FCC Test Report

(Bluetooth LE_DTS)

Report No.:	RF190408C21-2
FCC ID:	QOQGM210P
Test Model:	MGM210P32A, MGM210P22A
Series Model:	BGM210P32A, BGM210P22A (refer to item 3.1 for more details)
Received Date:	Apr. 08, 2019
Test Date:	Apr. 13 ~ Sep. 17, 2019
Issued Date:	Sep. 17, 2019
Applicant:	Silicon Laboratories Finland Oy
Address:	Alberga Business Park - Bldg D/Floor 5, Bertel Jungin aukio 3, 02600 ESPOO, FINLAND
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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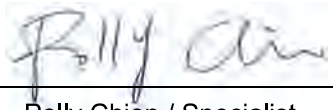
Release Control Record

Issue No.	Description	Date Issued
RF190408C21-2	Original release.	Sep. 17, 2019

1 Certificate of Conformity

Product:	Bluetooth Low Energy and ZigBee wireless radio modules
Brand:	Silicon Labs
Test Model:	MGM210P32A, MGM210P22A
Series Model:	BGM210P32A, BGM210P22A (refer to item 3.1 for more details)
Sample Status:	Engineering sample
Applicant:	Silicon Laboratories Finland Oy
Test Date:	Apr. 13 ~ Sep. 17, 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 RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Sep. 17, 2019

Polly Chien / Specialist

Approved by :  , **Date:** Sep. 17, 2019

Bruce Chen / Project Engineer

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 -13.08dB at 0.16600MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.4dB 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 1: No antenna connector is used. Antenna 2: Antenna connector is 50-ohm pin 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	2.94 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Bluetooth Low Energy and ZigBee wireless radio modules
Brand	Silicon Labs
Test Model	MGM210P32A, MGM210P22A
Series Model	BGM210P32A, BGM210P22A
Model Difference	Refer to note
Sample Status	Engineering sample
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	GFSK
Modulation Technology	DTS
Transfer Rate	1Mbps, 2Mbps
Operating Frequency	2402~2480MHz
Number of Channel	40
Output Power	**EUT / Dipole antenna** Mode A1 (MGM210P32A / High power 1M): 90.365mW Mode A2 (MGM210P22A / Low power 1M): 12.023mW Mode A3 (MGM210P32A / High power 2M): 87.297mW Mode A4 (MGM210P22A / Low power 2M): 12.106mW
	EUT / Chip antenna Mode B1(MGM210P32A / High power 1M): 94.842mW Mode B2 (MGM210P22A / Low power 1M): 12.050mW Mode B3 (MGM210P32A / High power 2M): 99.083mW Mode B4 (MGM210P22A / Low power 2M): 12.050mW
Antenna Type	Refer to Note
Antenna Connector	Chip antenna: NA Dipole antenna: 50-ohm pin
Accessory Device	NA
Cable Supplied	NA

Note:

1. All models are listed as below. Model MGM210P22A and MGM210P32A are the representative for final test.

Model	MGM210P22A	MGM210P32A	BGM210P22A	BGM210P32A
Spec.	Low-Power/ Zigbee and/or BLE	High-Power/ Zigbee and/or BLE	Low-Power/ BLE	high-Power/ BLE
Antenna Type	1. On board ceramic chip antenna with 1.86dBi of gain 2. Dipole antenna with the theoretical gain of 2.14dBi			
Hardware	The wireless chipset is the same in all these modules, and it integrates a PA subsystem and a RF switch to route the RF signal to two separate RF ports, one for the integral onboard ceramic chip antenna and one for an optional external antenna			
RF max TX power	10dBm	20dBm	10dBm	20dBm
The MGM210Px modules are for Zigbee + BLE, while the BGM210Px modules are for BLE only. The 22 and 32 in the model names indicate the power variant, that is, the xGM210P22A is the low-power variant which is allowed to transmit at up to 10dBm, whereas the xGM210P32A is the high-power variant for up to 20dBm. Hardware-wise, the two power variants only differ in their 50Ω matching network which is optimized for the related max allowed output power.				

2. The following samples are provided by client and used for testing.

Sample	Model
A	MGM210P32A
B	MGM210P22A

3. The EUT has DTS and Hopping functions.
4. The power setting is list as below.

Test Mode	A1: MGM210P32A / High power 1M / Dipole ant.	Test Mode	A2: MGM210P22A / Low power 1M / Dipole ant.
CH 0	195	CH 0	100
CH 19	195	CH 19	100
CH 38	195	CH 38	100
CH 39	195	CH 39	100
Test Mode	A3: MGM210P32A / High power 2M / Dipole ant.	Test Mode	A4: MGM210P22A + Low power 2M / Dipole ant.
CH 1	195	CH 1	100
CH 19	195	CH 19	100
CH 38	175	CH 38	100

Test Mode	B1: MGM210P32A + High power 1M / Chip ant.	Test Mode	B2: MGM210P22A / Low power 1M / Chip ant.
CH 0	192	CH 0	100
CH 19	192	CH 19	100
CH 38	192	CH 38	100
CH 39	192	CH 39	100
Test Mode	B3: MGM210P32A / High power 2M / Chip ant.	Test Mode	B4: MGM210P22A + Low power 2M / Chip ant.
CH 1	192	CH 1	100
CH 19	192	CH 19	100
CH 38	170	CH 38	100

3.2 Description of Test Modes

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

* That the channels 2402MHz, 2426MHz, and 2480MHz are used for primary advertising only, and these advertisement packets are never being sent over the 2M PHY, meaning that when testing band edges the 2M PHY should not be taken into account with the upper and lower channels.

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A1	√	√	√	√	Sample A / High power 1M / Dipole ant.
A2	-	-	-	√	Sample B / Low power 1M / Dipole ant.
A3	√	√	√	√	Sample A / High power 2M / Dipole ant.
A4	-	-	-	√	Sample B / Low power 2M / Dipole ant.
B1	√	√	√	√	Sample A / High power 1M / Chip ant.
B2	-	-	-	√	Sample B / Low power 1M / Chip ant.
B3	√	√	√	√	Sample A / High power 2M / Chip ant.
B4	-	-	-	√	Sample B / Low power 2M / Chip ant.

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

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

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on Z-plane.
2. "-": Means no effect.

Radiated Emission Test (Above 1GHz):

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

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

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, B1	0 to 39	0, 19, 38, 39	GFSK	1.0
A3, B3	0 to 39	1, 19, 38	GFSK	2.0

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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, B1	0 to 39	0	GFSK	1.0
A3, B3	0 to 39	1	GFSK	2.0

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.

EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, B1	0 to 39	0	GFSK	1.0
A3, B3	0 to 39	1	GFSK	2.0

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.

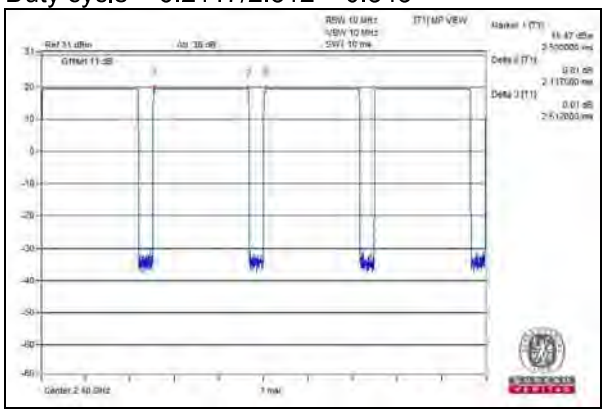
EUT Configure Mode	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
Conducted output power				
A1, A2, B1, B2	0 to 39	0, 19, 38, 39	GFSK	1.0/2.0
A3, A4, B3, B4	0 to 39	1, 19, 38	GFSK	1.0/2.0
For other tests except conducted output power				
A1, B1	0 to 39	0, 19, 38, 39	GFSK	1.0/2.0
A3, B3	0 to 39	1, 19, 38	GFSK	1.0/2.0

Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE≥1G	22 deg. C, 68% RH	120Vac, 60Hz	Han Wu
RE<1G	22 deg. C, 68% RH	120Vac, 60Hz	Han Wu
PLC	25 deg. C, 75% RH	120Vac, 60Hz	Jones Chang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Alan Wu

3.1 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor shall be considered.
Duty cycle = 0.2117/2.512 = 0.843



3.2 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.

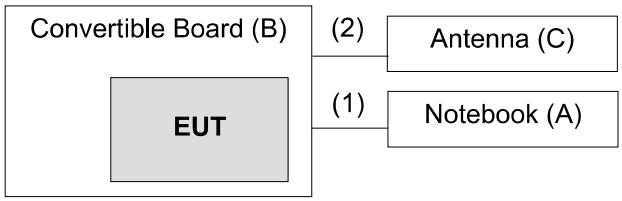
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	Lenovo	81A4	YD02TWF5	FCC DoC Approved	-
B.	Convertible Board	NA	NA	NA	NA	Provided by client
C.	Antenna	NA	NA	NA	NA	Provided by client

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1	Y	0	-
2.	RF cable	1	0.15	-	0	Provided by client

3.2.1 Configuration of System under Test



3.3 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 15.247 Meas Guidance v05r02
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.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY51210203	Mar. 18, 2019	Mar. 17, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 25, 2018	Sep. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna EMCI	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018	Aug. 07, 2019
			Jul. 11, 2019	Jul. 10, 2020
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 19, 2019	Feb. 18, 2020
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018	Aug. 07, 2019
			Jul. 11, 2019	Jul. 10, 2020
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018	Jul. 30, 2019
			Jul. 30, 2019	Jul. 29, 2020
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 17, 2018	Jul. 16, 2019
			Jul. 15, 2019	Jul. 14, 2020

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 HwaYa Chamber 9.

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 detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

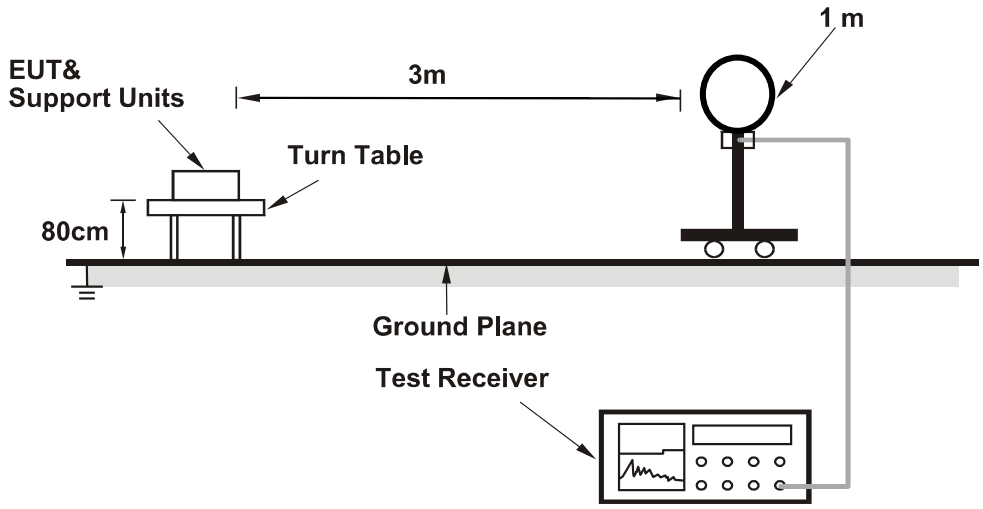
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

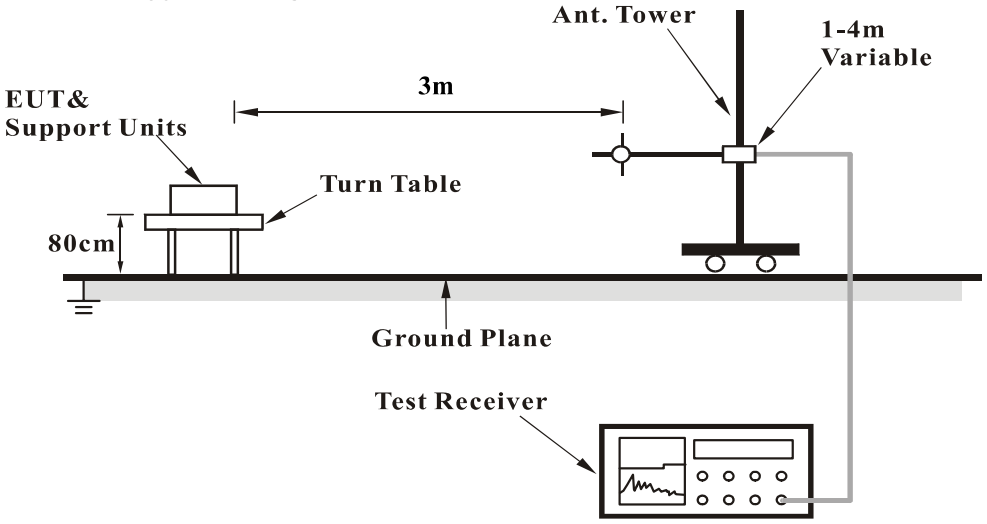
No deviation.

