

FCC Test Report (NFC)

Report No.: RF180903E03-3

FCC ID: NOIDS-S97407

Test Model: S97407

Received Date: Sep. 03, 2018

Test Date: Sep. 21 to Dec. 14, 2018

Issued Date: May 24, 2019

Applicant: NETRONIX, INC.

Address: No. 945, Boai St., Jubei City, Hsin-Chu, 302, Taiwan, R.O.C.

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



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Release Control Record

Issue No.	Description	Date Issued
RF180903E03-3	Original release.	May 24, 2019

1 Certificate of Conformity

Product: 9.7" Digital Signage

Brand: SABLE

Test Model: S97407

Sample Status: ENGINEERING SAMPLE

Applicant: NETRONIX, INC.

Test Date: Sep. 21 to Dec. 14, 2018

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.225)

47 CFR FCC Part 15, Subpart C (Section 15.215)

ANSI C63.10:2013

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

Prepared by : Phoenix Huang, **Date:** May 24, 2019
Phoenix Huang / Specialist

Approved by : May Chen, **Date:** May 24, 2019
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.225, 15.215)			
FCC Clause	Test Item	Result	Remarks
15.207	Conducted emission test	PASS	Meet the requirement of limit. Minimum passing margin is -15.52dB at 0.20078MHz.
15.225 (a)	The field strength of any emissions within the band 13.553-13.567 MHz	PASS	Meet the requirement of limit. Minimum passing margin is -55.92dB at 13.56MHz.
15.225 (b)	The field strength of any emissions within the bands 13.410-13.553 MHz and 13.567-13.710 MHz	PASS	Meet the requirement of limit.
15.225 (c)	The field strength of any emissions within the bands 13.110-13.410 MHz and 13.710-14.010 MHz	PASS	Meet the requirement of limit.
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band	PASS	Meet the requirement of limit. Minimum passing margin is -3.7dB at 40.69MHz.
15.225 (e)	The frequency tolerance	PASS	Meet the requirement of limit.
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (NFC)

Product	9.7" Digital Signage
Brand	SABLE
Test Model	S97407
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.8Vdc form battery or 5Vdc from USB interface
Modulation Type	ASK
Transfer Rate	Refer to Note
Operating Frequency	13.56MHz
Number of Channel	1
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	USB Cable × 1 (Shielded, 1m)

Note:

1. Simultaneously transmission condition.

Condition	Technology		
1	WLAN	Bluetooth	NFC
2	Zigbee	Bluetooth	NFC

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

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

Technology	Brand	Model Name	Ant. Net Gain (dBi)	Frequency Range	Ant. Type	Connector Type	Cable Length (cm)
WLAN	Walsin	RFPCA410603EMAB302	3.74	2.4~2.4835 GHz	PCB	i-pex(MHF)	3
Bluetooth	Walsin	RFPCA221126EMAB301	3.09	2.4~2.4835 GHz	PCB	i-pex(MHF)	26
Zigbee	Walsin	RFPCA410604EMAB301	3.7	2.4~2.4835 GHz	PCB	i-pex(MHF)	4.5
NFC	NA	NA	-	13.56 MHz	PCB Loop	NA	NA

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

Brand	Model No.	Spec.
TCL	PR-248899G	3.8Vdc, 3035mAh, 11.53Wh

4. The EUT was pre-tested under the following modes:

For Radiated Emission test	
Pre-test Mode	Description
Mode A	Power from USB adapter
Mode B	Power from Battery
From the above modes, the worst case was found in Mode A . Therefore only the test data of the mode was recorded in this report.	
For AC Power Conducted Emission test	
Pre-test Mode	Description
Mode C	Power from USB adapter
Mode D	Power from Laptop
From the above modes, the worst case was found in Mode D . Therefore only the test data of the mode was recorded in this report.	

5. The EUT has three types according to NFC technology as following table:

Mode	Type	Modulation	Data Rate
Active	A	100%, ASK	106 kbit/s
	B	10%, ASK	106 kbit/s
	F	8-30%, ASK	212 kbit/s, 424 kbit/s

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

3.2 Description of Test Modes

One channel was provided to this EUT:

Channel	Frequency (MHz)
1	13.56

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE	PLC	FS	EB	
-	√	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz **PLC**: Power Line Conducted Emission
FS: Frequency Stability **EB**: 20dB Bandwidth measurement

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

Radiated Emission Test:

- ☒ 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 Type
1	1	ASK

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 Type
1	1	ASK

Frequency Stability:

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

Available Channel	Tested Channel	Modulation Type
1	1	ASK

20dB Bandwidth:

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

Available Channel	Tested Channel	Modulation Type
1	1	ASK

Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested By
RE	22deg. C, 67%RH	120Vac, 60Hz	Andy Ho
	23deg. C, 68%RH	120Vac, 60Hz	Frank Chuang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
FS	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen
EB	25deg. C, 60%RH	120Vac, 60Hz	Anderson 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.	USB Adapter	ASUS	EXA1205UA	NA	NA	Provided by Lab
B.	Laptop	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab

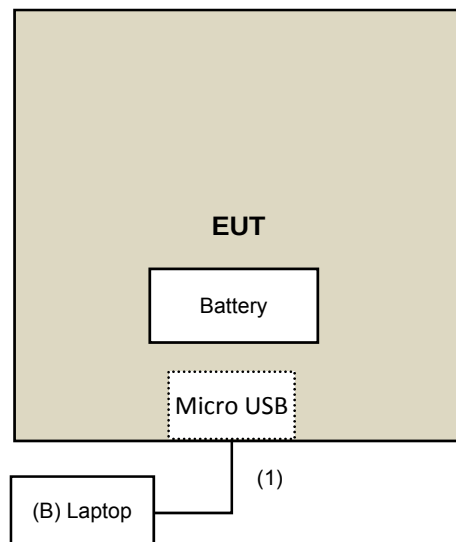
Note:

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

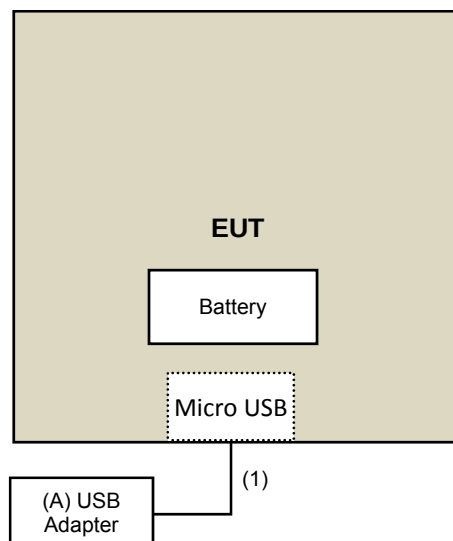
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Micro USB to USB Cable	1	1	Yes	0	Supplied by client

3.3.1 Configuration of System under Test

For Laptop Mode:



For USB Adapter Mode:



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 (15.225)

FCC Part 15, Subpart C (15.215)

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

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209 as below table:

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. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
4. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

For emissions (Below 30MHz)

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	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 15, 2018	Jan. 14, 2019
RF Cable	NA	LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	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. 3.
3. The CANADA Site Registration No. is 20331-1
4. Loop antenna was used for all emissions below 30 MHz.
5. Tested Date: Sep. 21, 2018

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 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. 22, 2018	Nov. 21, 2019
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	Sep. 27, 2018	Sep. 26, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 10, 2018	Jan. 09, 2019
True RMS Clamp Meter FLUKE	325	31130711WS	May 22, 2018	May 21, 2019

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. The CANADA Site Registration No. is 20331-1
4. Tested Date: Dec. 12 to 14, 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 or Average Detects 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 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.

Note:

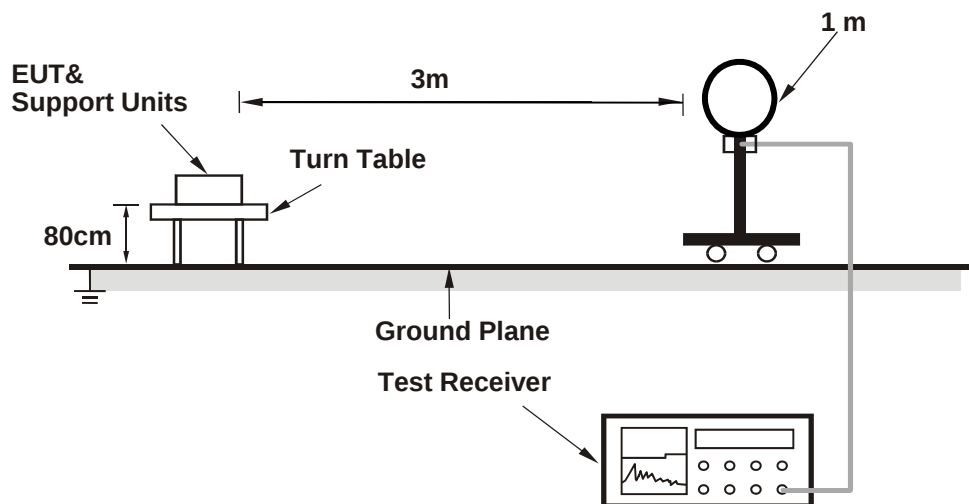
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

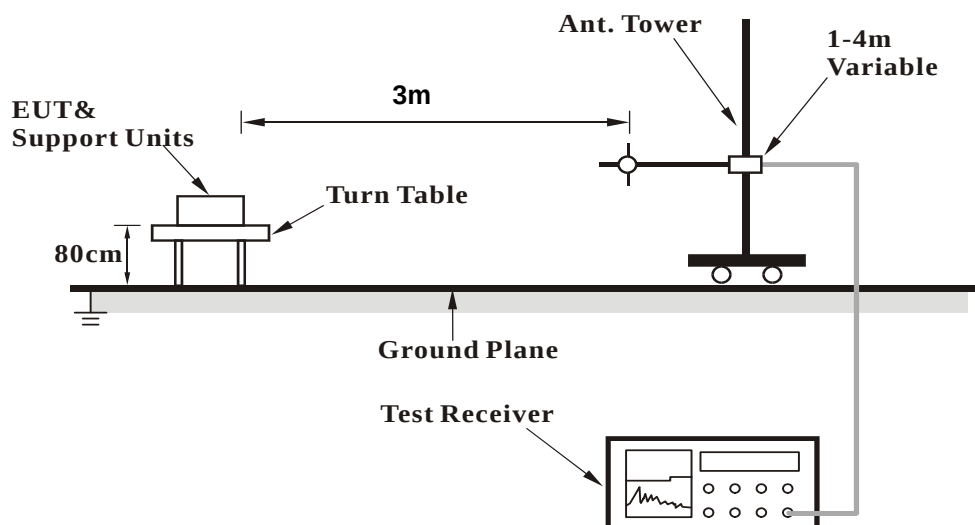
No deviation.

