

FCC Test Report (NFC)

Report No.: RF190308C34-6

FCC ID: HD5-CN85L0N

Test Model: CN85L0N

Received Date: Mar. 08, 2019

Test Date: Apr. 18 to 29, 2019

Issued Date: May 30, 2019

Applicant: Honeywell International Inc.

Address: 9680 Old Bailes Road, Fort Mill, SC 29707 USA

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
RF190308C34-6	Original release.	May 30, 2019

1 Certificate of Conformity

Product: Mobile computer

Brand: Honeywell

Test Model: CN85L0N

Sample Status: ENGINEERING SAMPLE

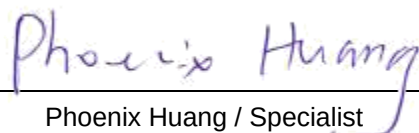
Applicant: Honeywell International Inc.

Test Date: Apr. 18 to 29, 2019

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 / Specialist

Date:

May 30, 2019

Approved by :


May Chen / Manager

Date:

May 30, 2019

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	NA	Without AC power port of the EUT.
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 -59.44dB 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 -11.9dB at 64.80MHz.
15.225 (e)	The frequency tolerance	PASS	Meet the requirement of limit.
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement.
15.203	Antenna Requirement	PASS	No antenna connector is used.

Note:

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.0 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (NFC)

Product	Mobile computer
Brand	Honeywell
Test Model	CN85L0N
Status of EUT	ENGINEERING SAMPLE
HW Version	V1.0
HW P/N	V2.0 (DVT)
Software Version	OS.02.001-HON.01.102
SW P/N	86.00.00-Debug(0633)
Power Supply Rating	3.85Vdc from battery
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	Battery x 1, Touch pen x 1, Handstrap x 1
Data Cable Supplied	NA

Note:

- There're 2 configurations for the EUT listed as below.

Item
Sample A: Scanner: N6703ER with Keypad 1 (Number) + 4G RAM
Sample B: Scanner: N6703ER with Keypad 2 (Letter) + 4G RAM
Note: From the above samples, the Sample B was selected for the test and its data was recorded in this report.

- There are WLAN, Bluetooth, Zigbee, NFC and WWAN technology used for the EUT. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN+BT 1	Zigbee+BT 2	NFC	Wireless charger (Rx)

Note: For Bluetooth technology the Radio 1 support BT 5.0 dual mode, the Radio 2 support BT-LE (4.2) single mode only.

- Simultaneously transmission condition.

Condition	Technology		
1	WLAN 2.4GHz	NFC	Zigbee
2	WLAN 5GHz	NFC	Zigbee
3	Bluetooth (Radio 1)	NFC	Zigbee

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

- The EUT needs to be supplied from battery, the information is as below table:

Brand	Model No.	Spec.
Inventus Power, Inc. / Honeywell	CW-BAT	3.85Vdc, 5800mAh, 22.3Wh

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

Radio 1					
WLAN Antenna Spec. / Bluetooth Antenna No. 1 Spec.					
Chain No.	Antenna Gain include trace loss (dBi)	Frequency range (GHz)	Antenna type	Connector type	Trace loss (dB)
Chain 0	0.4	2.4~2.4835	PIFA	POGO pin	1.4
	1.62	5.15~5.25			2
	1.62	5.25~5.35			2
	1.15	5.47~5.725			2.4
	1.15	5.725~5.85			2.4
Chain 1	1.7	2.4~2.4835	PIFA	POGO pin	0.3
	1.3	5.15~5.25			0.9
	1.3	5.25~5.35			0.9
	2	5.47~5.725			0.9
	2	5.725~5.85			0.9
Radio 2					
Bluetooth Antenna No. 2 Spec. / Zigbee Antenna Spec.					
Antenna Gain include trace loss (dBi)	Frequency range (GHz)	Antenna type	Connector type	Trace loss (dB)	
-0.1	2.4~2.4835	PIFA	POGO pin	0.5	
Radio 3					
NFC Antenna Spec.					
Frequency range (MHz)		Antenna type		Connector type	
13~14		Loop		NA	

6. The EUT has four 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
	V(ISO15693)	100%, ASK	26.48 kbit/s

7. 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

PLC: Power Line Conducted Emission

FS: Frequency Stability

EB: 20dB Bandwidth measurement

Note:

1. No need to concern of Conducted Emission due to the EUT is powered by battery.
2. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-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

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:

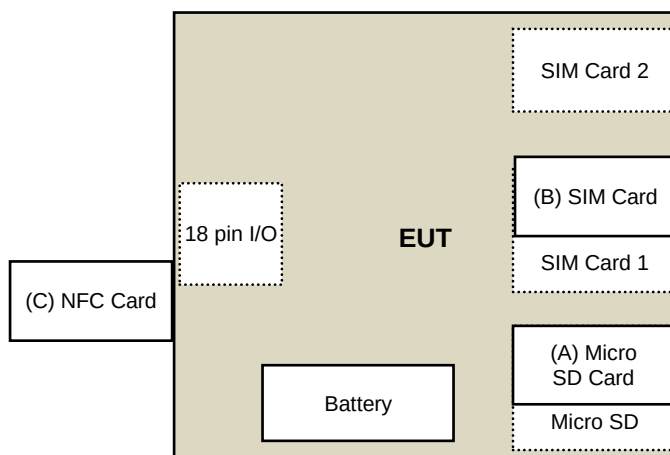
Applicable to	Environmental Conditions	Input Power	Tested By
RE	24deg. C, 68%RH	3.85Vdc	Andy Ho
	23deg. C, 68%RH	3.85Vdc	Andy Ho
FS	25deg. C, 60%RH	3.85Vdc	Anderson Chen
EB	25deg. C, 60%RH	3.85Vdc	Anderson Chen

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.	MicroSD Card	Transcend	NA	NA	NA	Provided by Lab
B.	SIM Card	R&S	CRT-Z3	NA	NA	Provided by Lab
C.	NFC Card	UGSI	NA	NA	NA	Supplied by client

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.225)

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

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	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-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. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-2	Mar. 18, 2019	Mar. 17, 2020
RF Cable	8D	966-3-3	Mar. 18, 2019	Mar. 17, 2020
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
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020
DC Power Supply Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
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. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: Apr. 18 to 29, 2019

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak or Average 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) 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:

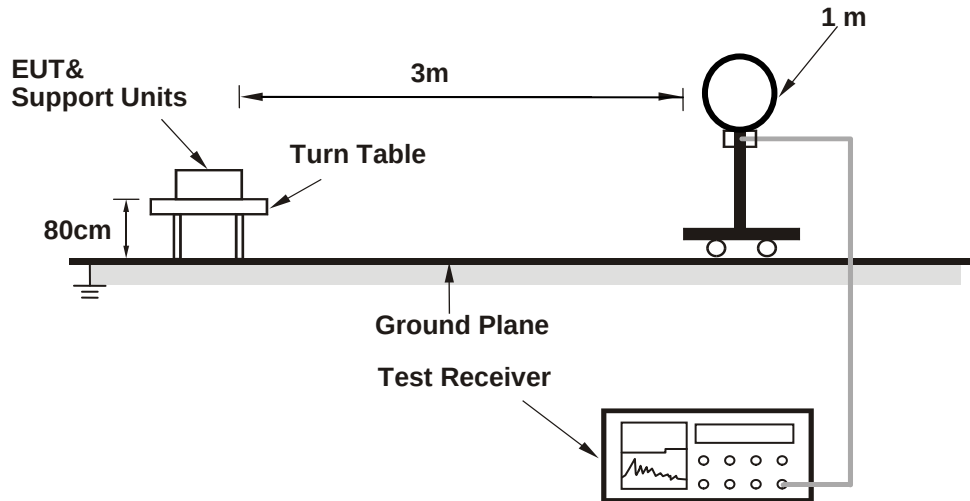
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

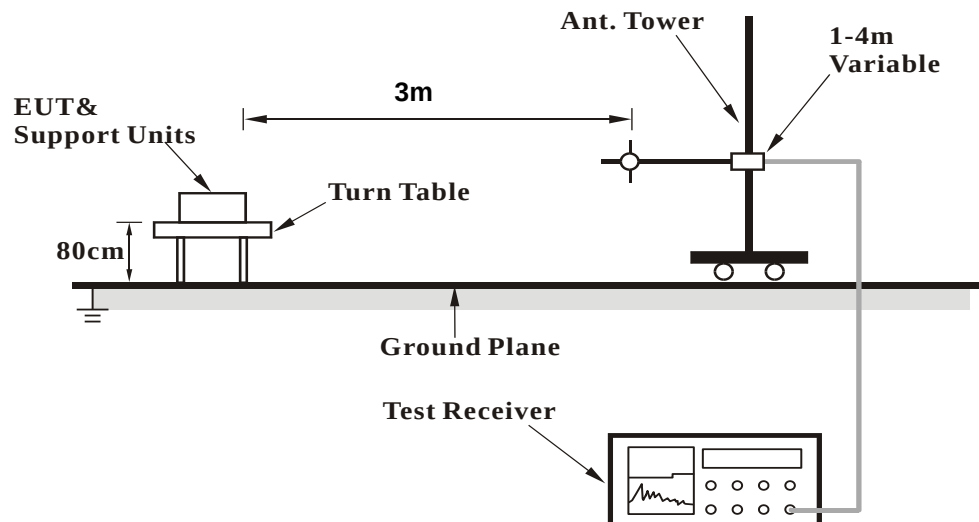
No deviation.

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
-----------------	--------------------	-------------------	------------

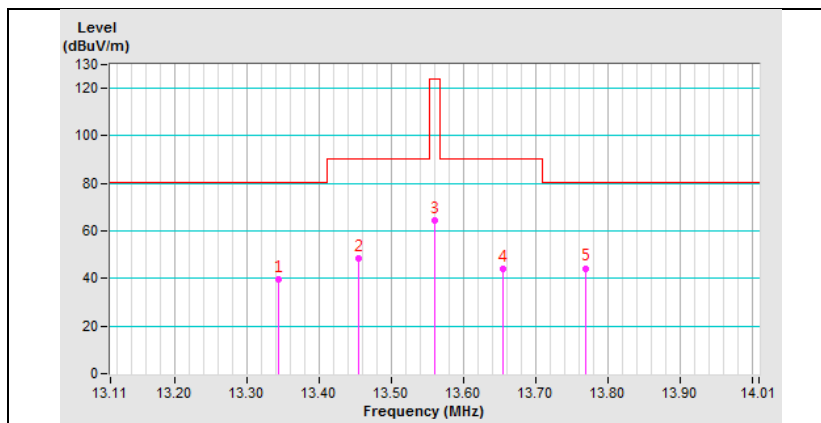
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.343	39.78 QP	80.50	-40.72	1.00	265	43.18	-3.40
2	13.454	48.26 QP	90.47	-42.21	1.00	144	51.67	-3.41
3	*13.560	64.32 QP	124.00	-59.68	1.00	189	67.75	-3.43
4	13.655	44.21 QP	90.47	-46.26	1.00	159	47.67	-3.46
5	13.769	44.34 QP	80.50	-36.16	1.00	284	47.82	-3.48

