

## TEST REPORT

**Product** : Phone Mount with Wireless Charging  
**Trade mark** :   
**Model/Type reference** : FB-CHGHDMT-MC1,FB-CHGHDMT1,  
FB-CHGHDMT-XXX,FB-CHGHDMT1-XXX,  
FB-CHGHDMT1-GRGR,FB-CHGHDMT1-PKPK,  
FB-CHGHDMT1-BKPK  
**Serial Number** : N/A  
**Report Number** : EED32P82029501  
**FCC ID** : 2AANZCHGHDMT  
**Date of Issue** : Jan. 11, 2024  
**Test Standards** : 47 CFR Part 15 Subpart C  
**Test result** : PASS

Prepared for:

**DGL Group, Ltd.**

**2045 Lincoln Highway, 3rd floor, Edison, NJ 08817**

Prepared by:

**Centre Testing International Group Co., Ltd.**

**Hongwei Industrial Zone, Bao'an 70 District,**

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Jan. 11, 2024

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Check No.: 8055131223



## 1 Version

Version No.	Date	Description
00	Jan. 11, 2024	Original

## 2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10:2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10:2013	PASS
Radiated Emissions	47 CFR Part 15 Subpart C Section 15.209	ANSI C63.10:2013	PASS

Remark:

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Model No.: FB-CHGHDMT-MC1,FB-CHGHDMT1,FB-CHGHDMT-XXX,FB-CHGHDMT1-XXX, FB-CHGHDMT1-GRGR,FB-CHGHDMT1-PKPK, FB-CHGHDMT1-BKBK

Only the model FB-CHGHDMT-MC1 was tested. They have same electrical, PCB and BOM, only the model's names and colour are different.

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## 4 General Information

### 4.1 Client Information

Applicant:	DGL Group, Ltd.
Address of Applicant:	2045 Lincoln Highway, 3rd floor, Edison, NJ 08817
Manufacturer:	DGL Group, Ltd.
Address of Manufacturer:	2045 Lincoln Highway, 3rd floor, Edison, NJ 08817

### 4.2 General Description of EUT

Product Name:	Phone Mount with Wireless Charging	
Model No.:	FB-CHGHDMT-MC1,FB-CHGHDMT1, FB-CHGHDMT-XXX,FB-CHGHDMT1-XXX, FB-CHGHDMT1-GRGR,FB-CHGHDMT1-PKPK, FB-CHGHDMT1-BKBK	
Test Model No.:	FB-CHGHDMT-MC1	
Trade Mark:		
Device type:	Desktop applications device	
Frequency Range:	110kHz-205kHz	
Number of Channels:	1	
Center Frequency:	128kHz	
Antenna Type:	Coil antenna	
Power Supply:	USB port:	DC 5.0V/DC 9.0V
Test Power Grade:	Default	
Test Software of EUT:	RF test	
Sample Received Date:	Dec. 13, 2023	
Sample tested Date:	Dec. 13, 2023 to Dec. 29, 2023	

## 4.3 Test Environment and Mode

<b>Operating Environment:</b>	
<b>Radiated Spurious Emissions:</b>	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
<b>Conducted Emissions:</b>	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
<b>Test mode:Transmitting mode</b>	
Mode a:	Wireless charging mode(Null load)(Connect to adapter)
Mode b:	Wireless charging mode(33.3% load)(Connect to adapter)
Mode c:	Wireless charging mode(66.7% load)(Connect to adapter)
Mode d:	Wireless charging mode(Half load)(Connect to adapter)
Mode e:	Wireless charging mode(Full load)(Connect to adapter)
<p>Note:</p> <ol style="list-style-type: none"> <li>1.Wireless output:5W,7.5W,10W,15W(maximum wireless output 15W during charging);</li> <li>2.Through Pre-scan,when EUT power by DC 9.0V was the worst case, only the worst case data was recorded in the report.</li> </ol>	



#### 4.4 Description of Support Units

The EUT has been tested with associated equipment below.

1) support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
AC adapter	MI	MDY-11-EF	FCC ID and DOC	CTI
Intelligent wireless charging full function test module	YBZ	/	FCC ID and DOC	Client

#### 4.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

#### 4.6 Deviation from Standards

None.

#### 4.7 Abnormalities from Standard Conditions

None.

#### 4.8 Other Information Requested by the Customer

None.

#### 4.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	$7.9 \times 10^{-8}$
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	3.3dB (9kHz-30MHz)
		4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

## 5 Equipment List

Conducted disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100435	04-25-2023	04-24-2024
LISN	R&S	ENV216	100098	09-22-2023	09-21-2024
Capacitive voltage probe	Schwarzbeck	CVP 9222C	00124	06-29-2023	06-28-2024
ISN	TESEQ	ISN T800	30297	01-04-2022	12-29-2023
				12-14-2023	12-13-2024
Barometer	changchun	DYM3	1188	---	---
Temperature/ Humidity Indicator	Defu	TH128	---	---	---
Test software	Fara	EZ-EMC	EMC-CON 3A1.1	---	---

3M Semi-anechoic Chamber (2)- Radiated disturbance Test					
Equipment	Manufacturer	Model	Serial No.	Cal. Date	Due Date
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05/22/2022	05/21/2025
Receiver	R&S	ESCI7	100938-003	09-22-2023	09-21-2024
Spectrum Analyzer	R&S	FSV40	101200	07/25/2023	07/24/2024
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	9163-618	05/22/2022	05/21/2025
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04/15/2021	04/14/2024
Microwave Preampifier	Tonscend	EMC051845SE	980380	12/23/2022 12/14/2023	12/23/2023 12/13/2024
Horn Antenna	A.H.SYSTEMS	SAS-574	374	05/29/2021	05/28/2024
Horn Antenna	ETS-LINGREN	BBHA 9120D	9120D-1869	04/15/2021	04/14/2024
Preampifier	Agilent	11909A	12-1	03/28/2023	03/27/2024
Preampifier	CD	PAP-1840-60	6041.6042	07/03/2023	07/02/2024
Test software	Fara	EZ-EMC	EMEC-3A1-Pre	---	---
Cable line	Fulai(7M)	SF106	5219/6A	---	---
Cable line	Fulai(6M)	SF106	5220/6A	---	---
Cable line	Fulai(3M)	SF106	5216/6A	---	---
Cable line	Fulai(3M)	SF106	5217/6A	---	---



## 6 Test results and Measurement Data

### 6.1 Antenna Requirement

<b>Standard requirement:</b>	47 CFR Part 15C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
<b>EUT Antenna:</b>	Please see Internal photos
The antenna is attached on the main PCB and no consideration of replacement.	

## 6.2 Conducted Emissions

**Test Requirement:** 47 CFR Part 15C Section 15.207  
**Test Method:** ANSI C63.10: 2013  
**Test Frequency Range:** 150kHz to 30MHz

**Limit:**

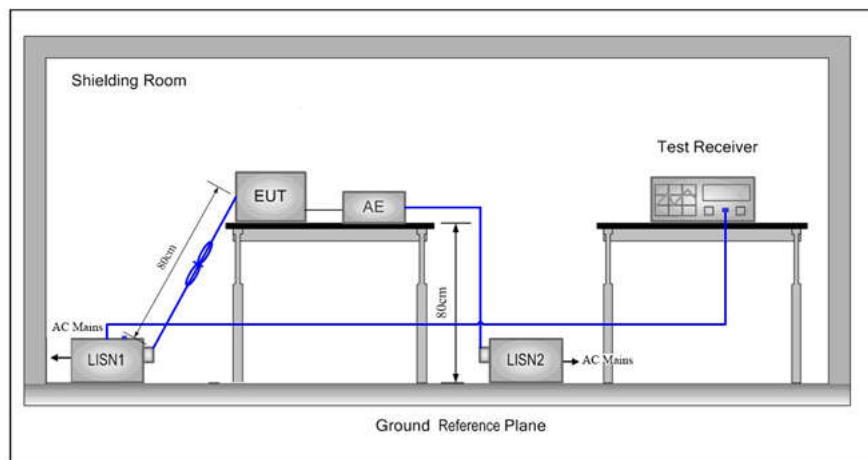
Frequency range (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

**Test Procedure:**

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a  $50\Omega/50\mu\text{H} + 5\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.

**Test Setup:**

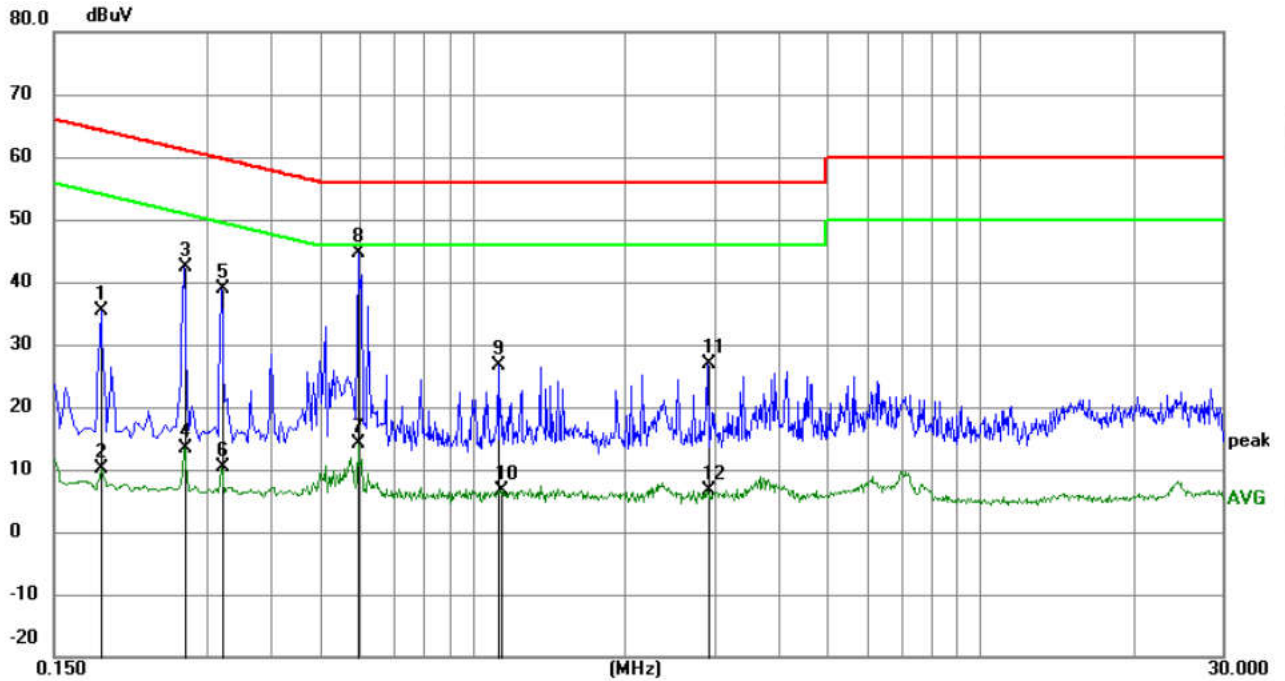


**Test Mode:** Transmitting mode, refer to section 4.3

**Test Results:** Pass

Measurement Data (Mode a):

