FCC Test Report

Report No.:	RFBHJM-WTW-P23110581
FCC ID:	K7SBPD008
Test Model:	BPD008
Received Date:	Nov. 22, 2023
Test Date:	Dec. 06, 2023 ~ Mar. 18, 2024
Issued Date:	Mar. 28, 2024
Applicant:	Belkin International, Inc.
Address:	555 S. Aviation Blvd., Suite 180, El Segundo, CA 90245, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBHJM-WTW-P23110581	Original release	Mar. 28, 2024

1 Certificate of Conformity

Product:	BoostCharge Pro Magnetic Power Bank 10K
Brand:	belkin
Test Model:	BPD008
Sample Status:	Engineering sample
Applicant:	Belkin International, Inc.
Test Date:	Dec. 06, 2023 ~ Mar. 18, 2024
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.209) ANSI C63.10-2013

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

Prepared by : _____ , **Date:** Mar. 28, 2024

Polly Chien / Specialist

Approved by : _____ , **Date:** Mar. 28, 2024

Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.209)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -10.49dB at 0.49800MHz.
15.209	Radiated Emission Test	Pass	Meet the requirement of limit. Minimum passing margin is -7.6dB at 33.88MHz

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.44 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~ 1000MHz	2.95 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	BoostCharge Pro Magnetic Power Bank 10K
Brand	belkin
Test Model	BPD008
Sample Status	Engineering sample
Power Supply Rating	5Vdc or 9 Vdc (adapter)
Modulation Type	FSK
Operating Frequency	127.7kHz for iPhone (8-11 series) 360.0kHz for iPhone (12-15 series)
Antenna Type	Coil antenna
Field Strength	127.7kHz: -11.6dBuV/m (PK) (300m) -12.3dBuV/m (AV) (300m) 360.0kHz: -16.8dBuV/m (PK) (300m) -19.7dBuV/m (AV) (300m)
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below
Maximum Power Output for Qi2 charging coil	15W
Dimension for iPhone charging coil	12.13cm^2

Note:

1. The EUT contains following accessory devices.

Type C Cable		
Brand	Model	Specification
Shenzhen Lianfa electronic Technology Co., LTD	LT.3201000090	Signal Line : 1.0m
Adapter (Support unit)		
Brand	Model	Specification
belkin	WCA004	AC Input : 100-240V~, 0.7A, 50/60Hz DC Output : 5V⎓3A, 9V⎓2.77A 3.3-5.9V⎓3A, 3.3-11V⎓2.25A

2. Due to radiated measurements are made and the antenna gain is already accounted for this device, so provide an antenna datasheet and/or antenna measurement report is not required. The antenna dimensions and pictures (include antenna wire length if have) are stated in EUT photo exhibit.
3. Only radiated measurements are used to show compliance with FCC limits for fundamental and spurious emissions.
4. The EUT has two exterior colors: black and white.

3.2 Description of Test Modes

2 Frequency tested to this EUT.

Test Frequency
127.7kHz
360.0kHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT configure mode	Applicable to			Description
	RE<1G	PLC	BW	
A	√	-	√	Charging Mode (EUT with Wireless Load) - 360.0kHz
B	√	√	√	Charging Mode (EUT with iPhone 11 Pro) – 127.7kHz
C	√	-	√	Charging Mode (EUT with iPhone 15 pro max) – 360.0kHz
D	√	√	-	Standby Mode

Where **RE<1G:** Radiated Emission below 1GHz **PLC:** Power Line Conducted Emission

BW: 20dB Bandwidth

Note:
1. The EUT was pretesting under with adapter and without adapter. After pretesting, the EUT with adapter was the worst mode for the final tests.
2. The charging mode has been pre-tested in three modes: 10%, 50% and 90%. After verification, 10% was chosen for final test and presented in the test report.
3. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-axis**.
4. For Power line conducted emission test: The EUT was pretesting under 127.7kHz and 360.0kHz. After pretesting, 127.7kHz was the worst mode for the final test.
5. Power line conducted emission test items chosen the worst maximum fundamental emission level channel.

Radiated Emission Test (Below 1GHz):

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

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

EUT Configure Mode	Tested Frequency
A	360.0kHz
B	127.7kHz
C	360.0kHz
D	-

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Tested Frequency
B	127.7kHz
D	-

20dB Bandwidth Test:

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

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

EUT Configure Mode	Tested Frequency
A	360.0kHz
B	127.7kHz
C	360.0kHz

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE<1G	23 deg. C, 68% RH	120Vac, 60Hz	Vincent Chen
PLC	23 deg. C, 64% RH	120Vac, 60Hz	Vincent Chen
BW	22 deg. C, 66% RH	120Vac, 60Hz	Vincent Chen

3.3 Description of Support Units

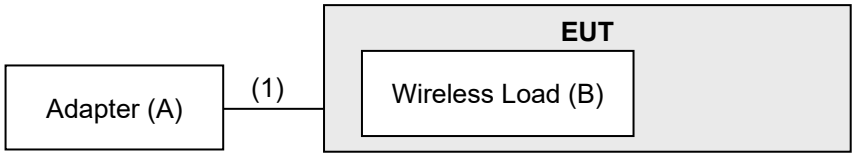
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	belkin	WCA004	NA	NA	Provided by manufacturer
B.	Wireless Load (15W MPP Qi2 RX)	ConvenientPower	T70-B	NA	NA	360kHz Provided by manufacturer
C.	iPhone 11 Pro	Apple	A2215	NA	BCG-E3309A	127.7kHz Provided by manufacturer
D.	iPhone 15 pro max	Apple	A3106	NA	BCG-E8441A	360kHz Provided by manufacturer

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Type C USB Cable	1	1	Y	0	Accessory of EUT

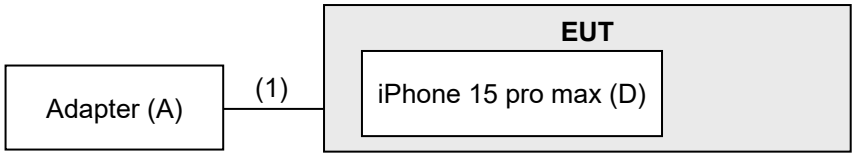
3.3.1 Configuration of System under Test

Charging Mode:
Test Mode A



Test Mode B

Test Mode C



Standby Mode:
Test Mode D

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 (15.209)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

FOR FREQUENCY BELOW 30MHz

Frequency (MHz)	Field Strength (dBuV/m)		Measurement Distance (meters)
	uV/m	dBuV/m	
0.009 – 0.490	2400 / F (kHz)	48.52-13.80	300
0.490 – 1.705	24000 / F (kHz)	33.80-22.97	30
1.705 – 30.0	30	29.54	30

FOR FREQUENCY BETWEEN 30-1000MHz

Frequency (MHz)	Field Strength	
	uV/m	dBuV/m
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	May 03, 2023	May 02, 2024
Signal Analyzer Agilent	N9010A	MY52220207	Jan. 03, 2023	Jan. 02, 2024
			Dec. 28, 2023	Dec. 27, 2024
Loop Antenna TESEQ	HLA 6121	45745	Aug. 08, 2023	Aug. 07, 2024
Pre-amplifier EMCI	EMC001340	980201	Sep. 27, 2023	Sep. 26, 2024
RF Coaxial Cable EMCI	5D-NM-BM	140901	Sep. 27, 2023	Sep. 26, 2024
Pre-Ammlifier EMCI	EMC 330H	980112	Sep. 27, 2023	Sep. 26, 2024
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-472	Oct. 16, 2023	Oct. 15, 2024
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Sep. 14, 2023	Sep. 13, 2024
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower Max-Full	MFA-440H	AT93021705	NA	NA
Turn Table Max-Full	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller Max-Full	MF-7802	NA	NA	NA
Boresight antenna tower fixture BV	BAF-02	7	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 HY - 966 chamber 5.
3. Tested date: Dec. 06, 2023 ~ Mar. 18, 2024

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

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

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

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

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9kHz-90kHz, 110kHz-490kHz) set to average detect function and peak detect function.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency 150 kHz to 30MHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

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:

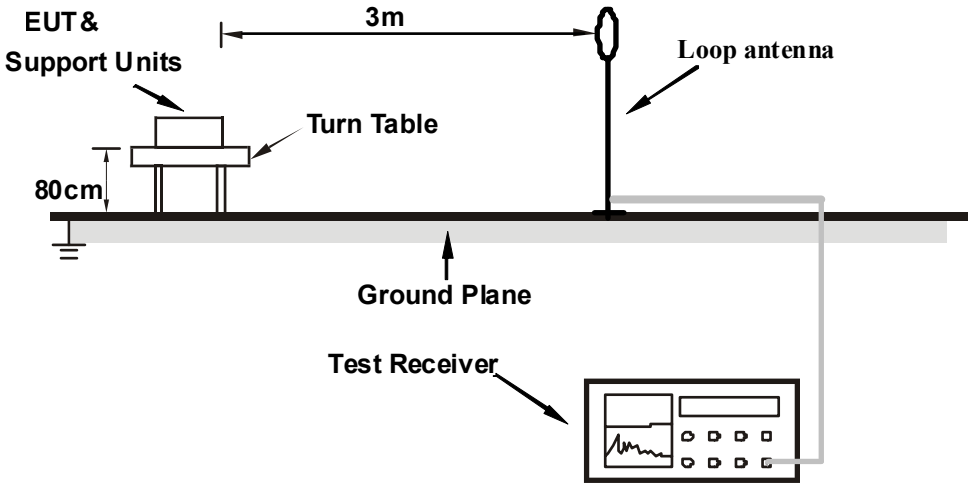
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

