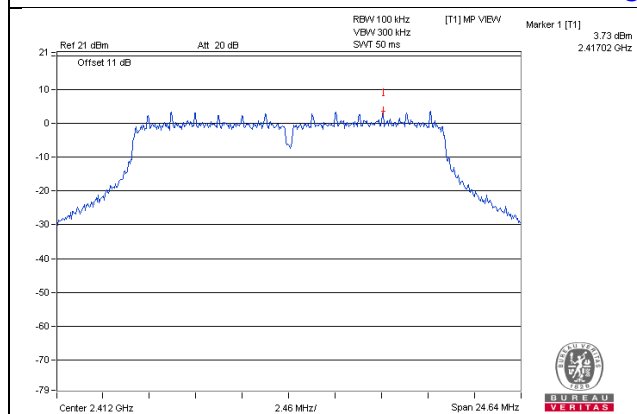


CH 11 Band edge

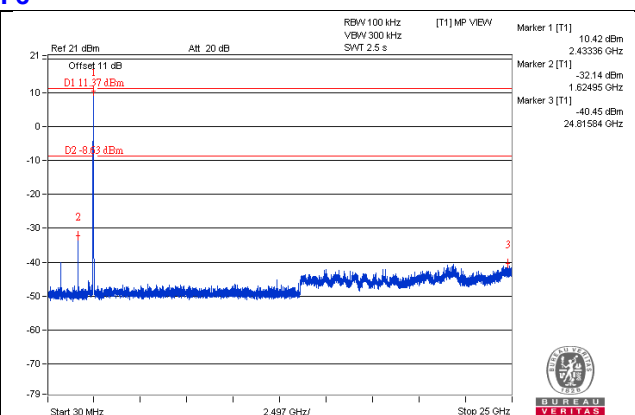
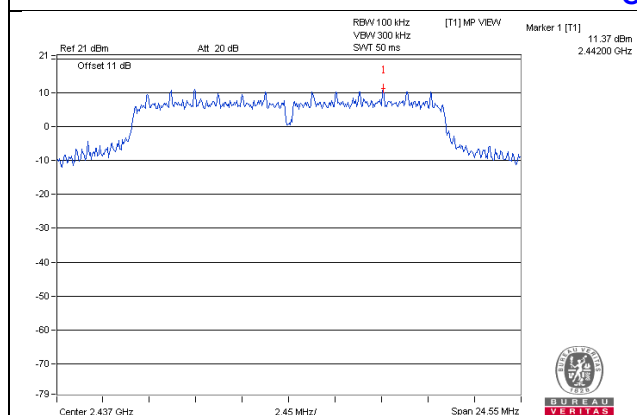


CHAIN 1

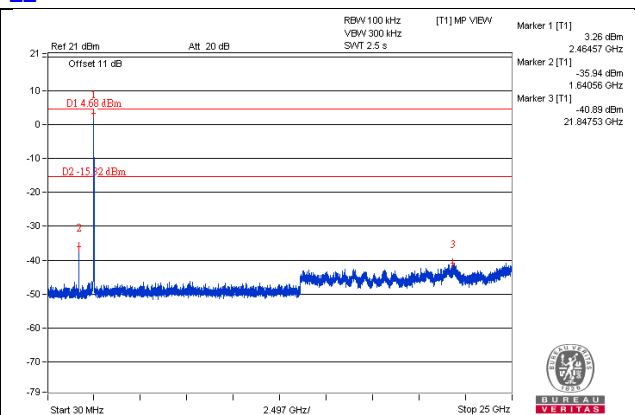
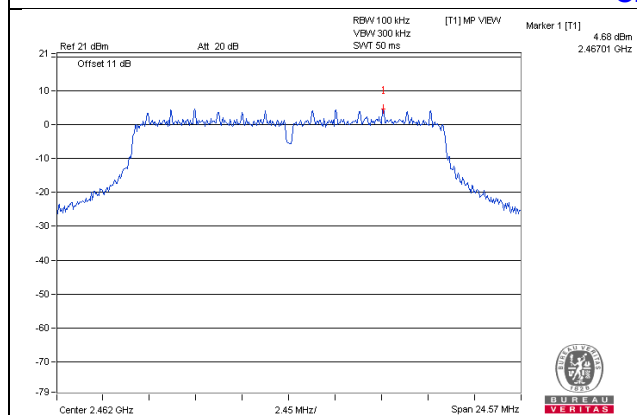
CH 1



