Shenzhen Most Technology Service Co., Ltd.
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.

TEST REPORT

FCC Rules Part 15.225

Report Reference No..... :	**MTEB24090200-R**	
FCC ID..... :	**2A397-HS330U**	
Compiled by (position+printed name+signature).. :	File administrators Alisa Luo	
Supervised by (position+printed name+signature).. :	Test Engineer Sunny Deng	
Approved by (position+printed name+signature).. :	Manager Yvette Zhou	
Date of issue.....:	**Sep. 14,2024**	
Representative Laboratory Name. :	**Shenzhen Most Technology Service Co., Ltd.**	
Address..... :	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.	
Applicant's name.....:	**QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.**	
Address..... :	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China	
Test specification/ Standard.....**:**	**FCC Rules Part 15.225**	
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.	

Test item description.....:	Self-Checkout Terminal
Trade Mark.....:	Histone
Model/Type reference..... :	HS330U（Products may be available in a variety of color combinations according to customer needs）
Listed Models ..... :	N/A
Modulation Type..... :	ASK
Operation Frequency..... :	13.56MHz
Hardware Version.....	GM-11
Software Version.....	GTGU010
Rating.....:	100-120V~/200-240V~, 50/60Hz, 3A/1.7A
Result.....:	PASS

T E S T R E P O R T

Equipment under Test	:	Self-Checkout Terminal
Model /Type	:	HS330U
Listed Models	:	N/A
Remark		N/A
Applicant	:	**QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.**
Address	:	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China
Manufacturer	:	**QINGDAO HISTONE INTELLIGENT COMMERCIAL SYSTEM CO., LTD.**
Address	:	Wisdom Valley, No.8 Shengshui Road, Laoshan District, Qingdao City, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2024-09-14	Initial Issue	Alisa Luo

2. TEST STANDARDS

The tests were performed according to following standards:

The tests were performed according to following standards:

FCC Rules Part 15.225: Operation within the band 13.110-14.010 MHz.

ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices
ANSI C63.4: 2014: –American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz
Range of 9 kHz to 40GHz

3. SUMMARY

3.1. General Remarks

Date of receipt of test sample	:	2024.09.05
Testing commenced on	:	2024.09.06
Testing concluded on	:	2024.09.14

3.2. Product Description

Product Name:	Self-Checkout Terminal
Model/Type reference:	HS330U
Power Supply：	AC 120V/60Hz
Testing sample ID：	MTYP06620-6622
Modulation:	ASK
Operation frequency:	13.56MHZ
Channel number:	1 (declared by the client)

3.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	●	120V / 60Hz
		○	12 V DC	○	24 V DC
		○	Other (specified in blank below)		

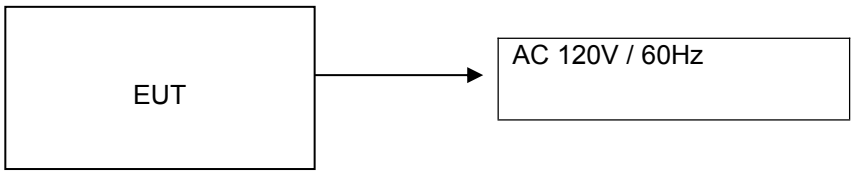
3.4. Short description of the Equipment under Test (EUT)

This is a Self-Checkout Terminal For more details, refer to the user's manual of the EUT.

3.5. EUT operation mode

Channel	Freq.(MHz)	Note(Modulation Type)
1	13.56MHz	ASK

3.6. Block Diagram of Test Setup



3.7. Test Item (Equipment Under Test) Description*

Short designation	EUT Name	EUT Description	Serial number	Hardware status	Software status
EUT A	/	/	/	/	/
EUT B	/	/	/	/	/
EUT C	/	/	/	/	/

*: declared by the applicant. According to customers information EUTs A and B are the same devices.Only the secondary screen size is different

3.8. Auxiliary Equipment (AE) Description

AE short designation	EUT Name (if available)	EUT Description	Serial number (if available)	Software (if used)
AE 1	/	/	/	/
AE 2	/	/	/	/

3.9 Antenna Information*

Short designation	Antenna Name	Antenna Type	Frequency Range	Serial number	Antenna Peak Gain
Antenna 1	---	/	/	/	/
Antenna 2	/	/	/	/	/

*: declared by the applicant.

