FCC Test Report

Report No.:	RF200707E04
FCC ID:	SWX-GBEPLUS
Test Model:	GBE-Plus
Received Date:	July 07, 2020
Test Date:	Aug. 10 to 17, 2020
Issued Date:	Aug. 27, 2020
Applicant:	Ubiquiti Inc.
Address:	685 Third Avenue, New York, NY 10017, 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

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Release Control Record

Issue No.	Description	Date Issued
RF200707E04	Original release.	Aug. 27, 2020

1 Certificate of Conformity

Product:	GigaBeam Plus
Brand:	UBIQUITI
Test Model:	GBE-Plus
Sample Status:	ENGINEERING SAMPLE
Applicant:	Ubiquiti Inc.
Test Date:	Aug. 10 to 17, 2020
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.255) 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 : Joyce Kuo , **Date:** Aug. 27, 2020

Joyce Kuo / Specialist

Approved by : , **Date:** Aug. 27, 2020

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.255)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -5.56 dB at 0.15391 MHz.
15.255(e)	6dB Bandwidth	-	Reference only.
15.255 (c) & (e)	Output Power	Pass	Meet the requirement of limit.
15.255(d)	Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.80 dB at 17978.75 MHz, 17983.70 MHz.
15.255(f)	Frequency Stability	Pass	Meet the requirement of limit.

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	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB
	40GHz ~ 200GHz	5.4 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	GigaBeam Plus
Brand	UBIQUITI
Test Model	GBE-Plus
Status of EUT	ENGINEERING SAMPLE
Power Supply Method	24Vdc from PoE adapter
Modulation Type	π/2-BPSK, π/2-QPSK, π/2-16QAM
Modulation Technology	OFDM
Transfer Rate	4620Mb/s
Operating Frequency	57 ~ 66 GHz
Output Power (EIRP)	58.32 GHz: 49.03 dBm 60.48 GHz: 49.72 dBm 62.64 GHz: 50.33 dBm 64.80 GHz: 50.26 dBm
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x1
Data Cable Supplied	NA

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN 2.4GHz	802.11ad
2	Bluetooth	802.11ad
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

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

With dish Antenna Gain (dBi)	Frequency Range (GHz)	Connector Type
35	57 ~ 71	none

3. The EUT must be supplied with a power adapter as following table:

Brand	Model No.	Spec.
Ubiquiti inc.	GP-A240-050G	AC Input: 100-240Vac, 0.3A MAX, 50/60Hz DC Output: 24V, 0.5A AC Intput Cable: Unshielded, 0.6m

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.
5. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

4 channels are provided for EUT and support 57GHz~71GHz.

Channel's Number	1	2	3	4
Frequency (MHz)	58320	60480	62640	64800

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO						DESCRIPTION
	PLC	BW	OP	FS	RE < 1G	RE ≥ 1G	
-	√	√	√	√	√	√	-

Where **PLC:** Power Line Conducted Emission **BW:** 6dB Bandwidth
OP: Output Power **FS:** Frequency Stability
RE < 1G: Radiated Emission below 1GHz **RE ≥ 1G:** Radiated Emission above 1GHz

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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1 to 4	1, 2, 3, 4	OFDM	π/2-BPSK	385

6dB Bandwidth 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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1 to 4	1, 2, 3, 4	OFDM	π/2-BPSK	385

Output Power Measurement:

☒ 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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1 to 4	1, 2, 3, 4	OFDM	π/2-BPSK	385

Frequency Stability Test:

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

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
1 to 4	1	CW

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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1 to 4	1, 2, 3, 4	OFDM	π/2-BPSK	385

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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
1 to 4	1, 2, 3, 4	OFDM	π/2-BPSK	385

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	25deg. C, 75%RH	120Vac, 60Hz	Kevin Ko
BW	23deg. C, 62%RH	120Vac, 60Hz	Weiwei Lo
OP	23deg. C, 62%RH	120Vac, 60Hz	Weiwei Lo
FS	23deg. C, 62%RH	120Vac, 60Hz	Weiwei Lo
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Sampson Chen
RE≥1G	20deg. C, 66%RH	120Vac, 60Hz	Sampson Chen

3.3 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.

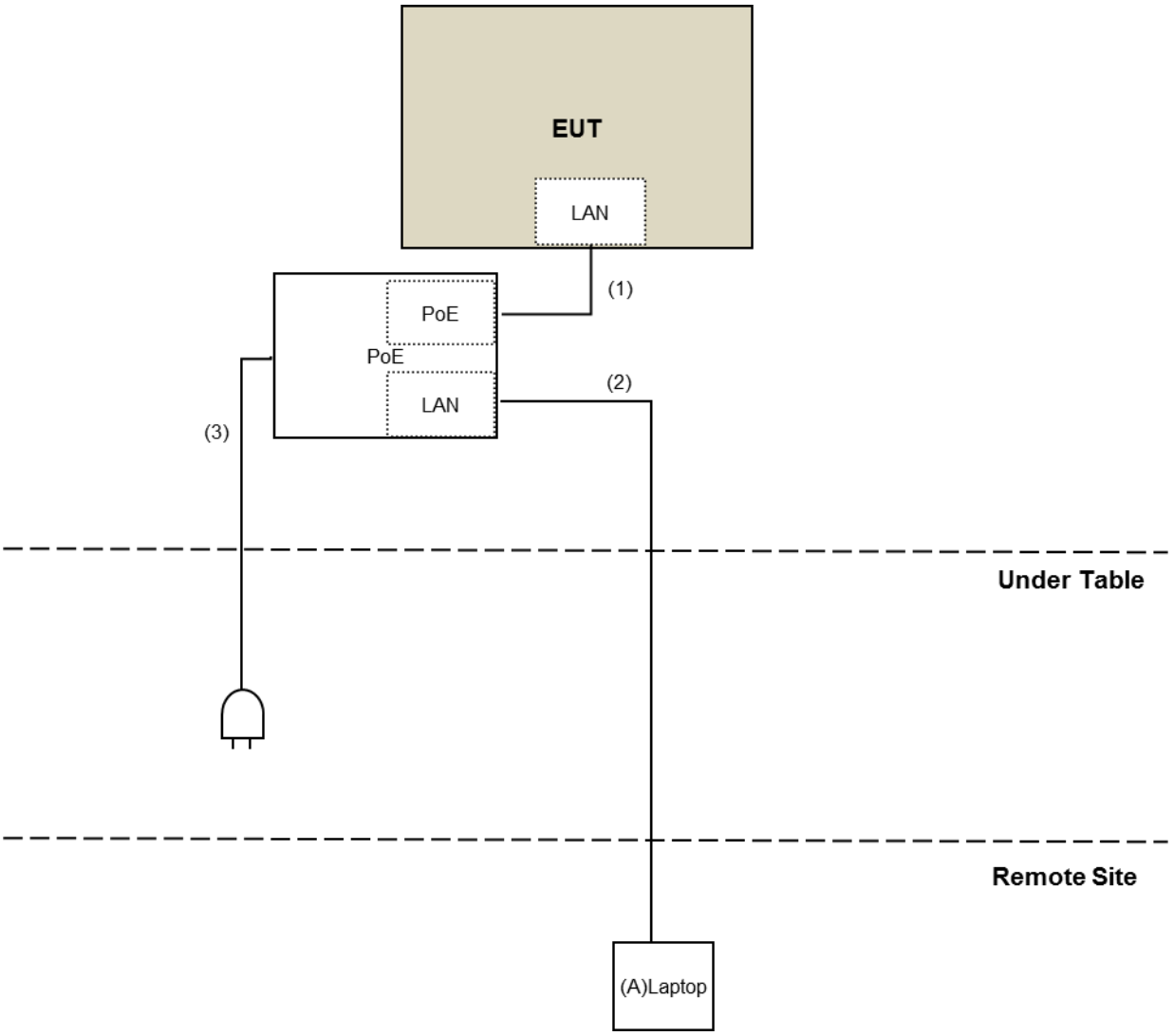
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

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	3	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	AC Cable	1	0.6	No	0	Supplied by client

3.3.1 Configuration of System under Test



3.4 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 (15.255)
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 Measurement

4.1.1 Limits of Radiated Emission Measurement

Spurious Emission	
Frequency Range	Limitation
Radiated emissions below 40GHz	Part 15.209
Between 40GHz and 200GHz	90pW/cm^2 (at 3 meter)
Note: The levels of the spurious emissions shall not exceed the level of the fundamental emission	

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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. As shown in 15.35(b), 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. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.

4.1.2 Test Instruments

For Below 40GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESR7	102026	Apr. 22, 2020	Apr. 21, 2021
Spectrum Analyzer Keysight	N9030B	MY57141948	May 22, 2020	May 21, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier EMCI	EMC330N	980538	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 08, 2019	Nov. 07, 2020
RF Cable	8D	966-5-1	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-2	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-3	Apr. 29, 2020	Apr. 28, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 14, 2020	Jan. 13, 2021
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980509	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-1500	180503	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-2000	180501	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCI	EMC104-SM-SM-6000	180506	Apr. 29, 2020	Apr. 28, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
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. 5.
3. Tested Date: Aug. 10, 2020

For Above 40GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Keysight	N9030A	MY55330160	Feb. 07, 2020	Feb. 06, 2021
**Horn Antenna (33~55GHz) OML	M22RH	110215-1	Oct. 17, 2019	Oct. 16, 2020
**Horn Antenna (50~75GHz) OML	M15HWD	110215-1	Oct. 17, 2019	Oct. 16, 2020
**Horn Antenna (75~110GHz) OML	M10RH	110215-1	Oct. 17, 2019	Oct. 16, 2020
**Horn Antenna(110~170GHz) OML	M06HWD	110215-1	Oct. 17, 2019	Oct. 16, 2020
**Horn Antenna (140~220GHz) OML	M05RH	110215-1	Oct. 17, 2019	Oct. 16, 2020
*OXE89 Horn Antenna (33~55GHz) QuinStar	QWH-UCRR00	924200002	Jan. 20, 2020	Jan. 19, 2021
*Conical Horn Antenna (50~75GHz) Keysight	WR15CH-Conical	WR15CH_001	Jan. 20, 2020	Jan. 19, 2021
*Conical Horn Antenna (75~110GHz) Keysight	WR10CH-Conical	WR10CH_001	Jan. 20, 2020	Jan. 19, 2021
*Conical Horn Antenna (110~170GHz) Keysight	WR6.5CH-Conical	WR6.5CH_001	Jan. 20, 2020	Jan. 19, 2021
*Conical Horn Antenna (140~220GHz) Keysight	WR5.1CH-Conical	WR5.1CH_001	Dec. 09, 2019	Dec. 08, 2020
N9029AV15-DC9 - 50-75 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension WR15	SAX 381	CoC	CoC
N9029AV10-DC9 - 75-110 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension WR10	SAX 378	CoC	CoC
N9029AV06-DC9 - 110-170 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension WR6.5	SAX 377	CoC	CoC
*N9029AV05-DC9 - 140-220 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension WR5.1	SAX 375	Dec. 09, 2019	Dec. 08, 2021
*N9029AV03-DC9 - 220-330 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension	SAX 376	Dec. 09, 2019	Dec. 08, 2021
Millimeter-Wave Signal Generator Frequency Extension Module (50~75 GHz) Keysight	E8257DV15	SGX 050	CoC	CoC

Millimeter-Wave Signal Generator Frequency Extension Module (75~110 GHz) Keysight	E8257DV10	SGX 069	CoC	CoC
Millimeter-Wave Signal Generator Frequency Extension Module (110~170 GHz) Keysight	E8257DV06-DC9	SGX 223	CoC	CoC
PSG analog signal generator Keysight	E8257D	MY53401987	June 17, 2020	June 16, 2021
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
**Zero-Bias Detector (50~75GHz) Vdi	WR15ZBD	WR15R5 1-30	Oct. 17, 2017	Oct. 16, 2020
4CH Infiniivision Oscilloscope Keysight	DSOX6004A	MY55190202	July 03, 2020	July 02, 2021

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. **The calibration interval of the above test instruments is 36 months and the calibrations are traceable to NML/ROC and NIST/USA.
4 Certificate of Conformance (CoC) which is issued by manufacturer states that the product meets the specification.
5 The test was performed in 966 Chamber No. 5
6 Tested Date: Aug. 10, 2020

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 30MHz to 40GHz

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 (30MHz-18GHz) / 1 meters (18GHz-40GHz) 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) and Average detection (AV) at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 40GHz

a. Connect the test antenna covering the appropriate frequency range to a spectrum analyzer via an external mixer to the spectrum analyzer.

b. Set spectrum analyzer RBW = 1 MHz, VBW = 3 MHz, average detector.

c. Calculate the distance to the far field boundary and determine the maximum measurement distance.

d. Perform an exploratory search for emissions and determine the approximate direction at which each observed emission emanates from the EUT.

e. Exploratory measurements be made at a closer distance than the validated maximum measurement distance.

f. Perform a final measurement; begin with the test antenna at the approximate position where the maximum level occurred during the exploratory scan.

g. Slowly scan the test antenna around this position, slowly vary the test antenna polarization by rotating through at least 0° to 180°, and slowly vary the orientation of the test antenna to find the final position, polarization, and orientation at which the maximum level of the emission is observed.

h. Record the measured reading with the test antenna fixed at this maximized position, polarization, and orientation. Record the measurement distance.

i. Calculate the maximum field strength of the emission at the measurement distance and the adjusted/corrected power at the output of the test antenna.

j. Calculate the EIRP from the measured field strength and then convert to the linear.

k. Calculate the power density at the distance specified by the limit from the field strength at the distance specified by the limit.