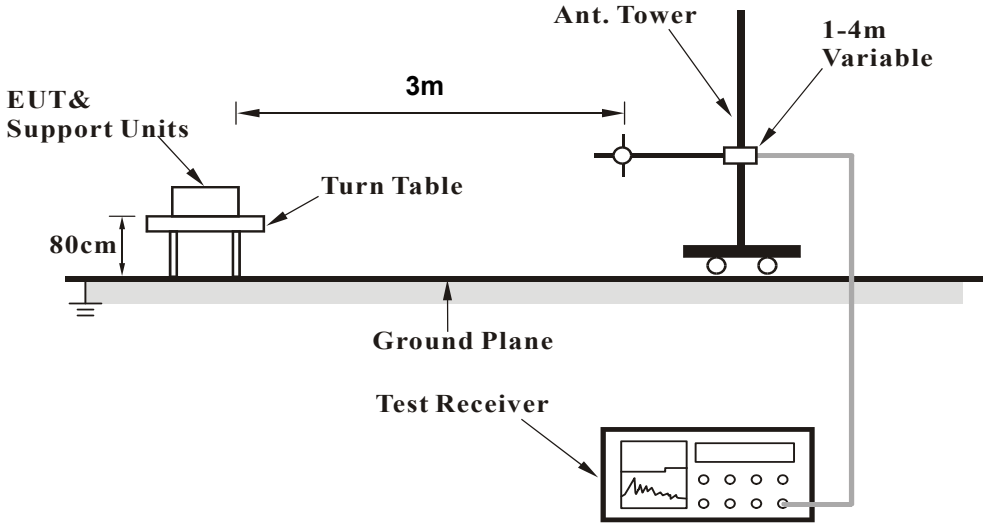
No deviation.

4.1.5 Test Set Up

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

Charging Mode:

a. The EUT powered by adapter.
b. Put the iPhone or Wireless Load on the EUT (wireless charging) during the test.

Standby Mode:

a. The EUT powered by adapter.

4.1.7 Test Results

Below 30MHz Data:

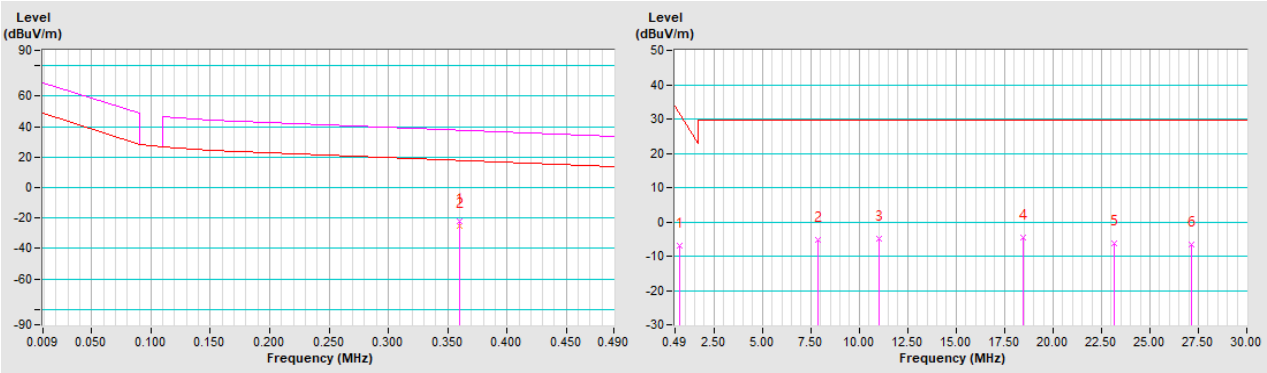
Charging Mode

Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	A		

Antenna Polarity : Parallel								
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	*0.3600	-22.3 PK	36.5	-58.8	1.00	33	37.9	-60.2
2	*0.3600	-25.4 AV	16.5	-41.9	1.00	33	34.8	-60.2
3	0.7200	-7.1 QP	30.5	-37.6	1.00	41	13.1	-20.2
4	7.8380	-5.3 QP	29.5	-34.8	1.00	2	13.6	-18.9
5	10.9956	-5.0 QP	29.5	-34.5	1.00	39	13.4	-18.4
6	18.4321	-4.5 QP	29.5	-34.0	1.00	18	13.4	-17.9
7	23.1537	-6.2 QP	29.5	-35.7	1.00	249	12.4	-18.6
8	27.1375	-6.5 QP	29.5	-36.0	1.00	160	11.3	-17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

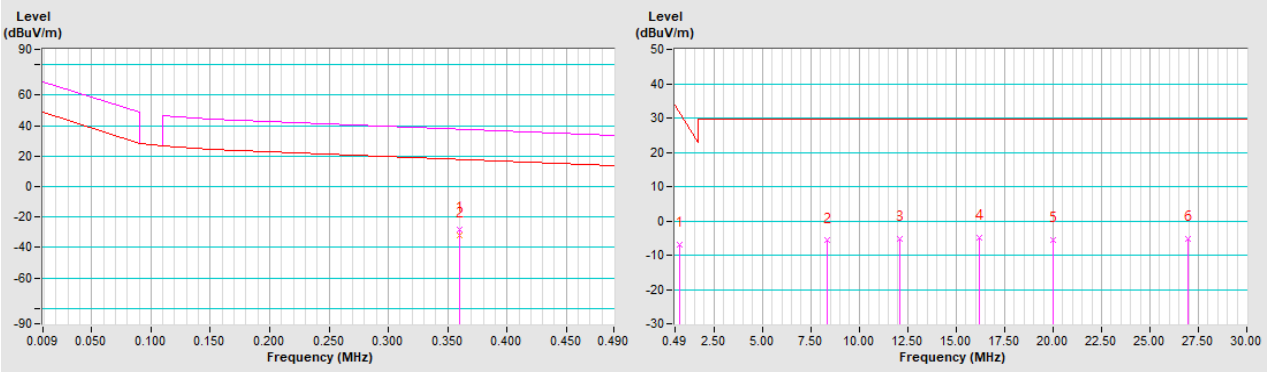


Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	A		

Antenna Polarity : Perpendicular								
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	*0.3600	-28.3 PK	36.5	-64.8	1.00	330	31.9	-60.2
2	*0.3600	-31.8 AV	16.5	-48.3	1.00	330	28.4	-60.2
3	0.7200	-6.9 QP	30.5	-37.4	1.00	76	13.3	-20.2
4	8.3397	-5.8 QP	29.5	-35.3	1.00	213	13.1	-18.9
5	12.0874	-5.3 QP	29.5	-34.8	1.00	19	13.0	-18.3
6	16.2188	-5.0 QP	29.5	-34.5	1.00	12	13.3	-18.3
7	20.0256	-5.5 QP	29.5	-35.0	1.00	218	12.4	-17.9
8	26.9900	-5.3 QP	29.5	-34.8	1.00	210	12.5	-17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

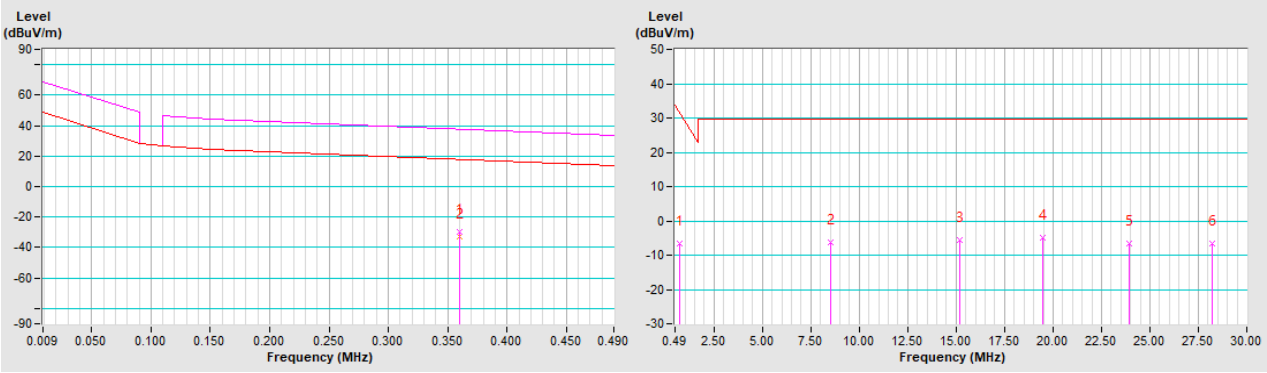


Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	A		

Antenna Polarity : Ground-parallel								
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	0.3600	-29.9 PK	36.5	-66.4	1.00	34	30.3	-60.2
2	0.3600	-33.0 AV	16.5	-49.5	1.00	34	27.2	-60.2
3	0.7200	-6.6 QP	30.5	-37.1	1.00	174	13.6	-20.2
4	8.5462	-6.3 QP	29.5	-35.8	1.00	358	12.6	-18.9
5	15.1860	-5.5 QP	29.5	-35.0	1.00	53	13.1	-18.6
6	19.4649	-4.9 QP	29.5	-34.4	1.00	120	12.9	-17.8
7	23.9505	-6.7 QP	29.5	-36.2	1.00	265	11.7	-18.4
8	28.1999	-6.6 QP	29.5	-36.1	1.00	341	11.3	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

