FCC Test Report

Report No.:	RF180713E08
FCC ID:	2ALI9V-JETR
Test Model:	JET-R
Received Date:	July 10, 2018
Test Date:	Aug. 27 to 31, 2018
Issued Date:	Sep. 21, 2018
Applicant:	WISEJET, INC.
Address:	401, IT Venture Town, 35, Techno 9-ro, Yuseong-gu, Daejun, South Korea
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Testing Laboratory
2022

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Release Control Record

Issue No.	Description	Date Issued
RF180713E08	Original release.	Sep. 21, 2018

1 Certificate of Conformity

Product:	V-JET
Brand:	WISEJET
Test Model:	JET-R
Sample Status:	ENGINEERING SAMPLE
Applicant:	WISEJET, INC.
Test Date:	Aug. 27 to 31, 2018
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 : _____ , **Date:** Sep. 21, 2018

Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 21, 2018

May Chen / 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 -4.3dB at 3.92172MHz.
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 -3.7dB at 575.72MHz.
15.255(f)	Frequency Stability	PASS	Meet the requirement of limit.

2.1 Measurement Uncertainty

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

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	V-JET
Brand	WISEJET
Test Model	JET-R
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 5V from host equipment
Modulation Type	16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	LRP-BPSK (20.337Mb/s)
Operating Frequency	LRP: 60.16GHz ~ 62.96GHz
Output Power	LRP: 28.94 dBm
Antenna Type	Refer to Note
Antenna Connector	NA
Accessory Device	NA
Data Cable Supplied	NA

Note:

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

Brand	Model	Antenna Gain (dBi)	Frequency range	Antenna Type	Connecter Type
Lattice Semiconductor	SiI6310	18	59.4~63.56GHz	patch array antenna	none

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

3.2 Description of Test Modes

LRP MODE							
Frequency Band	Channel Plan	Channel	Frequency	Channel	Frequency	Channel	Frequency
60.16 – 60.80GHz	A	1	60.16GHz	2	60.48GHz	3	60.80GHz
62.32 – 62.96GHz	B	1	62.32GHz	2	62.64GHz	3	62.96GHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

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

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	MODULATION TYPE	DATA RATE (Mbps)
L	3	1	OFDM	QPSK	3.807Gb/s

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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
L	3	1, 2, 3	OFDM	BPSK	20.337 Mb/s

Frequency stability 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	MODULATION TYPE	DATA RATE (Mbps)
L	3	1, 2, 3	OFDM	QPSK	3.807Gb/s

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	MODULATION TYPE	DATA RATE (Mbps)
L	3	1, 2, 3	OFDM	BPSK	20.337 Mb/s

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	MODULATION TYPE	DATA RATE (Mbps)
L	3	1, 2, 3	OFDM	BPSK	20.337 Mb/s

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 68%RH 25deg. C, 60%RH	120Vac, 60Hz	Eason Tseng Weiwei Lo
RE<1G	25deg. C, 71%RH	120Vac, 60Hz	Andy Ho
PLC	24deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Weiwei Lo

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.	USB Adapter	SAMSUNG	ETA-U90EWE	NA	NA	Supplied by client
B.	Test Tool	NA	NA	NA	NA	Supplied by client
C.	Monitor	DELL	P2415Q	CN-0J1P7F-QDC00-85L-13GB-A09	FCC DoC	Provided by Lab
D.	Mobile Phone	SAMSUNG	S8	NA	NA	Supplied by client
E.	TX Test Tool	NA	NA	NA	NA	Supplied by client
F.	USB Adapter	SAMSUNG	EP-TA300	NA	NA	Supplied by client
G.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab
H.	Test Tool	NA	NA	NA	NA	Supplied by client

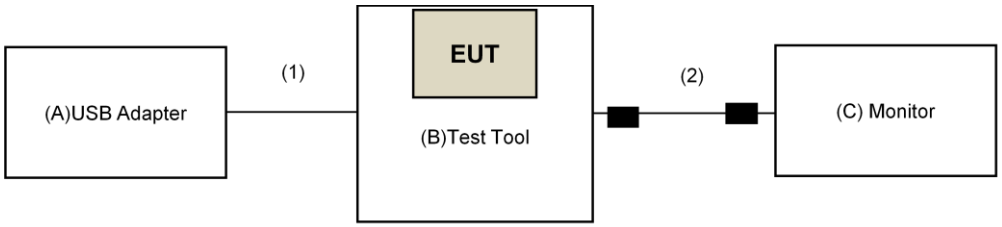
Note:

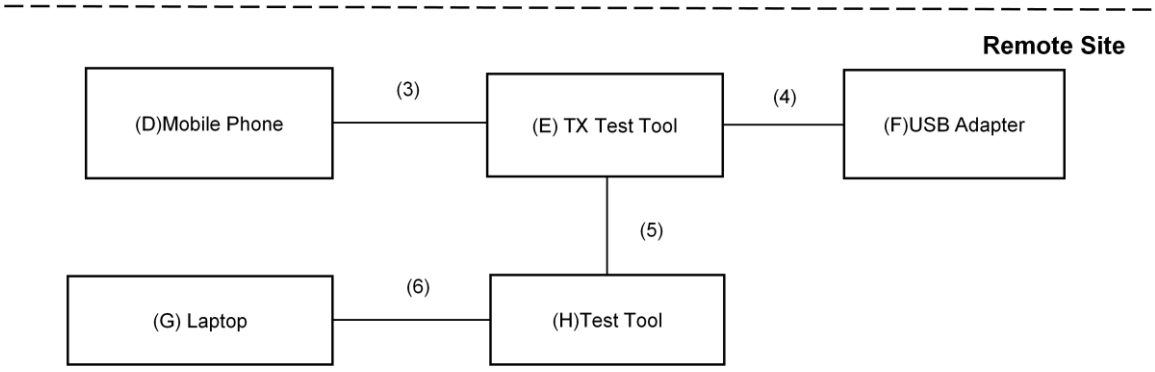
1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	microUSB Cable	1	1	Yes	0	Supplied by client
2.	HDMI Cable	1	1.5	Yes	2	Supplied by client
3.	USB Type-C Cable	1	0.7	Yes	0	Supplied by client
4.	USB Type-C Cable	1	1.5	Yes	0	Supplied by client
5.	Cable	1	0.9	No	0	Supplied by client
6.	microUSB Cable	1	1	Yes	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

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
FCC KDB 200443 D02 RF Detector Method v01

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	Average
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

Below 40GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 2019
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	May 05, 2018	May 04, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-3-1	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-2	Mar. 20, 2018	Mar. 19, 2019
RF Cable	8D	966-3-3	Mar. 20, 2018	Mar. 19, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200	160922	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-2000	150317	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-5000	150322	Jan. 29, 2018	Jan. 28, 2019
Spectrum Analyzer Keysight	N9030A	MY54490679	July 23, 2018	July 22, 2019
Pre-Amplifier EMCI	EMC184045SE	980386	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160924	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The CANADA Site Registration No. is 20331-1
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: Aug. 27 to 28, 2018

Above 40GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250254	Nov. 21, 2017	Nov. 20, 2018
*Harmonic Mixer (33~55GHz) OML	M22HWD	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Horn Antenna (33~55GHz) OML	M22RH	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Harmonic Mixer (50~75GHz) OML	M15RH	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Horn Antenna (50~75GHz) OML	M15HWD	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Harmonic Mixer (75~110GHz) OML	M10HWD	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Horn Antenna (75~110GHz) OML	M10RH	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Harmonic Mixer (110~170GHz) OML	M06RH	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Horn Antenna(110~170GHz) OML	M06HWD	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Harmonic Mixer (140~220GHz) OML	M05HWD	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Horn Antenna (140~220GHz) OML	M05RH	110215-1	Oct. 17, 2017	Oct. 16, 2019
*Diplexer EMCI	DPL26	DPL26_01	Oct. 17, 2017	Oct. 16, 2019
*Diplexer EMCI	DPL26	DPL26_02	Oct. 17, 2017	Oct. 16, 2019
*Precision 30dB Attenuator Keysight	11708A	MY55260015	Oct. 17, 2017	Oct. 16, 2019
*Zero-Bias Detector (50~75GHz) Vdi	WR15ZBD	WR15R5 1-30	Oct. 17, 2017	Oct. 16, 2019
4CH Infiniivision Oscilloscope Keysight	DSOX6004A	MY55190202	Dec. 13, 2017	Dec. 12, 2018
*WR15CH Conical Horn Keysight	WR15CH	WR15CH-01	Oct. 17, 2017	Oct. 16, 2019
*WR10CH Conical Horn Keysight	WR10CH	WR10CH-01	Oct. 17, 2017	Oct. 16, 2019
*Millimeter-Wave Signal Generator Frequency Extension Module (50~75 GHz) Keysight	E8257DV15	US54250106	Oct. 17, 2017	Oct. 16, 2019
PSG analog signal generator Keysight	E8257D	MY53401987	June 26, 2018	June 25, 2019
Antenna Tower & Turn Table CT	NA	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 3.
4. The CANADA Site Registration No. is 20331-1
6. Tested Date: Aug. 31, 2018

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

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

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

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

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

NOTE:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

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

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. Extrapolate the maximum measured field strength to the field strength at the distance specified by the limit, and then convert to the field strength in V/m.

