

FCC Test Report

Report No.: RF180717E02

FCC ID: 2ABLK-GM1020

Test Model: GM1020

Received Date: July 18, 2018

Test Date: Aug. 16 to 18, 2018

Issued Date: Sep. 06, 2018

Applicant: Calix Inc.

Address: 1035 N. McDowell Blvd. Petaluma, CA 94954 U.S.A.

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

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

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

**FCC Registration /
Designation Number:** 723255 / TW2022



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	13
3.5 General Description of Applied Standards	14
4 Test Types and Results	15
4.1 Radiated Emission and Bandedge Measurement.....	15
4.1.1 Limits of Radiated Emission and Bandedge Measurement	15
4.1.2 Test Instruments	16
4.1.3 Test Procedures.....	17
4.1.4 Deviation from Test Standard	17
4.1.5 Test Setup.....	18
4.1.6 EUT Operating Conditions.....	19
4.1.7 Test Results	20
4.2 Conducted Emission Measurement	39
4.2.1 Limits of Conducted Emission Measurement	39
4.2.2 Test Instruments	39
4.2.3 Test Procedures.....	40
4.2.4 Deviation from Test Standard	40
4.2.5 Test Setup.....	40
4.2.6 EUT Operating Conditions.....	40
4.2.7 Test Results	41
4.3 6dB Bandwidth Measurement	43
4.3.1 Limits of 6dB Bandwidth Measurement	43
4.3.2 Test Setup.....	43
4.3.3 Test Instruments	43
4.3.4 Test Procedure	43
4.3.5 Deviation from Test Standard	43
4.3.6 EUT Operating Conditions.....	43
4.3.7 Test Result.....	44
4.4 Conducted Output Power Measurement.....	46
4.4.1 Limits of Conducted Output Power Measurement	46
4.4.2 Test Setup.....	46
4.4.3 Test Instruments	46
4.4.4 Test Procedures.....	46
4.4.5 Deviation from Test Standard	46
4.4.6 EUT Operating Conditions.....	46
4.4.7 Test Results	47
4.5 Power Spectral Density Measurement.....	51
4.5.1 Limits of Power Spectral Density Measurement	51
4.5.2 Test Setup.....	51
4.5.3 Test Instruments	51
4.5.4 Test Procedure	51
4.5.5 Deviation from Test Standard	51
4.5.6 EUT Operating Condition	51

4.5.7 Test Results	52
4.6 Conducted Out of Band Emission Measurement	55
4.6.1 Limits of Conducted Out of Band Emission Measurement.....	55
4.6.2 Test Setup.....	55
4.6.3 Test Instruments	55
4.6.4 Test Procedure	55
4.6.5 Deviation from Test Standard	55
4.6.6 EUT Operating Condition	55
4.6.7 Test Results	55
5 Pictures of Test Arrangements.....	64
Appendix – Information on the Testing Laboratories	65

Release Control Record

Issue No.	Description	Date Issued
RF180717E02	Original release.	Sep. 06, 2018

1 Certificate of Conformity

Product: LCK1

Brand: Calix

Test Model: GM1020

Sample Status: ENGINEERING SAMPLE

Applicant: Calix Inc.

Test Date: Aug. 16 to 18, 2018

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Phoenix Huang, **Date:** Sep. 06, 2018
Phoenix Huang / Specialist

Approved by : May Chen, **Date:** Sep. 06, 2018
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -22.61dB at 0.15000MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2483.50MHz.
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 none and i-pex(MHF) not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.53 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.08 dB
	6GHz ~ 18GHz	4.98 dB
	18GHz ~ 40GHz	5.19 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	LCK1
Brand	Calix
Test Model	GM1020
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	120VAC, 1A
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz
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, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	2.412 ~ 2.462GHz CDD Mode: 487.203mW Beamforming Mode 483.764mW 5.18 ~ 5.24GHz (Client) CDD Mode: 201.853mW Beamforming Mode 201.853mW 5.18 ~ 5.24GHz (Master) CDD Mode: 336.538mW Beamforming Mode 334.608mW 5.745 ~ 5.825GHz CDD Mode: 450.343mW Beamforming Mode 450.343mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This device can support different category application which switched to access point mode and client mode by software.
2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	WLAN 5GHz

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

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

Antenna No.	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Antenna Connector	Cable Length (mm)
1	2.02	2.4 ~ 2.4835	PIFA	None	-
	2.48	5.15 ~ 5.85			
2	3.94	2.4 ~ 2.4835	PIFA	i-pex(MHF)	53
	5.01	5.15 ~ 5.85			

4. The EUT incorporates a MIMO function

2.4GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
VHT20	MCS 0~8, Nss=1	2TX	2RX
	MCS 0~8, Nss=2	2TX	2RX
VHT40	MCS 0~9, Nss=1	2TX	2RX
	MCS 0~9, Nss=2	2TX	2RX
5GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS 0~8, Nss=1	2TX	2RX
	MCS 0~8, Nss=2	2TX	2RX
802.11ac (VHT40)	MCS 0~9, Nss=1	2TX	2RX
	MCS 0~9, Nss=2	2TX	2RX
802.11ac (VHT80)	MCS 0~9, Nss=1	2TX	2RX
	MCS 0~9, Nss=2	2TX	2RX

Note:

1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)
5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

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

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

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
VHT20	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5
Beamforming Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
VHT20	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

Power Line Conducted Emission Test:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11g	1 to 11	6	OFDM	BPSK	6

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

CDD Mode					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6
VHT20	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5
Beamforming Mode (output power only)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
VHT20	1 to 11	1, 2, 6, 10, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 4, 6, 8, 9	OFDM	BPSK	13.5

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	24deg. C, 65%RH	120Vac, 60Hz	Eason Tseng
RE $<$ 1G	22deg. C, 67%RH	120Vac, 60Hz	Andy Ho
PLC	24deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

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

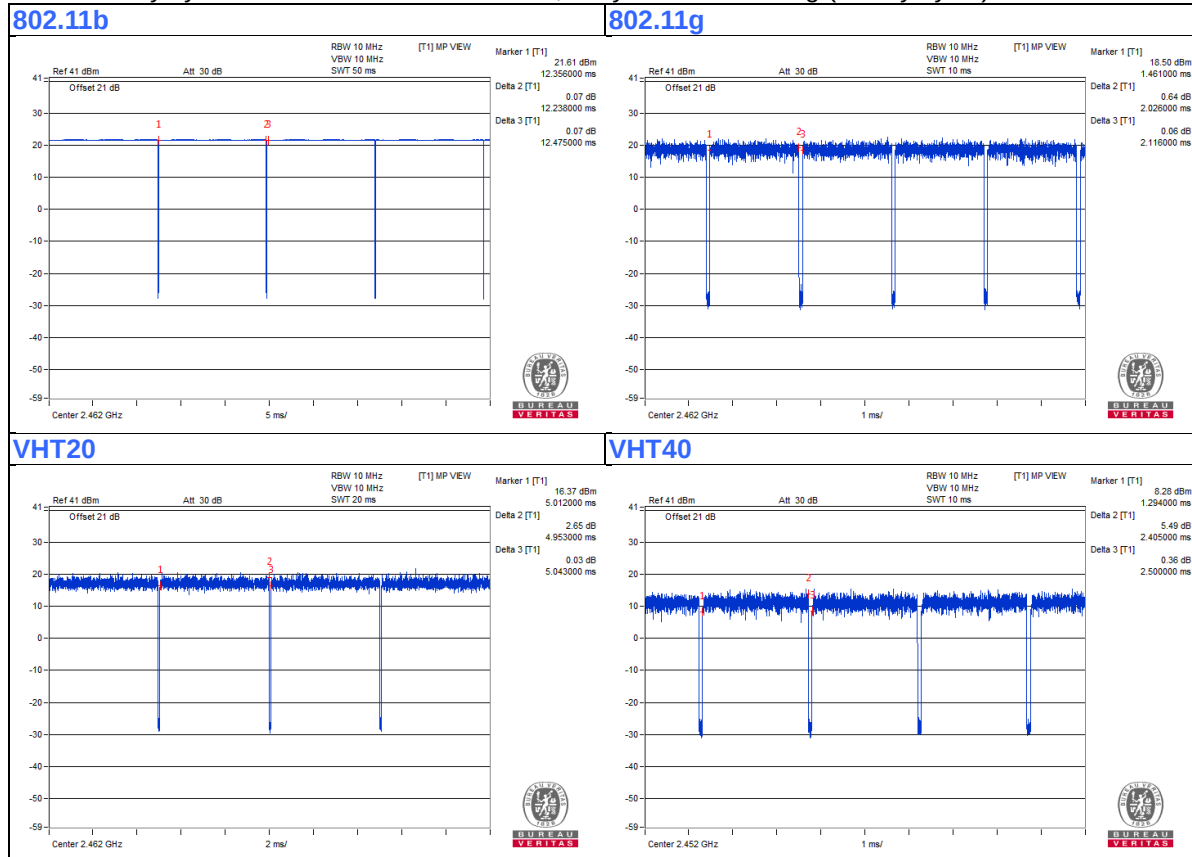
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11b: Duty cycle = $12.238 \text{ ms} / 12.475 \text{ ms} = 0.981$

802.11g: Duty cycle = $2.026 \text{ ms} / 2.116 \text{ ms} = 0.957$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.19$

VHT20: Duty cycle = $4.953 \text{ ms} / 5.043 \text{ ms} = 0.982$

VHT40: Duty cycle = $2.405 \text{ ms} / 2.5 \text{ ms} = 0.962$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.17$



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.

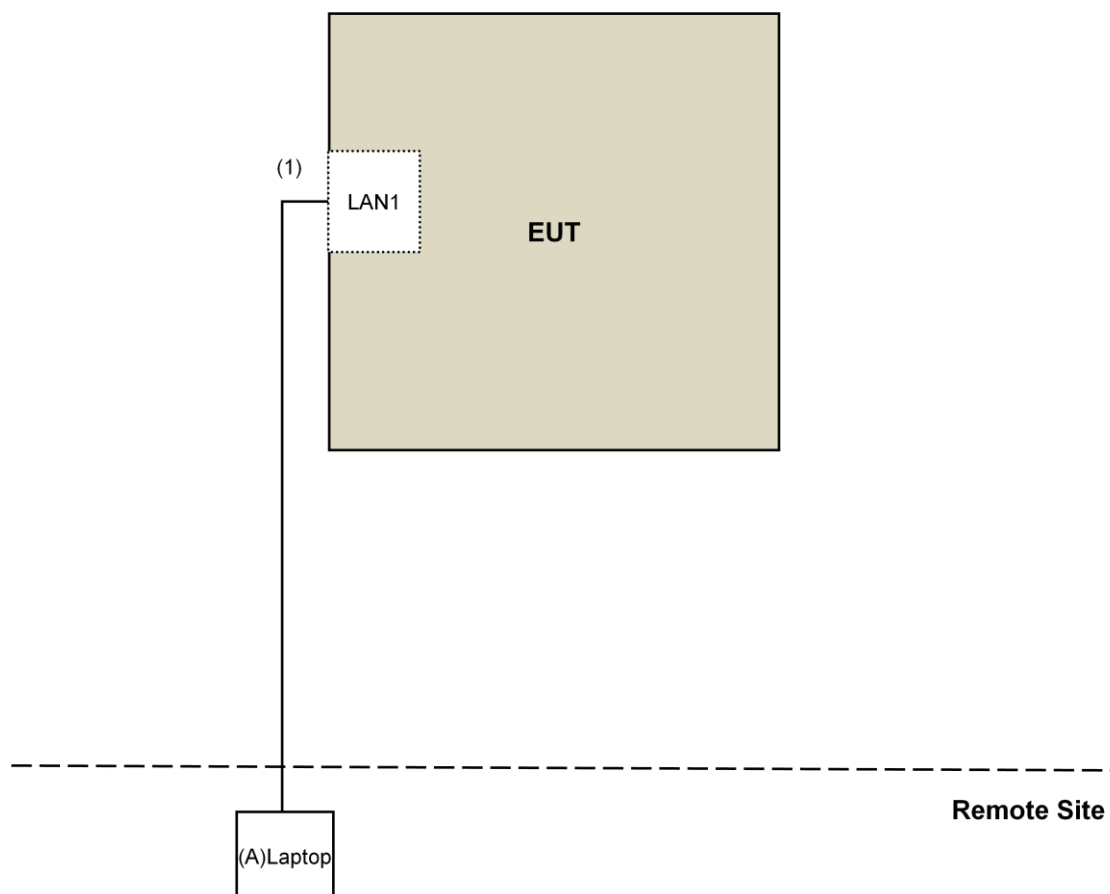
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 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.

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, 2018	July 11, 2019
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna ^(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 05, 2018	May 04, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-3-1	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-2	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-3	Mar. 20, 2018	Mar. 19, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200	160922	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	150317	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-5000	150322	Jan. 29, 2018	Jan. 28, 2019
Spectrum Analyzer Keysight	N9030A	MY54490679	July 23, 2018	July 22, 2019
Pre-Amplifier EMCI	EMC184045SE	980386	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160924	Jan. 29, 2018	Jan. 28, 2019
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	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The CANADA Site Registration No. is 20331-1
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Aug. 16 to 18, 2018

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

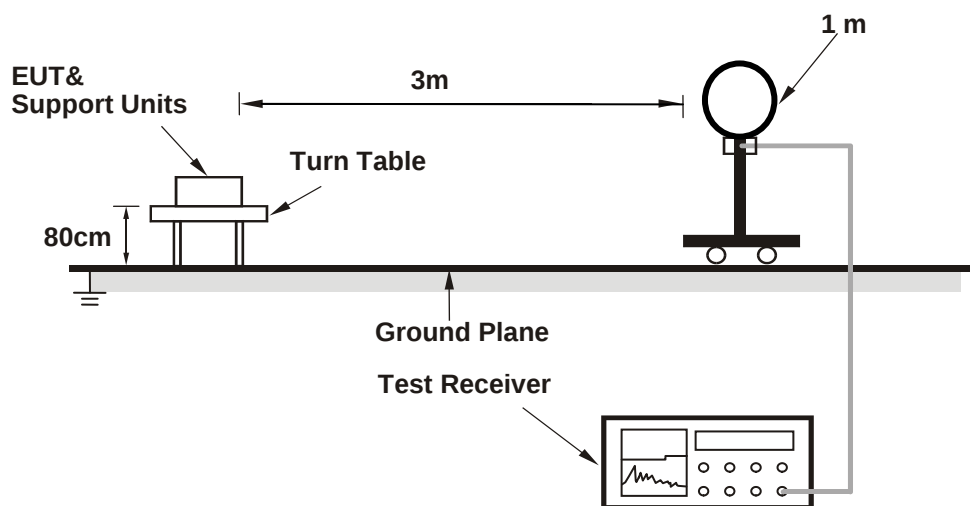
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

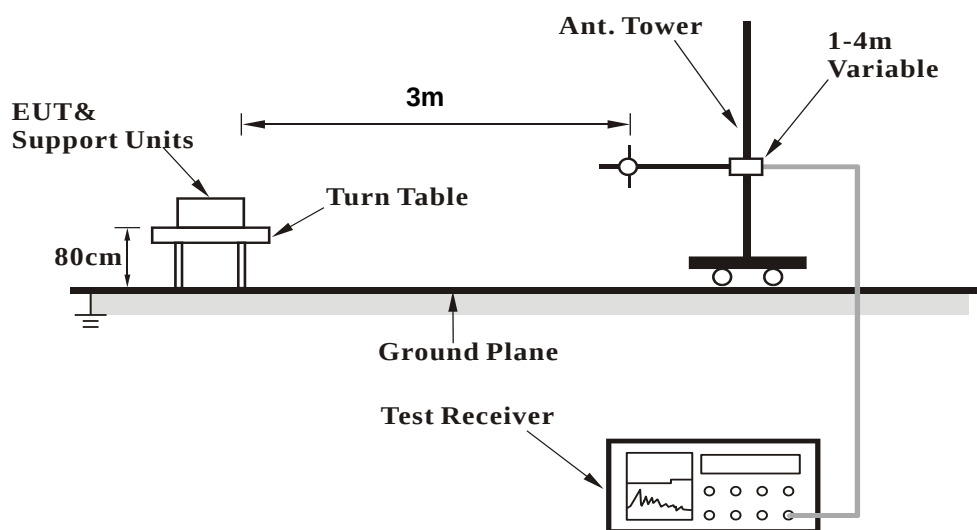
No deviation.