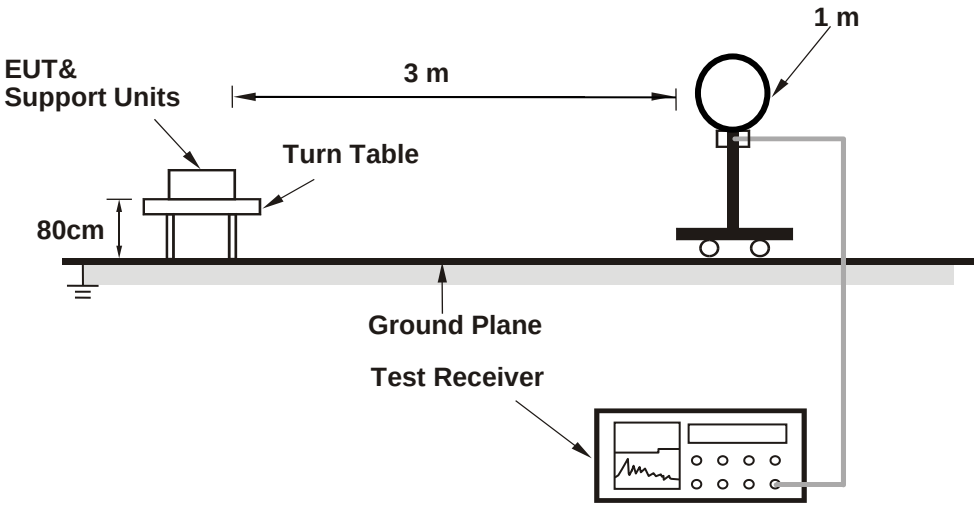
l. Repeat the preceding sequence for every emission observed in the frequency band under investigation.

4.1.4 Deviation from Test Standard

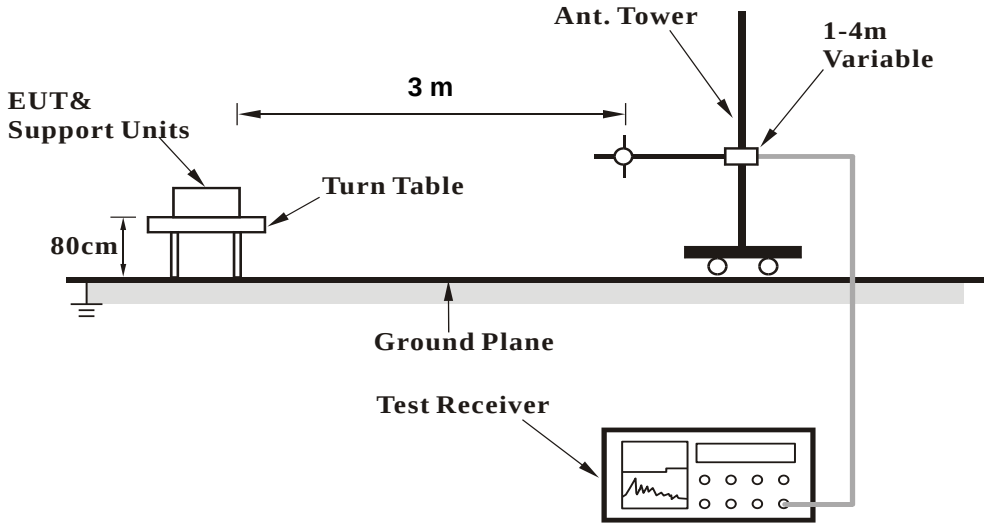
No deviation.

4.1.5 Test Setup

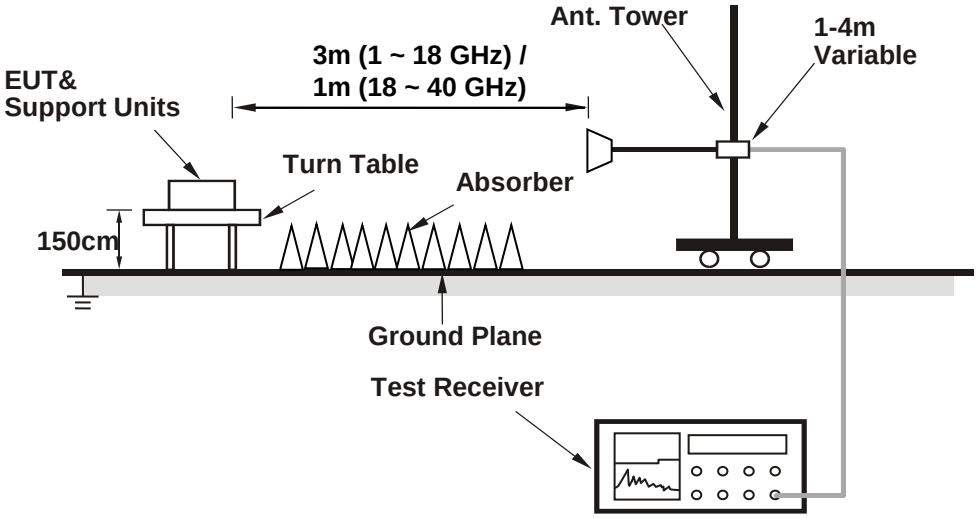
For Radiated emission below 30MHz



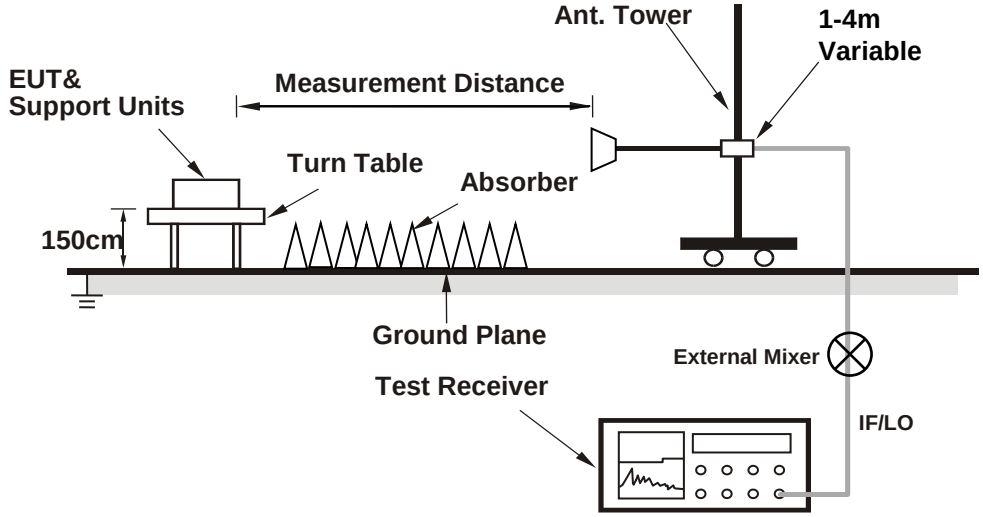
For Radiated emission 30MHz to 1GHz



For Radiated emission 1GHz to 40GHz



For Radiated emission above 40 GHz



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. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

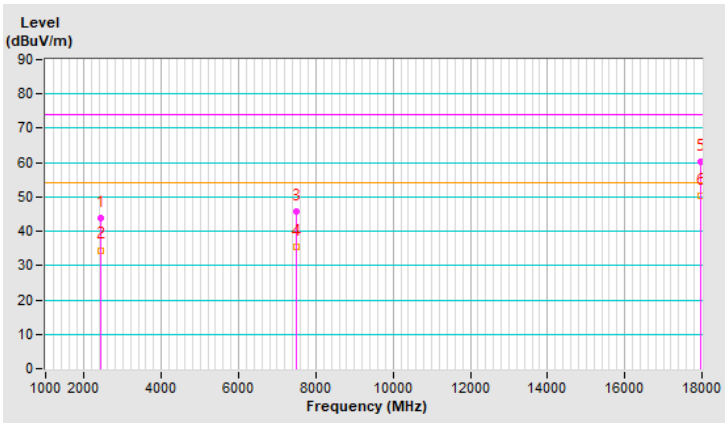
For 1~18 GHz

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2426.30	43.80 PK	74.00	-30.20	1.50 H	278	46.80	-3.00
2	#2426.30	34.50 AV	54.00	-19.50	1.50 H	278	37.50	-3.00
3	7488.90	45.80 PK	74.00	-28.20	3.00 H	311	38.70	7.10
4	7488.90	35.60 AV	54.00	-18.40	3.00 H	311	28.50	7.10
5	17978.75	60.10 PK	74.00	-13.90	4.00 H	333	34.50	25.60
6	**17978.75**	**50.20 AV**	**54.00**	**-3.80**	**4.00 H**	**333**	**24.60**	**25.60**

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. " # ": The radiated frequency is out of the restricted band.

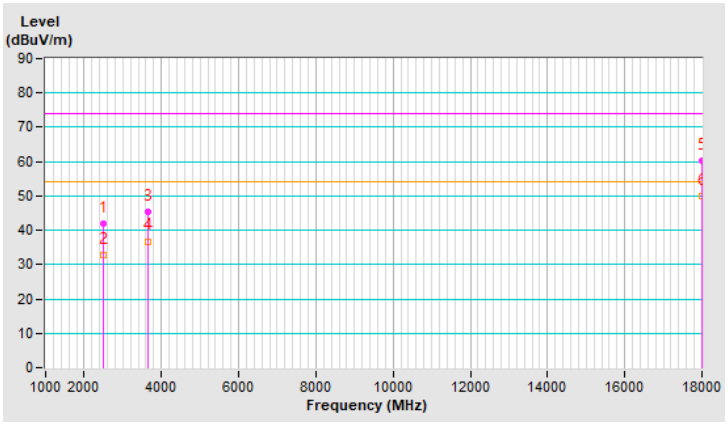


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2479.85	41.80 PK	74.00	-32.20	4.00 V	0	44.90	-3.10
2	#2479.85	32.70 AV	54.00	-21.30	4.00 V	0	35.80	-3.10
3	3666.45	45.50 PK	74.00	-28.50	3.00 V	4	46.60	-1.10
4	3666.45	36.80 AV	54.00	-17.20	3.00 V	4	37.90	-1.10
5	17983.85	60.30 PK	74.00	-13.70	1.00 V	239	34.50	25.80
6	17983.85	49.80 AV	54.00	-4.20	1.00 V	239	24.00	25.80

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. " # ": The radiated frequency is out of the restricted band.

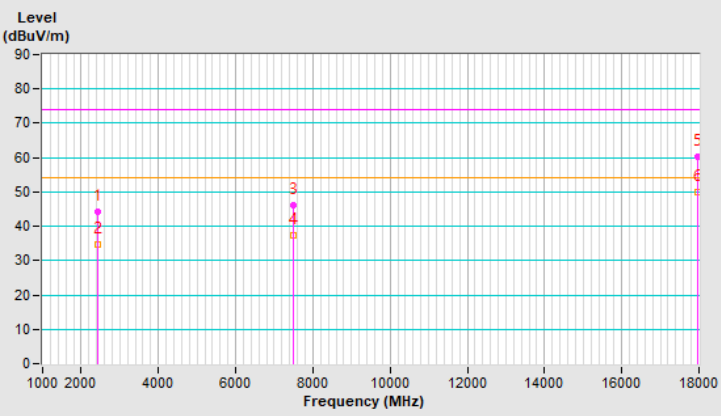


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2427.10	44.30 PK	74.00	-29.70	1.52 H	265	47.30	-3.00
2	#2427.10	34.70 AV	54.00	-19.30	1.52 H	265	37.70	-3.00
3	7489.00	46.10 PK	74.00	-27.90	3.02 H	317	39.00	7.10
4	7489.00	37.20 AV	54.00	-16.80	3.02 H	317	30.10	7.10
5	17979.00	60.10 PK	74.00	-13.90	3.95 H	346	34.50	25.60
6	17979.00	50.10 AV	54.00	-3.90	3.95 H	346	24.50	25.60

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. " # ": The radiated frequency is out of the restricted band.