Live line:

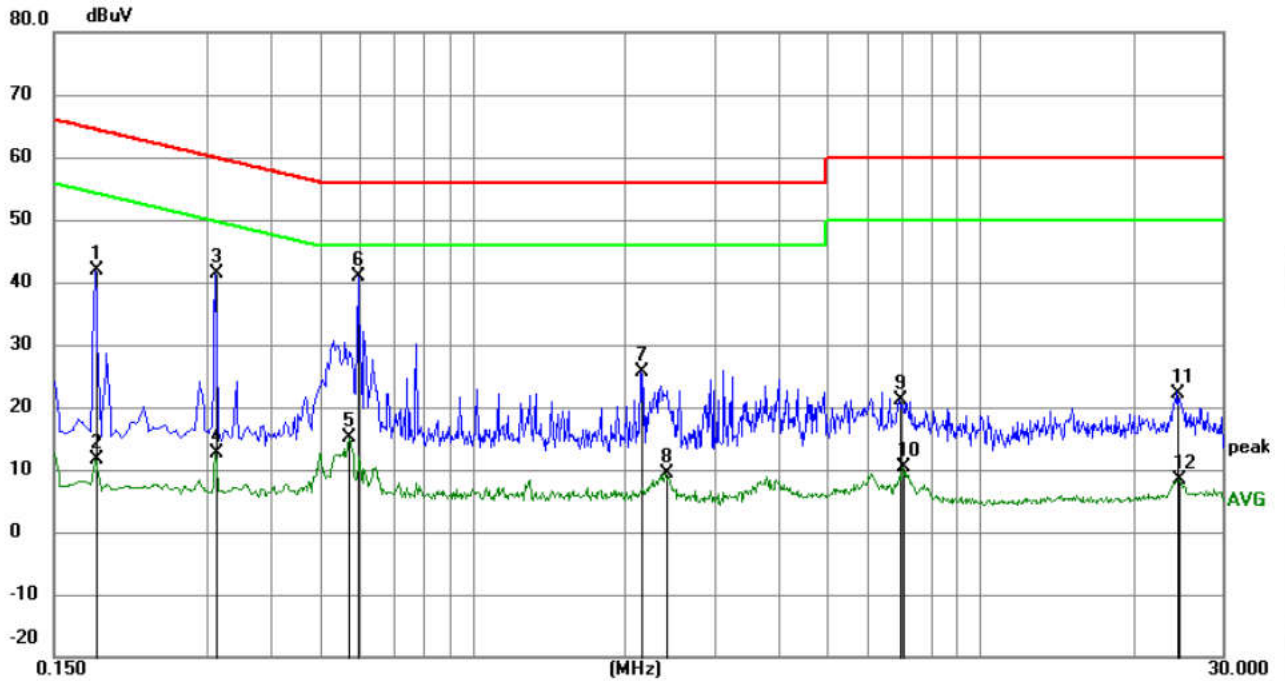


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1860	25.46	9.87	35.33	64.21	-28.88	QP	
2		0.1860	0.17	9.87	10.04	54.21	-44.17	AVG	
3		0.2714	32.37	10.01	42.38	61.07	-18.69	QP	
4		0.2714	3.33	10.01	13.34	51.07	-37.73	AVG	
5		0.3209	28.75	10.05	38.80	59.68	-20.88	QP	
6		0.3209	0.25	10.05	10.30	49.68	-39.38	AVG	
7		0.5954	4.09	10.06	14.15	46.00	-31.85	AVG	
8	*	0.5955	34.53	10.06	44.59	56.00	-11.41	QP	
9		1.1264	16.73	9.82	26.55	56.00	-29.45	QP	
10		1.1353	-3.24	9.82	6.58	46.00	-39.42	AVG	
11		2.9085	17.19	9.79	26.98	56.00	-29.02	QP	
12		2.9085	-3.15	9.79	6.64	46.00	-39.36	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1815	31.97	9.87	41.84	64.42	-22.58	QP	
2		0.1815	1.64	9.87	11.51	54.42	-42.91	AVG	
3		0.3120	31.25	10.06	41.31	59.92	-18.61	QP	
4		0.3120	2.58	10.06	12.64	49.92	-37.28	AVG	
5		0.5730	5.03	10.04	15.07	46.00	-30.93	AVG	
6	*	0.5955	30.90	10.06	40.96	56.00	-15.04	QP	
7		2.1525	15.74	9.79	25.53	56.00	-30.47	QP	
8		2.4000	-0.38	9.79	9.41	46.00	-36.59	AVG	
9		6.9450	11.41	9.79	21.20	60.00	-38.80	QP	
10		7.0620	0.61	9.79	10.40	50.00	-39.60	AVG	
11		24.5264	12.25	10.00	22.25	60.00	-37.75	QP	
12		24.5400	-1.58	10.00	8.42	50.00	-41.58	AVG	

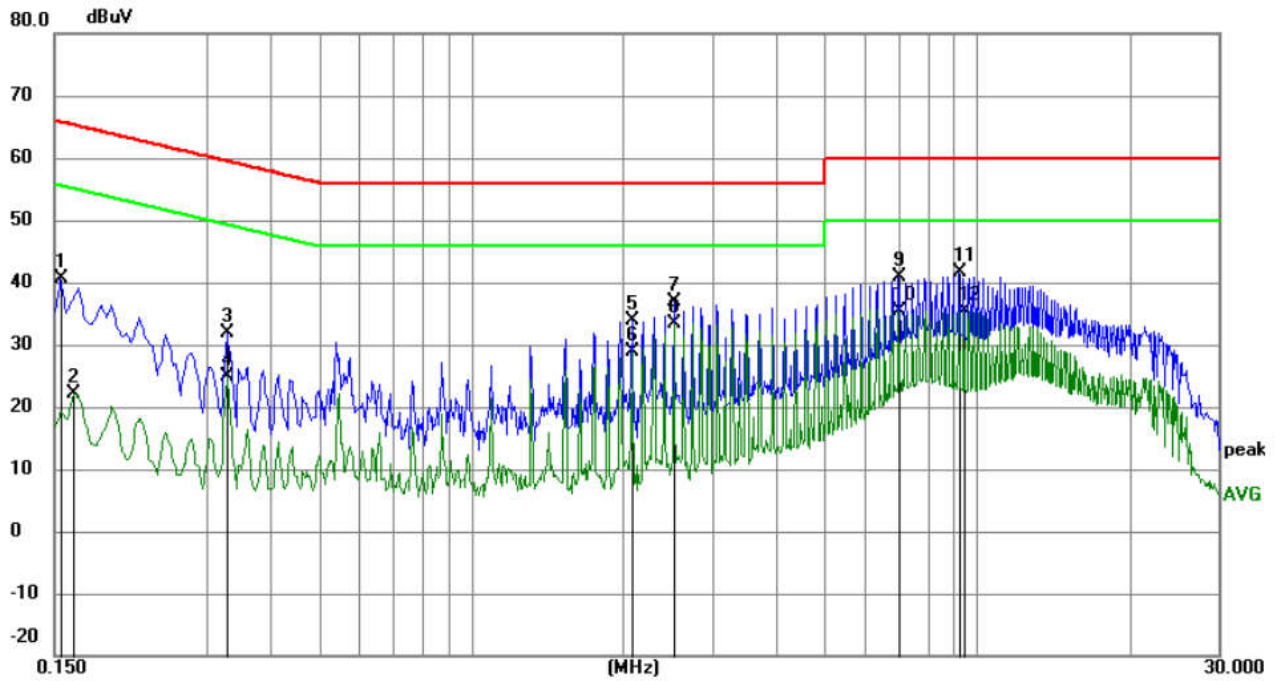
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.