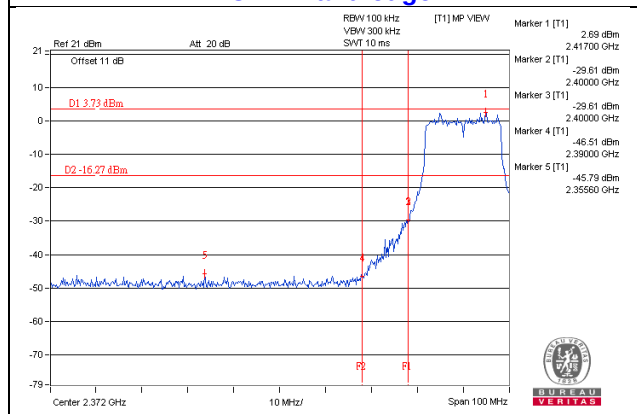
CH 6



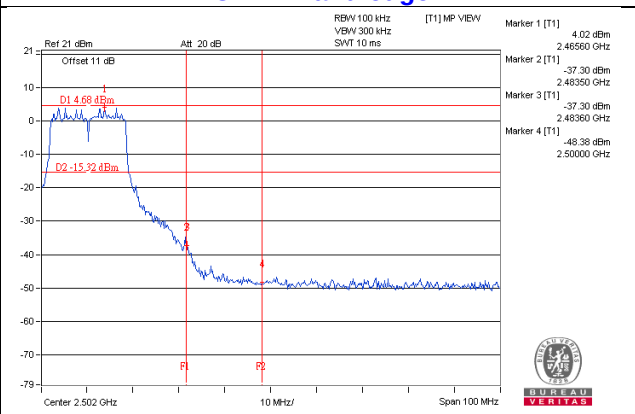
CH 11



CH 1 Band edge

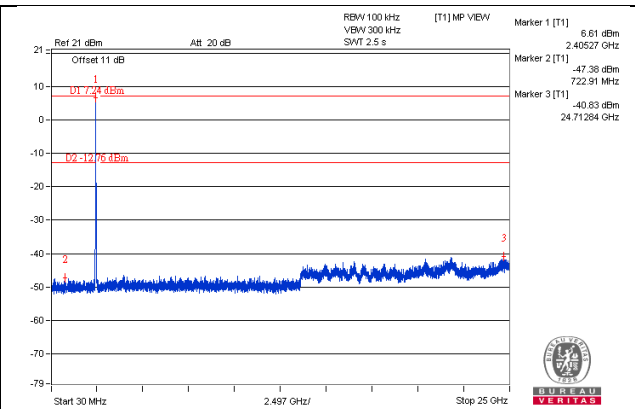
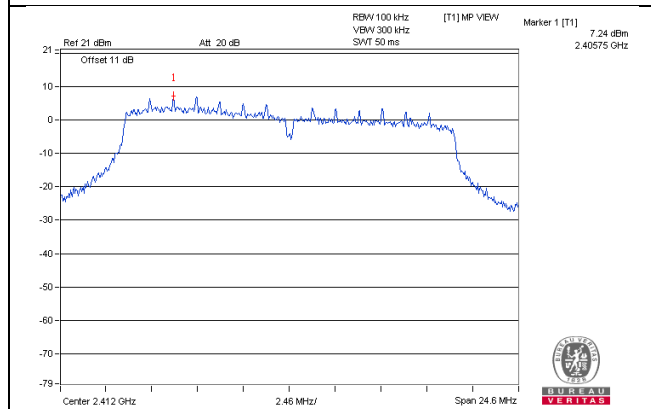