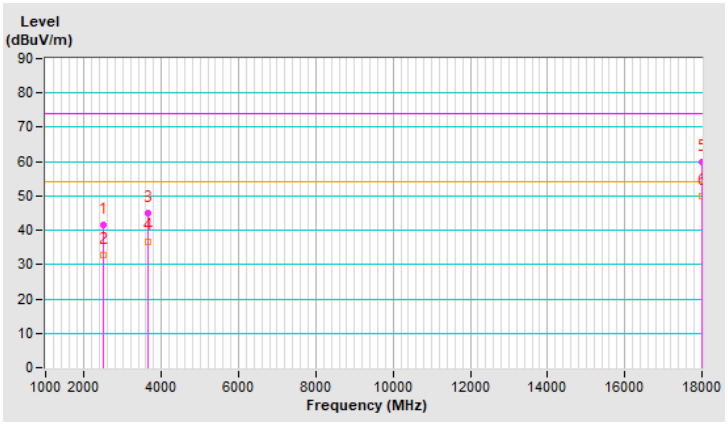


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2480.40	41.50 PK	74.00	-32.50	3.95 V	7	44.60	-3.10
2	#2480.40	32.70 AV	54.00	-21.30	3.95 V	7	35.80	-3.10
3	3666.20	45.00 PK	74.00	-29.00	3.03 V	1	46.10	-1.10
4	3666.20	36.80 AV	54.00	-17.20	3.03 V	1	37.90	-1.10
5	17983.10	59.90 PK	74.00	-14.10	1.06 V	252	34.20	25.70
6	17983.10	49.80 AV	54.00	-4.20	1.06 V	252	24.10	25.70

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. " # ": The radiated frequency is out of the restricted band.

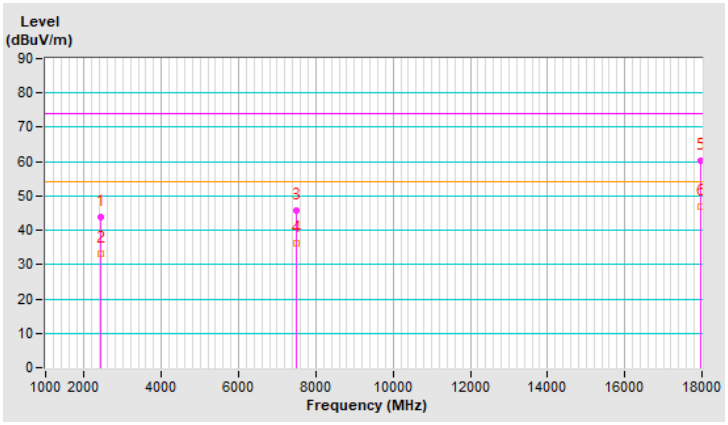


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2426.60	44.00 PK	74.00	-30.00	1.52 H	258	47.00	-3.00
2	#2426.60	33.00 AV	54.00	-21.00	1.52 H	258	36.00	-3.00
3	7488.70	45.60 PK	74.00	-28.40	3.08 H	326	38.50	7.10
4	7488.70	36.20 AV	54.00	-17.80	3.08 H	326	29.10	7.10
5	17978.60	60.20 PK	74.00	-13.80	3.92 H	346	34.60	25.60
6	17978.60	47.00 AV	54.00	-7.00	3.92 H	346	21.40	25.60

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. " # ": The radiated frequency is out of the restricted band.

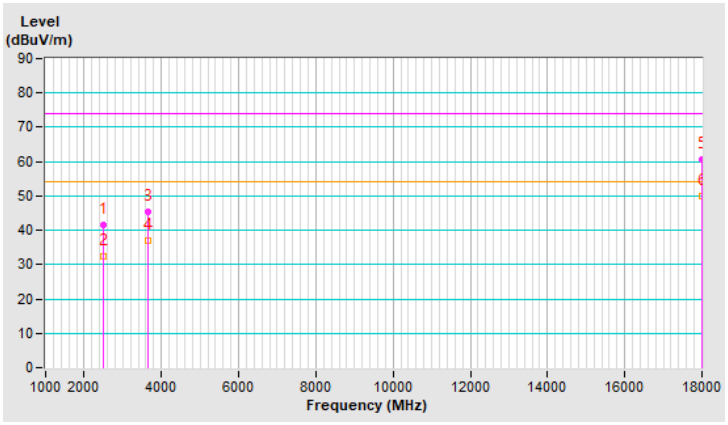


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	41.40 PK	74.00	-32.60	3.97 V	7	44.50	-3.10
2	#2480.00	32.30 AV	54.00	-21.70	3.97 V	7	35.40	-3.10
3	3665.80	45.50 PK	74.00	-28.50	2.97 V	2	46.60	-1.10
4	3665.80	37.10 AV	54.00	-16.90	2.97 V	2	38.20	-1.10
5	17983.60	60.50 PK	74.00	-13.50	1.03 V	234	34.80	25.70
6	17983.60	49.80 AV	54.00	-4.20	1.03 V	234	24.10	25.70

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. " # ": The radiated frequency is out of the restricted band.

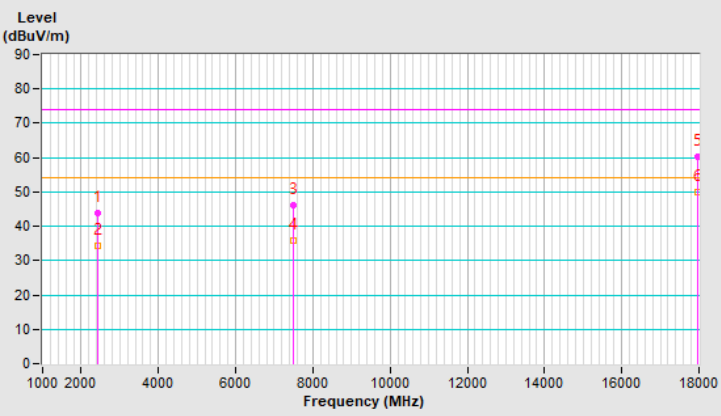


CHANNEL	TX Channel 4	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2426.40	43.90 PK	74.00	-30.10	1.48 H	272	46.90	-3.00
2	#2426.40	34.20 AV	54.00	-19.80	1.48 H	272	37.20	-3.00
3	7489.30	46.10 PK	74.00	-27.90	3.05 H	311	39.00	7.10
4	7489.30	35.80 AV	54.00	-18.20	3.05 H	311	28.70	7.10
5	17979.10	60.30 PK	74.00	-13.70	4.00 H	344	34.70	25.60
6	17979.10	49.80 AV	54.00	-4.20	4.00 H	344	24.20	25.60

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. " # ": The radiated frequency is out of the restricted band.

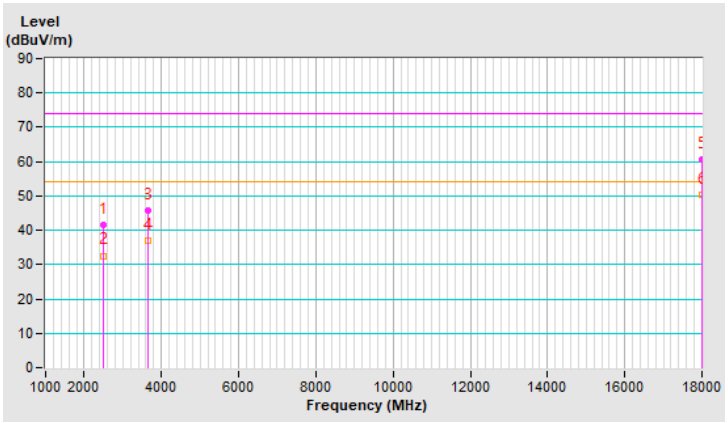


CHANNEL	TX Channel 4	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 18GHz		

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	#2479.80	41.40 PK	74.00	-32.60	3.98 V	6	44.50	-3.10
2	#2479.80	32.60 AV	54.00	-21.40	3.98 V	6	35.70	-3.10
3	3667.10	45.80 PK	74.00	-28.20	3.05 V	16	46.90	-1.10
4	3667.10	37.10 AV	54.00	-16.90	3.05 V	16	38.20	-1.10
5	17983.70	60.60 PK	74.00	-13.40	1.06 V	232	34.90	25.70
6	**17983.70**	**50.20 AV**	**54.00**	**-3.80**	**1.06 V**	**232**	**24.50**	**25.70**

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. " # ": The radiated frequency is out of the restricted band.



For 18~40 GHz

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

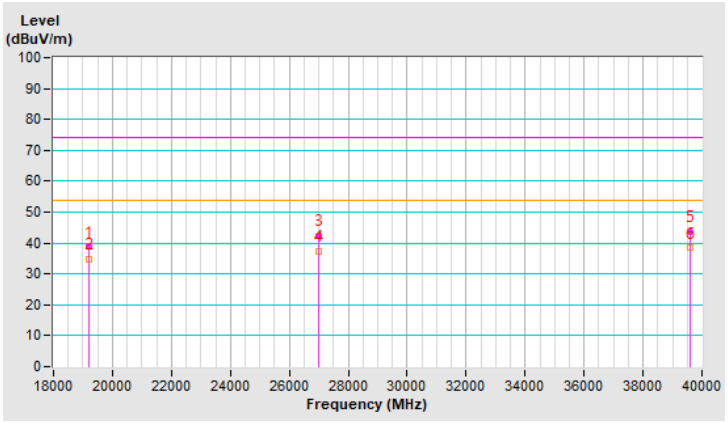
ANTENNA POLARITY: HORIZONTAL								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	19186.70	38.80 PK	74.00	-35.20	1.23 H	19	55.30	-16.50
2	19186.70	34.70 AV	54.00	-19.30	1.23 H	19	51.20	-16.50
3	26983.80	42.30 PK	74.00	-31.70	1.70 H	102	52.90	-10.60
4	26983.80	37.40 AV	54.00	-16.60	1.70 H	102	48.00	-10.60
5	39612.20	43.70 PK	74.00	-30.30	2.14 H	230	47.30	-3.60
6	39612.20	38.40 AV	54.00	-15.60	2.14 H	230	42.00	-3.60

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

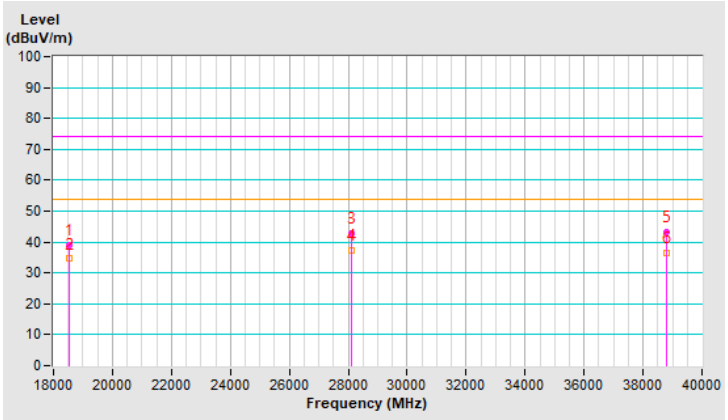
ANTENNA POLARITY: VERTICAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	18543.50	39.10 PK	74.00	-34.90	1.39 V	67	56.00	-16.90
2	18543.50	34.60 AV	54.00	-19.40	1.39 V	67	51.50	-16.90
3	28110.20	42.80 PK	74.00	-31.20	1.94 V	234	53.70	-10.90
4	28110.20	37.40 AV	54.00	-16.60	1.94 V	234	48.30	-10.90
5	38816.50	43.30 PK	74.00	-30.70	1.91 V	221	47.70	-4.40
6	38816.50	36.60 AV	54.00	-17.40	1.91 V	221	41.00	-4.40

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

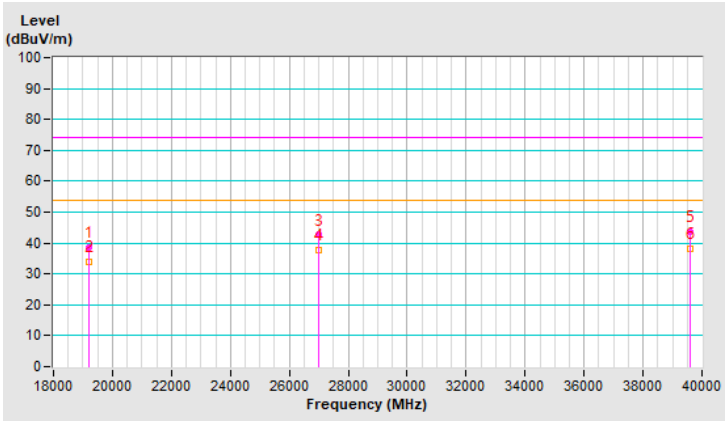
ANTENNA POLARITY: HORIZONTAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	19186.90	38.60 PK	74.00	-35.40	1.23 H	24	55.10	-16.50
2	19186.90	33.90 AV	54.00	-20.10	1.23 H	24	50.40	-16.50
3	26984.40	42.60 PK	74.00	-31.40	1.65 H	89	53.20	-10.60
4	26984.40	37.70 AV	54.00	-16.30	1.65 H	89	48.30	-10.60
5	39612.40	43.70 PK	74.00	-30.30	2.18 H	217	47.30	-3.60
6	39612.40	38.20 AV	54.00	-15.80	2.18 H	217	41.80	-3.60

