FCC Test Report

Report No.:	RF191115E03
FCC ID:	Q87-08162
Test Model:	MR6350
Series Model:	MR6340, MR6330, MR6320
Received Date:	Nov. 15, 2019
Test Date:	Nov. 21 to 28, 2019
Issued Date:	Feb. 12, 2020
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
Test Location :	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Testing Laboratory
2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF191115E03	Original release.	Feb. 12, 2020

1 Certificate of Conformity

Product:	Linksys MR6350 Dual-Band WiFi 5 Router, AC1300
Brand:	Linksys
Test Model:	MR6350
Series Model:	MR6340, MR6330, MR6320
Sample Status:	ENGINEERING SAMPLE
Applicant:	LINKSYS LLC
Test Date:	Nov. 21 to 28, 2019
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 : Vivian Huang , **Date:** Feb. 12, 2020

Vivian Huang / Specialist

Approved by : , **Date:** Feb. 12, 2020

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -6.91 dB at 0.47813 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.1 dB at 2390.00 MHz
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

Note:
Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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	1.8 dB
Conducted Emissions	-	3.1 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.0 dB
	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Linksys MR6350 Dual-Band WiFi 5 Router, AC1300
Brand	Linksys
Test Model	MR6350
Series Model	MR6340, MR6330, MR6320
Status of EUT	ENGINEERING SAMPLE
Driver Version	HW: V01 SW: v1.0.7
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 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:** 2.412GHz ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** 827.288 mW **5.18 ~ 5.24GHz:** 461.906 mW **5.745 ~ 5.825GHz:** 671.324 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x1
Data Cable Supplied	RJ45 cable x1 (unshielded, 1m)

Note:

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

Brand Name	Model Name	Description
Linksys	MR6350	For Marketing Purpose
	MR6340	
	MR6330	
	MR6320	
Note: From the above models, model: MR6350 was selected as representative model for the test and its data was recorded in this report.		

2. There are WLAN and Bluetooth technology used for the EUT. The EUT has two radios as following table:

Radio 1	Radio 2
WLAN 2.4GHz + 5GHz	Bluetooth

3. 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.		

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

No.	Brand	Model No.	Spec.	Plug
1	Ktec	KSA-18W-120150VU	AC Input: 100-240Vac, 0.5A, 50/60Hz DC Output: 12V, 1.5A DC Output Cable: 1.6m, Unshielded	FCC/IC
2	APD	WB-18Q12FU	AC Input: 100-240Vac, 0.6AMAX, 50-60Hz DC Output: 12V, 1.5A DC Output Cable: 1.6m, Unshielded	FCC/IC
Note: From the above adapters, the worst conducted emission test was found in **Adapter 2** and .the worst radiated emission test was found in **Adapter 1.** Therefore only the test data of the modes were recorded in this report.				

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

WLAN ANTENNA SPEC.						
Antenna NO.	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)
1	ANEP5M2-CCG03-EH	2.93	2.4~2.4835GHz	Dipole	i-pex(MHF)	165
		3.18	5.15~5.25GHz			
		3.18	5.25~5.35GHz			
		3.13	5.47~5.725GHz			
		3.17	5.725~5.85GHz			
2	ANEP5M2-CCG04-EH	2.82	2.4~2.4835GHz	Dipole	i-pex(MHF)	335
		2.95	5.15~5.25GHz			
		2.95	5.25~5.35GHz			
		2.78	5.47~5.725GHz			
		2.85	5.725~5.85GHz			
BLUETOOTH ANTENNA SPEC.						
1	ANTS1M1-CCG00-EH	2.9	2.4~2.4835GHz	Metal	none	N/A

6. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11b modulation mode.
2. The EUT support Beamforming and non-beamforming 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 the manufacturer will control the 802.11n mode power as same as 802.11ac and investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

7. The power setting are list as below:

802.11b		802.11g		VHT20		VHT40	
Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting	Frequency (MHz)	Power Setting
2412	25	2412	19.5	2412	19	2422	19
2437	26	2437	24	2437	24	2437	21
2462	24.5	2462	19	2462	19	2452	18

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

3.2 Description of Test Modes

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

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

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

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

NOTE:

1. The EUT had been pre-tested on the positioned of laying-flat and wall-mount. The worst case was found when positioned of on wall-mount (for below 1GHz and above 1GHz).

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
Beamforming Mode					
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
VHT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

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

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

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

Power Line Conducted Emission Test:

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

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

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

Antenna Port Conducted Measurement:

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

CDD Mode					
MODE	**AVAILABLE CHANNEL**	**TESTED CHANNEL**	**MODULATION TECHNOLOGY**	**MODULATION TYPE**	**Data Rate (Mbps)**
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
Beamforming Mode					
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
VHT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5
VHT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5

Test Condition:

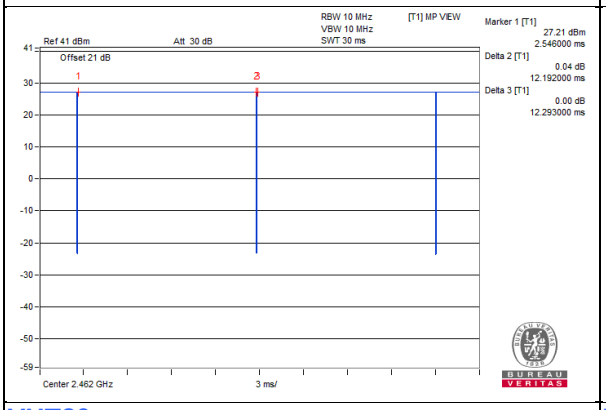
Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	25deg. C, 70%RH	120Vac, 60Hz	Jeff Lee
RE<1G	20deg. C, 61%RH	120Vac, 60Hz	Kevin Ko
PLC	25deg. C, 75%RH	120Vac, 60Hz	Kevin Ko
APCM	25deg. C, 60%RH	120Vac, 60Hz	Rpbert Cheng

3.3 Duty Cycle of Test Signal

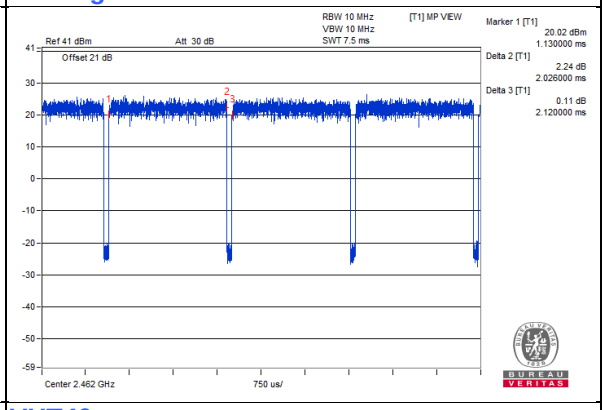
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11b: Duty cycle = 12.192/12.293 = 0.992
802.11g: Duty cycle = 2.026/2.12 = 0.956, Duty factor = 10 * log(1/Duty cycle) = 0.20
VHT20: Duty cycle = 1.031/1.119 = 0.921, Duty factor = 10 * log(1/Duty cycle) = 0.36
VHT40: Duty cycle = 1.627/1.909 = 0.852, Duty factor = 10 * log(1/Duty cycle) = 0.69

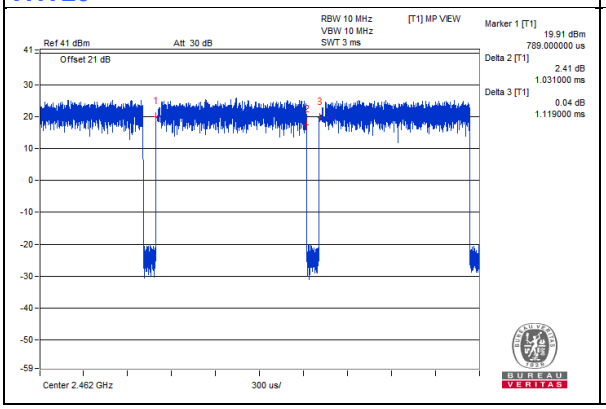
802.11b



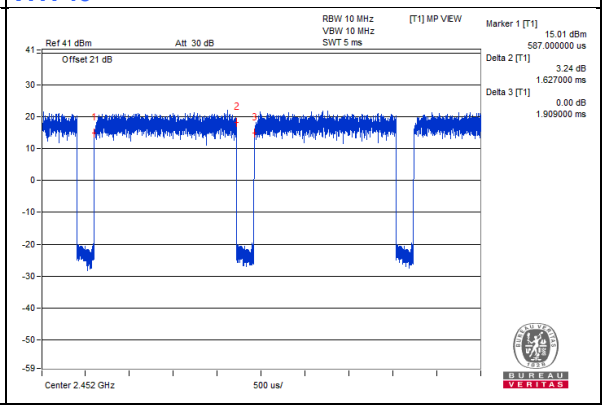
802.11g



VHT20



VHT40



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.

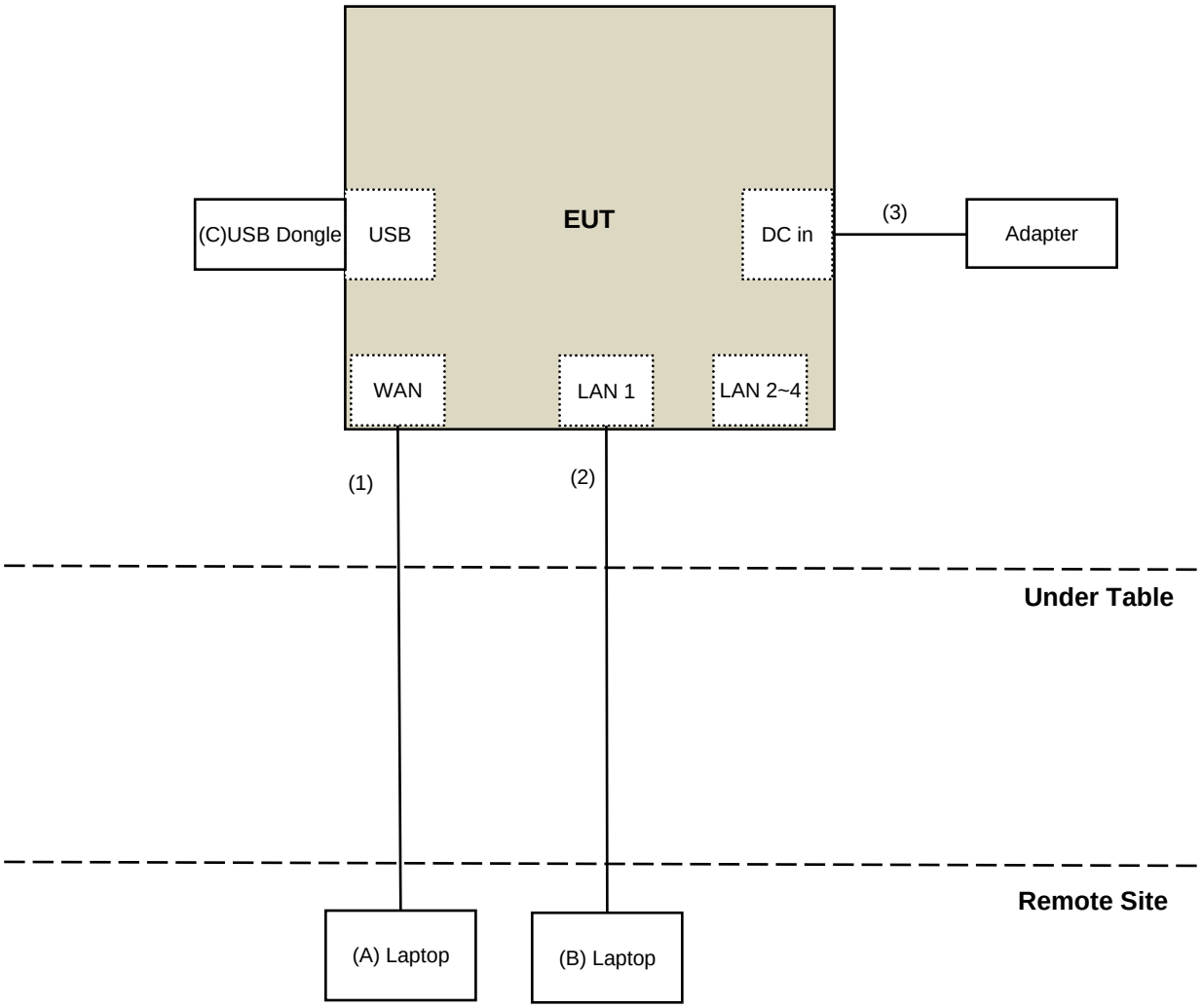
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	Laptop	DELL	E5430	DM1SKV1	FCC DoC	Provided by Lab
C.	USB Dongle	Sandisk	64G	NA	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	DC Cable	1	1.6	No	0	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and references