4.1.5 Test Setup

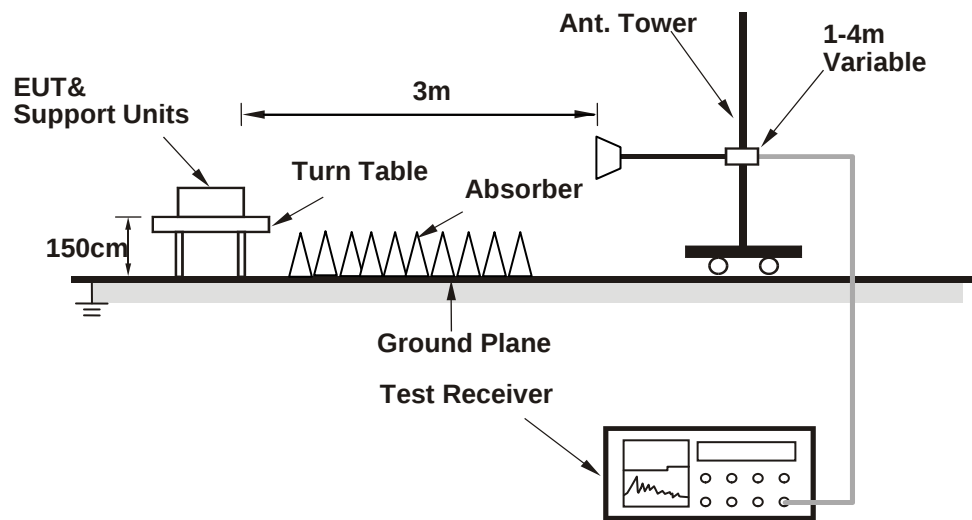
For Radiated emission below 30MHz



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 (QDART_1.0.40) has been activated to set the EUT on specific status.

4.1.7 Test Results

CDD Mode

Above 1GHz Data :

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	2385.30	58.5 PK	74.0	-15.5	2.13 H	18	61.2	-2.7
2	2385.30	53.7 AV	54.0	-0.3	2.13 H	18	56.4	-2.7
3	2390.00	53.9 PK	74.0	-20.1	2.13 H	18	56.6	-2.7
4	2390.00	43.4 AV	54.0	-10.6	2.13 H	18	46.1	-2.7
5	*2412.00	112.1 PK			2.13 H	18	114.8	-2.7
6	*2412.00	109.9 AV			2.13 H	18	112.6	-2.7
7	4824.00	56.2 PK	74.0	-17.8	1.12 H	164	54.6	1.6
8	4824.00	44.6 AV	54.0	-9.4	1.12 H	164	43.0	1.6
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	2385.30	57.4 PK	74.0	-16.6	1.18 V	279	60.1	-2.7
2	2385.30	51.6 AV	54.0	-2.4	1.18 V	279	54.3	-2.7
3	2390.00	53.0 PK	74.0	-21.0	1.18 V	279	55.7	-2.7
4	2390.00	41.8 AV	54.0	-12.2	1.18 V	279	44.5	-2.7
5	*2412.00	111.0 PK			1.18 V	279	113.7	-2.7
6	*2412.00	108.7 AV			1.18 V	279	111.4	-2.7
7	4824.00	54.3 PK	74.0	-19.7	1.28 V	305	52.7	1.6
8	4824.00	42.5 AV	54.0	-11.5	1.28 V	305	40.9	1.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 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	113.2 PK			1.97 H	351	116.2	-3.0
2	*2437.00	110.5 AV			1.97 H	351	113.5	-3.0
3	4874.00	57.9 PK	74.0	-16.1	1.08 H	163	56.3	1.6
4	4874.00	45.5 AV	54.0	-8.5	1.08 H	163	43.9	1.6
5	7311.00	42.5 PK	74.0	-31.5	2.77 H	318	34.8	7.7
6	7311.00	32.3 AV	54.0	-21.7	2.77 H	318	24.6	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.1 PK			1.17 V	276	115.1	-3.0
2	*2437.00	109.3 AV			1.17 V	276	112.3	-3.0
3	4874.00	55.4 PK	74.0	-18.6	1.25 V	305	53.8	1.6
4	4874.00	43.4 AV	54.0	-10.6	1.25 V	305	41.8	1.6
5	7311.00	42.9 PK	74.0	-31.1	2.54 V	315	35.2	7.7
6	7311.00	30.6 AV	54.0	-23.4	2.54 V	315	22.9	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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	110.6 PK			1.49 H	350	113.6	-3.0
2	*2462.00	108.4 AV			1.49 H	350	111.4	-3.0
3	2483.50	54.1 PK	74.0	-19.9	1.49 H	350	57.1	-3.0
4	2483.50	45.1 AV	54.0	-8.9	1.49 H	350	48.1	-3.0
5	2487.70	59.2 PK	74.0	-14.8	1.51 H	347	62.1	-2.9
6	2487.70	53.8 AV	54.0	-0.2	1.51 H	347	56.7	-2.9
7	4924.00	56.5 PK	74.0	-17.5	1.14 H	149	54.8	1.7
8	4924.00	44.2 AV	54.0	-9.8	1.14 H	149	42.5	1.7
9	7386.00	42.4 PK	74.0	-31.6	2.77 H	323	34.5	7.9
10	7386.00	32.3 AV	54.0	-21.7	2.77 H	323	24.4	7.9

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	*2462.00	109.5 PK			1.05 V	294	112.5	-3.0
2	*2462.00	107.2 AV			1.05 V	294	110.2	-3.0
3	2483.50	53.2 PK	74.0	-20.8	1.05 V	294	56.2	-3.0
4	2483.50	43.5 AV	54.0	-10.5	1.05 V	294	46.5	-3.0
5	2486.90	58.1 PK	74.0	-15.9	1.05 V	294	61.0	-2.9
6	2486.90	51.7 AV	54.0	-2.3	1.05 V	294	54.6	-2.9
7	4924.00	54.6 PK	74.0	-19.4	1.25 V	320	52.9	1.7
8	4924.00	42.3 AV	54.0	-11.7	1.25 V	320	40.6	1.7
9	7386.00	42.2 PK	74.0	-31.8	2.52 V	326	34.3	7.9
10	7386.00	30.2 AV	54.0	-23.8	2.52 V	326	22.3	7.9

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.

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	67.2 PK	74.0	-6.8	1.81 H	359	69.9	-2.7
2	2390.00	53.7 AV	54.0	-0.3	1.81 H	359	56.4	-2.7
3	*2412.00	108.6 PK			1.81 H	359	111.3	-2.7
4	*2412.00	99.5 AV			1.81 H	359	102.2	-2.7
5	4824.00	56.2 PK	74.0	-17.8	1.06 H	163	54.6	1.6
6	4824.00	43.4 AV	54.0	-10.6	1.06 H	163	41.8	1.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.3 PK	74.0	-7.7	1.17 V	268	69.0	-2.7
2	2390.00	52.1 AV	54.0	-1.9	1.17 V	268	54.8	-2.7
3	*2412.00	107.5 PK			1.17 V	268	110.2	-2.7
4	*2412.00	98.3 AV			1.17 V	268	101.0	-2.7
5	4824.00	53.2 PK	74.0	-20.8	1.21 V	318	51.6	1.6
6	4824.00	41.6 AV	54.0	-12.4	1.21 V	318	40.0	1.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.7 PK	74.0	-4.3	2.27 H	360	72.4	-2.7
2	2390.00	53.6 AV	54.0	-0.4	2.27 H	360	56.3	-2.7
3	*2417.00	113.1 PK			2.27 H	360	115.9	-2.8
4	*2417.00	103.4 AV			2.27 H	360	106.2	-2.8
5	4834.00	57.1 PK	74.0	-16.9	1.02 H	176	55.5	1.6
6	4834.00	44.6 AV	54.0	-9.4	1.02 H	176	43.0	1.6
7	7251.00	41.6 PK	74.0	-32.4	2.74 H	308	33.8	7.8
8	7251.00	31.5 AV	54.0	-22.5	2.74 H	308	23.7	7.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.8 PK	74.0	-5.2	1.16 V	271	71.5	-2.7
2	2390.00	52.0 AV	54.0	-2.0	1.16 V	271	54.7	-2.7
3	*2417.00	112.0 PK			1.16 V	271	114.8	-2.8
4	*2417.00	102.2 AV			1.16 V	271	105.0	-2.8
5	4834.00	54.3 PK	74.0	-19.7	1.30 V	315	52.7	1.6
6	4834.00	42.5 AV	54.0	-11.5	1.30 V	315	40.9	1.6
7	7251.00	43.2 PK	74.0	-30.8	2.56 V	308	35.4	7.8
8	7251.00	30.9 AV	54.0	-23.1	2.56 V	308	23.1	7.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 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	114.5 PK			2.25 H	354	117.5	-3.0
2	*2437.00	104.2 AV			2.25 H	354	107.2	-3.0
3	2483.50	70.1 PK	74.0	-3.9	2.13 H	347	73.1	-3.0
4	2483.50	53.6 AV	54.0	-0.4	2.13 H	347	56.6	-3.0
5	4874.00	58.1 PK	74.0	-15.9	1.11 H	167	56.5	1.6
6	4874.00	45.6 AV	54.0	-8.4	1.11 H	167	44.0	1.6
7	7311.00	42.1 PK	74.0	-31.9	2.83 H	305	34.4	7.7
8	7311.00	31.9 AV	54.0	-22.1	2.83 H	305	24.2	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.4 PK			1.21 V	276	116.4	-3.0
2	*2437.00	103.0 AV			1.21 V	276	106.0	-3.0
3	2483.50	69.6 PK	74.0	-4.4	1.16 V	281	72.6	-3.0
4	2483.50	52.3 AV	54.0	-1.7	1.16 V	281	55.3	-3.0
5	4874.00	55.3 PK	74.0	-18.7	1.26 V	293	53.7	1.6
6	4874.00	43.5 AV	54.0	-10.5	1.26 V	293	41.9	1.6
7	7311.00	43.3 PK	74.0	-30.7	2.58 V	325	35.6	7.7
8	7311.00	31.0 AV	54.0	-23.0	2.58 V	325	23.3	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 10	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	*2457.00	113.9 PK			2.20 H	352	116.9	-3.0
2	*2457.00	103.5 AV			2.20 H	352	106.5	-3.0
3	2483.50	70.9 PK	74.0	-3.1	2.20 H	352	73.9	-3.0
4	2483.50	53.9 AV	54.0	-0.1	2.20 H	352	56.9	-3.0
5	4914.00	57.2 PK	74.0	-16.8	1.12 H	158	55.5	1.7
6	4914.00	44.5 AV	54.0	-9.5	1.12 H	158	42.8	1.7
7	7371.00	41.2 PK	74.0	-32.8	2.80 H	327	33.4	7.8
8	7371.00	31.0 AV	54.0	-23.0	2.80 H	327	23.2	7.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2457.00	112.8 PK			1.14 V	289	115.8	-3.0
2	*2457.00	102.3 AV			1.14 V	289	105.3	-3.0
3	2483.50	69.8 PK	74.0	-4.2	1.14 V	289	72.8	-3.0
4	2483.50	51.8 AV	54.0	-2.2	1.14 V	289	54.8	-3.0
5	4914.00	54.5 PK	74.0	-19.5	1.29 V	318	52.8	1.7
6	4914.00	42.7 AV	54.0	-11.3	1.29 V	318	41.0	1.7
7	7371.00	43.2 PK	74.0	-30.8	2.52 V	331	35.4	7.8
8	7371.00	30.9 AV	54.0	-23.1	2.52 V	331	23.1	7.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 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	110.7 PK			2.19 H	360	113.7	-3.0
2	*2462.00	100.4 AV			2.19 H	360	103.4	-3.0
3	2483.50	67.5 PK	74.0	-6.5	2.19 H	360	70.5	-3.0
4	2483.50	53.6 AV	54.0	-0.4	2.19 H	360	56.6	-3.0
5	4924.00	56.3 PK	74.0	-17.7	1.13 H	172	54.6	1.7
6	4924.00	43.6 AV	54.0	-10.4	1.13 H	172	41.9	1.7
7	7386.00	41.0 PK	74.0	-33.0	2.81 H	329	33.1	7.9
8	7386.00	31.0 AV	54.0	-23.0	2.81 H	329	23.1	7.9
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	*2462.00	109.6 PK			1.22 V	281	112.6	-3.0
2	*2462.00	99.2 AV			1.22 V	281	102.2	-3.0
3	2483.50	66.4 PK	74.0	-7.6	1.22 V	281	69.4	-3.0
4	2483.50	51.5 AV	54.0	-2.5	1.22 V	281	54.5	-3.0
5	4924.00	53.5 PK	74.0	-20.5	1.23 V	289	51.8	1.7
6	4924.00	41.5 AV	54.0	-12.5	1.23 V	289	39.8	1.7
7	7386.00	43.0 PK	74.0	-31.0	2.53 V	307	35.1	7.9
8	7386.00	30.5 AV	54.0	-23.5	2.53 V	307	22.6	7.9

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.