3.10. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

○- supplied by the manufacturer

○- Supplied by the lab

●	ADAPTER 1	M/N:	/
		Manufacturer:	/
●	ADAPTER 2	M/N:	/
		Manufacturer:	/
●	ADAPTER 3	M/N:	/
		Manufacturer:	/

3.11. Modifications

No modifications were implemented to meet testing criteria.

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Shenzhen Most Technology Service Co., Ltd.
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.
The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 0031192610

Shenzhen Most Technology Service Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

A2LA-Lab Cert. No.: 6343.01

Shenzhen Most Technology Service Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

4.2. Environmental conditions

Radiated Emission:

Temperature:	23 ° C
Humidity:	48 %
Atmospheric pressure:	950-1050mbar

Conducted testing：

Temperature:	24 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

4.3. Test Description

FCC and IC Requirements		
FCC Part 15.203	Antenna Requirement	PASS
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.209&15.205 (a) &15.225(a,b,c,d)	Spurious Emissions	PASS
FCC Part 15.215 (c) &15.225	20dB Occupied Bandwidth	PASS
FCC Part 15.225(e)	Frequency Tolerance	PASS

Remark:
1. The measurement uncertainty is not included in the test result.
2. NA = Not Applicable; NP = Not Performed

4.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Most Technology Service Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Most Technology Service Co., Ltd. is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.12 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.5. Equipments Used during the Test

5.

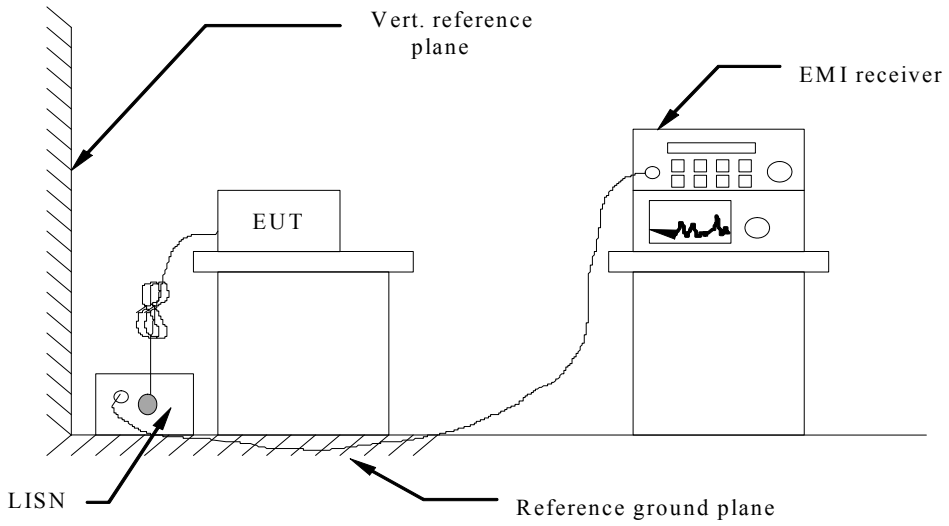
Item	Equipment	Manufacturer	Model No.	Serial No.	Firmware versions	Last Cal.
1.	L.I.S.N.	R&S	ENV216	100093	/	2024/03/15
2	Three-phase artificial power network	Schwarzback Mess	NNLK8129	8129178	/	2024/03/15
3.	Receiver	R&S	ESCI	100492	V3.0-10-2	2024/03/15
4	Receiver	R&S	ESPI	101202	V3.0-10-2	2024/03/15
5	Spectrum analyzer	Agilent	9020A	MT-E306	A14.16	2024/03/15
6	Bilong Antenna	Sunol Sciences	JB3	A121206	/	2024/08/15
7	Horn antenna	HF Antenna	HF Antenna	MT-E158	/	2024/03/15
8	Loop antenna	Beijing Daze	ZN30900B	/	/	2024/03/15
9	Horn antenna	R&S	OBH100400	26999002	/	2024/03/15
10	Wireless Communication Test Set	R&S	CMW500	/	CMW-BASE-3.7.21	2024/03/15
11	Spectrum analyzer	R&S	FSP	100019	V4.40 SP2	2024/03/15
12	High gain antenna	Schwarzbeck	LB-180400KF	MT-E389	/	2024/03/15
13	Preamplifier	Schwarzbeck	BBV 9743	MT-E390	/	2024/03/15
14	Pre-amplifier	EMCI	EMC051845SE	MT-E391	/	2024/03/15
15	Pre-amplifier	Agilent	83051A	MT-E392	/	2024/03/15
16	High pass filter unit	Tonscend	JS0806-F	MT-E393	/	2024/03/15
17	RF Cable(below1GHz)	Times	9kHz-1GHz	MT-E394	/	2024/03/15
18	RF Cable(above 1GHz)	Times	1-40G	MT-E395	/	2024/03/15
19	RF Cable (9KHz-40GHz)	Tonscend	170660	N/A	/	2024/03/15
20	Power meter	R&S	NRVS	100444	/	2024/03/15