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standard:

FCC Part 15, Subpart C (15.247)
ANSI C63.10-2013

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

References Test Guidance :

KDB 558074 D01 15.247 Meas Guidance v05r02
KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 30, 2019	May 29, 2020
Loop Antenna Electro-Metrics	EM-6879	264	Jan. 22, 2019	Jan. 21, 2020
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 23, 2019	Oct. 22, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 15, 2019	Aug. 14, 2020
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Nov. 21 to 23, 2019

For other test:

Description & Manufacturer	Model no.	Serial No.	Calibrated DATE	Calibrated Until
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Nov. 28, 2019

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

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

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

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

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

NOTE:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

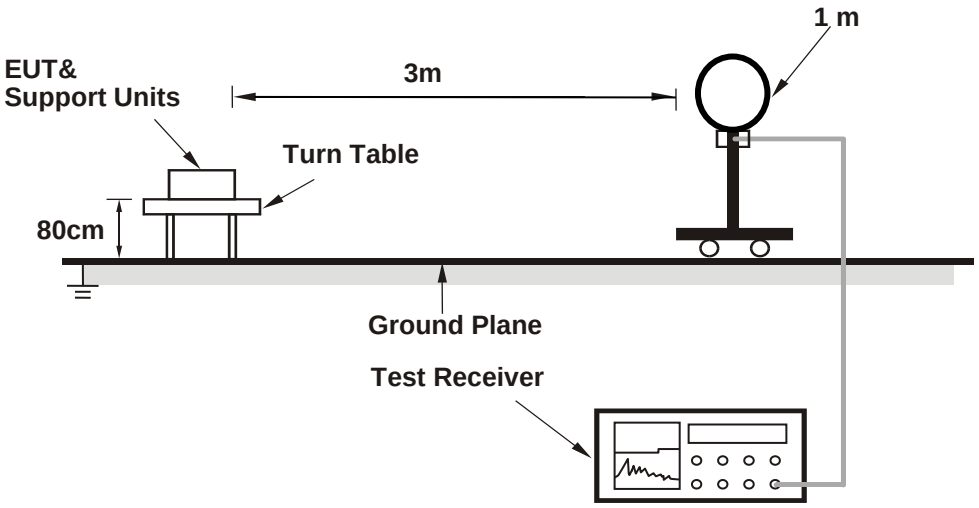
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

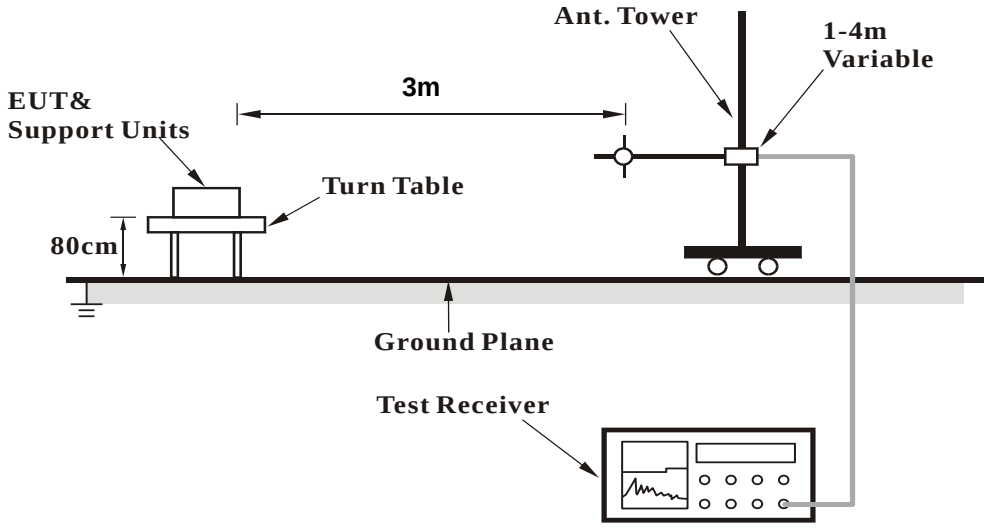
No deviation.

4.1.5 Test Setup

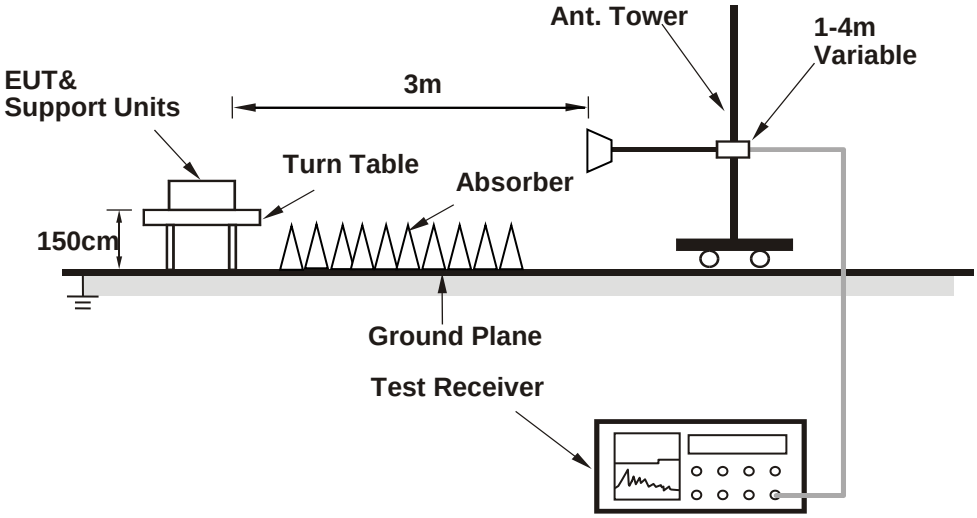
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Connected the EUT with the Laptop which is placed on remote site.
b. Controlling software (QDART-Connectivity (1.0.36)) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data：

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	53.2 PK	74.0	-20.8	1.06 H	230	54.8	-1.6
2	2390.00	45.1 AV	54.0	-8.9	1.06 H	230	46.7	-1.6
3	*2412.00	112.9 PK			1.06 H	230	114.6	-1.7
4	*2412.00	110.0 AV			1.06 H	230	111.7	-1.7
5	4824.00	47.1 PK	74.0	-26.9	1.41 H	53	44.8	2.3
6	4824.00	45.2 AV	54.0	-8.8	1.41 H	53	42.9	2.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.3 PK	74.0	-14.7	1.14 V	171	60.9	-1.6
2	2390.00	51.0 AV	54.0	-3.0	1.14 V	171	52.6	-1.6
3	*2412.00	118.7 PK			1.14 V	171	120.4	-1.7
4	*2412.00	116.3 AV			1.14 V	171	118.0	-1.7
5	4824.00	48.4 PK	74.0	-25.6	1.02 V	173	46.1	2.3
6	4824.00	46.8 AV	54.0	-7.2	1.02 V	173	44.5	2.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.1 PK	74.0	-19.9	2.36 H	157	55.7	-1.6
2	2390.00	46.8 AV	54.0	-7.2	2.36 H	157	48.4	-1.6
3	*2437.00	113.5 PK			2.36 H	157	115.3	-1.8
4	*2437.00	111.0 AV			2.36 H	157	112.8	-1.8
5	2483.50	51.2 PK	74.0	-22.8	2.36 H	157	52.9	-1.7
6	2483.50	44.1 AV	54.0	-9.9	2.36 H	157	45.8	-1.7
7	4874.00	47.1 PK	74.0	-26.9	1.34 H	189	44.7	2.4
8	4874.00	45.5 AV	54.0	-8.5	1.34 H	189	43.1	2.4
9	7311.00	47.7 PK	74.0	-26.3	1.30 H	166	38.5	9.2
10	7311.00	42.1 AV	54.0	-11.9	1.30 H	166	32.9	9.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.4 PK	74.0	-13.6	2.36 V	187	62.0	-1.6
2	**2390.00**	**52.9 AV**	**54.0**	**-1.1**	**2.36 V**	**187**	**54.5**	**-1.6**
3	*2437.00	119.4 PK			2.36 V	187	121.2	-1.8
4	*2437.00	116.9 AV			2.36 V	187	118.7	-1.8
5	2483.50	57.9 PK	74.0	-16.1	2.36 V	187	59.6	-1.7
6	2483.50	44.3 AV	54.0	-9.7	2.36 V	187	46.0	-1.7
7	4874.00	48.2 PK	74.0	-25.8	1.45 V	174	45.8	2.4
8	4874.00	46.6 AV	54.0	-7.4	1.45 V	174	44.2	2.4
9	7311.00	48.9 PK	74.0	-25.1	1.82 V	174	39.7	9.2
10	7311.00	42.3 AV	54.0	-11.7	1.82 V	174	33.1	9.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	112.4 PK			1.49 H	274	114.2	-1.8
2	*2462.00	109.5 AV			1.49 H	274	111.3	-1.8
3	2483.50	54.1 PK	74.0	-19.9	1.49 H	274	55.8	-1.7
4	2483.50	45.1 AV	54.0	-8.9	1.49 H	274	46.8	-1.7
5	4924.00	48.9 PK	74.0	-25.1	1.83 H	142	46.4	2.5
6	4924.00	46.5 AV	54.0	-7.5	1.83 H	142	44.0	2.5
7	7386.00	45.5 PK	74.0	-28.5	2.14 H	104	36.1	9.4
8	7386.00	31.7 AV	54.0	-22.3	2.14 H	104	22.3	9.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	118.2 PK			1.43 V	143	120.0	-1.8
2	*2462.00	115.8 AV			1.43 V	143	117.6	-1.8
3	2483.50	60.5 PK	74.0	-13.5	1.43 V	143	62.2	-1.7
4	2483.50	51.7 AV	54.0	-2.3	1.43 V	143	53.4	-1.7
5	4924.00	49.4 PK	74.0	-24.6	1.42 V	176	46.9	2.5
6	4924.00	47.5 AV	54.0	-6.5	1.42 V	176	45.0	2.5
7	7386.00	46.0 PK	74.0	-28.0	1.71 V	332	36.6	9.4
8	7386.00	33.2 AV	54.0	-20.8	1.71 V	332	23.8	9.4