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 2	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

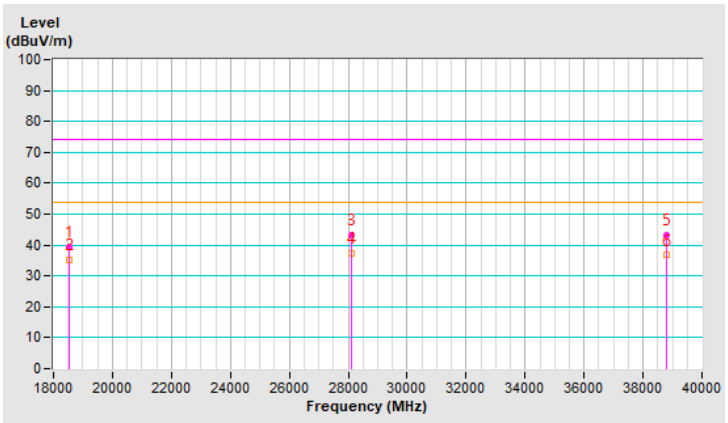
ANTENNA POLARITY: VERTICAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	18544.00	39.40 PK	74.00	-34.60	1.43 V	61	56.30	-16.90
2	18544.00	35.10 AV	54.00	-18.90	1.43 V	61	52.00	-16.90
3	28109.90	43.20 PK	74.00	-30.80	1.91 V	248	54.10	-10.90
4	28109.90	37.50 AV	54.00	-16.50	1.91 V	248	48.40	-10.90
5	38816.60	43.30 PK	74.00	-30.70	1.89 V	233	47.70	-4.40
6	38816.60	36.70 AV	54.00	-17.30	1.89 V	233	41.10	-4.40

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

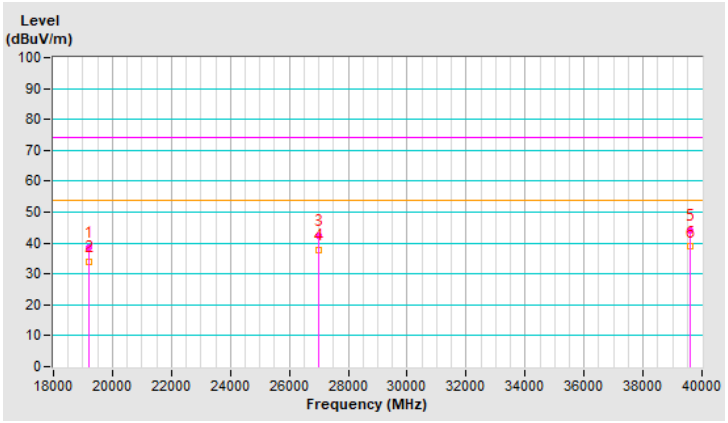
ANTENNA POLARITY: HORIZONTAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	19187.00	38.50 PK	74.00	-35.50	1.23 H	17	55.00	-16.50
2	19187.00	34.10 AV	54.00	-19.90	1.23 H	17	50.60	-16.50
3	26985.00	42.30 PK	74.00	-31.70	1.67 H	113	52.90	-10.60
4	26985.00	37.70 AV	54.00	-16.30	1.67 H	113	48.30	-10.60
5	39611.00	44.10 PK	74.00	-29.90	2.10 H	235	47.70	-3.60
6	39611.00	38.80 AV	54.00	-15.20	2.10 H	235	42.40	-3.60

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

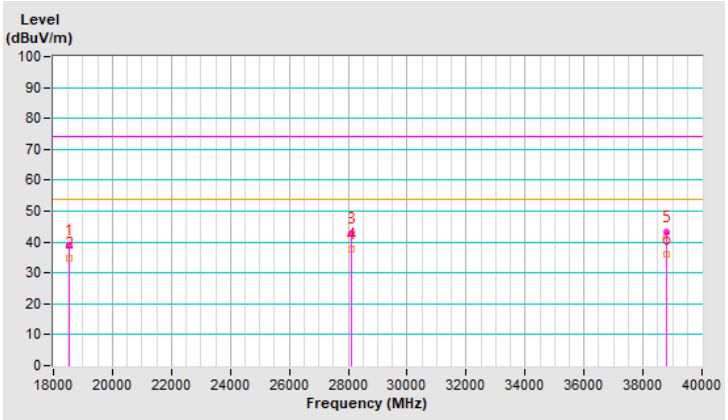
ANTENNA POLARITY: VERTICAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	18543.60	39.10 PK	74.00	-34.90	1.35 V	73	56.00	-16.90
2	18543.60	34.90 AV	54.00	-19.10	1.35 V	73	51.80	-16.90
3	28110.10	42.80 PK	74.00	-31.20	1.96 V	236	53.70	-10.90
4	28110.10	37.70 AV	54.00	-16.30	1.96 V	236	48.60	-10.90
5	38816.50	43.40 PK	74.00	-30.60	1.88 V	213	47.80	-4.40
6	38816.50	35.90 AV	54.00	-18.10	1.88 V	213	40.30	-4.40

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 4	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

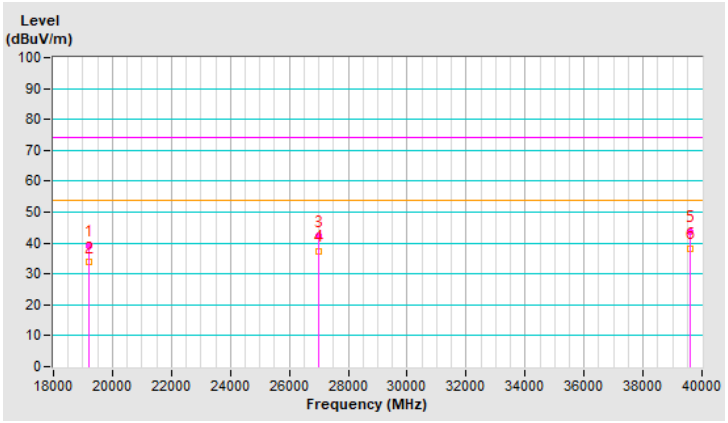
ANTENNA POLARITY: HORIZONTAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	19186.10	39.10 PK	74.00	-34.90	1.26 H	12	55.60	-16.50
2	19186.10	33.70 AV	54.00	-20.30	1.26 H	12	50.20	-16.50
3	26983.80	42.20 PK	74.00	-31.80	1.73 H	91	52.80	-10.60
4	26983.80	37.40 AV	54.00	-16.60	1.73 H	91	48.00	-10.60
5	39612.80	43.60 PK	74.00	-30.40	2.10 H	234	47.20	-3.60
6	39612.80	38.30 AV	54.00	-15.70	2.10 H	234	41.90	-3.60

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



CHANNEL	TX Channel 4	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	18GHz ~ 40GHz		

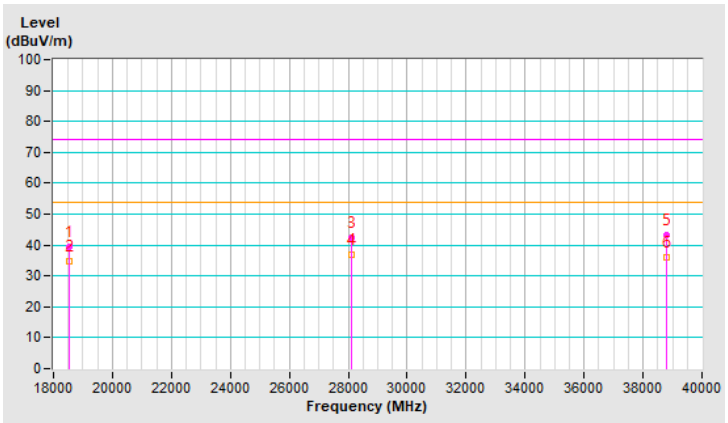
ANTENNA POLARITY: VERTICAL								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	18543.90	39.50 PK	74.00	-34.50	1.41 V	61	56.40	-16.90
2	18543.90	34.80 AV	54.00	-19.20	1.41 V	61	51.70	-16.90
3	28110.90	42.40 PK	74.00	-31.60	1.93 V	223	53.30	-10.90
4	28110.90	37.00 AV	54.00	-17.00	1.93 V	223	47.90	-10.90
5	38816.00	43.30 PK	74.00	-30.70	1.87 V	226	47.70	-4.40
6	38816.00	36.10 AV	54.00	-17.90	1.87 V	226	40.50	-4.40

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. Shorter measurement distances was used to improve the measurement system's noise floor. As standard description is based on the measurement in distance of 3 meters, the data obtained at 1-meter distance was extrapolate results to the 3-m distance:

Test value at 3-meter distance (dBuV)
= Test value at 1 meter distance (dBuV) -20log(3/1)(dB)
= Test value at 1 meter distance (dBuV) -9.5(dB).

*Measurements made at 1 meter distance. Test value converted to account for 3-meter measurement distance.



For above 40 GHz

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Average (AV)
FREQUENCY RANGE	40GHz ~ 200GHz		

ANTENNA POLARITY: HORIZONTAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)	Margin (pW/cm^2)
1	42.51	80.74	-23.97	3.55	90	-86.45
2	50.14	86.22	-18.48	12.55	90	-77.45
3	74.68	73.09	-31.61	0.61	90	-89.39
4	103.16	75.34	-29.36	1.02	90	-88.98
5	117.52	88.20	-16.50	19.79	90	-70.21
6	194.63	79.52	-25.18	2.69	90	-87.31
ANTENNA POLARITY: VERTICAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)	Margin (pW/cm^2)
1	42.62	82.17	-22.53	4.94	90	-85.06
2	50.01	91.12	-13.58	38.80	90	-51.20
3	69.65	78.54	-26.16	2.14	90	-87.86
4	103.04	75.00	-29.70	0.95	90	-89.05
5	117.52	91.11	-13.59	38.70	90	-51.30
6	193.20	79.25	-25.45	2.52	90	-87.48

Remarks:

1. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10 section 9.5 Equations to calculate EIRP

EIRP Level (dBm/MHz) = EMeas (dBμV/m)+20*log(dMeas)-104.7

Emeas is the field strength of the emission at the measurement distance, in dBμV/m

dMeas is the measurement distance, in m

Measurements made at 1 meter distance.

2. Power density formula as follows

Follow ANSI 63.10 section 9.6 Equations to calculate power density

PD=EIRPLinear/4πd2

PD is is the power density at the distance specified by the limit, in W/m2

EIRPLinear is the equivalent isotropically radiated power, in watts

d is the 3m distance.

3. The far-field boundary is given in ANSI 63.10 as:

R far field = (2 * L^2) /λ

L is the Largest Antenna Dimension of measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
40	0.03	0.0075	0.240
50	0.03	0.0060	0.300

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
50	0.025	0.0060	0.208
75	0.025	0.0040	0.313

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
75	0.018	0.0040	0.162
110	0.018	0.0027	0.238

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
110	0.012	0.0027	0.106
170	0.012	0.0018	0.163

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
170	0.008	0.0018	0.073
260	0.008	0.0012	0.111

CHANNEL	TX Channel 2	DETECTOR FUNCTION	Average (AV)
FREQUENCY RANGE	40GHz ~ 200GHz		

ANTENNA POLARITY: HORIZONTAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	42.59	81.68	-23.02	4.41	90	-85.59
2	55.60	86.19	-18.51	12.46	90	-77.54
3	72.48	73.62	-31.08	0.69	90	-89.31
4	103.14	74.66	-30.04	0.88	90	-89.12
5	121.84	89.83	-14.87	28.81	90	-61.19
6	191.25	80.20	-24.50	3.14	90	-86.86
ANTENNA POLARITY: VERTICAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	42.50	81.55	-23.15	4.28	90	-85.72
2	52.10	90.10	-14.61	30.62	90	-59.38
3	71.86	73.50	-31.20	0.67	90	-89.33
4	80.16	75.63	-29.07	1.10	90	-88.90
5	121.84	93.55	-11.15	67.82	90	-22.18
6	191.48	80.08	-24.62	3.05	90	-86.95

Remarks:

1. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10 section 9.5 Equations to calculate EIRP

EIRP Level (dBm/MHz) = EMeas (dBμV/m)+20*log(dMeas)-104.7

Emeas is the field strength of the emission at the measurement distance, in dBμV/m

dMeas is the measurement distance, in m

Measurements made at 1 meter distance.

2. Power density formula as follows

Follow ANSI 63.10 section 9.6 Equations to calculate power density

PD=EIRPLinear/4πd2

PD is is the power density at the distance specified by the limit, in W/m2

EIRPLinear is the equivalent isotropically radiated power, in watts

d is the 3m distance.