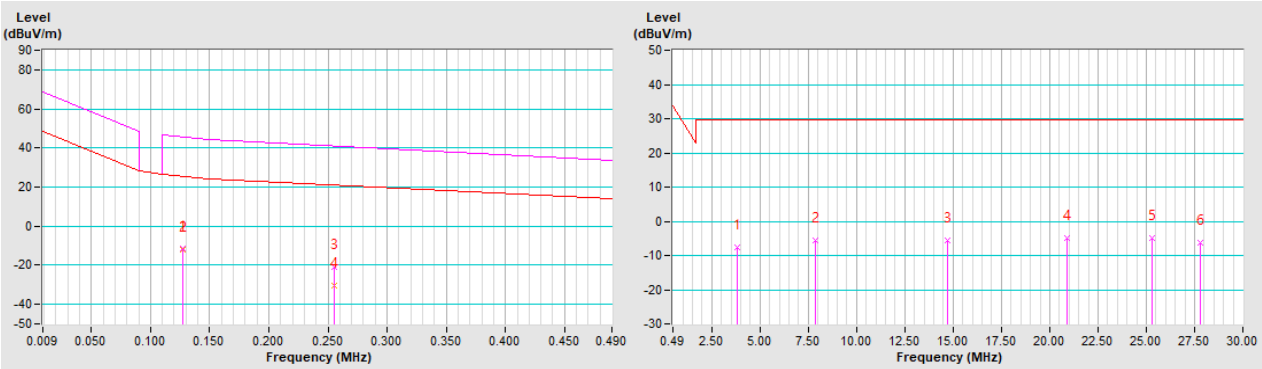


Test Frequency	127.7kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	B		

Antenna Polarity : Parallel								
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	*0.1277	-11.6 PK	45.5	-57.1	1.00	169	49.0	-60.6
2	*0.1277	-12.3 AV	25.5	-37.8	1.00	169	48.3	-60.6
3	0.2554	-21.1 PK	39.5	-60.6	1.00	232	39.1	-60.2
4	0.2554	-30.2 AV	19.5	-49.7	1.00	232	30.0	-60.2
5	3.8246	-7.5 QP	29.5	-37.0	1.00	94	12.8	-20.3
6	7.8380	-5.7 QP	29.5	-35.2	1.00	262	13.2	-18.9
7	14.6843	-5.6 QP	29.5	-35.1	1.00	226	13.0	-18.6
8	20.8814	-4.8 QP	29.5	-34.3	1.00	2	13.4	-18.2
9	25.2784	-5.0 QP	29.5	-34.5	1.00	209	12.6	-17.6
10	27.7868	-6.3 QP	29.5	-35.8	1.00	112	11.6	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

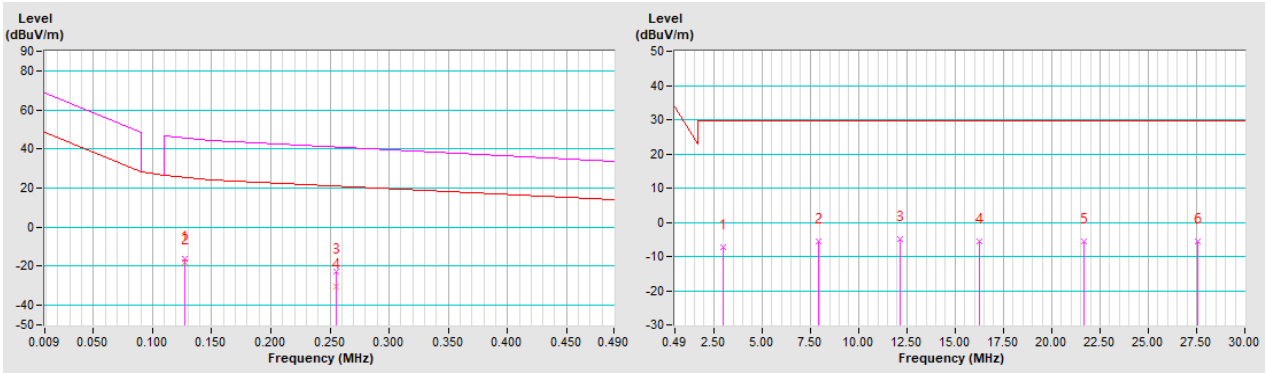


Test Frequency	127.7kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	B		

Antenna Polarity : Perpendicular								
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	*0.1277	-16.3 PK	45.5	-61.8	1.00	243	44.3	-60.6
2	*0.1277	-17.8 AV	25.5	-43.3	1.00	243	42.8	-60.6
3	0.2554	-22.7 PK	39.5	-62.2	1.00	143	37.5	-60.2
4	0.2554	-30.6 AV	19.5	-50.1	1.00	143	29.6	-60.2
5	2.9688	-7.3 QP	29.5	-36.8	1.00	8	13.2	-20.5
6	7.9265	-5.7 QP	29.5	-35.2	1.00	44	13.2	-18.9
7	12.1464	-5.0 QP	29.5	-34.5	1.00	44	13.3	-18.3
8	16.2779	-5.6 QP	29.5	-35.1	1.00	306	12.7	-18.3
9	21.6487	-5.6 QP	29.5	-35.1	1.00	304	12.6	-18.2
10	27.5507	-5.7 QP	29.5	-35.2	1.00	350	12.2	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

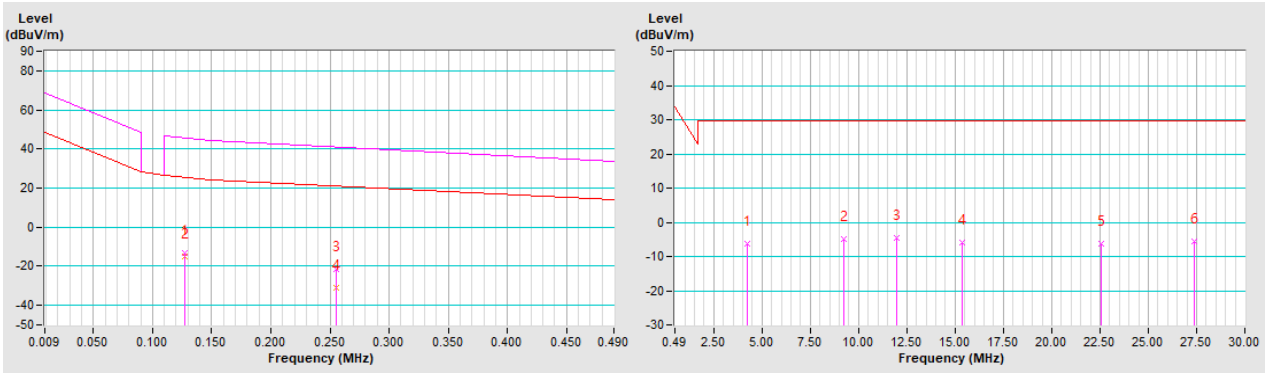


Test Frequency	127.7kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	B		

Antenna Polarity : Ground-parallel								
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	*0.1277	-13.0 PK	45.5	-58.5	1.00	263	47.6	-60.6
2	*0.1277	-14.8 AV	25.5	-40.3	1.00	263	45.8	-60.6
3	0.2554	-21.8 PK	39.5	-61.3	1.00	174	38.4	-60.2
4	0.2554	-30.9 AV	19.5	-50.4	1.00	174	29.3	-60.2
5	4.2673	-6.4 QP	29.5	-35.9	1.00	193	13.8	-20.2
6	9.2545	-5.0 QP	29.5	-34.5	1.00	351	13.8	-18.8
7	11.9694	-4.6 QP	29.5	-34.1	1.00	293	13.7	-18.3
8	15.3925	-6.0 QP	29.5	-35.5	1.00	108	12.5	-18.5
9	22.5635	-6.2 QP	29.5	-35.7	1.00	72	12.2	-18.4
10	27.3736	-5.7 QP	29.5	-35.2	1.00	141	12.1	-17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

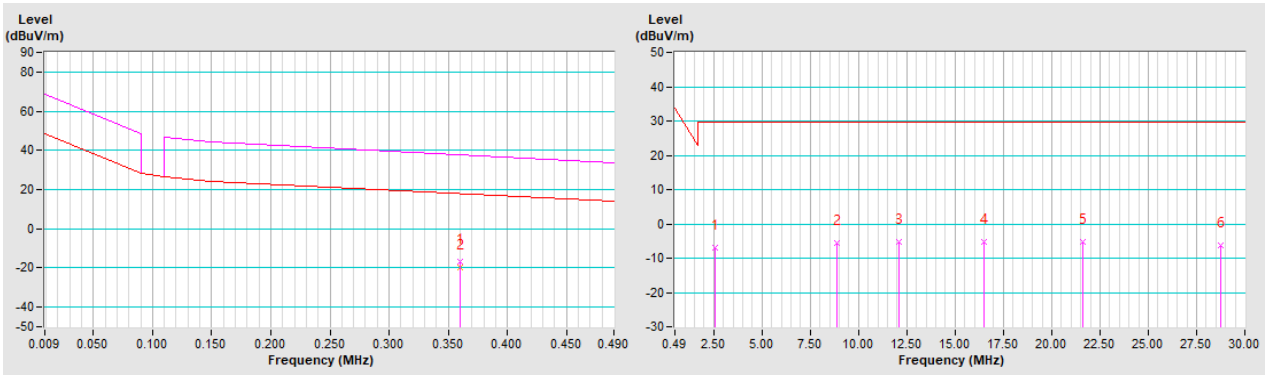


Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	C		

Antenna Polarity : Parallel								
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	*0.3600	-16.8 PK	36.5	-53.3	1.00	332	43.4	-60.2
2	*0.3600	-19.7 AV	16.5	-36.2	1.00	332	40.5	-60.2
3	2.5852	-7.0 QP	29.5	-36.5	1.00	358	13.5	-20.5
4	8.9003	-5.6 QP	29.5	-35.1	1.00	107	13.3	-18.9
5	12.1169	-5.2 QP	29.5	-34.7	1.00	119	13.1	-18.3
6	16.4844	-5.3 QP	29.5	-34.8	1.00	129	12.9	-18.2
7	21.6192	-5.3 QP	29.5	-34.8	1.00	353	12.9	-18.2
8	28.7311	-6.4 QP	29.5	-35.9	1.00	86	11.5	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