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.2 PK	74.0	-10.8	1.52 H	17	64.8	-1.6
2	2390.00	46.5 AV	54.0	-7.5	1.52 H	17	48.1	-1.6
3	*2412.00	109.4 PK			1.52 H	17	111.1	-1.7
4	*2412.00	98.5 AV			1.52 H	17	100.2	-1.7
5	4824.00	47.2 PK	74.0	-26.8	2.69 H	219	44.9	2.3
6	4824.00	44.9 AV	54.0	-9.1	2.69 H	219	42.6	2.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.1 PK	74.0	-3.9	3.04 V	355	71.7	-1.6
2	**2390.00**	**52.9 AV**	**54.0**	**-1.1**	**3.04 V**	**355**	**54.5**	**-1.6**
3	*2412.00	115.4 PK			3.04 V	355	117.1	-1.7
4	*2412.00	105.1 AV			3.04 V	355	106.8	-1.7
5	4824.00	48.7 PK	74.0	-25.3	1.08 V	194	46.4	2.3
6	4824.00	45.2 AV	54.0	-8.8	1.08 V	194	42.9	2.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.4 PK	74.0	-11.6	1.51 H	92	64.0	-1.6
2	2390.00	43.2 AV	54.0	-10.8	1.51 H	92	44.8	-1.6
3	*2437.00	114.7 PK			1.51 H	92	116.5	-1.8
4	*2437.00	103.2 AV			1.51 H	92	105.0	-1.8
5	2483.50	63.1 PK	74.0	-10.9	1.51 H	92	64.8	-1.7
6	2483.50	45.9 AV	54.0	-8.1	1.51 H	92	47.6	-1.7
7	4874.00	46.2 PK	74.0	-27.8	2.59 H	337	43.8	2.4
8	4874.00	41.4 AV	54.0	-12.6	2.59 H	337	39.0	2.4
9	7311.00	45.7 PK	74.0	-28.3	1.49 H	308	36.5	9.2
10	7311.00	42.9 AV	54.0	-11.1	1.49 H	308	33.7	9.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.3 PK	74.0	-5.7	3.03 V	355	69.9	-1.6
2	2390.00	50.7 AV	54.0	-3.3	3.03 V	355	52.3	-1.6
3	*2437.00	120.6 PK			3.03 V	355	122.4	-1.8
4	*2437.00	109.8 AV			3.03 V	355	111.6	-1.8
5	2483.50	69.7 PK	74.0	-4.3	3.01 V	349	71.4	-1.7
6	2483.50	52.8 AV	54.0	-1.2	3.01 V	349	54.5	-1.7
7	4874.00	47.5 PK	74.0	-26.5	1.32 V	91	45.1	2.4
8	4874.00	42.9 AV	54.0	-11.1	1.32 V	91	40.5	2.4
9	7311.00	46.4 PK	74.0	-27.6	2.30 V	53	37.2	9.2
10	7311.00	43.1 AV	54.0	-10.9	2.30 V	53	33.9	9.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.7 PK			1.55 H	90	112.5	-1.8
2	*2462.00	99.5 AV			1.55 H	90	101.3	-1.8
3	2483.50	62.1 PK	74.0	-11.9	1.55 H	90	63.8	-1.7
4	2483.50	49.2 AV	54.0	-4.8	1.55 H	90	50.9	-1.7
5	4924.00	47.3 PK	74.0	-26.7	1.99 H	263	44.8	2.5
6	4924.00	43.1 AV	54.0	-10.9	1.99 H	263	40.6	2.5
7	7386.00	46.9 PK	74.0	-27.1	1.79 H	294	37.5	9.4
8	7386.00	42.9 AV	54.0	-11.1	1.79 H	294	33.5	9.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	116.3 PK			2.62 V	350	118.1	-1.8
2	*2462.00	105.8 AV			2.62 V	350	107.6	-1.8
3	2483.50	68.2 PK	74.0	-5.8	2.62 V	350	69.9	-1.7
4	2483.50	52.4 AV	54.0	-1.6	2.62 V	350	54.1	-1.7
5	4924.00	48.9 PK	74.0	-25.1	2.02 V	210	46.4	2.5
6	4924.00	44.2 AV	54.0	-9.8	2.02 V	210	41.7	2.5
7	7386.00	47.2 PK	74.0	-26.8	2.21 V	273	37.8	9.4
8	7386.00	43.9 AV	54.0	-10.1	2.21 V	273	34.5	9.4

REMARKS:

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

VHT20

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.7 PK	74.0	-15.3	1.27 H	259	60.3	-1.6
2	2390.00	46.2 AV	54.0	-7.8	1.27 H	259	47.8	-1.6
3	*2412.00	107.5 PK			1.27 H	259	109.2	-1.7
4	*2412.00	96.3 AV			1.27 H	259	98.0	-1.7
5	4824.00	45.5 PK	74.0	-28.5	2.27 H	150	43.2	2.3
6	4824.00	41.1 AV	54.0	-12.9	2.27 H	150	38.8	2.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.5 PK	74.0	-9.5	2.40 V	6	66.1	-1.6
2	2390.00	51.7 AV	54.0	-2.3	2.40 V	6	53.3	-1.6
3	*2412.00	113.4 PK			2.40 V	6	115.1	-1.7
4	*2412.00	103.0 AV			2.40 V	6	104.7	-1.7
5	4824.00	49.2 PK	74.0	-24.8	1.76 V	280	46.9	2.3
6	4824.00	43.5 AV	54.0	-10.5	1.76 V	280	41.2	2.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
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	61.5 PK	74.0	-12.5	1.15 H	23	63.1	-1.6
2	2390.00	45.8 AV	54.0	-8.2	1.15 H	23	47.4	-1.6
3	*2437.00	113.8 PK			1.15 H	23	115.6	-1.8
4	*2437.00	102.2 AV			1.15 H	23	104.0	-1.8
5	2483.50	61.9 PK	74.0	-12.1	1.15 H	23	63.6	-1.7
6	2483.50	46.1 AV	54.0	-7.9	1.15 H	23	47.8	-1.7
7	4874.00	47.2 PK	74.0	-26.8	2.60 H	114	44.8	2.4
8	4874.00	41.7 AV	54.0	-12.3	2.60 H	114	39.3	2.4
9	7311.00	49.5 PK	74.0	-24.5	1.81 H	52	40.3	9.2
10	7311.00	42.6 AV	54.0	-11.4	1.81 H	52	33.4	9.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.2 PK	74.0	-6.8	2.46 V	4	68.8	-1.6
2	2390.00	51.6 AV	54.0	-2.4	2.46 V	4	53.2	-1.6
3	*2437.00	119.6 PK			2.46 V	4	121.4	-1.8
4	*2437.00	108.3 AV			2.46 V	4	110.1	-1.8
5	2483.50	67.9 PK	74.0	-6.1	2.61 V	359	69.6	-1.7
6	2483.50	52.8 AV	54.0	-1.2	2.61 V	359	54.5	-1.7
7	4874.00	48.9 PK	74.0	-25.1	2.00 V	4	46.5	2.4
8	4874.00	42.5 AV	54.0	-11.5	2.00 V	4	40.1	2.4
9	7311.00	51.2 PK	74.0	-22.8	2.14 V	324	42.0	9.2
10	7311.00	43.3 AV	54.0	-10.7	2.14 V	324	34.1	9.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.2 PK			1.13 H	53	110.0	-1.8
2	*2462.00	97.2 AV			1.13 H	53	99.0	-1.8
3	2483.50	59.7 PK	74.0	-14.3	1.13 H	53	61.4	-1.7
4	2483.50	45.5 AV	54.0	-8.5	1.13 H	53	47.2	-1.7
5	4924.00	46.5 PK	74.0	-27.5	1.56 H	195	44.0	2.5
6	4924.00	42.3 AV	54.0	-11.7	1.56 H	195	39.8	2.5
7	7386.00	48.4 PK	74.0	-25.6	1.16 H	356	39.0	9.4
8	7386.00	41.9 AV	54.0	-12.1	1.16 H	356	32.5	9.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	114.7 PK			2.73 V	350	116.5	-1.8
2	*2462.00	103.5 AV			2.73 V	350	105.3	-1.8
3	2483.50	65.5 PK	74.0	-8.5	2.73 V	350	67.2	-1.7
4	2483.50	52.0 AV	54.0	-2.0	2.73 V	350	53.7	-1.7
5	4924.00	47.6 PK	74.0	-26.4	1.61 V	34	45.1	2.5
6	4924.00	43.5 AV	54.0	-10.5	1.61 V	34	41.0	2.5
7	7386.00	49.2 PK	74.0	-24.8	1.26 V	113	39.8	9.4
8	7386.00	42.2 AV	54.0	-11.8	1.26 V	113	32.8	9.4

REMARKS:

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

VHT40

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.2 PK	74.0	-13.8	1.92 H	356	61.8	-1.6
2	2390.00	45.7 AV	54.0	-8.3	1.92 H	356	47.3	-1.6
3	*2422.00	106.5 PK			1.92 H	356	108.2	-1.7
4	*2422.00	98.7 AV			1.92 H	356	100.4	-1.7
5	4844.00	47.5 PK	74.0	-26.5	1.78 H	71	45.3	2.2
6	4844.00	45.9 AV	54.0	-8.1	1.78 H	71	43.7	2.2
7	7266.00	48.6 PK	74.0	-25.4	1.58 H	341	39.6	9.0
8	7266.00	47.2 AV	54.0	-6.8	1.58 H	341	38.2	9.0
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	66.4 PK	74.0	-7.6	2.69 V	324	68.0	-1.6
2	2390.00	51.9 AV	54.0	-2.1	2.69 V	324	53.5	-1.6
3	*2422.00	112.1 PK			2.69 V	324	113.8	-1.7
4	*2422.00	104.8 AV			2.69 V	324	106.5	-1.7
5	4844.00	48.2 PK	74.0	-25.8	1.06 V	175	46.0	2.2
6	4844.00	45.8 AV	54.0	-8.2	1.06 V	175	43.6	2.2
7	7266.00	49.5 PK	74.0	-24.5	2.66 V	188	40.5	9.0
8	7266.00	46.2 AV	54.0	-7.8	2.66 V	188	37.2	9.0

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.4 PK	74.0	-11.6	2.00 H	208	64.0	-1.6
2	2390.00	46.2 AV	54.0	-7.8	2.00 H	208	47.8	-1.6
3	*2437.00	108.5 PK			2.00 H	208	110.3	-1.8
4	*2437.00	97.2 AV			2.00 H	208	99.0	-1.8
5	2483.50	58.7 PK	74.0	-15.3	2.00 H	208	60.4	-1.7
6	2483.50	43.7 AV	54.0	-10.3	2.00 H	208	45.4	-1.7
7	4874.00	46.2 PK	74.0	-27.8	2.16 H	79	43.8	2.4
8	4874.00	42.5 AV	54.0	-11.5	2.16 H	79	40.1	2.4
9	7311.00	47.9 PK	74.0	-26.1	1.62 H	241	38.7	9.2
10	7311.00	42.0 AV	54.0	-12.0	1.62 H	241	32.8	9.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.2 PK	74.0	-5.8	2.81 V	323	69.8	-1.6
2	2390.00	52.4 AV	54.0	-1.6	2.81 V	323	54.0	-1.6
3	*2437.00	114.2 PK			2.81 V	323	116.0	-1.8
4	*2437.00	103.8 AV			2.81 V	323	105.6	-1.8
5	2483.50	64.5 PK	74.0	-9.5	2.81 V	323	66.2	-1.7
6	2483.50	49.6 AV	54.0	-4.4	2.81 V	323	51.3	-1.7
7	4874.00	47.9 PK	74.0	-26.1	2.22 V	267	45.5	2.4
8	4874.00	44.7 AV	54.0	-9.3	2.22 V	267	42.3	2.4
9	7311.00	48.9 PK	74.0	-25.1	1.56 V	67	39.7	9.2
10	7311.00	45.5 AV	54.0	-8.5	1.56 V	67	36.3	9.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	105.8 PK			2.26 H	318	107.6	-1.8
2	*2452.00	95.4 AV			2.26 H	318	97.2	-1.8
3	2483.50	60.4 PK	74.0	-13.6	2.26 H	318	62.1	-1.7
4	2483.50	46.8 AV	54.0	-7.2	2.26 H	318	48.5	-1.7
5	4904.00	45.6 PK	74.0	-28.4	1.39 H	349	43.1	2.5
6	4904.00	42.3 AV	54.0	-11.7	1.39 H	349	39.8	2.5
7	7356.00	47.9 PK	74.0	-26.1	1.86 H	65	38.7	9.2
8	7356.00	46.2 AV	54.0	-7.8	1.86 H	65	37.0	9.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	111.3 PK			2.69 V	359	113.1	-1.8
2	*2452.00	101.2 AV			2.69 V	359	103.0	-1.8
3	2483.50	67.0 PK	74.0	-7.0	2.69 V	359	68.7	-1.7
4	2483.50	52.8 AV	54.0	-1.2	2.69 V	359	54.5	-1.7
5	4904.00	48.1 PK	74.0	-25.9	2.48 V	142	45.6	2.5
6	4904.00	45.2 AV	54.0	-8.8	2.48 V	142	42.7	2.5
7	7356.00	49.3 PK	74.0	-24.7	2.67 V	82	40.1	9.2
8	7356.00	46.9 AV	54.0	-7.1	2.67 V	82	37.7	9.2