- 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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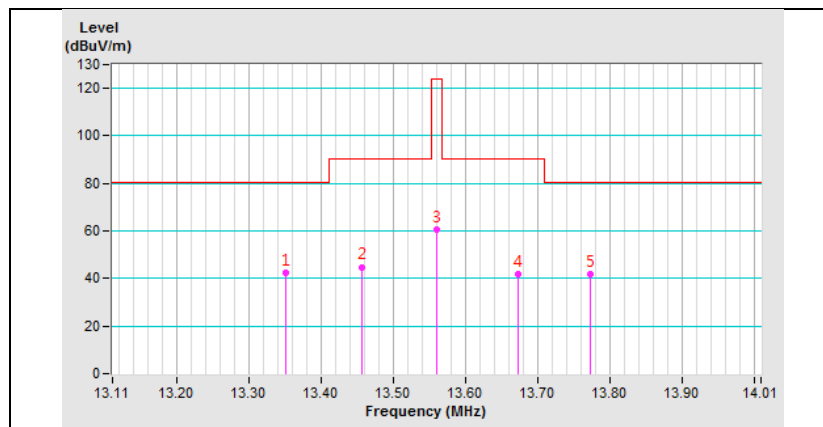
Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.350	42.25 QP	80.50	-38.25	1.00	173	45.65	-3.40
2	13.457	44.87 QP	90.47	-45.60	1.00	138	48.28	-3.41
3	*13.560	60.72 QP	124.00	-63.28	1.00	223	64.15	-3.43
4	13.673	41.94 QP	90.47	-48.53	1.00	143	45.40	-3.46
5	13.773	41.83 QP	80.50	-38.67	1.00	295	45.31	-3.48

- 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
-----------------	--------------------	-------------------	------------

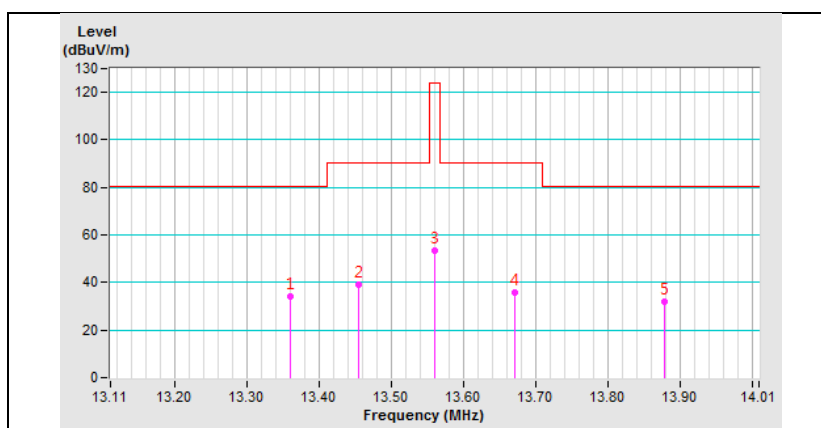
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.359	33.92 QP	80.50	-46.58	1.00	295	37.32	-3.40
2	13.454	39.31 QP	90.47	-51.16	1.00	138	42.72	-3.41
3	*13.560	53.43 QP	124.00	-70.57	1.00	144	56.86	-3.43
4	13.672	35.72 QP	90.47	-54.75	1.00	295	39.18	-3.46
5	13.878	31.68 QP	80.50	-48.82	1.00	243	35.17	-3.49

- 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:

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

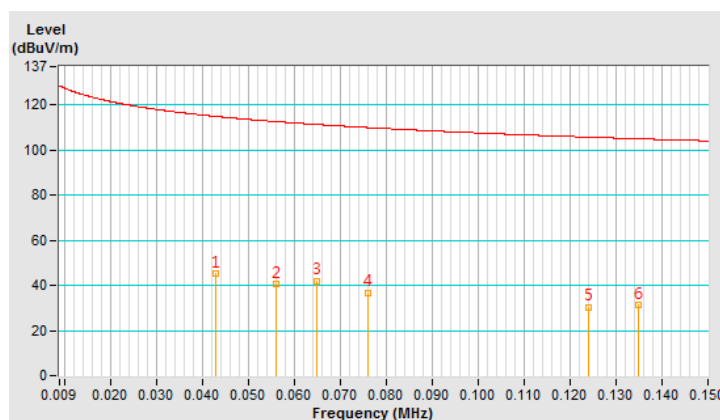


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.043	45.18 AV	114.92	-69.74	1.00	256	20.60	24.58
2	0.056	40.49 AV	112.63	-72.14	1.00	118	18.33	22.16
3	0.065	41.76 AV	111.34	-69.58	1.00	142	20.79	20.97
4	0.076	36.63 AV	109.98	-73.35	1.00	195	17.10	19.53
5	0.124	30.31 AV	105.73	-75.42	1.00	212	14.93	15.38
6	0.135	31.08 AV	104.99	-73.91	1.00	231	16.16	14.92

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

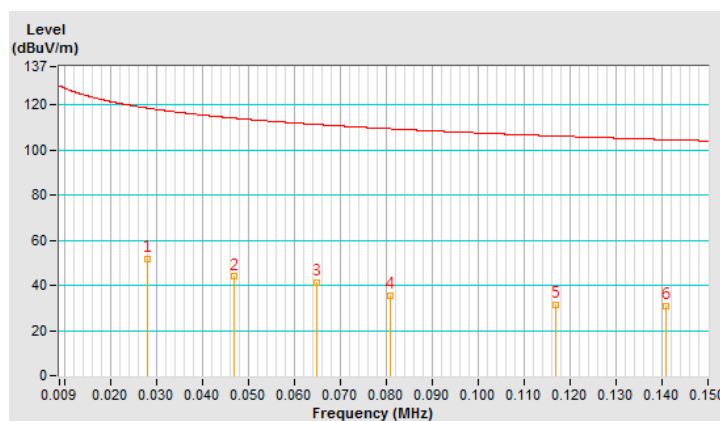


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.028	51.86 AV	118.65	-66.79	1.00	131	23.34	28.52
2	0.047	44.02 AV	114.15	-70.13	1.00	143	20.38	23.64
3	0.065	41.38 AV	111.34	-69.96	1.00	241	20.41	20.97
4	0.081	35.43 AV	109.43	-74.00	1.00	192	16.56	18.87
5	0.117	31.49 AV	106.24	-74.75	1.00	256	15.81	15.68
6	0.141	30.89 AV	104.62	-73.73	1.00	118	16.21	14.68

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

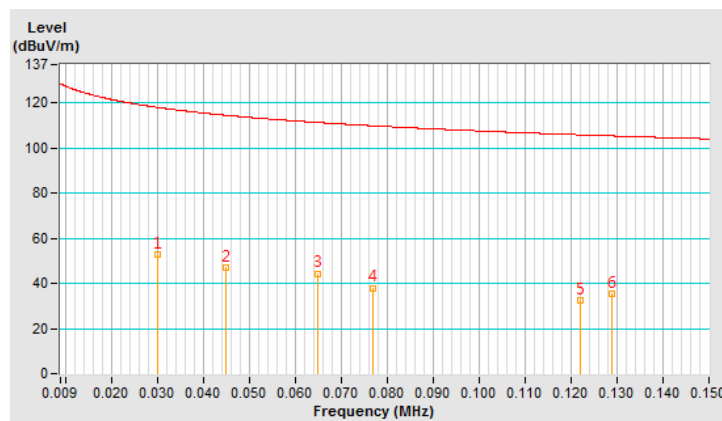


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.030	52.63 AV	118.05	-65.42	1.00	118	24.99	27.64
2	0.045	46.95 AV	114.53	-67.58	1.00	145	22.84	24.11
3	0.065	44.25 AV	111.34	-67.09	1.00	157	23.28	20.97
4	0.077	37.95 AV	109.87	-71.92	1.00	205	18.56	19.39
5	0.122	32.43 AV	105.87	-73.44	1.00	145	16.97	15.46
6	0.129	35.19 AV	105.39	-70.20	1.00	118	20.01	15.18

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

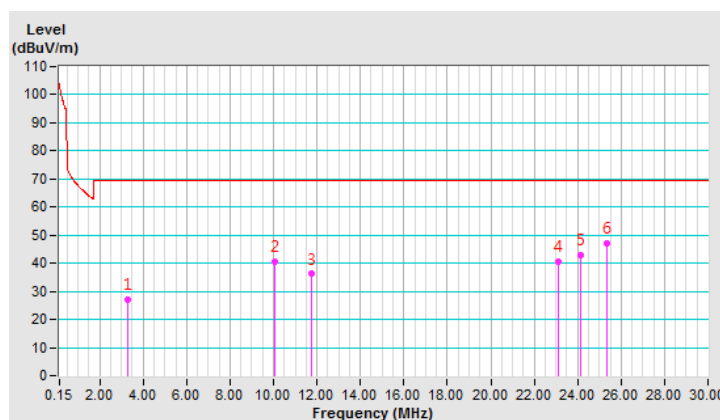


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.304	27.11 QP	69.50	-42.39	1.00	269	30.65	-3.54
2	10.047	40.58 QP	69.50	-28.92	1.00	119	43.40	-2.82
3	11.750	36.25 QP	69.50	-33.25	1.00	238	39.36	-3.11
4	23.129	40.56 QP	69.50	-28.94	1.00	179	44.65	-4.09
5	24.138	42.83 QP	69.50	-26.67	1.00	152	46.77	-3.94
6	25.326	47.12 QP	69.50	-22.38	1.00	203	50.88	-3.76

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

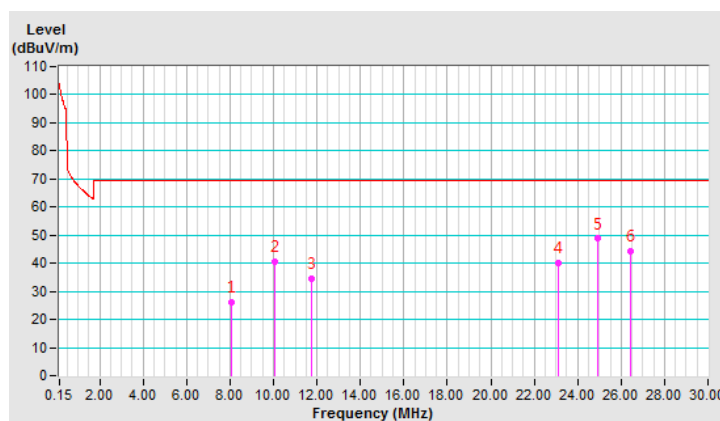


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	8.045	26.16 QP	69.50	-43.34	1.00	113	29.30	-3.14
2	10.048	40.76 QP	69.50	-28.74	1.00	141	43.58	-2.82
3	11.754	34.62 QP	69.50	-34.88	1.00	195	37.74	-3.12
4	23.127	40.02 QP	69.50	-29.48	1.00	145	44.11	-4.09
5	24.952	48.83 QP	69.50	-20.67	1.00	265	52.65	-3.82
6	26.412	44.21 QP	69.50	-25.29	1.00	269	47.80	-3.59

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

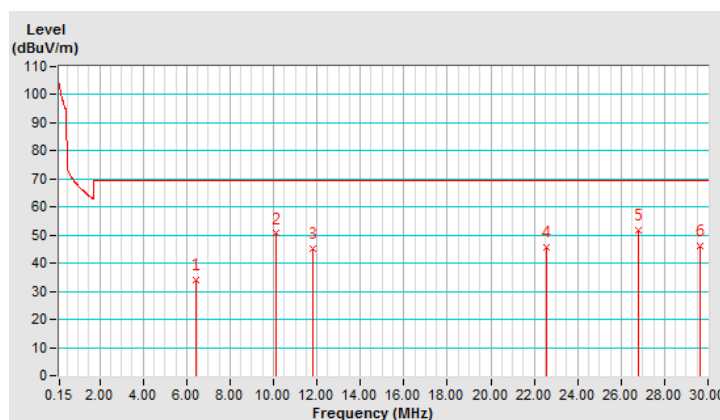


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.425	34.19 QP	69.50	-35.31	1.00	142	37.61	-3.42
2	10.097	50.65 QP	69.50	-18.85	1.00	158	53.48	-2.83
3	11.801	45.32 QP	69.50	-24.18	1.00	119	48.44	-3.12
4	22.579	45.64 QP	69.50	-23.86	1.00	302	49.82	-4.18
5	26.810	51.65 QP	69.50	-17.85	1.00	142	55.19	-3.54
6	29.660	46.13 QP	69.50	-23.37	1.00	187	49.23	-3.10