4.1.5 Test Setup

For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



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

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Type A

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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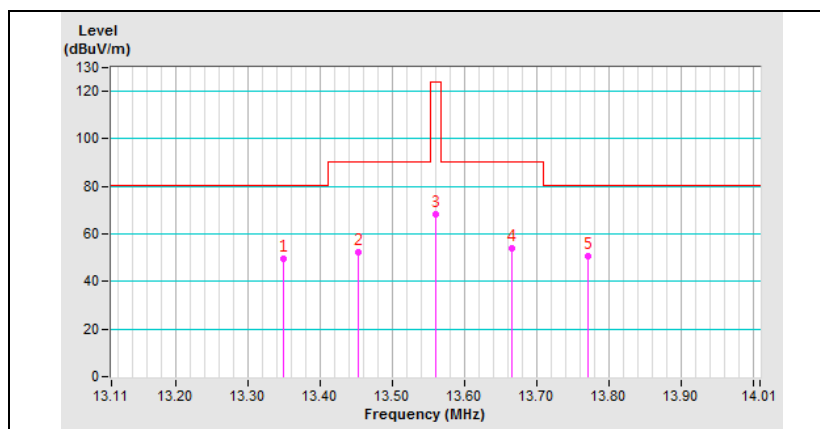
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.348	49.73 QP	80.50	-30.77	1.00	231	53.18	-3.45
2	13.453	52.46 QP	90.47	-38.01	1.00	105	55.93	-3.47
3	*13.560	68.08 QP	124.00	-55.92	1.00	113	71.56	-3.48
4	13.665	54.07 QP	90.47	-36.40	1.00	312	57.57	-3.50
5	13.771	50.61 QP	80.50	-29.89	1.00	205	54.13	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * " : Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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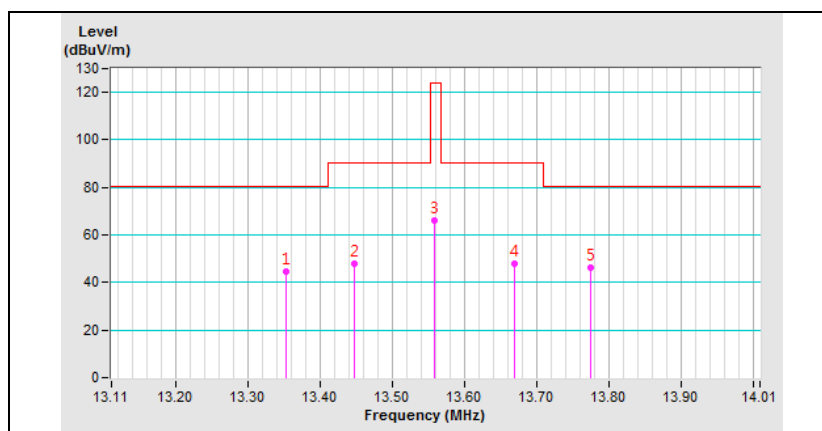
Antenna Polarity & Test Distance: Perpendicylar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.353	44.42 QP	80.50	-36.08	1.00	201	47.87	-3.45
2	13.447	47.72 QP	90.47	-42.75	1.00	302	51.19	-3.47
3	*13.559	66.11 QP	124.00	-57.89	1.00	106	69.59	-3.48
4	13.670	47.78 QP	90.47	-42.69	1.00	224	51.28	-3.50
5	13.775	46.10 QP	80.50	-34.40	1.00	360	49.62	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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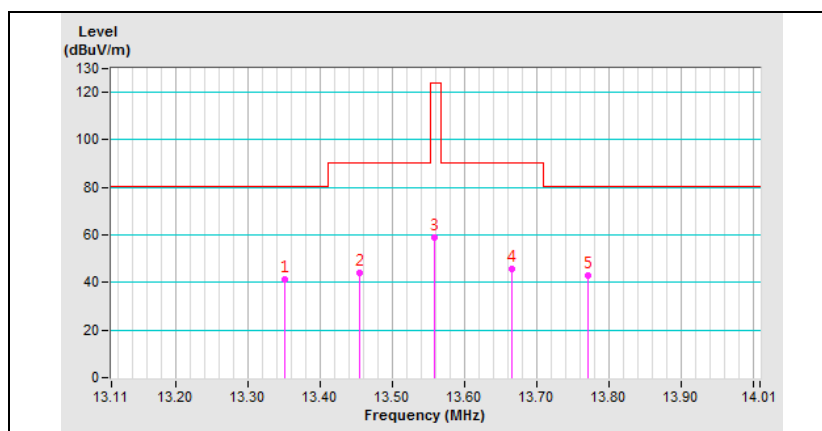
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.351	41.48 QP	80.50	-39.02	1.00	112	44.93	-3.45
2	13.455	43.95 QP	90.47	-46.52	1.00	302	47.42	-3.47
3	*13.559	58.86 QP	124.00	-65.14	1.00	201	62.34	-3.48
4	13.665	45.66 QP	90.47	-44.81	1.00	98	49.16	-3.50
5	13.772	42.96 QP	80.50	-37.54	1.00	42	46.48	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$

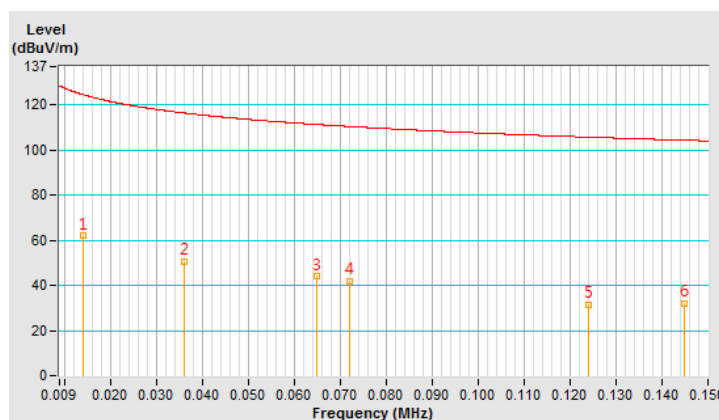


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.014	61.98 AV	124.66	-62.68	1.00	205	25.77	36.21
2	0.036	50.50 AV	116.47	-65.97	1.00	216	23.55	26.95
3	0.065	43.98 AV	111.34	-67.36	1.00	115	22.48	21.50
4	0.072	41.91 AV	110.45	-68.54	1.00	302	21.26	20.65
5	0.124	31.44 AV	105.73	-74.29	1.00	202	15.26	16.18
6	0.145	32.00 AV	104.37	-72.37	1.00	115	16.76	15.24

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

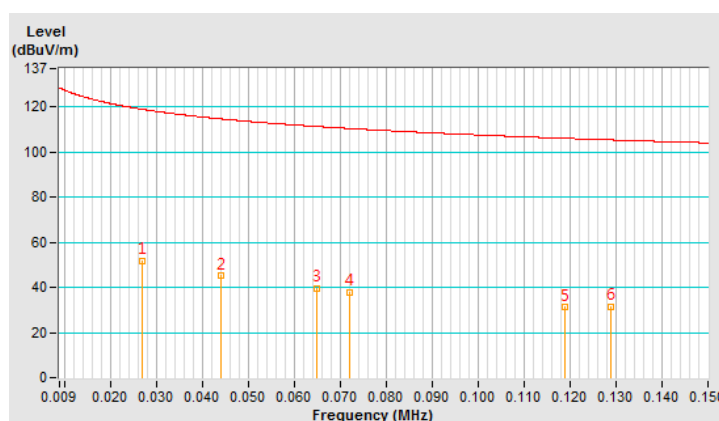


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendicylar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.027	51.65 AV	118.96	-67.31	1.00	134	21.77	29.88
2	0.044	45.20 AV	114.73	-69.53	1.00	302	20.32	24.88
3	0.065	39.69 AV	111.34	-71.65	1.00	206	18.19	21.50
4	0.072	37.94 AV	110.45	-72.51	1.00	302	17.29	20.65
5	0.119	31.22 AV	106.09	-74.87	1.00	118	14.81	16.41
6	0.129	31.59 AV	105.39	-73.80	1.00	221	15.62	15.97

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

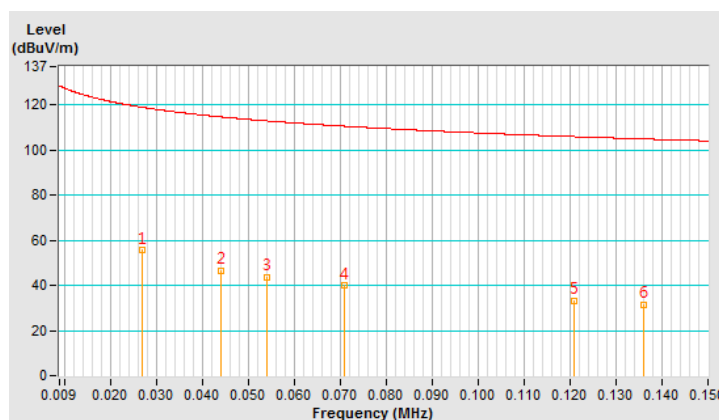


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.027	55.64 AV	118.96	-63.32	1.00	315	25.76	29.88
2	0.044	46.69 AV	114.73	-68.04	1.00	206	21.81	24.88
3	0.054	43.64 AV	112.95	-69.31	1.00	108	20.80	22.84
4	0.071	39.87 AV	110.57	-70.70	1.00	142	19.10	20.77
5	0.121	33.15 AV	105.94	-72.79	1.00	208	16.84	16.31
6	0.136	31.39 AV	104.93	-73.54	1.00	118	15.74	15.65