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

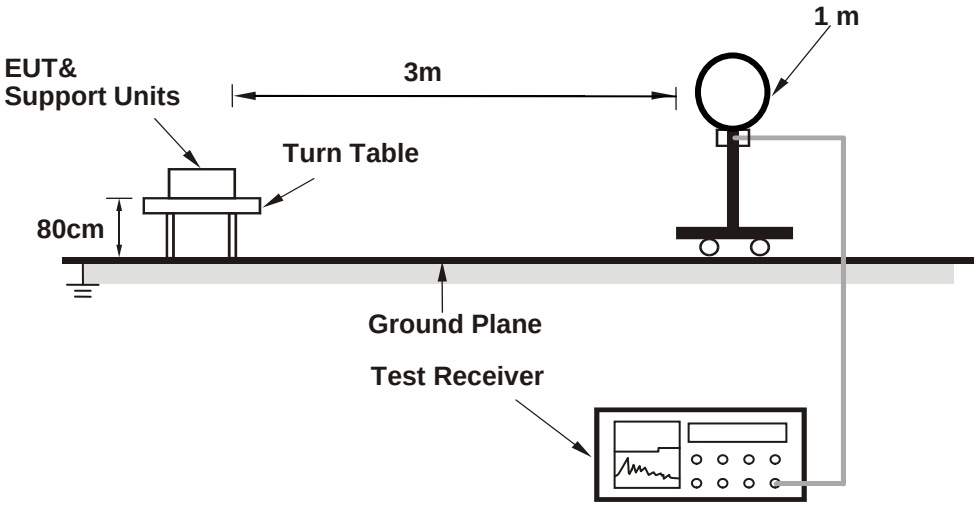
m. Repeat the preceding sequence for every emission observed in the frequency band under investigation.

4.1.4 Deviation from Test Standard

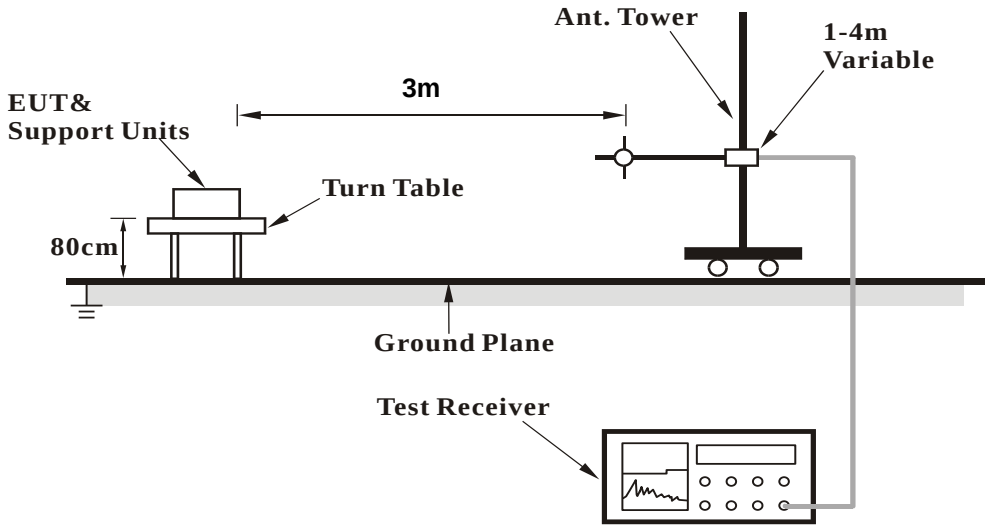
No deviation.

4.1.5 Test Setup

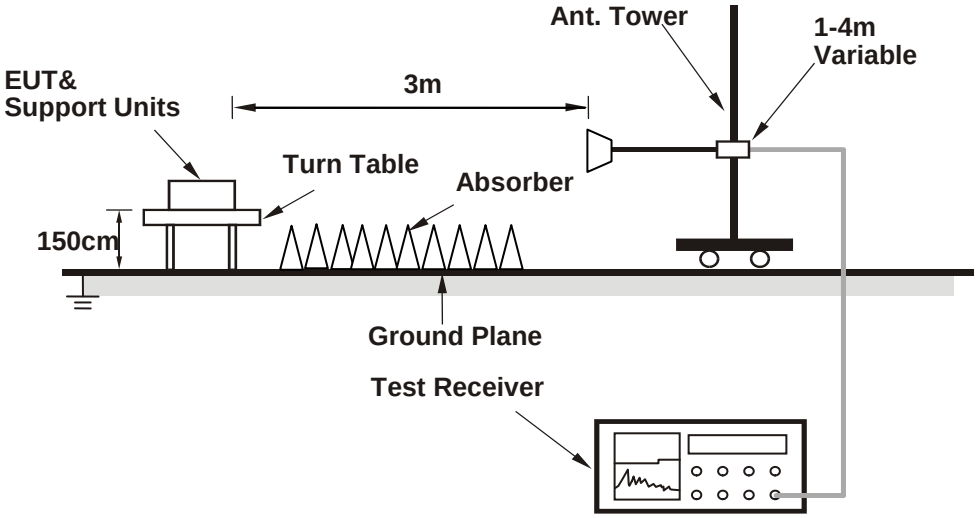
For Radiated emission below 30MHz



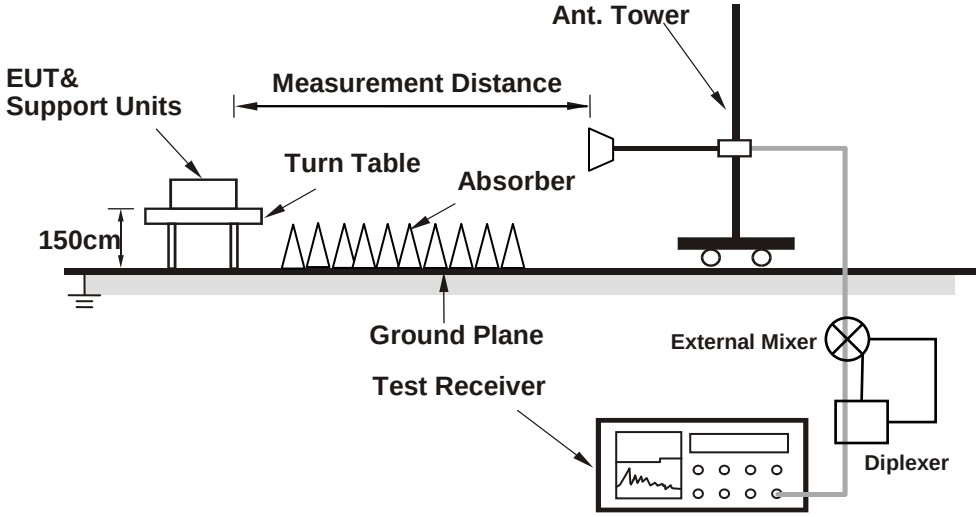
For Radiated emission 30MHz to 1GHz



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. Controlling software has been activated to set the EUT on specific status.

4.1.7 Test Results

Channel Plan A

Above 1GHz Data:

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	2375.90	48.5 PK	74.0	-25.5	1.39 H	240	51.1	-2.6
2	2375.90	39.1 AV	54.0	-14.9	1.39 H	240	41.7	-2.6
3	3563.70	48.1 PK	74.0	-25.9	1.47 H	158	48.9	-0.8
4	3563.70	38.5 AV	54.0	-15.5	1.47 H	158	39.3	-0.8
5	3711.90	51.1 PK	74.0	-22.9	1.35 H	279	51.6	-0.5
6	3711.90	41.5 AV	54.0	-12.5	1.35 H	279	42.0	-0.5
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	2375.90	45.2 PK	74.0	-28.8	1.61 V	127	47.8	-2.6
2	2375.90	34.1 AV	54.0	-19.9	1.61 V	127	36.7	-2.6
3	3563.70	49.2 PK	74.0	-24.8	1.08 V	360	50.0	-0.8
4	3563.70	39.5 AV	54.0	-14.5	1.08 V	360	40.3	-0.8
5	3711.90	51.5 PK	74.0	-22.5	1.55 V	30	52.0	-0.5
6	3711.90	41.6 AV	54.0	-12.4	1.55 V	30	42.1	-0.5

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

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

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	24194.12	45.6 PK	74.0	-28.4	2.06 H	136	64.5	-18.9
2	24194.12	34.8 AV	54.0	-19.2	2.06 H	136	53.7	-18.9
3	29602.83	44.6 PK	74.0	-29.4	1.63 H	218	63.2	-18.6
4	29602.83	36.8 AV	54.0	-17.2	1.63 H	218	55.4	-18.6
5	34491.77	45.6 PK	74.0	-28.4	1.94 H	211	64.8	-19.2
6	34491.77	35.2 AV	54.0	-18.8	1.94 H	211	54.4	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21113.20	44.9 PK	74.0	-29.1	2.18 V	137	64.9	-20.0
2	21113.20	34.1 AV	54.0	-19.9	2.18 V	137	54.1	-20.0
3	27245.40	44.8 PK	74.0	-29.2	1.73 V	219	62.6	-17.8
4	27245.40	37.2 AV	54.0	-16.8	1.73 V	219	55.0	-17.8
5	31282.00	46.1 PK	74.0	-27.9	1.93 V	213	64.0	-17.9
6	31282.00	35.9 AV	54.0	-18.1	1.93 V	213	53.8	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.67	-44.43	-68.43	24	0.032 PK	90
2	120.32	-33.63	-57.23	23.6	0.383 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.41	-44.12	-68.12	24	0.034 PK	90
2	120.32	-33.52	-57.12	23.6	0.393 PK	90