4.1.5 Test Setup

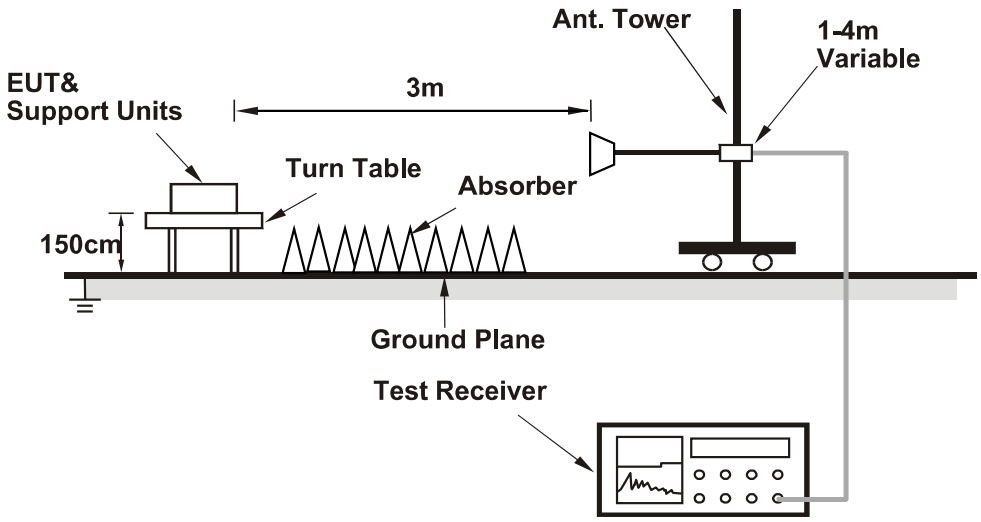
For Radiated emission below 30MHz



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. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a USB cable and ran a test program (BGTOOL) to enable EUT under transmission condition continuously at specific channel frequency.
d. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz Data:

Mode A1

CHANNEL	TX Channel 0	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	2363.60	56.1 PK	74.0	-17.9	1.41 H	146	24.2	31.9
2	2363.60	45.1 AV	54.0	-8.9	1.41 H	146	13.2	31.9
3	*2402.00	107.5 PK			1.42 H	139	75.7	31.8
4	*2402.00	103.1 AV			1.42 H	139	71.3	31.8
5	4804.00	46.6 PK	74.0	-27.4	1.23 H	354	42.9	3.7
6	4804.00	34.2 AV	54.0	-19.8	1.23 H	354	30.5	3.7
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	2363.60	58.2 PK	74.0	-15.8	1.49 V	222	26.3	31.9
2	2363.60	52.5 AV	54.0	-1.5	1.49 V	222	20.6	31.9
3	*2402.00	116.4 PK			1.49 V	249	84.6	31.8
4	*2402.00	111.5 AV			1.49 V	249	79.7	31.8
5	4804.00	47.5 PK	74.0	-26.5	1.11 V	181	43.8	3.7
6	4804.00	35.5 AV	54.0	-18.5	1.11 V	181	31.8	3.7

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 19	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	*2440.00	107.2 PK			1.44 H	150	75.4	31.8
2	*2440.00	102.2 AV			1.44 H	150	70.4	31.8
3	4880.00	45.8 PK	74.0	-28.2	1.09 H	320	42.3	3.5
4	4880.00	34.1 AV	54.0	-19.9	1.09 H	320	30.6	3.5
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	*2440.00	115.8 PK			1.25 V	249	84.0	31.8
2	*2440.00	111.4 AV			1.25 V	249	79.6	31.8
3	4880.00	47.1 PK	74.0	-26.9	1.11 V	160	43.6	3.5
4	4880.00	35.5 AV	54.0	-18.5	1.11 V	160	32.0	3.5

Remarks:

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

CHANNEL	TX Channel 38	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	*2478.00	106.8 PK			1.43 H	135	75.0	31.8
2	*2478.00	105.5 AV			1.43 H	135	73.7	31.8
3	2483.50	58.1 PK	74.0	-15.9	1.43 H	133	26.3	31.8
4	2483.50	47.3 AV	54.0	-6.7	1.43 H	133	15.5	31.8
5	4956.00	46.0 PK	74.0	-28.0	1.22 H	320	42.2	3.8
6	4956.00	34.3 AV	54.0	-19.7	1.22 H	320	30.5	3.8
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	*2478.00	115.3 PK			1.44 V	246	83.5	31.8
2	*2478.00	114.2 AV			1.44 V	246	82.4	31.8
3	2483.50	65.0 PK	74.0	-9.0	1.40 V	240	33.2	31.8
4	**2483.50**	**53.6 AV**	**54.0**	**-0.4**	**1.40 V**	**240**	**21.8**	**31.8**
5	4956.00	47.5 PK	74.0	-26.5	1.12 V	189	43.7	3.8
6	4956.00	36.3 AV	54.0	-17.7	1.12 V	189	32.5	3.8

Remarks:

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

CHANNEL	TX Channel 39	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	*2480.00	104.1 PK			1.55 H	135	72.3	31.8
2	*2480.00	94.3 AV			1.55 H	135	62.5	31.8
3	2483.50	57.2 PK	74.0	-16.8	1.49 H	139	25.4	31.8
4	2483.50	44.2 AV	54.0	-9.8	1.49 H	139	12.4	31.8
5	4960.00	42.2 PK	74.0	-31.8	1.13 H	344	38.4	3.8
6	4960.00	32.1 AV	54.0	-21.9	1.13 H	344	28.3	3.8
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	*2480.00	112.3 PK			1.46 V	222	80.5	31.8
2	*2480.00	103.1 AV			1.46 V	222	71.3	31.8
3	2483.50	59.2 PK	74.0	-14.8	1.40 V	222	27.4	31.8
4	2483.50	50.0 AV	54.0	-4.0	1.40 V	222	18.2	31.8
5	4960.00	45.0 PK	74.0	-29.0	1.38 V	179	41.2	3.8
6	4960.00	33.9 AV	54.0	-20.1	1.38 V	179	30.1	3.8

Remarks:

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

Mode A3

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	2365.70	57.0 PK	74.0	-17.0	1.28 H	149	25.1	31.9
2	2365.70	44.8 AV	54.0	-9.2	1.28 H	149	12.9	31.9
3	*2404.00	107.3 PK			1.29 H	144	75.5	31.8
4	*2404.00	105.0 AV			1.29 H	144	73.2	31.8
5	4808.00	44.6 PK	74.0	-29.4	1.11 H	301	40.9	3.7
6	4808.00	32.6 AV	54.0	-21.4	1.11 H	301	28.9	3.7
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	2365.70	58.2 PK	74.0	-15.8	1.09 V	21	26.3	31.9
2	2365.70	51.3 AV	54.0	-2.7	1.09 V	21	19.4	31.9
3	*2404.00	116.0 PK			1.08 V	21	84.2	31.8
4	*2404.00	113.0 AV			1.09 V	21	81.2	31.8
5	4808.00	45.2 PK	74.0	-28.8	1.01 V	272	42.1	3.1
6	4808.00	35.2 AV	54.0	-18.8	1.01 V	272	32.1	3.1

Remarks:

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

CHANNEL	TX Channel 19	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	*2440.00	107.3 PK			1.23 H	151	75.5	31.8
2	*2440.00	104.9 AV			1.23 H	151	73.1	31.8
3	4880.00	44.2 PK	74.0	-29.8	1.19 H	329	40.7	3.5
4	4880.00	32.3 AV	54.0	-21.7	1.19 H	329	28.8	3.5
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	*2440.00	116.2 PK			1.09 V	93	84.4	31.8
2	*2440.00	113.5 AV			1.09 V	93	81.7	31.8
3	4880.00	45.1 PK	74.0	-28.9	1.22 V	277	41.6	3.5
4	4880.00	32.5 AV	54.0	-21.5	1.22 V	277	29.0	3.5

Remarks:

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

CHANNEL	TX Channel 38	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	*2478.00	104.7 PK			1.33 H	166	72.9	31.8
2	*2478.00	102.1 AV			1.33 H	166	70.3	31.8
3	2483.50	57.3 PK	74.0	-16.7	1.32 H	165	25.5	31.8
4	2483.50	47.0 AV	54.0	-7.0	1.32 H	165	15.2	31.8
5	4976.00	45.0 PK	74.0	-29.0	1.19 H	320	41.2	3.8
6	4976.00	33.2 AV	54.0	-20.8	1.19 H	320	29.4	3.8
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	*2478.00	113.3 PK			1.11 V	79	81.5	31.8
2	*2478.00	110.4 AV			1.11 V	79	78.6	31.8
3	2483.50	63.0 PK	74.0	-11.0	1.09 V	78	31.2	31.8
4	2483.50	53.1 AV	54.0	-0.9	1.09 V	78	21.3	31.8
5	4976.00	45.6 PK	74.0	-28.4	1.16 V	288	41.8	3.8
6	4976.00	33.0 AV	54.0	-21.0	1.16 V	288	29.2	3.8

Remarks:

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

Mode B1

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.1 PK	74.0	-16.9	1.68 H	348	25.3	31.8
2	2390.00	45.3 AV	54.0	-8.7	1.68 H	348	13.5	31.8
3	*2402.00	115.8 PK			1.60 H	340	84.0	31.8
4	*2402.00	115.0 AV			1.60 H	340	83.2	31.8
5	4804.00	47.2 PK	74.0	-26.8	1.80 H	332	43.5	3.7
6	4804.00	37.2 AV	54.0	-16.8	1.80 H	332	33.5	3.7
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	56.3 PK	74.0	-17.7	1.10 V	260	24.5	31.8
2	2390.00	44.3 AV	54.0	-9.7	1.10 V	260	12.5	31.8
3	*2402.00	107.3 PK			1.10 V	260	75.5	31.8
4	*2402.00	105.8 AV			1.10 V	260	74.0	31.8
5	4804.00	44.1 PK	74.0	-29.9	2.21 V	160	40.4	3.7
6	4804.00	30.0 AV	54.0	-24.0	2.21 V	160	26.3	3.7

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 19	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	*2440.00	116.6 PK			1.78 H	338	84.8	31.8
2	*2440.00	115.1 AV			1.78 H	338	83.3	31.8
3	4880.00	47.1 PK	74.0	-26.9	1.90 H	16	43.6	3.5
4	4880.00	37.3 AV	54.0	-16.7	1.90 H	16	33.8	3.5
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	*2440.00	109.0 PK			1.08 V	263	77.2	31.8
2	*2440.00	107.2 AV			1.08 V	263	75.4	31.8
3	4880.00	43.1 PK	74.0	-30.9	2.58 V	175	39.6	3.5
4	4880.00	30.4 AV	54.0	-23.6	2.58 V	175	26.9	3.5

Remarks:

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

CHANNEL	TX Channel 38	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	*2478.00	114.8 PK			1.43 H	13	83.0	31.8
2	*2478.00	113.3 AV			1.43 H	13	81.5	31.8
3	2483.50	63.8 PK	74.0	-10.2	1.40 H	13	32.0	31.8
4	2483.50	53.3 AV	54.0	-0.7	1.40 H	13	21.5	31.8
5	4956.00	48.6 PK	74.0	-25.4	1.94 H	355	44.8	3.8
6	4956.00	37.7 AV	54.0	-16.3	1.94 H	355	33.9	3.8
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	*2478.00	106.1 PK			1.69 V	349	74.3	31.8
2	*2478.00	104.9 AV			1.69 V	349	73.1	31.8
3	2483.50	55.8 PK	74.0	-18.2	1.68 V	344	24.0	31.8
4	2483.50	44.0 AV	54.0	-10.0	1.68 V	344	12.2	31.8
5	4956.00	44.2 PK	74.0	-29.8	2.98 V	177	40.4	3.8
6	4956.00	31.0 AV	54.0	-23.0	2.98 V	177	27.2	3.8

Remarks:

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

CHANNEL	TX Channel 39	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	*2480.00	116.0 PK			1.70 H	345	84.2	31.8
2	*2480.00	106.5 AV			1.70 H	345	74.7	31.8
3	2483.50	61.3 PK	74.0	-12.7	1.70 H	340	29.5	31.8
4	2483.50	49.6 AV	54.0	-4.4	1.70 H	340	17.8	31.8
5	4960.00	41.2 PK	74.0	-32.8	1.88 H	12	37.4	3.8
6	4960.00	29.5 AV	54.0	-24.5	1.88 H	12	25.7	3.8
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	*2480.00	106.8 PK			1.19 V	266	75.0	31.8
2	*2480.00	97.3 AV			1.19 V	266	65.5	31.8
3	2483.50	53.1 PK	74.0	-20.9	1.09 V	260	21.3	31.8
4	2483.50	43.0 AV	54.0	-11.0	1.09 V	260	11.2	31.8
5	4960.00	43.5 PK	74.0	-30.5	2.37 V	161	39.7	3.8
6	4960.00	30.1 AV	54.0	-23.9	2.37 V	161	26.3	3.8

Remarks:

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

Mode B3

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	56.0 PK	74.0	-18.0	1.35 H	344	24.2	31.8
2	2390.00	44.1 AV	54.0	-9.9	1.35 H	344	12.3	31.8
3	*2404.00	115.1 PK			1.40 H	350	83.3	31.8
4	*2404.00	111.5 AV			1.40 H	350	79.7	31.8
5	4808.00	44.3 PK	74.0	-29.7	2.08 H	300	40.6	3.7
6	4808.00	34.2 AV	54.0	-19.8	2.08 H	300	30.5	3.7
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	56.1 PK	74.0	-17.9	1.19 V	258	24.3	31.8
2	2390.00	44.0 AV	54.0	-10.0	1.19 V	258	12.2	31.8
3	*2404.00	107.0 PK			1.28 V	255	75.2	31.8
4	*2404.00	104.4 AV			1.28 V	255	72.6	31.8
5	4808.00	44.0 PK	74.0	-30.0	2.88 V	169	40.3	3.7
6	4808.00	30.1 AV	54.0	-23.9	2.88 V	169	26.4	3.7

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 19	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	*2440.00	116.5 PK			1.70 H	19	84.7	31.8
2	*2440.00	113.1 AV			1.70 H	19	81.3	31.8
3	4880.00	44.5 PK	74.0	-29.5	2.21 H	330	41.0	3.5
4	4880.00	34.6 AV	54.0	-19.4	2.21 H	330	31.1	3.5
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	*2440.00	108.0 PK			1.29 V	204	76.2	31.8
2	*2440.00	104.5 AV			1.29 V	204	72.7	31.8
3	4880.00	42.5 PK	74.0	-31.5	2.82 V	169	39.0	3.5
4	4880.00	29.4 AV	54.0	-24.6	2.82 V	169	25.9	3.5

Remarks:

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

CHANNEL	TX Channel 38	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	*2478.00	114.1 PK			1.69 H	358	82.3	31.8
2	*2478.00	110.5 AV			1.69 H	358	78.7	31.8
3	2483.50	63.0 PK	74.0	-11.0	1.97 H	340	31.2	31.8
4	2483.50	53.0 AV	54.0	-1.0	1.97 H	340	21.2	31.8
5	4976.00	46.1 PK	74.0	-27.9	1.90 H	300	42.3	3.8
6	4976.00	31.7 AV	54.0	-22.3	1.90 H	300	27.9	3.8
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	*2478.00	107.0 PK			1.71 V	5	75.2	31.8
2	*2478.00	102.6 AV			1.71 V	5	70.8	31.8
3	2483.50	56.0 PK	74.0	-18.0	1.19 V	0	24.2	31.8
4	2483.50	44.0 AV	54.0	-10.0	1.19 V	0	12.2	31.8
5	4976.00	44.5 PK	74.0	-29.5	3.02 V	178	40.7	3.8
6	4976.00	31.1 AV	54.0	-22.9	3.02 V	178	27.3	3.8

Remarks:

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

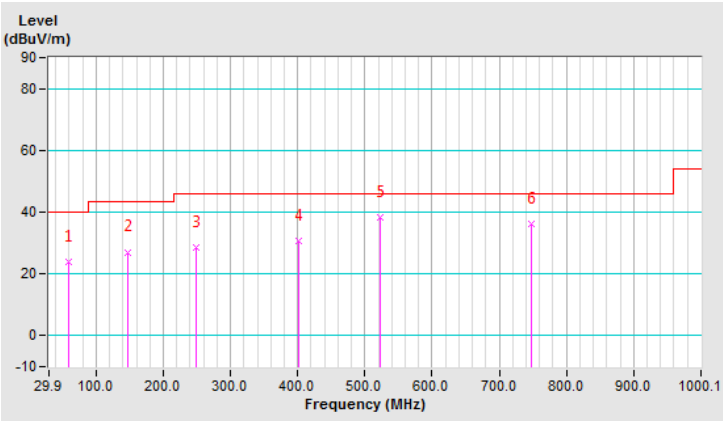
Below 1GHz worst-case data:

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A1

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	59.01	24.1 QP	40.0	-15.9	1.50 H	48	38.6	-14.5
2	146.32	27.1 QP	43.5	-16.4	1.00 H	273	41.0	-13.9
3	249.17	28.4 QP	46.0	-17.6	1.00 H	173	42.6	-14.2
4	402.46	30.6 QP	46.0	-15.4	1.00 H	80	40.6	-10.0
5	522.76	38.3 QP	46.0	-7.7	1.50 H	333	45.5	-7.2
6	747.85	36.2 QP	46.0	-9.8	1.00 H	79	37.5	-1.3

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.

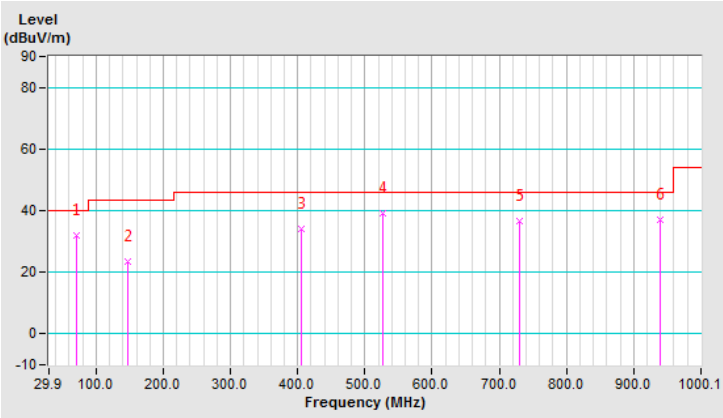


CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	70.65	31.8 QP	40.0	-8.2	1.01 V	70	47.9	-16.1
2	146.32	23.5 QP	43.5	-20.0	1.01 V	52	37.4	-13.9
3	406.34	34.0 QP	46.0	-12.0	1.01 V	11	43.9	-9.9
4	526.64	39.3 QP	46.0	-6.7	1.01 V	251	46.6	-7.3
5	730.38	36.5 QP	46.0	-9.5	1.49 V	54	38.5	-2.0
6	939.95	36.9 QP	46.0	-9.1	1.49 V	62	34.3	2.6

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. 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.

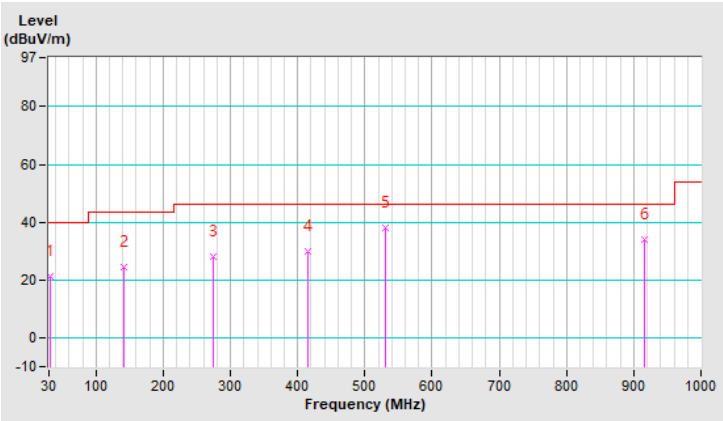


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A3

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	31.84	21.5 QP	40.0	-18.5	1.00 H	117	37.1	-15.6
2	142.44	24.5 QP	43.5	-19.0	1.50 H	268	38.7	-14.2
3	274.39	27.9 QP	46.0	-18.1	1.00 H	173	41.0	-13.1
4	416.04	30.0 QP	46.0	-16.0	1.00 H	77	39.6	-9.6
5	530.52	38.0 QP	46.0	-8.0	1.50 H	337	45.3	-7.3
6	916.66	34.1 QP	46.0	-11.9	1.50 H	79	31.9	2.2

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 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.

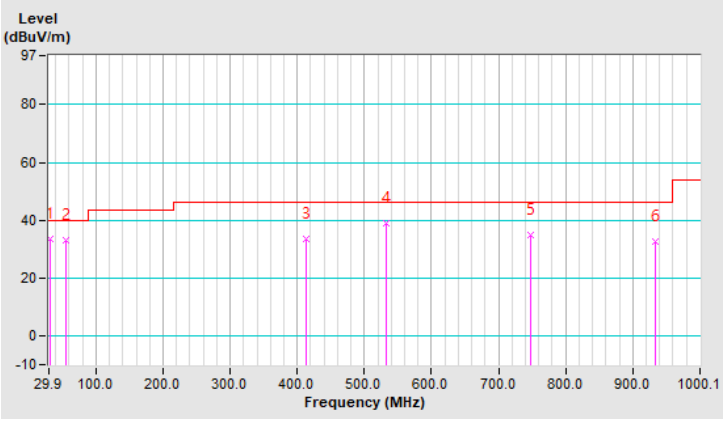


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A3

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	**31.84**	**33.4 QP**	**40.0**	**-6.6**	**1.49 V**	**129**	**49.0**	**-15.6**
2	55.13	33.1 QP	40.0	-6.9	1.01 V	21	47.0	-13.9
3	414.10	33.7 QP	46.0	-12.3	1.49 V	8	43.4	-9.7
4	532.46	39.1 QP	46.0	-6.9	1.01 V	275	46.4	-7.3
5	747.85	34.9 QP	46.0	-11.1	1.49 V	103	36.2	-1.3
6	934.13	32.6 QP	46.0	-13.4	1.01 V	140	30.3	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 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.

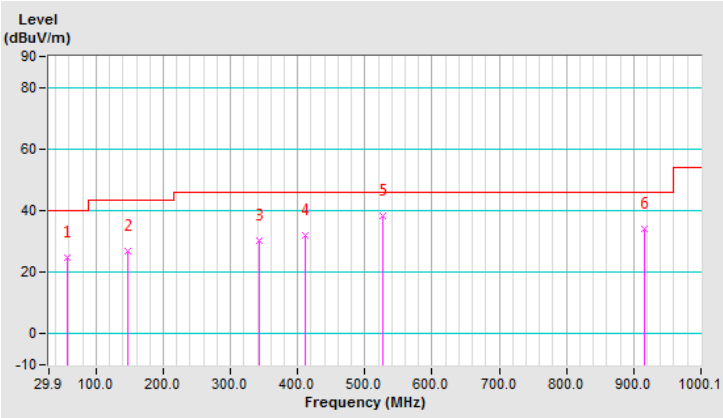


CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B1

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	57.07	24.8 QP	40.0	-15.2	1.50 H	94	39.1	-14.3
2	146.32	26.8 QP	43.5	-16.7	1.50 H	285	40.7	-13.9
3	342.30	30.4 QP	46.0	-15.6	1.01 H	21	41.7	-11.3
4	412.16	32.1 QP	46.0	-13.9	1.01 H	112	41.9	-9.8
5	526.64	38.3 QP	46.0	-7.7	1.50 H	327	45.6	-7.3
6	916.66	34.1 QP	46.0	-11.9	1.50 H	115	31.9	2.2

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 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.

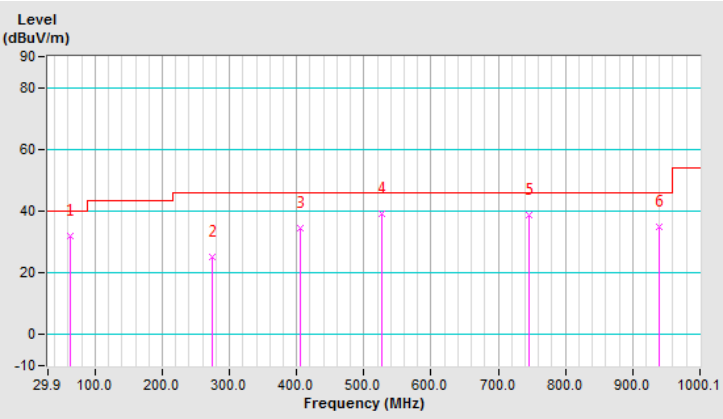


CHANNEL	TX Channel 0	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	62.89	32.1 QP	40.0	-7.9	1.49 V	126	46.9	-14.8
2	274.39	25.1 QP	46.0	-20.9	1.49 V	225	38.2	-13.1
3	406.34	34.5 QP	46.0	-11.5	1.00 V	9	44.4	-9.9
4	526.64	39.0 QP	46.0	-7.0	1.00 V	331	46.3	-7.3
5	745.91	38.7 QP	46.0	-7.3	1.49 V	285	40.1	-1.4
6	939.95	35.1 QP	46.0	-10.9	1.00 V	102	32.5	2.6

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. 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.

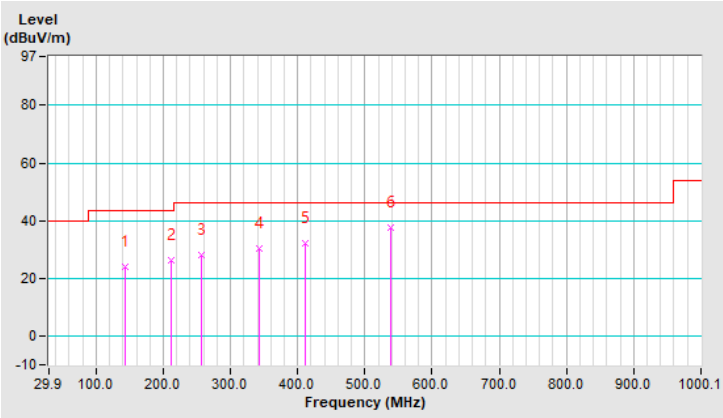


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B3

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	142.44	24.1 QP	43.5	-19.4	1.01 H	260	38.3	-14.2
2	212.30	26.2 QP	43.5	-17.3	1.50 H	231	42.1	-15.9
3	256.93	28.3 QP	46.0	-17.7	1.01 H	170	42.2	-13.9
4	342.30	30.4 QP	46.0	-15.6	1.01 H	21	41.7	-11.3
5	412.16	32.1 QP	46.0	-13.9	1.01 H	112	41.9	-9.8
6	538.28	37.6 QP	46.0	-8.4	1.50 H	324	44.8	-7.2

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 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.