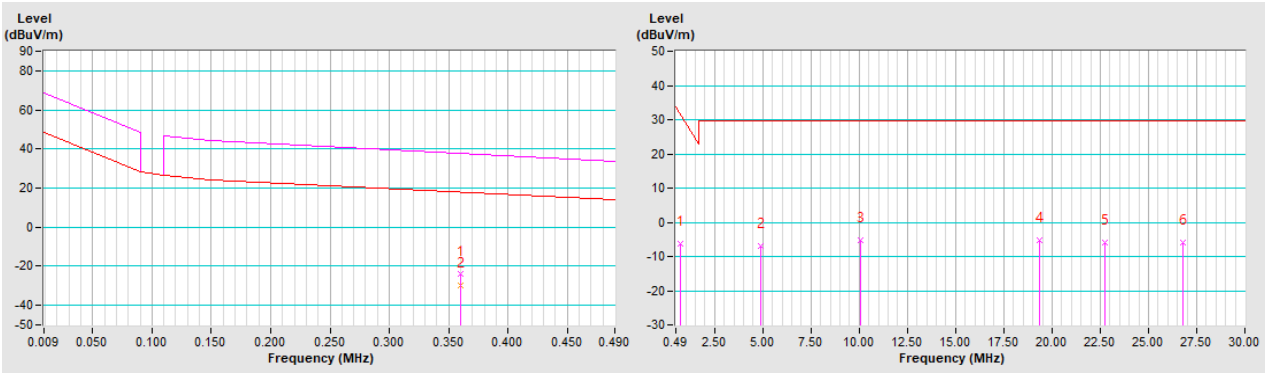


Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	C		

Antenna Polarity : Perpendicular								
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	*0.3600	-23.9 PK	36.5	-60.4	1.00	232	36.3	-60.2
2	*0.3600	-29.8 AV	16.5	-46.3	1.00	232	30.4	-60.2
3	0.7200	-6.2 QP	30.5	-36.7	1.00	16	14.0	-20.2
4	4.9165	-7.0 QP	29.5	-36.5	1.00	203	13.1	-20.1
5	10.0512	-5.2 QP	29.5	-34.7	1.00	2	13.4	-18.6
6	19.3469	-5.2 QP	29.5	-34.7	1.00	168	12.6	-17.8
7	22.7405	-6.0 QP	29.5	-35.5	1.00	140	12.5	-18.5
8	26.8129	-5.9 QP	29.5	-35.4	1.00	6	11.9	-17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

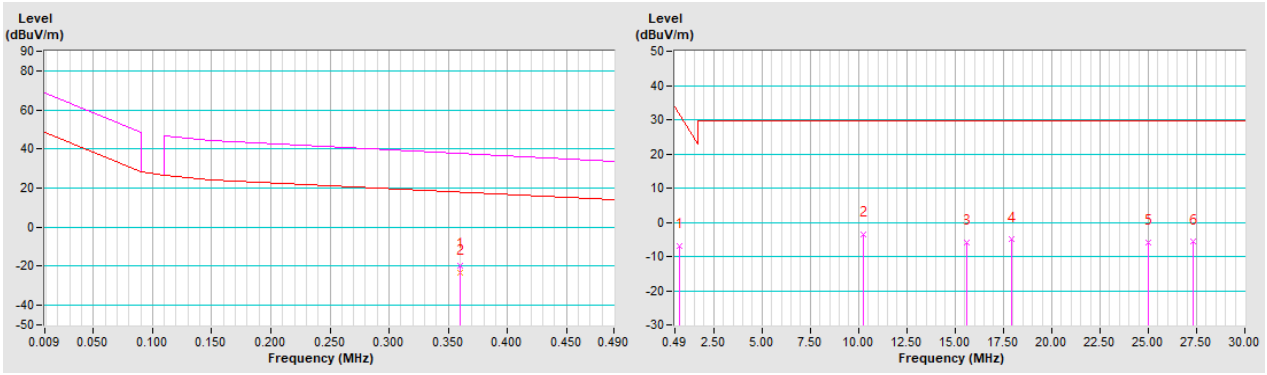


Test Frequency	360.0kHz	Detector Function	Peak (PK) Average (AV) Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	C		

Antenna Polarity : Ground-parallel								
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	*0.3600	-19.8 PK	36.5	-56.3	1.00	158	40.4	-60.2
2	*0.3600	-23.5 AV	16.5	-40.0	1.00	158	36.7	-60.2
3	0.7200	-7.0 QP	30.5	-37.5	1.00	51	13.2	-20.2
4	10.2283	-3.6 QP	29.5	-33.1	1.00	88	15.0	-18.6
5	15.5991	-5.8 QP	29.5	-35.3	1.00	18	12.7	-18.5
6	17.9304	-5.1 QP	29.5	-34.6	1.00	270	12.8	-17.9
7	24.9833	-5.9 QP	29.5	-35.4	1.00	6	11.5	-17.4
8	27.3441	-5.8 QP	29.5	-35.3	1.00	53	12.0	-17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor(dB) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value.
5. " * ": Fundamental frequency.
6. Loop antenna was used for all radiated emission below 30MHz.
7. The test distance for below 0.49MHz is 3m, extrapolate the measured field strength to a distance of 300meters. (Distance factor@3m = 40*log(3/300) = -80dB)
   The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)



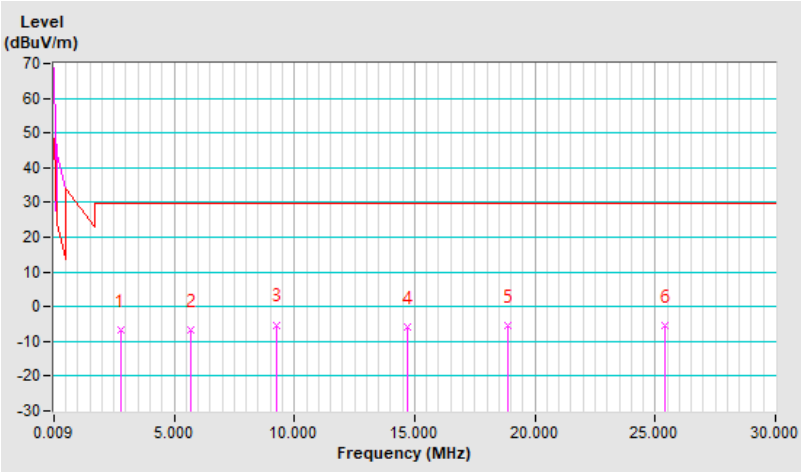
Standby Mode

Test Frequency	-	Detector Function	Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	D		

Antenna Polarity : Parallel								
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	2.7600	-6.8 QP	29.5	-36.3	1.00	154	13.7	-20.5
2	5.6800	-6.8 QP	29.5	-36.3	1.00	17	12.4	-19.2
3	9.2800	-5.2 QP	29.5	-34.7	1.00	230	13.6	-18.8
4	14.6800	-5.8 QP	29.5	-35.3	1.00	277	12.8	-18.6
5	18.9000	-5.6 QP	29.5	-35.1	1.00	246	12.2	-17.8
6	25.4000	-5.4 QP	29.5	-34.9	1.00	293	12.2	-17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor (dB) + 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. Loop antenna was used for all radiated emission below 30MHz.
6. The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

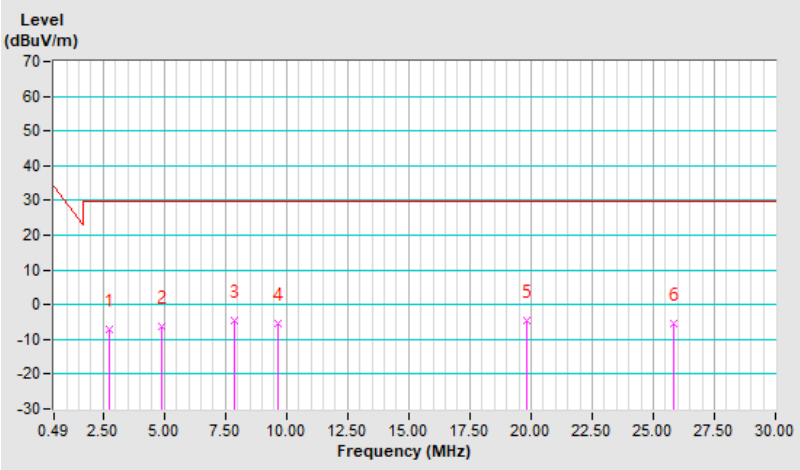


Test Frequency	-	Detector Function	Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	D		