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	2376.05	47.7 PK	74.0	-26.3	1.41 H	271	50.3	-2.6
2	2376.05	38.4 AV	54.0	-15.6	1.41 H	271	41.0	-2.6
3	3564.00	48.0 PK	74.0	-26.0	1.49 H	182	48.8	-0.8
4	3564.00	38.4 AV	54.0	-15.6	1.49 H	182	39.2	-0.8
5	3712.53	51.6 PK	74.0	-22.4	1.42 H	290	52.1	-0.5
6	3712.53	42.2 AV	54.0	-11.8	1.42 H	290	42.7	-0.5
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	2376.05	44.1 PK	74.0	-29.9	1.68 V	112	46.7	-2.6
2	2376.05	32.9 AV	54.0	-21.1	1.68 V	112	35.5	-2.6
3	3564.00	50.5 PK	74.0	-23.5	1.17 V	360	51.3	-0.8
4	3564.00	39.9 AV	54.0	-14.1	1.17 V	360	40.7	-0.8
5	3712.53	52.0 PK	74.0	-22.0	1.43 V	14	52.5	-0.5
6	3712.53	42.0 AV	54.0	-12.0	1.43 V	14	42.5	-0.5

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

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

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	24193.70	44.6 PK	74.0	-29.4	2.01 H	155	63.5	-18.9
2	24193.70	34.1 AV	54.0	-19.9	2.01 H	155	53.0	-18.9
3	29602.80	43.9 PK	74.0	-30.1	1.66 H	237	62.5	-18.6
4	29602.80	36.8 AV	54.0	-17.2	1.66 H	237	55.4	-18.6
5	34491.20	45.7 PK	74.0	-28.3	1.97 H	209	64.9	-19.2
6	34491.20	35.5 AV	54.0	-18.5	1.97 H	209	54.7	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21112.60	43.6 PK	74.0	-30.4	2.17 V	145	63.6	-20.0
2	21112.60	33.2 AV	54.0	-20.8	2.17 V	145	53.2	-20.0
3	27245.70	44.9 PK	74.0	-29.1	1.74 V	240	62.7	-17.8
4	27245.70	37.2 AV	54.0	-16.8	1.74 V	240	55.0	-17.8
5	31283.10	45.1 PK	74.0	-28.9	1.88 V	185	63.0	-17.9
6	31283.10	35.3 AV	54.0	-18.7	1.88 V	185	53.2	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.87	-44.66	-68.66	24	0.03 PK	90
2	120.96	-33.51	-57.11	23.6	0.394 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.33	-44.12	-68.12	24	0.034 PK	90
2	120.96	-33.43	-57.03	23.6	0.401 PK	90

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	2376.30	47.4 PK	74.0	-26.6	1.50 H	299	50.0	-2.6
2	2376.30	38.0 AV	54.0	-16.0	1.50 H	299	40.6	-2.6
3	3563.90	48.5 PK	74.0	-25.5	1.47 H	180	49.3	-0.8
4	3563.90	39.1 AV	54.0	-14.9	1.47 H	180	39.9	-0.8
5	3713.20	50.6 PK	74.0	-23.4	1.33 H	297	51.1	-0.5
6	3713.20	41.6 AV	54.0	-12.4	1.33 H	297	42.1	-0.5
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	2376.30	43.9 PK	74.0	-30.1	1.56 V	106	46.5	-2.6
2	2376.30	33.2 AV	54.0	-20.8	1.56 V	106	35.8	-2.6
3	3563.90	50.0 PK	74.0	-24.0	1.00 V	360	50.8	-0.8
4	3563.90	39.3 AV	54.0	-14.7	1.00 V	360	40.1	-0.8
5	3713.20	51.4 PK	74.0	-22.6	1.50 V	12	51.9	-0.5
6	3713.20	41.5 AV	54.0	-12.5	1.50 V	12	42.0	-0.5

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

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

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	24193.90	45.2 PK	74.0	-28.8	2.07 H	139	64.1	-18.9
2	24193.90	34.2 AV	54.0	-19.8	2.07 H	139	53.1	-18.9
3	29602.50	43.5 PK	74.0	-30.5	1.69 H	250	62.1	-18.6
4	29602.50	36.3 AV	54.0	-17.7	1.69 H	250	54.9	-18.6
5	34492.00	45.5 PK	74.0	-28.5	1.96 H	223	64.7	-19.2
6	34492.00	35.2 AV	54.0	-18.8	1.96 H	223	54.4	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21113.00	44.7 PK	74.0	-29.3	2.07 V	152	64.7	-20.0
2	21113.00	33.9 AV	54.0	-20.1	2.07 V	152	53.9	-20.0
3	27245.90	45.5 PK	74.0	-28.5	1.67 V	245	63.3	-17.8
4	27245.90	37.9 AV	54.0	-16.1	1.67 V	245	55.7	-17.8
5	31283.00	45.2 PK	74.0	-28.8	1.97 V	185	63.1	-17.9
6	31283.00	35.3 AV	54.0	-18.7	1.97 V	185	53.2	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.24	-44.34	-68.34	24	0.033 PK	90
2	121.6	-33.51	-57.11	23.6	0.394 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	43.57	-44.27	-68.27	24	0.033 PK	90
2	121.6	-33.64	-57.24	23.6	0.382 PK	90

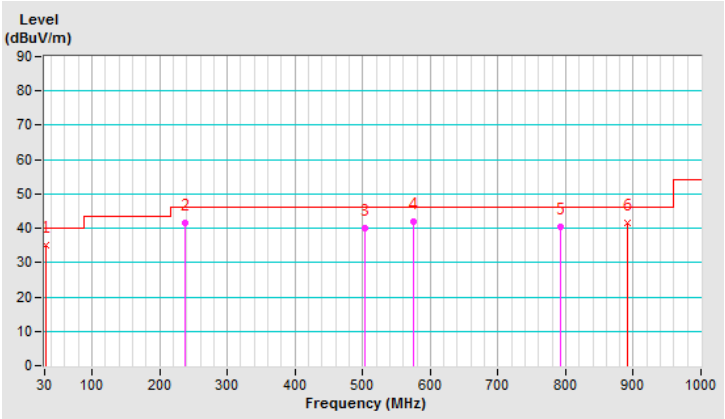
Below 1GHz Data:

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	32.40	35.2 QP	40.0	-4.8	1.49 H	184	44.2	-9.0
2	237.35	41.4 QP	46.0	-4.6	1.50 H	302	50.8	-9.4
3	503.60	40.1 QP	46.0	-5.9	2.00 H	303	42.0	-1.9
4	575.72	42.0 QP	46.0	-4.0	2.00 H	291	42.4	-0.4
5	791.79	40.4 QP	46.0	-5.6	2.00 H	302	36.7	3.7
6	891.01	41.4 QP	46.0	-4.6	1.00 H	311	36.6	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

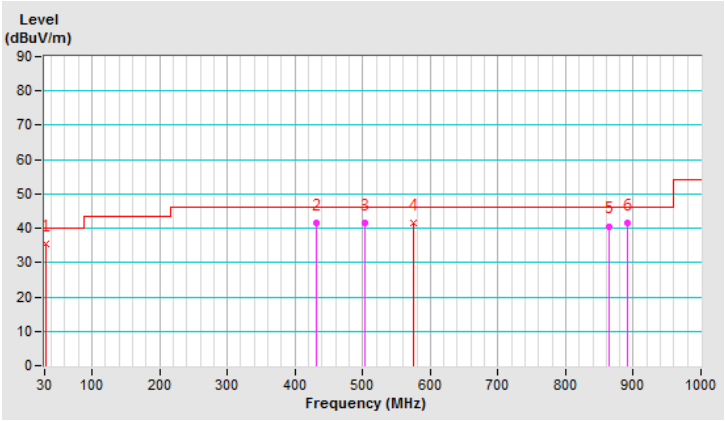


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.32	35.4 QP	40.0	-4.6	1.00 V	302	44.4	-9.0
2	431.87	41.4 QP	46.0	-4.6	1.00 V	153	44.6	-3.2
3	503.85	41.4 QP	46.0	-4.6	1.00 V	263	43.3	-1.9
4	575.74	41.5 QP	46.0	-4.5	1.00 V	303	41.9	-0.4
5	863.93	40.6 QP	46.0	-5.4	1.50 V	179	36.2	4.4
6	891.15	41.4 QP	46.0	-4.6	1.00 V	302	36.6	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