REMARKS:

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

Below 1GHz Data:

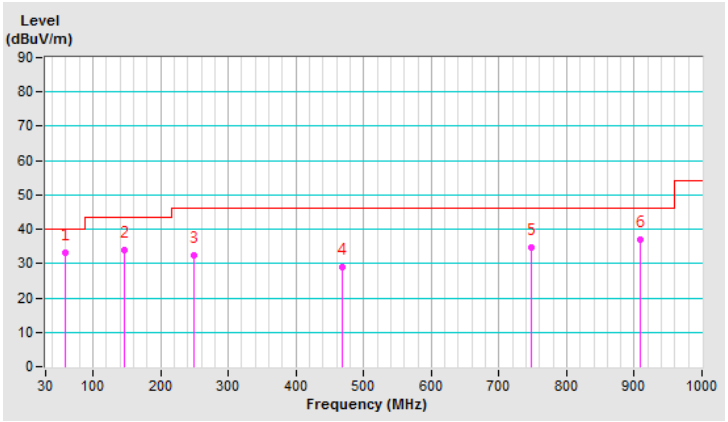
802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	58.78	33.3 QP	40.0	-6.7	4.00 H	229	42.0	-8.7
2	147.22	33.8 QP	43.5	-9.7	2.00 H	46	41.6	-7.8
3	249.56	32.4 QP	46.0	-13.6	1.00 H	0	41.0	-8.6
4	469.19	28.8 QP	46.0	-17.2	4.00 H	228	31.1	-2.3
5	747.80	34.5 QP	46.0	-11.5	3.00 H	360	30.9	3.6
6	908.53	36.9 QP	46.0	-9.1	2.00 H	268	30.6	6.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

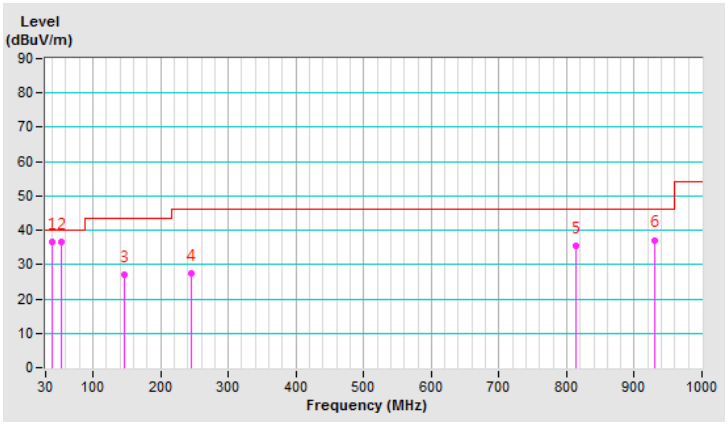


CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.97	36.7 QP	40.0	-3.3	1.00 V	290	45.4	-8.7
2	53.33	36.5 QP	40.0	-3.5	1.00 V	150	44.8	-8.3
3	147.03	27.2 QP	43.5	-16.3	3.00 V	0	34.9	-7.7
4	245.95	27.3 QP	46.0	-18.7	1.00 V	360	36.0	-8.7
5	814.39	35.6 QP	46.0	-10.4	1.00 V	202	30.9	4.7
6	929.75	37.2 QP	46.0	-8.8	4.00 V	360	30.4	6.8

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



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. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 27, 2019	Sep. 26, 2020
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:
1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: Nov. 23, 2019

4.2.3 Test Procedures

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

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

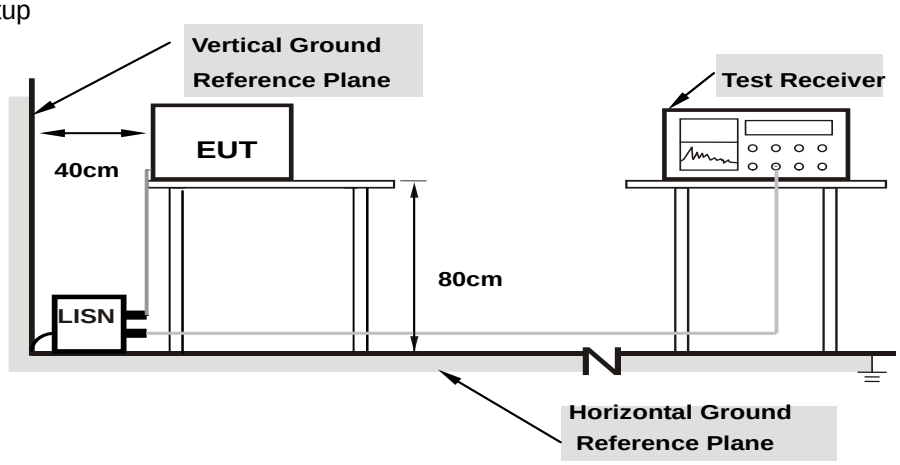
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

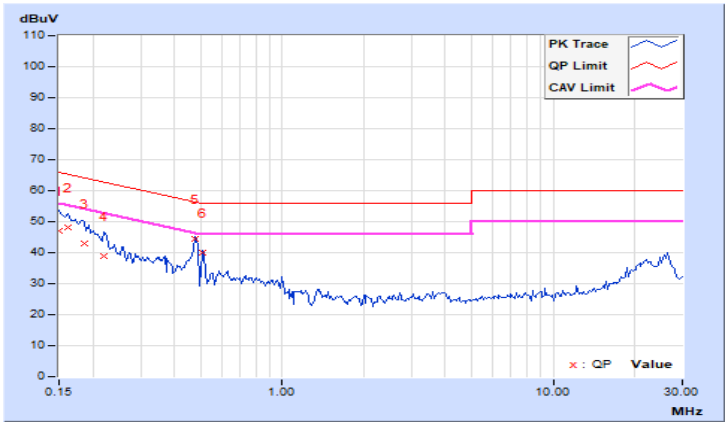
4.2.7 Test Results

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	37.08	21.76	47.07	31.75	66.00	56.00	-18.93	-24.25
2	0.16172	9.99	38.26	23.54	48.25	33.53	65.38	55.38	-17.13	-21.85
3	0.18516	9.99	33.10	18.99	43.09	28.98	64.25	54.25	-21.16	-25.27
4	0.22031	9.99	28.99	16.12	38.98	26.11	62.81	52.81	-23.83	-26.70
5	**0.47813**	**10.01**	**34.34**	**29.45**	**44.35**	**39.46**	**56.37**	**46.37**	**-12.02**	**-6.91**
6	0.50938	10.01	29.97	24.76	39.98	34.77	56.00	46.00	-16.02	-11.23

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

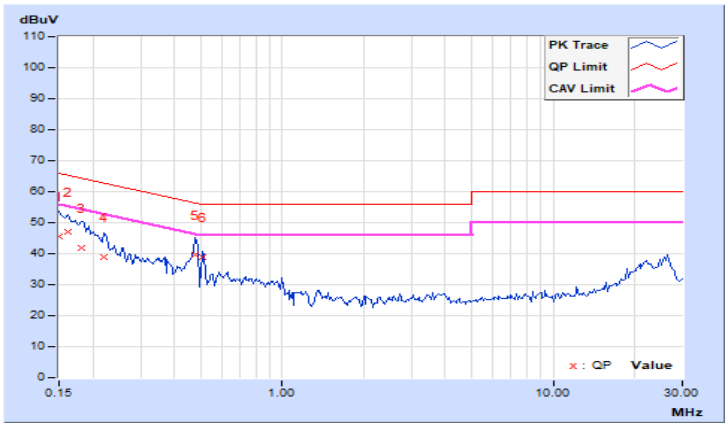


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	35.61	18.83	45.60	28.82	66.00	56.00	-20.40	-27.18
2	0.16172	9.99	37.23	21.08	47.22	31.07	65.38	55.38	-18.16	-24.31
3	0.18125	9.99	31.90	14.64	41.89	24.63	64.43	54.43	-22.54	-29.80
4	0.22031	9.99	28.77	13.25	38.76	23.24	62.81	52.81	-24.05	-29.57
5	0.47813	10.02	29.74	25.22	39.76	35.24	56.37	46.37	-16.61	-11.13
6	0.50938	10.02	29.01	22.05	39.03	32.07	56.00	46.00	-16.97	-13.93

Remarks:

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

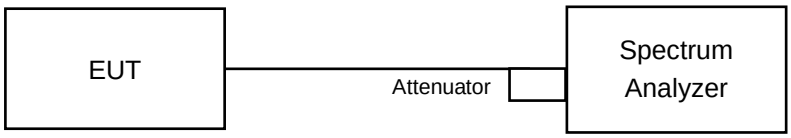


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	9.08	8.57	0.5	Pass
6	2437	10.08	9.14	0.5	Pass
11	2462	9.05	9.08	0.5	Pass

802.11g

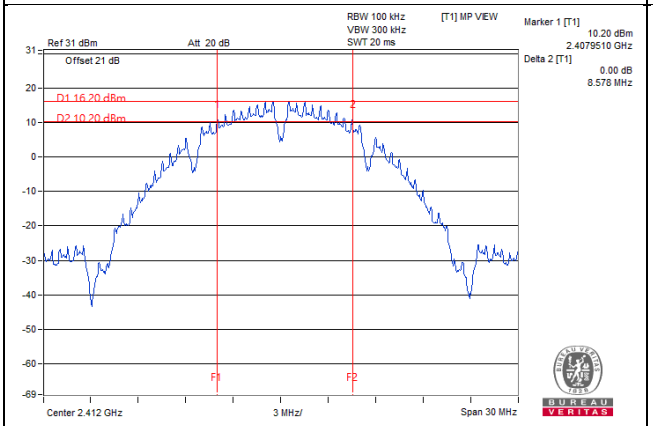
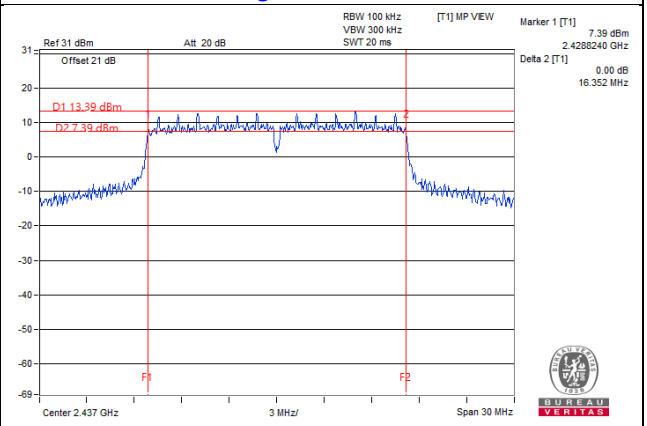
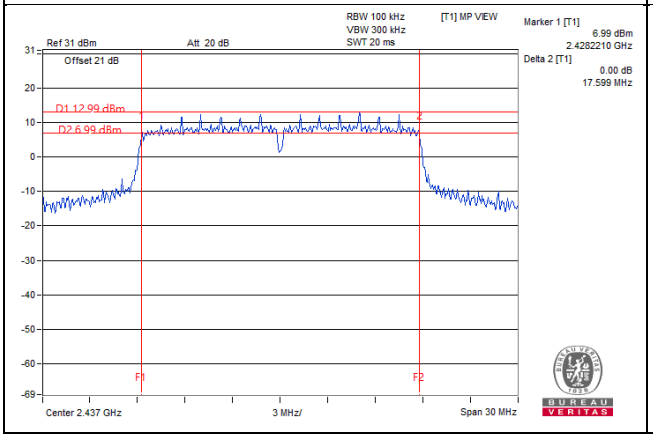
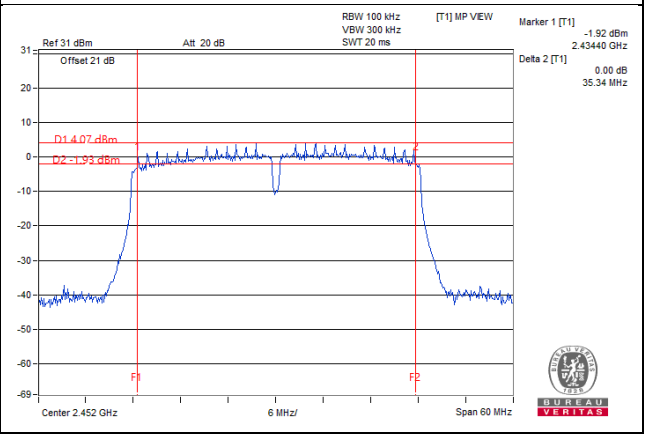
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	16.37	16.38	0.5	Pass
6	2437	16.36	16.35	0.5	Pass
11	2462	16.37	16.38	0.5	Pass