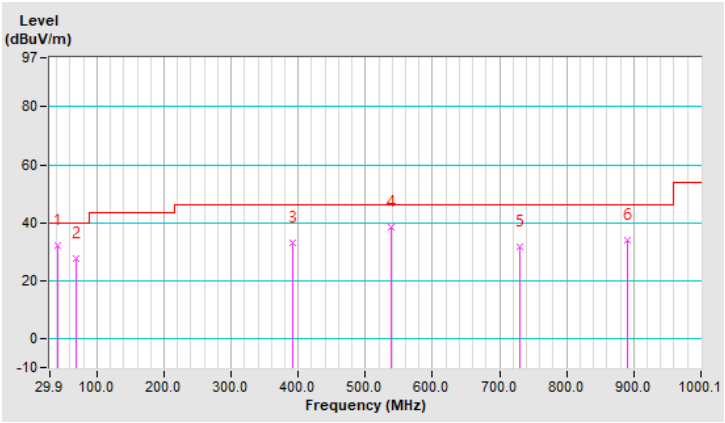


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B3

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	41.54	32.2 QP	40.0	-7.8	1.49 V	30	45.9	-13.7
2	68.71	27.8 QP	40.0	-12.2	1.00 V	21	43.8	-16.0
3	390.81	33.1 QP	46.0	-12.9	1.49 V	12	43.2	-10.1
4	538.28	38.4 QP	46.0	-7.6	1.00 V	250	45.6	-7.2
5	730.38	31.6 QP	46.0	-14.4	1.00 V	58	33.6	-2.0
6	891.44	34.0 QP	46.0	-12.0	1.49 V	12	32.6	1.4

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 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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 10, 2018	Dec. 09, 2019
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019	Sep. 04, 2020
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 21, 2019	Feb. 20, 2020
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	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 HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-12047.
4. Test date: Sep. 16, 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.

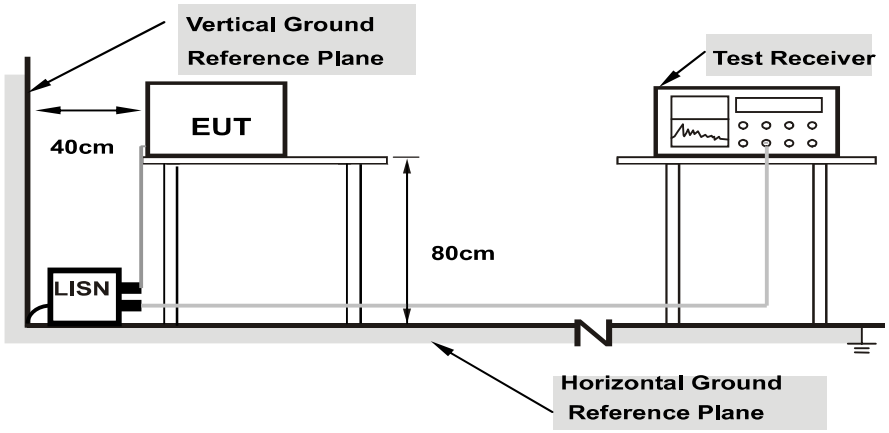
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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 item 4.1.6.

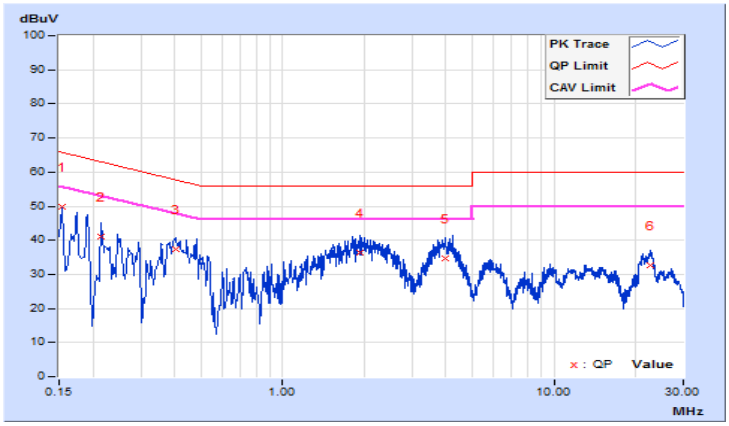
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	10.16	39.52	20.58	49.68	30.74	65.78	55.78	-16.10	-25.04
2	0.21406	10.22	30.94	18.72	41.16	28.94	63.05	53.05	-21.89	-24.11
3	0.40179	10.28	27.03	10.28	37.31	20.56	57.82	47.82	-20.51	-27.26
4	1.92600	10.44	25.79	17.49	36.23	27.93	56.00	46.00	-19.77	-18.07
5	3.95800	10.56	24.28	16.98	34.84	27.54	56.00	46.00	-21.16	-18.46
6	22.63000	10.91	21.65	16.36	32.56	27.27	60.00	50.00	-27.44	-22.73

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.

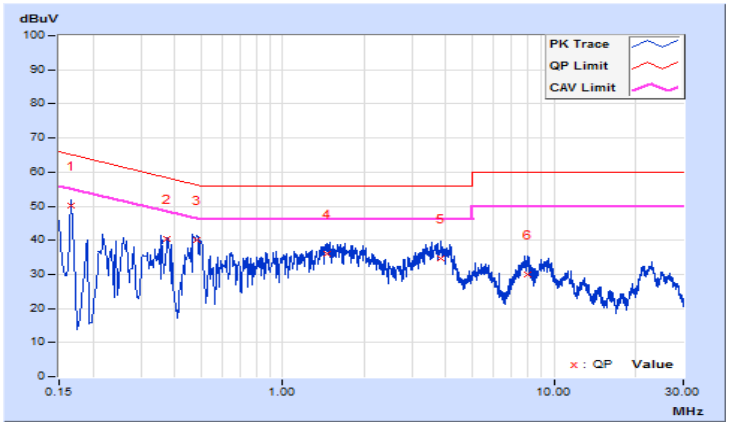


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A1		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16623	10.23	40.06	24.48	50.29	34.71	65.15	55.15	-14.86	-20.44
2	0.37421	10.33	29.93	20.48	40.26	30.81	58.41	48.41	-18.15	-17.60
3	0.48190	10.36	29.61	19.75	39.97	30.11	56.31	46.31	-16.34	-16.20
4	1.45400	10.48	25.48	16.83	35.96	27.31	56.00	46.00	-20.04	-18.69
5	3.81800	10.64	23.96	16.49	34.60	27.13	56.00	46.00	-21.40	-18.87
6	7.98200	10.75	19.32	13.47	30.07	24.22	60.00	50.00	-29.93	-25.78

Remarks:

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

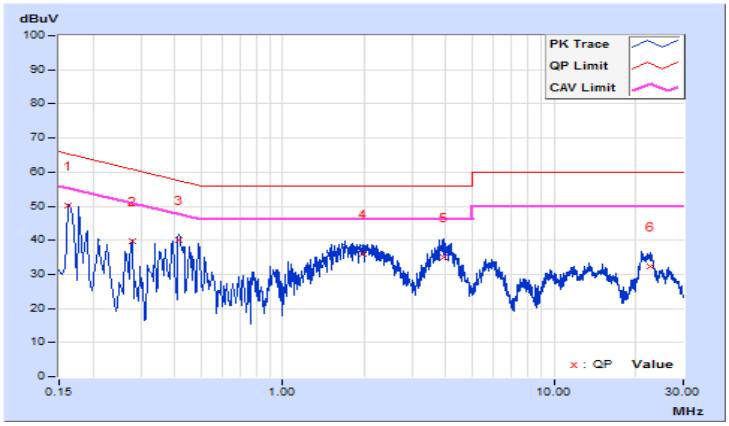


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A3		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16190	10.17	39.88	25.82	50.05	35.99	65.37	55.37	-15.32	-19.38
2	0.27800	10.24	29.34	15.30	39.58	25.54	60.88	50.88	-21.30	-25.34
3	0.41361	10.28	29.88	16.69	40.16	26.97	57.58	47.58	-17.42	-20.61
4	1.99000	10.44	25.42	17.26	35.86	27.70	56.00	46.00	-20.14	-18.30
5	3.91000	10.55	24.45	16.91	35.00	27.46	56.00	46.00	-21.00	-18.54
6	22.79800	10.90	21.36	16.19	32.26	27.09	60.00	50.00	-27.74	-22.91

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.

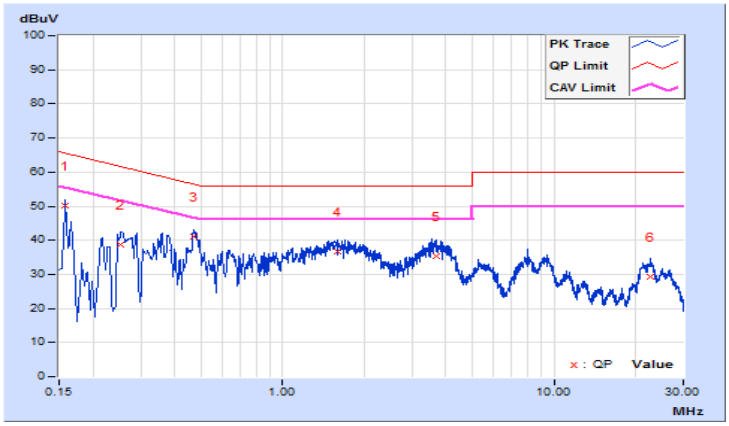


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A3		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	10.22	40.01	24.36	50.23	34.58	65.57	55.57	-15.34	-20.99
2	0.25405	10.31	28.55	12.14	38.86	22.45	61.62	51.62	-22.76	-29.17
3	0.47000	10.35	30.76	19.34	41.11	29.69	56.51	46.51	-15.40	-16.82
4	1.59793	10.49	26.21	17.53	36.70	28.02	56.00	46.00	-19.30	-17.98
5	3.66600	10.63	24.57	17.39	35.20	28.02	56.00	46.00	-20.80	-17.98
6	22.65400	11.11	18.25	13.19	29.36	24.30	60.00	50.00	-30.64	-25.70

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.

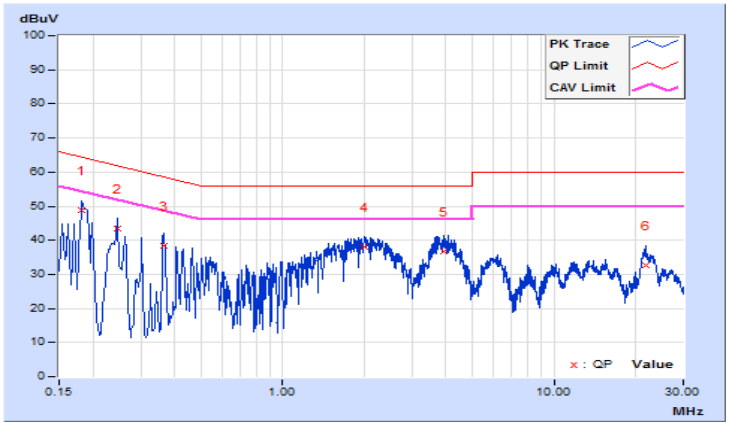


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18228	10.20	38.49	23.09	48.69	33.29	64.38	54.38	-15.69	-21.09
2	0.24600	10.23	33.13	19.19	43.36	29.42	61.89	51.89	-18.53	-22.47
3	0.36544	10.27	28.13	16.11	38.40	26.38	58.60	48.60	-20.20	-22.22
4	2.00427	10.44	27.69	16.98	38.13	27.42	56.00	46.00	-17.87	-18.58
5	3.95000	10.56	25.98	17.32	36.54	27.88	56.00	46.00	-19.46	-18.12
6	21.82600	10.92	21.58	16.11	32.50	27.03	60.00	50.00	-27.50	-22.97

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.