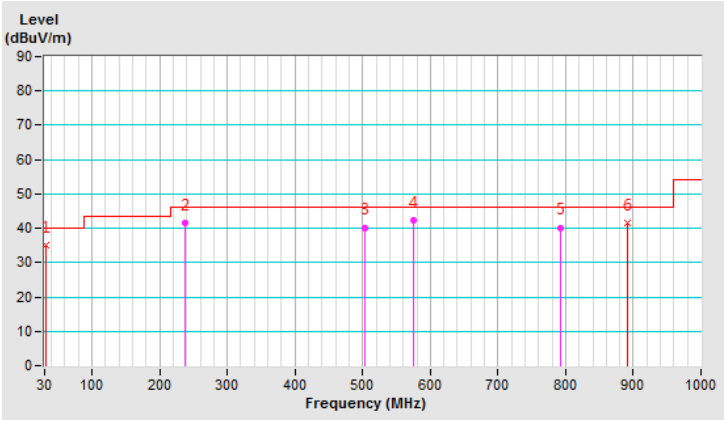


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.40	35.1 QP	40.0	-4.9	1.58 H	331	44.1	-9.0
2	237.35	41.6 QP	46.0	-4.4	1.00 H	106	51.0	-9.4
3	503.62	40.2 QP	46.0	-5.8	1.50 H	274	42.1	-1.9
4	**575.72**	**42.3 QP**	**46.0**	**-3.7**	**1.50 H**	**271**	**42.7**	**-0.4**
5	791.80	40.2 QP	46.0	-5.8	2.13 H	164	36.5	3.7
6	891.01	41.6 QP	46.0	-4.4	1.50 H	293	36.8	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

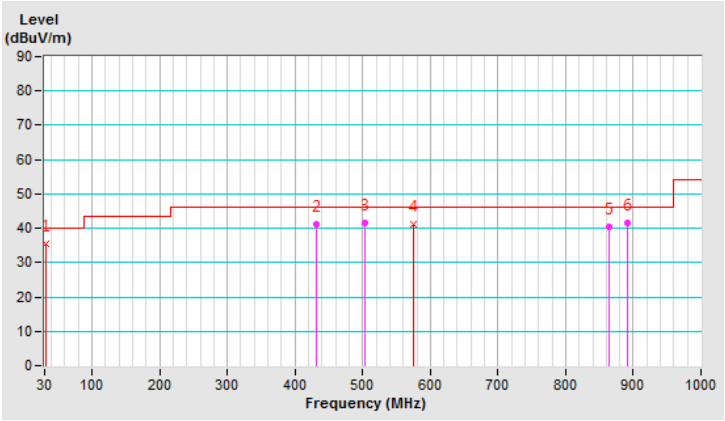


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.33	35.4 QP	40.0	-4.6	1.00 V	273	44.4	-9.0
2	431.87	41.1 QP	46.0	-4.9	1.00 V	266	44.3	-3.2
3	503.85	41.5 QP	46.0	-4.5	1.00 V	197	43.4	-1.9
4	575.74	41.3 QP	46.0	-4.7	1.00 V	332	41.7	-0.4
5	863.93	40.5 QP	46.0	-5.5	1.50 V	318	36.1	4.4
6	891.14	41.6 QP	46.0	-4.4	1.00 V	261	36.8	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

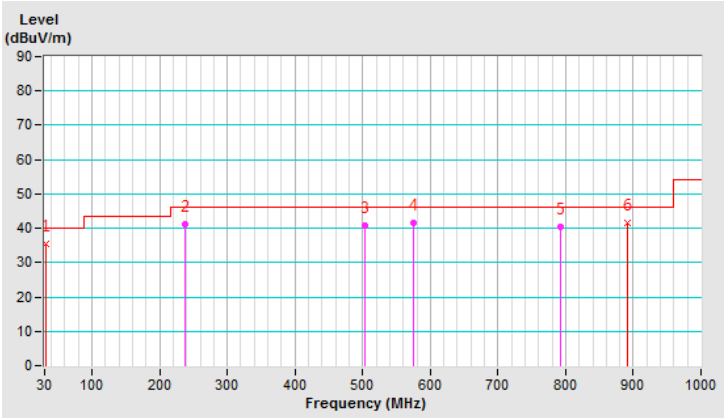


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.40	35.3 QP	40.0	-4.7	1.53 H	201	44.3	-9.0
2	237.35	41.3 QP	46.0	-4.7	1.50 H	269	50.7	-9.4
3	503.62	40.8 QP	46.0	-5.2	1.50 H	112	42.7	-1.9
4	575.72	41.7 QP	46.0	-4.3	1.50 H	302	42.1	-0.4
5	791.79	40.3 QP	46.0	-5.7	1.50 H	263	36.6	3.7
6	891.01	41.4 QP	46.0	-4.6	1.24 H	302	36.6	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

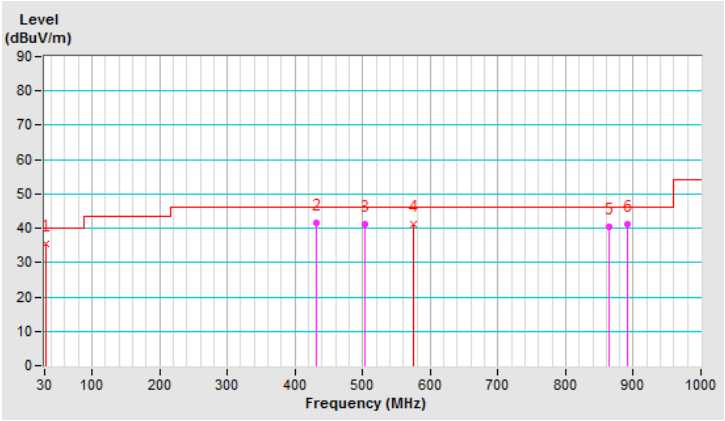


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	32.34	35.5 QP	40.0	-4.5	1.00 V	182	44.5	-9.0
2	431.85	41.6 QP	46.0	-4.4	1.08 V	241	44.8	-3.2
3	503.85	41.2 QP	46.0	-4.8	1.10 V	118	43.1	-1.9
4	575.74	41.3 QP	46.0	-4.7	1.00 V	206	41.7	-0.4
5	863.92	40.5 QP	46.0	-5.5	1.46 V	331	36.1	4.4
6	891.15	41.1 QP	46.0	-4.9	1.00 V	279	36.3	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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 Plan B

Above 1GHz Data:

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	2376.30	48.1 PK	74.0	-25.9	1.39 H	243	50.7	-2.6
2	2376.30	38.9 AV	54.0	-15.1	1.39 H	243	41.5	-2.6
3	3563.90	48.9 PK	74.0	-25.1	1.49 H	144	49.7	-0.8
4	3563.90	39.0 AV	54.0	-15.0	1.49 H	144	39.8	-0.8
5	3713.20	51.5 PK	74.0	-22.5	1.32 H	286	52.0	-0.5
6	3713.20	41.9 AV	54.0	-12.1	1.32 H	286	42.4	-0.5
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	2376.30	44.6 PK	74.0	-29.4	1.59 V	124	47.2	-2.6
2	2376.30	33.6 AV	54.0	-20.4	1.59 V	124	36.2	-2.6
3	3563.90	49.4 PK	74.0	-24.6	1.04 V	360	50.2	-0.8
4	3563.90	39.5 AV	54.0	-14.5	1.04 V	360	40.3	-0.8
5	3713.20	51.2 PK	74.0	-22.8	1.53 V	26	51.7	-0.5
6	3713.20	41.3 AV	54.0	-12.7	1.53 V	26	41.8	-0.5

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

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

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	24194.12	45.2 PK	74.0	-28.8	2.11 H	130	64.1	-18.9
2	24194.12	34.5 AV	54.0	-19.5	2.11 H	130	53.4	-18.9
3	29602.83	44.7 PK	74.0	-29.3	1.65 H	227	63.3	-18.6
4	29602.83	37.2 AV	54.0	-16.8	1.65 H	227	55.8	-18.6
5	34491.77	45.8 PK	74.0	-28.2	1.98 H	198	65.0	-19.2
6	34491.77	35.6 AV	54.0	-18.4	1.98 H	198	54.8	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21113.30	44.9 PK	74.0	-29.1	2.14 V	137	64.9	-20.0
2	21113.30	34.1 AV	54.0	-19.9	2.14 V	137	54.1	-20.0
3	27246.00	45.0 PK	74.0	-29.0	1.66 V	236	62.8	-17.8
4	27246.00	37.3 AV	54.0	-16.7	1.66 V	236	55.1	-17.8
5	31283.00	46.0 PK	74.0	-28.0	1.97 V	186	63.9	-17.9
6	31283.00	35.9 AV	54.0	-18.1	1.97 V	186	53.8	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.21	-43.51	-67.51	24	0.039 PK	90
2	124.64	-33.63	-57.23	23.6	0.383 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.56	-44.15	-68.15	24	0.034 PK	90
2	124.64	-33.49	-57.09	23.6	0.396 PK	90