CH 11 Band edge

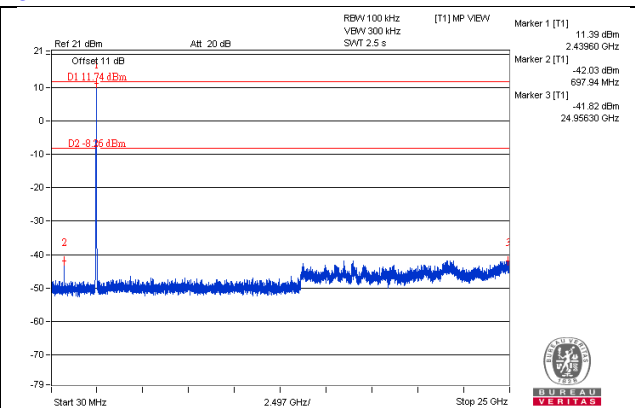
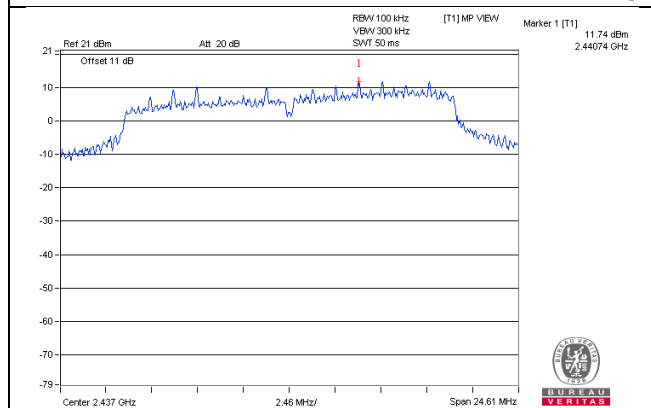


802.11n (HT20) CHAIN 0

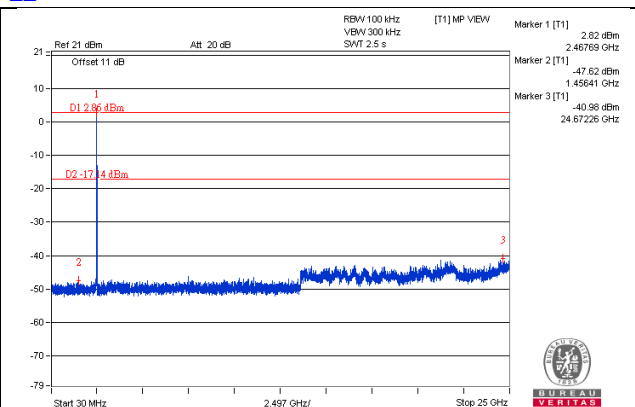
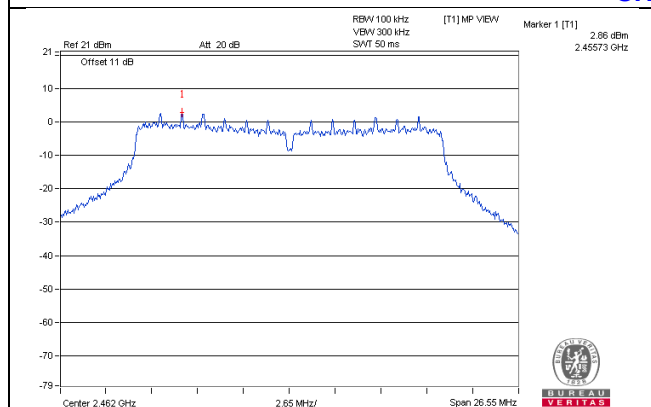
CH 1