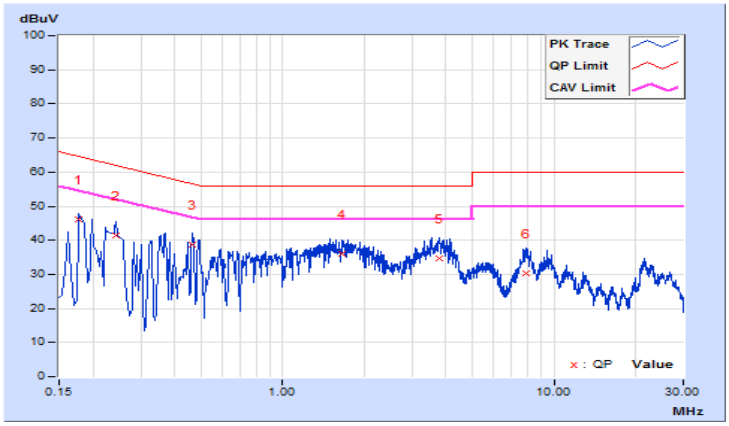


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B1		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17801	10.26	35.70	11.90	45.96	22.16	64.58	54.58	-18.62	-32.42
2	0.24200	10.31	31.16	16.88	41.47	27.19	62.03	52.03	-20.56	-24.84
3	0.46200	10.35	28.34	12.49	38.69	22.84	56.66	46.66	-17.97	-23.82
4	1.65796	10.49	25.42	16.85	35.91	27.34	56.00	46.00	-20.09	-18.66
5	3.79000	10.64	24.04	16.59	34.68	27.23	56.00	46.00	-21.32	-18.77
6	7.91400	10.75	19.61	13.61	30.36	24.36	60.00	50.00	-29.64	-25.64

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.

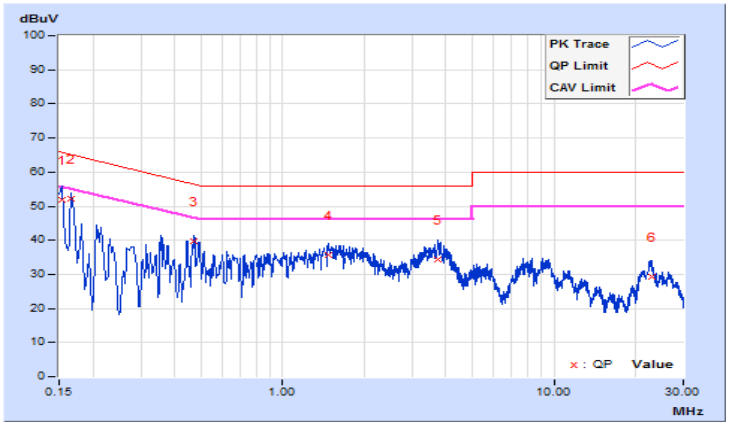


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B3		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	10.16	41.76	22.36	51.92	32.52	65.78	55.78	-13.86	-23.26
2	**0.16600**	**10.17**	**41.91**	**26.50**	**52.08**	**36.67**	**65.16**	**55.16**	**-13.08**	**-18.49**
3	0.47000	10.29	29.32	16.87	39.61	27.16	56.51	46.51	-16.90	-19.35
4	1.48600	10.41	25.30	16.00	35.71	26.41	56.00	46.00	-20.29	-19.59
5	3.71800	10.54	23.83	16.49	34.37	27.03	56.00	46.00	-21.63	-18.97
6	22.95400	10.90	18.29	13.34	29.19	24.24	60.00	50.00	-30.81	-25.76

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.

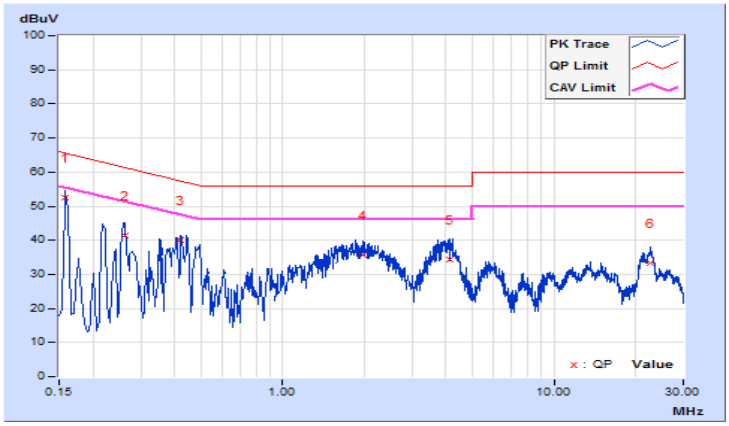


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B3		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	10.22	42.15	25.88	52.37	36.10	65.57	55.57	-13.20	-19.47
2	0.26083	10.31	31.14	15.29	41.45	25.60	61.40	51.40	-19.95	-25.80
3	0.42242	10.34	29.78	18.90	40.12	29.24	57.40	47.40	-17.28	-18.16
4	1.97000	10.51	25.20	16.97	35.71	27.48	56.00	46.00	-20.29	-18.52
5	4.13000	10.65	23.60	16.25	34.25	26.90	56.00	46.00	-21.75	-19.10
6	22.82200	11.11	22.12	16.99	33.23	28.10	60.00	50.00	-26.77	-21.90

Remarks:

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

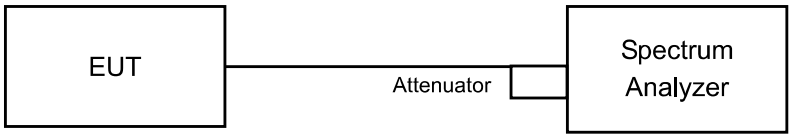


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

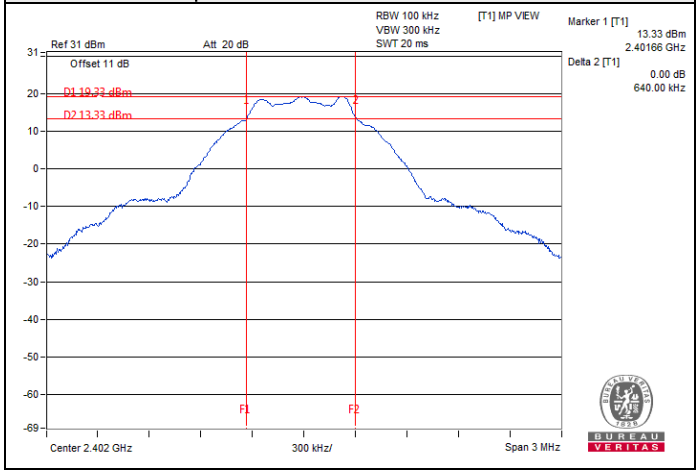
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Result

Mode A1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.64	0.5	Pass
19	2440	0.64	0.5	Pass
38	2478	0.64	0.5	Pass
39	2480	0.64	0.5	Pass

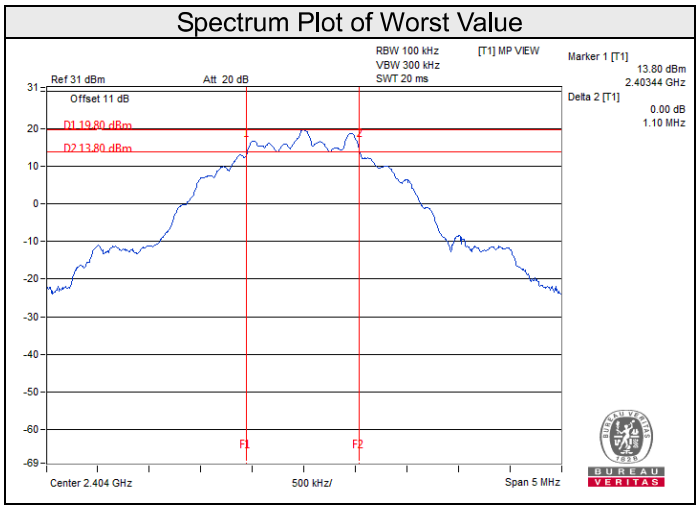
Spectrum Plot of Worst Value



Mode A3

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2404	1.10	0.5	Pass
19	2440	1.10	0.5	Pass
38	2478	1.10	0.5	Pass

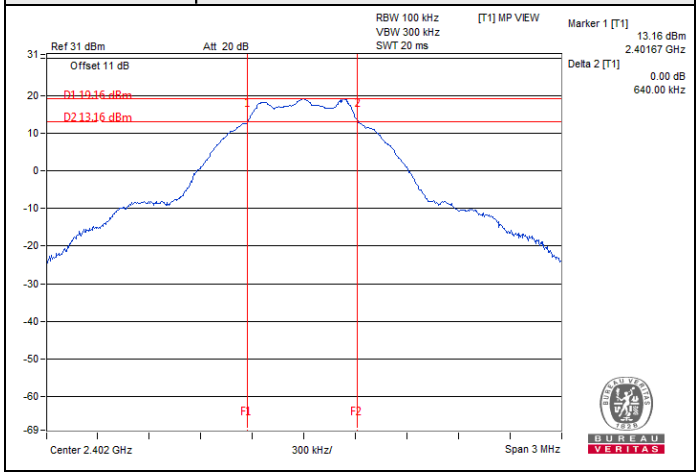
Spectrum Plot of Worst Value



Mode B1

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
0	2402	0.64	0.5	Pass
19	2440	0.64	0.5	Pass
38	2478	0.64	0.5	Pass
39	2480	0.64	0.5	Pass

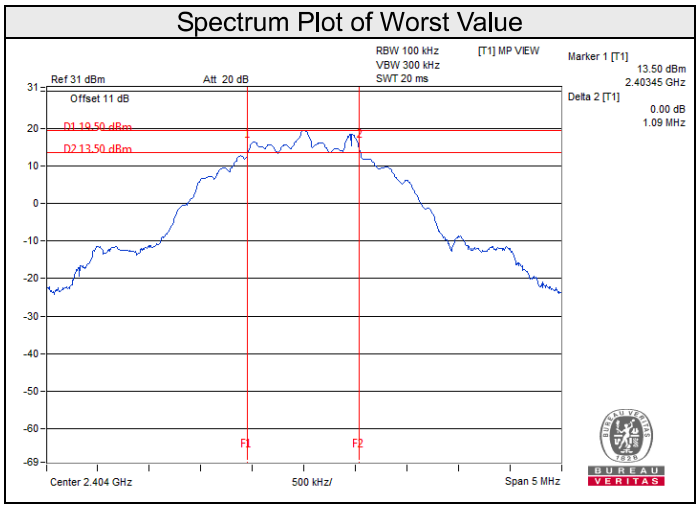
Spectrum Plot of Worst Value



Mode B3

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2404	1.09	0.5	Pass
19	2440	1.10	0.5	Pass
38	2478	1.10	0.5	Pass

Spectrum Plot of Worst Value

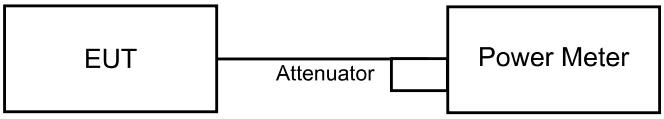


4.4 Conducted Output Power Measurement

4.4.1 Limits of Conducted Output Power Measurement

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

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.

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

Mode A1

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	86.896	19.39	30	Pass
19	2440	**90.365**	19.56	30	Pass
38	2478	86.099	19.35	30	Pass
39	2480	80.910	19.08	30	Pass

Mode A2

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	11.830	10.73	30	Pass
19	2440	11.995	10.79	30	Pass
38	2478	**12.023**	10.80	30	Pass
39	2480	**12.023**	10.80	30	Pass

Mode A3

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2404	**87.297**	19.41	30	Pass
19	2440	84.918	19.29	30	Pass
38	2478	49.431	16.94	30	Pass

Mode A4

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2404	11.995	10.79	30	Pass
19	2440	**12.106**	10.83	30	Pass
38	2478	10.257	10.11	30	Pass

Mode B1

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	**94.842**	19.77	30	Pass
19	2440	92.045	19.64	30	Pass
38	2478	90.782	19.58	30	Pass
39	2480	81.283	19.10	30	Pass

Mode B2

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
0	2402	11.803	10.72	30	Pass
19	2440	11.995	10.79	30	Pass
38	2478	12.023	10.80	30	Pass
39	2480	**12.050**	10.81	30	Pass

Mode B3

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2404	**99.083**	19.96	30	Pass
19	2440	95.499	19.80	30	Pass
38	2478	48.529	16.86	30	Pass

Mode B4

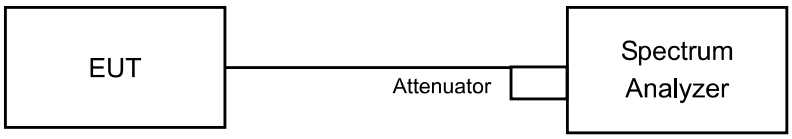
Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2404	11.885	10.75	30	Pass
19	2440	**12.050**	10.81	30	Pass
38	2478	10.304	10.13	30	Pass

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

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

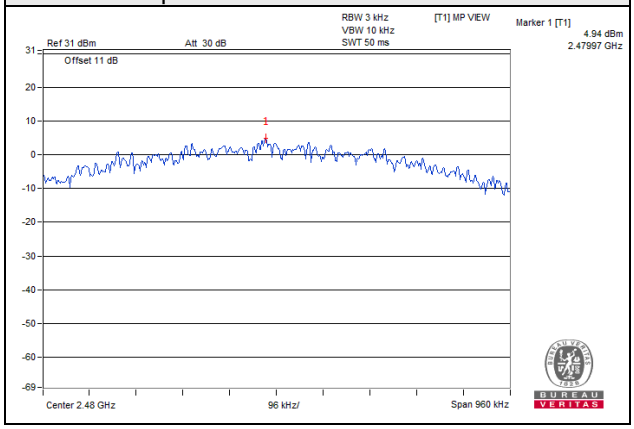
Same as item 4.3.6

4.5.7 Test Results

Mode A1

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	2402	4.79	8	Pass
19	2440	4.91	8	Pass
38	2478	4.85	8	Pass
39	2480	4.94	8	Pass