VHT20

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
1	2412	17.60	17.61	0.5	Pass
6	2437	17.62	17.59	0.5	Pass
10	2457	17.60	17.63	0.5	Pass

VHT40

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
3	2422	35.39	35.53	0.5	Pass
6	2437	35.38	35.43	0.5	Pass
9	2452	35.34	35.45	0.5	Pass

Spectrum Plot of Worst Value	
802.11b / Chain 1 : CH1	**802.11g / Chain 1 : CH6**
	
VHT20 / Chain 1 : CH6	**VHT40 / Chain 0 : CH9**
	

4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

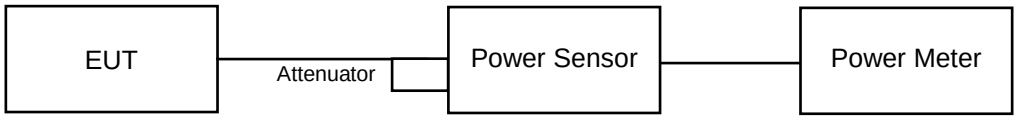
For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

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

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

CDD Mode

802.11b

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	25.43	25.22	681.8	28.34	30.00	Pass
6	2437	26.27	26.06	827.288	29.18	30.00	Pass
11	2462	24.84	24.80	606.784	27.83	30.00	Pass

Beamformig Mode

802.11g

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	20.26	20.03	206.863	23.16	30.00	Pass
6	2437	24.40	24.04	528.936	27.23	30.00	Pass
11	2462	19.93	19.62	190.023	22.79	30.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power limit shall not be reduced.

VHT20

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	19.73	19.51	183.303	22.63	30.00	Pass
6	2437	24.24	23.99	516.072	27.13	30.00	Pass
11	2462	19.94	19.58	189.41	22.77	30.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power limit shall not be reduced.

VHT40

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	19.41	19.01	166.913	22.22	30.00	Pass
6	2437	21.50	21.05	268.604	24.29	30.00	Pass
9	2452	18.46	18.27	137.289	21.38	30.00	Pass

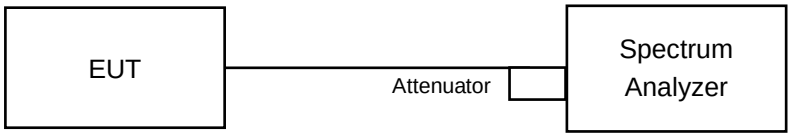
Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power limit shall not be reduced.

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

802.11b

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

802.11g, VHT20, VHT40

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6

4.5.7 Test Results

802.11b

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-8.17	3.01	-5.16	8.00	Pass
	6	2437	-7.86	3.01	-4.85	8.00	Pass
	11	2462	-8.02	3.01	-5.01	8.00	Pass
1	1	2412	-8.65	3.01	-5.64	8.00	Pass
	6	2437	-7.61	3.01	-4.60	8.00	Pass
	11	2462	-7.96	3.01	-4.95	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power density limit shall not be reduced.

802.11g

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-15.78	3.01	0.20	-12.57	8.00	Pass
	6	2437	-11.18	3.01	0.20	-7.97	8.00	Pass
	11	2462	-15.76	3.01	0.20	-12.55	8.00	Pass
1	1	2412	-15.74	3.01	0.20	-12.53	8.00	Pass
	6	2437	-11.60	3.01	0.20	-8.39	8.00	Pass
	11	2462	-15.90	3.01	0.20	-12.69	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power density limit shall not be reduced.

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

VHT20

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	1	2412	-16.24	3.01	0.36	-12.87	8.00	Pass
	6	2437	-12.09	3.01	0.36	-8.72	8.00	Pass
	11	5462	-16.01	3.01	0.36	-12.64	8.00	Pass
1	1	2412	-16.57	3.01	0.36	-13.20	8.00	Pass
	6	2437	-12.24	3.01	0.36	-8.87	8.00	Pass
	11	5462	-16.52	3.01	0.36	-13.15	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power density limit shall not be reduced.

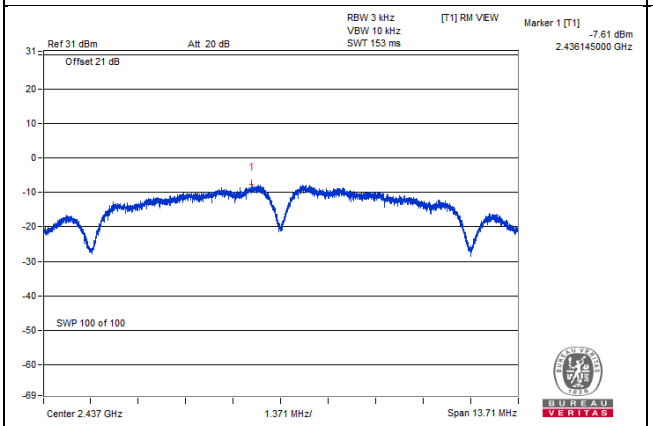
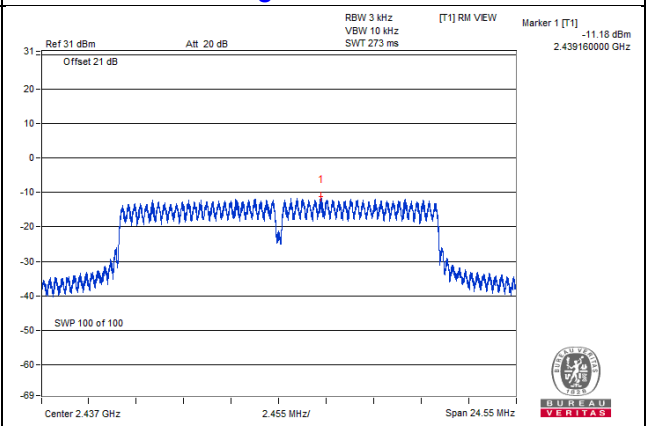
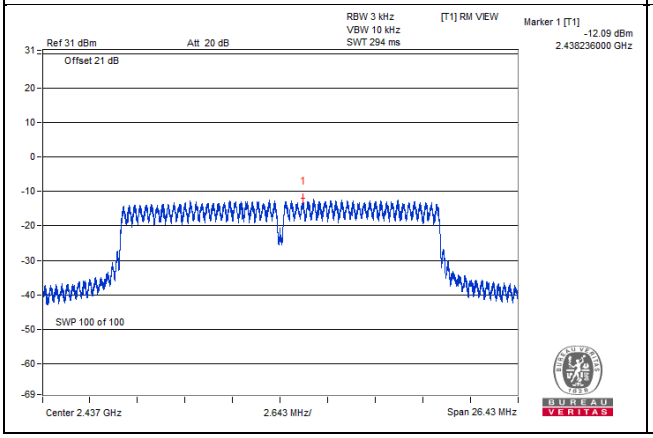
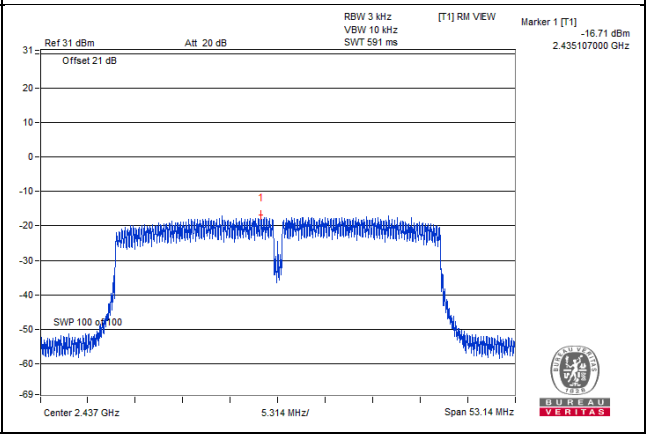
2. Refer to section 3.3 for duty cycle spectrum plot.

VHT40

TX chain	Channel	Freq. (MHz)	PSD W/O Duty Factor (dBm/3kHz)	10 log (N=2) dB	Duty Factor (dB)	TOTAL PSD With Duty Factor (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
0	3	2422	-18.70	3.01	0.69	-15.00	8.00	Pass
	6	2437	-17.28	3.01	0.69	-13.58	8.00	Pass
	9	2452	-19.46	3.01	0.69	-15.76	8.00	Pass
1	3	2422	-19.19	3.01	0.69	-15.49	8.00	Pass
	6	2437	-16.71	3.01	0.69	-13.01	8.00	Pass
	9	2452	-19.96	3.01	0.69	-16.26	8.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.89dBi < 6dBi , so the power density limit shall not be reduced.

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

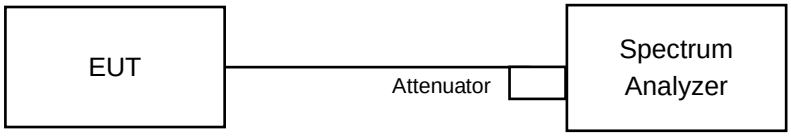
Spectrum Plot of Worst Value	
802.11b / Chain 1: CH6	**802.11g / Chain 0 : CH6**
	