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

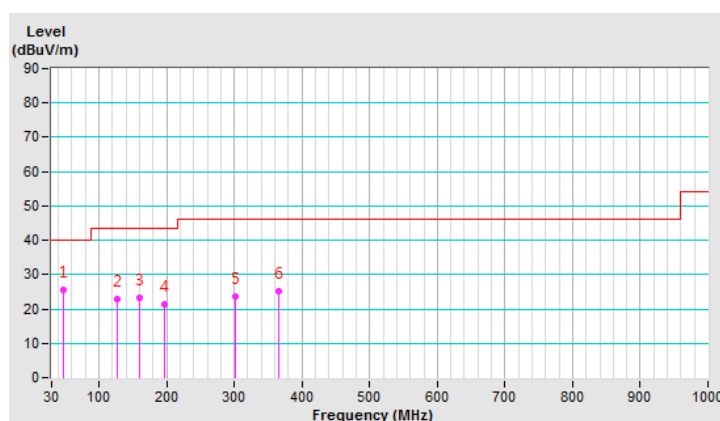


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.38	25.5 QP	40.0	-14.5	1.90 H	281	34.1	-8.6
2	126.59	22.9 QP	43.5	-20.6	1.14 H	267	32.6	-9.7
3	159.62	23.2 QP	43.5	-20.3	1.50 H	264	31.3	-8.1
4	196.16	21.3 QP	43.5	-22.2	1.50 H	118	31.6	-10.3
5	301.79	23.5 QP	46.0	-22.5	1.00 H	149	30.2	-6.7
6	365.89	25.0 QP	46.0	-21.0	2.00 H	301	30.0	-5.0

REMARKS:

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

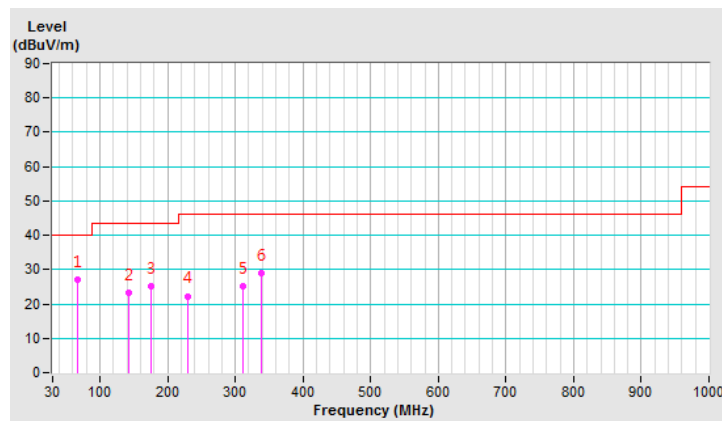


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	67.80	27.1 QP	40.0	-12.9	1.65 V	232	37.2	-10.1
2	143.06	23.2 QP	43.5	-20.3	1.50 V	301	31.3	-8.1
3	176.30	25.0 QP	43.5	-18.5	1.51 V	279	34.1	-9.1
4	229.12	22.3 QP	46.0	-23.7	1.50 V	249	32.0	-9.7
5	311.88	25.0 QP	46.0	-21.0	2.00 V	206	31.2	-6.2
6	339.02	28.8 QP	46.0	-17.2	1.50 V	144	34.5	-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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Type B

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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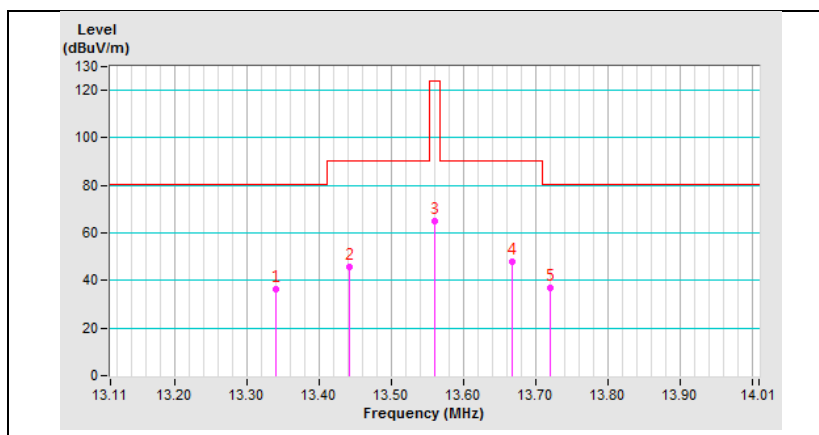
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.339	36.31 QP	80.50	-44.19	1.00	115	39.71	-3.40
2	13.442	45.67 QP	90.47	-44.80	1.00	259	49.08	-3.41
3	*13.560	65.13 QP	124.00	-58.87	1.00	264	68.56	-3.43
4	13.668	47.67 QP	90.47	-42.80	1.00	158	51.13	-3.46
5	13.720	37.09 QP	80.50	-43.41	1.00	135	40.56	-3.47

- 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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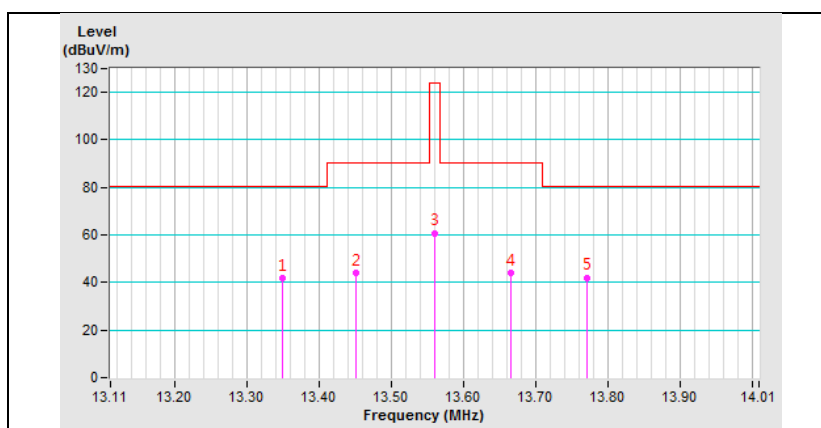
Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.348	41.96 QP	80.50	-38.54	1.00	159	45.36	-3.40
2	13.451	44.18 QP	90.47	-46.29	1.00	201	47.59	-3.41
3	*13.560	60.86 QP	124.00	-63.14	1.00	154	64.29	-3.43
4	13.665	43.87 QP	90.47	-46.60	1.00	143	47.33	-3.46
5	13.771	42.12 QP	80.50	-38.38	1.00	297	45.60	-3.48

- 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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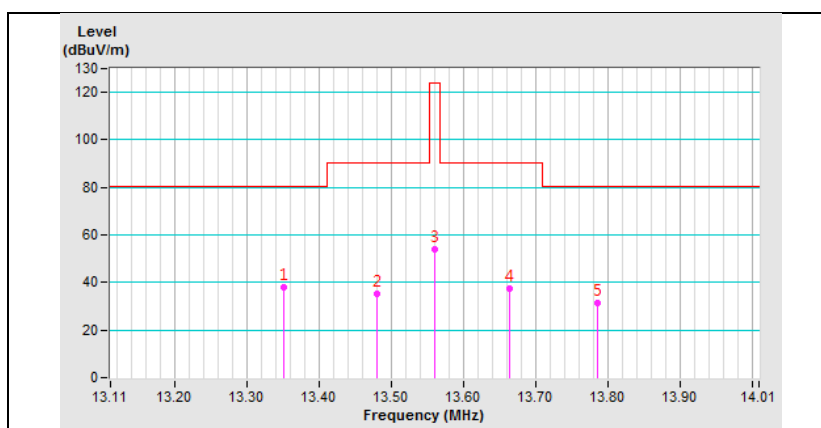
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.350	37.85 QP	80.50	-42.65	1.00	145	41.25	-3.40
2	13.480	35.05 QP	90.47	-55.42	1.00	201	38.47	-3.42
3	*13.560	53.88 QP	124.00	-70.12	1.00	241	57.31	-3.43
4	13.663	37.45 QP	90.47	-53.02	1.00	172	40.91	-3.46
5	13.785	31.26 QP	80.50	-49.24	1.00	138	34.74	-3.48

- 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:

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

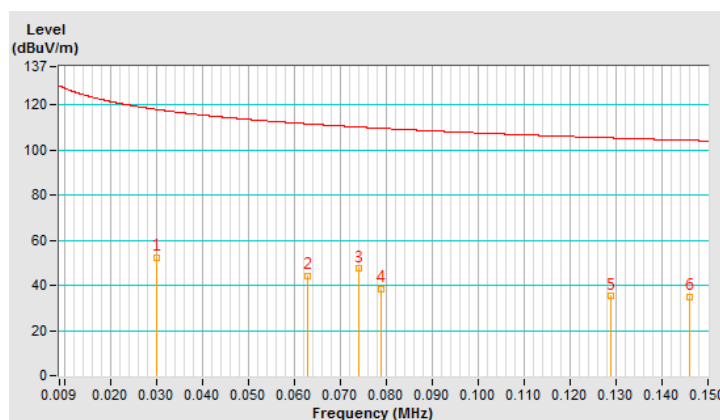


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.030	52.35 AV	118.05	-65.70	1.00	241	24.71	27.64
2	0.063	44.26 AV	111.61	-67.35	1.00	354	23.02	21.24
3	0.074	47.49 AV	110.21	-62.72	1.00	178	27.71	19.78
4	0.079	38.32 AV	109.65	-71.33	1.00	223	19.19	19.13
5	0.129	35.18 AV	105.39	-70.21	1.00	265	20.00	15.18
6	0.146	34.95 AV	104.31	-69.36	1.00	154	20.48	14.47

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

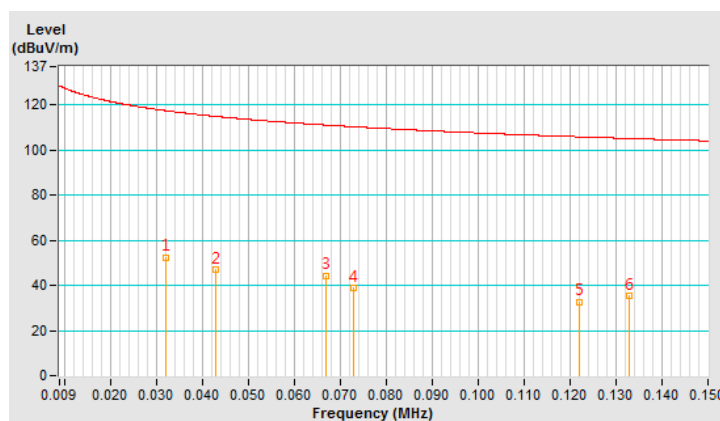


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.032	52.43 AV	117.49	-65.06	1.00	141	25.26	27.17
2	0.043	46.83 AV	114.92	-68.09	1.00	265	22.25	24.58
3	0.067	44.13 AV	111.08	-66.95	1.00	302	23.43	20.70
4	0.073	38.65 AV	110.33	-71.68	1.00	105	18.73	19.92
5	0.122	32.58 AV	105.87	-73.29	1.00	265	17.12	15.46
6	0.133	35.32 AV	105.12	-69.80	1.00	114	20.31	15.01

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

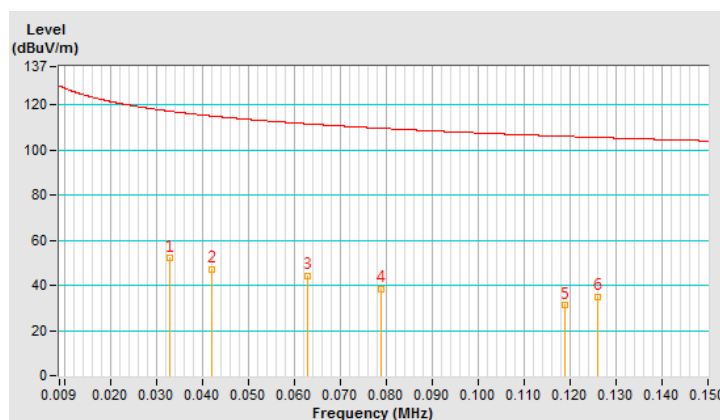


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.033	52.12 AV	117.22	-65.10	1.00	165	25.19	26.93
2	0.042	47.02 AV	115.13	-68.11	1.00	263	22.21	24.81
3	0.063	44.26 AV	111.61	-67.35	1.00	172	23.02	21.24
4	0.079	38.39 AV	109.65	-71.26	1.00	165	19.26	19.13
5	0.119	31.22 AV	106.09	-74.87	1.00	178	15.63	15.59
6	0.126	35.12 AV	105.59	-70.47	1.00	263	19.81	15.31