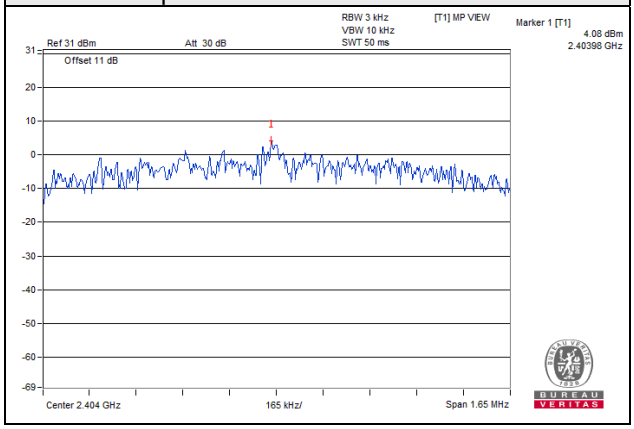
Spectrum Plot of Worst Value



Mode A3

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
1	2404	4.08	8	Pass
19	2440	3.90	8	Pass
38	2478	0.83	8	Pass

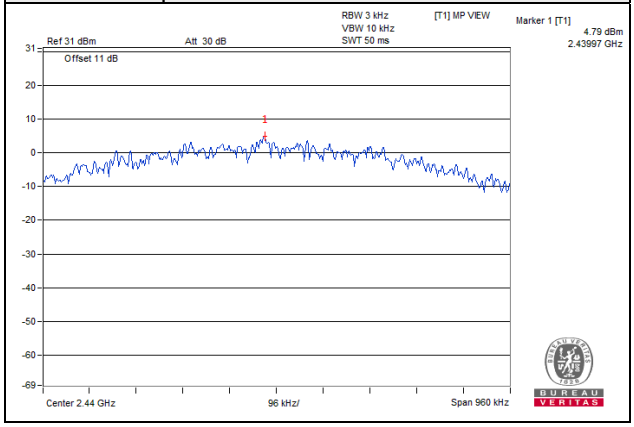
Spectrum Plot of Worst Value



Mode B1

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
0	2402	4.55	8	Pass
19	2440	4.79	8	Pass
38	2478	4.53	8	Pass
39	2480	4.54	8	Pass

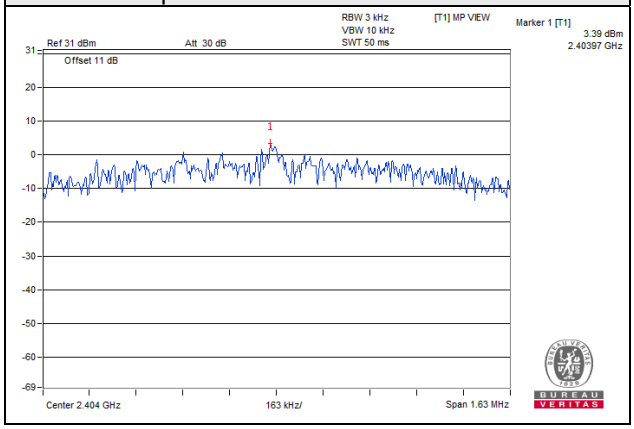
Spectrum Plot of Worst Value



Mode B3

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass / Fail
1	2404	3.39	8	Pass
19	2440	3.21	8	Pass
38	2478	0.85	8	Pass

Spectrum Plot of Worst Value

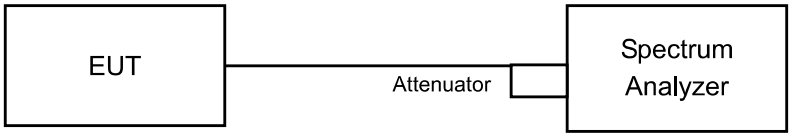


4.6 Conducted Out of Band Emission Measurement

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

a. Set the RBW = 100 kHz.
b. Set the VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep time = auto couple.
e. Trace mode = max hold.
f. Allow trace to fully stabilize.
g. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement Procedure OOBE

a. Set RBW = 100 kHz.
b. Set VBW ≥ 300 kHz.
c. Detector = peak.
d. Sweep = auto couple.
e. Trace Mode = max hold.
f. Allow trace to fully stabilize.
g. 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

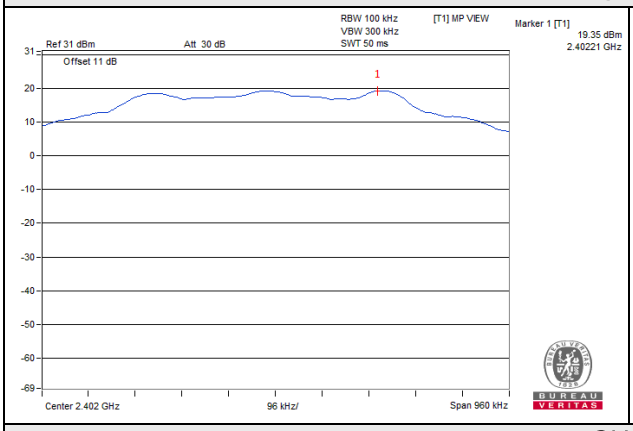
Same as item 4.3.6

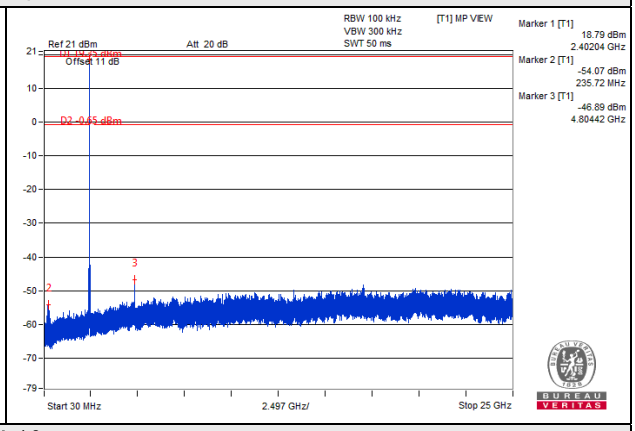
4.6.7 Test Results

The spectrum plots are attached on the following pages. B1 line indicates the highest level, and B2 line indicates the 20dB offset below B1. It shows compliance with the requirement.