Measurement Data (Mode b):

Live line:



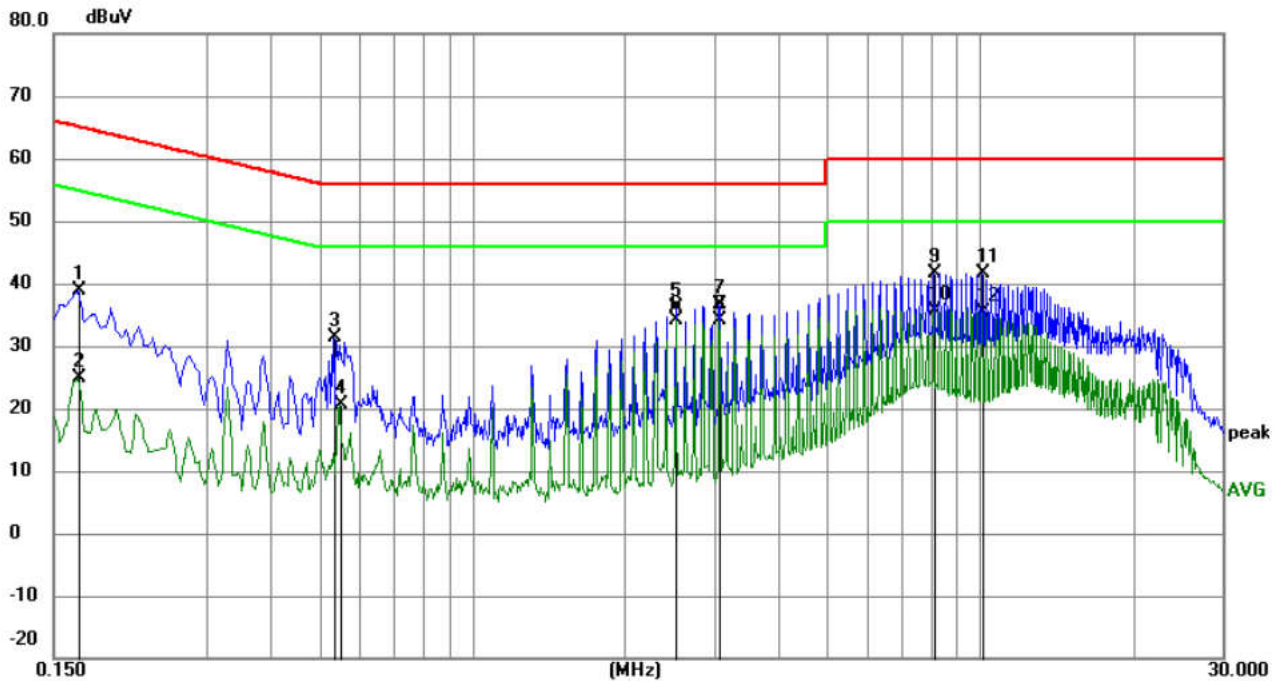
No.	Mk.	Freq.	Reading	Correct	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1544	30.80	9.87	40.67	65.76	-25.09	QP	
2		0.1635	12.36	9.87	22.23	55.28	-33.05	AVG	
3		0.3300	21.81	10.04	31.85	59.45	-27.60	QP	
4		0.3300	14.89	10.04	24.93	49.45	-24.52	AVG	
5		2.0849	24.02	9.79	33.81	56.00	-22.19	QP	
6		2.0849	19.06	9.79	28.85	46.00	-17.15	AVG	
7		2.5215	27.19	9.79	36.98	56.00	-19.02	QP	
8	*	2.5215	23.54	9.79	33.33	46.00	-12.67	AVG	
9		7.0170	31.01	9.79	40.80	60.00	-19.20	QP	
10		7.0170	25.49	9.79	35.28	50.00	-14.72	AVG	
11		9.2084	31.84	9.78	41.62	60.00	-18.38	QP	
12		9.4290	25.52	9.78	35.30	50.00	-14.70	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.



Neutral line:



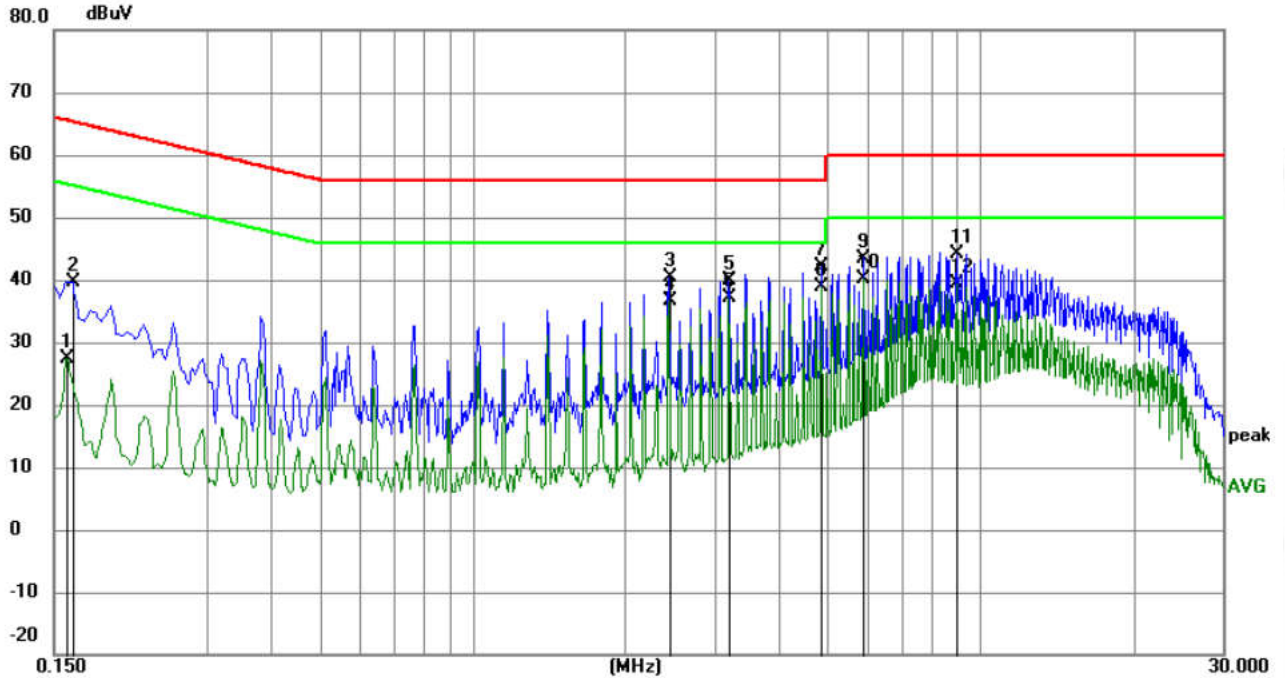
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1680	29.12	9.87	38.99	65.06	-26.07	QP	
2		0.1680	14.96	9.87	24.83	55.06	-30.23	AVG	
3		0.5325	21.28	9.99	31.27	56.00	-24.73	QP	
4		0.5505	10.60	10.01	20.61	46.00	-25.39	AVG	
5		2.5215	26.44	9.79	36.23	56.00	-19.77	QP	
6	*	2.5215	24.31	9.79	34.10	46.00	-11.90	AVG	
7		3.0705	26.74	9.79	36.53	56.00	-19.47	QP	
8		3.0705	24.31	9.79	34.10	46.00	-11.90	AVG	
9		8.1150	31.94	9.79	41.73	60.00	-18.27	QP	
10		8.1150	25.78	9.79	35.57	50.00	-14.43	AVG	
11		10.0950	31.81	9.78	41.59	60.00	-18.41	QP	
12		10.0950	25.71	9.78	35.49	50.00	-14.51	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Measurement Data (Mode c):

Live line:

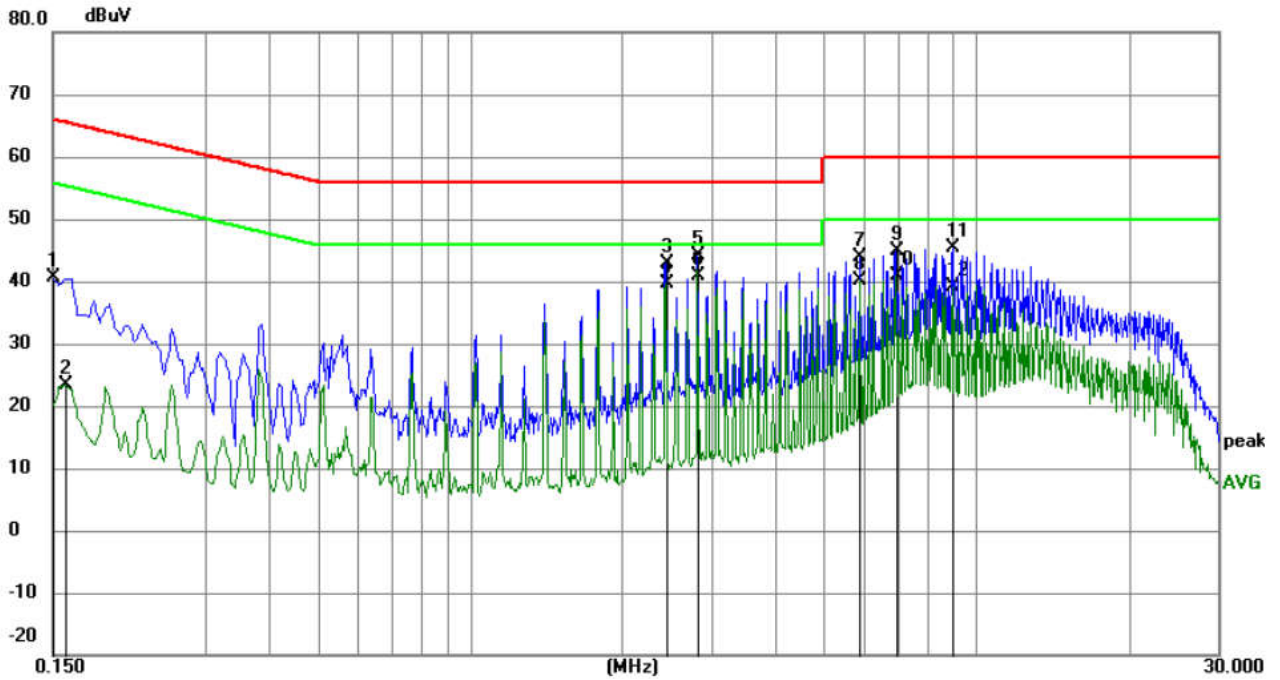


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1590	17.54	9.87	27.41	55.52	-28.11	AVG	
2		0.1635	29.76	9.87	39.63	65.28	-25.65	QP	
3		2.4360	30.68	9.79	40.47	56.00	-15.53	QP	
4		2.4360	26.94	9.79	36.73	46.00	-9.27	AVG	
5		3.2055	30.12	9.79	39.91	56.00	-16.09	QP	
6		3.2055	27.37	9.79	37.16	46.00	-8.84	AVG	
7		4.8705	32.43	9.78	42.21	56.00	-13.79	QP	
8	*	4.8705	29.21	9.78	38.99	46.00	-7.01	AVG	
9		5.8965	33.72	9.78	43.50	60.00	-16.50	QP	
10		5.8965	30.32	9.78	40.10	50.00	-9.90	AVG	
11		8.9700	34.28	9.78	44.06	60.00	-15.94	QP	
12		8.9700	29.70	9.78	39.48	50.00	-10.52	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1500	30.88	9.87	40.75	66.00	-25.25	QP	
2		0.1590	13.52	9.87	23.39	55.52	-32.13	AVG	
3		2.4359	33.13	9.79	42.92	56.00	-13.08	QP	
4		2.4359	29.72	9.79	39.51	46.00	-6.49	AVG	
5		2.8184	34.37	9.79	44.16	56.00	-11.84	QP	
6	*	2.8184	31.01	9.79	40.80	46.00	-5.20	AVG	
7		5.8965	34.16	9.78	43.94	60.00	-16.06	QP	
8		5.8965	30.43	9.78	40.21	50.00	-9.79	AVG	
9		6.9225	34.98	9.79	44.77	60.00	-15.23	QP	
10		6.9225	31.08	9.79	40.87	50.00	-9.13	AVG	
11		8.9700	35.61	9.78	45.39	60.00	-14.61	QP	
12		8.9700	29.46	9.78	39.24	50.00	-10.76	AVG	

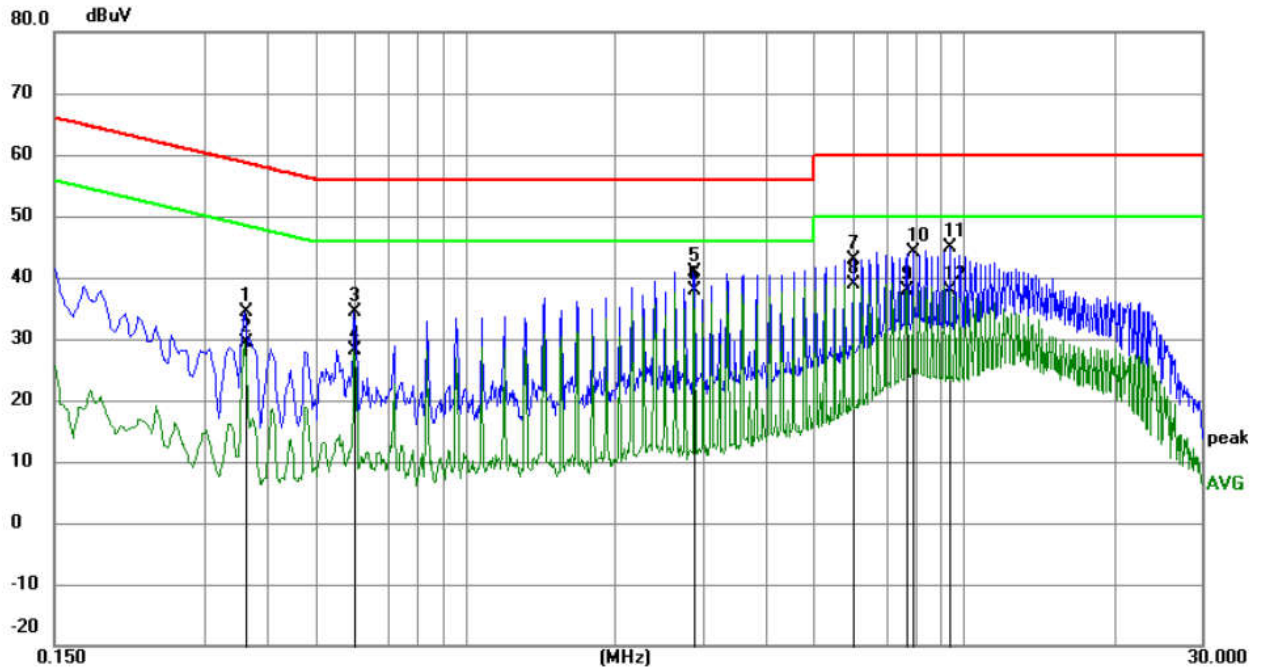
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.



Measurement Data (Mode d):

Live line:

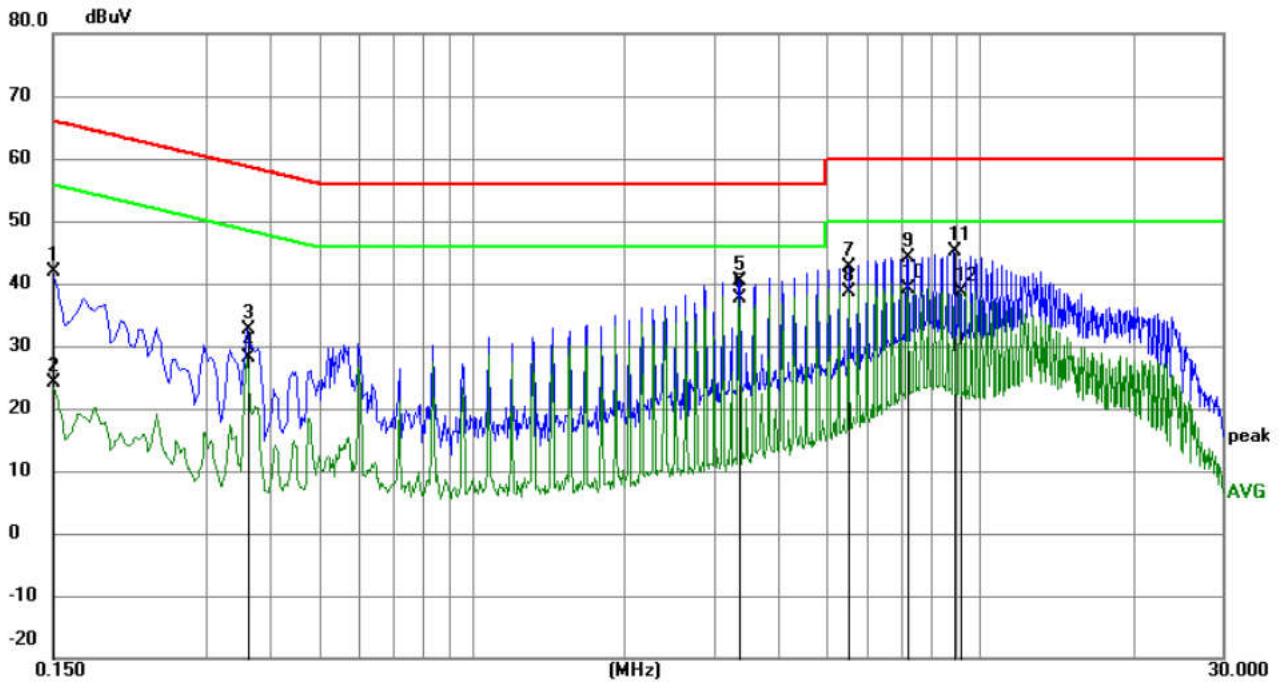


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.3615	24.43	10.01	34.44	58.69	-24.25	QP	
2		0.3615	19.39	10.01	29.40	48.69	-19.29	AVG	
3		0.6000	24.34	10.07	34.41	56.00	-21.59	QP	
4		0.6000	17.95	10.07	28.02	46.00	-17.98	AVG	
5		2.8815	31.18	9.79	40.97	56.00	-15.03	QP	
6	*	2.8815	28.21	9.79	38.00	46.00	-8.00	AVG	
7		6.0045	33.13	9.78	42.91	60.00	-17.09	QP	
8		6.0045	29.11	9.78	38.89	50.00	-11.11	AVG	
9		7.6830	28.19	9.79	37.98	50.00	-12.02	AVG	
10		7.9260	34.24	9.79	44.03	60.00	-15.97	QP	
11		9.3705	35.13	9.78	44.91	60.00	-15.09	QP	
12		9.3705	28.12	9.78	37.90	50.00	-12.10	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	32.05	9.87	41.92	66.00	-24.08	QP	
2		0.1500	14.19	9.87	24.06	56.00	-31.94	AVG	
3		0.3615	22.66	10.01	32.67	58.69	-26.02	QP	
4		0.3615	18.23	10.01	28.24	48.69	-20.45	AVG	
5		3.3630	30.67	9.79	40.46	56.00	-15.54	QP	
6	*	3.3630	27.91	9.79	37.70	46.00	-8.30	AVG	
7		5.5275	32.96	9.78	42.74	60.00	-17.26	QP	
8		5.5275	28.84	9.78	38.62	50.00	-11.38	AVG	
9		7.2105	34.36	9.79	44.15	60.00	-15.85	QP	
10		7.2105	29.29	9.79	39.08	50.00	-10.92	AVG	
11		8.8890	35.29	9.78	45.07	60.00	-14.93	QP	
12		9.1320	28.73	9.78	38.51	50.00	-11.49	AVG	