VHT20 / Chain 0: CH6	**VHT40 / Chain 1: CH6**
	

4.6 Conducted Out of Band Emission Measurement

4.6.1 Limits of Conducted Out of Band Emission Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOBE

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

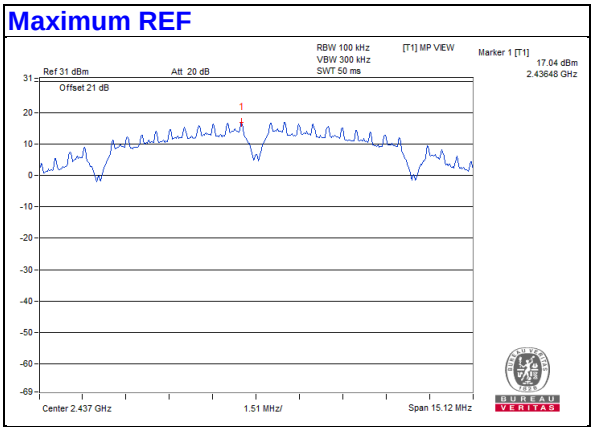
Same as Item 4.3.6

4.6.7 Test Results

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

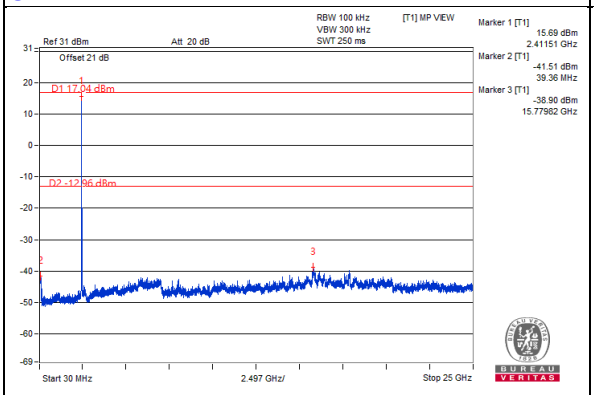
802.11b

Maximum REF

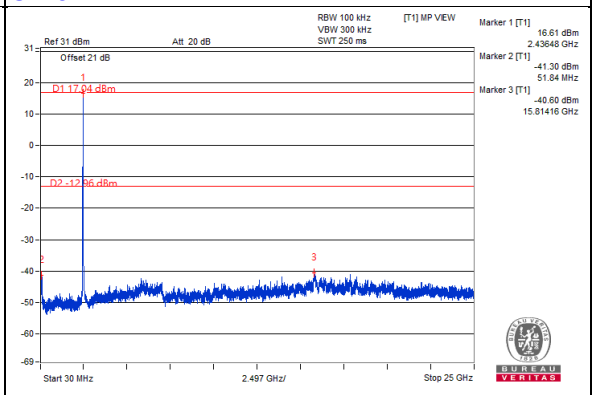


Chain 0

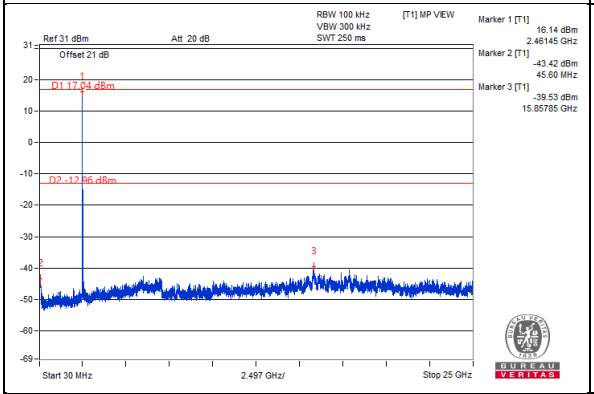
CH 1



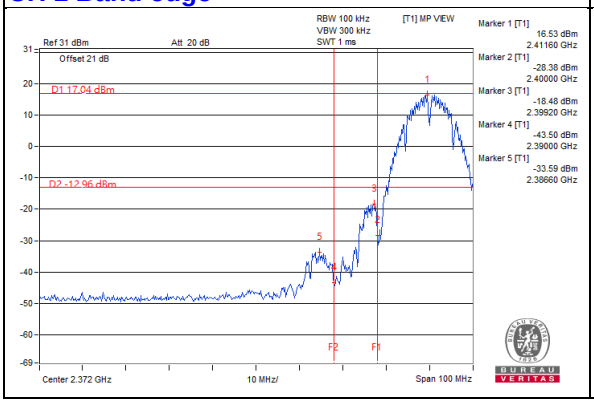
CH 6



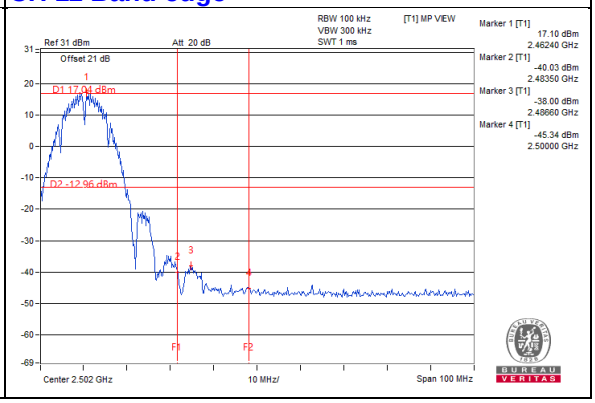
CH 11



CH 1 Band edge

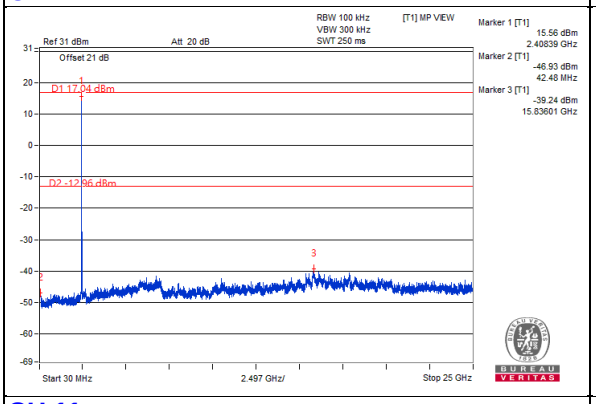


CH 11 Band edge

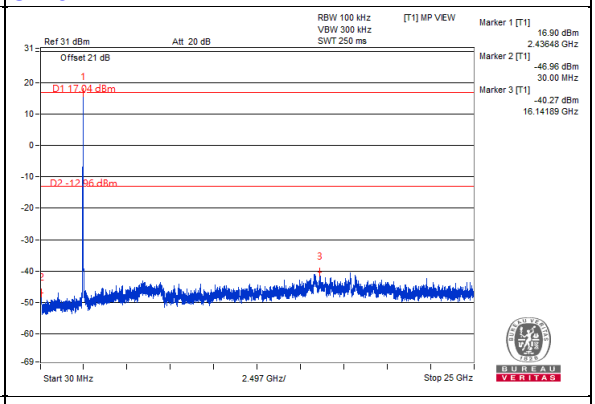


Chain 1

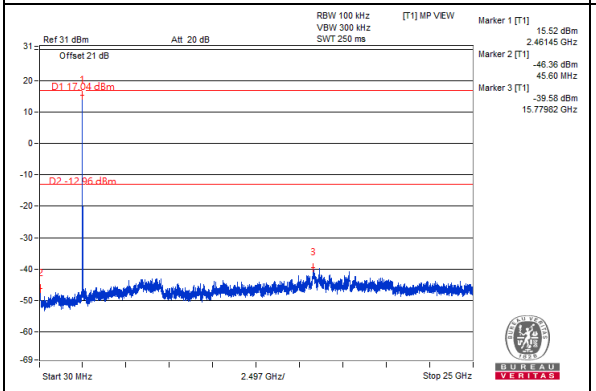
CH 1



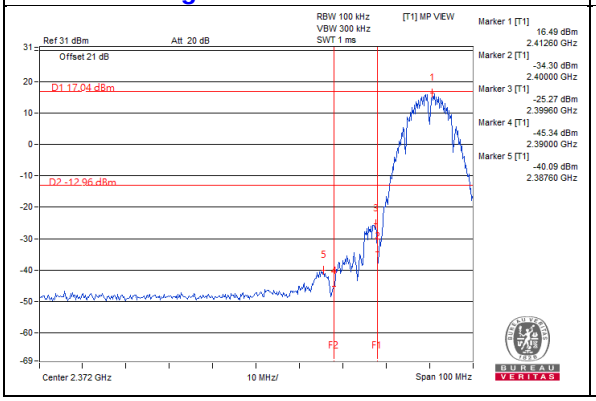
CH 6



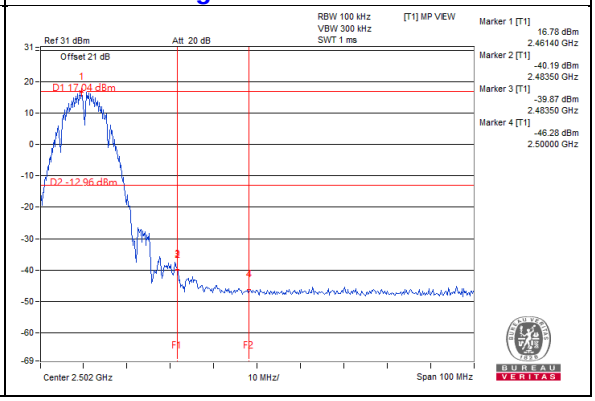
CH 11



CH 1 Band edge

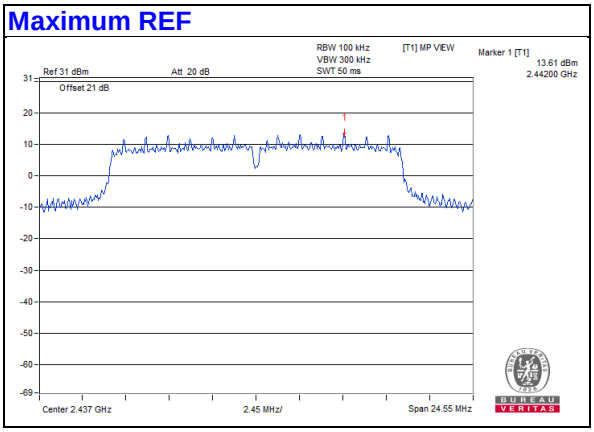


CH 11 Band edge