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

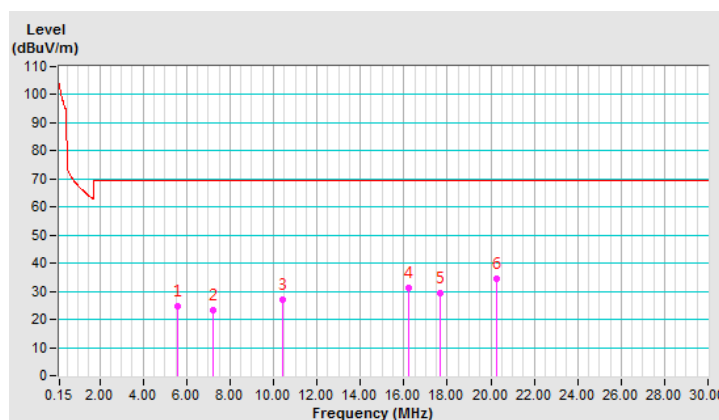


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5.583	24.73 QP	69.50	-44.77	1.00	241	27.81	-3.08
2	7.195	23.51 QP	69.50	-45.99	1.00	302	26.54	-3.03
3	10.418	27.26 QP	69.50	-42.24	1.00	266	30.27	-3.01
4	16.209	31.17 QP	69.50	-38.33	1.00	173	35.04	-3.87
5	17.702	29.36 QP	69.50	-40.14	1.00	105	33.46	-4.10
6	20.269	34.45 QP	69.50	-35.05	1.00	318	38.82	-4.37

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

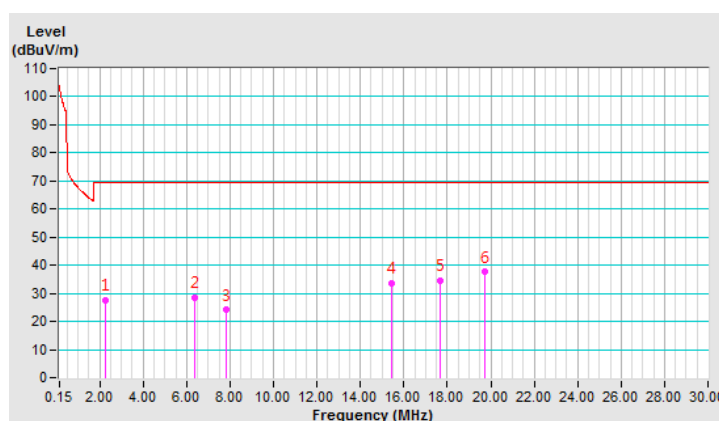


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendiclar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2.240	27.41 QP	69.50	-42.09	1.00	206	29.08	-1.67
2	6.359	28.59 QP	69.50	-40.91	1.00	302	31.64	-3.05
3	7.851	24.02 QP	69.50	-45.48	1.00	306	27.03	-3.01
4	15.433	33.65 QP	69.50	-35.85	1.00	301	37.41	-3.76
5	17.702	34.42 QP	69.50	-35.08	1.00	115	38.52	-4.10
6	19.732	37.58 QP	69.50	-31.92	1.00	302	41.97	-4.39

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

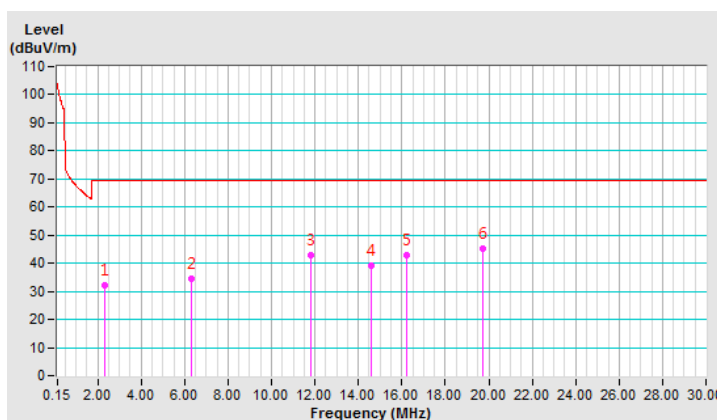


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2.299	32.19 QP	69.50	-37.31	1.00	205	33.97	-1.78
2	6.329	34.45 QP	69.50	-35.05	1.00	226	37.50	-3.05
3	11.821	42.91 QP	69.50	-26.59	1.00	137	46.13	-3.22
4	14.597	39.22 QP	69.50	-30.28	1.00	302	42.86	-3.64
5	16.239	43.08 QP	69.50	-26.42	1.00	145	46.96	-3.88
6	19.702	45.27 QP	69.50	-24.23	1.00	236	49.66	-4.39

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

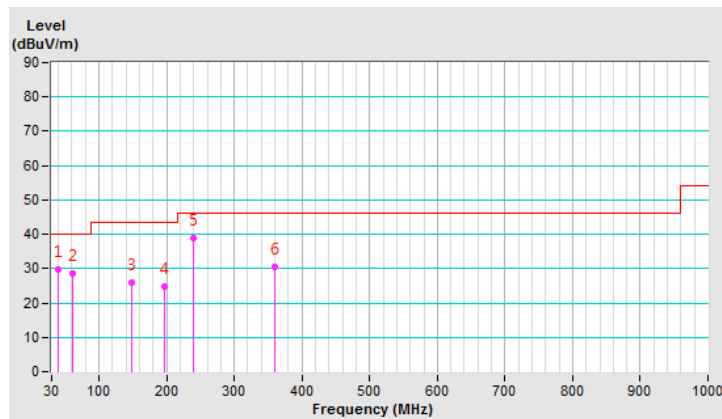


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.89	29.7 QP	40.0	-10.3	1.00 H	346	39.3	-9.6
2	60.99	28.5 QP	40.0	-11.5	2.00 H	136	37.9	-9.4
3	148.27	26.0 QP	43.5	-17.5	1.50 H	93	34.1	-8.1
4	196.21	24.8 QP	43.5	-18.7	1.00 H	269	35.5	-10.7
5	240.03	39.0 QP	46.0	-7.0	1.00 H	292	48.3	-9.3
6	360.02	30.5 QP	46.0	-15.5	1.00 H	68	36.1	-5.6

REMARKS:

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

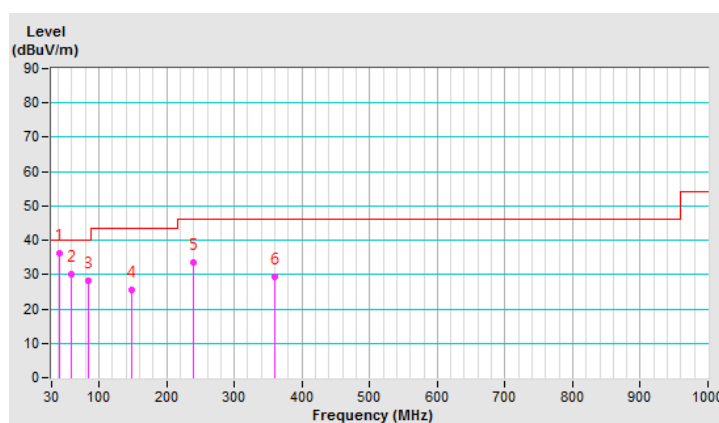


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	40.69	36.2 QP	40.0	-3.8	1.00 V	2	45.6	-9.4
2	58.76	30.1 QP	40.0	-9.9	1.50 V	172	39.1	-9.0
3	84.03	28.1 QP	40.0	-11.9	1.00 V	360	41.9	-13.8
4	148.15	25.6 QP	43.5	-17.9	2.00 V	310	33.7	-8.1
5	240.03	33.5 QP	46.0	-12.5	1.00 V	252	42.8	-9.3
6	359.99	29.3 QP	46.0	-16.7	1.50 V	55	35.0	-5.7

REMARKS:

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



Type B

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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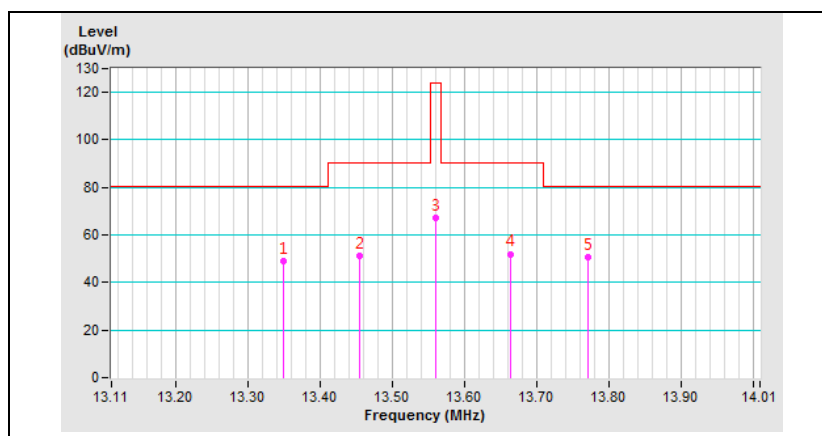
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.348	49.07 QP	80.50	-31.43	1.00	105	52.52	-3.45
2	13.455	51.37 QP	90.47	-39.10	1.00	159	54.84	-3.47
3	*13.560	67.20 QP	124.00	-56.80	1.00	216	70.68	-3.48
4	13.664	52.03 QP	90.47	-38.44	1.00	159	55.53	-3.50
5	13.771	50.54 QP	80.50	-29.96	1.00	114	54.06	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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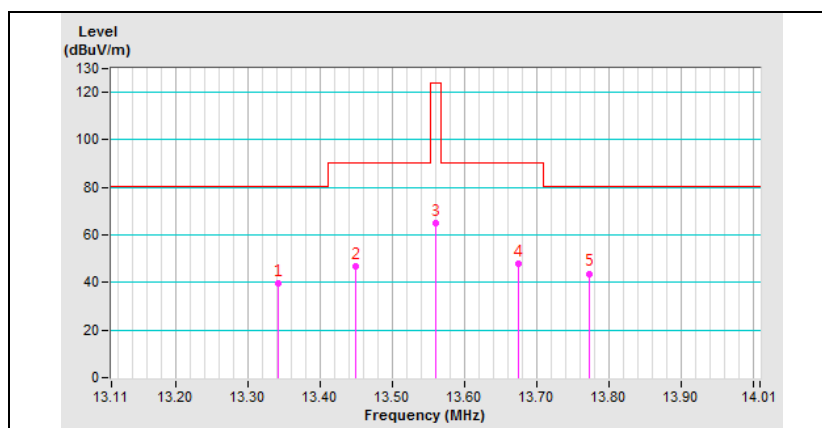
Antenna Polarity & Test Distance: Perpendicylar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.342	39.49 QP	80.50	-41.01	1.00	118	42.94	-3.45
2	13.449	47.02 QP	90.47	-43.45	1.00	302	50.49	-3.47
3	*13.560	65.16 QP	124.00	-58.84	1.00	159	68.64	-3.48
4	13.675	47.65 QP	90.47	-42.82	1.00	247	51.15	-3.50
5	13.773	43.78 QP	80.50	-36.72	1.00	162	47.30	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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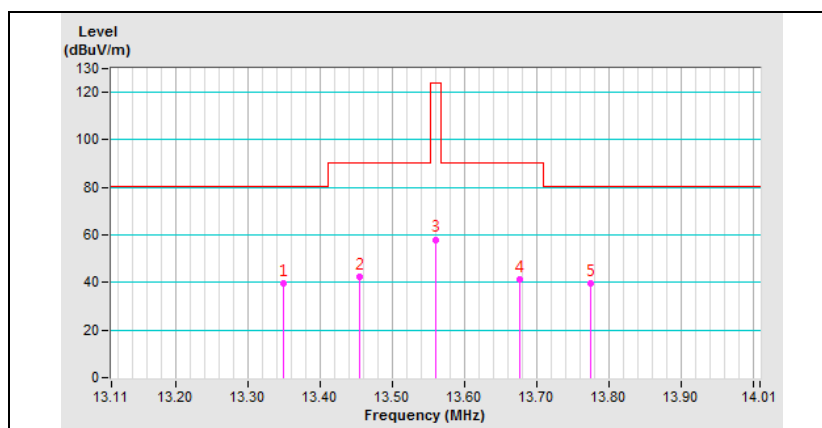
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.348	39.64 QP	80.50	-40.86	1.00	115	43.09	-3.45
2	13.455	42.62 QP	90.47	-47.85	1.00	102	46.09	-3.47
3	*13.560	58.10 QP	124.00	-65.90	1.00	206	61.58	-3.48
4	13.677	41.40 QP	90.47	-49.07	1.00	154	44.90	-3.50
5	13.775	39.61 QP	80.50	-40.89	1.00	237	43.13	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$

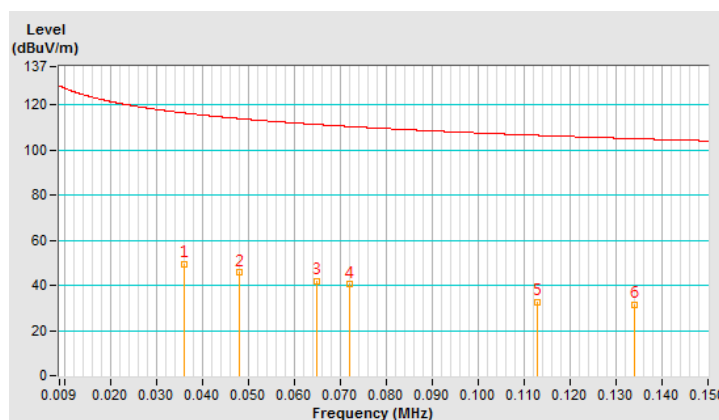


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.036	49.30 AV	116.47	-67.17	1.00	115	22.35	26.95
2	0.048	45.79 AV	113.97	-68.18	1.00	216	21.94	23.85
3	0.065	41.95 AV	111.34	-69.39	1.00	302	20.45	21.50
4	0.072	40.54 AV	110.45	-69.91	1.00	206	19.89	20.65
5	0.113	32.77 AV	106.54	-73.77	1.00	208	16.10	16.67
6	0.134	31.40 AV	105.06	-73.66	1.00	143	15.66	15.74

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

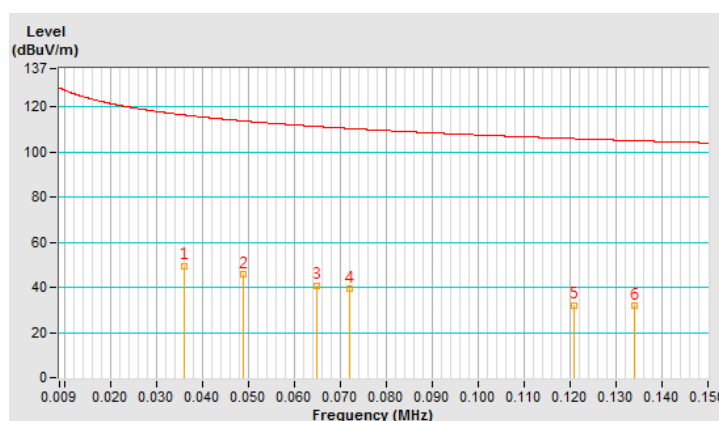


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendiclar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.036	49.58 AV	116.47	-66.89	1.00	205	22.63	26.95
2	0.049	45.78 AV	113.79	-68.01	1.00	218	22.19	23.59
3	0.065	40.88 AV	111.34	-70.46	1.00	203	19.38	21.50
4	0.072	39.29 AV	110.45	-71.16	1.00	115	18.64	20.65
5	0.121	32.13 AV	105.94	-73.81	1.00	104	15.82	16.31
6	0.134	31.75 AV	105.06	-73.31	1.00	209	16.01	15.74

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

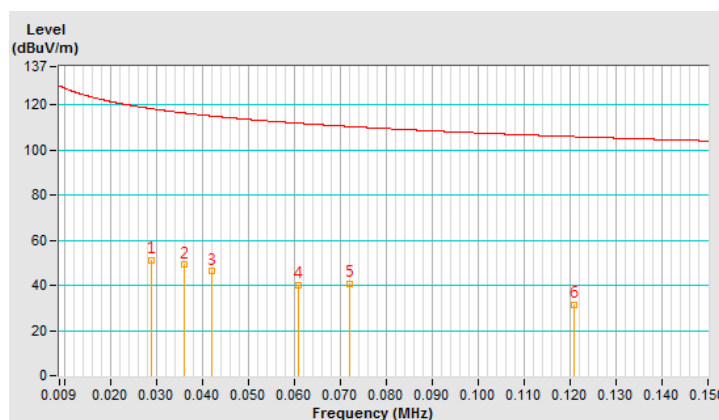


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.029	51.36 AV	118.34	-66.98	1.00	143	22.39	28.97
2	0.036	49.06 AV	116.47	-67.41	1.00	221	22.11	26.95
3	0.042	46.36 AV	115.13	-68.77	1.00	225	20.97	25.39
4	0.061	40.16 AV	111.89	-71.73	1.00	138	18.17	21.99
5	0.072	40.87 AV	110.45	-69.58	1.00	164	20.22	20.65
6	0.121	31.44 AV	105.94	-74.50	1.00	305	15.13	16.31

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

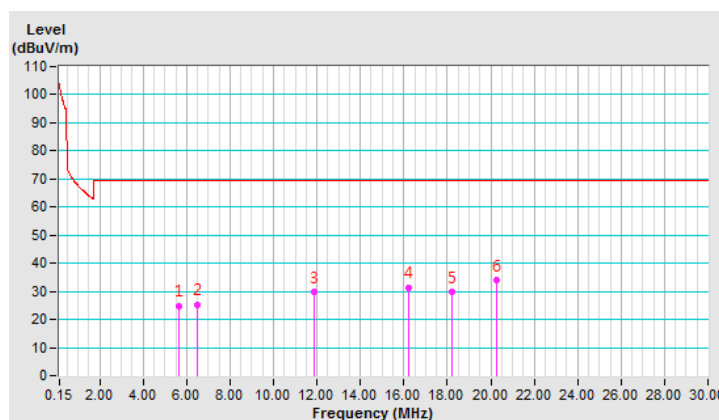


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5.642	24.75 QP	69.50	-44.75	1.00	214	27.82	-3.07
2	6.478	25.16 QP	69.50	-44.34	1.00	93	28.21	-3.05
3	11.851	29.66 QP	69.50	-39.84	1.00	302	32.89	-3.23
4	16.209	31.17 QP	69.50	-38.33	1.00	149	35.04	-3.87
5	18.239	29.61 QP	69.50	-39.89	1.00	211	33.78	-4.17
6	20.269	33.85 QP	69.50	-35.65	1.00	308	38.22	-4.37

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

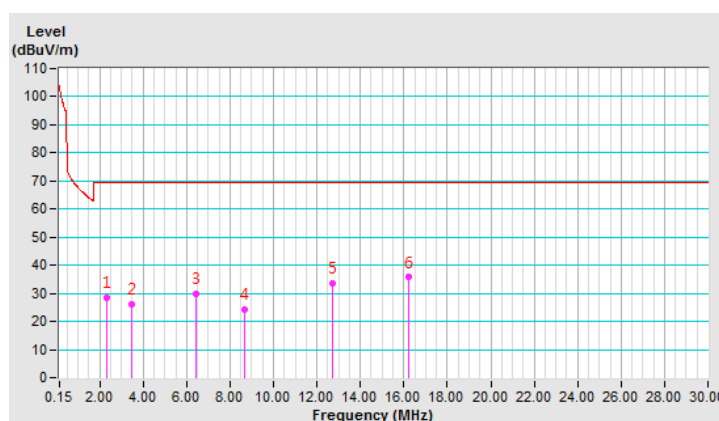


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendiclar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2.299	28.52 QP	69.50	-40.98	1.00	241	30.30	-1.78
2	3.493	26.25 QP	69.50	-43.25	1.00	305	29.31	-3.06
3	6.418	29.75 QP	69.50	-39.75	1.00	299	32.80	-3.05
4	8.687	24.32 QP	69.50	-45.18	1.00	172	27.31	-2.99
5	12.747	33.54 QP	69.50	-35.96	1.00	265	36.90	-3.36
6	16.209	35.72 QP	69.50	-33.78	1.00	173	39.59	-3.87