Antenna Polarity : Perpendicular								
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	2.7600	-7.1 QP	29.5	-36.6	1.00	240	13.4	-20.5
2	4.9200	-6.1 QP	29.5	-35.6	1.00	172	14.0	-20.1
3	7.8400	-4.6 QP	29.5	-34.1	1.00	114	14.3	-18.9
4	9.6700	-5.6 QP	29.5	-35.1	1.00	105	13.1	-18.7
5	19.8500	-4.7 QP	29.5	-34.2	1.00	108	13.2	-17.9
6	25.8400	-5.5 QP	29.5	-35.0	1.00	266	12.4	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor (dB) + 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. Loop antenna was used for all radiated emission below 30MHz.
6. The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)

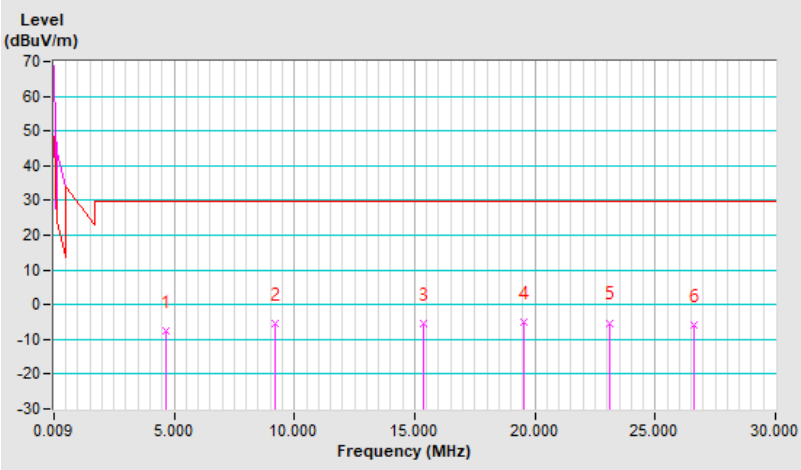


Test Frequency	-	Detector Function	Quasi-Peak (QP)
Frequency Range	9 kHz ~ 30 MHz		
Test Mode	D		

Antenna Polarity : Ground-parallel								
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	4.6800	-7.6 QP	29.5	-37.1	1.00	246	12.5	-20.1
2	9.2000	-5.5 QP	29.5	-35.0	1.00	185	13.3	-18.8
3	15.3600	-5.3 QP	29.5	-34.8	1.00	9	13.2	-18.5
4	19.5200	-4.9 QP	29.5	-34.4	1.00	1	13.0	-17.9
5	23.1200	-5.2 QP	29.5	-34.7	1.00	259	13.4	-18.6
6	26.6400	-5.7 QP	29.5	-35.2	1.00	238	12.2	-17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Distance Factor (dB) + 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. Loop antenna was used for all radiated emission below 30MHz.
6. The test distance for 0.49 ~ 30MHz is 3m, extrapolate the measured field strength to a distance of 30 meters. (Distance factor@3m = 40*log(3/30) = -40dB)



Below 1GHz Data:

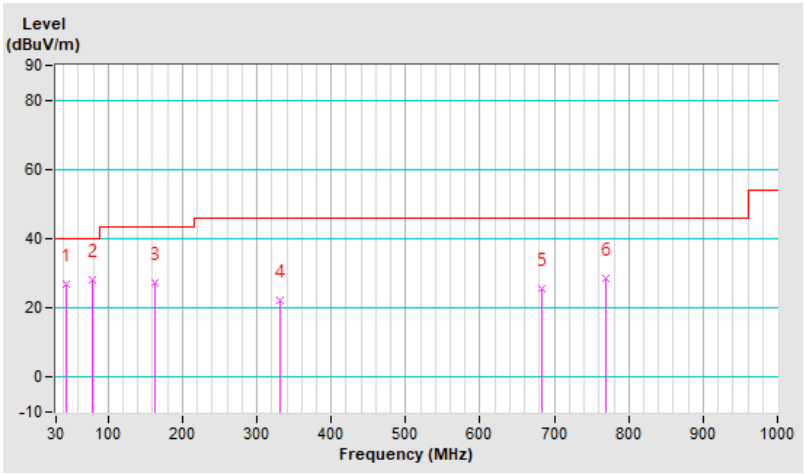
Charging Mode

Test Frequency	360.0kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	A		

Antenna Polarity & Test Distance: Horizontal 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	42.72	26.9 QP	40.0	-13.1	1.00 H	158	39.5	-12.6
2	77.93	28.3 QP	40.0	-11.7	1.50 H	264	45.2	-16.9
3	162.89	27.3 QP	43.5	-16.2	1.00 H	31	40.1	-12.8
4	330.70	22.1 QP	46.0	-23.9	2.00 H	153	33.3	-11.2
5	683.78	25.5 QP	46.0	-20.5	2.00 H	150	29.1	-3.6
6	770.11	28.5 QP	46.0	-17.5	1.00 H	21	29.6	-1.1

Remarks:

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

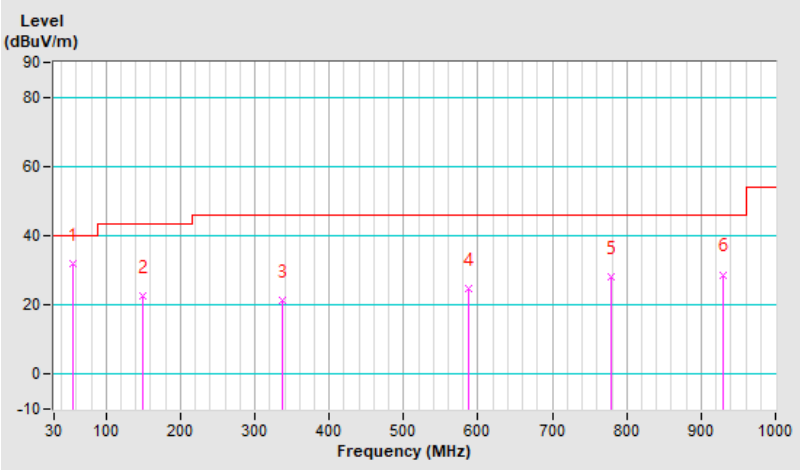


Test Frequency	360.0kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	A		

Antenna Polarity & Test Distance: Vertical 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	54.63	32.1 QP	40.0	-7.9	1.00 V	231	44.8	-12.7
2	148.34	22.6 QP	43.5	-20.9	1.00 V	19	35.4	-12.8
3	337.49	21.4 QP	46.0	-24.6	1.50 V	250	32.6	-11.2
4	587.75	24.9 QP	46.0	-21.1	1.50 V	328	30.2	-5.3
5	778.84	28.1 QP	46.0	-17.9	2.00 V	143	29.0	-0.9
6	930.16	28.8 QP	46.0	-17.2	1.00 V	196	29.2	-0.4

Remarks:

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

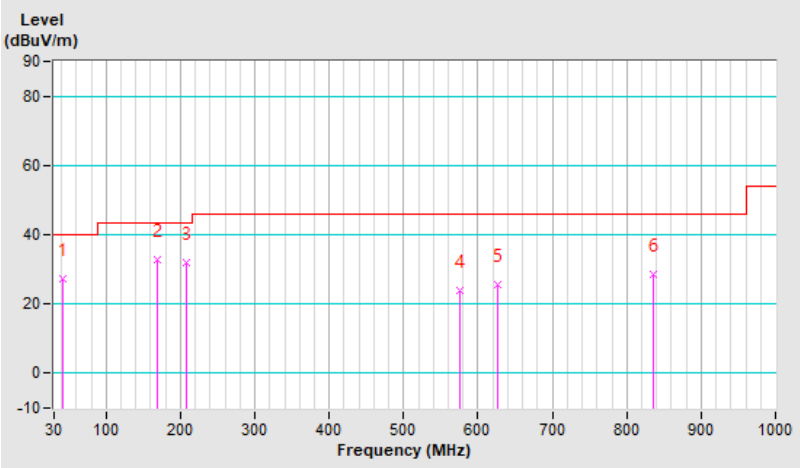


Test Frequency	127.7kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	B		

Antenna Polarity & Test Distance: Horizontal 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	41.64	27.1 QP	40.0	-12.9	2.00 H	26	39.7	-12.6
2	168.71	32.8 QP	43.5	-10.7	1.00 H	19	45.9	-13.1
3	207.51	31.8 QP	43.5	-11.7	1.00 H	166	47.6	-15.8
4	576.11	24.0 QP	46.0	-22.0	1.50 H	100	29.6	-5.6
5	626.55	25.4 QP	46.0	-20.6	1.00 H	112	29.8	-4.4
6	835.10	28.6 QP	46.0	-17.4	2.00 H	158	29.5	-0.9

Remarks:

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

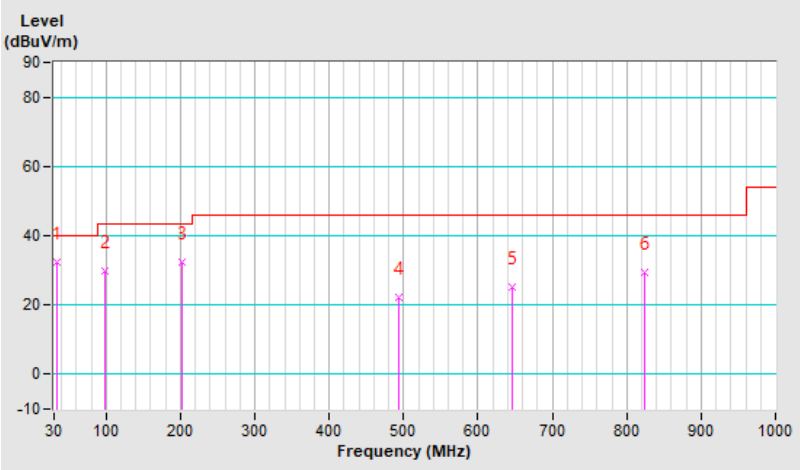


Test Frequency	127.7kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	B		

Antenna Polarity & Test Distance: Vertical 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	**33.88**	**32.4 QP**	**40.0**	**-7.6**	**1.00 V**	**348**	**45.5**	**-13.1**
2	97.90	29.9 QP	43.5	-13.6	1.00 V	259	47.3	-17.4
3	201.69	32.5 QP	43.5	-11.0	1.50 V	80	48.3	-15.8
4	493.66	22.2 QP	46.0	-23.8	1.00 V	250	29.2	-7.0
5	645.95	25.2 QP	46.0	-20.8	2.00 V	51	29.3	-4.1
6	823.46	29.3 QP	46.0	-16.7	2.00 V	7	30.2	-0.9