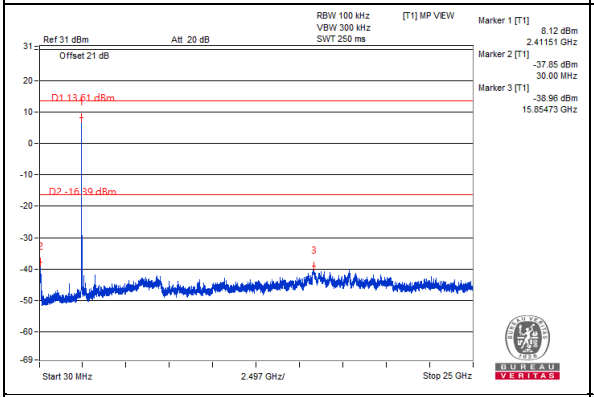
802.11g

Maximum REF

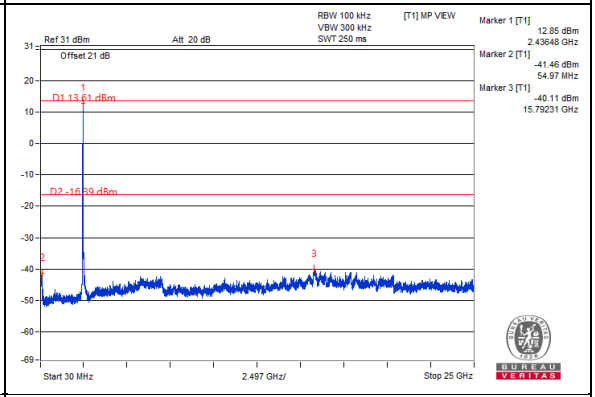


Chain 0

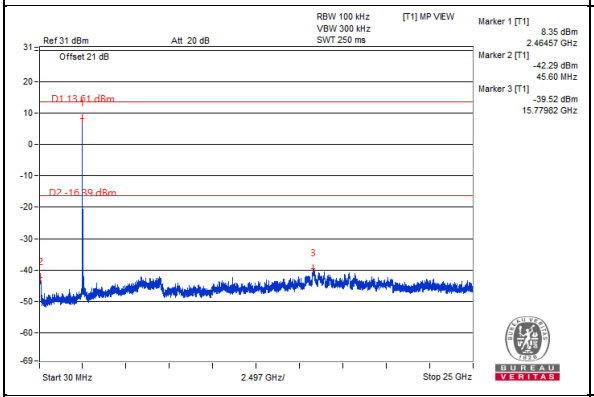
CH 1



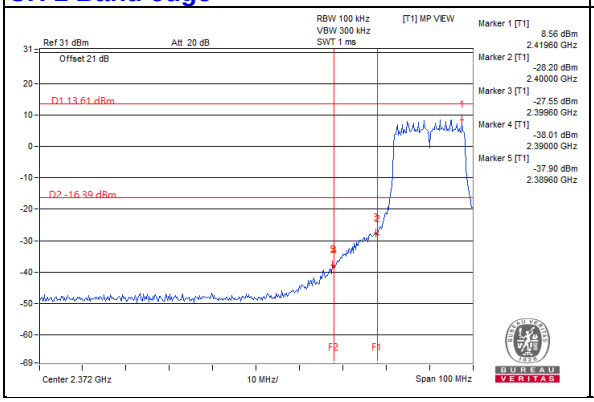
CH 6



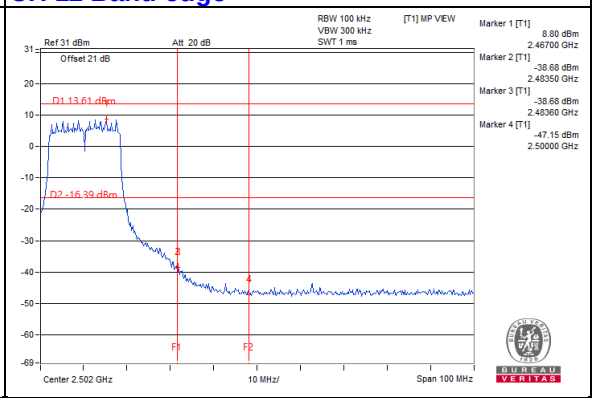
CH 11



CH 1 Band edge

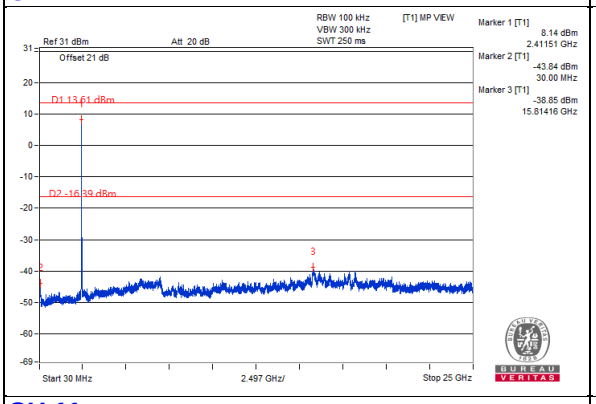


CH 11 Band edge

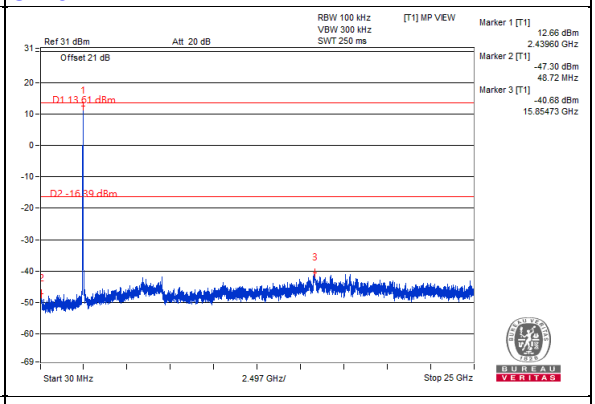


Chain 1

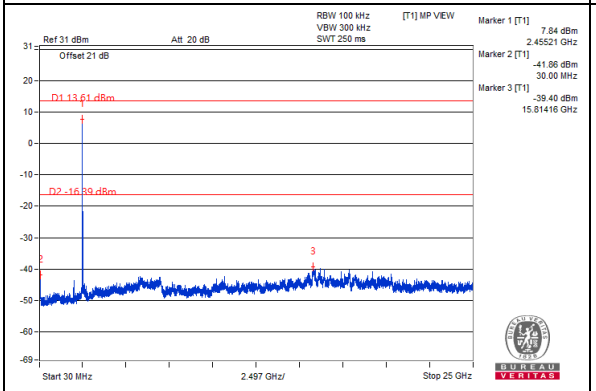
CH 1



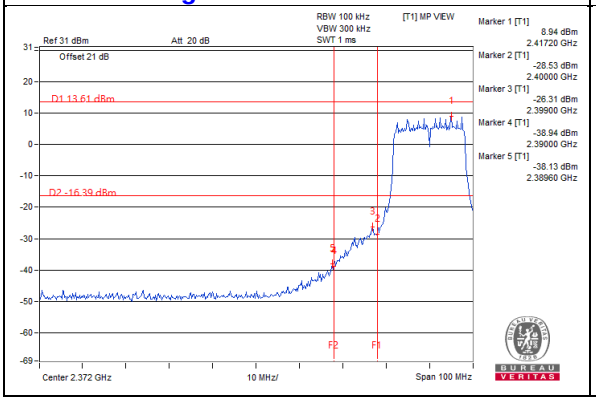
CH 6



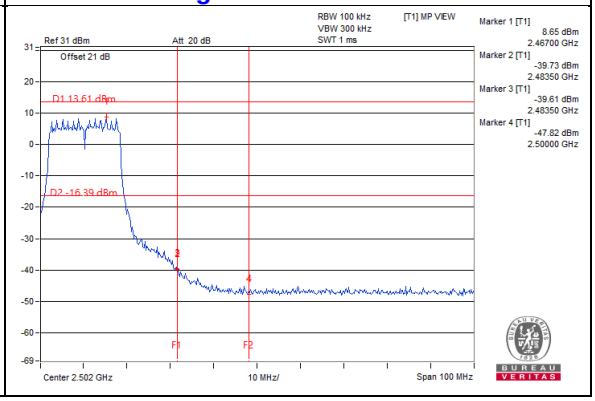
CH 11



CH 1 Band edge

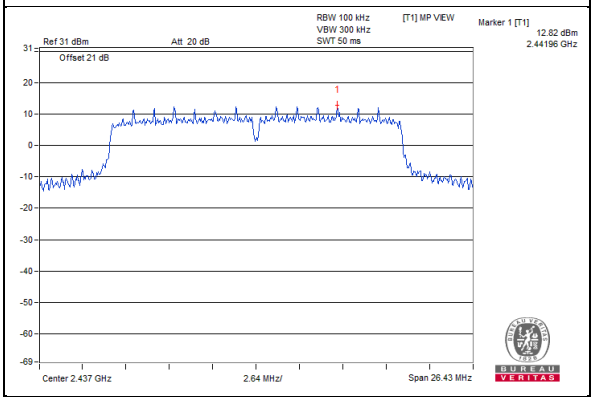


CH 11 Band edge



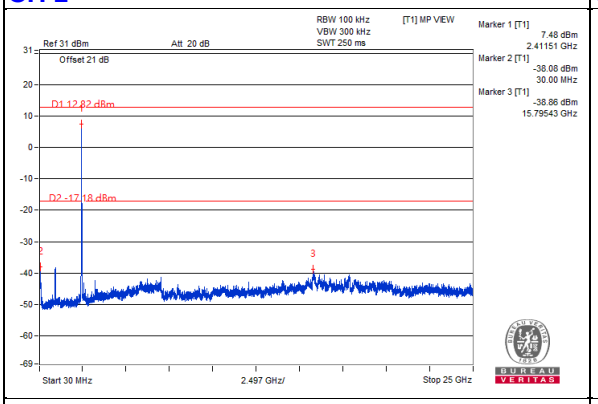
VHT20

Maximum REF

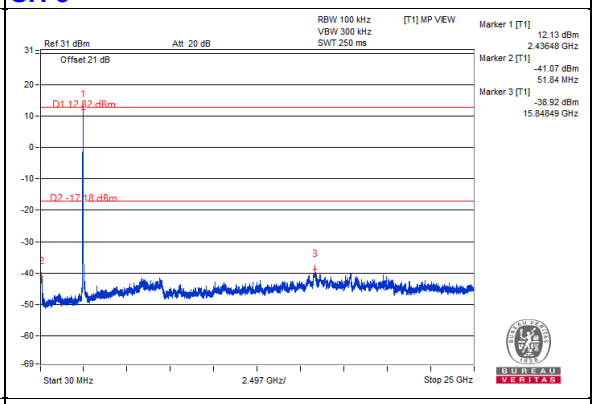


Chain 0

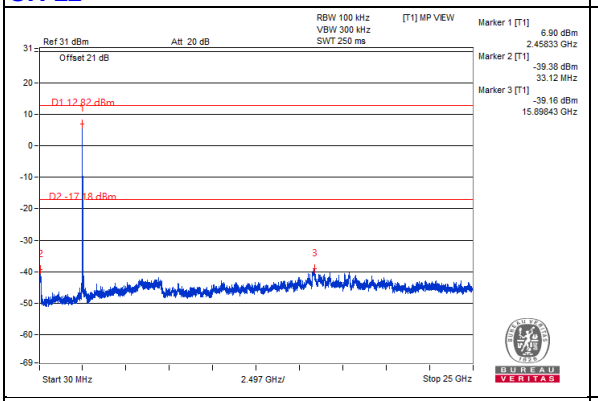
CH 1



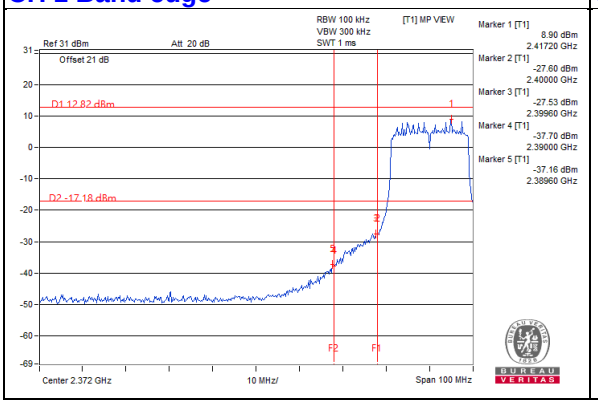
CH 6



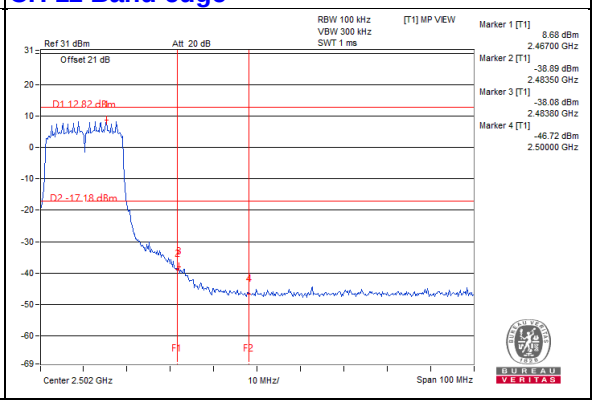
CH 11



CH 1 Band edge

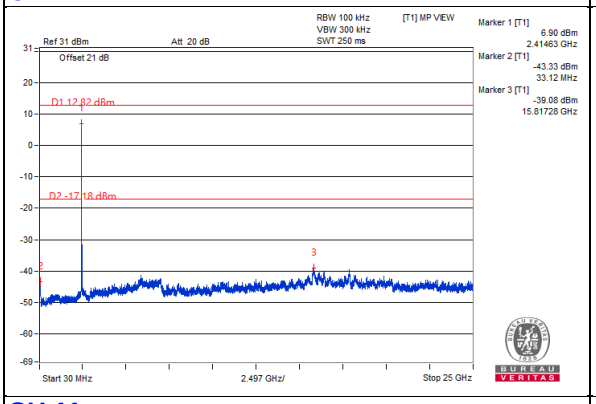


CH 11 Band edge

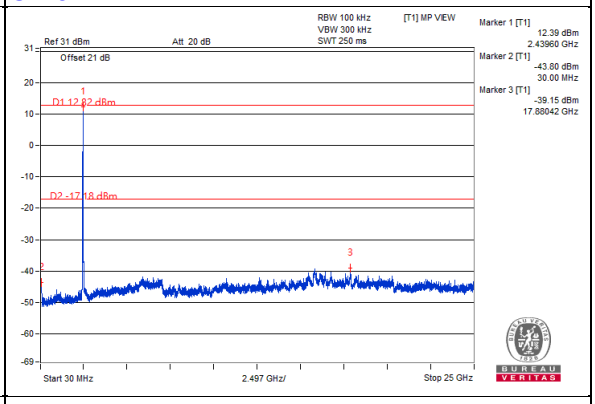


Chain 1