3. The far-field boundary is given in ANSI 63.10 as:

R far field = (2 * L^2) /λ

L is the Largest Antenna Dimension of measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
40	0.03	0.0075	0.240
50	0.03	0.0060	0.300

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
50	0.025	0.0060	0.208
75	0.025	0.0040	0.313

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
75	0.018	0.0040	0.162
110	0.018	0.0027	0.238

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
110	0.012	0.0027	0.106
170	0.012	0.0018	0.163

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
170	0.008	0.0018	0.073
260	0.008	0.0012	0.111

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Average (AV)
FREQUENCY RANGE	40GHz ~ 200GHz		

ANTENNA POLARITY: HORIZONTAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	42.45	81.16	-23.54	3.92	90	-86.08
2	55.60	86.19	-18.51	12.46	90	-77.54
3	74.77	74.38	-30.32	0.82	90	-89.18
4	102.89	75.10	-29.60	0.97	90	-89.03
5	126.16	89.16	-15.54	24.68	90	-65.32
6	195.39	79.43	-25.27	2.63	90	-87.37
ANTENNA POLARITY: VERTICAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	42.66	81.22	-23.48	3.97	90	-86.03
2	55.56	92.34	-12.36	51.34	90	-38.66
3	74.67	73.04	-31.66	0.60	90	-89.40
4	75.51	74.69	-30.01	0.88	90	-89.12
5	124.40	88.99	-15.71	23.76	90	-66.24
6	186.61	79.88	-24.82	2.91	90	-87.09

Remarks:

1. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10 section 9.5 Equations to calculate EIRP

EIRP Level (dBm/MHz) = EMeas (dBμV/m)+20*log(dMeas)-104.7

Emeas is the field strength of the emission at the measurement distance, in dBμV/m

dMeas is the measurement distance, in m

Measurements made at 1 meter distance.

2. Power density formula as follows

Follow ANSI 63.10 section 9.6 Equations to calculate power density

PD=EIRPLinear/4πd2

PD is is the power density at the distance specified by the limit, in W/m2

EIRPLinear is the equivalent isotropically radiated power, in watts

d is the 3m distance.

3. The far-field boundary is given in ANSI 63.10 as:

R far field = (2 * L^2) /λ

L is the Largest Antenna Dimension of measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
40	0.03	0.0075	0.240
50	0.03	0.0060	0.300

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
50	0.025	0.0060	0.208
75	0.025	0.0040	0.313

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
75	0.018	0.0040	0.162
110	0.018	0.0027	0.238

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
110	0.012	0.0027	0.106
170	0.012	0.0018	0.163

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
170	0.008	0.0018	0.073
260	0.008	0.0012	0.111

CHANNEL	TX Channel 4	DETECTOR FUNCTION	Average (AV)
FREQUENCY RANGE	40GHz ~ 200GHz		

ANTENNA POLARITY: HORIZONTAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	43.22	81.23	-23.47	3.98	90	-86.02
2	50.65	71.96	-32.74	0.47	90	-89.53
3	74.81	72.99	-31.72	0.60	90	-89.40
4	103.04	74.93	-29.77	0.93	90	-89.07
5	130.48	85.81	-18.89	11.41	90	-78.59
6	187.65	80.98	-23.72	3.75	90	-86.25
ANTENNA POLARITY: VERTICAL						
NO.	Frequency (GHz)	E_{Meas} (dBμV/m)	EIRP Level (dBm/MHz)	Power Density (pW/cm2)	Power Density Limit (pW/cm2)	Margin (pW/cm2)
1	48.60	87.32	-17.38	16.16	90	-73.84
2	55.17	79.58	-25.12	2.72	90	-87.28
3	67.22	83.07	-21.63	6.08	90	-83.92
4	77.13	77.65	-27.05	1.74	90	-88.26
5	130.48	85.29	-19.41	10.13	90	-79.87
6	183.61	80.01	-24.69	3.00	90	-87.00

Remarks:

1. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10 section 9.5 Equations to calculate EIRP

EIRP Level (dBm/MHz) = EMeas (dBμV/m)+20*log(dMeas)-104.7

Emeas is the field strength of the emission at the measurement distance, in dBμV/m

dMeas is the measurement distance, in m

Measurements made at 1 meter distance.

2. Power density formula as follows

Follow ANSI 63.10 section 9.6 Equations to calculate power density

PD=EIRPLinear/4πd2

PD is is the power density at the distance specified by the limit, in W/m2

EIRPLinear is the equivalent isotropically radiated power, in watts

d is the 3m distance.

3. The far-field boundary is given in ANSI 63.10 as:

R far field = (2 * L^2) /λ

L is the Largest Antenna Dimension of measurement antenna, including the reflector

λ is the wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
40	0.03	0.0075	0.240
50	0.03	0.0060	0.300

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
50	0.025	0.0060	0.208
75	0.025	0.0040	0.313

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
75	0.018	0.0040	0.162
110	0.018	0.0027	0.238

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
110	0.012	0.0027	0.106
170	0.012	0.0018	0.163

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field)
170	0.008	0.0018	0.073
260	0.008	0.0012	0.111

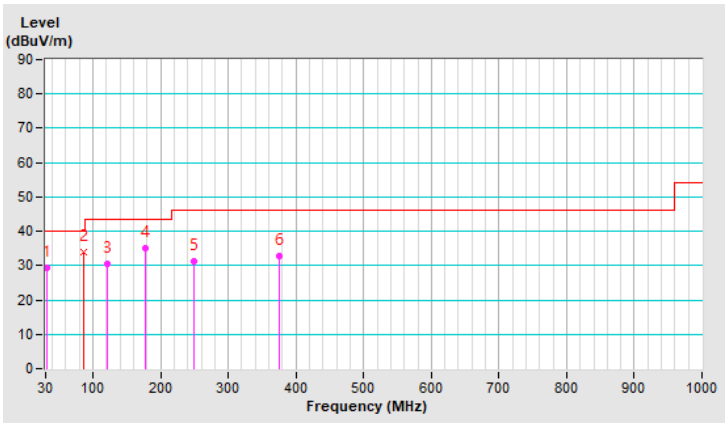
Below 1GHz Data:

CHANNEL	TX Channel 1	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	31.99	29.50 QP	40.00	-10.50	1.00 H	0	43.20	-13.70
2	86.70	33.80 QP	40.00	-6.20	4.00 H	103	52.20	-18.40
3	121.23	30.60 QP	43.50	-12.90	3.00 H	132	45.20	-14.60
4	176.67	35.10 QP	43.50	-8.40	2.00 H	293	48.90	-13.80
5	249.96	31.20 QP	46.00	-14.80	1.00 H	55	45.00	-13.80
6	375.00	32.90 QP	46.00	-13.10	1.00 H	0	42.90	-10.00

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.

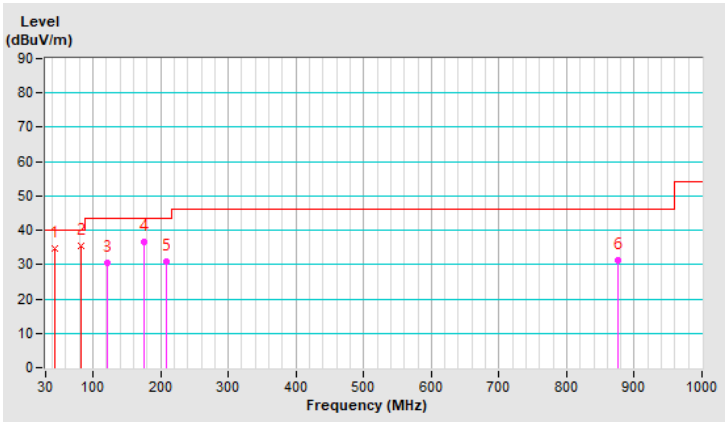


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	43.24	34.60 QP	40.00	-5.40	1.00 V	283	47.40	-12.80
2	82.87	35.50 QP	40.00	-4.50	1.00 V	46	53.40	-17.90
3	121.18	30.60 QP	43.50	-12.90	2.00 V	112	45.20	-14.60
4	175.41	36.50 QP	43.50	-7.00	3.00 V	82	50.10	-13.60
5	208.39	30.90 QP	43.50	-12.60	1.00 V	134	47.00	-16.10
6	875.01	31.20 QP	46.00	-14.80	2.00 V	360	32.50	-1.30

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.

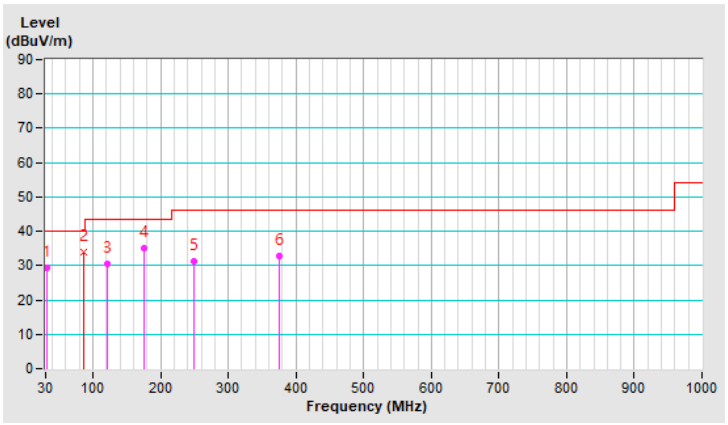


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.20	29.50 QP	40.00	-10.50	1.00 H	3	43.20	-13.70
2	87.10	33.80 QP	40.00	-6.20	4.00 H	98	52.20	-18.40
3	121.20	30.60 QP	43.50	-12.90	3.00 H	129	45.20	-14.60
4	176.30	35.10 QP	43.50	-8.40	2.00 H	281	48.80	-13.70
5	250.10	31.20 QP	46.00	-14.80	1.00 H	57	45.00	-13.80
6	375.10	32.90 QP	46.00	-13.10	1.00 H	0	42.90	-10.00

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.

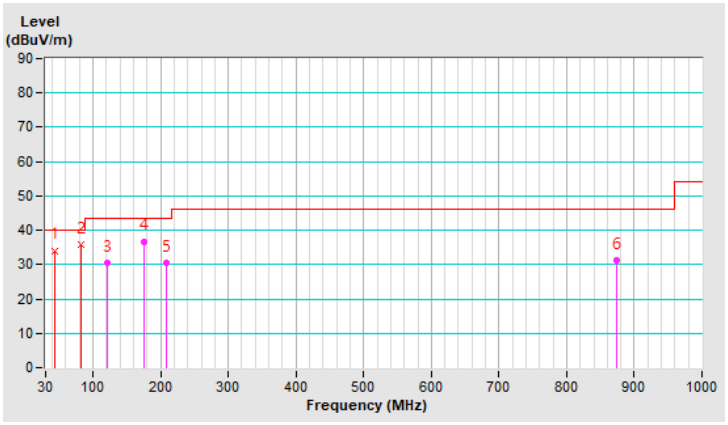


CHANNEL	TX Channel 2	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	43.50	34.10 QP	40.00	-5.90	1.00 V	277	46.90	-12.80
2	83.10	35.70 QP	40.00	-4.30	1.00 V	61	53.60	-17.90
3	121.00	30.60 QP	43.50	-12.90	2.00 V	107	45.20	-14.60
4	175.80	36.80 QP	43.50	-6.70	3.00 V	88	50.40	-13.60
5	208.30	30.60 QP	43.50	-12.90	1.00 V	119	46.70	-16.10
6	874.60	31.20 QP	46.00	-14.80	2.00 V	348	32.60	-1.40

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.

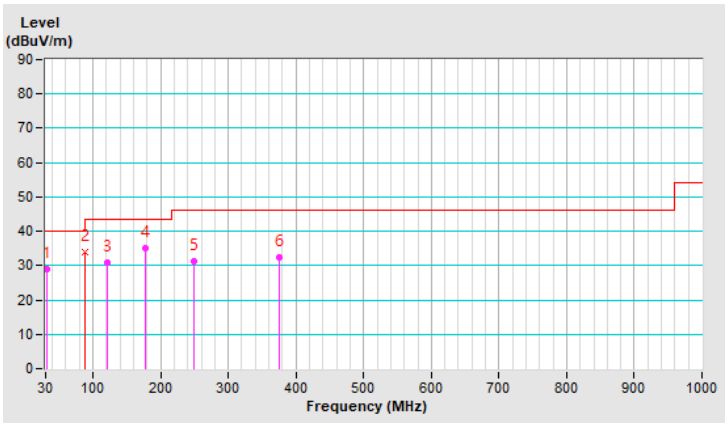


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	31.80	29.10 QP	40.00	-10.90	1.00 H	14	42.90	-13.80
2	87.30	33.90 QP	40.00	-6.10	4.00 H	83	52.30	-18.40
3	121.40	30.70 QP	43.50	-12.80	3.00 H	142	45.30	-14.60
4	176.60	35.10 QP	43.50	-8.40	2.00 H	295	48.80	-13.70
5	249.60	31.40 QP	46.00	-14.60	1.00 H	54	45.20	-13.80
6	375.00	32.50 QP	46.00	-13.50	1.00 H	8	42.50	-10.00

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.