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

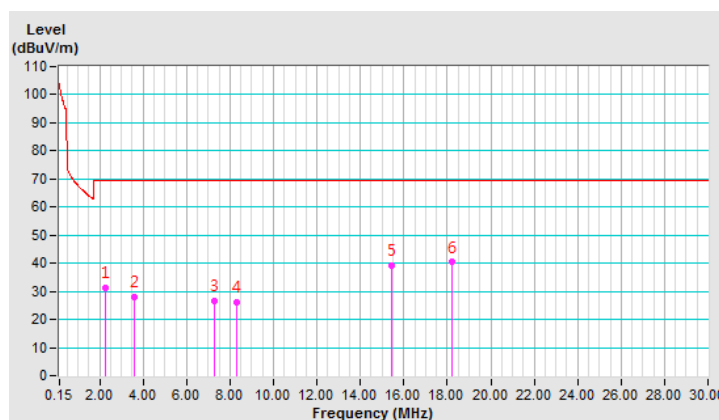


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2.240	31.46 QP	69.50	-38.04	1.00	201	33.13	-1.67
2	3.613	27.94 QP	69.50	-41.56	1.00	318	30.99	-3.05
3	7.254	26.70 QP	69.50	-42.80	1.00	225	29.72	-3.02
4	8.329	26.14 QP	69.50	-43.36	1.00	149	29.14	-3.00
5	15.433	39.13 QP	69.50	-30.37	1.00	302	42.89	-3.76
6	18.239	40.33 QP	69.50	-29.17	1.00	189	44.50	-4.17

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

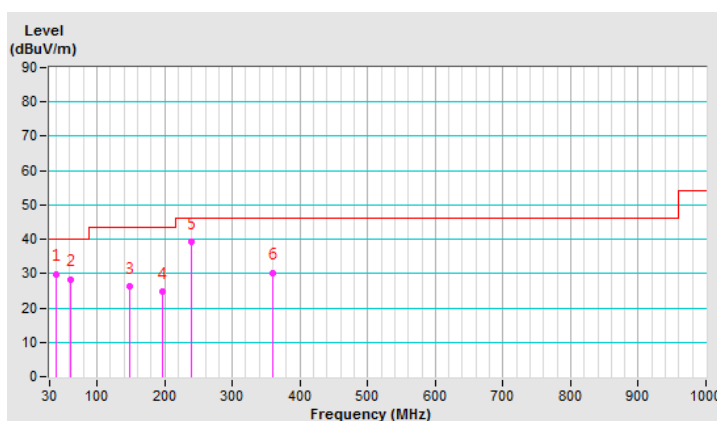


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.89	29.9 QP	40.0	-10.1	1.00 H	358	39.5	-9.6
2	61.01	28.4 QP	40.0	-11.6	1.50 H	106	37.8	-9.4
3	148.24	26.3 QP	43.5	-17.2	1.50 H	153	34.4	-8.1
4	196.20	24.7 QP	43.5	-18.8	1.00 H	239	35.4	-10.7
5	240.05	39.2 QP	46.0	-6.8	1.00 H	352	48.5	-9.3
6	359.98	30.3 QP	46.0	-15.7	1.50 H	308	36.0	-5.7

REMARKS:

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

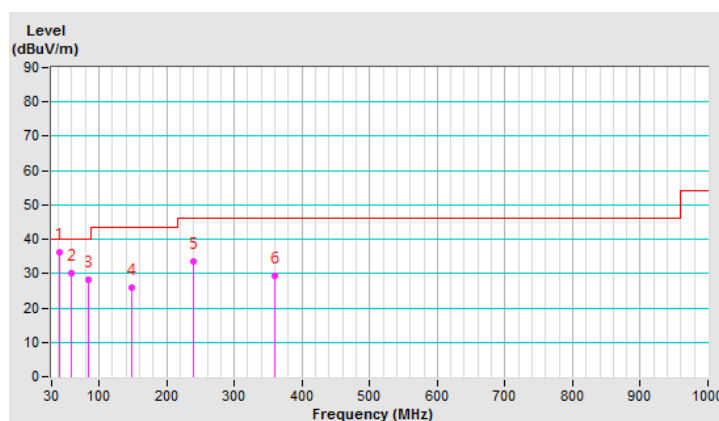


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	40.69	36.3 QP	40.0	-3.7	1.00 V	7	45.7	-9.4
2	58.75	30.2 QP	40.0	-9.8	1.50 V	192	39.2	-9.0
3	84.02	28.3 QP	40.0	-11.7	1.00 V	330	42.1	-13.8
4	148.16	25.8 QP	43.5	-17.7	1.50 V	270	33.9	-8.1
5	240.02	33.4 QP	46.0	-12.6	1.00 V	232	42.7	-9.3
6	359.98	29.2 QP	46.0	-16.8	2.00 V	205	34.9	-5.7

REMARKS:

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



Type F

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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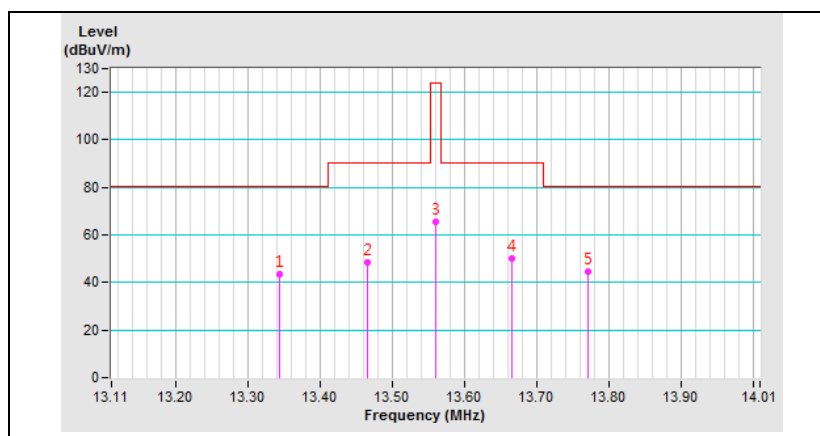
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.343	43.57 QP	80.50	-36.93	1.00	113	47.02	-3.45
2	13.465	48.69 QP	90.47	-41.78	1.00	241	52.16	-3.47
3	*13.560	65.63 QP	124.00	-58.37	1.00	306	69.11	-3.48
4	13.665	50.07 QP	90.47	-40.40	1.00	154	53.57	-3.50
5	13.772	44.43 QP	80.50	-36.07	1.00	216	47.95	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} & 30\text{m} \\
 &= 84\text{dBuV/m} & 30\text{m} \\
 &= 84+20\log(30/3)^2 & 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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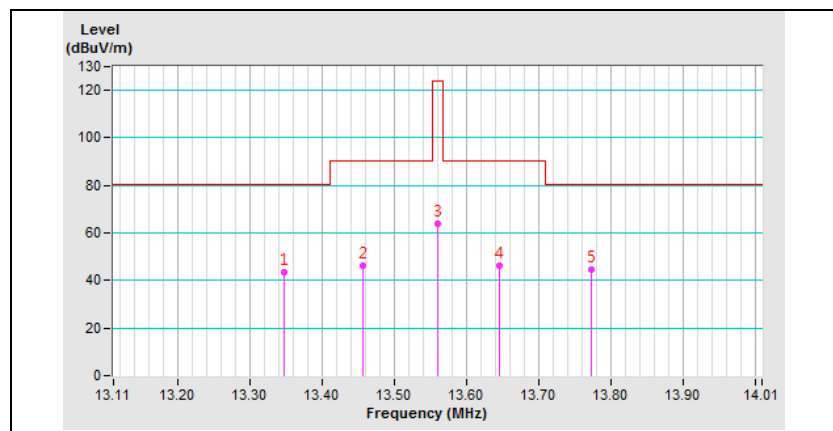
Antenna Polarity & Test Distance: Perpendicylar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.347	43.53 QP	80.50	-36.97	1.00	111	46.98	-3.45
2	13.457	46.31 QP	90.47	-44.16	1.00	46	49.78	-3.47
3	*13.560	63.78 QP	124.00	-60.22	1.00	95	67.26	-3.48
4	13.646	46.10 QP	90.47	-44.37	1.00	254	49.60	-3.50
5	13.774	44.83 QP	80.50	-35.67	1.00	138	48.35	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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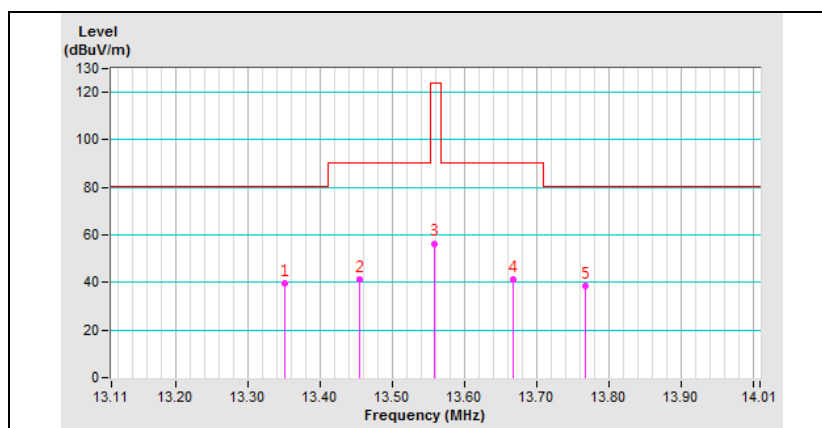
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.350	39.48 QP	80.50	-41.02	1.00	156	42.93	-3.45
2	13.455	41.36 QP	90.47	-49.11	1.00	231	44.83	-3.47
3	*13.559	56.45 QP	124.00	-67.55	1.00	149	59.93	-3.48
4	13.668	41.24 QP	90.47	-49.23	1.00	263	44.74	-3.50
5	13.767	38.40 QP	80.50	-42.10	1.00	256	41.92	-3.52

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Pre-Amplifier Factor(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. Above limits have been translated by the formula
 6. " * ": Fundamental frequency.