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

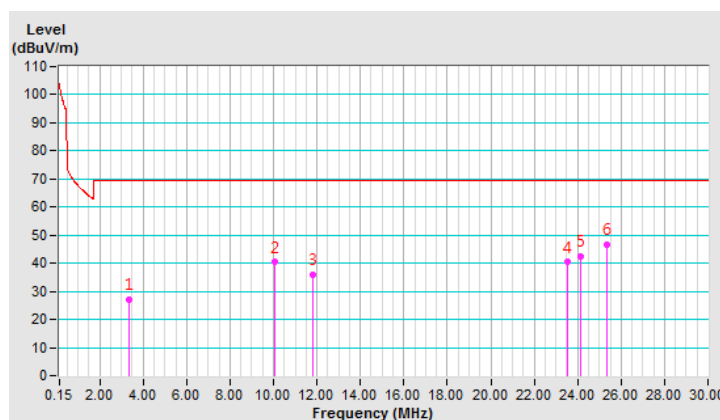


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3.329	27.18 QP	69.50	-42.32	1.00	145	30.72	-3.54
2	10.044	40.32 QP	69.50	-29.18	1.00	264	43.14	-2.82
3	11.783	35.98 QP	69.50	-33.52	1.00	118	39.10	-3.12
4	23.528	40.32 QP	69.50	-29.18	1.00	171	44.36	-4.04
5	24.149	42.31 QP	69.50	-27.19	1.00	259	46.25	-3.94
6	25.358	46.58 QP	69.50	-22.92	1.00	179	50.34	-3.76

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

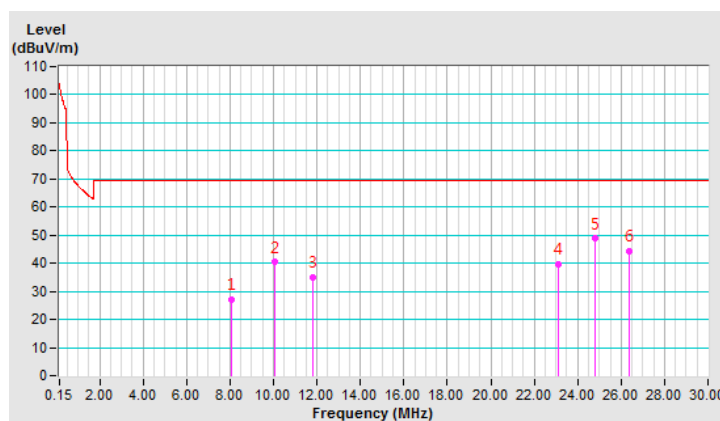


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	8.085	27.05 QP	69.50	-42.45	1.00	141	30.18	-3.13
2	10.041	40.44 QP	69.50	-29.06	1.00	153	43.26	-2.82
3	11.804	34.98 QP	69.50	-34.52	1.00	265	38.10	-3.12
4	23.087	39.68 QP	69.50	-29.82	1.00	172	43.78	-4.10
5	24.812	48.74 QP	69.50	-20.76	1.00	115	52.58	-3.84
6	26.379	44.20 QP	69.50	-25.30	1.00	169	47.80	-3.60

REMARKS:

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

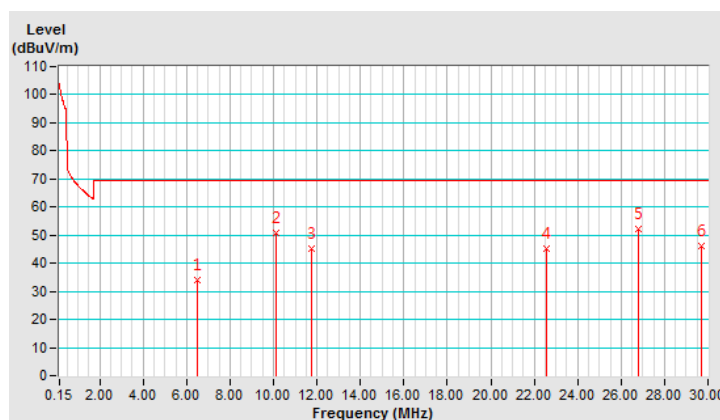


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.485	34.03 QP	69.50	-35.47	1.00	198	37.43	-3.40
2	10.106	50.74 QP	69.50	-18.76	1.00	264	53.57	-2.83
3	11.772	45.15 QP	69.50	-24.35	1.00	172	48.27	-3.12
4	22.584	45.43 QP	69.50	-24.07	1.00	189	49.61	-4.18
5	26.801	52.23 QP	69.50	-17.27	1.00	241	55.77	-3.54
6	29.700	46.12 QP	69.50	-23.38	1.00	179	49.21	-3.09

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

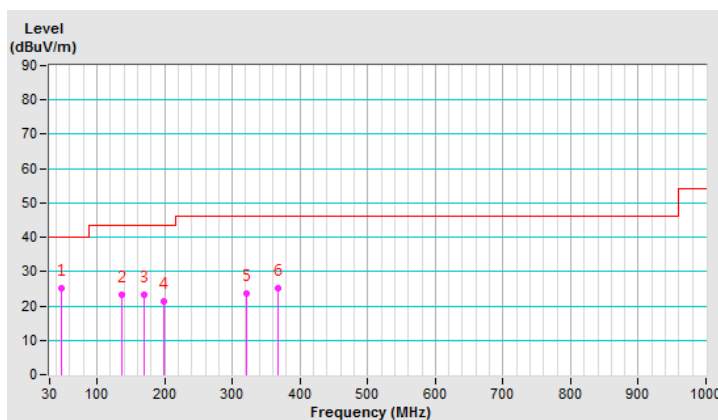


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.40	25.3 QP	40.0	-14.7	1.59 H	224	33.9	-8.6
2	136.59	23.1 QP	43.5	-20.4	1.64 H	298	31.7	-8.6
3	169.62	23.3 QP	43.5	-20.2	1.50 H	279	32.1	-8.8
4	198.16	21.3 QP	43.5	-22.2	1.65 H	331	31.6	-10.3
5	321.79	23.6 QP	46.0	-22.4	1.50 H	274	29.5	-5.9
6	367.39	25.1 QP	46.0	-20.9	1.65 H	305	30.1	-5.0

REMARKS:

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

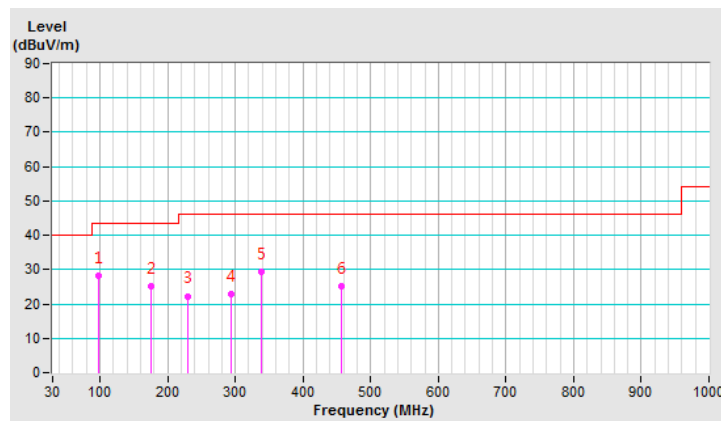


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	97.80	28.1 QP	43.5	-15.4	2.00 V	305	40.6	-12.5
2	176.30	25.3 QP	43.5	-18.2	1.50 V	149	34.4	-9.1
3	229.12	22.3 QP	46.0	-23.7	1.50 V	249	32.0	-9.7
4	293.08	22.9 QP	46.0	-23.1	2.01 V	174	29.9	-7.0
5	339.02	29.3 QP	46.0	-16.7	1.50 V	265	35.0	-5.7
6	456.88	25.3 QP	46.0	-20.7	2.50 V	146	28.2	-2.9

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



Type F

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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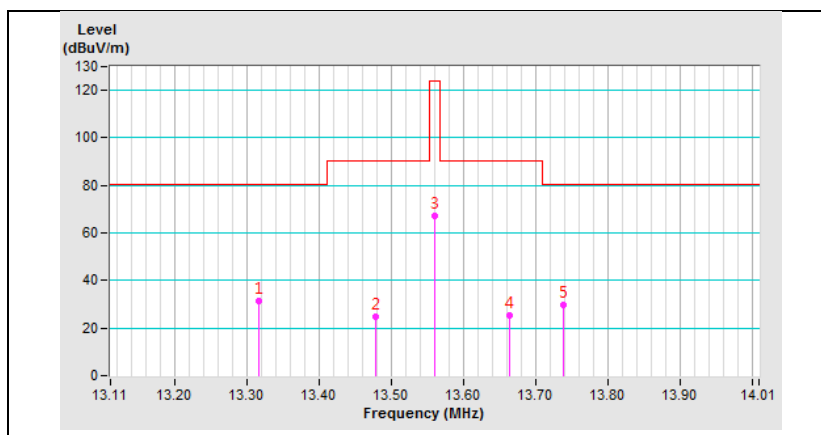
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.315	31.58 QP	80.50	-48.92	1.00	145	34.98	-3.40
2	13.478	24.73 QP	90.47	-65.74	1.00	279	28.15	-3.42
3	*13.560	67.29 QP	124.00	-56.71	1.00	265	70.72	-3.43
4	13.663	25.18 QP	90.47	-65.29	1.00	224	28.64	-3.46
5	13.739	29.65 QP	80.50	-50.85	1.00	241	33.12	-3.47

- 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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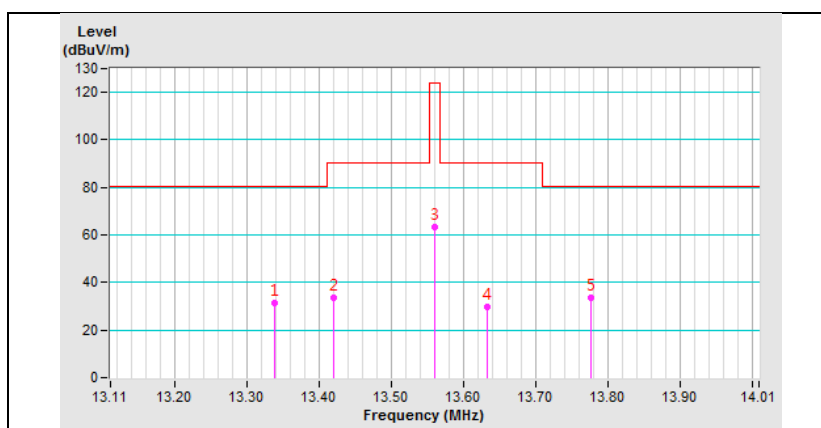
Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.337	31.17 QP	80.50	-49.33	1.00	142	34.57	-3.40
2	13.420	33.38 QP	90.47	-57.09	1.00	259	36.79	-3.41
3	*13.560	63.16 QP	124.00	-60.84	1.00	223	66.59	-3.43
4	13.632	29.69 QP	90.47	-60.78	1.00	172	33.14	-3.45
5	13.777	33.39 QP	80.50	-47.11	1.00	315	36.87	-3.48

- 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:

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



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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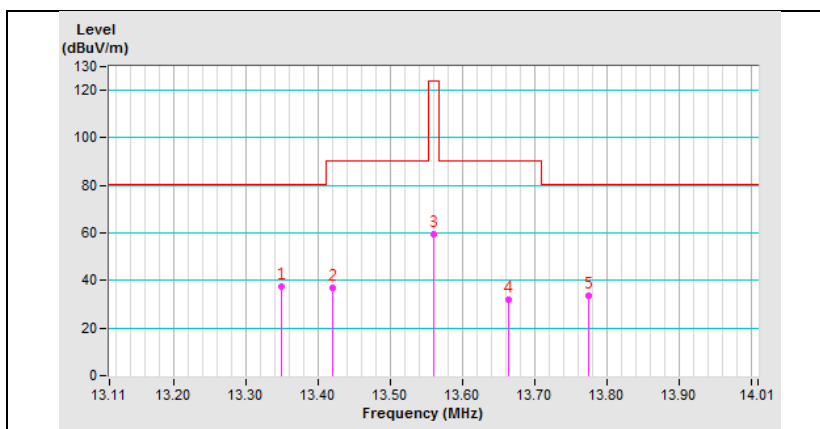
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.348	37.26 QP	80.50	-43.24	1.00	265	40.66	-3.40
2	13.420	36.68 QP	90.47	-53.79	1.00	179	40.09	-3.41
3	*13.560	59.25 QP	124.00	-64.75	1.00	243	62.68	-3.43
4	13.664	32.18 QP	90.47	-58.29	1.00	295	35.64	-3.46
5	13.775	33.76 QP	80.50	-46.74	1.00	224	37.24	-3.48

- 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:

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

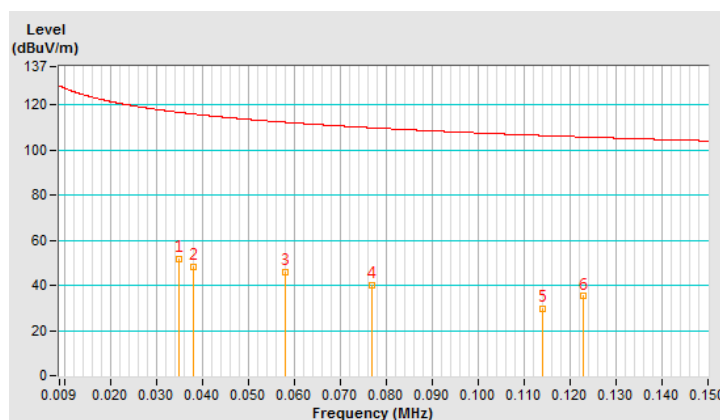


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.035	51.90 AV	116.70	-64.80	1.00	141	25.50	26.40
2	0.038	48.20 AV	116.00	-67.80	1.00	165	22.50	25.70
3	0.058	45.80 AV	112.30	-66.50	1.00	143	24.00	21.80
4	0.077	40.20 AV	109.90	-69.70	1.00	147	20.80	19.40
5	0.114	29.80 AV	106.50	-76.70	1.00	157	14.00	15.80
6	0.123	35.30 AV	105.80	-70.50	1.00	187	19.90	15.40

REMARKS:

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

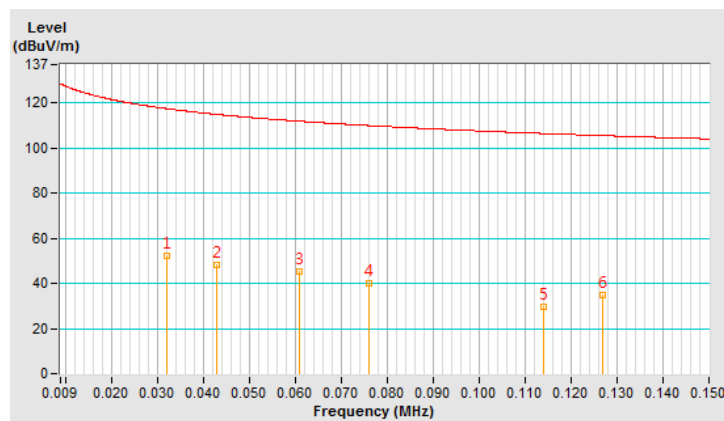


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.032	52.30 AV	117.50	-65.20	1.00	149	25.20	27.10
2	0.043	48.20 AV	114.90	-66.70	1.00	195	23.70	24.50
3	0.061	45.30 AV	111.90	-66.60	1.00	162	23.80	21.50
4	0.076	40.30 AV	110.00	-69.70	1.00	179	20.80	19.50
5	0.114	29.60 AV	106.50	-76.90	1.00	172	13.80	15.80
6	0.127	35.10 AV	105.50	-70.40	1.00	241	19.80	15.30

REMARKS:

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

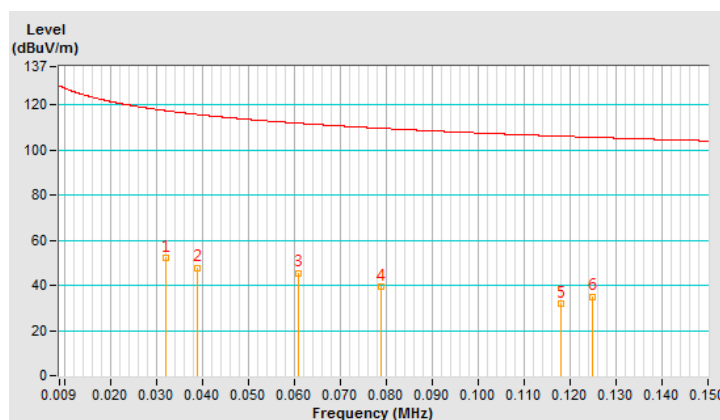


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.032	52.10 AV	117.50	-65.40	1.00	265	25.00	27.10
2	0.039	47.60 AV	115.80	-68.20	1.00	193	22.10	25.50
3	0.061	45.30 AV	111.90	-66.60	1.00	143	23.80	21.50
4	0.079	39.40 AV	109.60	-70.20	1.00	145	20.30	19.10
5	0.118	31.70 AV	106.20	-74.50	1.00	132	16.10	15.60
6	0.125	34.80 AV	105.70	-70.90	1.00	291	19.50	15.30

REMARKS:

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

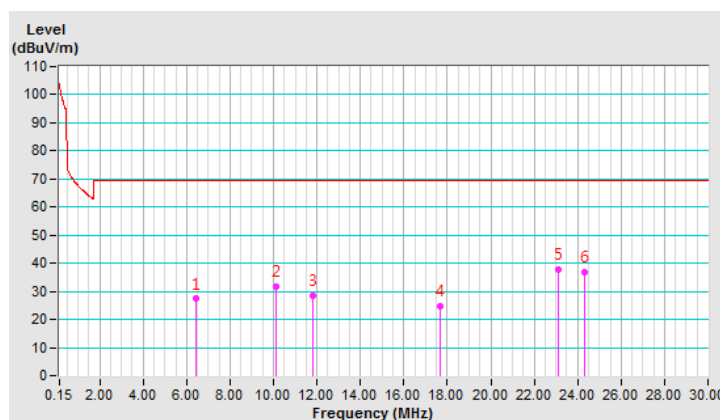


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.424	27.30 QP	69.50	-42.20	1.00	301	30.70	-3.40
2	10.093	31.60 QP	69.50	-37.90	1.00	118	34.40	-2.80
3	11.830	28.50 QP	69.50	-41.00	1.00	249	31.60	-3.10
4	17.694	24.70 QP	69.50	-44.80	1.00	226	28.80	-4.10
5	23.128	37.70 QP	69.50	-31.80	1.00	172	41.80	-4.10
6	24.350	36.90 QP	69.50	-32.60	1.00	159	40.80	-3.90

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

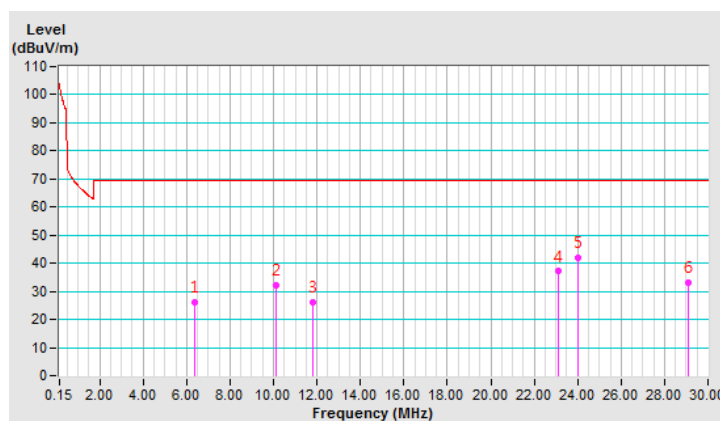


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.347	26.10 QP	69.50	-43.40	1.00	157	29.60	-3.50
2	10.095	32.30 QP	69.50	-37.20	1.00	135	35.10	-2.80
3	11.837	26.20 QP	69.50	-43.30	1.00	143	29.30	-3.10
4	23.130	37.10 QP	69.50	-32.40	1.00	269	41.20	-4.10
5	24.044	42.00 QP	69.50	-27.50	1.00	243	45.90	-3.90
6	29.114	33.10 QP	69.50	-36.40	1.00	305	36.30	-3.20

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

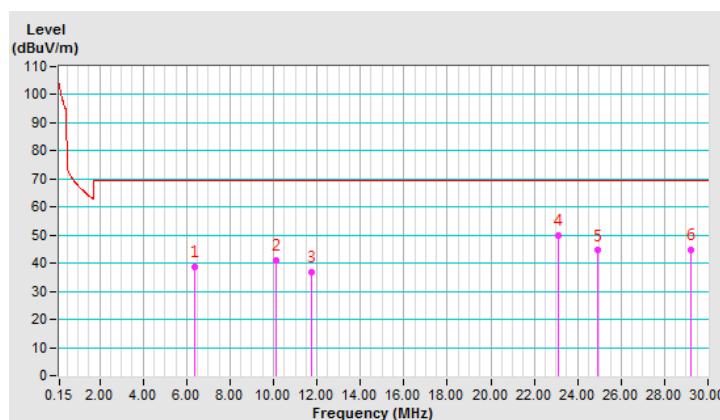


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.395	38.80 QP	69.50	-30.70	1.00	131	42.20	-3.40
2	10.097	41.10 QP	69.50	-28.40	1.00	142	43.90	-2.80
3	11.752	36.90 QP	69.50	-32.60	1.00	295	40.10	-3.20
4	23.130	50.00 QP	69.50	-19.50	1.00	171	54.10	-4.10
5	24.917	44.50 QP	69.50	-25.00	1.00	258	48.30	-3.80
6	29.235	45.00 QP	69.50	-24.50	1.00	263	48.20	-3.20

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

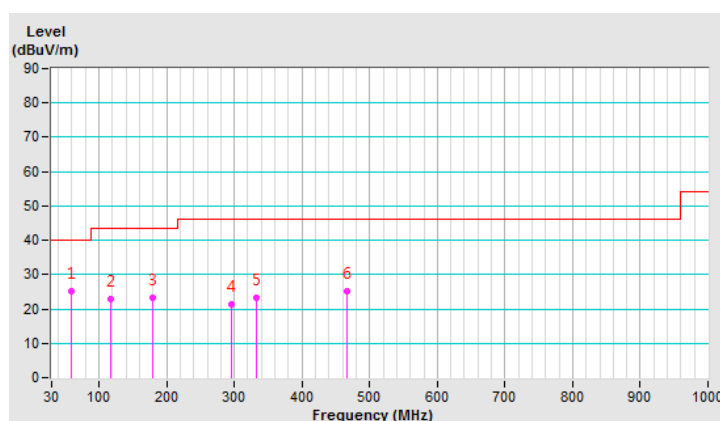


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	58.38	25.3 QP	40.0	-14.7	1.00 H	246	34.1	-8.8
2	116.59	22.8 QP	43.5	-20.7	2.50 H	149	32.9	-10.1
3	179.62	23.3 QP	43.5	-20.2	1.65 H	304	32.7	-9.4
4	296.15	21.4 QP	46.0	-24.6	1.53 H	298	28.3	-6.9
5	331.79	23.4 QP	46.0	-22.6	1.39 H	287	29.1	-5.7
6	465.89	25.1 QP	46.0	-20.9	1.40 H	116	27.8	-2.7