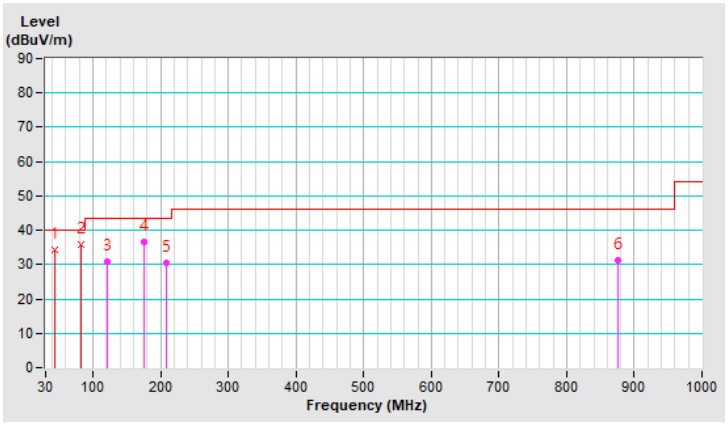


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	43.70	34.40 QP	40.00	-5.60	1.00 V	262	47.10	-12.70
2	83.10	35.70 QP	40.00	-4.30	1.00 V	62	53.60	-17.90
3	121.00	31.00 QP	43.50	-12.50	2.00 V	120	45.60	-14.60
4	175.50	36.60 QP	43.50	-6.90	3.00 V	75	50.20	-13.60
5	208.00	30.40 QP	43.50	-13.10	1.00 V	133	46.50	-16.10
6	875.00	31.20 QP	46.00	-14.80	2.00 V	353	32.50	-1.30

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.

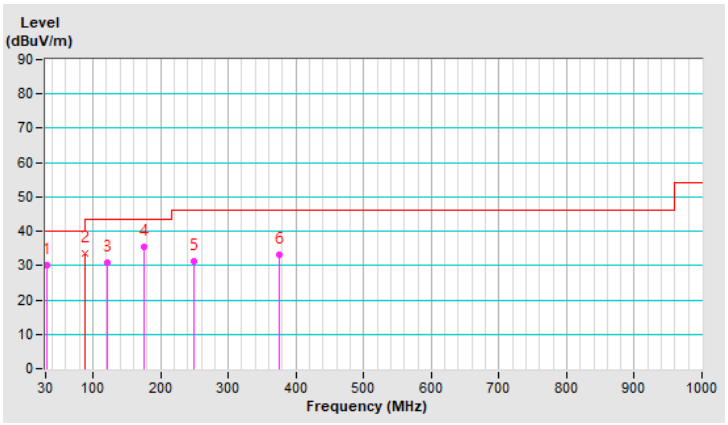


CHANNEL	TX Channel 4	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.80	30.00 QP	40.00	-10.00	1.00 H	10	43.80	-13.80
2	87.60	33.60 QP	40.00	-6.40	4.00 H	96	52.00	-18.40
3	121.80	30.70 QP	43.50	-12.80	3.00 H	137	45.30	-14.60
4	176.40	35.50 QP	43.50	-8.00	2.00 H	289	49.20	-13.70
5	250.10	31.10 QP	46.00	-14.90	1.00 H	44	44.90	-13.80
6	374.80	33.20 QP	46.00	-12.80	1.00 H	4	43.20	-10.00

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.

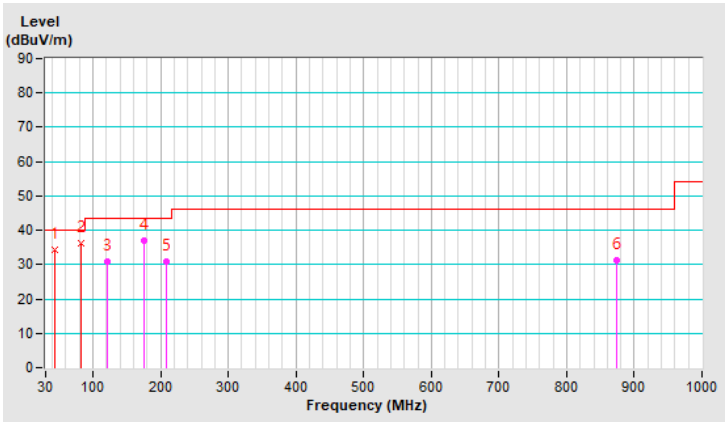


CHANNEL	TX Channel 4	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	43.30	34.40 QP	40.00	-5.60	1.00 V	275	47.20	-12.80
2	83.20	36.10 QP	40.00	-3.90	1.00 V	61	54.10	-18.00
3	121.60	30.70 QP	43.50	-12.80	2.00 V	123	45.30	-14.60
4	175.10	36.90 QP	43.50	-6.60	3.00 V	73	50.40	-13.50
5	208.10	30.80 QP	43.50	-12.70	1.00 V	122	46.90	-16.10
6	874.60	31.20 QP	46.00	-14.80	2.00 V	360	32.60	-1.40

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. 19, 2020	Mar. 18, 2021
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	005	Aug. 30, 2019	Aug. 29, 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: Aug. 11, 2020

4.2.3 Test Procedures

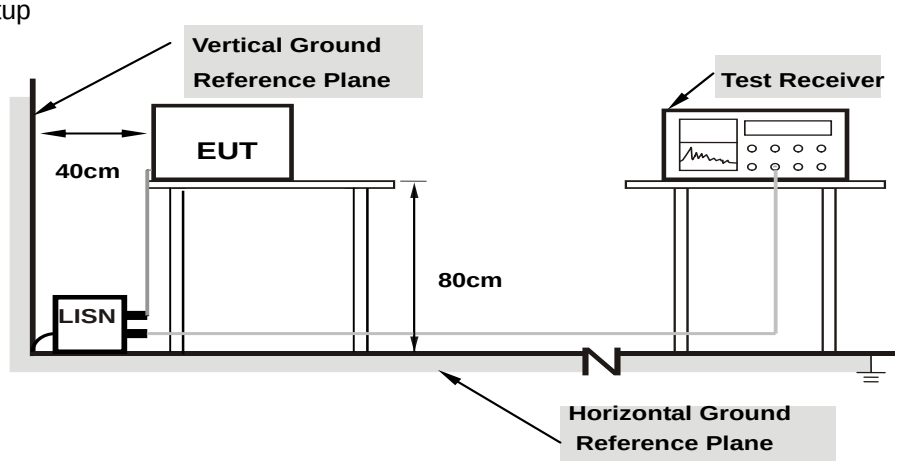
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

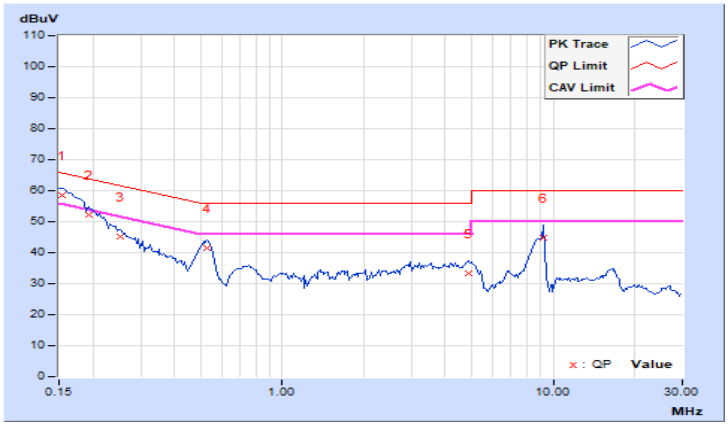
4.2.7 Test Results

Channel	TX Channel 1		
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	0.15391	9.98	48.51	30.36	58.49	40.34	65.79	55.79	-7.30	-15.45
2	0.19297	9.99	42.25	23.99	52.24	33.98	63.91	53.91	-11.67	-19.93
3	0.25156	10.00	35.11	19.38	45.11	29.38	61.71	51.71	-16.60	-22.33
4	0.52500	10.02	31.44	22.06	41.46	32.08	56.00	46.00	-14.54	-13.92
5	4.86719	10.33	23.05	17.07	33.38	27.40	56.00	46.00	-22.62	-18.60
6	9.25000	10.62	34.23	29.17	44.85	39.79	60.00	50.00	-15.15	-10.21

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

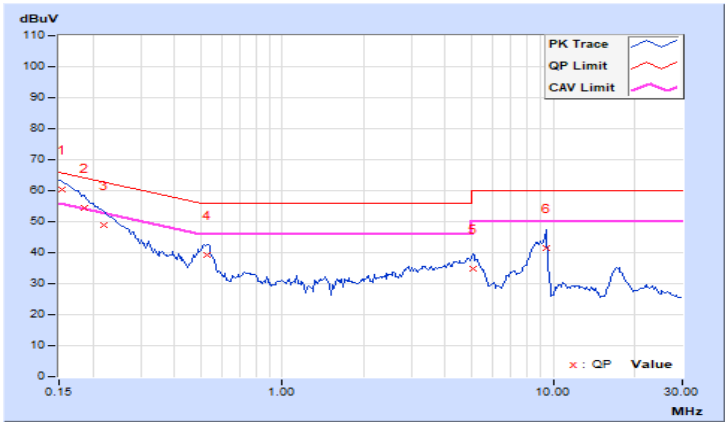


Channel	TX Channel 1		
Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	**0.15391**	**9.99**	**50.24**	**32.98**	**60.23**	**42.97**	**65.79**	**55.79**	**-5.56**	**-12.82**
2	0.18516	10.00	44.61	27.24	54.61	37.24	64.25	54.25	-9.64	-17.01
3	0.22031	10.00	39.06	21.84	49.06	31.84	62.81	52.81	-13.75	-20.97
4	0.52891	10.04	29.37	19.47	39.41	29.51	56.00	46.00	-16.59	-16.49
5	5.08203	10.33	24.46	19.38	34.79	29.71	60.00	50.00	-25.21	-20.29
6	9.48438	10.57	31.07	25.74	41.64	36.31	60.00	50.00	-18.36	-13.69

Remarks:

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

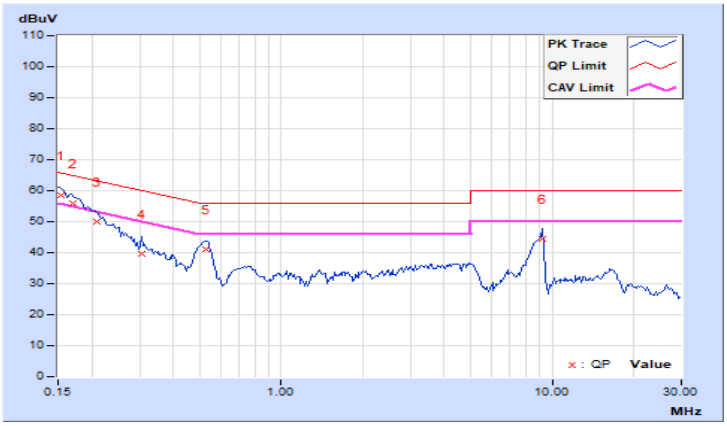


Channel	TX Channel 2		
Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15391	9.98	48.37	30.12	58.35	40.10	65.79	55.79	-7.44	-15.69
2	0.16953	9.98	45.93	27.98	55.91	37.96	64.98	54.98	-9.07	-17.02
3	0.20859	9.99	39.98	23.45	49.97	33.44	63.26	53.26	-13.29	-19.82
4	0.30625	10.00	29.81	14.64	39.81	24.64	60.07	50.07	-20.26	-25.43
5	0.52891	10.02	31.10	21.60	41.12	31.62	56.00	46.00	-14.88	-14.38
6	9.20313	10.62	33.94	28.63	44.56	39.25	60.00	50.00	-15.44	-10.75

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

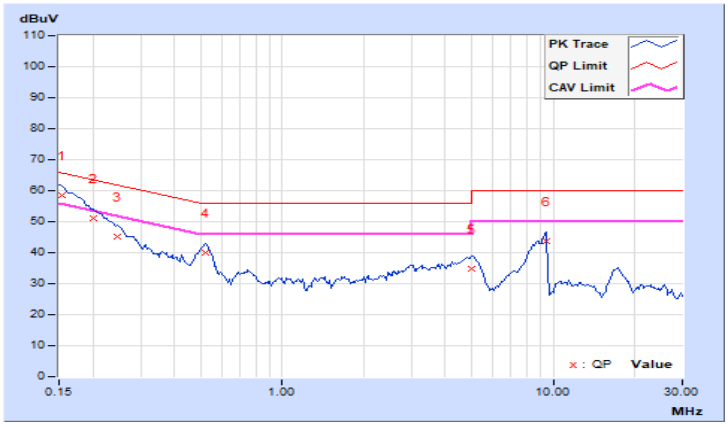


Channel	TX Channel 2		
Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15391	9.99	48.71	30.62	58.70	40.61	65.79	55.79	-7.09	-15.18
2	0.20078	10.00	41.28	22.74	51.28	32.74	63.58	53.58	-12.30	-20.84
3	0.24766	10.01	35.33	20.95	45.34	30.96	61.84	51.84	-16.50	-20.88
4	0.52109	10.04	29.88	20.47	39.92	30.51	56.00	46.00	-16.08	-15.49
5	5.01953	10.33	24.47	19.31	34.80	29.64	60.00	50.00	-25.20	-20.36
6	9.39453	10.57	33.05	27.78	43.62	38.35	60.00	50.00	-16.38	-11.65