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} && 30\text{m} \\
 &= 84\text{dBuV/m} && 30\text{m} \\
 &= 84+20\log(30/3)^2 && 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$

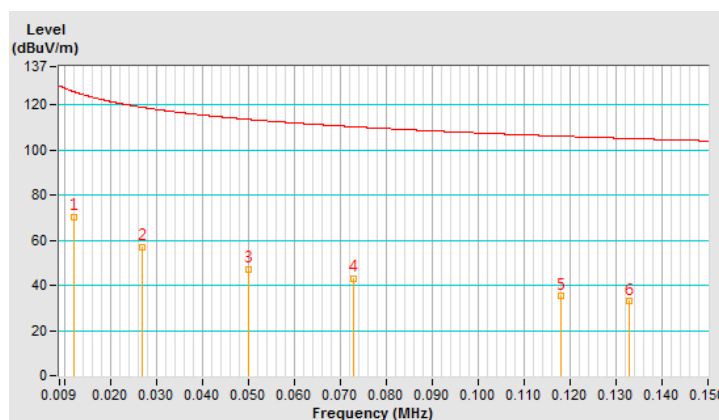


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.012	70.35 AV	126.00	-55.65	1.00	106	33.12	37.23
2	0.027	57.09 AV	118.96	-61.87	1.00	115	27.21	29.88
3	0.050	47.29 AV	113.62	-66.33	1.00	201	23.96	23.33
4	0.073	43.12 AV	110.33	-67.21	1.00	249	22.59	20.53
5	0.118	35.13 AV	106.16	-71.03	1.00	224	18.68	16.45
6	0.133	33.00 AV	105.12	-72.12	1.00	115	17.22	15.78

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

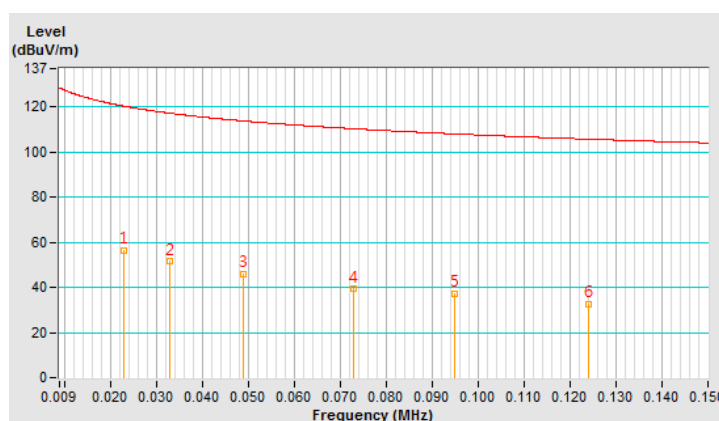


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendiclyar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.023	56.45 AV	120.36	-63.91	1.00	156	24.70	31.75
2	0.033	51.39 AV	117.22	-65.83	1.00	115	23.66	27.73
3	0.049	46.06 AV	113.79	-67.73	1.00	84	22.47	23.59
4	0.073	39.20 AV	110.33	-71.13	1.00	205	18.67	20.53
5	0.095	37.12 AV	108.04	-70.92	1.00	206	19.25	17.87
6	0.124	32.62 AV	105.73	-73.11	1.00	226	16.44	16.18

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

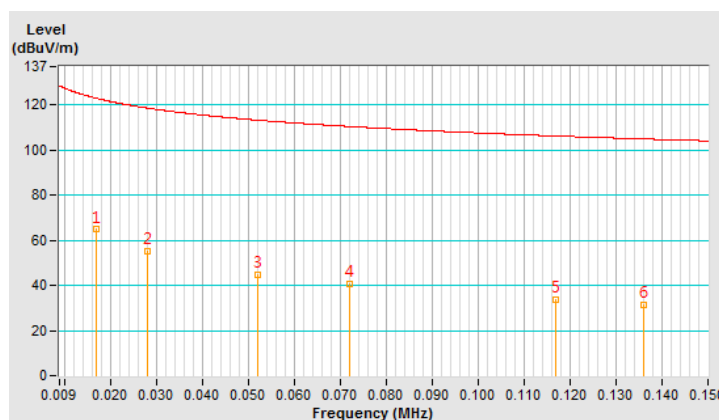


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.017	64.82 AV	122.98	-58.16	1.00	241	30.16	34.66
2	0.028	55.12 AV	118.65	-63.53	1.00	231	25.69	29.43
3	0.052	44.82 AV	113.28	-68.46	1.00	206	21.74	23.08
4	0.072	40.64 AV	110.45	-69.81	1.00	37	19.99	20.65
5	0.117	33.66 AV	106.24	-72.58	1.00	142	17.16	16.50
6	0.136	31.62 AV	104.93	-73.31	1.00	225	15.97	15.65

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

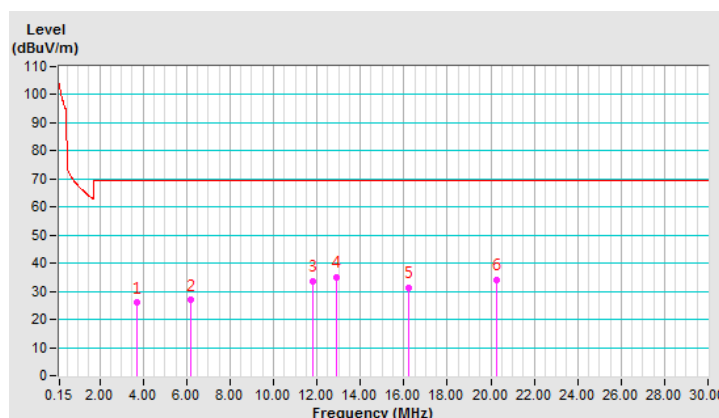


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.702	25.87 QP	69.50	-43.63	1.00	124	28.91	-3.04
2	6.210	26.89 QP	69.50	-42.61	1.00	36	29.95	-3.06
3	11.791	33.71 QP	69.50	-35.79	1.00	197	36.93	-3.22
4	12.926	34.93 QP	69.50	-34.57	1.00	331	38.32	-3.39
5	16.239	31.33 QP	69.50	-38.17	1.00	298	35.21	-3.88
6	20.269	34.07 QP	69.50	-35.43	1.00	242	38.44	-4.37

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

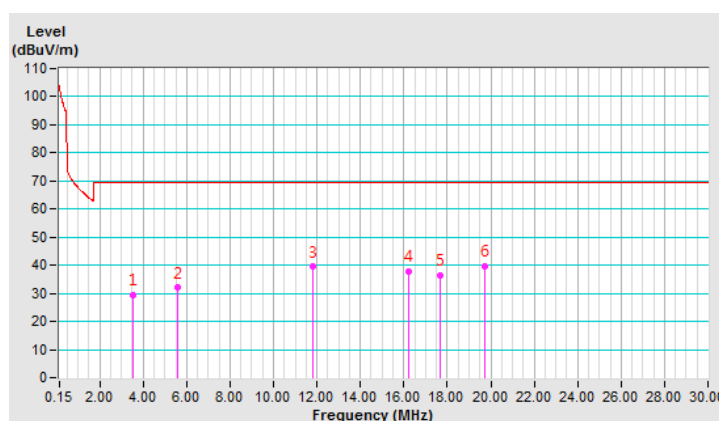


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendiclyar at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.553	29.36 QP	69.50	-40.14	1.00	331	32.40	-3.04
2	5.613	32.03 QP	69.50	-37.47	1.00	134	35.11	-3.08
3	11.821	39.50 QP	69.50	-30.00	1.00	201	42.72	-3.22
4	16.239	37.85 QP	69.50	-31.65	1.00	115	41.73	-3.88
5	17.702	36.55 QP	69.50	-32.95	1.00	264	40.65	-4.10
6	19.702	39.74 QP	69.50	-29.76	1.00	231	44.13	-4.39

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

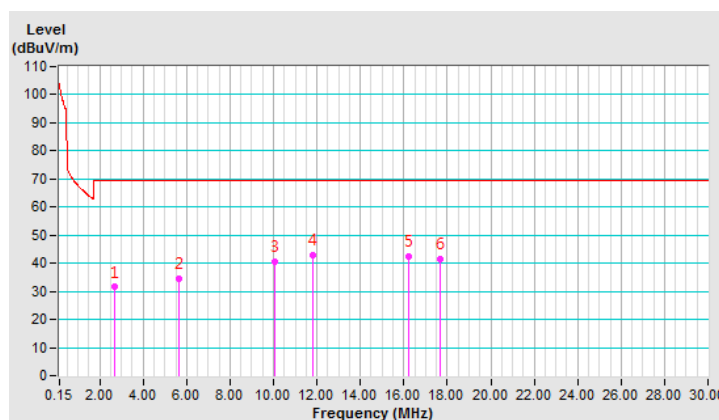


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2.687	31.53 QP	69.50	-37.97	1.00	114	34.01	-2.48
2	5.672	34.66 QP	69.50	-34.84	1.00	341	37.73	-3.07
3	10.030	40.65 QP	69.50	-28.85	1.00	260	43.60	-2.95
4	11.821	42.86 QP	69.50	-26.64	1.00	265	46.08	-3.22
5	16.239	42.31 QP	69.50	-27.19	1.00	118	46.19	-3.88
6	17.702	41.65 QP	69.50	-27.85	1.00	243	45.75	-4.10