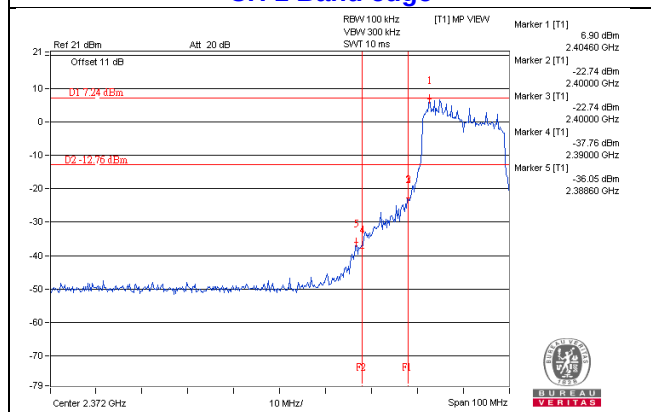
CH 6



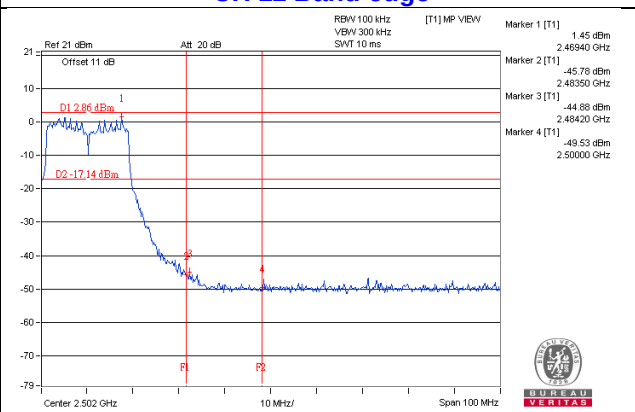
CH 11



CH 1 Band edge

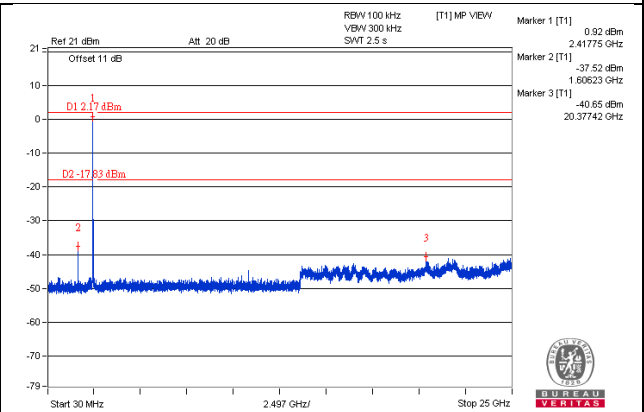
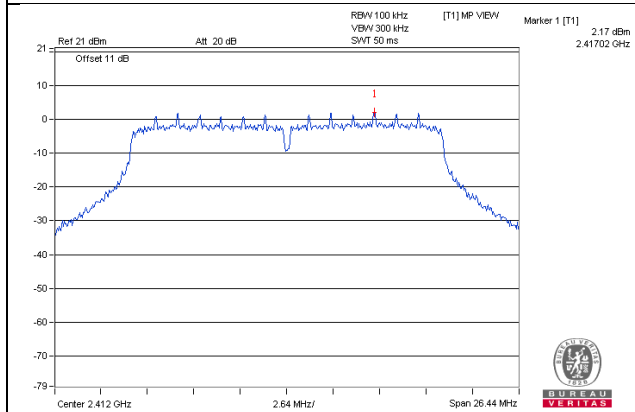


CH 11 Band edge

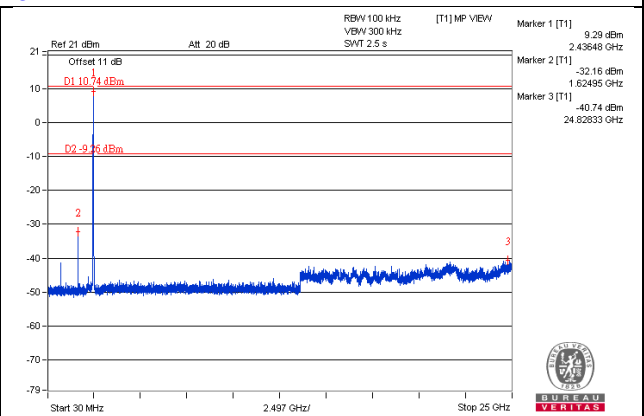
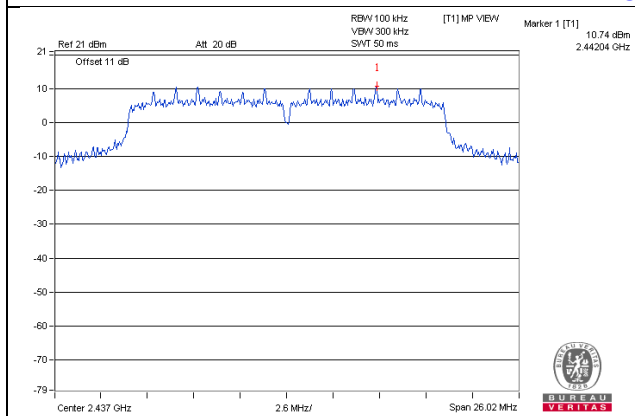