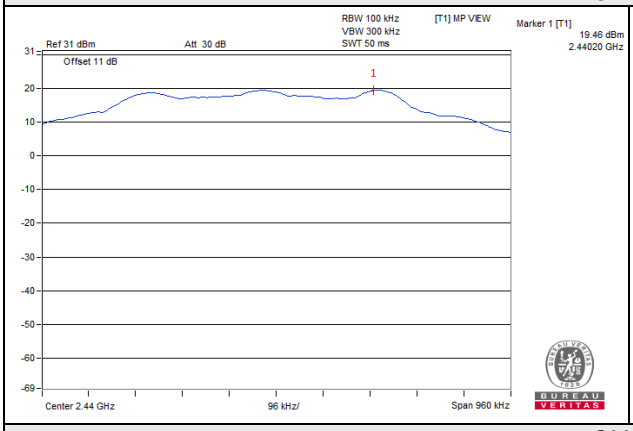
Mode A1

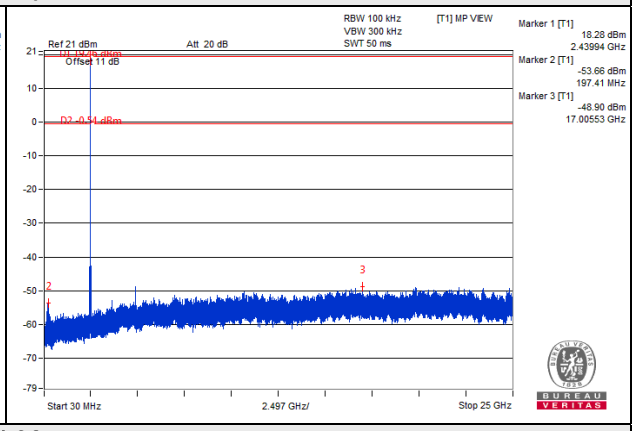
CH 0



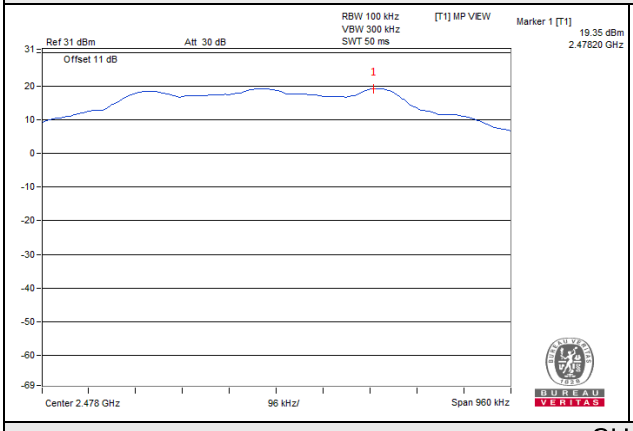


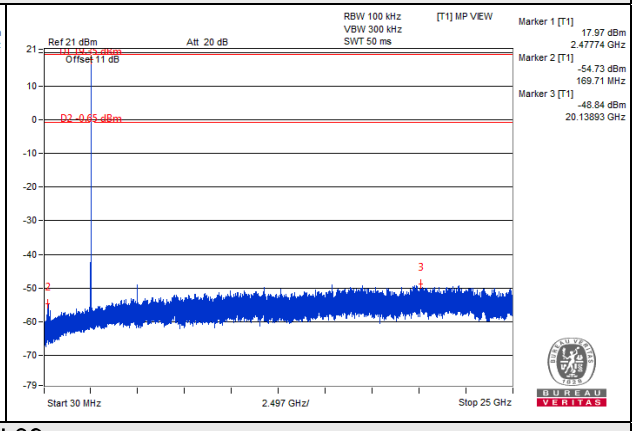
CH 19



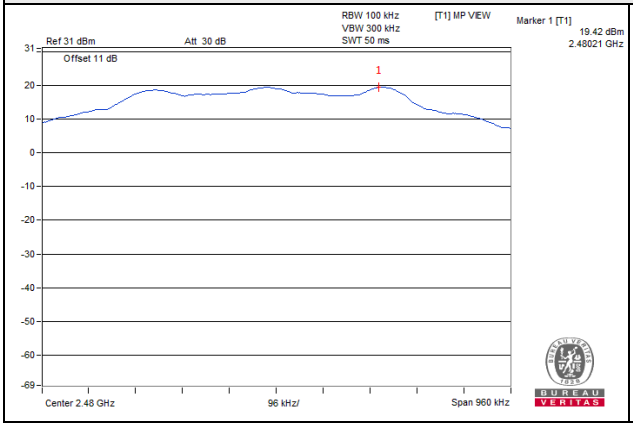


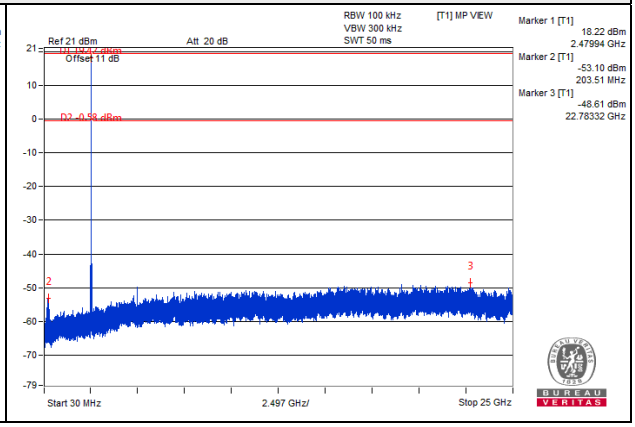
CH 38



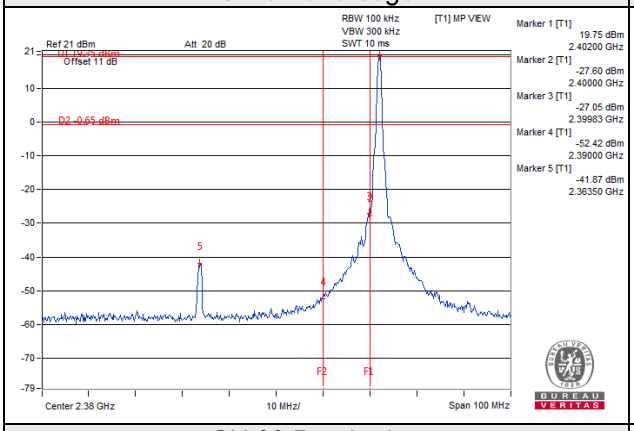


CH 39

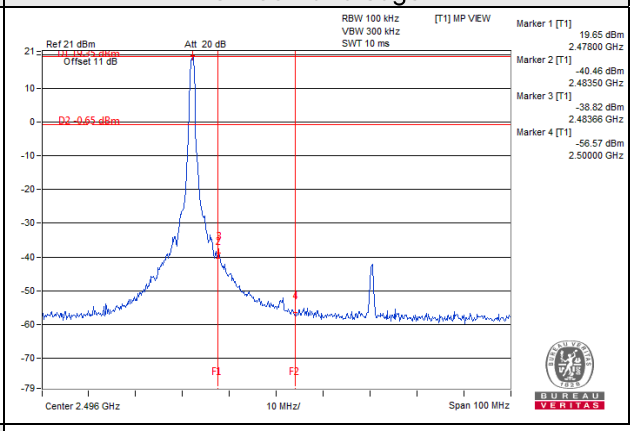




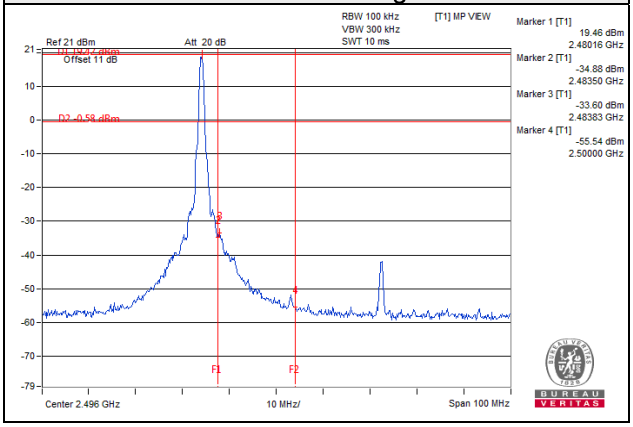
CH 0 Band edge



CH 38 Band edge

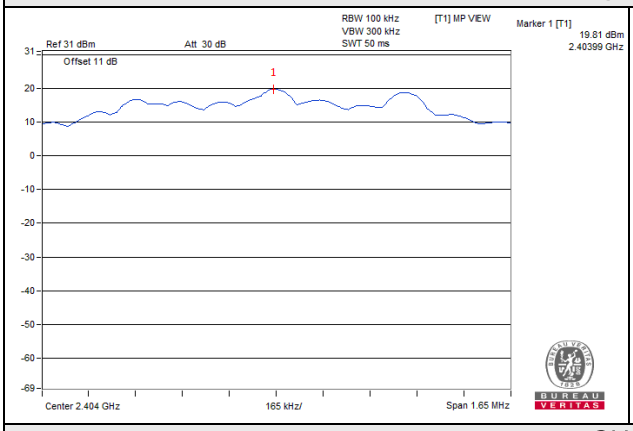


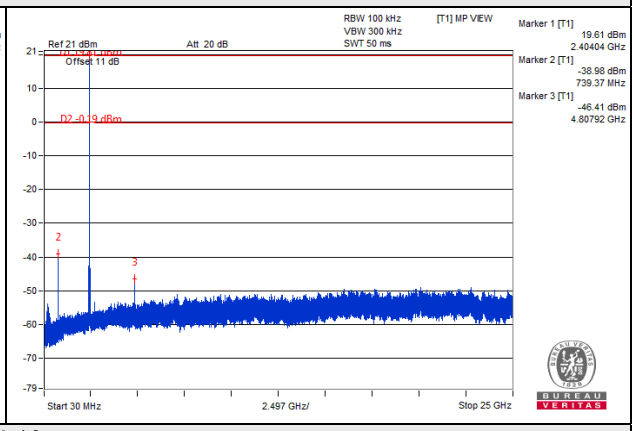
CH 39 Band edge



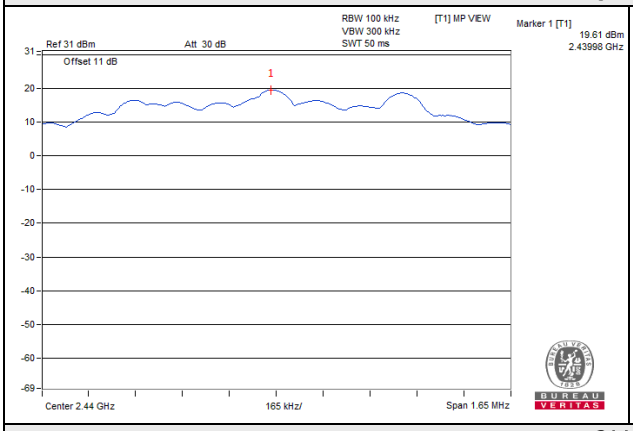
Mode A3

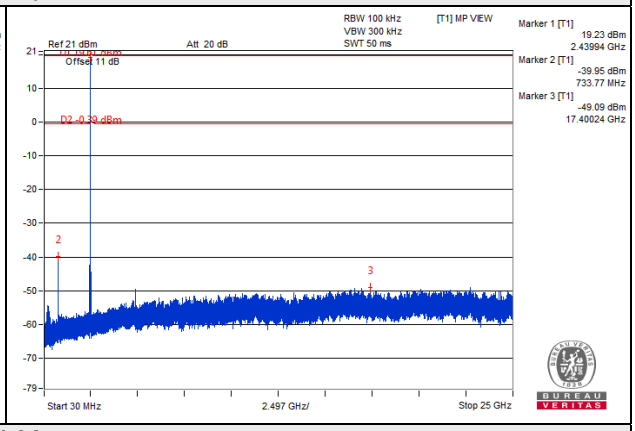
CH 1



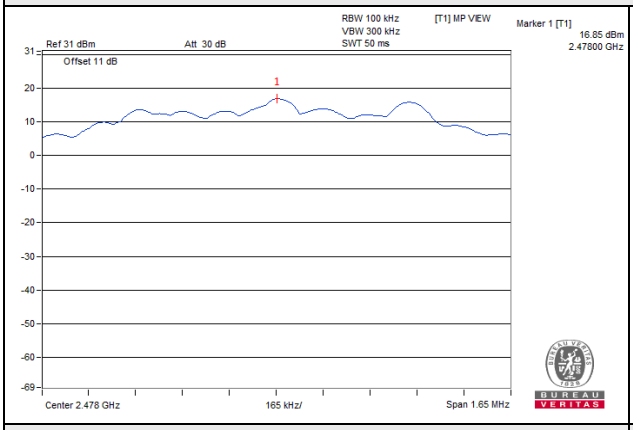


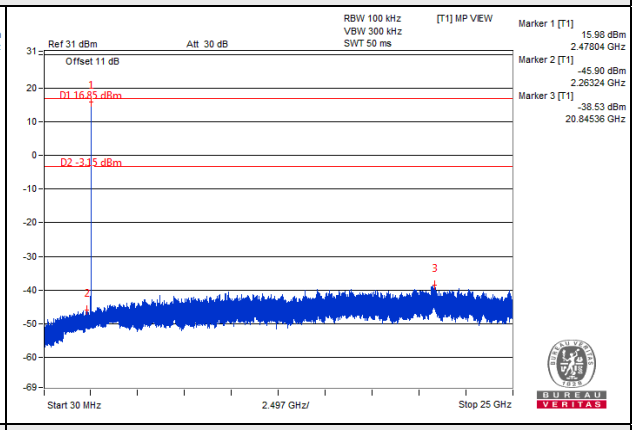
CH 19



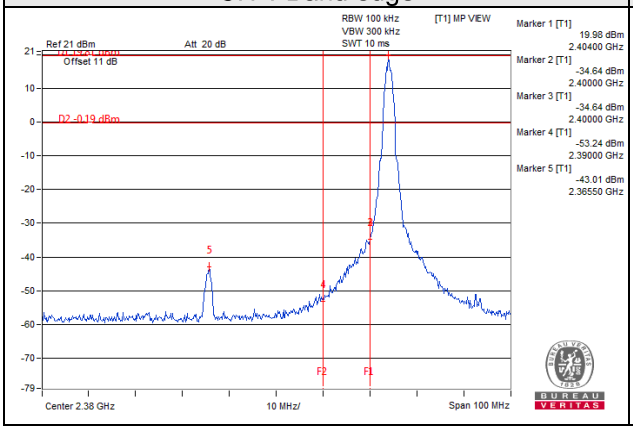


CH 38

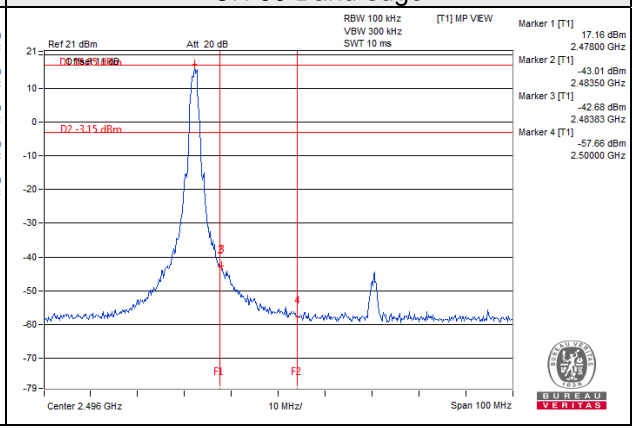




CH 1 Band edge

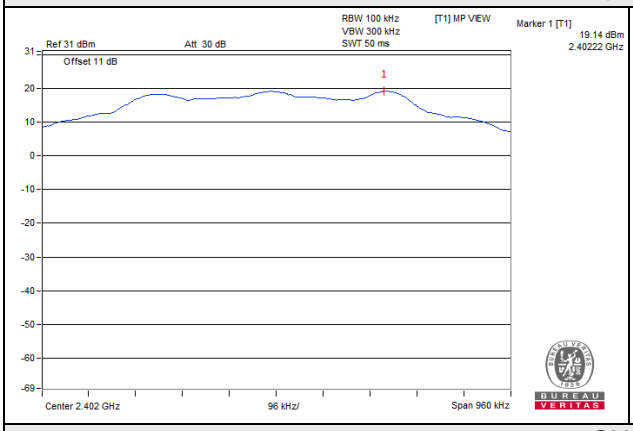


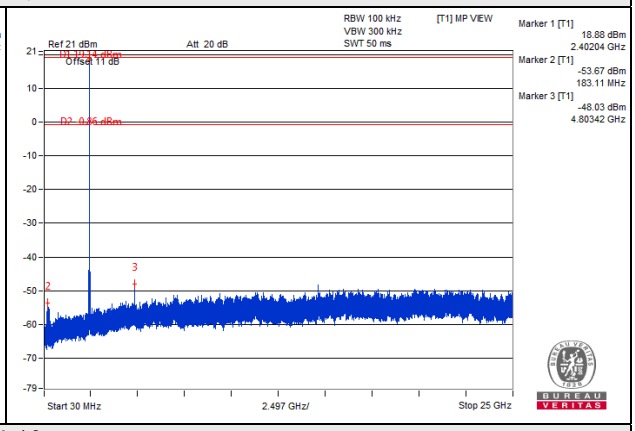
CH 38 Band edge



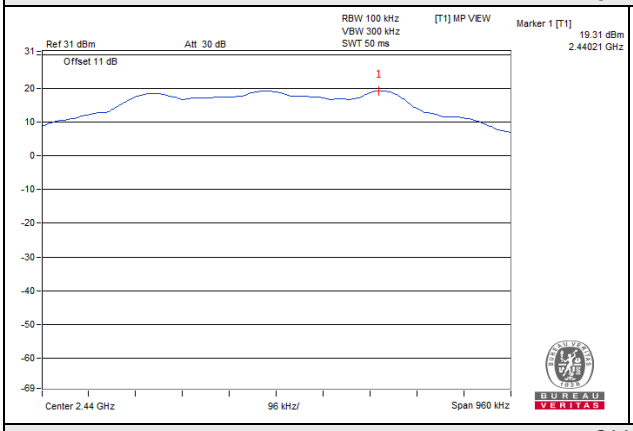
Mode B1

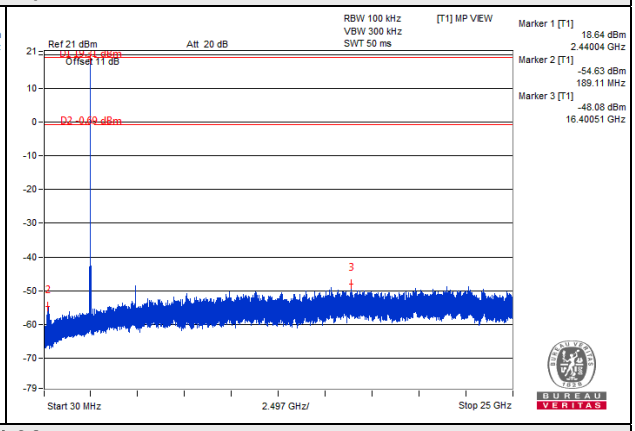