VHT20

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	69.7 PK	74.0	-4.3	2.69 H	105	72.4	-2.7
2	2390.00	53.5 AV	54.0	-0.5	2.69 H	105	56.2	-2.7
3	*2412.00	109.6 PK			2.69 H	105	112.3	-2.7
4	*2412.00	98.2 AV			2.69 H	105	100.9	-2.7
5	4824.00	56.2 PK	74.0	-17.8	1.12 H	160	54.6	1.6
6	4824.00	43.6 AV	54.0	-10.4	1.12 H	160	42.0	1.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.8 PK	74.0	-5.2	1.21 V	284	71.5	-2.7
2	2390.00	51.9 AV	54.0	-2.1	1.21 V	284	54.6	-2.7
3	*2412.00	108.5 PK			1.21 V	284	111.2	-2.7
4	*2412.00	97.0 AV			1.21 V	284	99.7	-2.7
5	4824.00	53.3 PK	74.0	-20.7	1.30 V	278	51.7	1.6
6	4824.00	41.9 AV	54.0	-12.1	1.30 V	278	40.3	1.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.7 PK	74.0	-6.3	2.62 H	360	70.4	-2.7
2	2390.00	53.6 AV	54.0	-0.4	2.62 H	360	56.3	-2.7
3	*2417.00	112.6 PK			2.62 H	360	115.4	-2.8
4	*2417.00	102.9 AV			2.62 H	360	105.7	-2.8
5	4834.00	57.2 PK	74.0	-16.8	1.12 H	175	55.6	1.6
6	4834.00	44.8 AV	54.0	-9.2	1.12 H	175	43.2	1.6
7	7251.00	41.3 PK	74.0	-32.7	2.77 H	332	33.5	7.8
8	7251.00	31.2 AV	54.0	-22.8	2.77 H	332	23.4	7.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.8 PK	74.0	-7.2	1.11 V	274	69.5	-2.7
2	2390.00	52.0 AV	54.0	-2.0	1.11 V	274	54.7	-2.7
3	*2417.00	111.5 PK			1.11 V	274	114.3	-2.8
4	*2417.00	101.7 AV			1.11 V	274	104.5	-2.8
5	4834.00	54.1 PK	74.0	-19.9	1.21 V	299	52.5	1.6
6	4834.00	42.3 AV	54.0	-11.7	1.21 V	299	40.7	1.6
7	7251.00	42.9 PK	74.0	-31.1	2.55 V	308	35.1	7.8
8	7251.00	30.6 AV	54.0	-23.4	2.55 V	308	22.8	7.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 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	114.2 PK			2.21 H	354	117.2	-3.0
2	*2437.00	104.4 AV			2.21 H	354	107.4	-3.0
3	2483.50	71.8 PK	74.0	-2.2	2.27 H	349	74.8	-3.0
4	2483.50	53.7 AV	54.0	-0.3	2.27 H	349	56.7	-3.0
5	4874.00	58.7 PK	74.0	-15.3	1.03 H	172	57.1	1.6
6	4874.00	46.0 AV	54.0	-8.0	1.03 H	172	44.4	1.6
7	7311.00	42.7 PK	74.0	-31.3	2.77 H	328	35.0	7.7
8	7311.00	32.3 AV	54.0	-21.7	2.77 H	328	24.6	7.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	113.1 PK			1.13 V	285	116.1	-3.0
2	*2437.00	103.2 AV			1.13 V	285	106.2	-3.0
3	2483.50	70.2 PK	74.0	-3.8	1.42 V	256	73.2	-3.0
4	2483.50	51.1 AV	54.0	-2.9	1.42 V	256	54.1	-3.0
5	4874.00	55.0 PK	74.0	-19.0	1.26 V	316	53.4	1.6
6	4874.00	43.1 AV	54.0	-10.9	1.26 V	316	41.5	1.6
7	7311.00	43.4 PK	74.0	-30.6	2.53 V	299	35.7	7.7
8	7311.00	31.2 AV	54.0	-22.8	2.53 V	299	23.5	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 10	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	*2457.00	113.2 PK			2.35 H	352	116.2	-3.0
2	*2457.00	103.1 AV			2.35 H	352	106.1	-3.0
3	2483.50	72.1 PK	74.0	-1.9	2.35 H	352	75.1	-3.0
4	2483.50	53.9 AV	54.0	-0.1	2.35 H	352	56.9	-3.0
5	4914.00	57.0 PK	74.0	-17.0	1.08 H	179	55.3	1.7
6	4914.00	44.4 AV	54.0	-9.6	1.08 H	179	42.7	1.7
7	7371.00	41.5 PK	74.0	-32.5	2.75 H	323	33.7	7.8
8	7371.00	31.3 AV	54.0	-22.7	2.75 H	323	23.5	7.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2457.00	112.1 PK			1.20 V	277	115.1	-3.0
2	*2457.00	101.9 AV			1.20 V	277	104.9	-3.0
3	2483.50	71.0 PK	74.0	-3.0	1.20 V	277	74.0	-3.0
4	2483.50	51.8 AV	54.0	-2.2	1.20 V	277	54.8	-3.0
5	4914.00	54.1 PK	74.0	-19.9	1.28 V	307	52.4	1.7
6	4914.00	42.2 AV	54.0	-11.8	1.28 V	307	40.5	1.7
7	7371.00	42.5 PK	74.0	-31.5	2.50 V	313	34.7	7.8
8	7371.00	30.5 AV	54.0	-23.5	2.50 V	313	22.7	7.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 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	108.9 PK			2.92 H	118	111.9	-3.0
2	*2462.00	98.8 AV			2.92 H	118	101.8	-3.0
3	2483.50	68.6 PK	74.0	-5.4	2.92 H	118	71.6	-3.0
4	2483.50	53.8 AV	54.0	-0.2	2.92 H	118	56.8	-3.0
5	4924.00	56.3 PK	74.0	-17.7	1.06 H	157	54.6	1.7
6	4924.00	43.9 AV	54.0	-10.1	1.06 H	157	42.2	1.7
7	7386.00	41.5 PK	74.0	-32.5	2.82 H	333	33.6	7.9
8	7386.00	31.0 AV	54.0	-23.0	2.82 H	333	23.1	7.9
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	*2462.00	107.8 PK			1.16 V	280	110.8	-3.0
2	*2462.00	97.6 AV			1.16 V	280	100.6	-3.0
3	2483.50	67.5 PK	74.0	-6.5	1.16 V	280	70.5	-3.0
4	2483.50	51.7 AV	54.0	-2.3	1.16 V	280	54.7	-3.0
5	4924.00	53.4 PK	74.0	-20.6	1.19 V	313	51.7	1.7
6	4924.00	41.8 AV	54.0	-12.2	1.19 V	313	40.1	1.7
7	7386.00	43.2 PK	74.0	-30.8	2.51 V	326	35.3	7.9
8	7386.00	30.7 AV	54.0	-23.3	2.51 V	326	22.8	7.9

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.

VHT40

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	68.5 PK	74.0	-5.5	2.73 H	104	71.2	-2.7
2	2390.00	53.5 AV	54.0	-0.5	2.73 H	104	56.2	-2.7
3	*2422.00	106.6 PK			2.73 H	104	109.5	-2.9
4	*2422.00	96.3 AV			2.73 H	104	99.2	-2.9
5	4844.00	56.1 PK	74.0	-17.9	1.04 H	168	54.5	1.6
6	4844.00	43.1 AV	54.0	-10.9	1.04 H	168	41.5	1.6
7	7266.00	40.4 PK	74.0	-33.6	2.78 H	324	32.6	7.8
8	7266.00	30.7 AV	54.0	-23.3	2.78 H	324	22.9	7.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.6 PK	74.0	-6.4	1.13 V	283	70.3	-2.7
2	2390.00	51.9 AV	54.0	-2.1	1.13 V	283	54.6	-2.7
3	*2422.00	105.5 PK			1.13 V	283	108.4	-2.9
4	*2422.00	95.1 AV			1.13 V	283	98.0	-2.9
5	4844.00	53.6 PK	74.0	-20.4	1.21 V	319	52.0	1.6
6	4844.00	41.9 AV	54.0	-12.1	1.21 V	319	40.3	1.6
7	7266.00	43.2 PK	74.0	-30.8	2.52 V	322	35.4	7.8
8	7266.00	30.7 AV	54.0	-23.3	2.52 V	322	22.9	7.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.8 PK	74.0	-6.2	2.70 H	107	70.5	-2.7
2	2390.00	53.5 AV	54.0	-0.5	2.70 H	107	56.2	-2.7
3	*2427.00	106.3 PK			2.70 H	107	109.2	-2.9
4	*2427.00	96.7 AV			2.70 H	107	99.6	-2.9
5	4854.00	57.6 PK	74.0	-16.4	1.06 H	172	56.0	1.6
6	4854.00	45.0 AV	54.0	-9.0	1.06 H	172	43.4	1.6
7	7281.00	40.9 PK	74.0	-33.1	2.78 H	304	33.0	7.9
8	7281.00	31.1 AV	54.0	-22.9	2.78 H	304	23.2	7.9
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	1.13 V	260	69.9	-2.7
2	2390.00	51.9 AV	54.0	-2.1	1.13 V	260	54.6	-2.7
3	*2427.00	105.2 PK			1.13 V	260	108.1	-2.9
4	*2427.00	95.5 AV			1.13 V	260	98.4	-2.9
5	4854.00	54.2 PK	74.0	-19.8	1.24 V	299	52.6	1.6
6	4854.00	42.5 AV	54.0	-11.5	1.24 V	299	40.9	1.6
7	7281.00	43.6 PK	74.0	-30.4	2.56 V	305	35.7	7.9
8	7281.00	31.3 AV	54.0	-22.7	2.56 V	305	23.4	7.9

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	68.6 PK	74.0	-5.4	2.26 H	360	71.3	-2.7
2	2390.00	53.7 AV	54.0	-0.3	2.26 H	360	56.4	-2.7
3	*2437.00	109.2 PK			2.26 H	360	112.2	-3.0
4	*2437.00	98.8 AV			2.26 H	360	101.8	-3.0
5	2483.50	62.1 PK	74.0	-11.9	2.26 H	360	65.1	-3.0
6	2483.50	47.5 AV	54.0	-6.5	2.26 H	360	50.5	-3.0
7	4874.00	57.8 PK	74.0	-16.2	1.04 H	163	56.2	1.6
8	4874.00	45.3 AV	54.0	-8.7	1.04 H	163	43.7	1.6
9	7311.00	41.6 PK	74.0	-32.4	2.78 H	313	33.9	7.7
10	7311.00	31.6 AV	54.0	-22.4	2.78 H	313	23.9	7.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.7 PK	74.0	-6.3	1.13 V	295	70.4	-2.7
2	2390.00	52.1 AV	54.0	-1.9	1.13 V	295	54.8	-2.7
3	*2437.00	108.1 PK			1.13 V	295	111.1	-3.0
4	*2437.00	97.6 AV			1.13 V	295	100.6	-3.0
5	2483.50	61.0 PK	74.0	-13.0	1.13 V	295	64.0	-3.0
6	2483.50	45.4 AV	54.0	-8.6	1.13 V	295	48.4	-3.0
7	4874.00	55.4 PK	74.0	-18.6	1.31 V	309	53.8	1.6
8	4874.00	43.6 AV	54.0	-10.4	1.31 V	309	42.0	1.6
9	7311.00	42.7 PK	74.0	-31.3	2.58 V	313	35.0	7.7
10	7311.00	30.7 AV	54.0	-23.3	2.58 V	313	23.0	7.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 8	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	*2447.00	104.9 PK			2.24 H	354	107.9	-3.0
2	*2447.00	94.9 AV			2.24 H	354	97.9	-3.0
3	2483.50	68.7 PK	74.0	-5.3	2.24 H	354	71.7	-3.0
4	2483.50	53.9 AV	54.0	-0.1	2.24 H	354	56.9	-3.0
5	4894.00	57.8 PK	74.0	-16.2	1.04 H	175	56.1	1.7
6	4894.00	45.0 AV	54.0	-9.0	1.04 H	175	43.3	1.7
7	7341.00	41.7 PK	74.0	-32.3	2.79 H	303	33.8	7.9
8	7341.00	31.8 AV	54.0	-22.2	2.79 H	303	23.9	7.9
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	*2447.00	103.8 PK			1.12 V	280	106.8	-3.0
2	*2447.00	93.7 AV			1.12 V	280	96.7	-3.0
3	2483.50	66.1 PK	74.0	-7.9	1.12 V	280	69.1	-3.0
4	2483.50	51.4 AV	54.0	-2.6	1.12 V	280	54.4	-3.0
5	4894.00	54.6 PK	74.0	-19.4	1.30 V	289	52.9	1.7
6	4894.00	42.9 AV	54.0	-11.1	1.30 V	289	41.2	1.7
7	7341.00	43.1 PK	74.0	-30.9	2.52 V	314	35.2	7.9
8	7341.00	30.6 AV	54.0	-23.4	2.52 V	314	22.7	7.9

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	103.1 PK			3.03 H	360	106.1	-3.0
2	*2452.00	94.1 AV			3.03 H	360	97.1	-3.0
3	2483.50	67.6 PK	74.0	-6.4	3.03 H	360	70.6	-3.0
4	2483.50	53.6 AV	54.0	-0.4	3.03 H	360	56.6	-3.0
5	4904.00	56.0 PK	74.0	-18.0	1.05 H	157	54.3	1.7
6	4904.00	42.9 AV	54.0	-11.1	1.05 H	157	41.2	1.7
7	7356.00	40.9 PK	74.0	-33.1	2.72 H	326	33.0	7.9
8	7356.00	31.1 AV	54.0	-22.9	2.72 H	326	23.2	7.9
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	*2452.00	102.0 PK			1.13 V	284	105.0	-3.0
2	*2452.00	92.9 AV			1.13 V	284	95.9	-3.0
3	2483.50	66.5 PK	74.0	-7.5	1.13 V	284	69.5	-3.0
4	2483.50	51.5 AV	54.0	-2.5	1.13 V	284	54.5	-3.0
5	4904.00	53.8 PK	74.0	-20.2	1.22 V	308	52.1	1.7
6	4904.00	41.8 AV	54.0	-12.2	1.22 V	308	40.1	1.7
7	7356.00	43.0 PK	74.0	-31.0	2.58 V	311	35.1	7.9
8	7356.00	30.3 AV	54.0	-23.7	2.58 V	311	22.4	7.9

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.