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

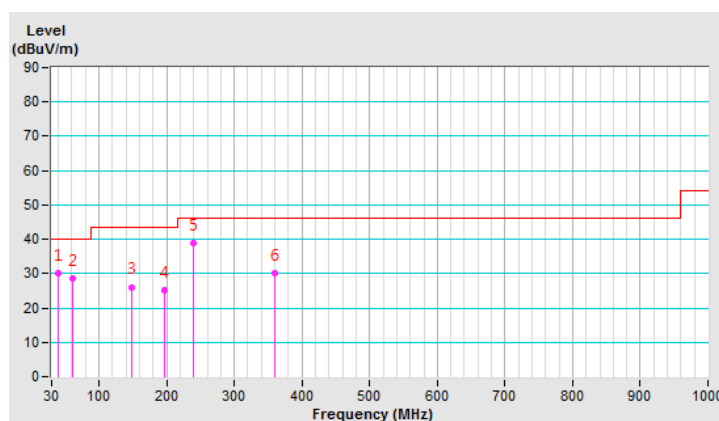


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.89	30.0 QP	40.0	-10.0	1.00 H	348	39.6	-9.6
2	60.99	28.6 QP	40.0	-11.4	1.50 H	136	38.0	-9.4
3	148.26	26.1 QP	43.5	-17.4	1.50 H	183	34.2	-8.1
4	196.18	25.0 QP	43.5	-18.5	1.00 H	243	35.7	-10.7
5	240.03	39.0 QP	46.0	-7.0	1.00 H	312	48.3	-9.3
6	359.96	30.1 QP	46.0	-15.9	1.00 H	300	35.8	-5.7

REMARKS:

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

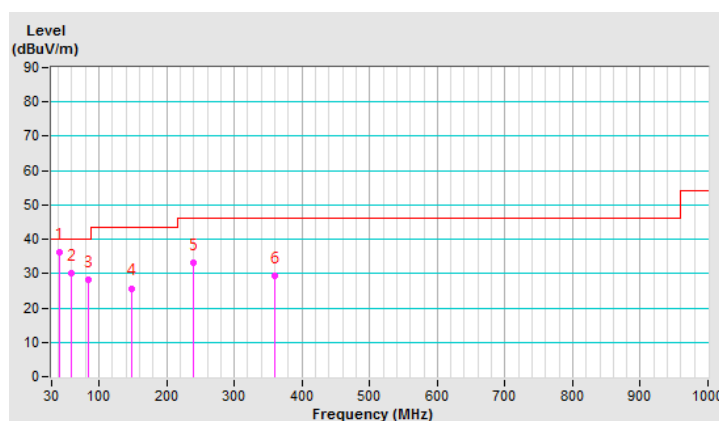


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	40.69	36.1 QP	40.0	-3.9	1.00 V	15	45.5	-9.4
2	58.79	30.1 QP	40.0	-9.9	1.50 V	242	39.2	-9.1
3	84.01	28.2 QP	40.0	-11.8	1.50 V	270	42.0	-13.8
4	148.17	25.7 QP	43.5	-17.8	1.00 V	280	33.8	-8.1
5	240.01	33.3 QP	46.0	-12.7	2.00 V	353	42.6	-9.3
6	359.99	29.4 QP	46.0	-16.6	1.50 V	245	35.1	-5.7

REMARKS:

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



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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 06, 2018	Mar. 05, 2019
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
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: Nov. 20, 2018

4.2.3 Test Procedures

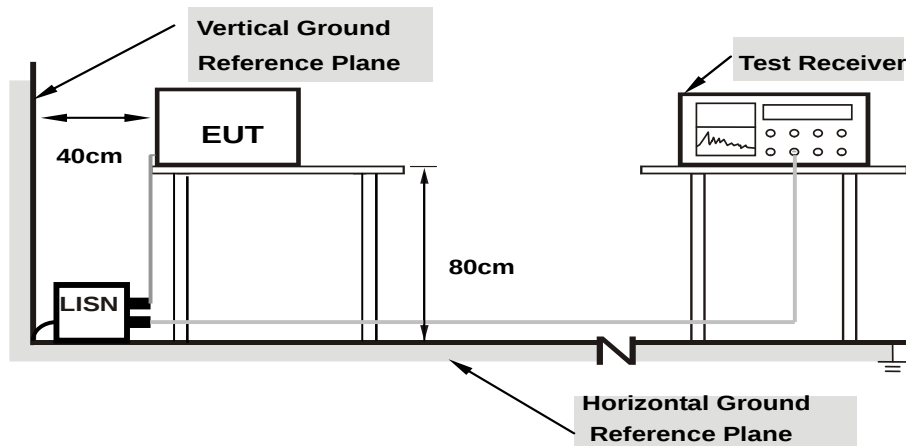
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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.

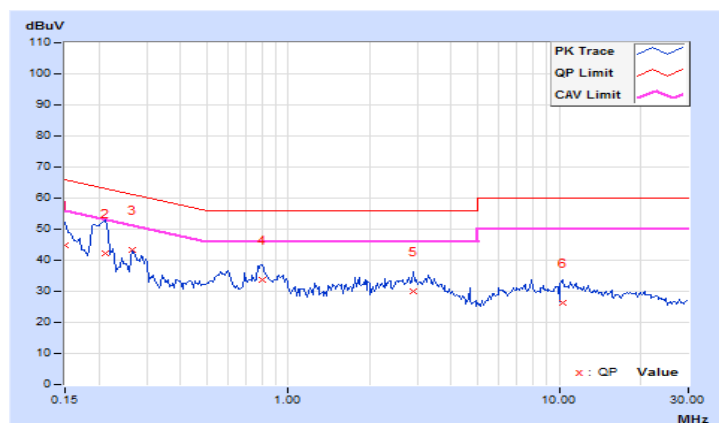
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.02	34.84	22.65	44.86	32.67	66.00	56.00	-21.14	-23.33
2	0.21250	10.04	32.17	23.25	42.21	33.29	63.11	53.11	-20.90	-19.82
3	0.26719	10.05	33.44	16.85	43.49	26.90	61.20	51.20	-17.71	-24.30
4	0.80625	10.10	23.66	12.15	33.76	22.25	56.00	46.00	-22.24	-23.75
5	2.88281	10.20	19.68	14.11	29.88	24.31	56.00	46.00	-26.12	-21.69
6	10.32813	10.55	15.78	10.88	26.33	21.43	60.00	50.00	-33.67	-28.57

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

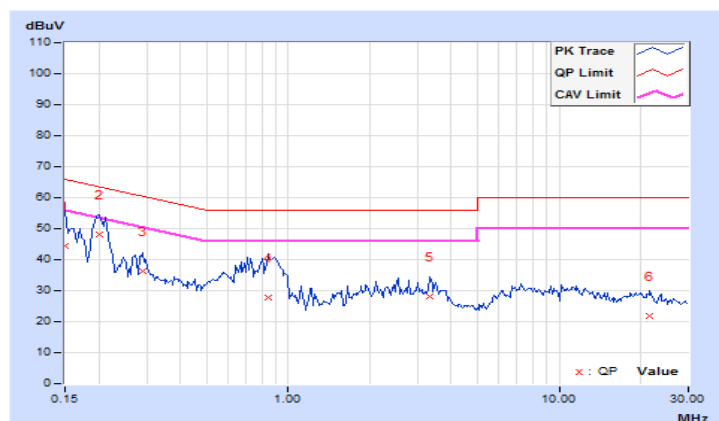


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.93	34.50	20.66	44.43	30.59	66.00	56.00	-21.57	-25.41
2	0.20078	9.94	38.12	23.22	48.06	33.16	63.58	53.58	-15.52	-20.42
3	0.29063	9.95	26.32	19.22	36.27	29.17	60.51	50.51	-24.24	-21.34
4	0.84531	9.98	17.78	9.89	27.76	19.87	56.00	46.00	-28.24	-26.13
5	3.34375	10.09	18.00	12.52	28.09	22.61	56.00	46.00	-27.91	-23.39
6	21.56641	10.89	10.98	0.96	21.87	11.85	60.00	50.00	-38.13	-38.15

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

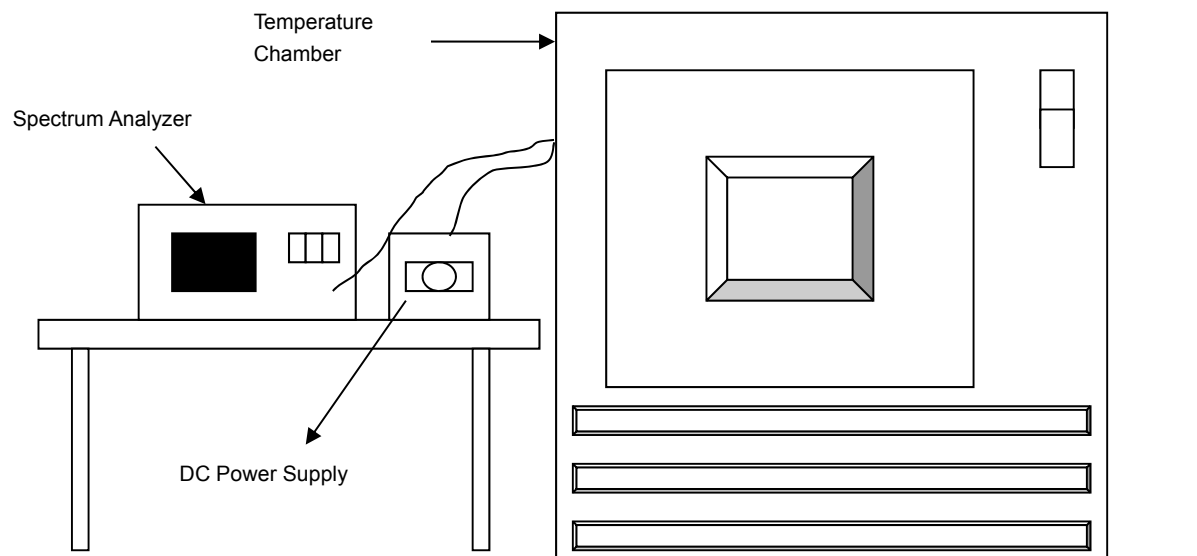


4.3 Frequency Stability

4.3.1 Limits of Frequency Stability Measurement

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

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 EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- Turned the EUT on and coupled its output to a spectrum analyzer.
- Turned the EUT off and set the chamber to the highest temperature specified.
- Allowed sufficient time (approximately 30 min) for the temperature of the chamber to stabilize then turned the EUT on and measured the operating frequency after 2, 5, and 10 minutes.
- Repeated step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at $+20$ degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

Same as Item 4.1.6.