CHAIN 1

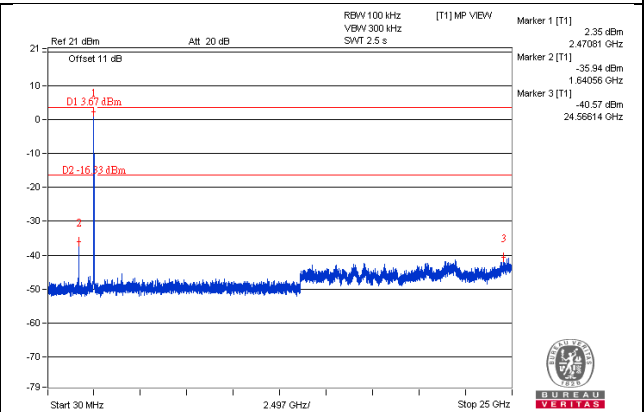
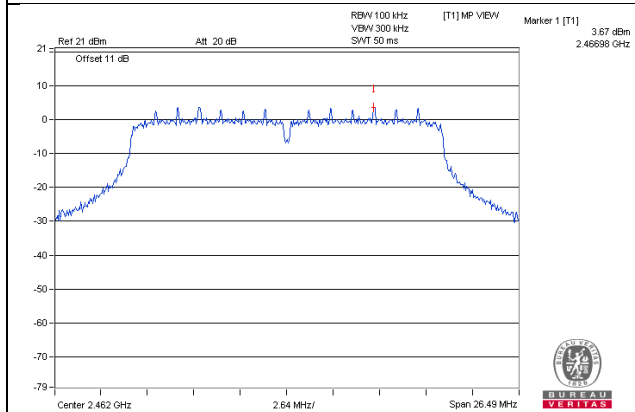
CH 1



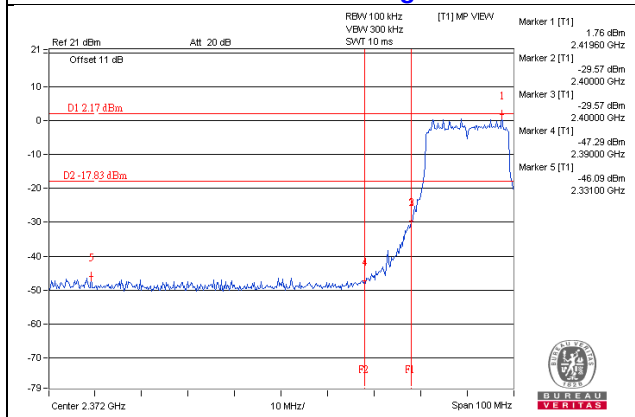
CH 6



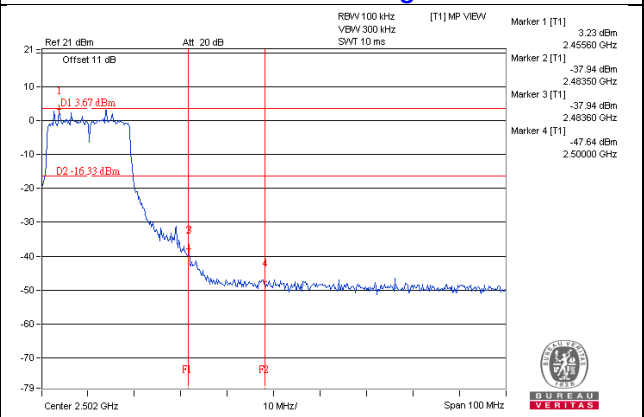
CH 11



CH 1 Band edge

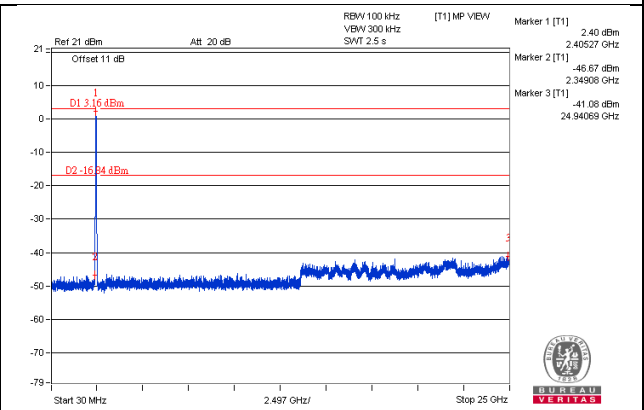
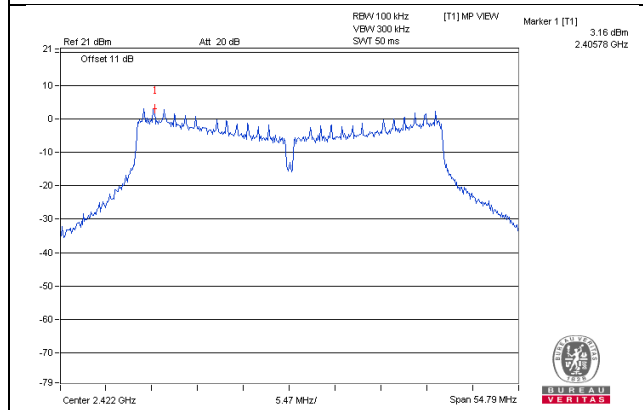