Remarks:

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

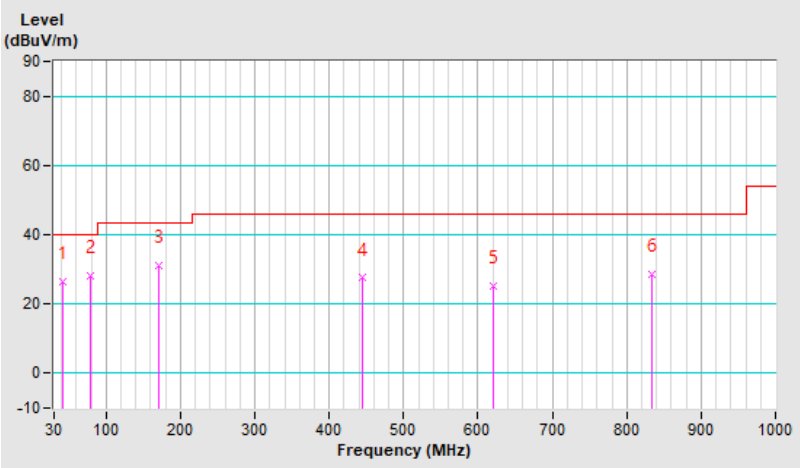


Test Frequency	360.0kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	C		

Antenna Polarity & Test Distance: Horizontal 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	41.64	26.4 QP	40.0	-13.6	2.00 H	26	39.0	-12.6
2	78.50	28.0 QP	40.0	-12.0	1.00 H	340	45.0	-17.0
3	170.65	30.9 QP	43.5	-12.6	1.00 H	2	44.0	-13.1
4	444.19	27.5 QP	46.0	-18.5	1.00 H	56	35.8	-8.3
5	619.76	25.3 QP	46.0	-20.7	1.00 H	330	29.9	-4.6
6	833.16	28.5 QP	46.0	-17.5	2.00 H	246	29.4	-0.9

Remarks:

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

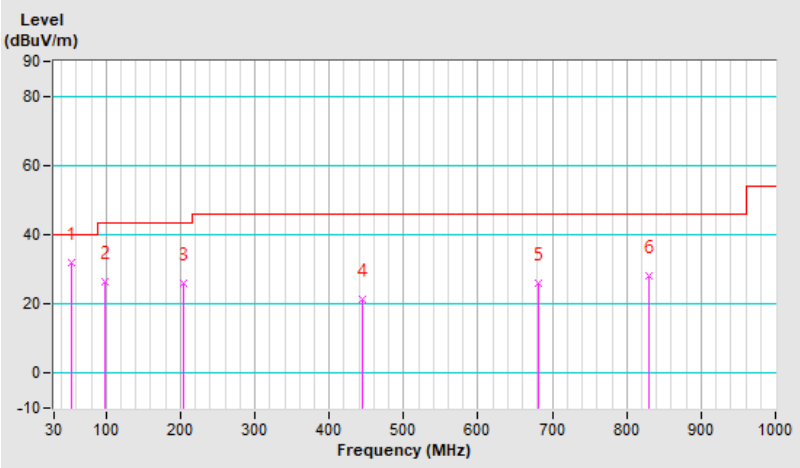


Test Frequency	360.0kHz	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	C		

Antenna Polarity & Test Distance: Vertical 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	53.28	32.1 QP	40.0	-7.9	1.50 V	4	44.6	-12.5
2	98.87	26.5 QP	43.5	-17.0	1.00 V	178	43.7	-17.2
3	203.63	26.2 QP	43.5	-17.3	2.00 V	44	42.1	-15.9
4	444.19	21.4 QP	46.0	-24.6	1.00 V	129	29.7	-8.3
5	680.87	25.9 QP	46.0	-20.1	1.00 V	348	29.5	-3.6
6	829.28	28.3 QP	46.0	-17.7	1.50 V	93	29.2	-0.9

Remarks:

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



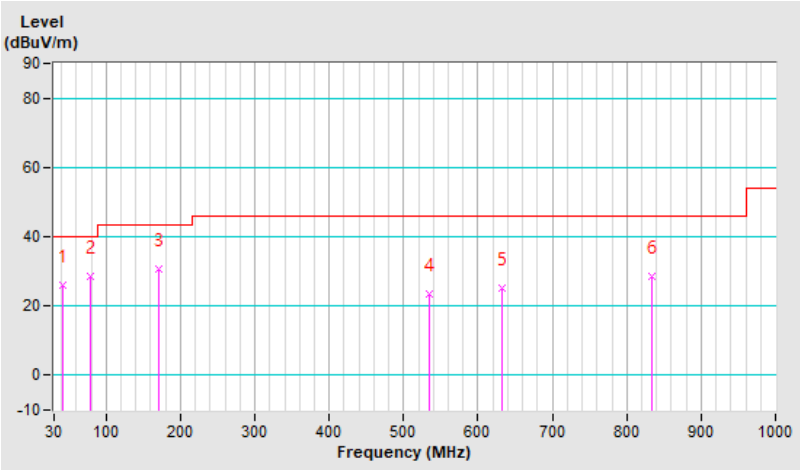
Standby Mode

Test Frequency	-	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	D		

Antenna Polarity & Test Distance: Horizontal 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	41.64	26.2 QP	40.0	-13.8	1.50 H	171	38.8	-12.6
2	78.50	28.4 QP	40.0	-11.6	2.00 H	49	45.4	-17.0
3	171.62	30.6 QP	43.5	-12.9	1.00 H	2	43.8	-13.2
4	534.40	23.5 QP	46.0	-22.5	2.00 H	13	29.7	-6.2
5	632.37	25.1 QP	46.0	-20.9	2.00 H	328	29.4	-4.3
6	833.16	28.4 QP	46.0	-17.6	1.00 H	8	29.3	-0.9

Remarks:

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

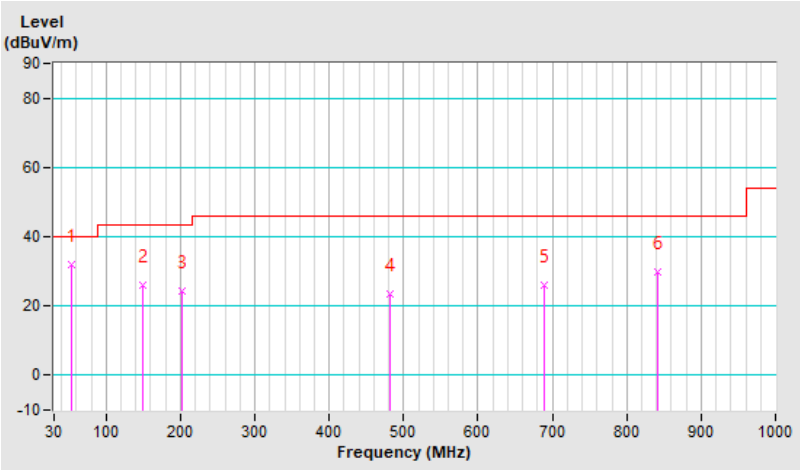


Test Frequency	-	Detector Function	Quasi-Peak (QP)
Frequency Range	30MHz ~ 1GHz		
Test Mode	D		

Antenna Polarity & Test Distance: Vertical 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	53.28	31.9 QP	40.0	-8.1	1.00 V	155	44.4	-12.5
2	148.34	26.1 QP	43.5	-17.4	1.50 V	327	38.9	-12.8
3	202.66	24.3 QP	43.5	-19.2	1.00 V	282	40.1	-15.8
4	482.02	23.5 QP	46.0	-22.5	1.00 V	261	30.9	-7.4
5	689.60	26.0 QP	46.0	-20.0	2.00 V	28	29.5	-3.5
6	840.92	29.9 QP	46.0	-16.1	1.50 V	188	30.8	-0.9

Remarks:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver R&S	ESR3	102783	Dec. 21, 2022	Dec. 20, 2023
RF Coaxial Cable WORKEN	5D-FB	Cable-cond2-01	Sep. 02, 2023	Sep. 01, 2024
LISN R&S	ESH2-Z5	100100	Mar. 07, 2023	Mar. 06, 2024
LISN R&S	ESH3-Z5	100116	Feb. 15, 2023	Feb. 14, 2024
Software BV ADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HY - Conduction 2.
3. The VCCI Site Registration No. is C-12047.
4. Tested date: Dec. 06, 2023

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.