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

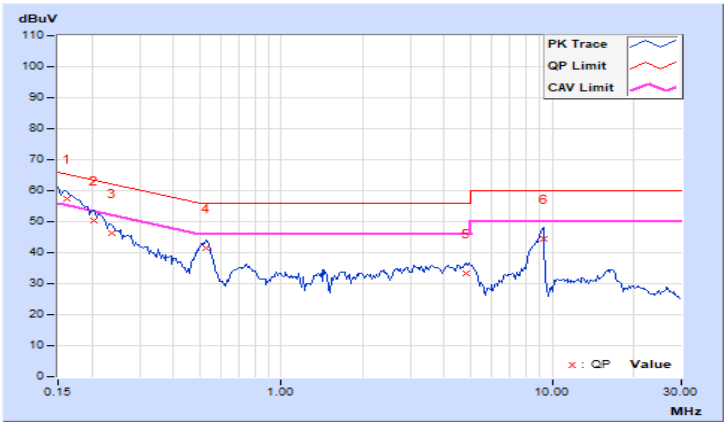


Channel	TX Channel 3		
Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.16172	9.98	47.57	29.80	57.55	39.78	65.38	55.38	-7.83	-15.60
2	0.20469	9.99	40.28	22.52	50.27	32.51	63.42	53.42	-13.15	-20.91
3	0.23594	9.99	36.39	17.64	46.38	27.63	62.24	52.24	-15.86	-24.61
4	0.52500	10.02	31.34	21.80	41.36	31.82	56.00	46.00	-14.64	-14.18
5	4.78906	10.32	23.08	16.91	33.40	27.23	56.00	46.00	-22.60	-18.77
6	9.29297	10.62	33.69	28.44	44.31	39.06	60.00	50.00	-15.69	-10.94

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

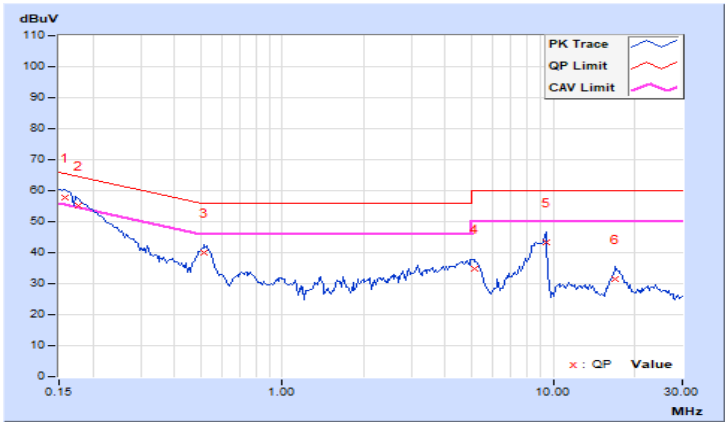


Channel	TX Channel 3		
Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15781	9.99	47.86	31.06	57.85	41.05	65.58	55.58	-7.73	-14.53
2	0.17734	10.00	45.03	27.20	55.03	37.20	64.61	54.61	-9.58	-17.41
3	0.51719	10.04	29.78	20.35	39.82	30.39	56.00	46.00	-16.18	-15.61
4	5.10547	10.33	24.32	19.21	34.65	29.54	60.00	50.00	-25.35	-20.46
5	9.41797	10.57	32.72	27.45	43.29	38.02	60.00	50.00	-16.71	-11.98
6	17.03125	10.98	20.35	15.05	31.33	26.03	60.00	50.00	-28.67	-23.97

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

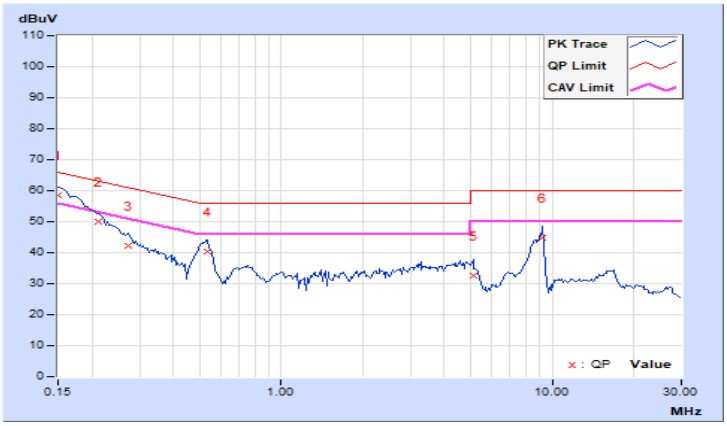


Channel	TX Channel 4		
Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	9.98	48.55	30.44	58.53	40.42	66.00	56.00	-7.47	-15.58
2	0.21250	9.99	40.06	24.09	50.05	34.08	63.11	53.11	-13.06	-19.03
3	0.27109	10.00	32.17	16.12	42.17	26.12	61.08	51.08	-18.91	-24.96
4	0.53672	10.02	30.24	20.72	40.26	30.74	56.00	46.00	-15.74	-15.26
5	5.10156	10.34	22.43	16.17	32.77	26.51	60.00	50.00	-27.23	-23.49
6	9.23438	10.62	34.13	28.79	44.75	39.41	60.00	50.00	-15.25	-10.59

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

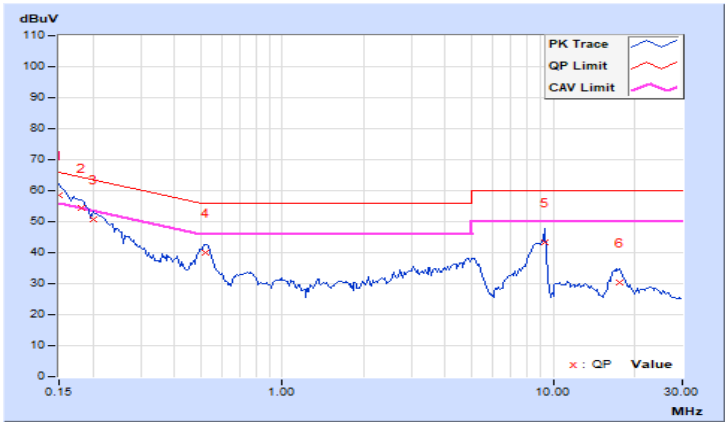


Channel	TX Channel 4		
Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	48.65	30.66	58.64	40.65	66.00	56.00	-7.36	-15.35
2	0.18125	10.00	44.49	28.06	54.49	38.06	64.43	54.43	-9.94	-16.37
3	0.20078	10.00	40.89	22.54	50.89	32.54	63.58	53.58	-12.69	-21.04
4	0.52109	10.04	29.92	20.45	39.96	30.49	56.00	46.00	-16.04	-15.51
5	9.32813	10.56	32.89	27.65	43.45	38.21	60.00	50.00	-16.55	-11.79
6	17.49609	11.00	19.45	13.91	30.45	24.91	60.00	50.00	-29.55	-25.09

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

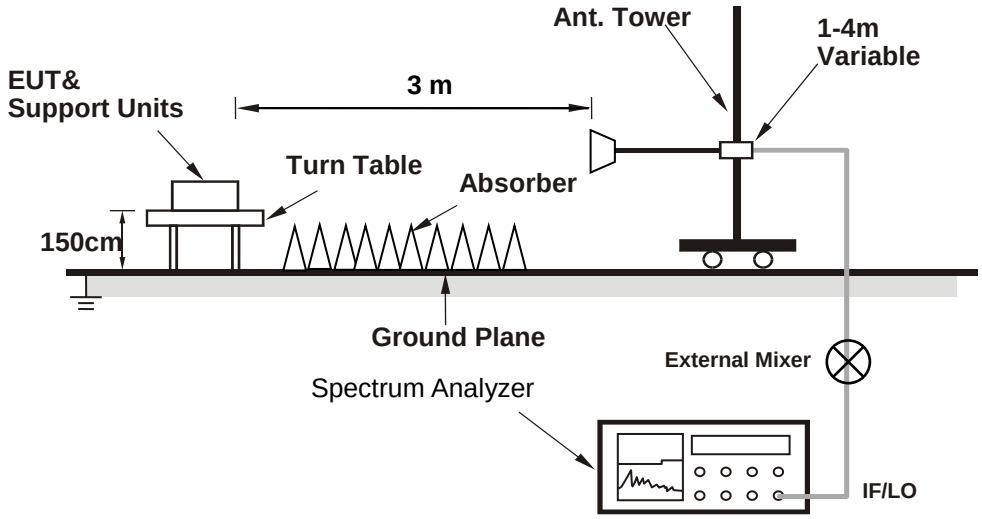


4.3 6dB Bandwidth Measurement

4.3.1 Limits of 6dB Bandwidth Measurement

None: For reporting purposes only.

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

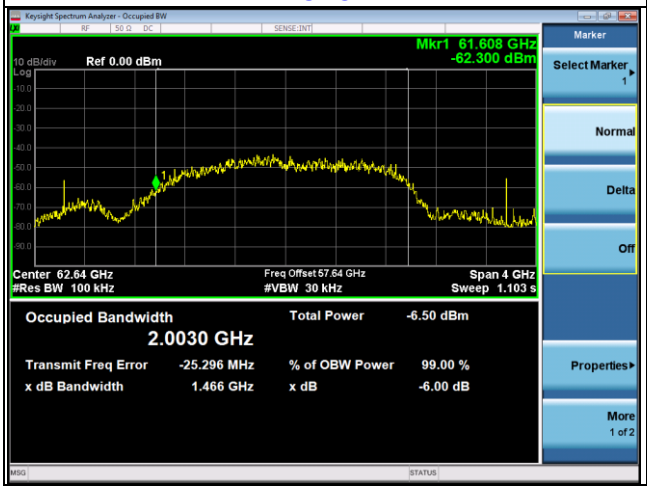
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
1	58320	1494
2	60480	1490
3	62640	1466
4	64800	1525

Spectrum Plot of Worst Value

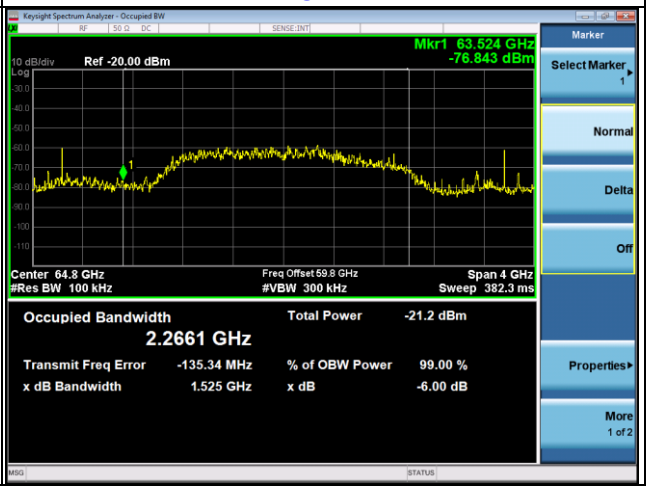
CH1

CH2

CH3



CH4



4.4 Output Power Measurement

4.4.1 Limits of Output Power Measurement

15.255 (c) & (e)