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

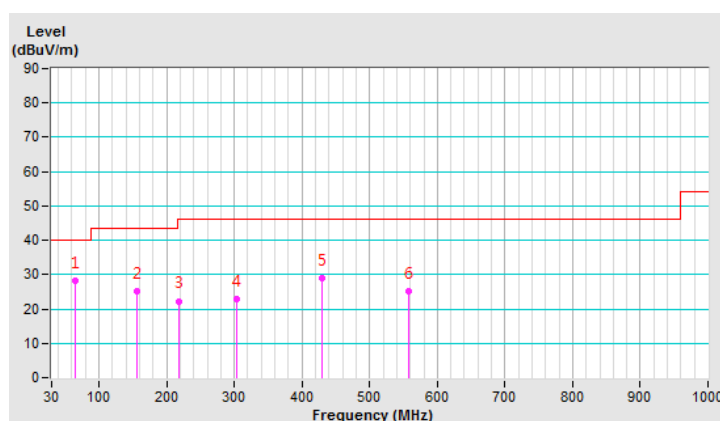


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	64.80	28.1 QP	40.0	-11.9	1.50 V	224	37.7	-9.6
2	156.30	25.2 QP	43.5	-18.3	1.50 V	249	33.0	-7.8
3	219.12	22.3 QP	46.0	-23.7	1.50 V	241	32.3	-10.0
4	303.08	22.9 QP	46.0	-23.1	2.50 V	143	29.5	-6.6
5	429.02	28.8 QP	46.0	-17.2	1.50 V	243	32.3	-3.5
6	556.88	25.2 QP	46.0	-20.8	2.50 V	265	26.0	-0.8

REMARKS:

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



Type V

Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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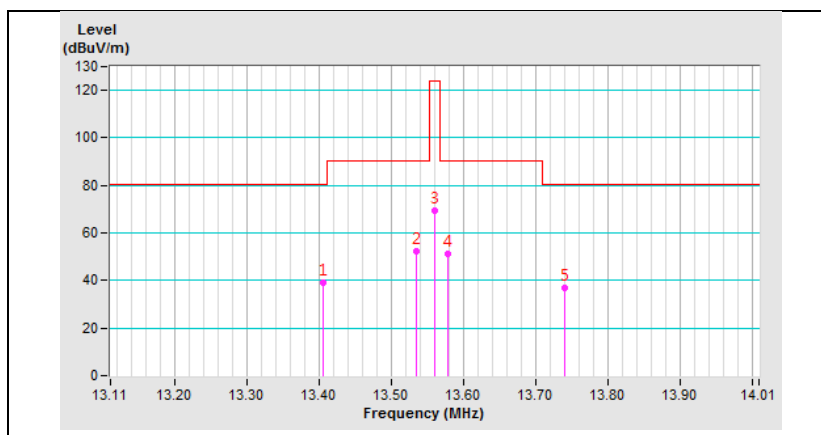
Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.405	39.01 QP	80.50	-41.49	1.00	142	42.42	-3.41
2	13.535	52.32 QP	90.47	-38.15	1.00	263	55.75	-3.43
3	*13.560	69.15 QP	124.00	-54.85	1.00	243	72.58	-3.43
4	13.579	51.46 QP	90.47	-39.01	1.00	163	54.89	-3.43
5	13.740	36.96 QP	80.50	-43.54	1.00	243	40.43	-3.47

- 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:

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



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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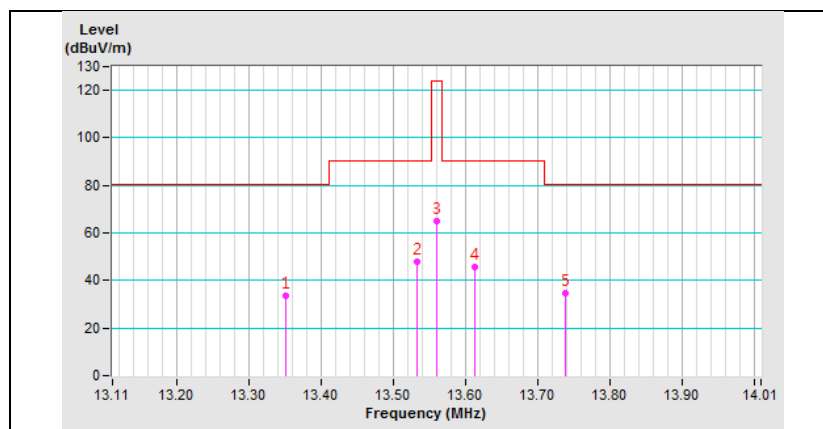
Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.350	33.43 QP	80.50	-47.07	1.00	115	36.83	-3.40
2	13.533	47.96 QP	90.47	-42.51	1.00	243	51.39	-3.43
3	*13.560	64.93 QP	124.00	-59.07	1.00	115	68.36	-3.43
4	13.612	45.74 QP	90.47	-44.73	1.00	241	49.19	-3.45
5	13.739	34.43 QP	80.50	-46.07	1.00	195	37.90	-3.47

- 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:

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



Frequency Range	13.110 ~ 14.010MHz	Detector Function	Quasi-Peak
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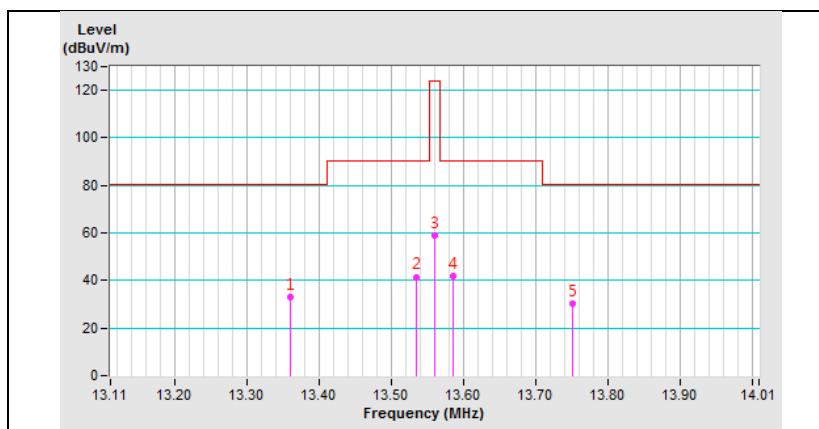
Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.359	32.93 QP	80.50	-47.57	1.00	246	36.33	-3.40
2	13.535	41.58 QP	90.47	-48.89	1.00	265	45.01	-3.43
3	*13.560	58.96 QP	124.00	-65.04	1.00	243	62.39	-3.43
4	13.585	41.65 QP	90.47	-48.82	1.00	178	45.09	-3.44
5	13.752	30.43 QP	80.50	-50.07	1.00	241	33.91	-3.48

- 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:

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

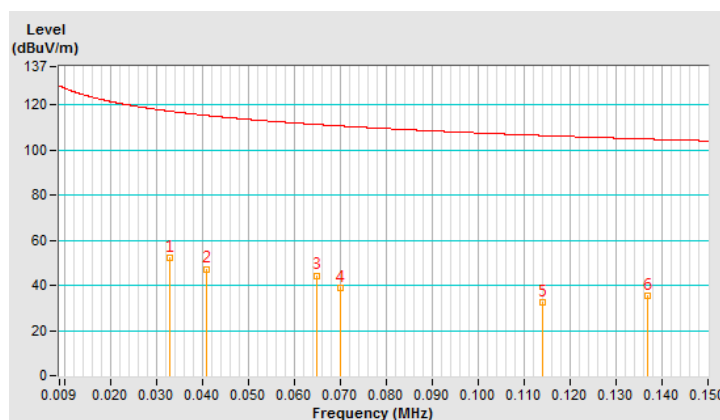


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.033	52.03 AV	117.22	-65.19	1.00	295	25.10	26.93
2	0.041	47.25 AV	115.34	-68.09	1.00	172	22.20	25.05
3	0.065	44.31 AV	111.34	-67.03	1.00	265	23.34	20.97
4	0.070	38.81 AV	110.70	-71.89	1.00	144	18.50	20.31
5	0.114	32.36 AV	106.46	-74.10	1.00	115	16.57	15.79
6	0.137	35.32 AV	104.87	-69.55	1.00	261	20.47	14.85

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

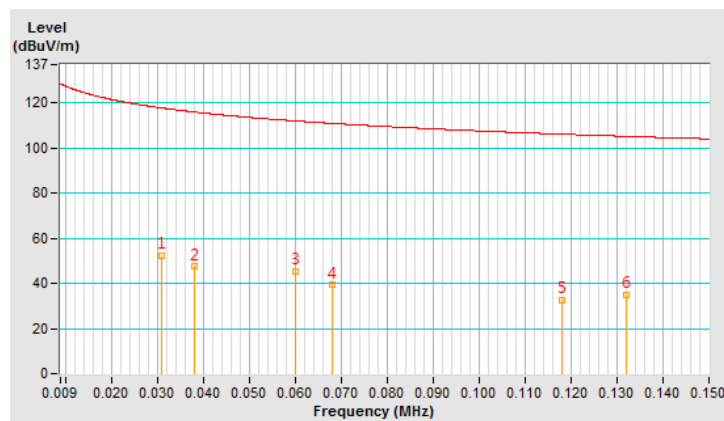


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.031	52.32 AV	117.77	-65.45	1.00	115	24.92	27.40
2	0.038	47.44 AV	116.00	-68.56	1.00	205	21.69	25.75
3	0.060	45.31 AV	112.03	-66.72	1.00	171	23.68	21.63
4	0.068	39.32 AV	110.95	-71.63	1.00	224	18.74	20.58
5	0.118	32.54 AV	106.16	-73.62	1.00	205	16.91	15.63
6	0.132	34.89 AV	105.19	-70.30	1.00	162	19.84	15.05

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

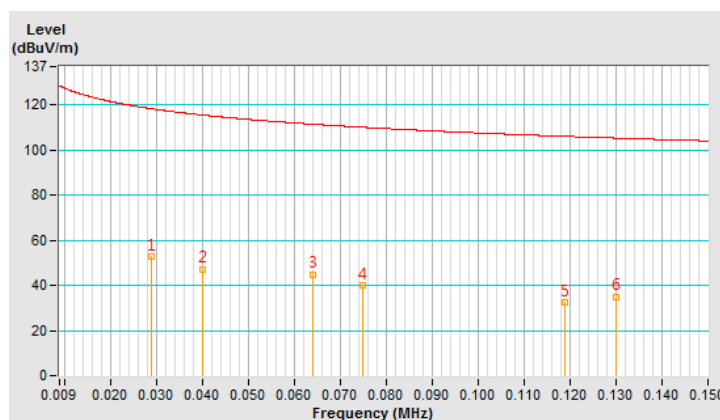


Frequency Range	9kHz ~ 0.15MHz	Detector Function	Average
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.029	52.65 AV	118.34	-65.69	1.00	108	24.57	28.08
2	0.040	47.08 AV	115.55	-68.47	1.00	226	21.80	25.28
3	0.064	44.91 AV	111.47	-66.56	1.00	263	23.81	21.10
4	0.075	39.87 AV	110.10	-70.23	1.00	263	20.22	19.65
5	0.119	32.29 AV	106.09	-73.80	1.00	115	16.70	15.59
6	0.130	34.92 AV	105.32	-70.40	1.00	149	19.79	15.13