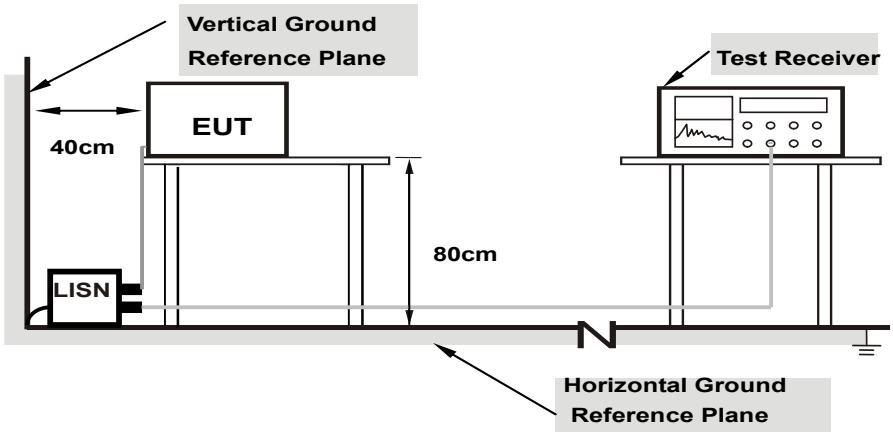
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

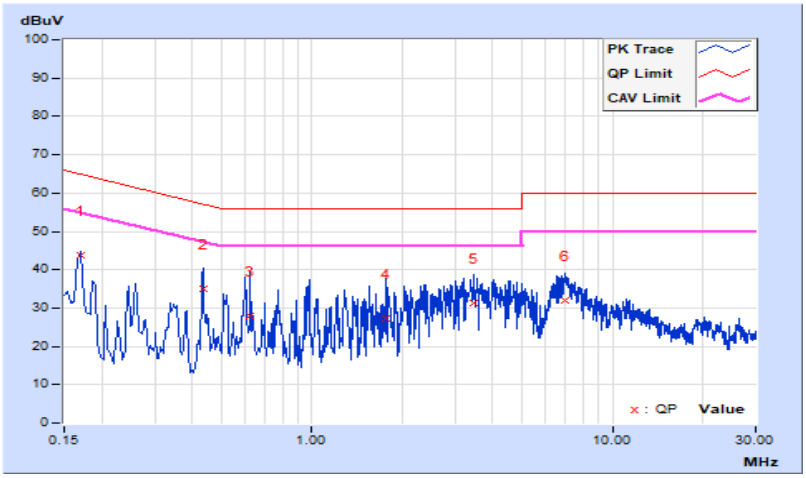
Charging Mode

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.38	33.26	21.76	43.64	32.14	64.96	54.96	-21.32	-22.82
2	0.43400	10.49	24.64	17.13	35.13	27.62	57.18	47.18	-22.05	-19.56
3	0.62600	10.51	17.30	3.06	27.81	13.57	56.00	46.00	-28.19	-32.43
4	1.77400	10.55	16.56	1.41	27.11	11.96	56.00	46.00	-28.89	-34.04
5	3.45400	10.63	20.63	10.42	31.26	21.05	56.00	46.00	-24.74	-24.95
6	6.96600	10.69	21.45	12.48	32.14	23.17	60.00	50.00	-27.86	-26.83

Remarks:

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

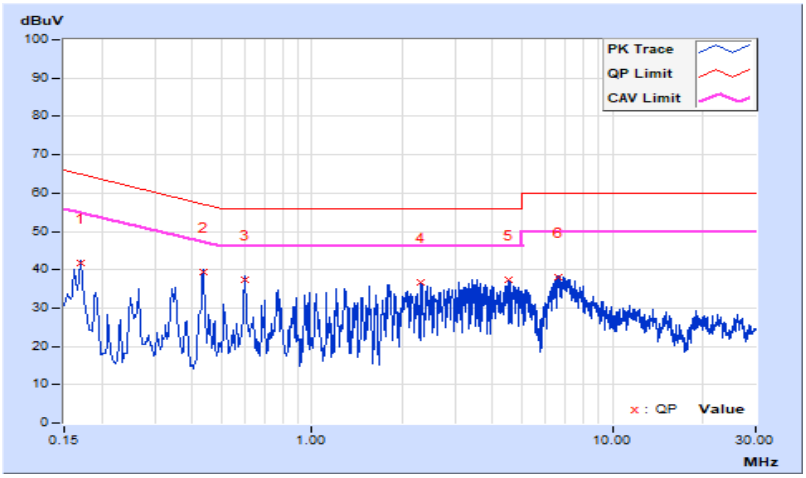


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.42	31.37	23.91	41.79	34.33	64.96	54.96	-23.17	-20.63
2	0.43400	10.53	28.76	24.58	39.29	35.11	57.18	47.18	-17.89	-12.07
3	0.60200	10.54	26.69	22.47	37.23	33.01	56.00	46.00	-18.77	-12.99
4	2.31800	10.60	26.06	16.54	36.66	27.14	56.00	46.00	-19.34	-18.86
5	4.54600	10.74	26.56	16.41	37.30	27.15	56.00	46.00	-18.70	-18.85
6	6.57400	10.78	27.41	16.87	38.19	27.65	60.00	50.00	-21.81	-22.35

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.



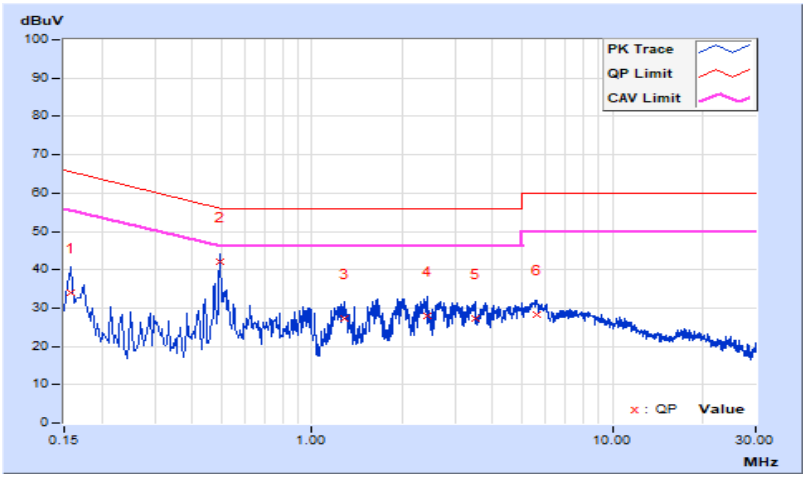
Standby Mode

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	10.37	23.48	14.31	33.85	24.68	65.57	55.57	-31.72	-30.89
2	0.49737	10.50	31.49	24.50	41.99	35.00	56.04	46.04	-14.05	-11.04
3	1.28600	10.54	16.67	5.73	27.21	16.27	56.00	46.00	-28.79	-29.73
4	2.43800	10.57	17.23	6.71	27.80	17.28	56.00	46.00	-28.20	-28.72
5	3.49800	10.63	16.75	8.07	27.38	18.70	56.00	46.00	-28.62	-27.30
6	5.58200	10.68	17.66	10.13	28.34	20.81	60.00	50.00	-31.66	-29.19

Remarks:

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

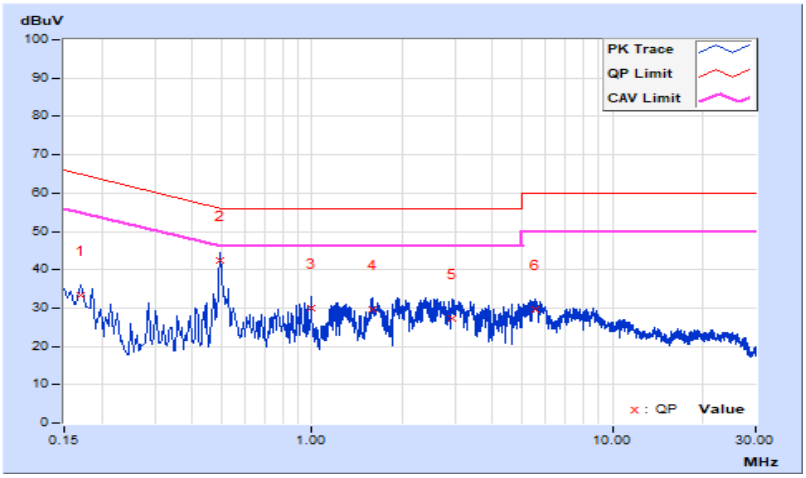


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17000	10.42	23.00	15.20	33.42	25.62	64.96	54.96	-31.54	-29.34
2	**0.49800**	**10.53**	**31.99**	**25.01**	**42.52**	**35.54**	**56.03**	**46.03**	**-13.51**	**-10.49**
3	0.99800	10.56	19.40	10.46	29.96	21.02	56.00	46.00	-26.04	-24.98
4	1.60200	10.57	18.97	9.44	29.54	20.01	56.00	46.00	-26.46	-25.99
5	2.91800	10.65	16.60	7.48	27.25	18.13	56.00	46.00	-28.75	-27.87
6	5.55000	10.76	18.87	11.00	29.63	21.76	60.00	50.00	-30.37	-28.24

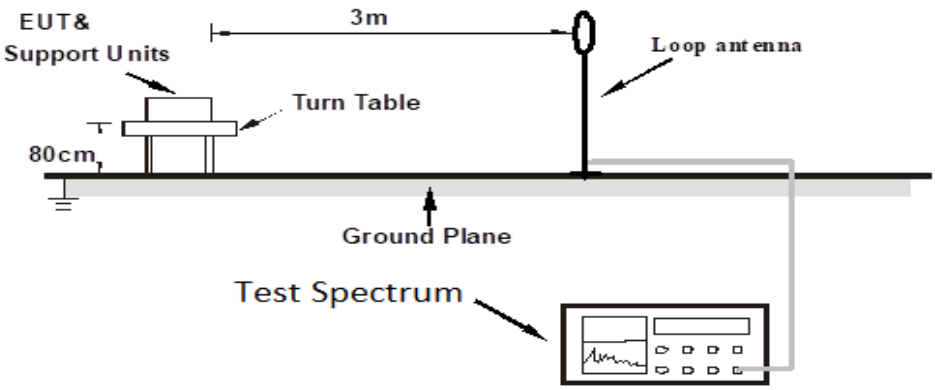
Remarks:

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 20dB Bandwidth Measurement

4.3.1 Test SetUp



4.3.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.3 Test Procedure

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

b. The antenna is a broadband loop antenna, which is fixed of a 1m height above the ground, and set away from 3m to the EUT to find the disturbance reading on each frequency.

c. The test-spectrum system was set to peak detect function and specified bandwidth.