CH 0



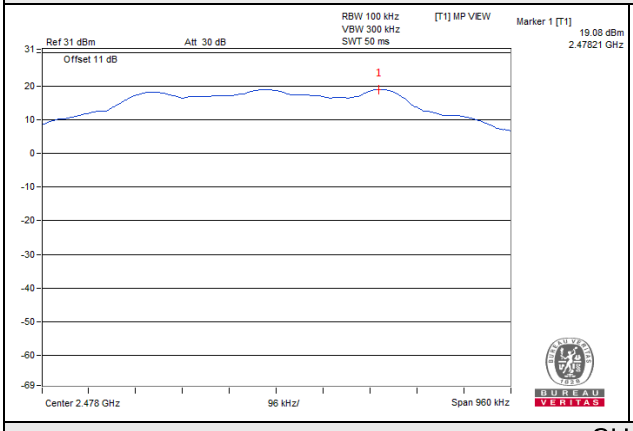


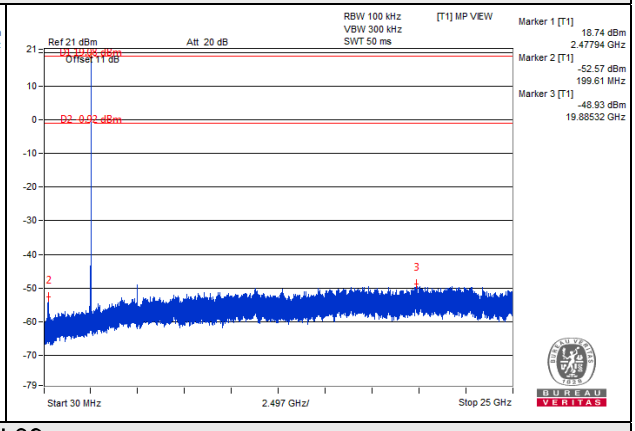
CH 19



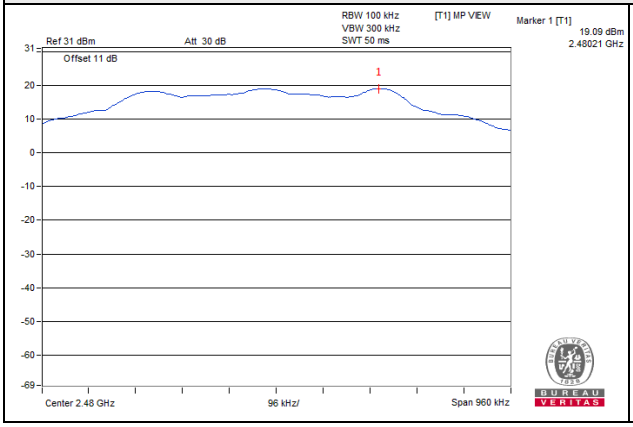


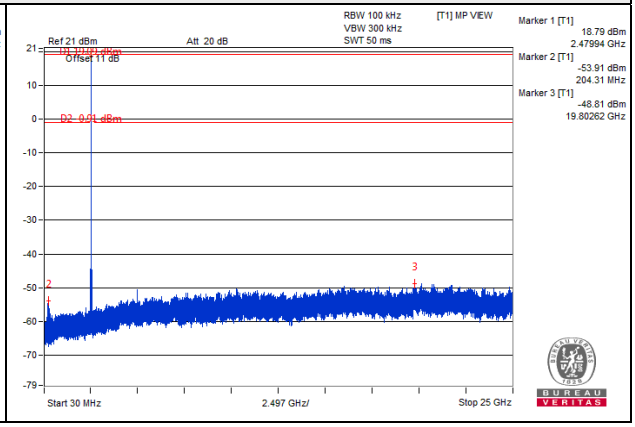
CH 38



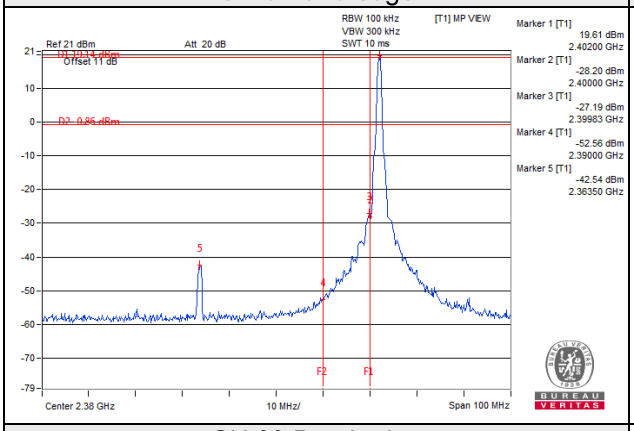


CH 39

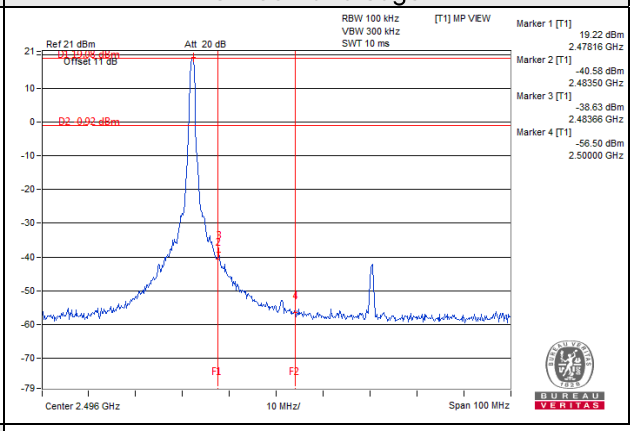




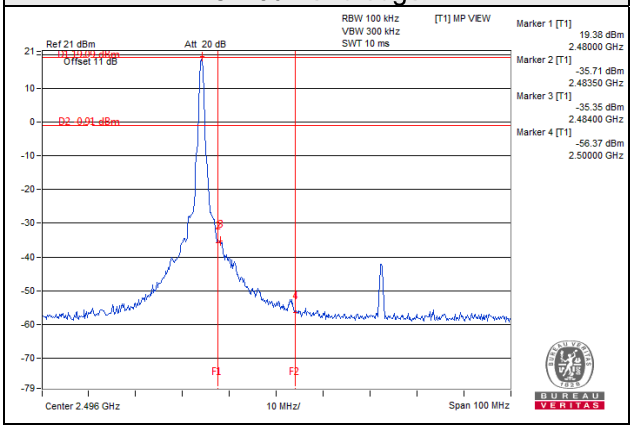
CH 0 Band edge



CH 38 Band edge

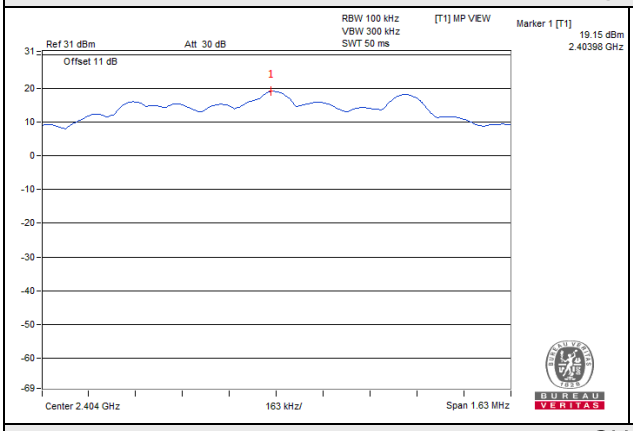


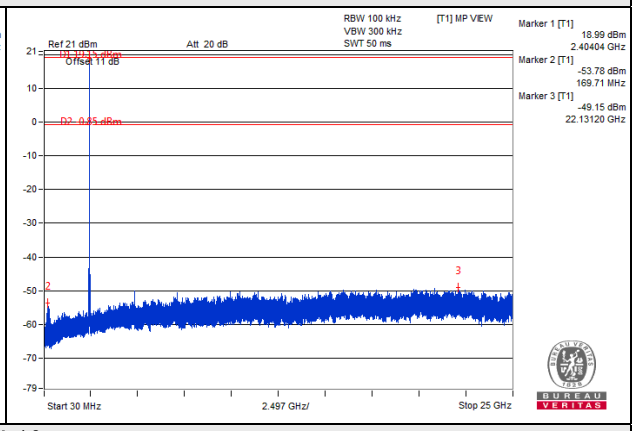
CH 39 Band edge



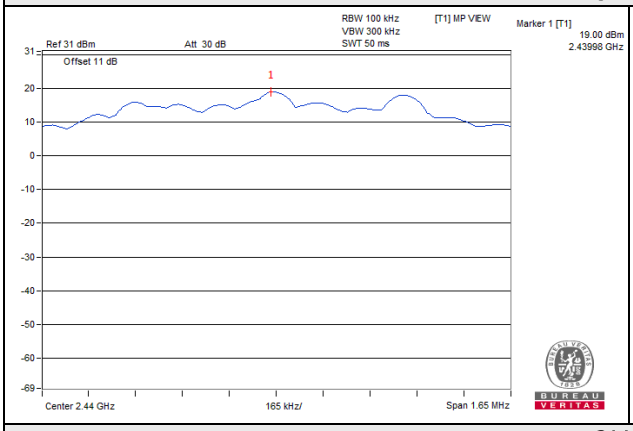
Mode B3

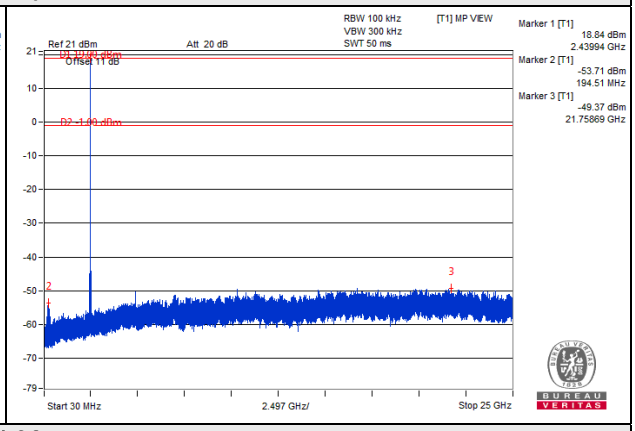
CH 1



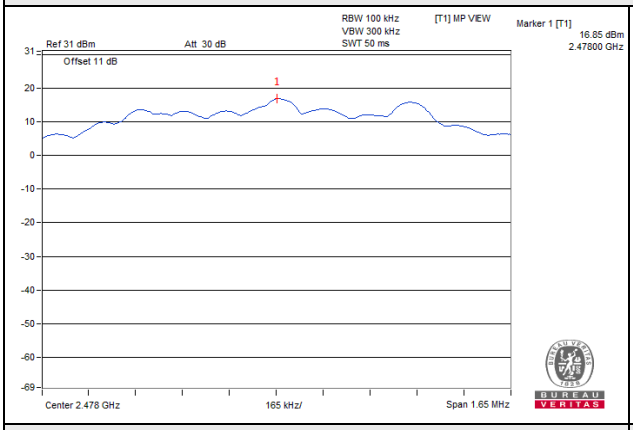


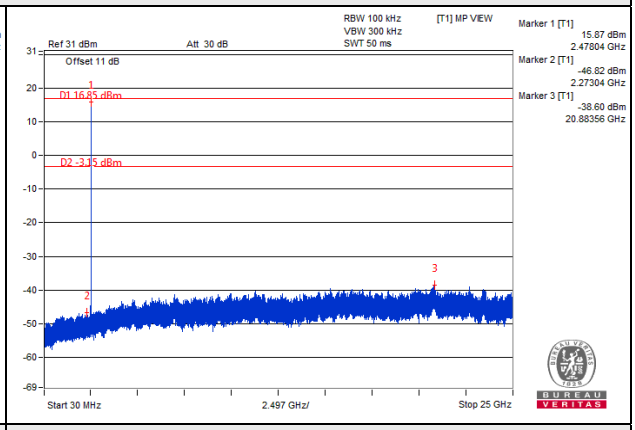
CH 19



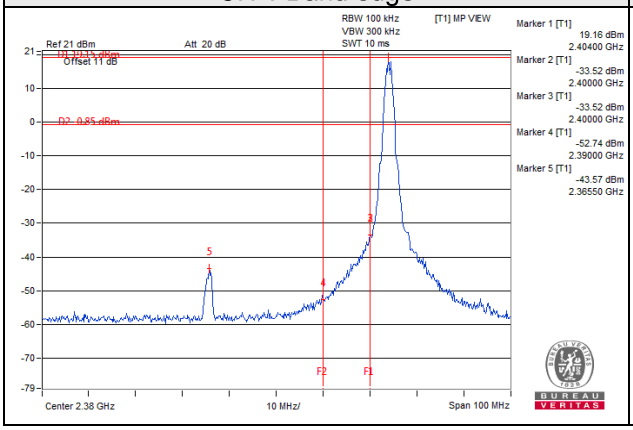


CH 38

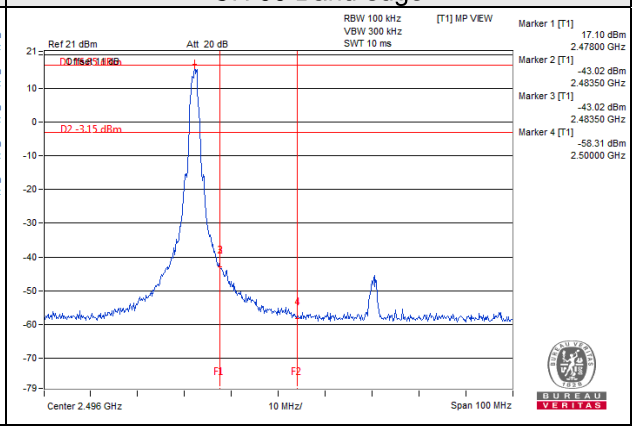




CH 1 Band edge



CH 38 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 and approved according to ISO/IEC 17025.

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

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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