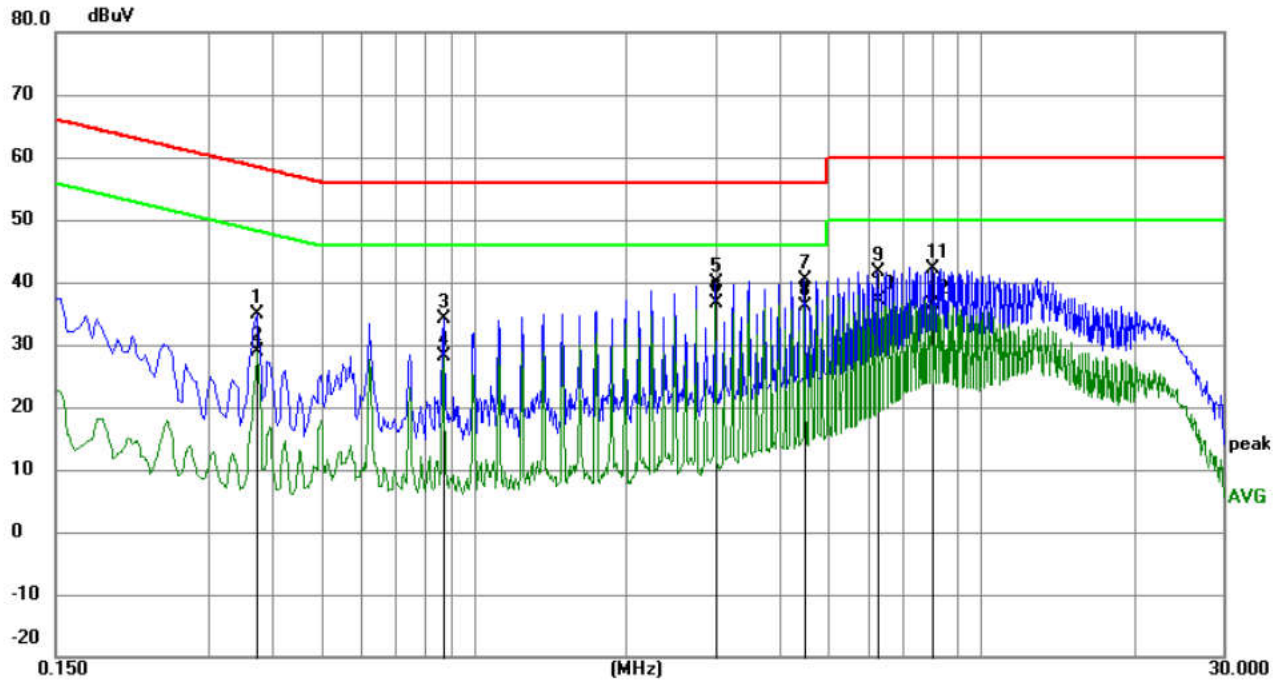
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.



Measurement Data (Mode e):

Live line:

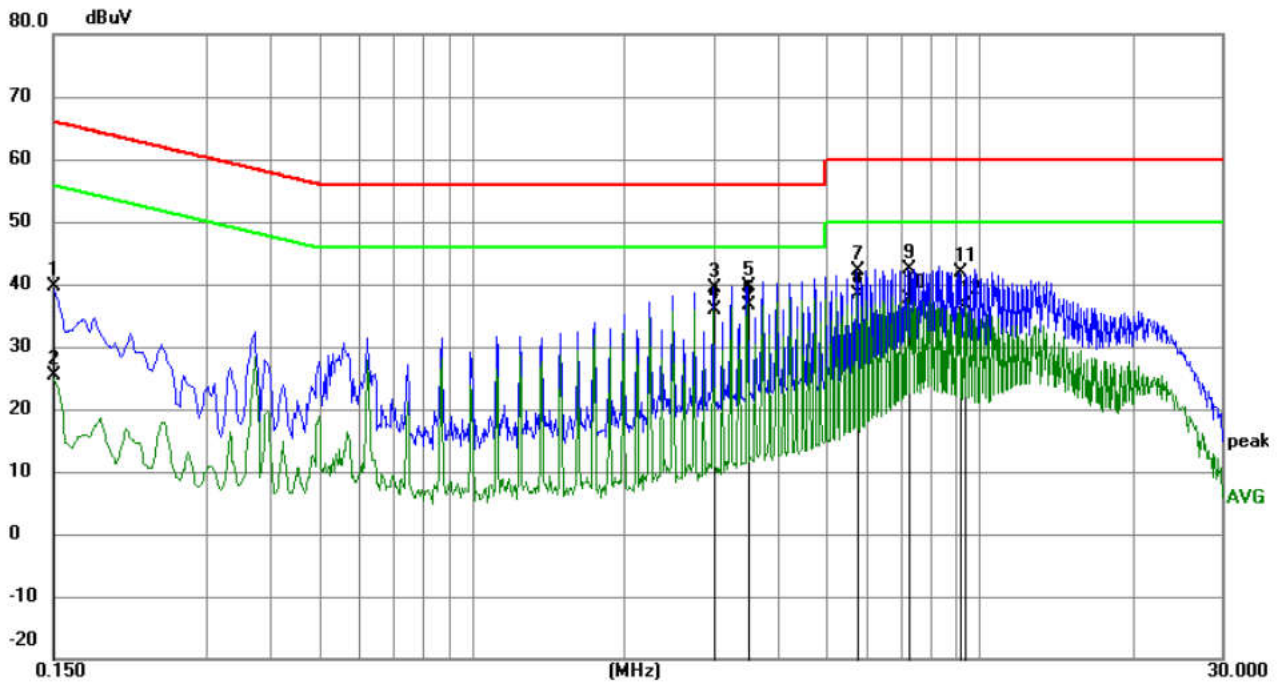


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.3750	24.84	9.99	34.83	58.39	-23.56	QP	
2		0.3750	18.88	9.99	28.87	48.39	-19.52	AVG	
3		0.8745	24.32	9.85	34.17	56.00	-21.83	QP	
4		0.8745	18.38	9.85	28.23	46.00	-17.77	AVG	
5		2.9940	30.01	9.79	39.80	56.00	-16.20	QP	
6	*	2.9940	26.85	9.79	36.64	46.00	-9.36	AVG	
7		4.4925	30.55	9.78	40.33	56.00	-15.67	QP	
8		4.4925	26.44	9.78	36.22	46.00	-9.78	AVG	
9		6.2385	31.95	9.79	41.74	60.00	-18.26	QP	
10		6.2385	27.39	9.79	37.18	50.00	-12.82	AVG	
11		7.9845	32.41	9.79	42.20	60.00	-17.80	QP	
12		7.9845	26.61	9.79	36.40	50.00	-13.60	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	29.69	9.87	39.56	66.00	-26.44	QP	
2		0.1500	15.46	9.87	25.33	56.00	-30.67	AVG	
3		2.9940	29.54	9.79	39.33	56.00	-16.67	QP	
4		2.9940	26.11	9.79	35.90	46.00	-10.10	AVG	
5		3.4935	29.86	9.78	39.64	56.00	-16.36	QP	
6	*	3.4935	26.97	9.78	36.75	46.00	-9.25	AVG	
7		5.7390	32.31	9.78	42.09	60.00	-17.91	QP	
8		5.7390	28.72	9.78	38.50	50.00	-11.50	AVG	
9		7.2375	32.64	9.79	42.43	60.00	-17.57	QP	
10		7.2375	27.76	9.79	37.55	50.00	-12.45	AVG	
11		9.1095	32.13	9.78	41.91	60.00	-18.09	QP	
12		9.3569	26.82	9.78	36.60	50.00	-13.40	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

## 6.3 Radiated Emissions

**Test Requirement:** 47 CFR Part 15C Section 15.231(b) and 15.209

**Test Method:** ANSI C63.10 2013

**Test Site:** Measurement Distance: 3m (Semi-Anechoic Chamber)

**Receiver Setup:**

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak

**Test Setup:**

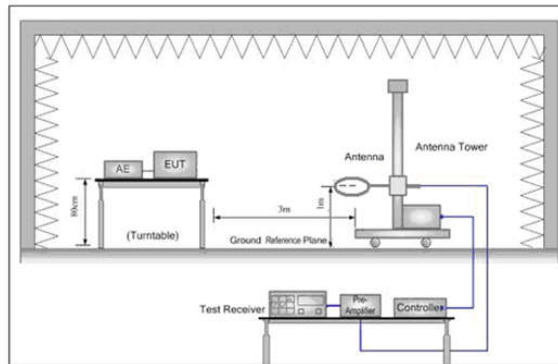


Figure . Below 30MHz

**Test Procedure:** **Below 1GHz test procedure as below:**

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**Limit:**  
(Spurious Emissions)

Frequency	Field strength (microvolt/meter)	Limit (dB $\mu$ V/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

**Test Mode:**

Transmitting mode, refer to section 4.3

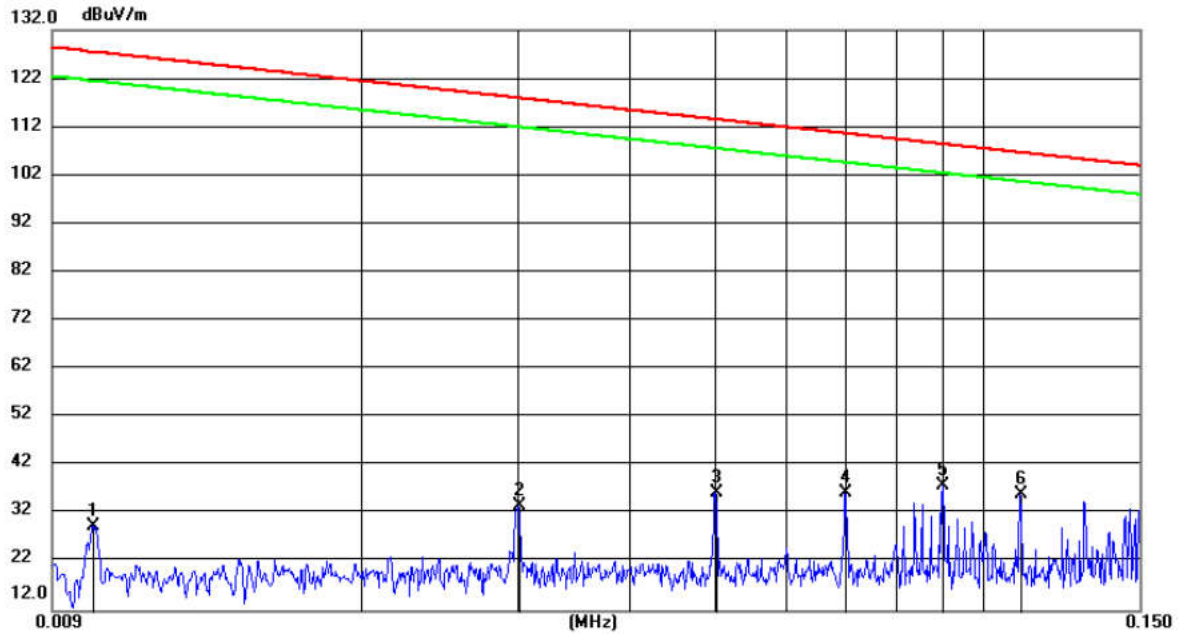
**Test Results:**

Pass



**9kHz~150kHz:**

Measurement Data (Mode a):