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	2377.00	47.8 PK	74.0	-26.2	1.46 H	259	50.4	-2.6
2	2377.00	38.5 AV	54.0	-15.5	1.46 H	259	41.1	-2.6
3	3563.50	48.7 PK	74.0	-25.3	1.49 H	172	49.5	-0.8
4	3563.50	38.9 AV	54.0	-15.1	1.49 H	172	39.7	-0.8
5	3713.60	50.9 PK	74.0	-23.1	1.37 H	292	51.4	-0.5
6	3713.60	41.8 AV	54.0	-12.2	1.37 H	292	42.3	-0.5
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	2377.00	44.1 PK	74.0	-29.9	1.62 V	114	46.7	-2.6
2	2377.00	33.1 AV	54.0	-20.9	1.62 V	114	35.7	-2.6
3	3563.50	50.0 PK	74.0	-24.0	1.11 V	360	50.8	-0.8
4	3563.50	39.6 AV	54.0	-14.4	1.11 V	360	40.4	-0.8
5	3713.60	51.9 PK	74.0	-22.1	1.48 V	11	52.4	-0.5
6	3713.60	42.2 AV	54.0	-11.8	1.48 V	11	42.7	-0.5

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

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

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	24193.70	44.9 PK	74.0	-29.1	2.06 H	144	63.8	-18.9
2	24193.70	34.2 AV	54.0	-19.8	2.06 H	144	53.1	-18.9
3	29602.80	44.2 PK	74.0	-29.8	1.64 H	239	62.8	-18.6
4	29602.80	36.8 AV	54.0	-17.2	1.64 H	239	55.4	-18.6
5	34491.20	45.3 PK	74.0	-28.7	1.97 H	212	64.5	-19.2
6	34491.20	35.1 AV	54.0	-18.9	1.97 H	212	54.3	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21112.70	44.3 PK	74.0	-29.7	2.15 V	144	64.3	-20.0
2	21112.70	33.7 AV	54.0	-20.3	2.15 V	144	53.7	-20.0
3	27245.70	45.3 PK	74.0	-28.7	1.68 V	246	63.1	-17.8
4	27245.70	37.5 AV	54.0	-16.5	1.68 V	246	55.3	-17.8
5	31283.20	45.4 PK	74.0	-28.6	1.92 V	196	63.3	-17.9
6	31283.20	35.5 AV	54.0	-18.5	1.92 V	196	53.4	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.21	-43.43	-67.43	24	0.04 PK	90
2	125.28	-33.52	-57.12	23.6	0.393 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.35	-44.11	-68.11	24	0.034 PK	90
2	125.28	-34.23	-57.83	23.6	0.334 PK	90

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	2377.00	47.3 PK	74.0	-26.7	1.44 H	287	49.9	-2.6
2	2377.00	38.0 AV	54.0	-16.0	1.44 H	287	40.6	-2.6
3	3564.00	48.9 PK	74.0	-25.1	1.49 H	165	49.7	-0.8
4	3564.00	39.4 AV	54.0	-14.6	1.49 H	165	40.2	-0.8
5	3713.80	51.1 PK	74.0	-22.9	1.37 H	291	51.6	-0.5
6	3713.80	41.9 AV	54.0	-12.1	1.37 H	291	42.4	-0.5
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	2377.00	43.6 PK	74.0	-30.4	1.57 V	118	46.2	-2.6
2	2377.00	32.9 AV	54.0	-21.1	1.57 V	118	35.5	-2.6
3	3564.00	50.2 PK	74.0	-23.8	1.00 V	360	51.0	-0.8
4	3564.00	39.6 AV	54.0	-14.4	1.00 V	360	40.4	-0.8
5	3713.80	51.1 PK	74.0	-22.9	1.52 V	20	51.6	-0.5
6	3713.80	41.3 AV	54.0	-12.7	1.52 V	20	41.8	-0.5

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

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

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	24193.90	45.1 PK	74.0	-28.9	2.12 H	132	64.0	-18.9
2	24193.90	34.2 AV	54.0	-19.8	2.12 H	132	53.1	-18.9
3	29602.50	44.0 PK	74.0	-30.0	1.68 H	247	62.6	-18.6
4	29602.50	36.6 AV	54.0	-17.4	1.68 H	247	55.2	-18.6
5	34492.00	45.6 PK	74.0	-28.4	1.94 H	221	64.8	-19.2
6	34492.00	35.3 AV	54.0	-18.7	1.94 H	221	54.5	-19.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	21113.10	45.0 PK	74.0	-29.0	2.09 V	139	65.0	-20.0
2	21113.10	34.2 AV	54.0	-19.8	2.09 V	139	54.2	-20.0
3	27246.00	45.3 PK	74.0	-28.7	1.62 V	239	63.1	-17.8
4	27246.00	37.5 AV	54.0	-16.5	1.62 V	239	55.3	-17.8
5	31283.00	45.6 PK	74.0	-28.4	2.03 V	176	63.5	-17.9
6	31283.00	35.7 AV	54.0	-18.3	2.03 V	176	53.6	-17.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.26	-43.18	-67.18	24	0.043 PK	90
2	125.92	-33.74	-57.34	23.6	0.374 PK	90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						
NO.	Frequency (GHz)	EIRP Level (dBm)	Reading Value (dBm)	Transmit Antenna Gain (dBi)	Power Density (pW/cm^2)	Power Density Limit (pW/cm^2)
1	48.33	-44.26	-68.26	24	0.033 PK	90
2	125.92	-33.66	-57.26	23.6	0.381 PK	90

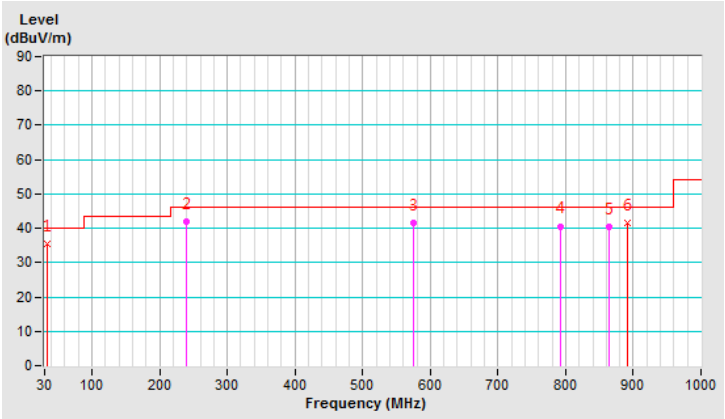
Below 1GHz Data:

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	33.09	35.3 QP	40.0	-4.7	1.79 H	342	44.3	-9.0
2	239.61	41.8 QP	46.0	-4.2	1.50 H	75	51.0	-9.2
3	575.72	41.6 QP	46.0	-4.4	1.50 H	143	42.0	-0.4
4	791.84	40.6 QP	46.0	-5.4	2.50 H	303	36.9	3.7
5	864.01	40.3 QP	46.0	-5.7	1.50 H	116	35.9	4.4
6	891.00	41.5 QP	46.0	-4.5	2.50 H	269	36.7	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

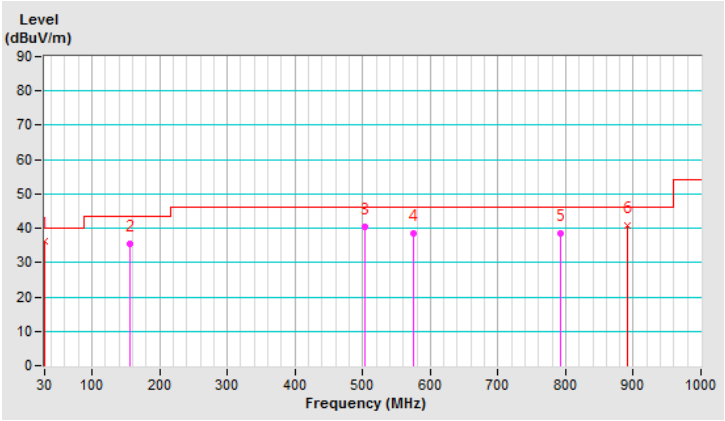


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	30.59	36.1 QP	40.0	-3.9	1.00 V	172	45.2	-9.1
2	155.57	35.6 QP	43.5	-7.9	1.00 V	302	43.2	-7.6
3	503.41	40.3 QP	46.0	-5.7	1.00 V	224	42.2	-1.9
4	575.46	38.6 QP	46.0	-7.4	1.00 V	306	39.1	-0.5
5	791.67	38.5 QP	46.0	-7.5	2.00 V	174	34.9	3.6
6	891.18	40.7 QP	46.0	-5.3	1.50 V	331	35.9	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

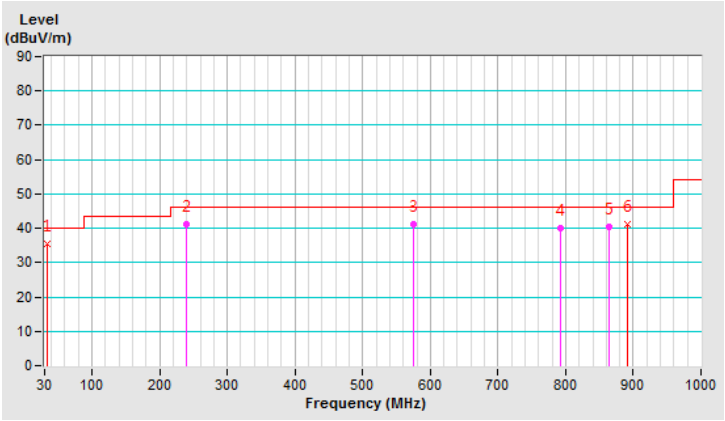


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	33.09	35.4 QP	40.0	-4.6	1.50 H	301	44.4	-9.0
2	239.62	41.3 QP	46.0	-4.7	1.00 H	261	50.5	-9.2
3	575.72	41.3 QP	46.0	-4.7	1.56 H	172	41.7	-0.4
4	791.84	40.1 QP	46.0	-5.9	2.50 H	131	36.4	3.7
5	864.01	40.4 QP	46.0	-5.6	1.50 H	305	36.0	4.4
6	891.00	41.1 QP	46.0	-4.9	1.50 H	308	36.3	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