CH 11 Band edge

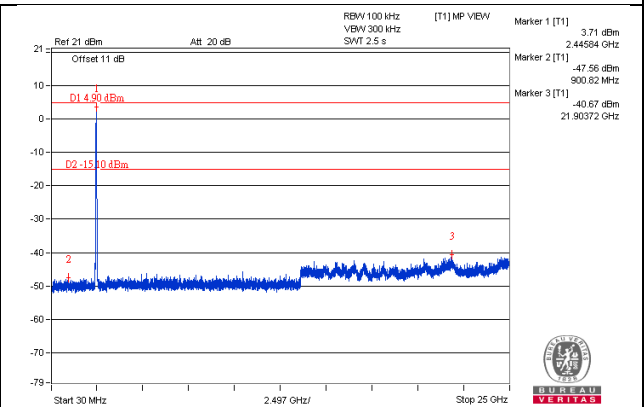
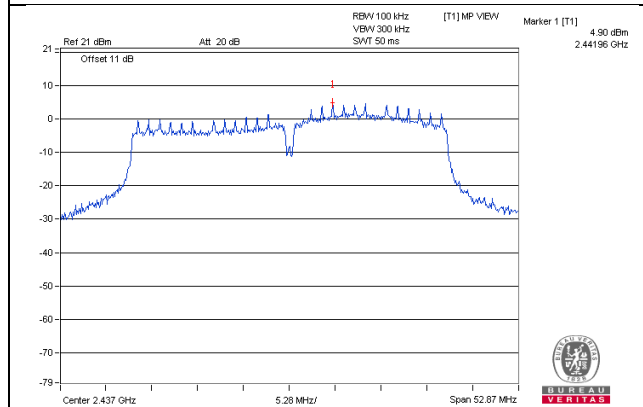


802.11n (HT40) Chain 0

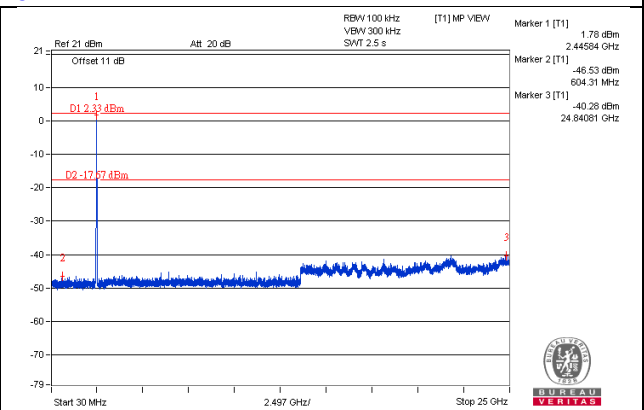
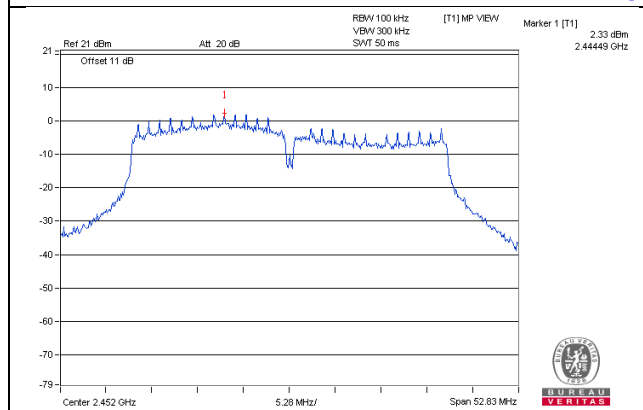
CH 3