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	91.21	30.1 QP	43.5	-13.4	3.00 H	105	43.7	-13.6
2	141.31	31.9 QP	43.5	-11.6	3.00 H	142	39.8	-7.9
3	375.00	35.0 QP	46.0	-11.0	2.50 H	302	40.0	-5.0
4	500.01	34.9 QP	46.0	-11.1	2.00 H	143	36.9	-2.0
5	625.00	34.5 QP	46.0	-11.5	1.50 H	302	33.6	0.9
6	874.99	37.8 QP	46.0	-8.2	1.00 H	256	33.3	4.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.41	33.4 QP	40.0	-6.6	1.00 V	115	42.5	-9.1
2	90.50	32.4 QP	43.5	-11.1	1.00 V	265	46.0	-13.6
3	164.08	30.6 QP	43.5	-12.9	1.00 V	308	38.7	-8.1
4	375.00	33.8 QP	46.0	-12.2	1.00 V	226	38.8	-5.0
5	500.01	34.7 QP	46.0	-11.3	1.50 V	274	36.7	-2.0
6	874.99	35.5 QP	46.0	-10.5	1.50 V	360	31.0	4.5

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

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

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: Aug. 18, 2018

4.2.3 Test Procedures

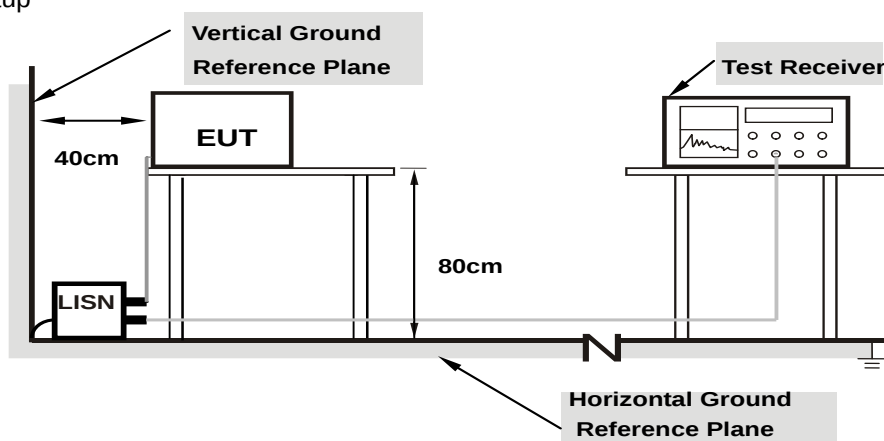
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

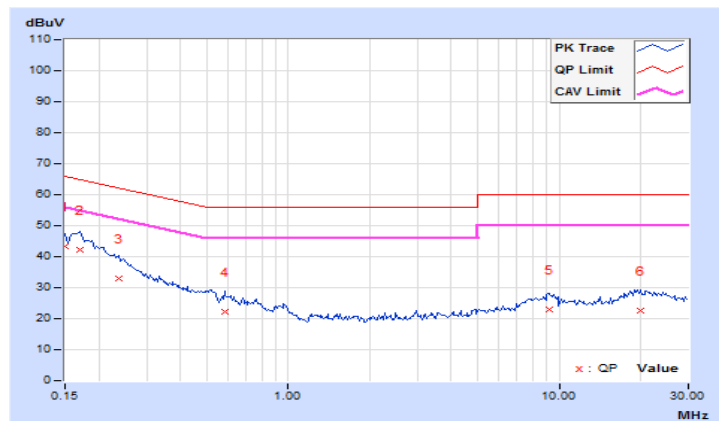
4.2.7 Test Results

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	0.15000	10.05	33.34	18.09	43.39	28.14	66.00	56.00	-22.61	-27.86
2	0.16953	10.05	32.08	17.63	42.13	27.68	64.98	54.98	-22.85	-27.30
3	0.23594	10.08	23.02	7.80	33.10	17.88	62.24	52.24	-29.14	-34.36
4	0.58359	10.14	11.90	5.48	22.04	15.62	56.00	46.00	-33.96	-30.38
5	9.21094	10.66	12.13	6.67	22.79	17.33	60.00	50.00	-37.21	-32.67
6	20.08594	11.39	11.03	5.44	22.42	16.83	60.00	50.00	-37.58	-33.17

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

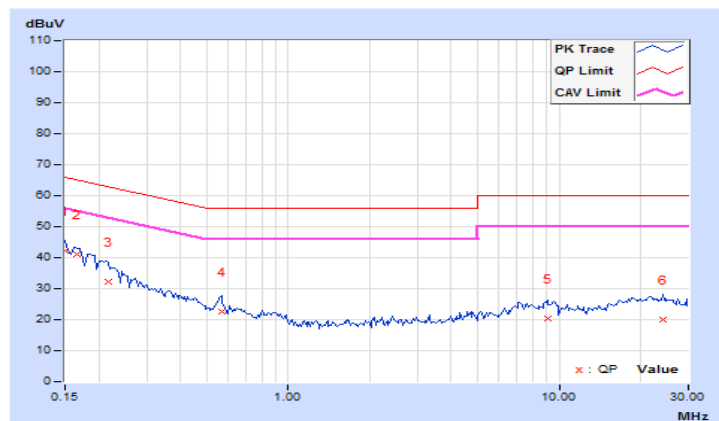


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

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	9.95	32.35	17.41	42.30	27.36	66.00	56.00	-23.70	-28.64
2	0.16562	9.96	31.01	18.08	40.97	28.04	65.18	55.18	-24.21	-27.14
3	0.21641	9.97	22.30	7.43	32.27	17.40	62.96	52.96	-30.69	-35.56
4	0.56797	10.03	12.58	4.69	22.61	14.72	56.00	46.00	-33.39	-31.28
5	9.04297	10.48	10.01	2.23	20.49	12.71	60.00	50.00	-39.51	-37.29
6	24.05078	11.21	8.70	3.19	19.91	14.40	60.00	50.00	-40.09	-35.60

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

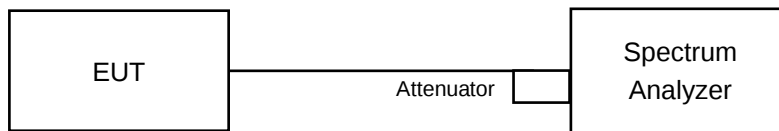


4.3 6dB Bandwidth Measurement

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 specific channel frequencies individually.

4.3.7 Test Result

CDD Mode

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	9.04	9.06	0.5	Pass
6	2437	10.10	9.58	0.5	Pass
11	2462	8.58	8.11	0.5	Pass

802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.43	16.44	0.5	Pass
2	2417	16.41	16.42	0.5	Pass
6	2437	16.41	16.39	0.5	Pass
10	2457	16.40	16.43	0.5	Pass
11	2462	16.39	16.40	0.5	Pass

VHT20

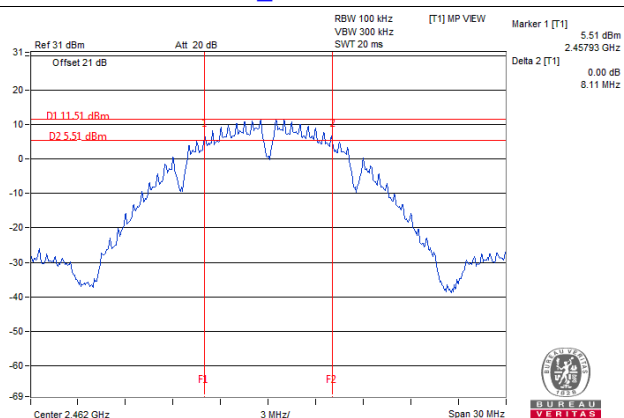
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.63	17.65	0.5	Pass
2	2417	17.62	17.63	0.5	Pass
6	2437	17.63	17.66	0.5	Pass
10	2457	17.62	17.62	0.5	Pass
11	2462	17.67	17.69	0.5	Pass

VHT40

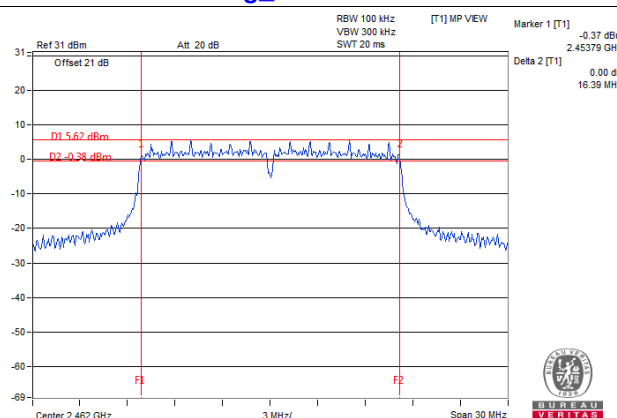
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.53	35.16	0.5	Pass
4	2427	35.34	35.21	0.5	Pass
6	2437	35.27	35.39	0.5	Pass
8	2447	35.53	35.29	0.5	Pass
9	2452	35.47	35.36	0.5	Pass

Spectrum Plot of Worst Value

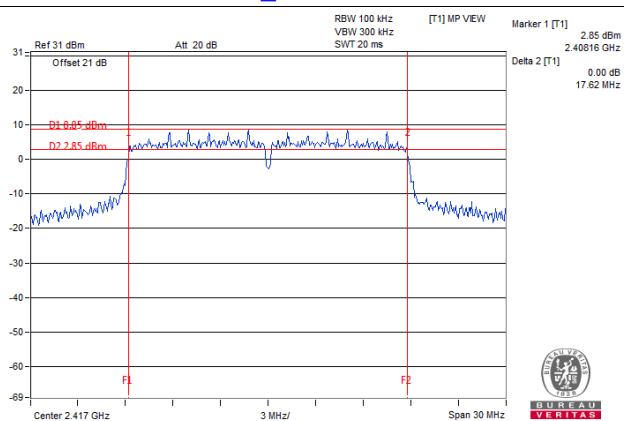
802.11b_Chain 1 / CH11



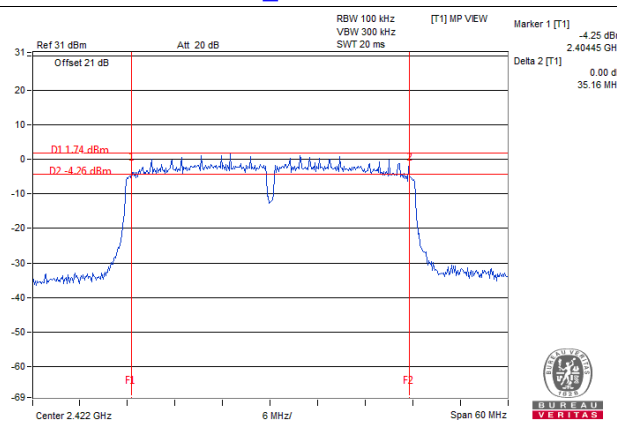
802.11g_Chain 0 / CH11



VHT20_Chain 0 / CH2



VHT40_Chain 1 / CH3



4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

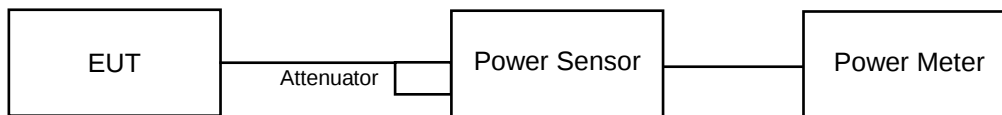
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

CDD Mode

FOR PEAK POWER

802.11b

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	23.23	22.99	409.445	26.12	30	Pass
6	2437	23.71	23.46	456.783	26.60	30	Pass
11	2462	20.93	21.25	257.232	24.10	30	Pass

802.11g

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	22.89	22.73	382.035	25.82	30	Pass
2	2417	23.62	23.51	454.532	26.58	30	Pass
6	2437	23.99	23.74	487.203	26.88	30	Pass
10	2457	23.37	23.26	429.106	26.33	30	Pass
11	2462	22.67	22.74	372.859	25.72	30	Pass

VHT20

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.88	22.02	313.391	24.96	30	Pass
2	2417	23.82	23.69	474.875	26.77	30	Pass
6	2437	23.93	23.74	483.764	26.85	30	Pass
10	2457	23.32	23.28	427.597	26.31	30	Pass
11	2462	21.63	21.85	298.655	24.75	30	Pass

VHT40

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.02	21.68	306.452	24.86	30	Pass
4	2427	22.32	22.01	329.463	25.18	30	Pass
6	2437	23.06	22.87	395.944	25.98	30	Pass
8	2447	20.60	20.35	223.208	23.49	30	Pass
9	2452	19.76	19.54	184.574	22.66	30	Pass

FOR AVERAGE POWER

802.11b

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	21.31	21.00	261.1	24.17
6	2437	22.25	21.96	324.916	25.12
11	2462	18.77	19.07	156.06	21.93

802.11g

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	16.18	16.12	82.421	19.16
2	2417	19.38	19.11	168.166	22.26
6	2437	21.23	21.16	263.356	24.21
10	2457	19.34	19.25	170.041	22.31
11	2462	16.66	16.83	94.54	19.76

VHT20

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.26	15.36	67.93	18.32
2	2417	19.45	19.10	169.388	22.29
6	2437	21.18	21.15	261.537	24.18
10	2457	19.36	19.27	170.826	22.33
11	2462	14.66	14.71	58.822	17.70

VHT40

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	15.04	15.01	63.611	18.04
4	2427	15.62	15.54	72.285	18.59
6	2437	17.62	17.37	112.386	20.51
8	2447	13.45	13.35	43.758	16.41
9	2452	12.39	12.35	34.517	15.38

Beamforming Mode

FOR PEAK POWER

VHT20

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	21.88	22.02	313.391	24.96	29.96	Pass
2	2417	23.82	23.69	474.875	26.77	29.96	Pass
6	2437	23.93	23.74	483.764	26.85	29.96	Pass
10	2457	23.32	23.28	427.597	26.31	29.96	Pass
11	2462	21.63	21.85	298.655	24.75	29.96	Pass

Note: The directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (6.04 - 6) = 29.96\text{dBm}$.

VHT40

Chan.	Chan. Freq. (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	22.02	21.68	306.452	24.86	29.96	Pass
4	2427	22.32	22.01	329.463	25.18	29.96	Pass
6	2437	23.06	22.87	395.944	25.98	29.96	Pass
8	2447	20.60	20.35	223.208	23.49	29.96	Pass
9	2452	19.76	19.54	184.574	22.66	29.96	Pass

Note: The directional gain = $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (6.04 - 6) = 29.96\text{dBm}$.

FOR AVERAGE POWER

VHT20

Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
1	2412	15.26	15.36	67.93	18.32
2	2417	19.45	19.10	169.388	22.29
6	2437	21.18	21.15	261.537	24.18
10	2457	19.36	19.27	170.826	22.33
11	2462	14.66	14.71	58.822	17.70

VHT40

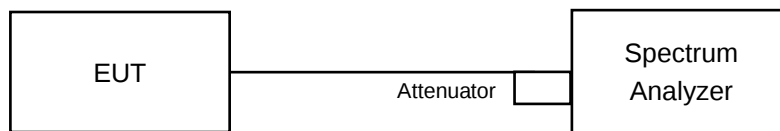
Channel	Frequency (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)
		Chain 0	Chain 1		
3	2422	15.04	15.01	63.611	18.04
4	2427	15.62	15.54	72.285	18.59
6	2437	17.62	17.37	112.386	20.51
8	2447	13.45	13.35	43.758	16.41
9	2452	12.39	12.35	34.517	15.38

4.5 Power Spectral Density Measurement

4.5.1 Limits of Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

CDD Mode

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	-1.14	3.01	1.87	7.96	Pass
	6	2437	-1.08	3.01	1.93	7.96	Pass
	11	2462	-2.79	3.01	0.22	7.96	Pass
1	1	2412	0.55	3.01	3.56	7.96	Pass
	6	2437	-0.63	3.01	2.38	7.96	Pass
	11	2462	-2.75	3.01	0.26	7.96	Pass

Note: 1. The directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (6.04 - 6) = 7.96\text{dBm}$.

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	-8.52	3.01	-5.51	7.96	Pass
	2	2427	-5.07	3.01	-2.06	7.96	Pass
	6	2437	-4.44	3.01	-1.43	7.96	Pass
	10	2457	-6.14	3.01	-3.13	7.96	Pass
	11	2462	-8.38	3.01	-5.37	7.96	Pass
1	1	2412	-9.27	3.01	-6.26	7.96	Pass
	2	2427	-5.02	3.01	-2.01	7.96	Pass
	6	2437	-3.53	3.01	-0.52	7.96	Pass
	10	2457	-5.88	3.01	-2.87	7.96	Pass
	11	2462	-7.54	3.01	-4.53	7.96	Pass

Note: 1. The directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (6.04 - 6) = 7.96\text{dBm}$.