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		0.0100	8.35	21.30	29.65	127.49	-97.84	peak	100	243
2		0.0301	12.94	20.92	33.86	117.95	-84.09	peak	100	7
3		0.0501	15.51	20.90	36.41	113.54	-77.13	peak	100	359
4		0.0700	15.72	20.83	36.55	110.65	-74.10	peak	100	360
5	*	0.0901	17.10	20.85	37.95	108.46	-70.51	peak	100	7
6		0.1101	15.17	20.84	36.01	106.72	-70.71	peak	100	7

**Remark:**

1.The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

2.The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

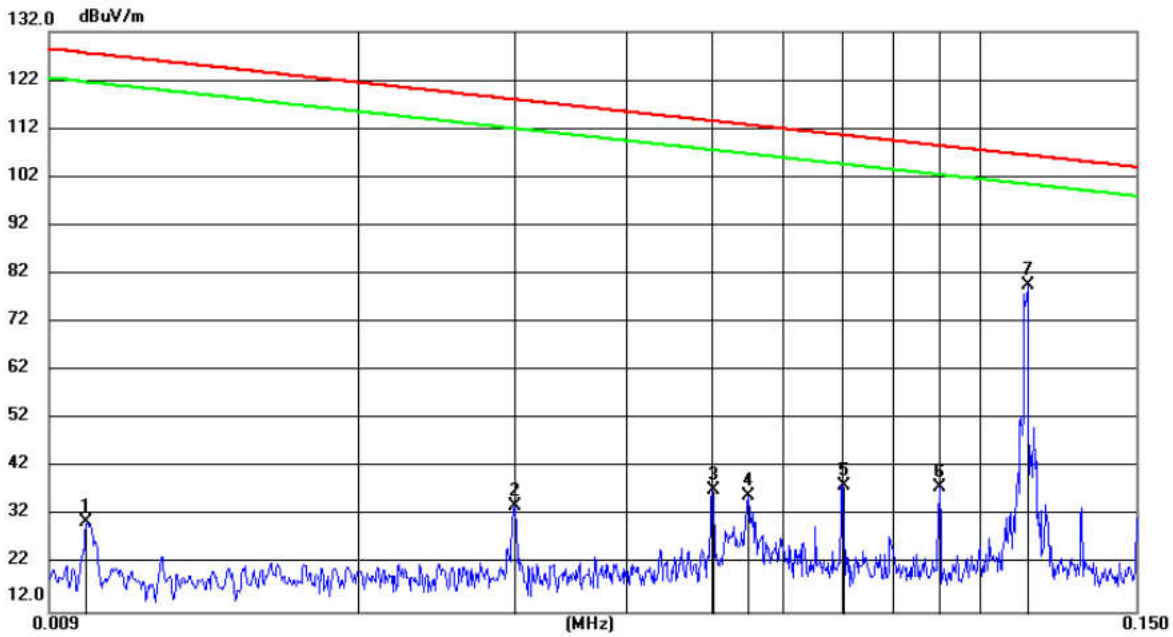
Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.



Measurement Data (Mode b):



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1		0.0099	9.44	21.31	30.75	127.58	-96.83	peak	100	243	
2		0.0300	13.08	20.92	34.00	117.98	-83.98	peak	100	353	
3		0.0501	16.49	20.90	37.39	113.54	-76.15	peak	100	8	
4		0.0549	15.18	20.88	36.06	112.75	-76.69	peak	100	309	
5		0.0702	17.43	20.83	38.26	110.62	-72.36	peak	100	8	
6		0.0901	17.03	20.85	37.88	108.46	-70.58	peak	100	8	
7	*	0.1132	58.88	20.85	79.73	106.48	-26.75	peak	100	22	

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

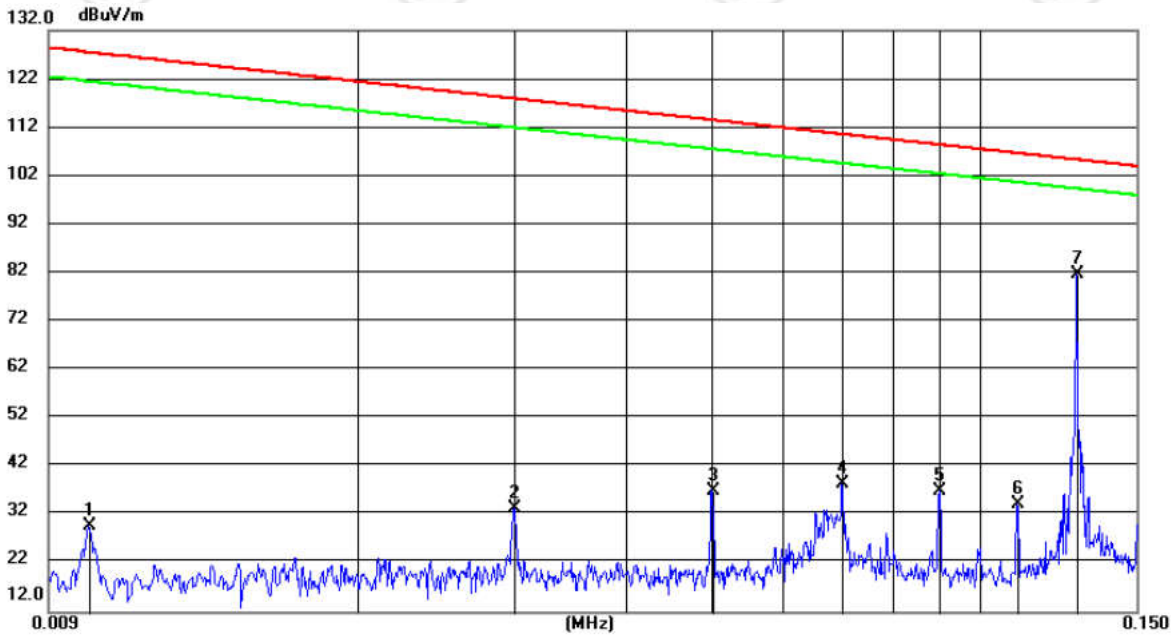
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode c):



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		0.0100	8.55	21.30	29.85	127.40	-97.55	peak	100	352
2		0.0300	12.43	20.92	33.35	117.91	-84.56	peak	100	316
3		0.0501	16.22	20.90	37.12	113.49	-76.37	peak	100	352
4		0.0700	17.82	20.83	38.65	110.60	-71.95	peak	100	352
5		0.0901	16.15	20.85	37.00	108.42	-71.42	peak	100	352
6		0.1101	13.54	20.84	34.38	106.69	-72.31	peak	100	352
7	*	0.1285	60.91	20.89	81.80	105.35	-23.55	peak	100	352

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

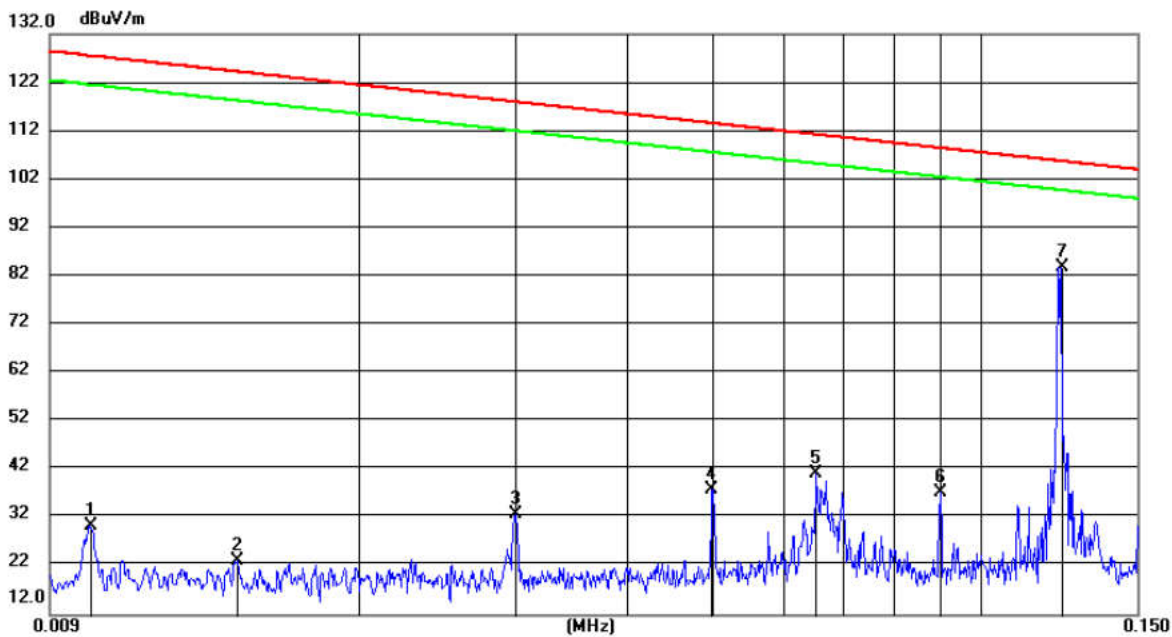
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode d):