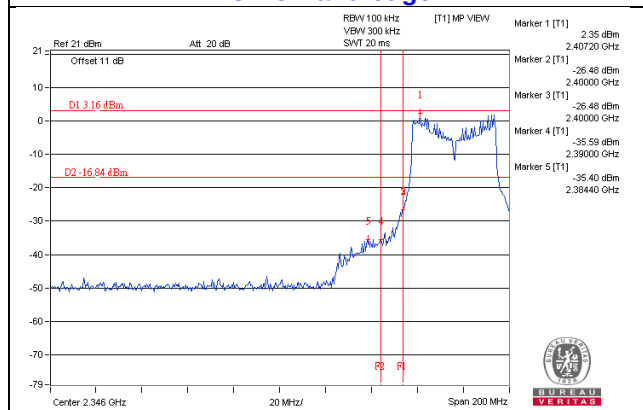
CH 6



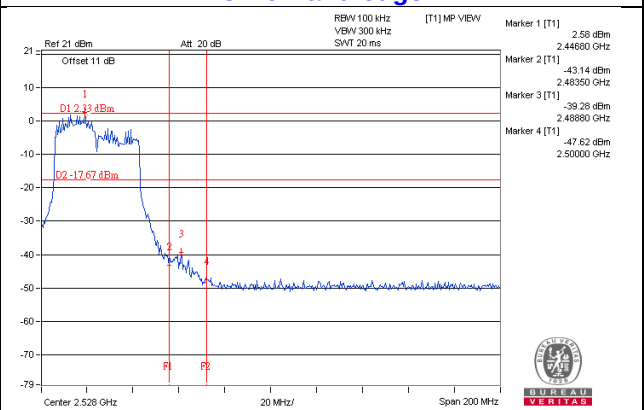
CH 9



CH 3 Band edge

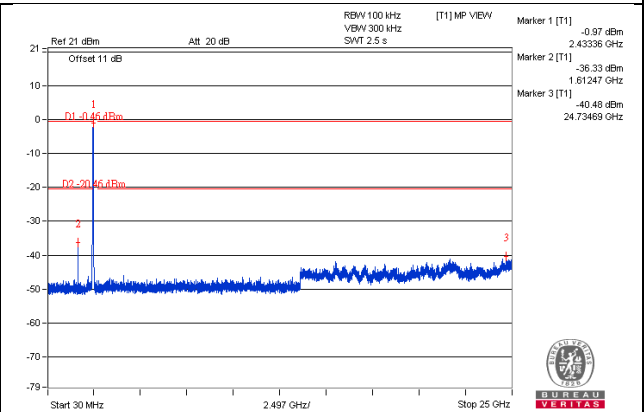
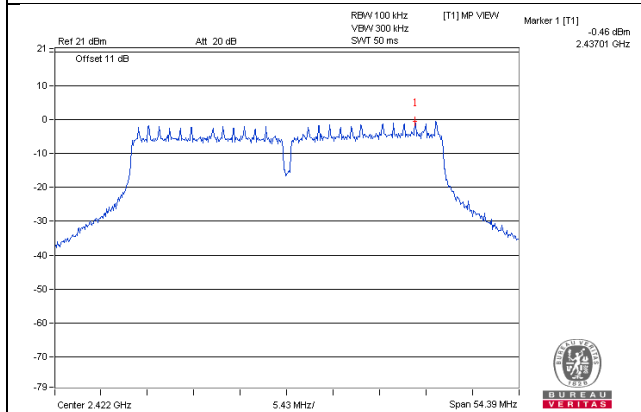


CH 9 Band edge

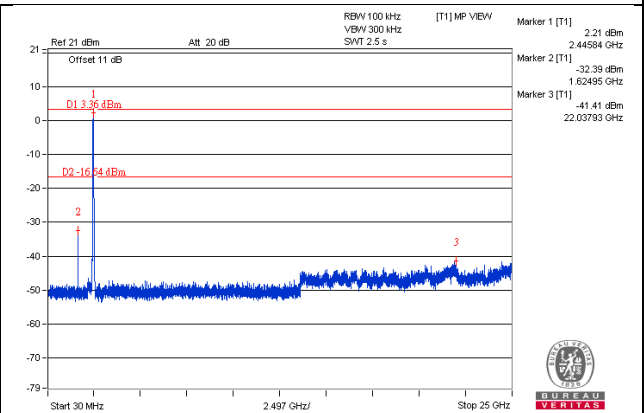
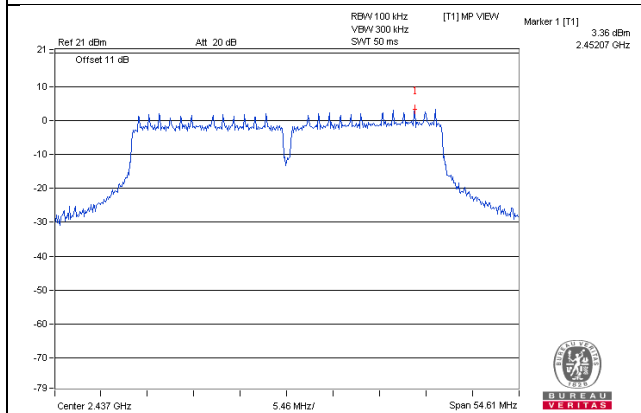