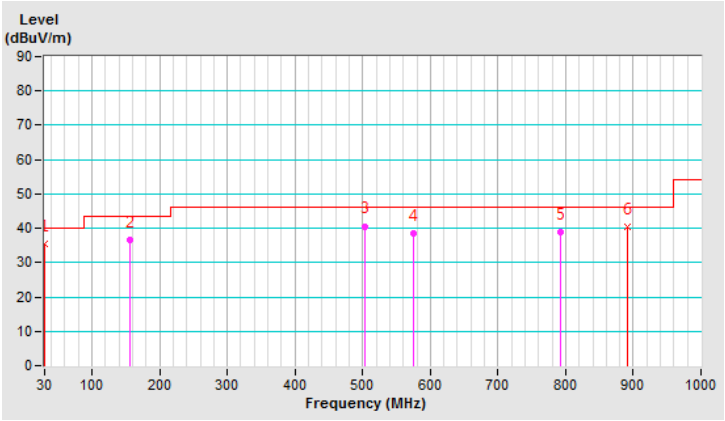


CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	30.60	35.6 QP	40.0	-4.4	1.00 V	231	44.7	-9.1
2	155.57	36.6 QP	43.5	-6.9	1.00 V	311	44.2	-7.6
3	503.41	40.6 QP	46.0	-5.4	1.00 V	261	42.5	-1.9
4	575.45	38.6 QP	46.0	-7.4	1.00 V	172	39.1	-0.5
5	791.67	38.8 QP	46.0	-7.2	1.50 V	206	35.2	3.6
6	891.18	40.3 QP	46.0	-5.7	1.50 V	115	35.5	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

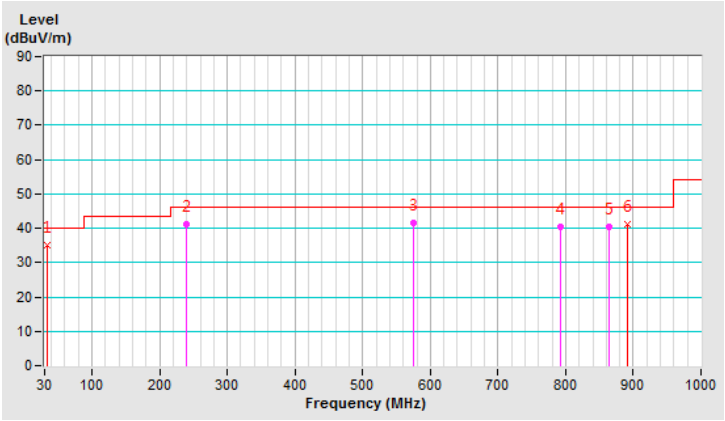


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	33.10	35.2 QP	40.0	-4.8	1.46 H	332	44.2	-9.0
2	239.62	41.3 QP	46.0	-4.7	1.19 H	143	50.5	-9.2
3	575.72	41.5 QP	46.0	-4.5	1.49 H	281	41.9	-0.4
4	791.84	40.3 QP	46.0	-5.7	2.51 H	302	36.6	3.7
5	864.01	40.4 QP	46.0	-5.6	1.55 H	102	36.0	4.4
6	891.00	41.3 QP	46.0	-4.7	1.50 H	179	36.5	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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.

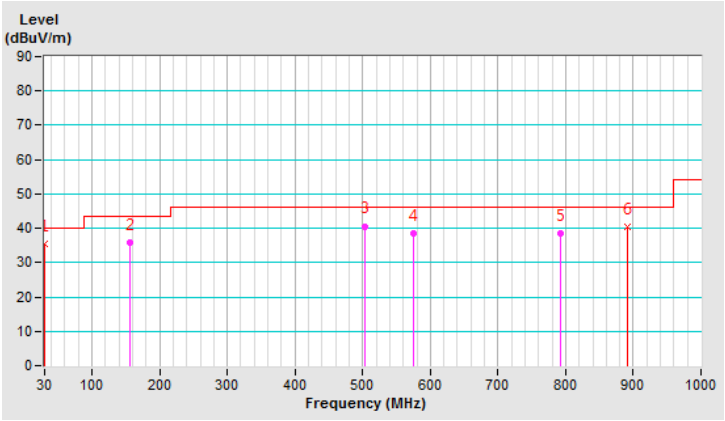


CHANNEL	TX Channel 3	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	30.61	35.5 QP	40.0	-4.5	1.06 V	224	44.6	-9.1
2	155.56	35.8 QP	43.5	-7.7	1.00 V	231	43.4	-7.6
3	503.40	40.6 QP	46.0	-5.4	1.00 V	304	42.5	-1.9
4	575.45	38.6 QP	46.0	-7.4	1.03 V	289	39.1	-0.5
5	791.67	38.6 QP	46.0	-7.4	1.50 V	264	35.0	3.6
6	891.18	40.5 QP	46.0	-5.5	1.50 V	302	35.7	4.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The 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	Nov. 01, 2017	Oct. 31, 2018
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Nov. 15, 2017	Nov. 14, 2018
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 04, 2018	June 03, 2019
50 ohms Terminator	N/A	EMC-02	Sep. 22, 2017	Sep. 21, 2018
RF Cable	5D-FB	COCCAB-001	Sep. 29, 2017	Sep. 28, 2018
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 16, 2018	Mar. 15, 2019
Software BVADT	BVADT_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. 29, 2018

4.2.3 Test Procedures

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

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

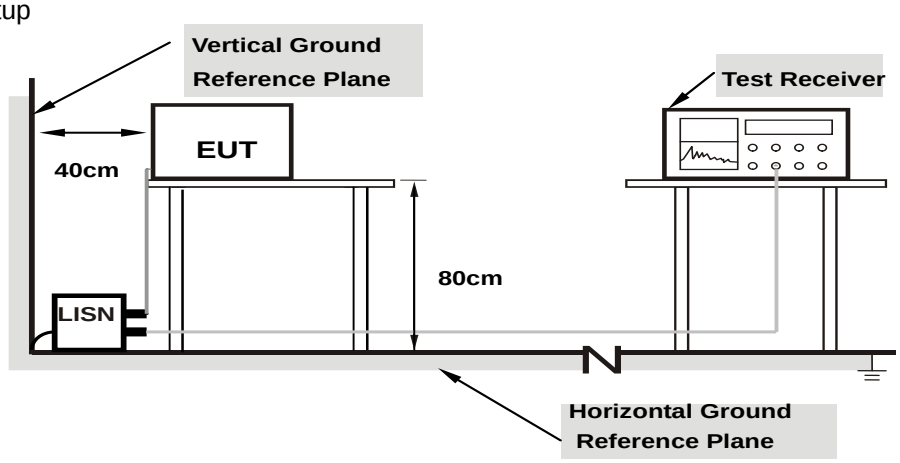
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

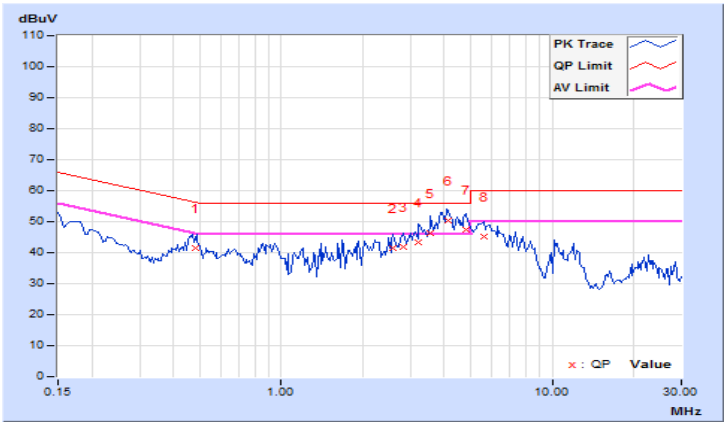
4.2.7 Test Results

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

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	0.48081	10.13	31.17	25.89	41.30	36.02	56.33	46.33	-15.03	-10.31
2	2.58984	10.26	31.20	19.05	41.46	29.31	56.00	46.00	-14.54	-16.69
3	2.83594	10.27	31.69	20.99	41.96	31.26	56.00	46.00	-14.04	-14.74
4	3.21094	10.29	32.95	22.57	43.24	32.86	56.00	46.00	-12.76	-13.14
5	3.56250	10.31	36.16	25.43	46.47	35.74	56.00	46.00	-9.53	-10.26
6	4.13125	10.35	40.09	29.41	50.44	39.76	56.00	46.00	-5.56	-6.24
7	4.78906	10.39	36.96	25.36	47.35	35.75	56.00	46.00	-8.65	-10.25

REMARKS:

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

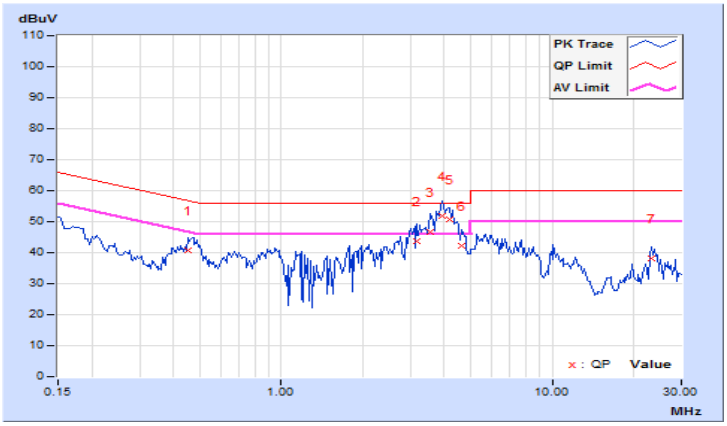


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	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	0.45469	10.02	30.66	18.77	40.68	28.79	56.79	46.79	-16.11	-18.00
2	3.16016	10.15	33.41	20.40	43.56	30.55	56.00	46.00	-12.44	-15.45
3	3.54297	10.17	36.42	23.34	46.59	33.51	56.00	46.00	-9.41	-12.49
4	**3.92172**	**10.19**	**41.51**	**27.48**	**51.70**	**37.67**	**56.00**	**46.00**	**-4.30**	**-8.33**
5	4.20703	10.20	40.41	26.66	50.61	36.86	56.00	46.00	-5.39	-9.14
6	4.64844	10.23	31.92	21.30	42.15	31.53	56.00	46.00	-13.85	-14.47
7	23.31250	11.20	26.84	13.63	38.04	24.83	60.00	50.00	-21.96	-25.17

REMARKS:

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

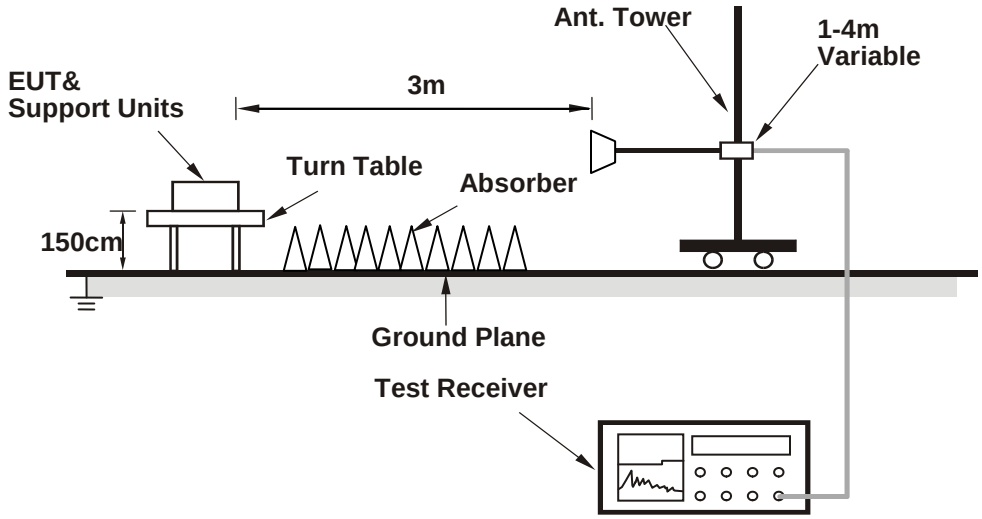


4.3 6dB Bandwidth Measurement

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

The spectrum analyzer and external mixer are set up to measure the radiated output of the transmitter.

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.

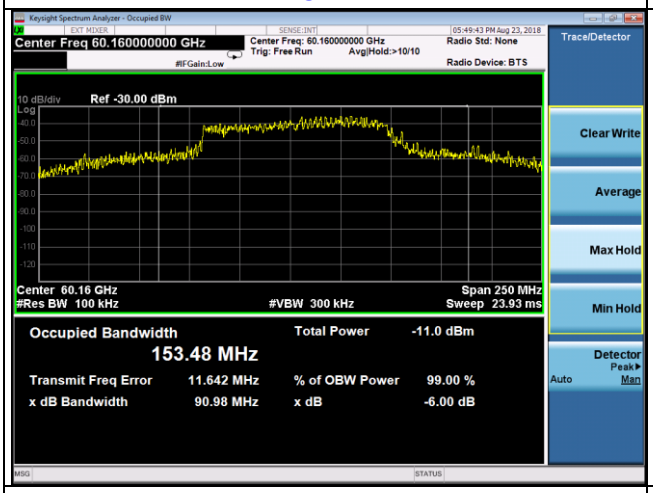
4.3.7 Test Result

Channel Plan A

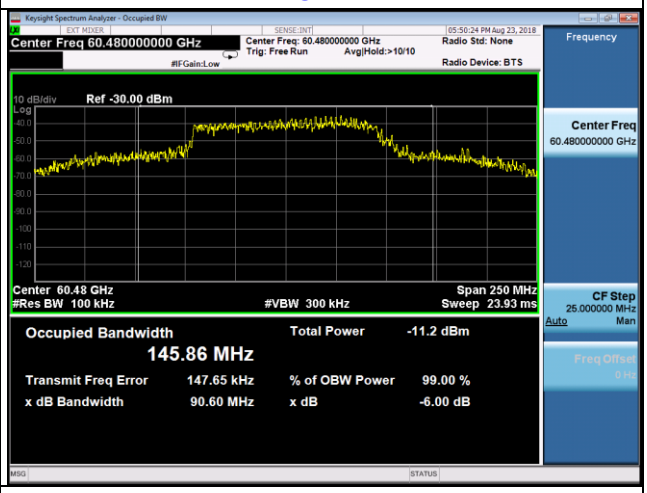
Channel	Frequency (GHz)	6dB Bandwidth (MHz)
1	60.16	90.98
2	60.48	90.6
3	60.8	90.81

Spectrum Plot of Worst Value

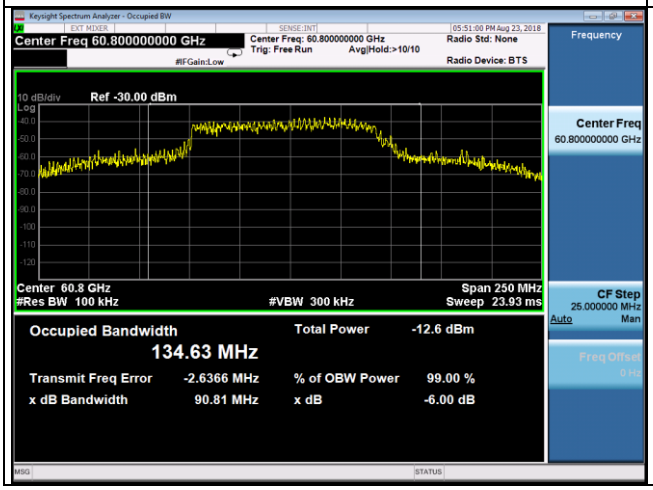
CH1



CH2



CH3

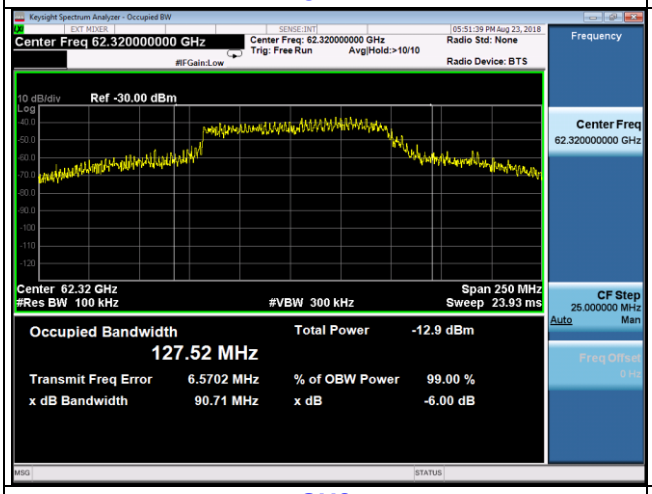


Channel Plan B

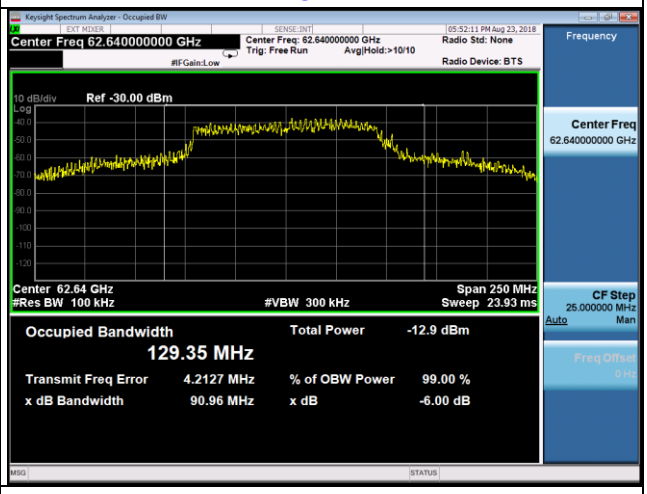
Channel	Frequency (GHz)	6dB Bandwidth (MHz)
1	62.32	90.71
2	62.64	90.96
3	62.96	90.76