VHT20

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	-10.58	3.01	-7.57	7.96	Pass
	2	2427	-5.97	3.01	-2.96	7.96	Pass
	6	2437	-4.91	3.01	-1.90	7.96	Pass
	10	2457	-6.31	3.01	-3.30	7.96	Pass
	11	2462	-10.86	3.01	-7.85	7.96	Pass
1	1	2412	-10.61	3.01	-7.60	7.96	Pass
	2	2427	-5.48	3.01	-2.47	7.96	Pass
	6	2437	-4.11	3.01	-1.10	7.96	Pass
	10	2457	-5.15	3.01	-2.14	7.96	Pass
	11	2462	-9.63	3.01	-6.62	7.96	Pass

Note: 1. The directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (6.04 - 6) = 7.96\text{dBm}$.

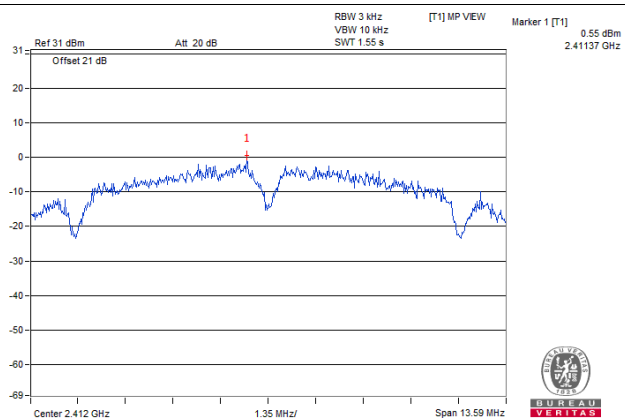
VHT40

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-13.59	3.01	-10.58	7.96	Pass
	4	2427	-12.08	3.01	-9.07	7.96	Pass
	6	2437	-9.86	3.01	-6.85	7.96	Pass
	8	2447	-14.80	3.01	-11.79	7.96	Pass
	9	2452	-15.81	3.01	-12.80	7.96	Pass
1	3	2422	-12.87	3.01	-9.86	7.96	Pass
	4	2427	-11.52	3.01	-8.51	7.96	Pass
	6	2437	-9.98	3.01	-6.97	7.96	Pass
	8	2447	-14.76	3.01	-11.75	7.96	Pass
	9	2452	-15.55	3.01	-12.54	7.96	Pass

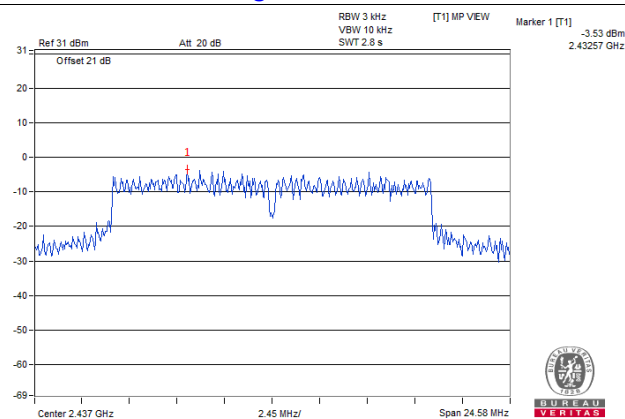
Note: 1. The directional gain = $10 \log[(10^{\text{Chain0/20}} + 10^{\text{Chain1/20}})^2 / 2] = 6.04\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8 - (6.04 - 6) = 7.96\text{dBm}$.

Spectrum Plot of Worst Value

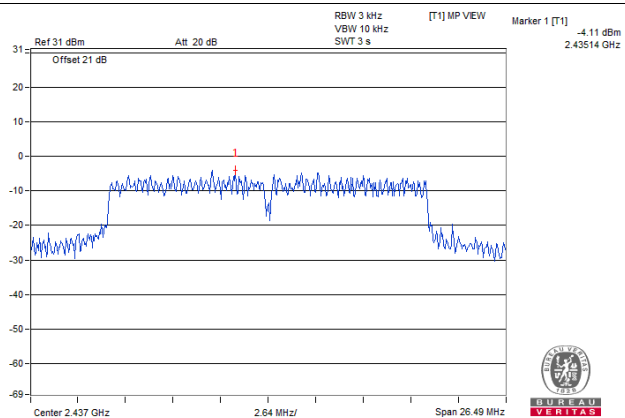
802.11b_Chain 1 / CH1



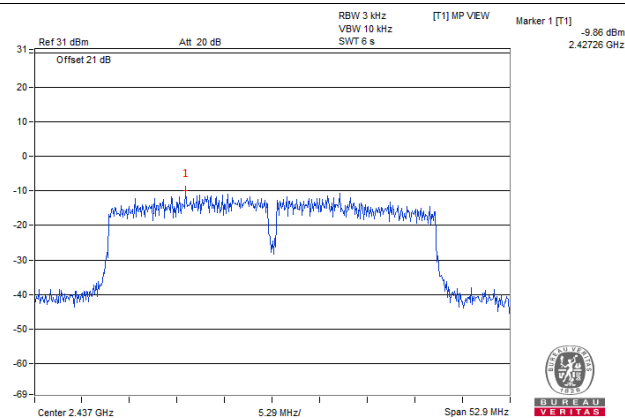
802.11g_Chain 1 / CH6



VHT20_Chain 1 / CH6



VHT40_Chain 0 / CH6

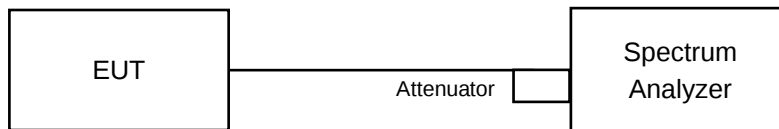


4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

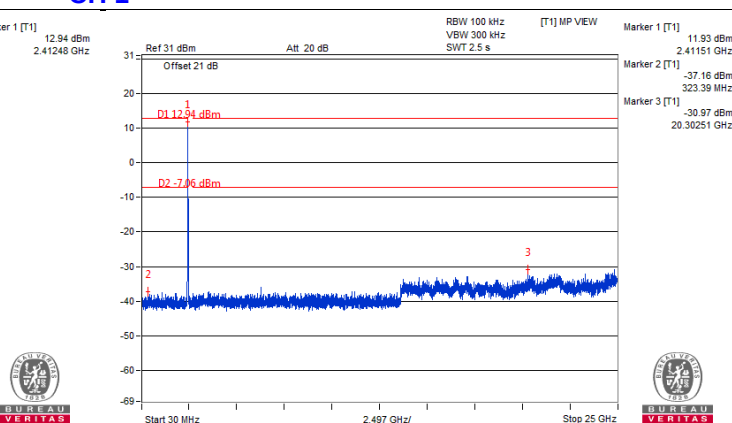
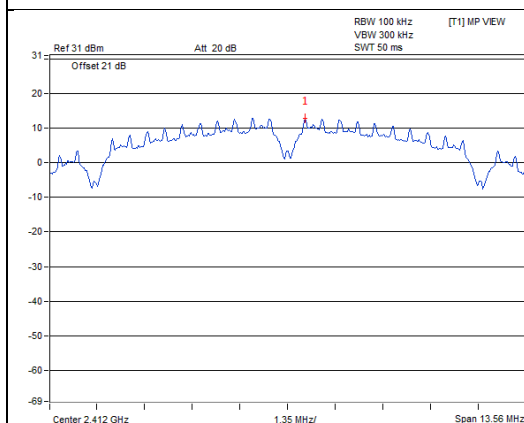
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.6.7 Test Results

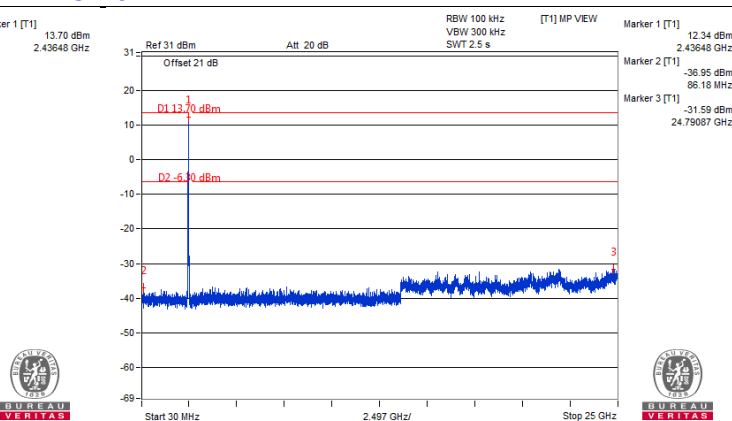
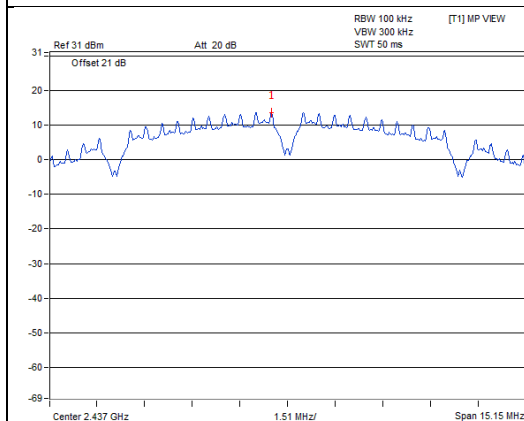
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11b Chain 0

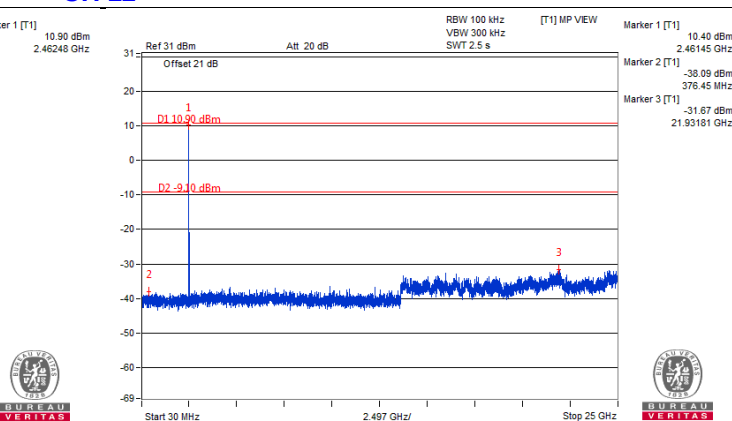
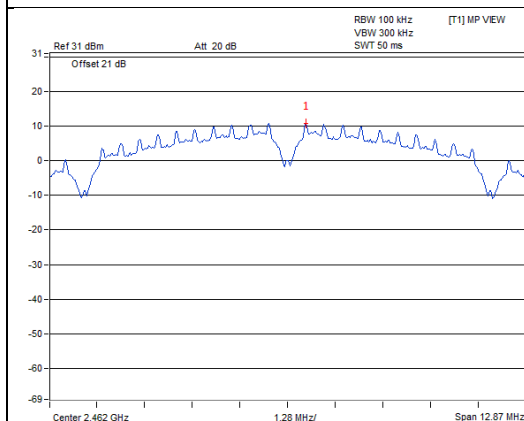
CH 1