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

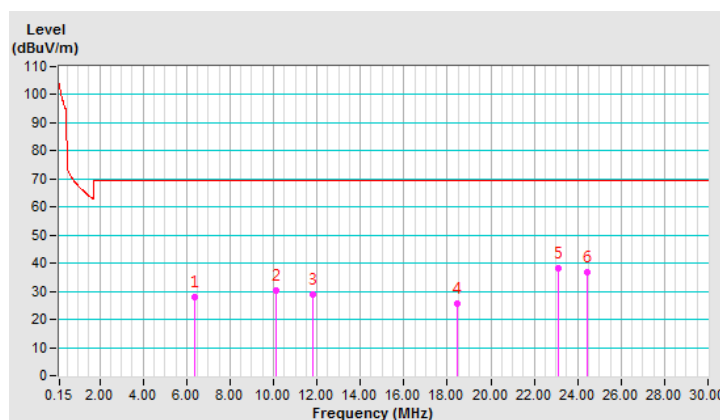


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.389	27.95 QP	69.50	-41.55	1.00	241	31.38	-3.43
2	10.096	30.25 QP	69.50	-39.25	1.00	119	33.08	-2.83
3	11.802	28.95 QP	69.50	-40.55	1.00	141	32.07	-3.12
4	18.488	25.68 QP	69.50	-43.82	1.00	241	29.98	-4.30
5	23.129	38.31 QP	69.50	-31.19	1.00	172	42.40	-4.09
6	24.470	36.74 QP	69.50	-32.76	1.00	119	40.63	-3.89

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

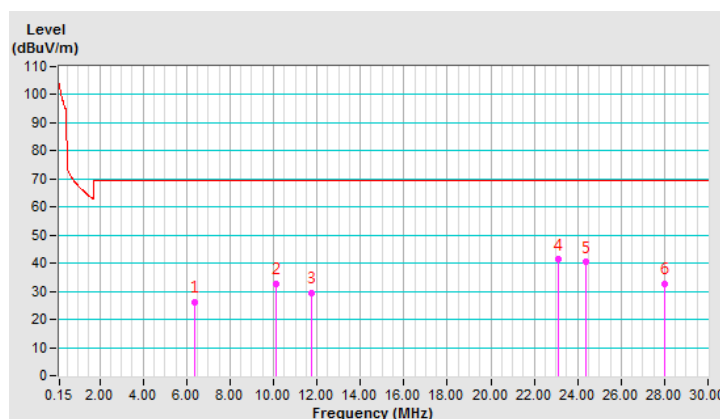


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Perpendicular at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.398	26.02 QP	69.50	-43.48	1.00	141	29.45	-3.43
2	10.096	32.71 QP	69.50	-36.79	1.00	253	35.54	-2.83
3	11.752	29.32 QP	69.50	-40.18	1.00	265	32.44	-3.12
4	23.129	41.31 QP	69.50	-28.19	1.00	279	45.40	-4.09
5	24.351	40.33 QP	69.50	-29.17	1.00	118	44.24	-3.91
6	28.016	32.69 QP	69.50	-36.81	1.00	151	36.04	-3.35

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

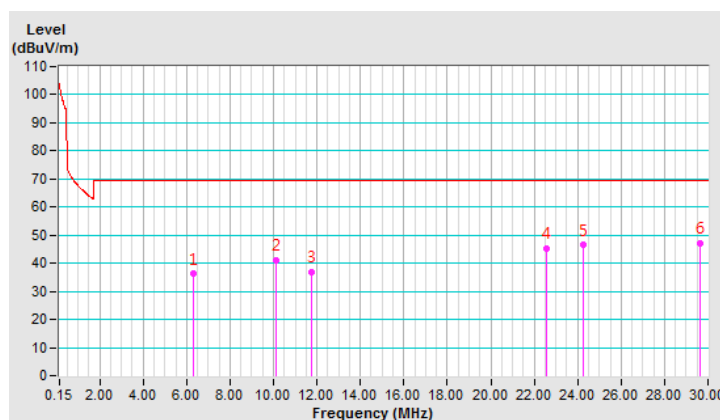


Frequency Range	0.15MHz ~ 30MHz	Detector Function	Quasi-Peak
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Antenna Polarity & Test Distance: Ground Parallel at 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	6.328	36.13 QP	69.50	-33.37	1.00	145	39.57	-3.44
2	10.097	41.05 QP	69.50	-28.45	1.00	263	43.88	-2.83
3	11.752	36.89 QP	69.50	-32.61	1.00	194	40.01	-3.12
4	22.580	45.18 QP	69.50	-24.32	1.00	263	49.36	-4.18
5	24.288	46.38 QP	69.50	-23.12	1.00	225	50.30	-3.92
6	29.664	47.25 QP	69.50	-22.25	1.00	179	50.35	-3.10

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

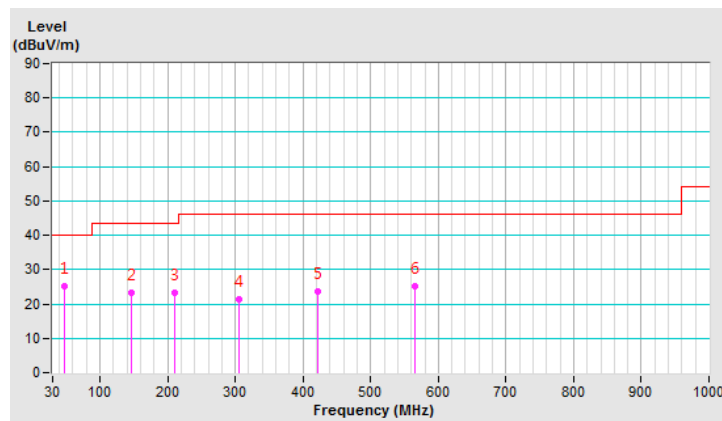


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	48.38	25.3 QP	40.0	-14.7	1.55 H	249	33.9	-8.6
2	146.56	23.1 QP	43.5	-20.4	2.50 H	302	30.9	-7.8
3	209.60	23.2 QP	43.5	-20.3	1.50 H	223	33.4	-10.2
4	306.15	21.4 QP	46.0	-24.6	1.30 H	295	27.9	-6.5
5	421.78	23.6 QP	46.0	-22.4	1.50 H	249	27.3	-3.7
6	565.89	25.1 QP	46.0	-20.9	1.60 H	263	25.6	-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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

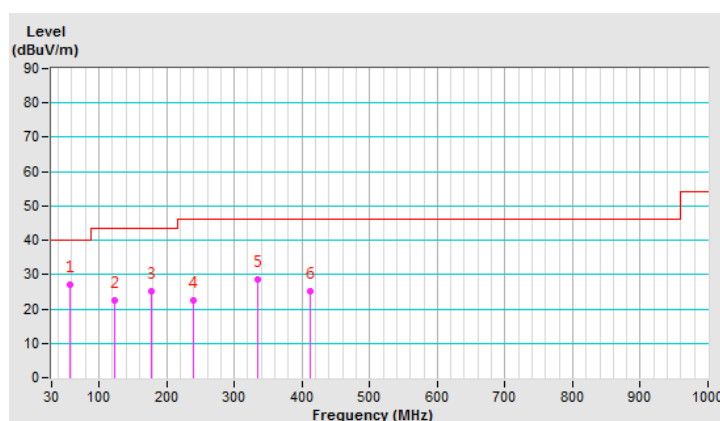


Frequency Range	30MHz ~ 1000MHz	Detector Function	Quasi-Peak
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.81	27.1 QP	40.0	-12.9	2.00 V	114	35.9	-8.8
2	123.08	22.6 QP	43.5	-20.9	1.50 V	303	32.4	-9.8
3	178.30	25.3 QP	43.5	-18.2	1.06 V	279	34.5	-9.2
4	239.12	22.5 QP	46.0	-23.5	1.59 V	226	31.4	-8.9
5	335.02	28.7 QP	46.0	-17.3	1.50 V	301	34.4	-5.7
6	411.88	25.1 QP	46.0	-20.9	1.70 V	319	29.1	-4.0

REMARKS:

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

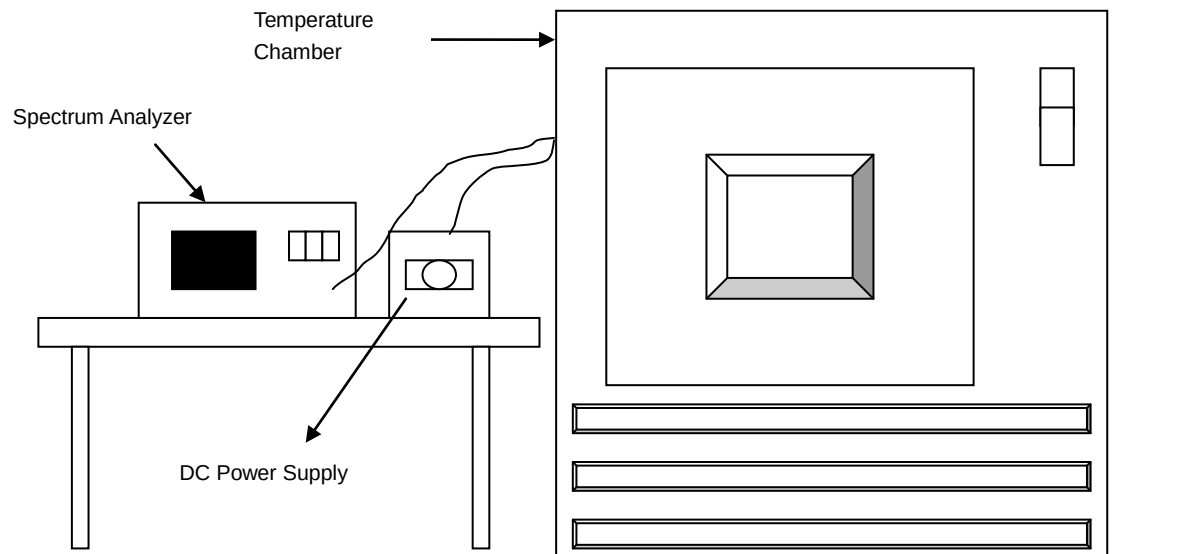


4.2 Frequency Stability

4.2.1 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.

4.2.2 Test Setup



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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.

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Conditions

Same as Item 4.1.6.

4.2.7 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	3.85	13.56	0.00000	13.56	0.00000	13.56	0.00000	13.56	0.00000
40	3.85	13.56003	0.00022	13.56003	0.00022	13.56003	0.00022	13.56003	0.00022
30	3.85	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015
20	3.85	13.55995	-0.00037	13.55995	-0.00037	13.55994	-0.00044	13.55995	-0.00037
10	3.85	13.56	0.00000	13.56	0.00000	13.55999	-0.00007	13.56001	0.00007
0	3.85	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
-10	3.85	13.55994	-0.00044	13.55995	-0.00037	13.55995	-0.00037	13.55995	-0.00037
-20	3.85	13.56005	0.00037	13.56005	0.00037	13.56005	0.00037	13.56005	0.00037

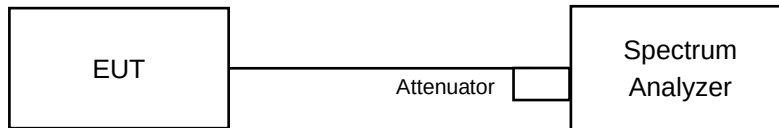
Frequency Stability Versus Voltage									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	4.43	13.55995	-0.00037	13.55995	-0.00037	13.55994	-0.00044	13.55995	-0.00037
	3.85	13.55995	-0.00037	13.55995	-0.00037	13.55994	-0.00044	13.55995	-0.00037
	3.27	13.55995	-0.00037	13.55995	-0.00037	13.55994	-0.00044	13.55995	-0.00037

4.3 20dB Bandwidth

4.3.1 Limits of 20dB BANDWIDTH Measurement

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

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 Procedures

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

4.3.5 Deviation from Test Standard

No deviation.