Spectrum Plot of Worst Value

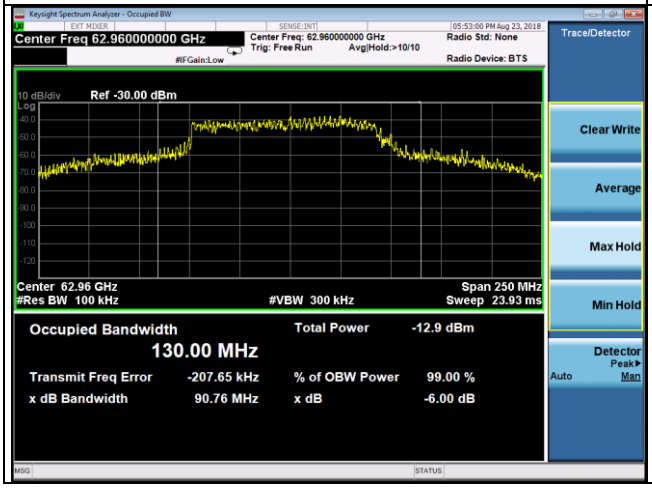
CH1



CH2



CH3



4.4 Output Power Measurement

4.4.1 Limits of Output Power Measurement

15.255 (c) & (e)

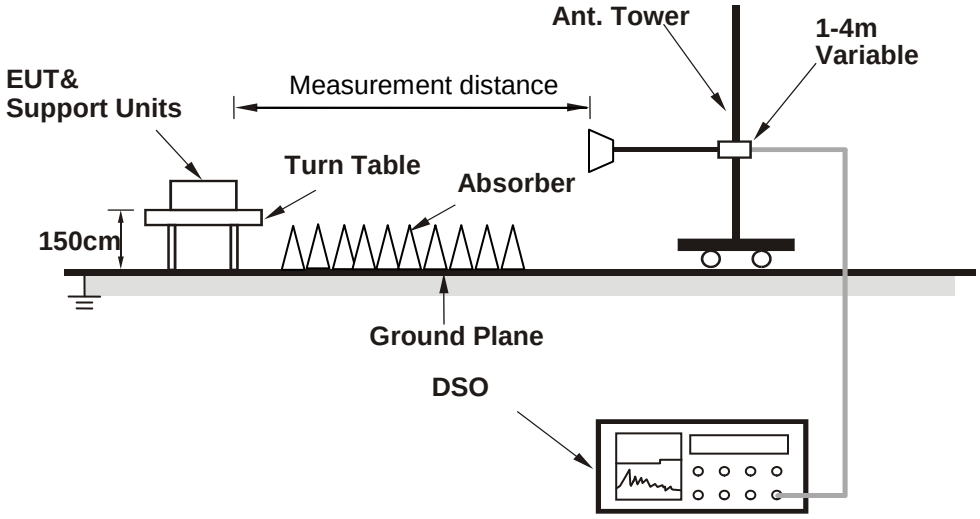
Output Power (EIRP)				
Applicaple	**Type**		**Peak Power**	**Average Power**
V	Within the 57-71 GHz band (Other than fixed field disturbance sensors and short-range devices)	Other than fixed point to point transmitters located outdoors	43dBm	40dBm
		Fixed point-to-point transmitters located outdoors	85dBm (*Note 1)	82dBm (*Note 2)
	Fixed field disturbance sensors (61-61.5GHz)	Occupy 500 MHz or less of bandwidth	43dBm (*Note 3)	40dBm (*Note 3)
	Fixed field disturbance sensors	Other than occupy 500 MHz or less of bandwidth and that are contained wholly within the frequency band 61.0-61.5 GHz	10dBm	-
	short-range devices for interactive motion sensing	-		

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**
	Fixed field disturbance sensors (Exclude 61-61.5GHz)	-	≦ 0.1mW
V	Other	Other	500mW
V		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 57-64 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 paragraph (e), 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)
62.96	0.02	0.00476	0.168

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

Channel Plan A

Channel	Frequency (GHz)	EIRP (dBm)	Max. Antenna Gain (dBi)	S.G Output Value (dBm)	Conducted Output Power (dBm)	Conducted Output Power (mW)	EIRP Limit (dBm)	Conducted Output Power limit (mW)	Pass /Fail
1	60.16	28.94	18	7.94	10.94	12.42	43	454.9	Pass
2	60.48	26.60	18	5.60	8.6	7.24	43	453	Pass
3	60.80	25.03	18	4.03	7.03	5.05	43	454.05	Pass

Note: The 6dB bandwidth is less than 100MHz, therefore conducted power limit = 500mW x (6dB bandwidth /100).

Channel Plan B

Channel	Frequency (GHz)	EIRP (dBm)	Max. Antenna Gain (dBi)	S.G Output Value (dBm)	Conducted Output Power (dBm)	Conducted Output Power (mW)	EIRP Limit (dBm)	Conducted Output Power limit (mW)	Pass /Fail
1	62.32	24.36	18	3.36	6.36	4.33	43	453.55	Pass
2	62.64	24.76	18	3.76	6.76	4.74	43	454.8	Pass
3	62.96	25.02	18	4.02	7.02	5.04	43	453.8	Pass

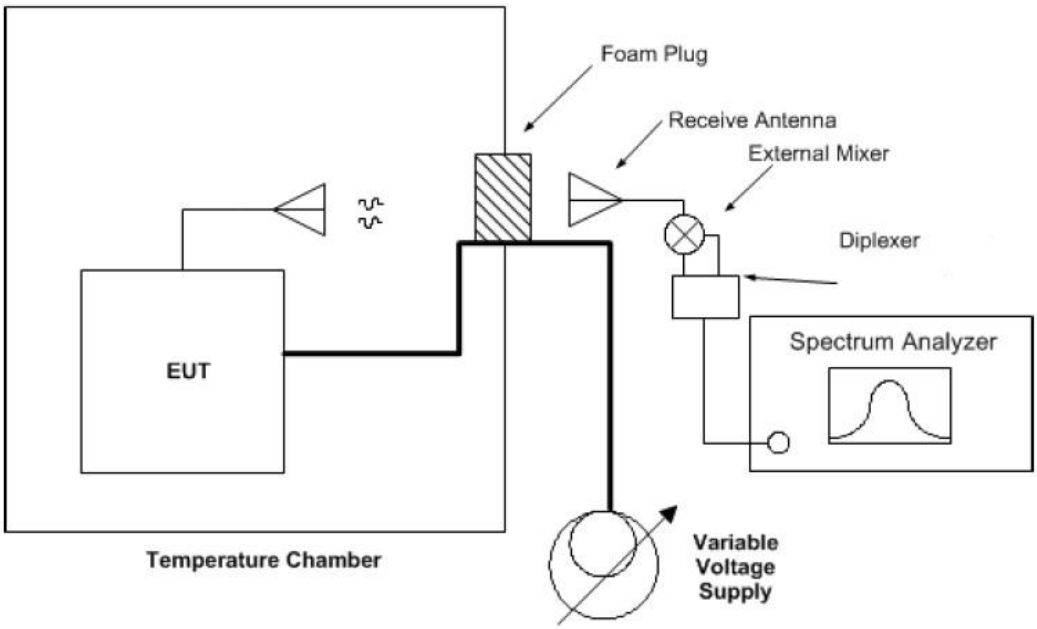
Note: The 6dB bandwidth is less than 100MHz, therefore conducted power limit = 500mW x (6dB bandwidth /100).

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

Refer to section 4.1.2 to get information of above instrument.

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

Same as Item 4.3.6

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 60480 MHz									
TEMP. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	5	60480.158	PASS	60480.2041	PASS	60480.1701	PASS	60480.1824	PASS
40	5	60479.8842	PASS	60479.8967	PASS	60479.8996	PASS	60479.8867	PASS
30	5	60479.7684	PASS	60479.7964	PASS	60479.7817	PASS	60479.8103	PASS
20	5	60480.1665	PASS	60480.154	PASS	60480.1809	PASS	60480.1588	PASS
10	5	60479.7946	PASS	60479.823	PASS	60479.8149	PASS	60479.8312	PASS
0	5	60479.9023	PASS	60479.9055	PASS	60479.8998	PASS	60479.9012	PASS
-10	5	60480.1806	PASS	60480.1606	PASS	60480.1944	PASS	60480.1831	PASS
-20	5	60479.7963	PASS	60479.793	PASS	60479.8328	PASS	60479.8319	PASS
-30	5	60480.158	PASS	60480.2041	PASS	60480.1701	PASS	60480.1824	PASS

Frequency Stability Versus Voltage									
Operating Frequency: 60480 MHz									
TEMP. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	5.75	60480.1745	PASS	60480.1606	PASS	60480.181	PASS	60480.1475	PASS
	5	60480.1665	PASS	60480.154	PASS	60480.1809	PASS	60480.1588	PASS
	4.25	60480.172	PASS	60480.1633	PASS	60480.1862	PASS	60480.1629	PASS

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

Linkou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

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

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

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