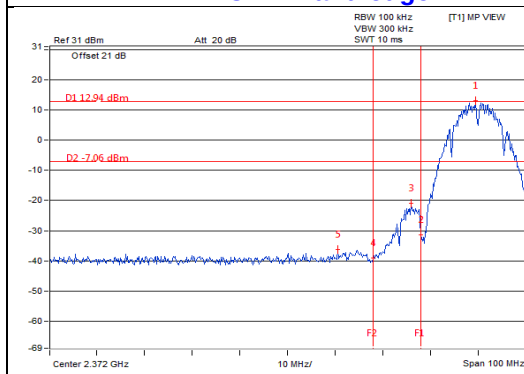
CH 6



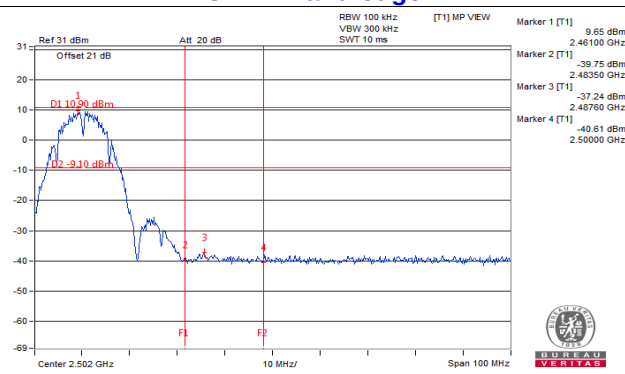
CH 11



CH 1 Band edge

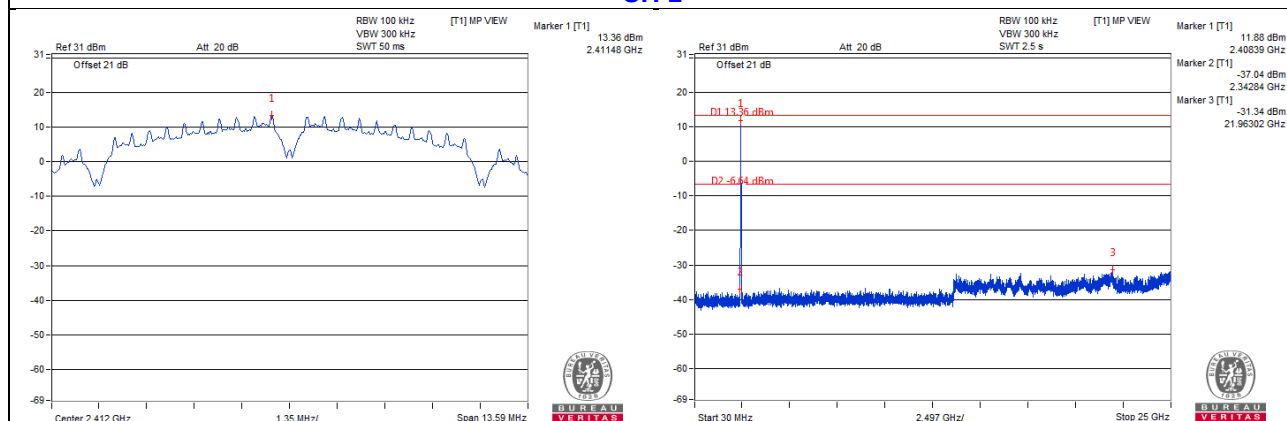


CH 11 Band edge

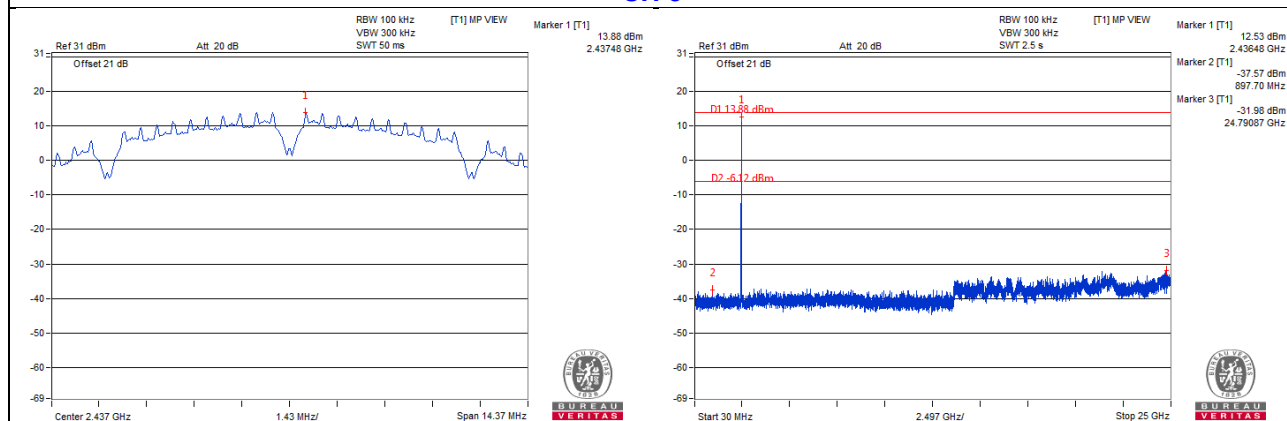


Chain 1

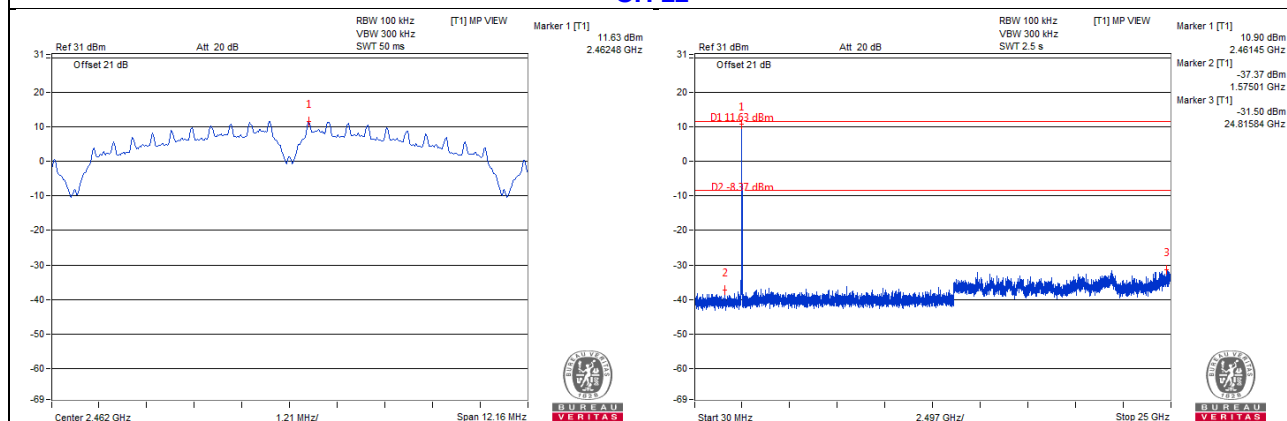
CH 1



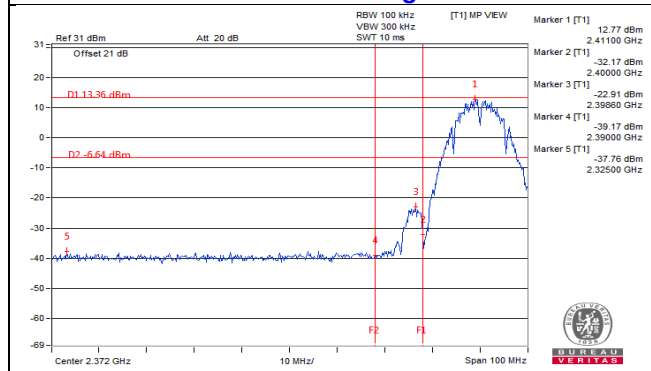
CH 6



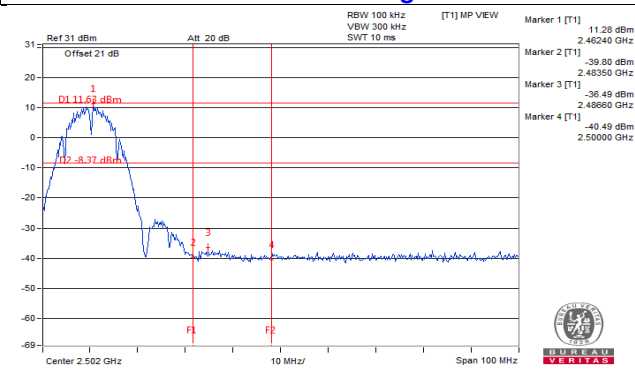
CH 11



CH 1 Band edge

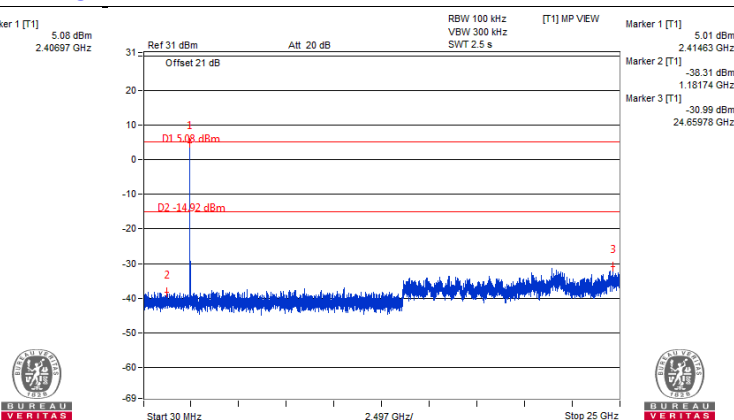
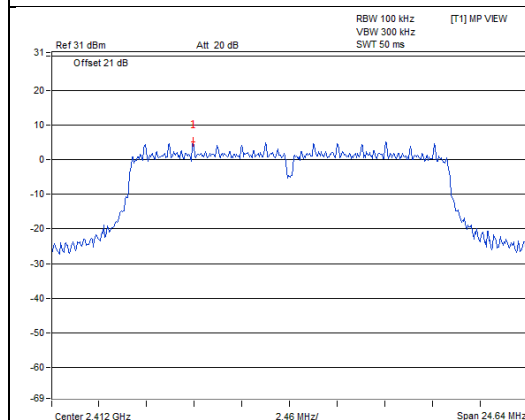


CH 11 Band edge

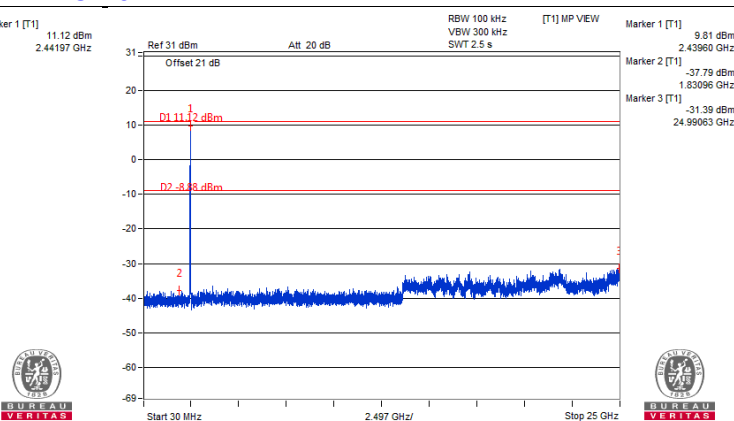
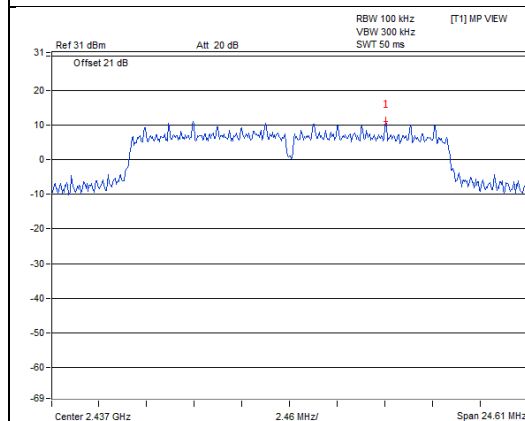


802.11g Chain 0

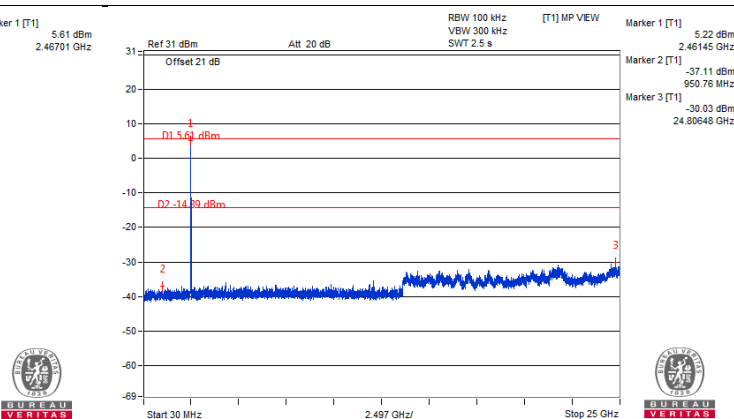
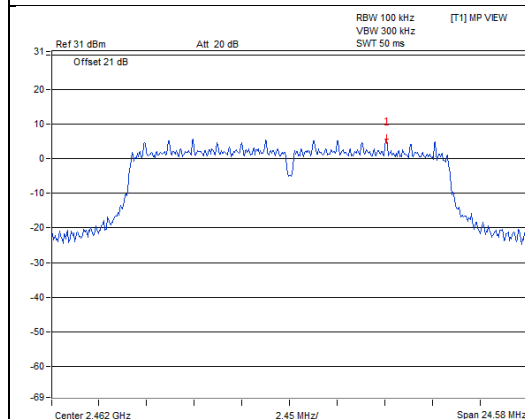
CH 1



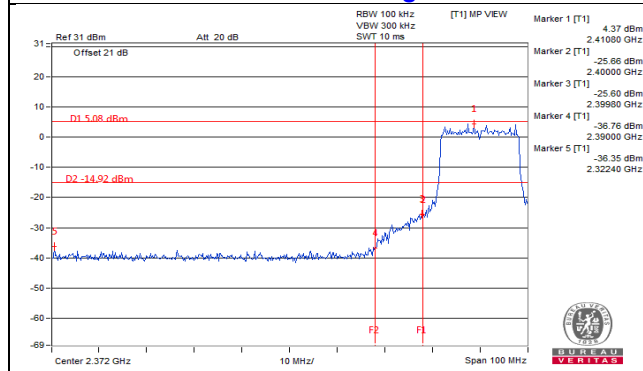
CH 6



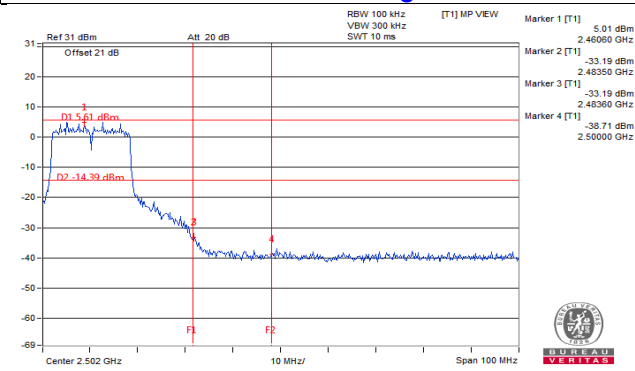
CH 11



CH 1 Band edge

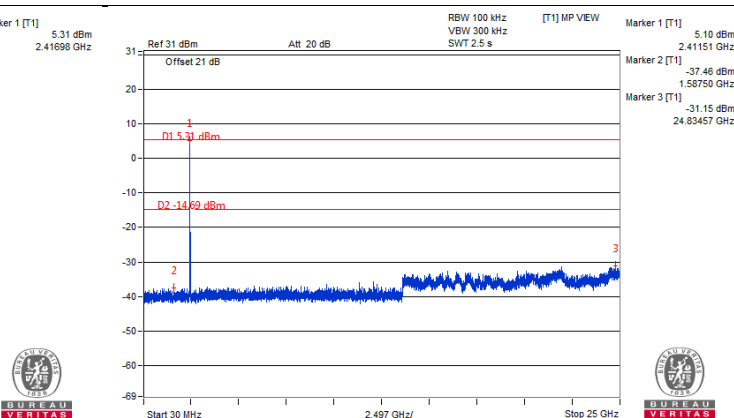
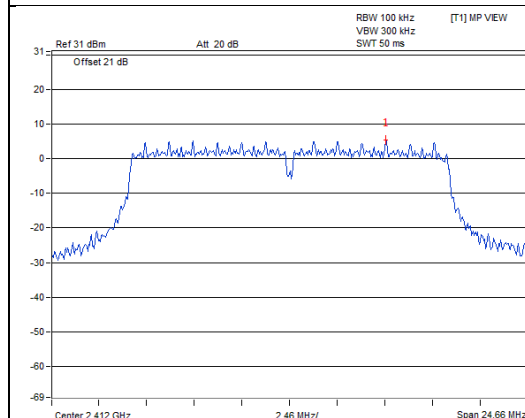


CH 11 Band edge

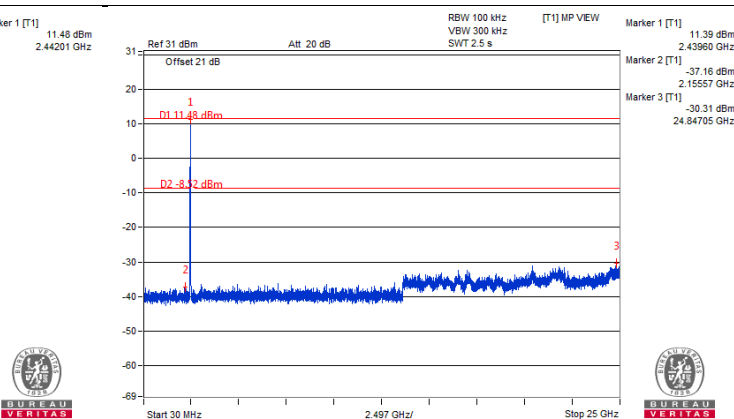
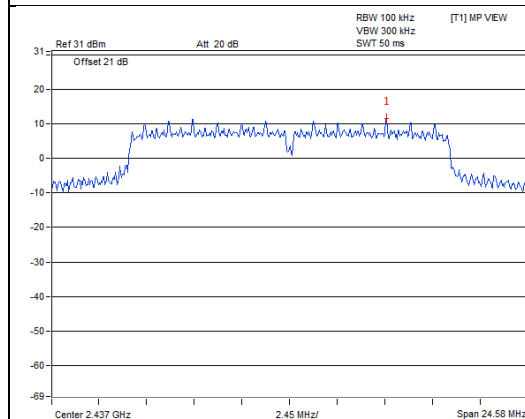