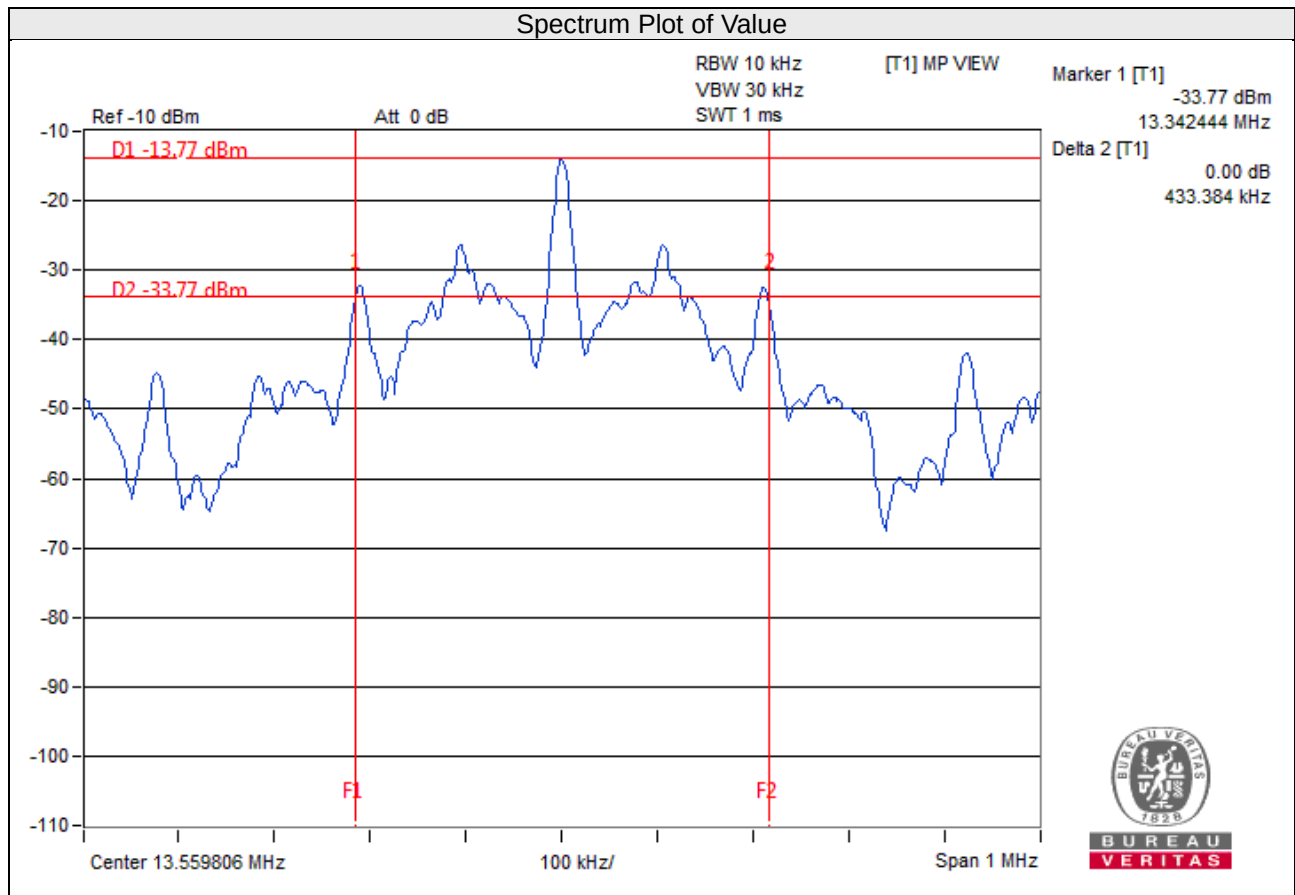
4.3.6 EUT Operating Conditions

Same as Item 4.1.6.

4.3.7 Test Results

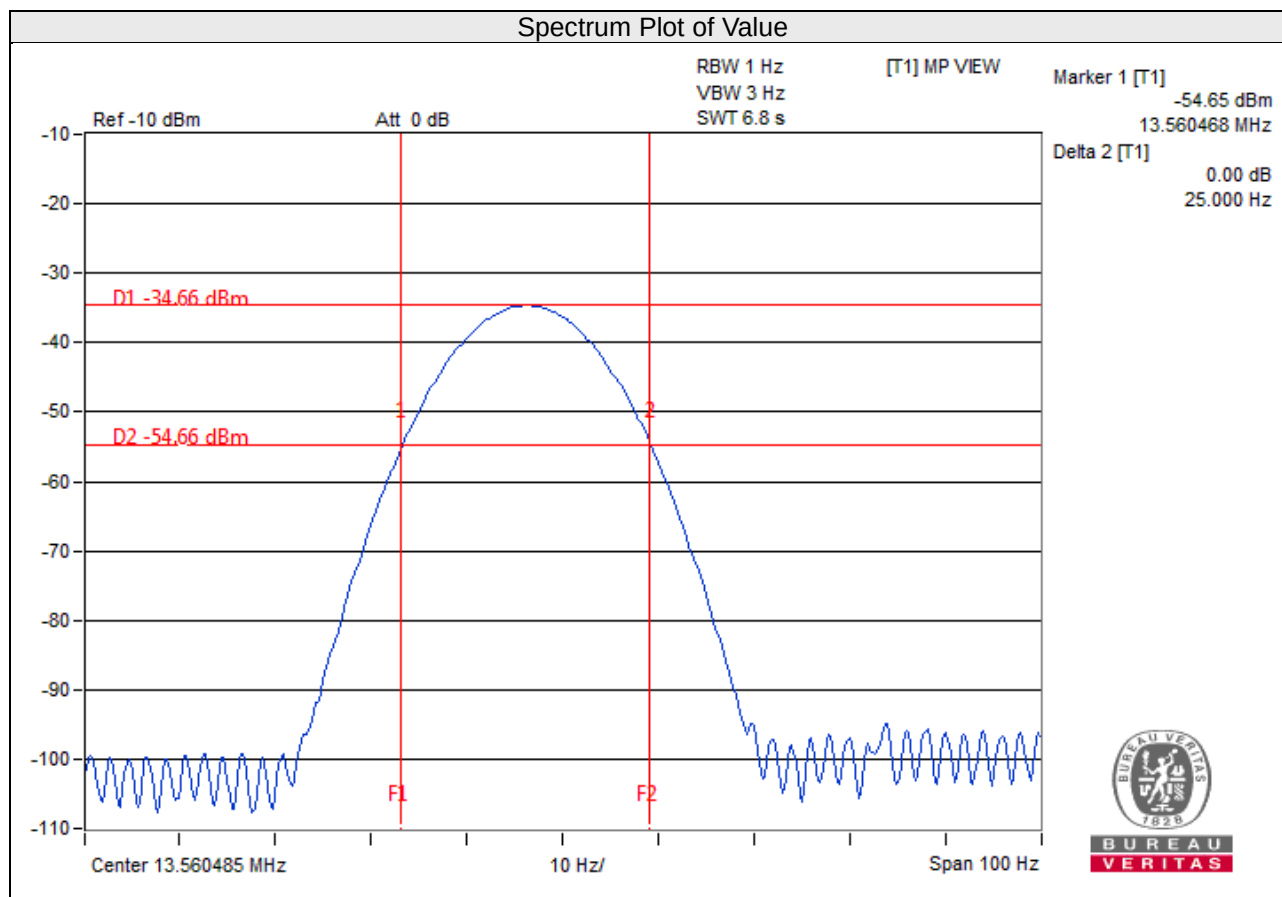
Type A

20dBc Point (Low) (MHz)	20dBc Point (High) (MHz)	Operating Frequency Band (MHz)	Pass/Fail
13.342444	13.775828	13.11 – 14.01	Pass



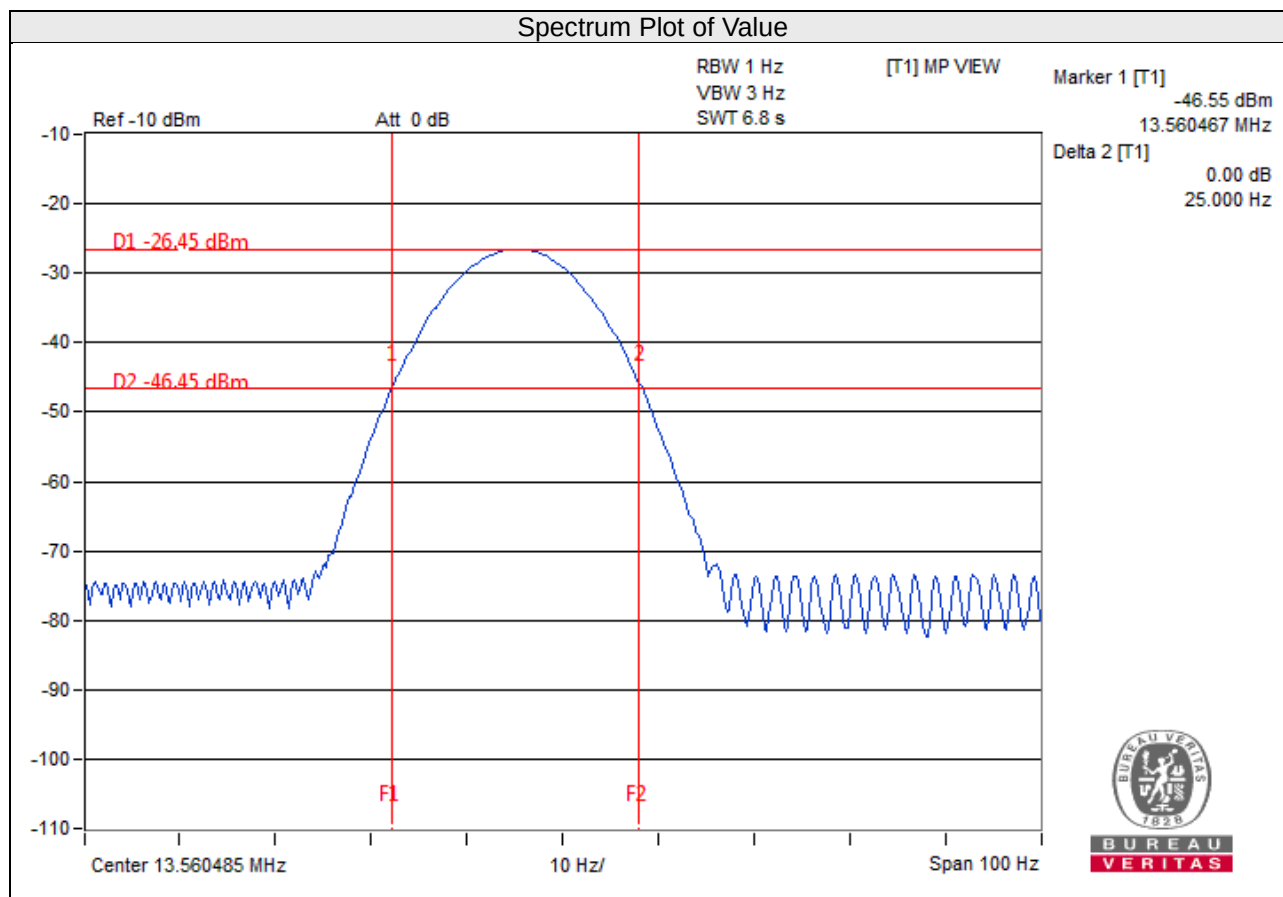
Type F

20dBc Point (Low) (MHz)	20dBc Point (High) (MHz)	Operating Frequency Band (MHz)	Pass/Fail
13.560468	13.560493	13.11 – 14.01	Pass



Type V

20dBc Point (Low) (MHz)	20dBc Point (High) (MHz)	Operating Frequency Band (MHz)	Pass/Fail
13.560467	13.560692	13.11 – 14.01	Pass



5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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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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