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1		0.0100	9.06	21.30	30.36	127.49	-97.13	peak	100	241	
2		0.0146	2.18	21.09	23.27	124.22	-100.95	peak	100	140	
3		0.0300	11.95	20.92	32.87	117.98	-85.11	peak	100	7	
4		0.0499	17.08	20.90	37.98	113.58	-75.60	peak	100	7	
5		0.0653	20.52	20.85	41.37	111.25	-69.88	peak	100	7	
6		0.0901	16.57	20.85	37.42	108.46	-71.04	peak	100	7	
7	*	0.1232	62.97	20.88	83.85	105.75	-21.90	peak	100	7	

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

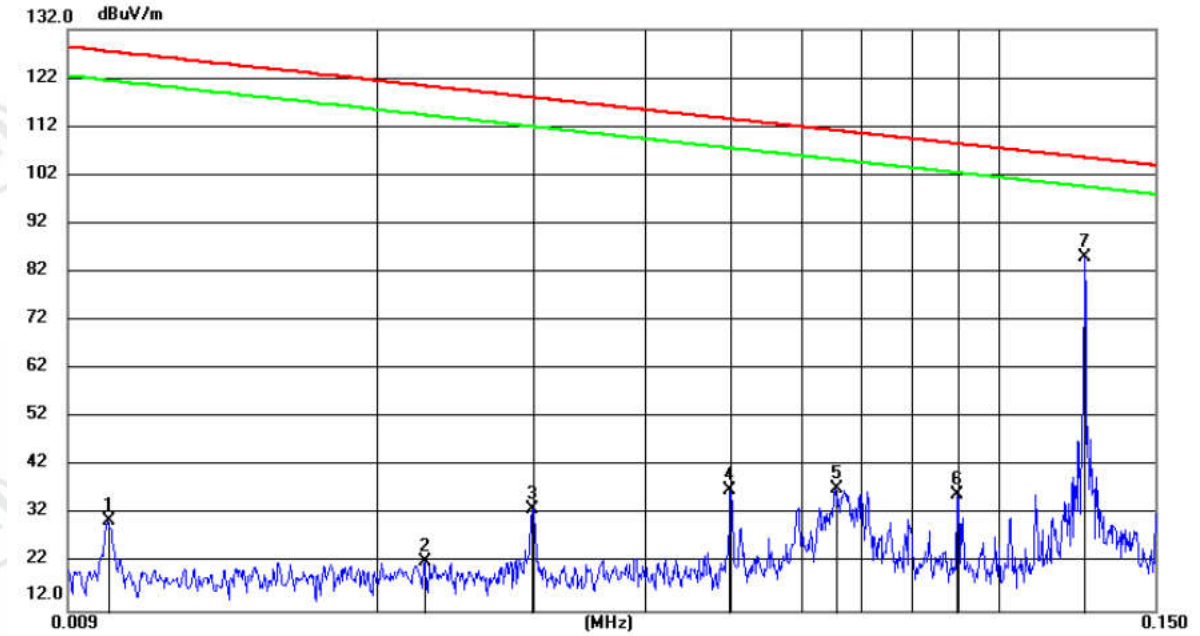
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode e):



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		0.0100	9.49	21.30	30.79	127.40	-96.61	100	168	peak
2		0.0226	1.52	20.93	22.45	120.36	-97.91	100	269	peak
3		0.0299	12.36	20.92	33.28	117.94	-84.66	100	315	peak
4		0.0499	16.19	20.90	37.09	113.52	-76.43	100	352	peak
5		0.0656	16.46	20.85	37.31	111.16	-73.85	100	307	peak
6		0.0898	15.22	20.85	36.07	108.45	-72.38	100	352	peak
7	*	0.1249	64.28	20.88	85.16	105.60	-20.44	100	352	peak

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

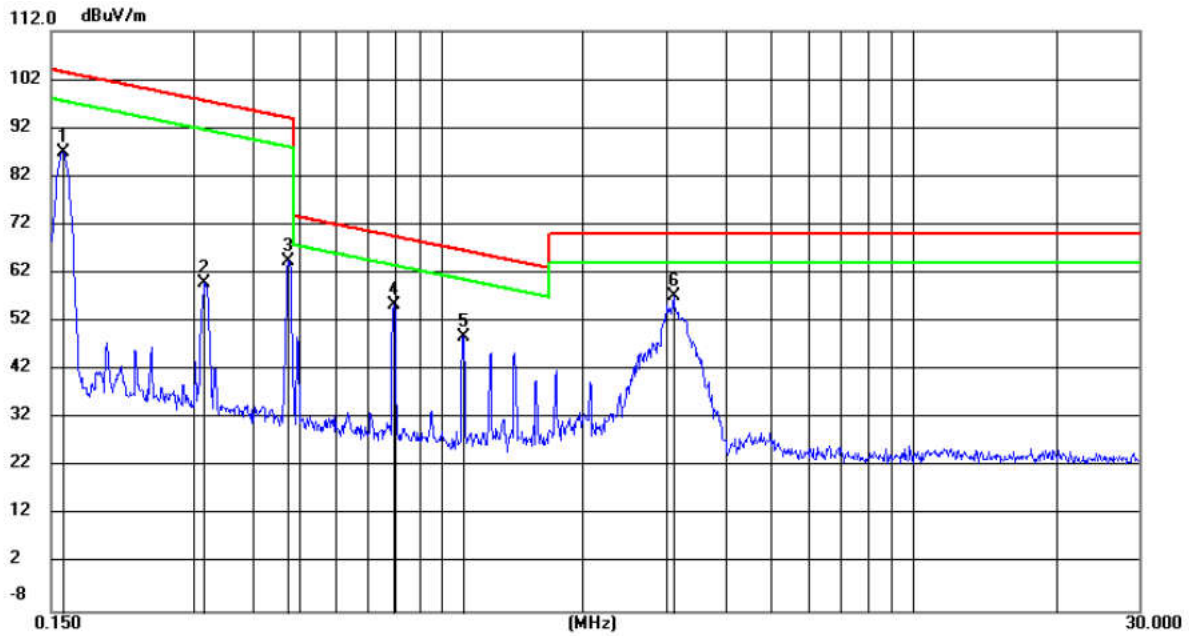
Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.



**150kHz~30MHz:**

Measurement Data (Mode a):



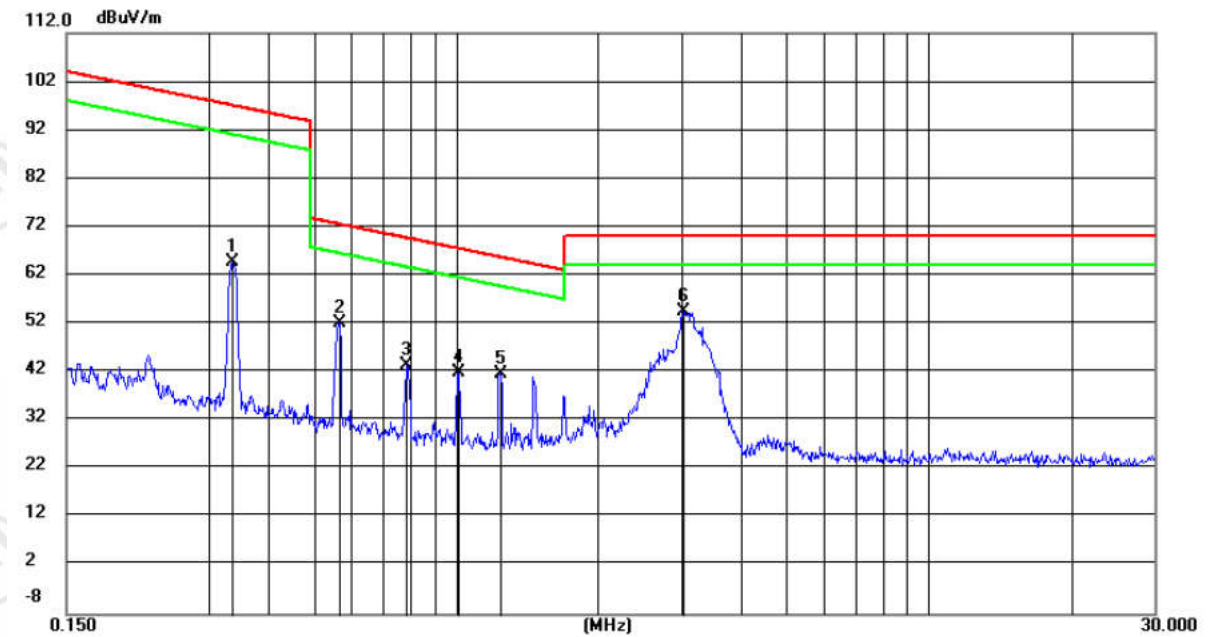
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1	0.1582	65.93	20.93	86.86	103.59	-16.73	peak	100	23	
2	0.3166	39.11	20.91	60.02	97.58	-37.56	peak	100	147	
3	0.4761	43.91	20.60	64.51	94.05	-29.54	peak	100	16	
4	0.7960	34.92	20.53	55.45	69.60	-14.15	peak	100	16	
5	1.1173	28.34	20.49	48.83	66.66	-17.83	peak	100	352	
6 *	3.1066	36.85	20.41	57.26	70.00	-12.74	peak	100	352	

Remark:

- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:  
 Final Test Level = Receiver Reading - Correct Factor  
 Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor
- The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.