Chain 1

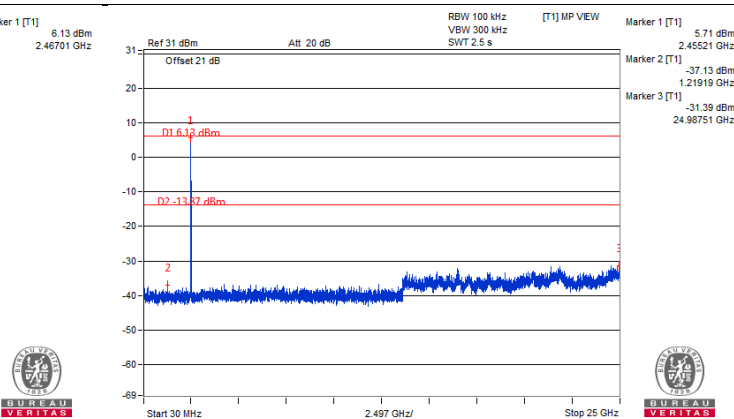
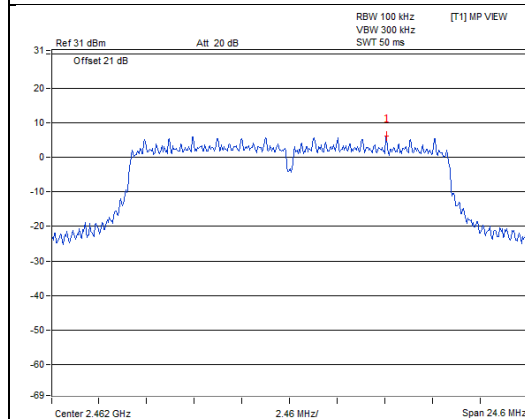
CH 1