Chain 1

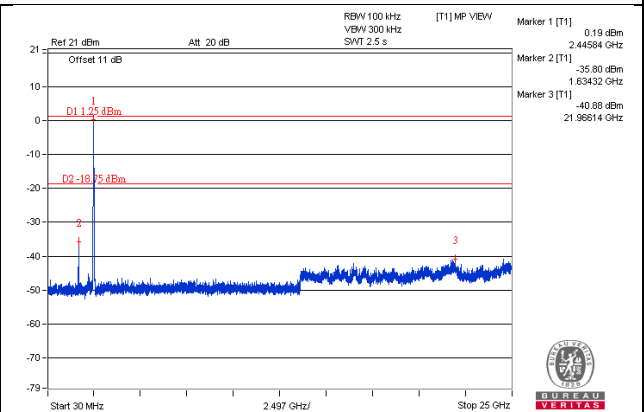
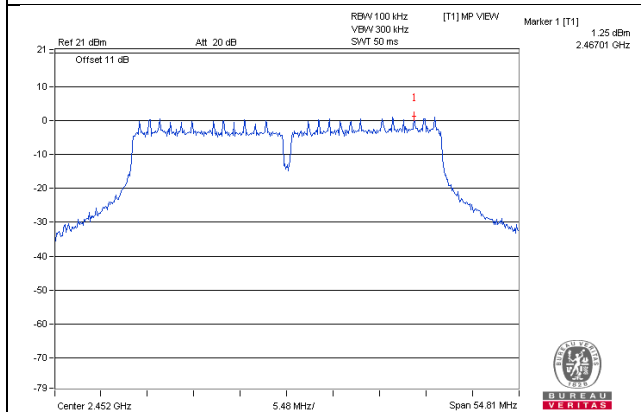
CH 3



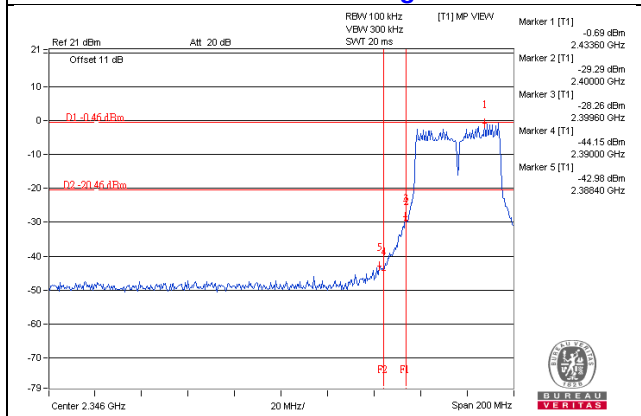
CH 6



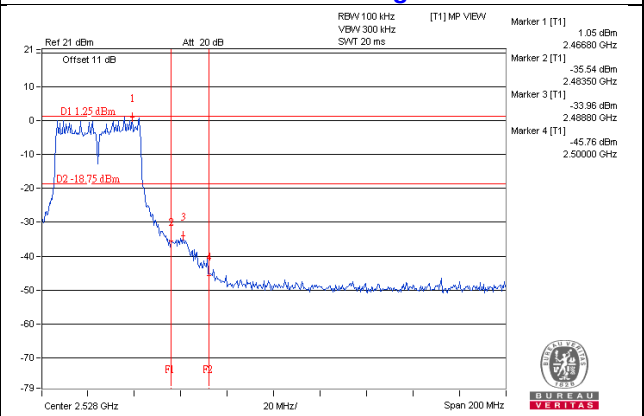
CH 9



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

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

Linkou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

--- END ---