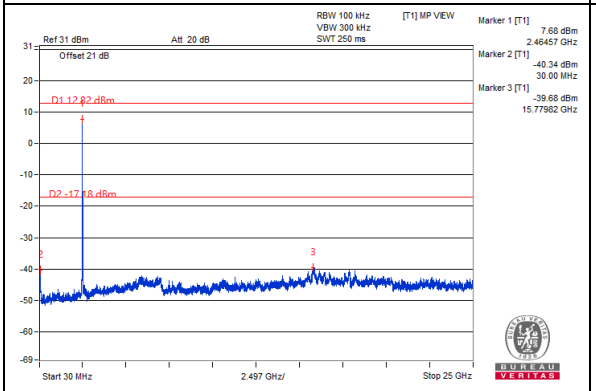
CH 1



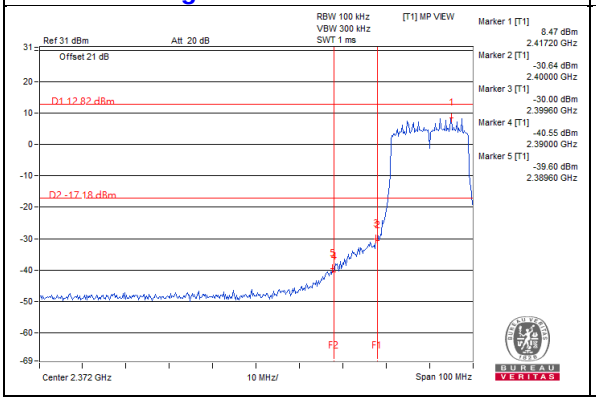
CH 6



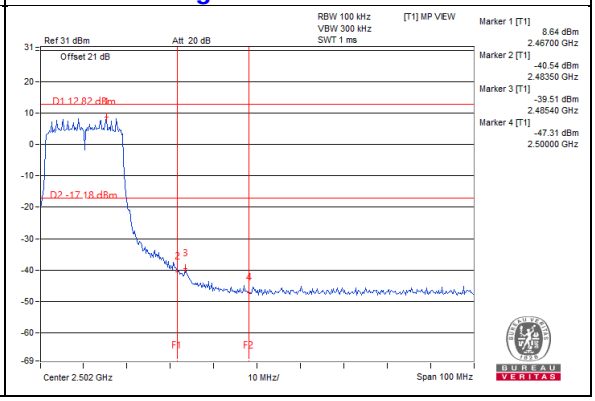
CH 11



CH 1 Band edge

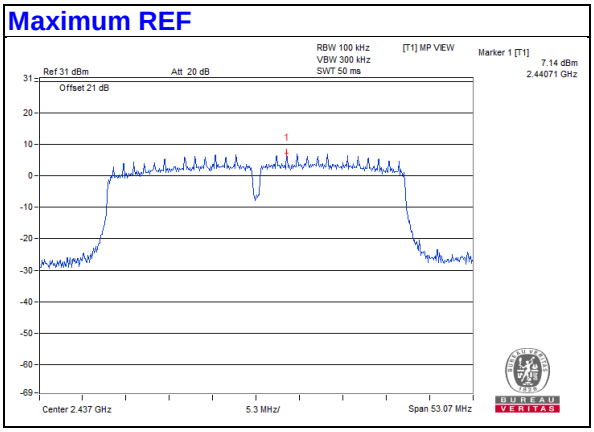


CH 11 Band edge



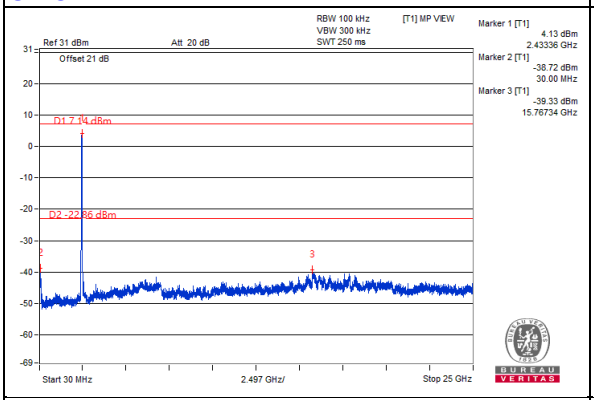
VHT40

Maximum REF

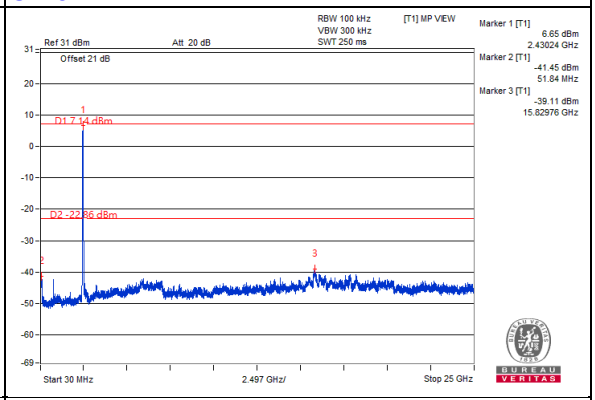


Chain 0

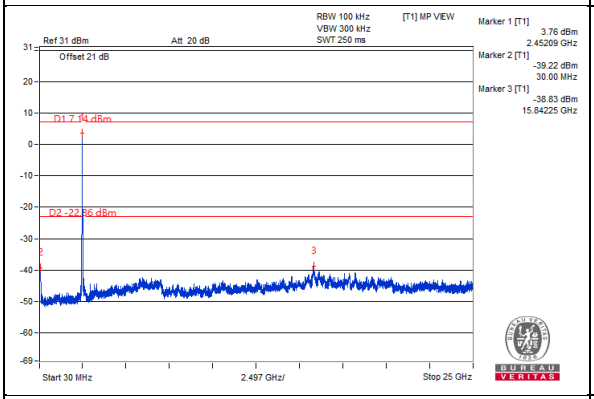
CH 3



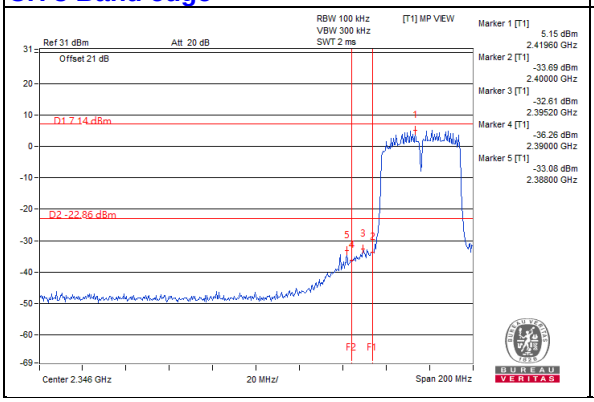
CH 6



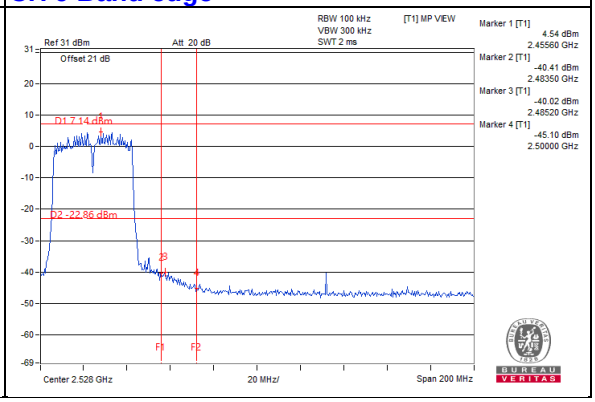
CH 9



CH 3 Band edge

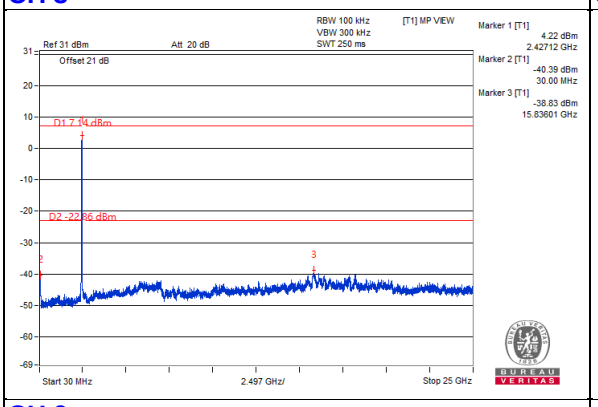


CH 9 Band edge

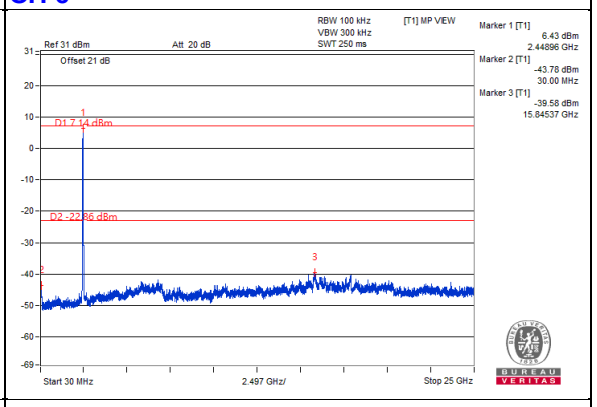


Chain 1

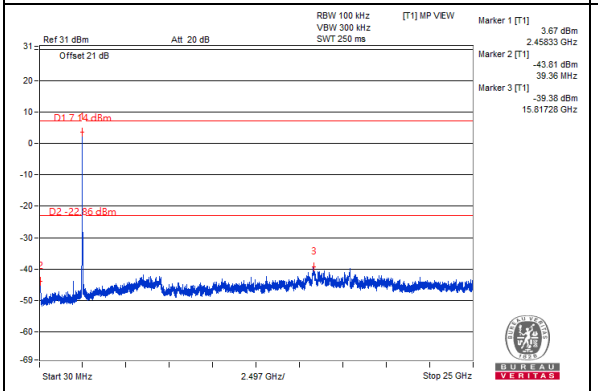
CH 3



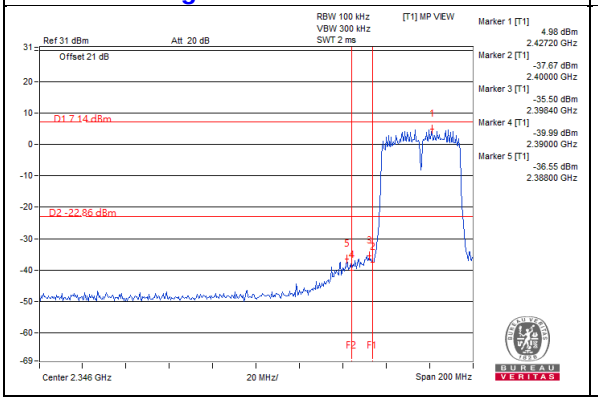
CH 6



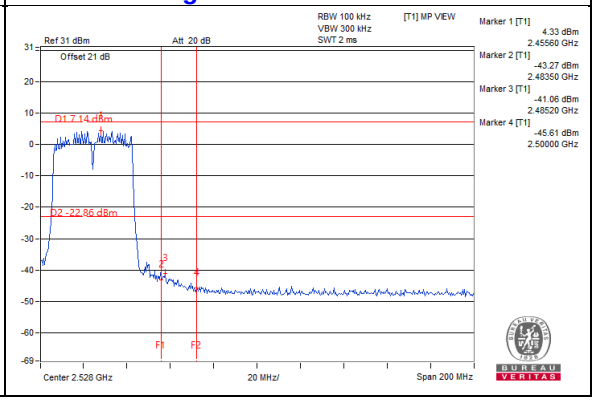
CH 9



CH 3 Band edge



CH 9 Band edge



5 Pictures of Test Arrangements

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

Appendix – Information of 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:

Lin Kou 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 ---