4.3.4 Deviation from Test Standard

No deviation.

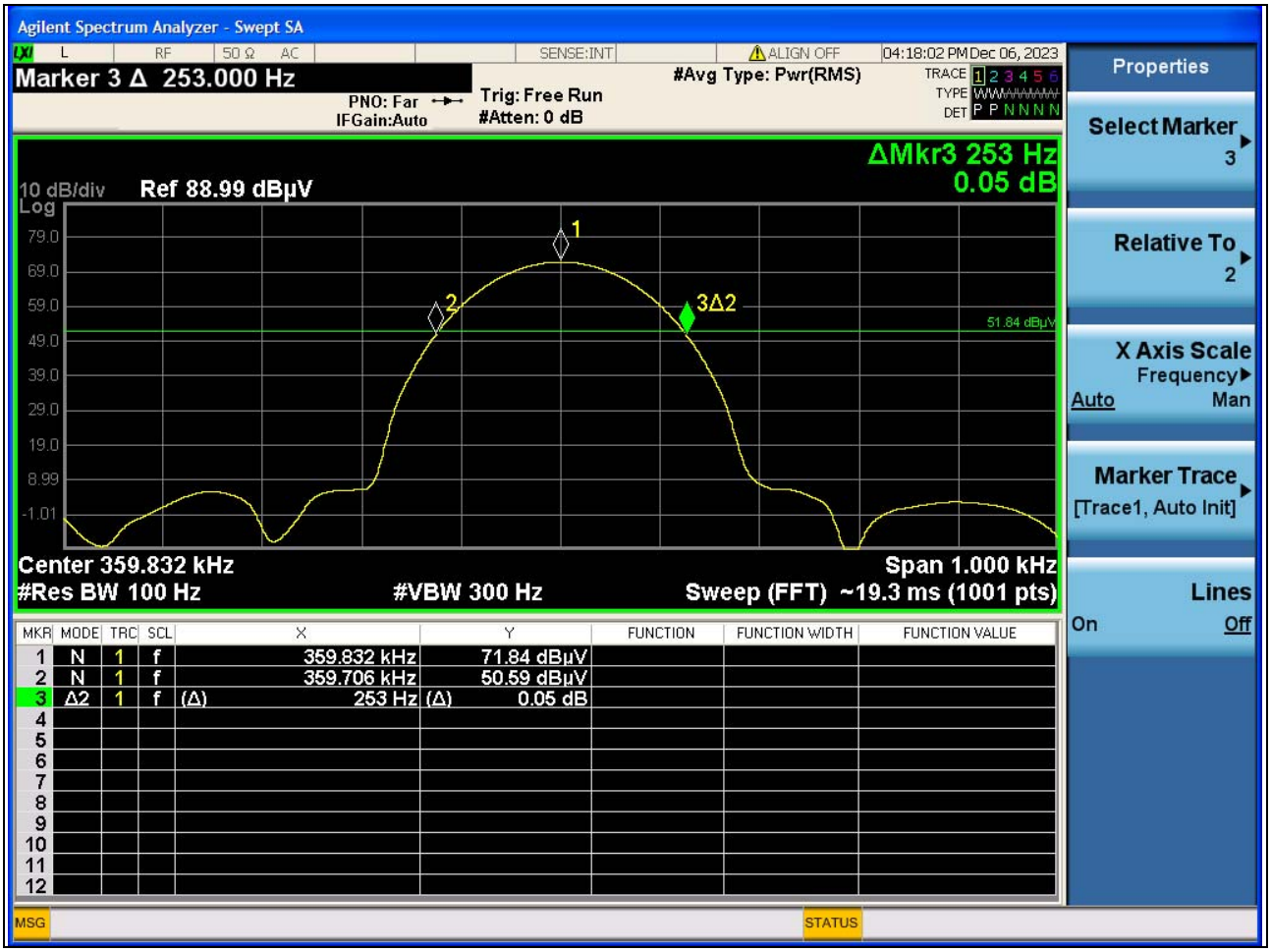
4.3.5 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously.

4.3.6 Test Results

Test Mode A

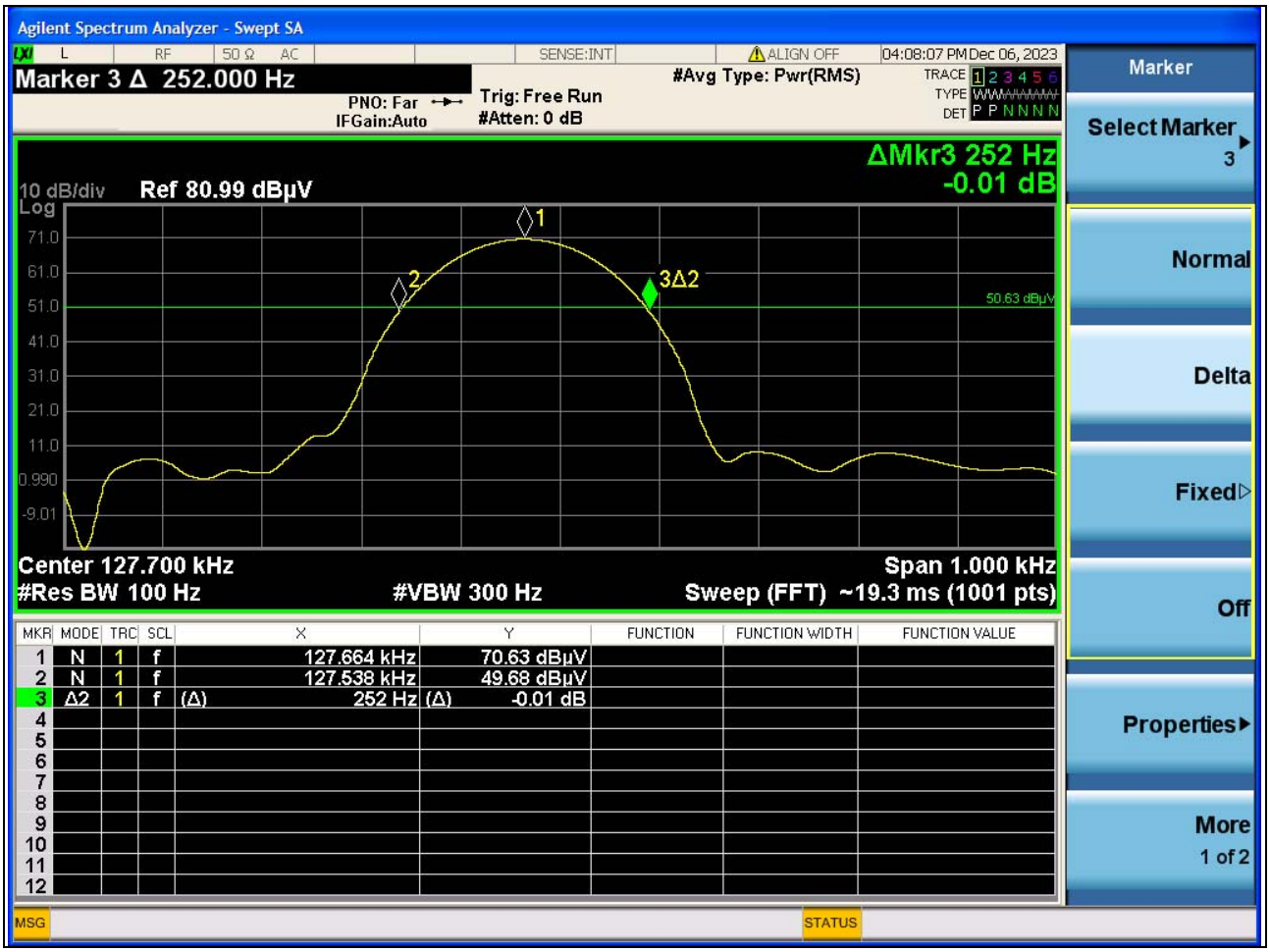
Frequency (kHz)	20dB Bandwidth (Hz)	Pass / Fail
360.0	253	Pass



Note: The signal look like CW signal, so RBW can't be match 1~5 % OBW.

Test Mode B

Frequency (kHz)	20dB Bandwidth (Hz)	Pass / Fail
127.7	252	Pass



Note: The signal look like CW signal, so RBW can't be match 1~5 % OBW.

Test Mode C

Frequency (kHz)	20dB Bandwidth (Hz)	Pass / Fail
360.0	252	Pass

Note: The signal look like CW signal, so RBW can't be match 1~5 % OBW.

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

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Tel: 886-2-26052180
Fax: 886-2-26051924

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

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

Email: service.adt@tw.bureauveritas.com
Web Site: http://ee.bureauveritas.com.tw

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

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