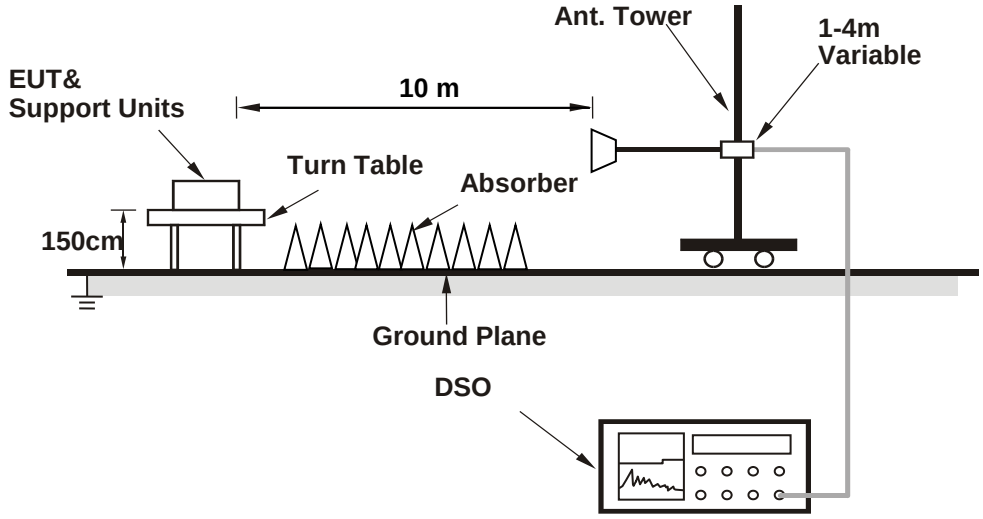
Output Power (EIRP)					
Applicaple	**Type**			**Average EIRP Power**	**Peak EIRP Power**
	Fixed field disturbance sensors and short-range devices for interactive motion sensing	(a)	For fixed field disturbance sensors that occupy 500 MHz or less of bandwidth and that are contained wholly within the frequency band 61.0-61.5 GHz	40dBm (*Note 3)	43dBm (*Note 3)
		(b)	For fixed field disturbance sensors other than those operating under the provisions of (a) above, and short-range devices for interactive motion sensing	-	10dBm
V	Products other than fixed field disturbance sensors and short-range devices for interactive motion sensing	(c)	For fixed point-to-point transmitters located outdoors	82dBm (*Note 1)	85dBm (*Note 2)
		(d)	For other devices	40dBm	43dBm

Note:
1. The average power of any emission shall not exceed 82 dBm, and shall be reduced by 2 dB for every dB that the antenna gain is less than 51 dBi.
2. The peak power of any emission shall not exceed 85 dBm, and shall be reduced by 2 dB for every dB that the antenna gain is less than 51 dBi.
3. In addition, the average power of any emission outside of the 61.0-61.5 GHz band, measured during the transmit interval, but still within the 57-71 GHz band, shall not exceed 10 dBm, and the peak power of any emission shall not exceed 13 dBm.

Peak Output Power (Conducted Power)			
Applicaple	**Type**	**6dB Bandwidth**	**Maximum Conducted Power**
	For fixed field disturbance sensors other than those operating under the provisions of (a) above, and short-range devices for interactive motion sensing	-	-10 dBm (0.1mW)
V	Other	Greater than or equal to 100 MHz	500mW
		Less than 100MHz	500mW x (B/100)

Note:
1. B is 6dB Bandwidth (measured with a 100kHz resolution bandwidth)
2. Peak transmitter output power shall be measured with an RF detector that has a detection bandwidth that encompasses the 57-71 GHz band and the has a video bandwidth of at least 10 MHz, or using an equivalent measurement method.
3. For purposes of demonstrating complained with this RSS, corrections to the transmitter output power may be made due to the antenna and circuit loss.

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. Place the EUT in a continuous transmission mode.
b. For radiated emission measurements, attach a test receive antenna for the fundamental frequency band to the RF input of an RF detector or a downconverter with an RF detector at the output.
c. Connect the video output of the detector to the 50 ohm input of the DSO.
d. Place the test receive antenna in the main beam of the EUT at a distance which will provide a signal within the operating range of the RF detector.
e. Set the sampling rate of the DSO to the required value. Adjust the memory depth, the triggering and the sweep speed to obtain a display which is representative of the signal considering the type of modulation.
f. For radiated emission measurements, calculate the distance to the far field boundary of the fundamental emission using following equation

$$d_{farfield} = \frac{2D^2}{\lambda}$$

where:

D = largest dimension of the transmit antenna

λ = wavelength

Frequency (GHz)	L (m)	Lambda (m)	R (Far Field) (m)
58.32	0.15	0.00514	8.755
60.48	0.15	0.00496	9.073
62.64	0.15	0.00479	9.395
64.80	0.15	0.00463	9.719

*Measurements made at 10 meter distance.

g. Perform radiated emission measurements to keep maximize the received signal from the EUT in the far field.
h. Record the average and peak from the DSO and the measurement distance.
i. Disconnect the EUT fromthe RF input port of the instrumentation system.
j. Connect a mm-wave source to the RF input port of the instrumentation system via a waveguide variable attenuator. The mm-wave source is unmodulated.
k. Using substitution measurement.
l. Measure and note the power.
m. For conducted power measurements, calculate the conducted power using following equation

$P_{cond} = EIRP-G_{dBi}$

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

For Output Power (EIRP)

Channel	Frequency (GHz)	DSO Value (mV)	Power (dBm)	Gain of Test Antenna (dBi)	E_{Meas} (dBμV/m)	EIRP Level (dBm)	EIRP Limit (dBm)	Pass/Fail
1	58.32	16.29	-18.34	20.50	133.73	49.03PK	53.00	Pass
		15.85	-20.19	20.50	131.88	47.18AV	50.00	Pass
2	60.48	18.06	-17.07	21.40	134.42	49.72PK	53.00	Pass
		17.20	-18.62	21.40	132.87	48.17AV	50.00	Pass
3	62.64	17.09	-16.76	21.40	135.03	50.33PK	53.00	Pass
		16.36	-18.38	21.40	133.41	48.71AV	50.00	Pass
4	64.80	19.27	-17.13	21.40	134.96	50.26PK	53.00	Pass
		15.72	-18.28	21.40	133.81	49.11AV	50.00	Pass

Note. The measured power level is converted to EIRP using the equation:

Follow ANSI 63.10 section 9.4 Equations to calculate and extrapolate field strength

E_{Meas} (dBμV/m) = 126.8 − 20log(λ) + P −G

where:

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

P is the power measured at the output of the test antenna, in dBm

λ is the wavelength of the emission under investigation [300/fMHz], in m

G is the gain of the test antenna, in dBi

Follow ANSI 63.10 section 9.5 Equations to calculate EIRP

EIRP Level (dBm/MHz) = E_{Meas} (dBμV/m)+20*log(d_{Meas})-104.7

where:

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

Measurements made at 10 meter distance.

For Peak Output Power (Conducted Power)

Channel	Frequency (GHz)	EIRP (dBm)	Max. Array Gain (dBi)	Conducted Output Power (dBm)	Conducted Output Power (mW)	Conducted Output Power limit (mW)	Pass /Fail
1	58.32	49.03	35	14.03	25.29	500	Pass
2	60.48	49.72	35	14.72	29.65	500	Pass
3	62.64	50.33	35	15.33	34.12	500	Pass
4	64.80	50.26	35	15.26	33.57	500	Pass

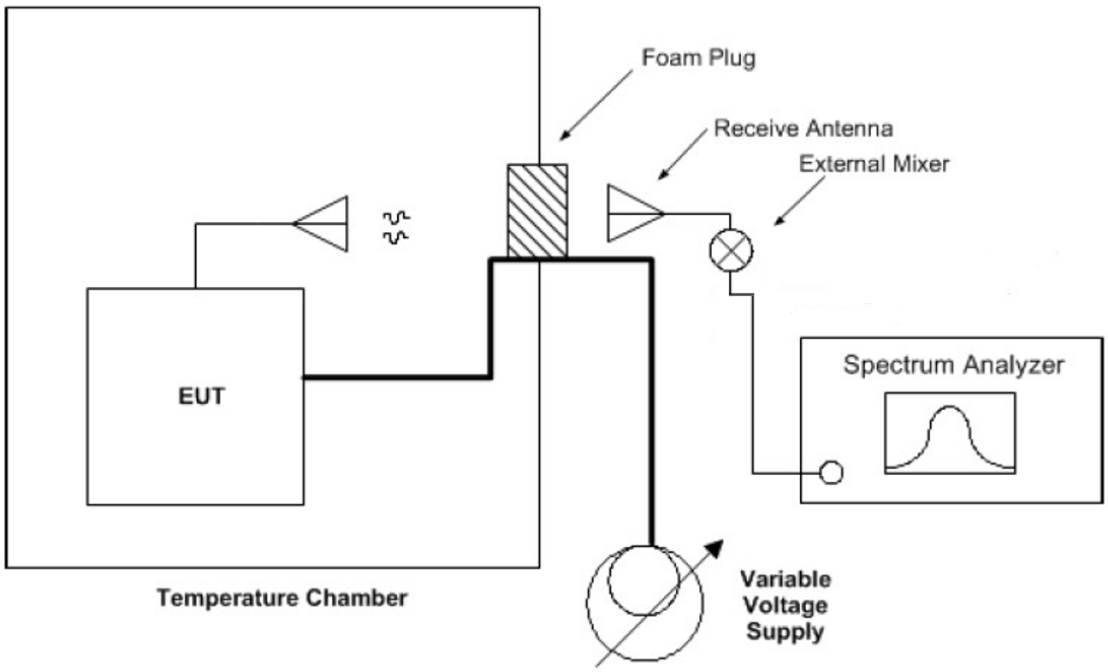
Note:
The EIRP was evaluated on vertical and horizontal polarization, the worst case is Vertical polarization.

4.5 Frequency Stability Measurement

4.5.1 Limits of Conducted Out of Band Emission Measurement

15.255(f) Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees Celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

4.5.2 Test Setup



4.5.3 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
N9029AV15-DC9 - 50-75 GHz VDI Standard Downconverter with 9VDC supply Keysight	SA Extension WR15	SAX 381	CoC	CoC
**Horn Antenna (50~75GHz) OML	M15HWD	110215-1	Oct. 17, 2017	Oct. 16, 2020
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 16, 2020	Jan. 15, 2021
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. **The calibration interval of the above test instruments is 36 months and the calibrations are traceable to NML/ROC and NIST/USA.
4. Certificate of Conformance (CoC) which is issued by manufacturer states that the product meets the specification.
5. The test was performed in Oven room 2.
6. Tested Date: Aug. 17, 2020

4.5.4 Test Procedure

a. Arrange EUT and test equipment as above setup configuration.
b. With the EUT at ambient temperature and voltage source set to the EUT nominal operating voltage (100%), record the spectrum mask of the EUT emission on the spectrum analyzer.
c. Vary EUT power supply between 85% and 115% of nominal, and record the frequency excursion of the EUT emission mask.
d. Set the power supply to 100% nominal setting, and raise EUT operating temperature to 50 °C. Record the frequency excursion of the EUT emission mask.
e. Repeat step d) at each 10 °C increment down to −20 °C

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Set the EUT transmit at modulation mode to test frequency stability.

4.5.7 Test Results

Frequency Stability Versus Temp.													
Operating Frequency: 57312 MHz													
TEMP. (℃)	Power Supply (Vdc)	0 minutes			2 minutes			5 minutes			10 minutes		
		FL(MHz)	FH(MHz)	PASS/ FAIL	FL(MHz)	FH(MHz)	PASS/ FAIL	FL(MHz)	FH(MHz)	PASS/ FAIL	FL(MHz)	FH(MHz)	PASS/ FAIL
50	24	57312.21	59258.30	PASS	57312.18	59258.27	PASS	57312.18	59258.29	PASS	57312.22	59258.30	PASS
40	24	57312.09	59258.41	PASS	57312.05	59258.38	PASS	57312.08	59258.41	PASS	57312.06	59258.40	PASS
30	24	57312.07	59258.42	PASS	57312.02	59258.42	PASS	57312.02	59258.38	PASS	57312.07	59258.42	PASS
20	24	57311.93	59258.13	PASS	57311.96	59258.17	PASS	57311.95	59258.13	PASS	57311.97	59258.13	PASS
10	24	57311.78	59258.31	PASS	57311.76	59258.28	PASS	57311.76	59258.28	PASS	57311.79	59258.29	PASS
0	24	57311.81	59258.39	PASS	57311.77	59258.40	PASS	57311.77	59258.41	PASS	57311.79	59258.37	PASS
-10	24	57311.79	59258.23	PASS	57311.81	59258.18	PASS	57311.80	59258.20	PASS	57311.78	59258.19	PASS
-20	24	57311.83	59258.52	PASS	57311.78	59258.50	PASS	57311.77	59258.50	PASS	57311.80	59258.50	PASS

Frequency Stability Versus Voltage													
Operating Frequency: 57312 MHz													
TEMP. (℃)	Power Supply (Vdc)	0 minutes			2 minutes			5 minutes			10 minutes		
		FL(MHz)	FH(MHz)	PASS / FAIL	FL(MHz)	FH(MHz)	PASS / FAIL	FL(MHz)	FH(MHz)	PASS/ FAIL	FL(MHz)	FH(MHz)	PASS/ FAIL
20	27.6	57311.93	59258.13	PASS	57311.97	59258.16	PASS	57311.96	59258.13	PASS	57311.96	59258.14	PASS
	24	57311.93	59258.13	PASS	57311.96	59258.17	PASS	57311.95	59258.13	PASS	57311.97	59258.13	PASS
	20.4	57311.93	59258.13	PASS	57311.96	59258.17	PASS	57311.95	59258.13	PASS	57311.98	59258.14	PASS

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:

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

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