Measurement Data (Mode b):



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		0.3356	43.93	20.87	64.80	97.08	-32.28	peak	100	168	
2		0.5641	31.59	20.54	52.13	72.58	-20.45	peak	100	7	
3		0.7876	23.03	20.53	43.56	69.69	-26.13	peak	100	168	
4		1.0103	21.57	20.49	42.06	67.53	-25.47	peak	100	147	
5		1.2357	21.30	20.48	41.78	65.79	-24.01	peak	100	183	
6	*	3.0253	34.21	20.41	54.62	70.00	-15.38	peak	100	80	

Remark:

1.The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

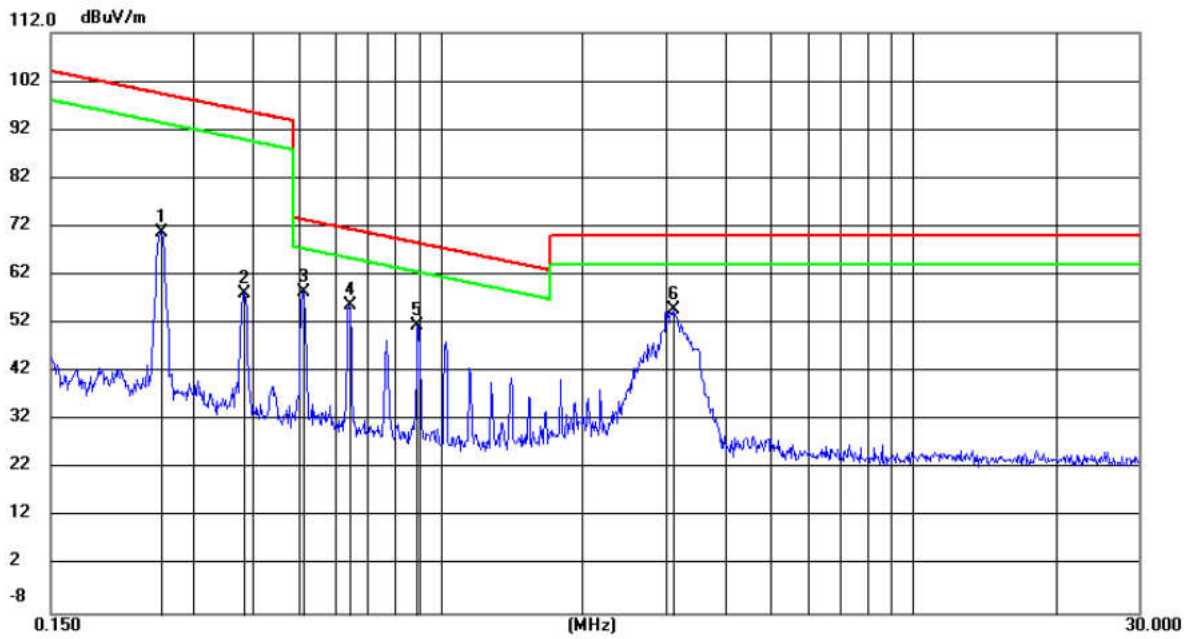
2.The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode c):



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		0.2562	49.76	21.03	70.79	99.41	-28.62	peak	100	167
2		0.3832	37.29	20.78	58.07	95.93	-37.86	peak	100	160
3	*	0.5128	38.03	20.55	58.58	73.41	-14.83	peak	100	182
4		0.6406	35.31	20.54	55.85	71.48	-15.63	peak	100	167
5		0.8944	30.94	20.51	51.45	68.59	-17.14	peak	100	167
6		3.1066	34.39	20.41	54.80	70.00	-15.20	peak	100	352

Remark:

1.The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

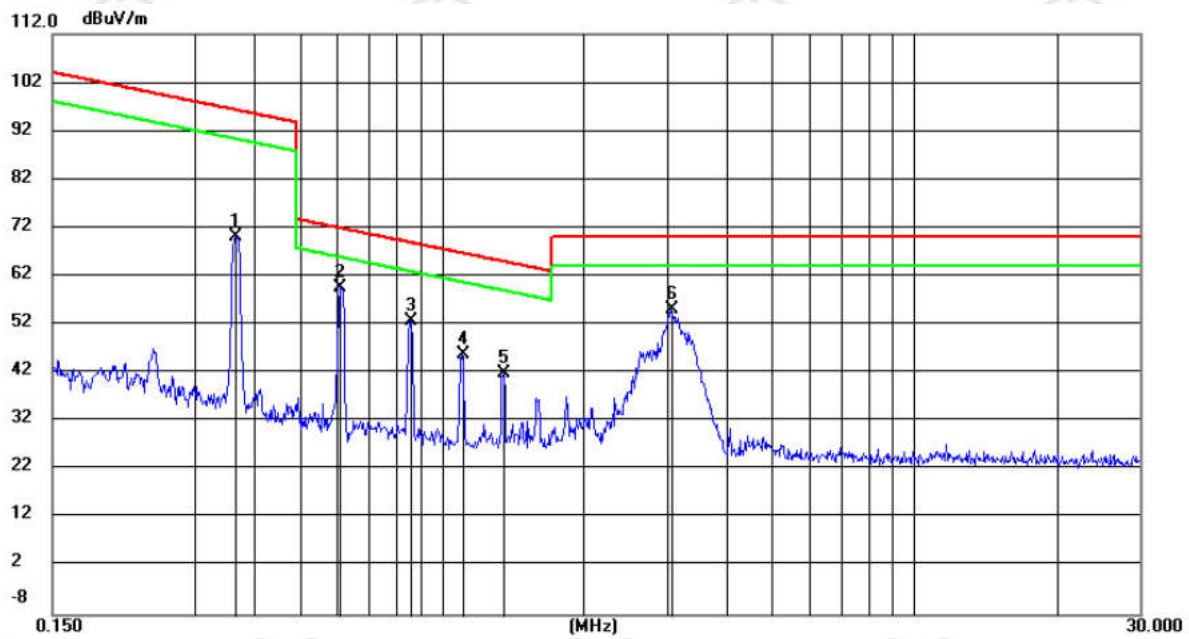
2.The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} - \text{Correct Factor}$$

$$\text{Correct Factor} = \text{Preamplifier Factor} - \text{Antenna Factor} - \text{Cable Factor}$$

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode d):



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1		0.3653	49.46	20.81	70.27	96.34	-26.07	peak	100	169	
2	*	0.6075	39.26	20.54	59.80	71.94	-12.14	peak	100	169	
3		0.8618	32.20	20.51	52.71	68.91	-16.20	peak	100	183	
4		1.1056	25.50	20.49	45.99	66.75	-20.76	peak	100	183	
5		1.3521	21.51	20.47	41.98	65.01	-23.03	peak	100	7	
6		3.0576	34.82	20.41	55.23	70.00	-14.77	peak	100	337	

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

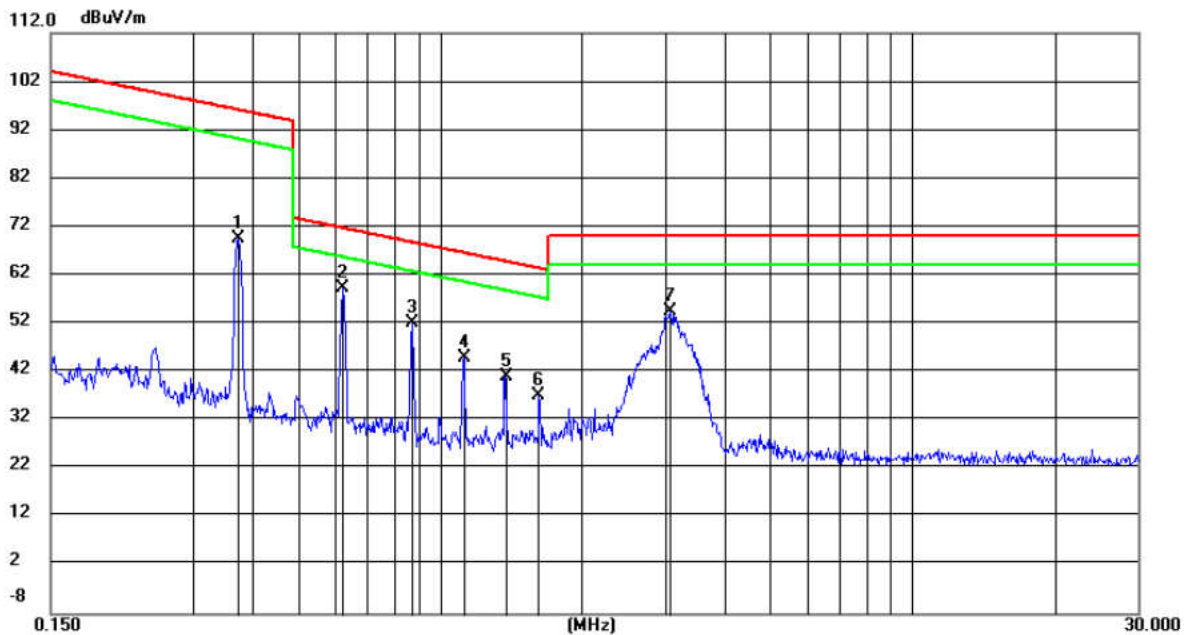
2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.

Measurement Data (Mode e):



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1		0.3731	48.89	20.80	69.69	96.16	-26.47	peak	100	182	
2	*	0.6238	38.68	20.54	59.22	71.71	-12.49	peak	100	190	
3		0.8710	31.66	20.51	52.17	68.82	-16.65	peak	100	190	
4		1.1233	24.56	20.49	45.05	66.61	-21.56	peak	100	22	
5		1.3738	20.51	20.47	40.98	64.87	-23.89	peak	100	190	
6		1.6190	16.80	20.46	37.26	63.45	-26.19	peak	100	204	
7		3.0738	34.26	20.41	54.67	70.00	-15.33	peak	100	15	

Remark:

1. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

2. The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

3. The highest frequency is 128kHz of the EUT, so upper frequency of measurement range is 30MHz.