4.3.7 Test Result

Frequency Stability Versus Temp.									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
50	3.8	13.55999	-0.00007	13.55999	-0.00007	13.56	0.00000	13.56	0.00000
40	3.8	13.55997	-0.00022	13.55997	-0.00022	13.55998	-0.00015	13.55997	-0.00022
30	3.8	13.55999	-0.00007	13.55998	-0.00015	13.55999	-0.00007	13.55999	-0.00007
20	3.8	13.56002	0.00015	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
10	3.8	13.55999	-0.00007	13.55999	-0.00007	13.55998	-0.00015	13.55999	-0.00007
0	3.8	13.56005	0.00037	13.56006	0.00044	13.56005	0.00037	13.56006	0.00044
-10	3.8	13.55998	-0.00015	13.55998	-0.00015	13.55998	-0.00015	13.55998	-0.00015
-20	3.8	13.56	0.00000	13.56001	0.00007	13.55999	-0.00007	13.56	0.00000

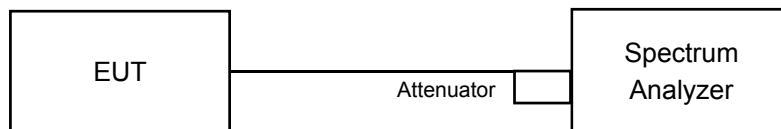
Frequency Stability Versus Voltage									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	4.37	13.56002	0.00015	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
	3.8	13.56002	0.00015	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
	3.23	13.56002	0.00015	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007

4.4 20dB Bandwidth

4.4.1 Limits of 20dB BANDWIDTH Measurement

The 20dB bandwidth shall be specified in operating frequency band.

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

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10kHz / 1Hz RBW and 30kHz / 3Hz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.4.5 Deviation from Test Standard

No deviation.

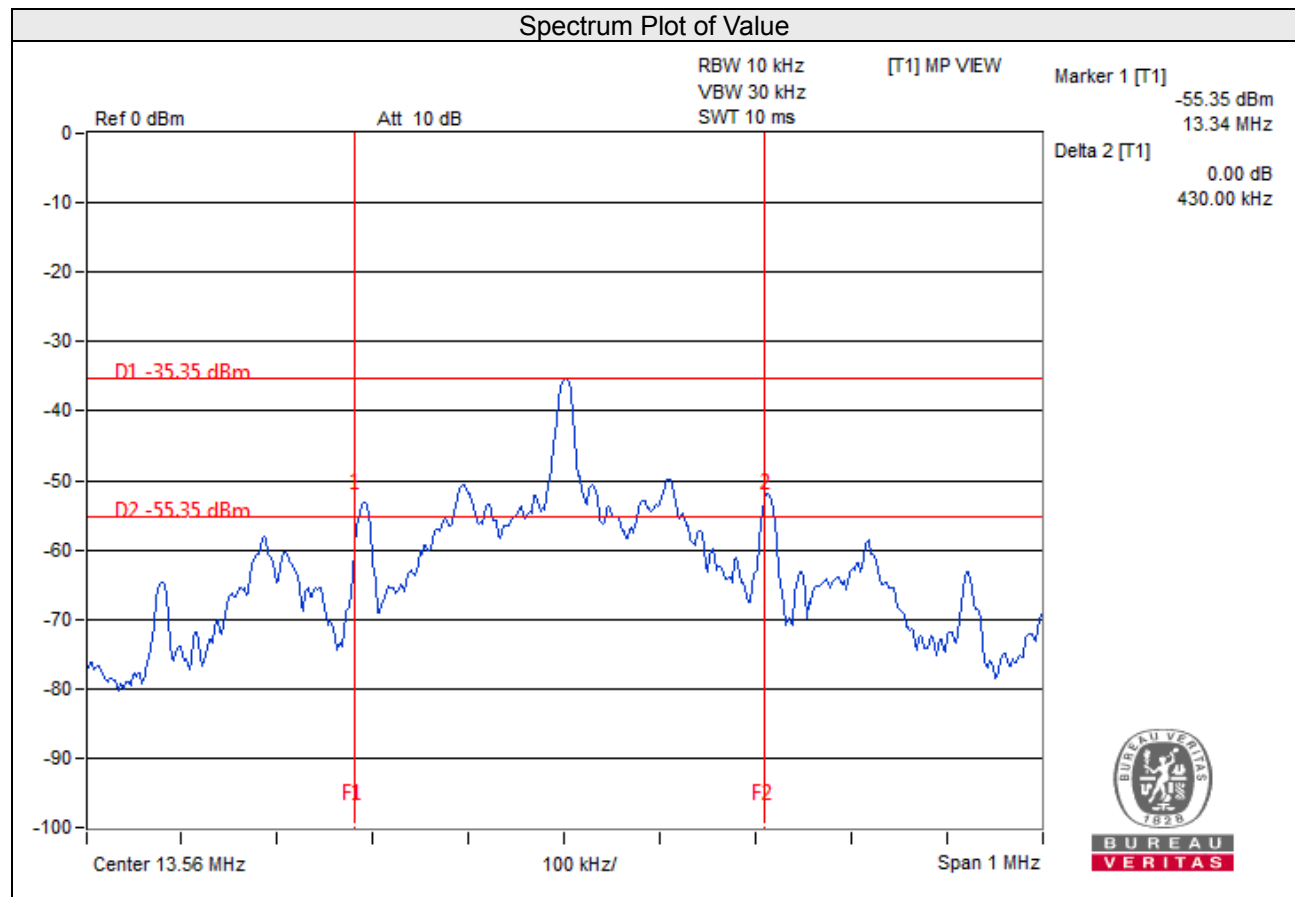
4.4.6 EUT Operating Conditions

Same as Item 4.1.6.

4.4.7 Test Results

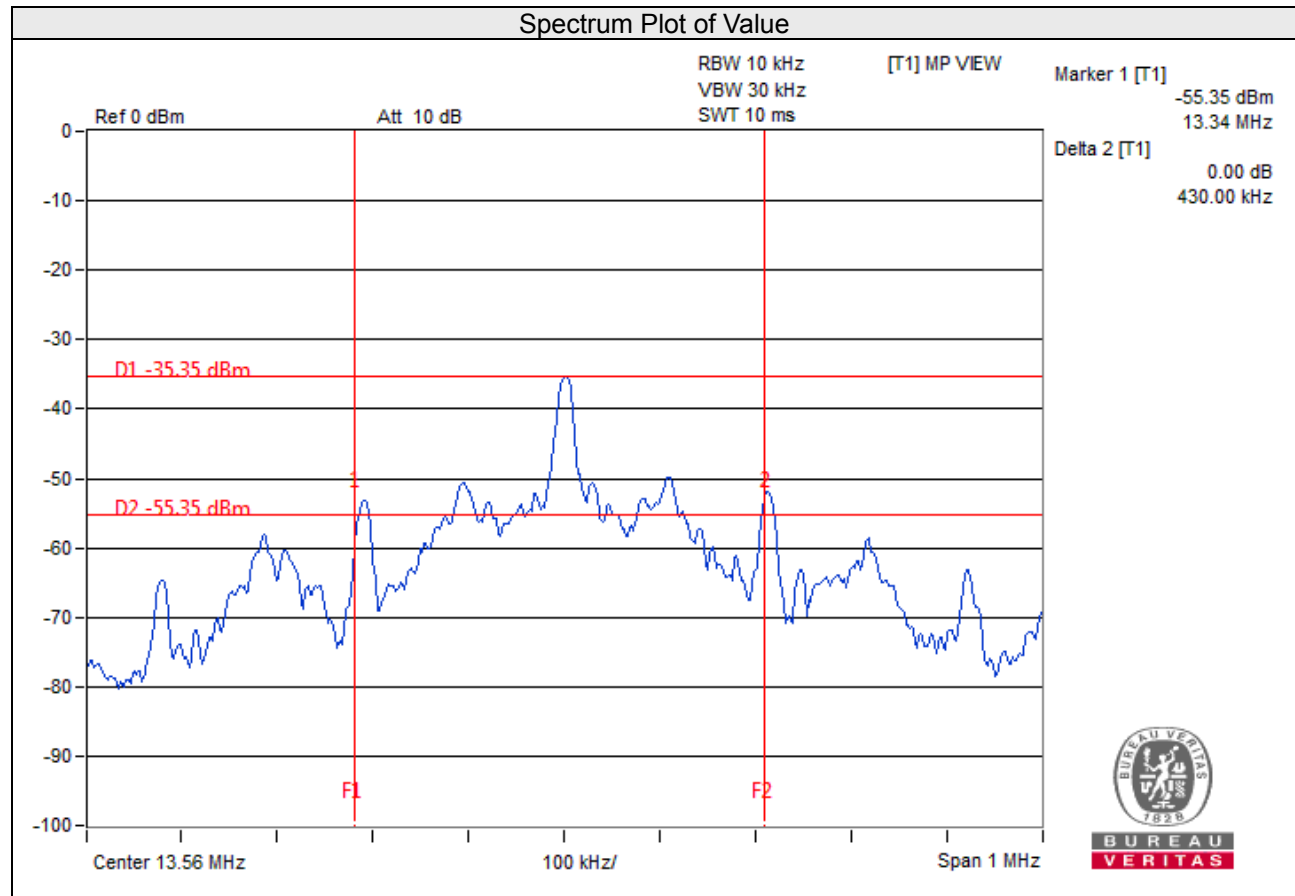
Type A

20dBc Point (Low) (MHz)	20dBc Point (High) (MHz)	Operating Frequency Band (MHz)	Pass/Fail
13.34	13.77	13.11 – 14.01	Pass



Type B

20dBc Point (Low) (MHz)	20dBc Point (High) (MHz)	Operating Frequency Band (MHz)	Pass/Fail
13.34	13.77	13.11 – 14.01	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:

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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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