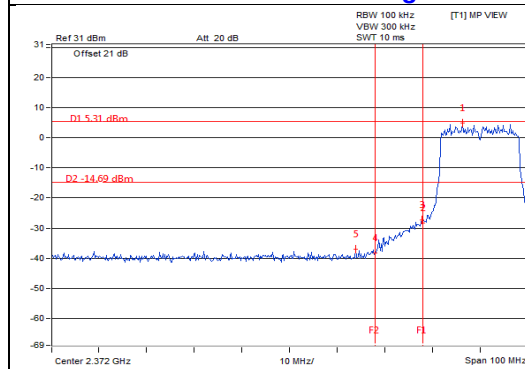
CH 6



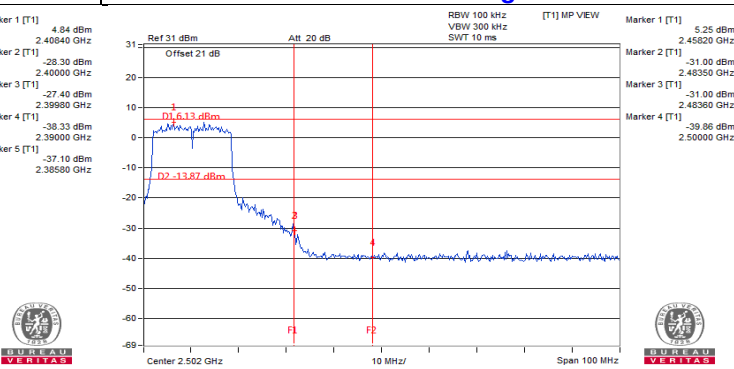
CH 11



CH 1 Band edge

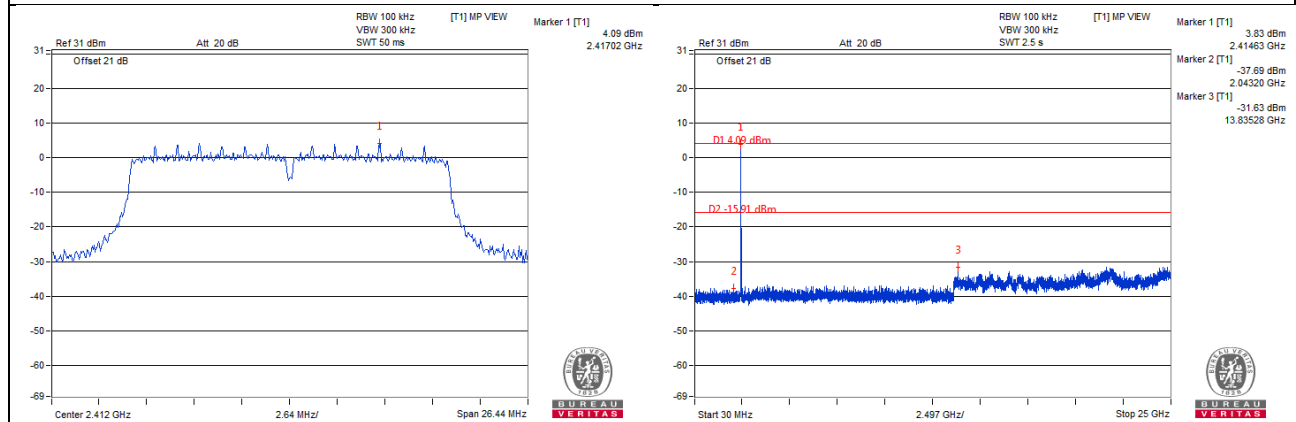


CH 11 Band edge

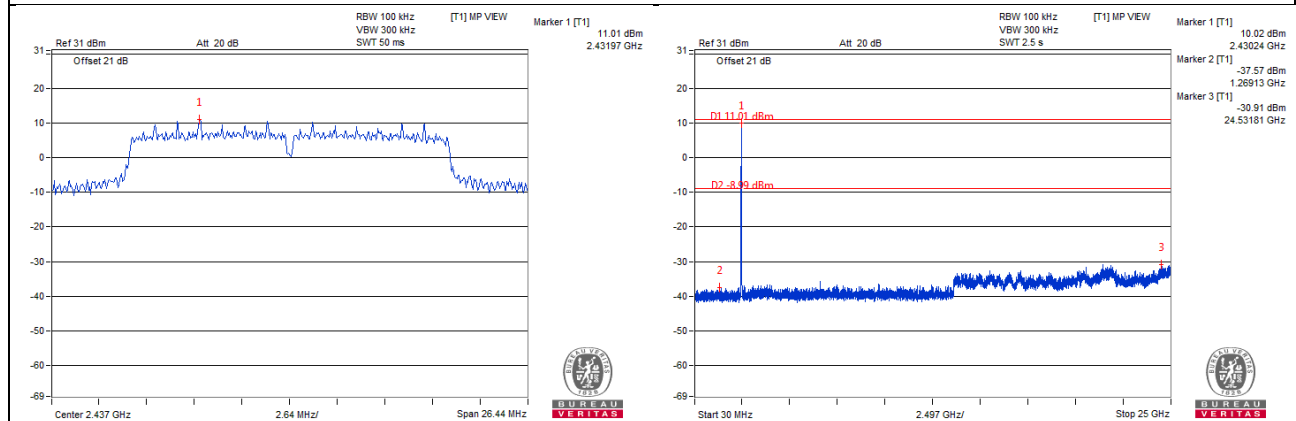


VHT20 Chain 0

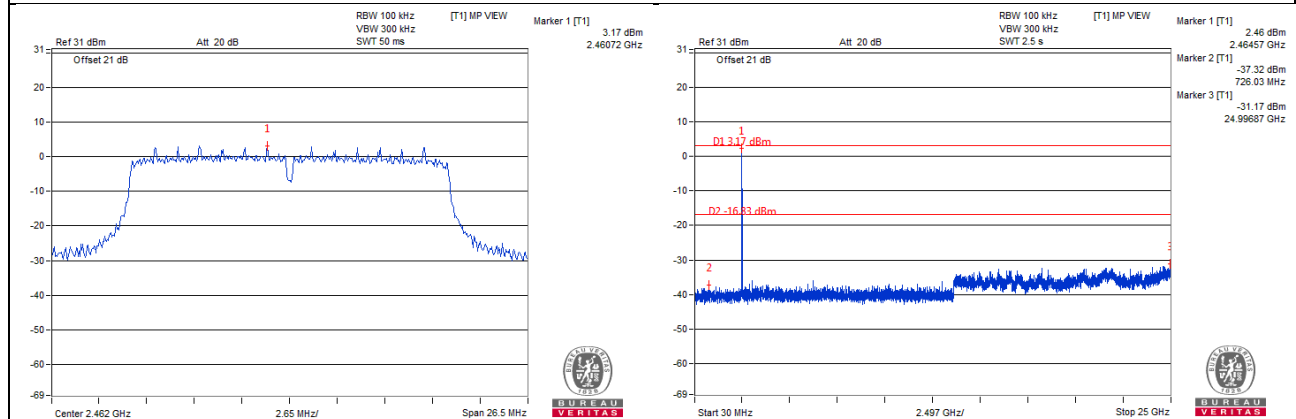
CH 1



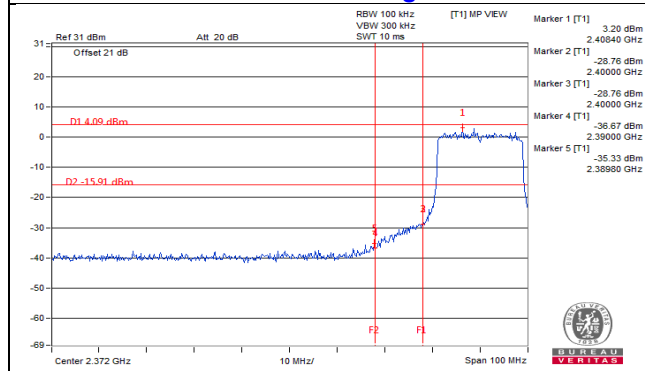
CH 6



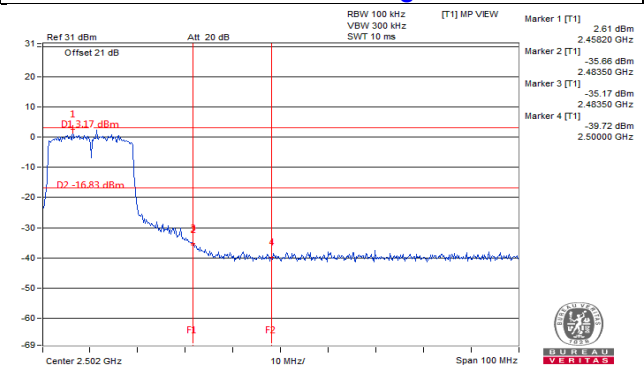
CH 11



CH 1 Band edge

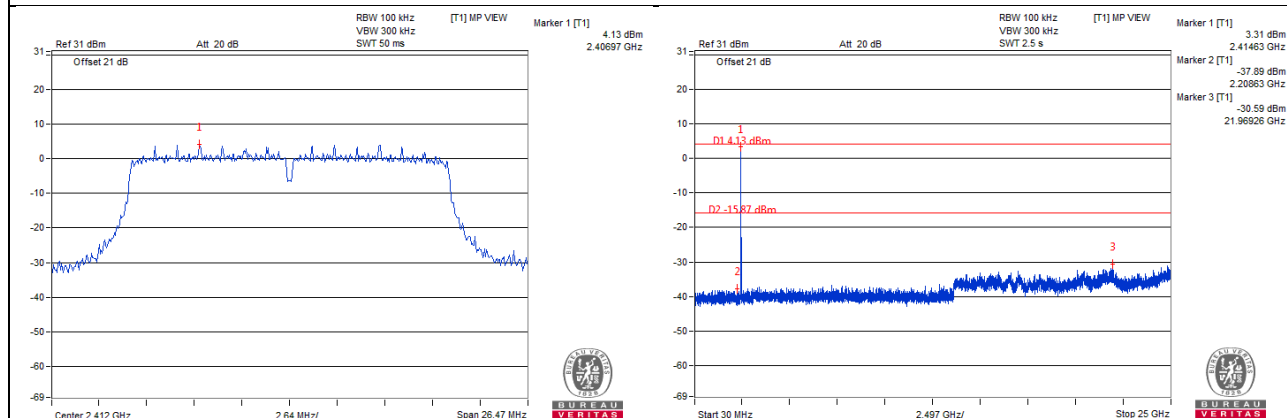


CH 11 Band edge

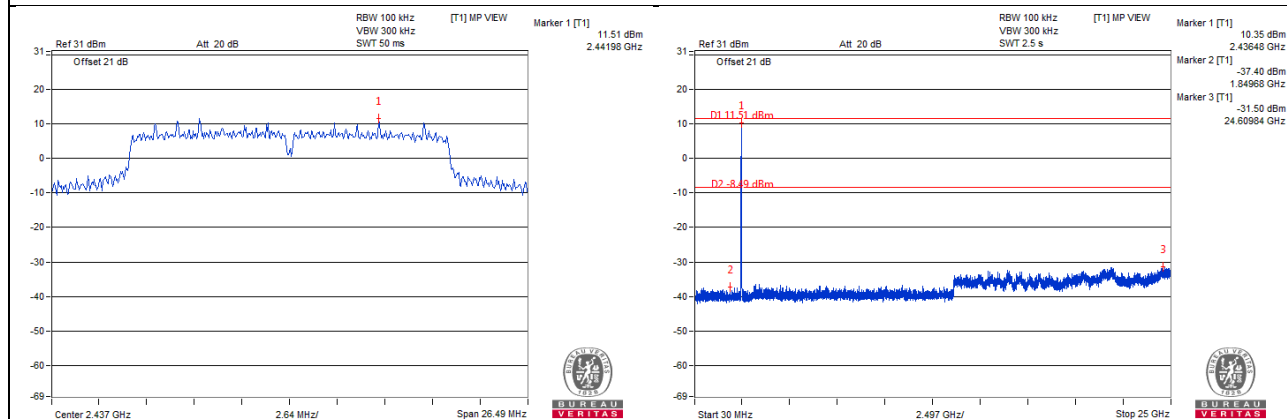


Chain 1

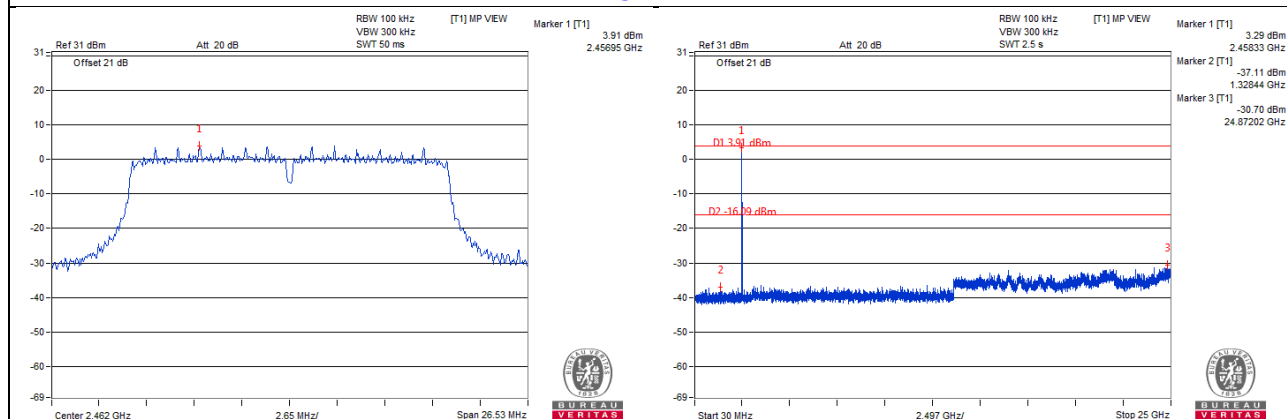
CH 1



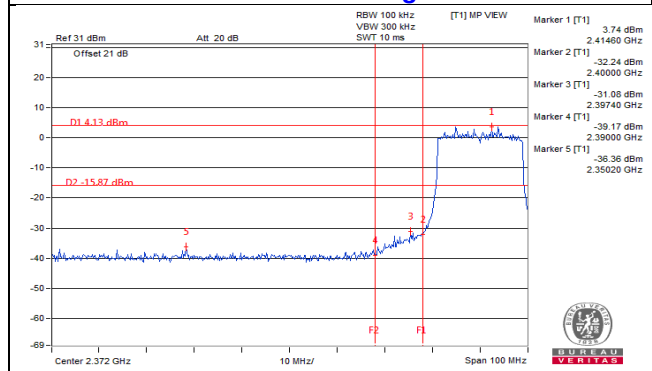
CH 6



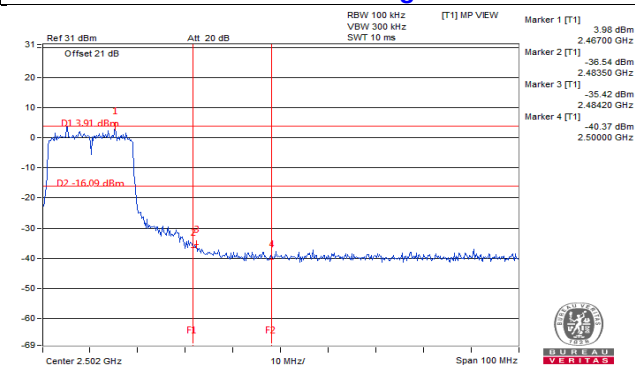
CH 11



CH 1 Band edge

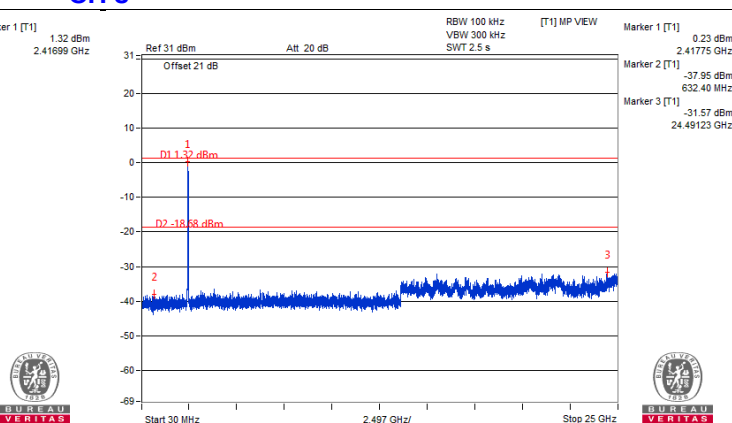
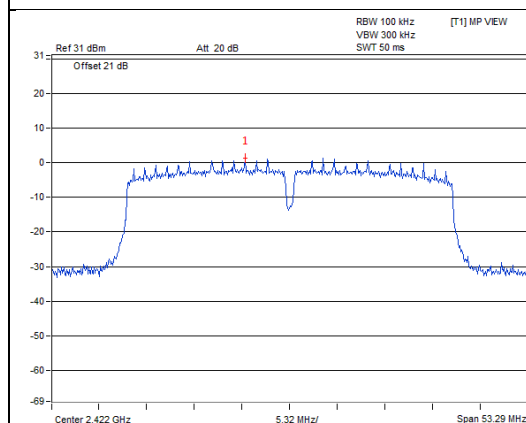


CH 11 Band edge

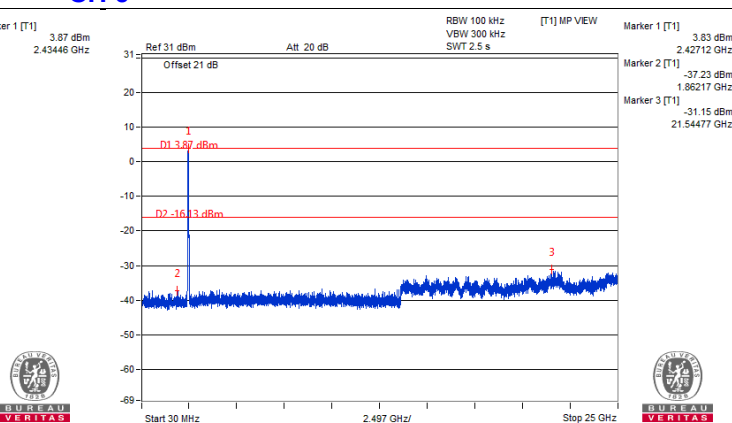
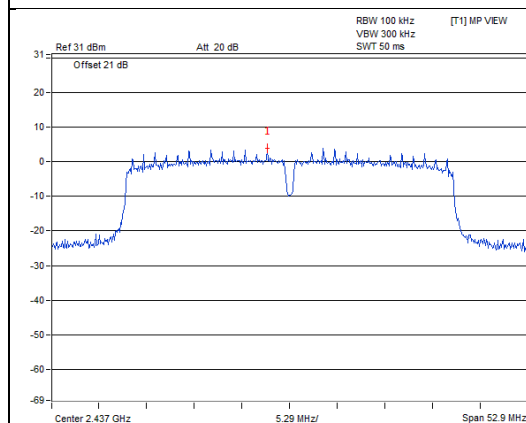


VHT40 Chain 0

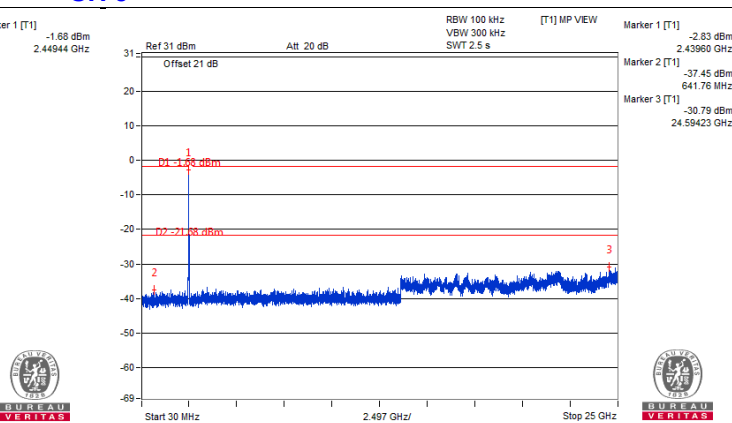
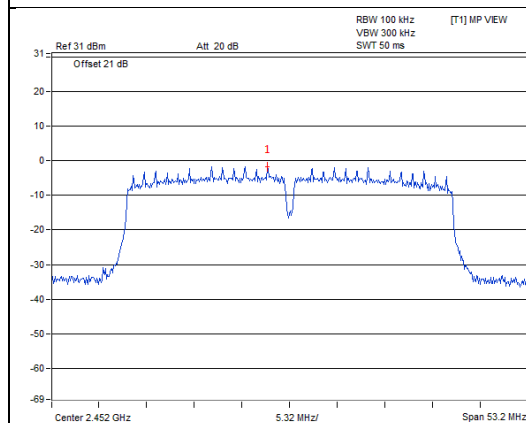
CH 3



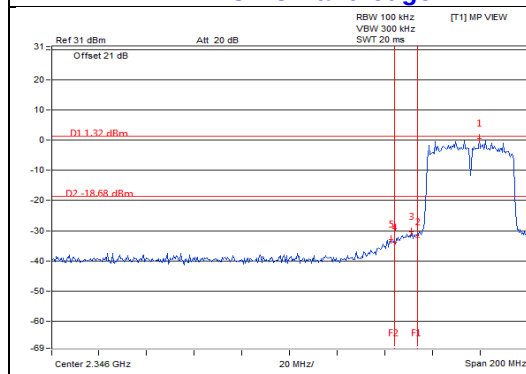
CH 6



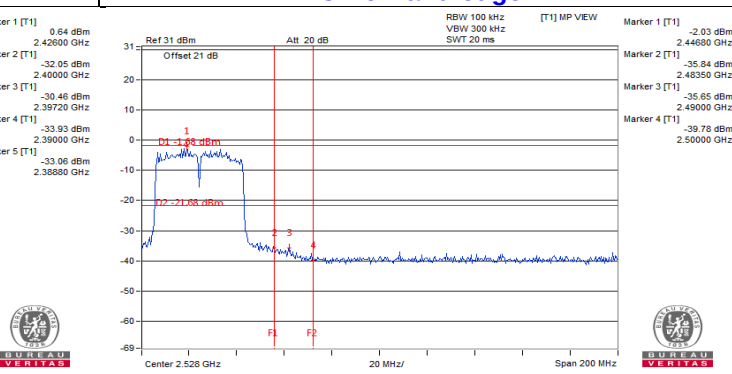
CH 9



CH 3 Band edge

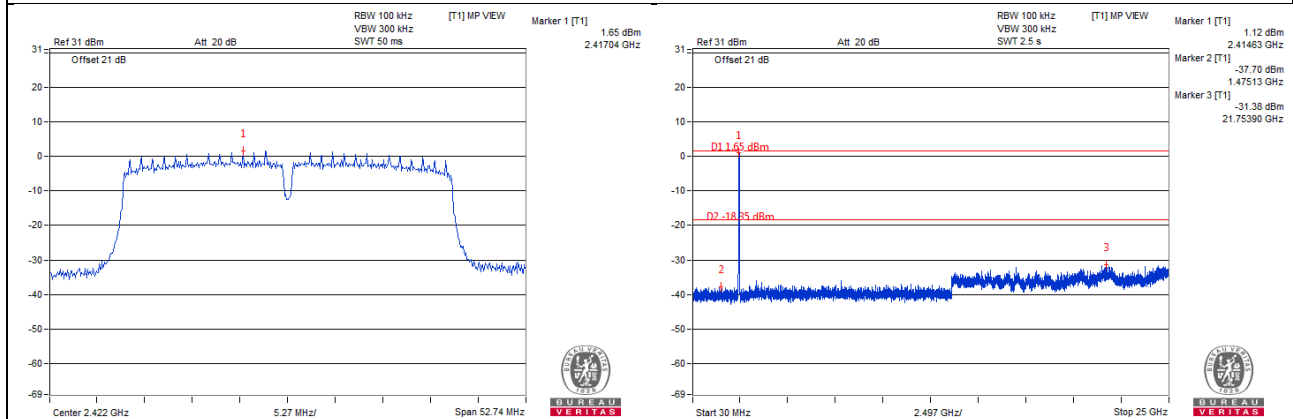


CH 9 Band edge

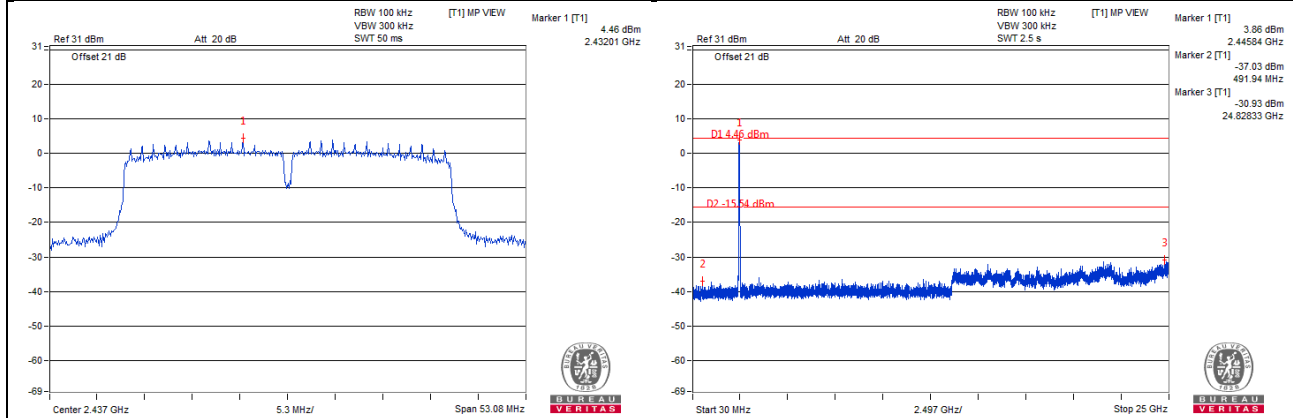


Chain 1

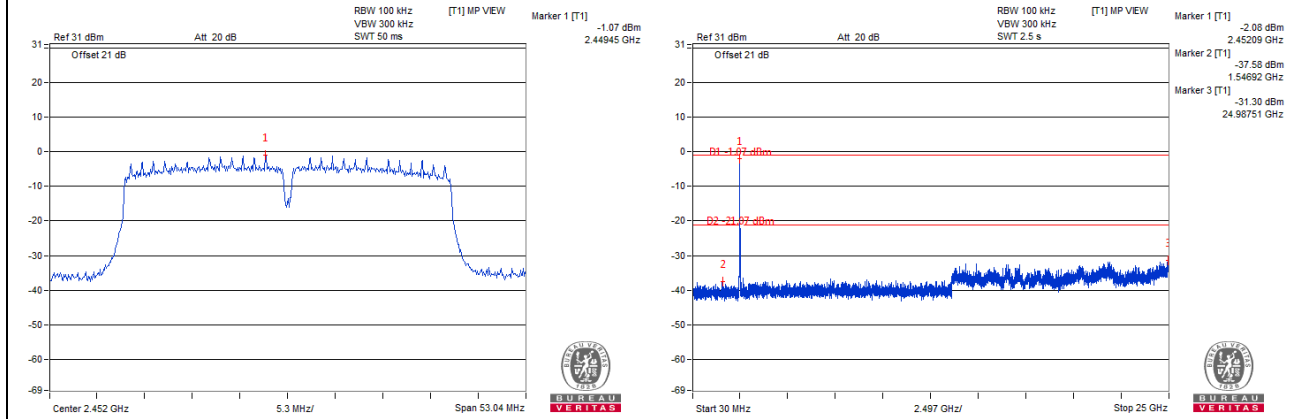
CH 3



CH 6

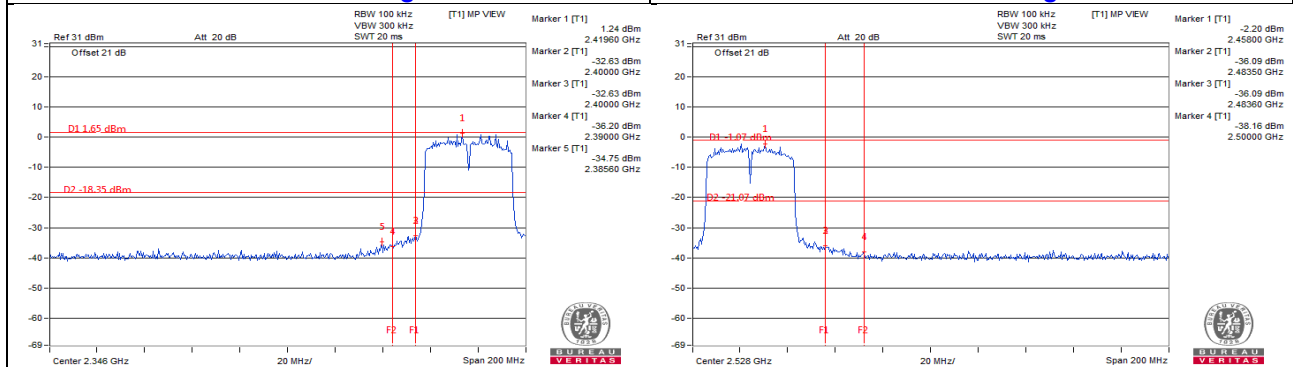


CH 9



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 ---