6. Note: The Cal.Interval was one year.

7. TEST CONDITIONS AND RESULTS

7.1. AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013.
2 Support equipment, if needed, was placed as per ANSI C63.10-2013
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
4 The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

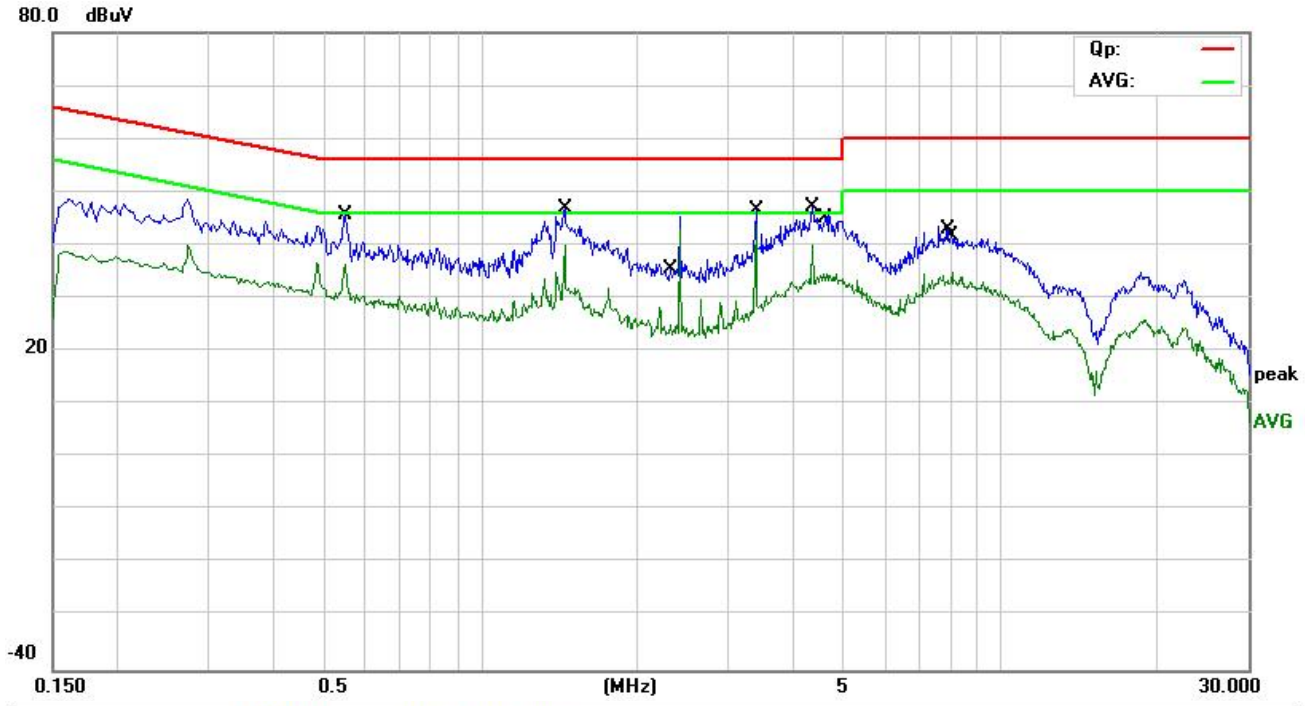
AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

Frequency range (MHz)	Limit (dBuV)	
	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 RESULTS

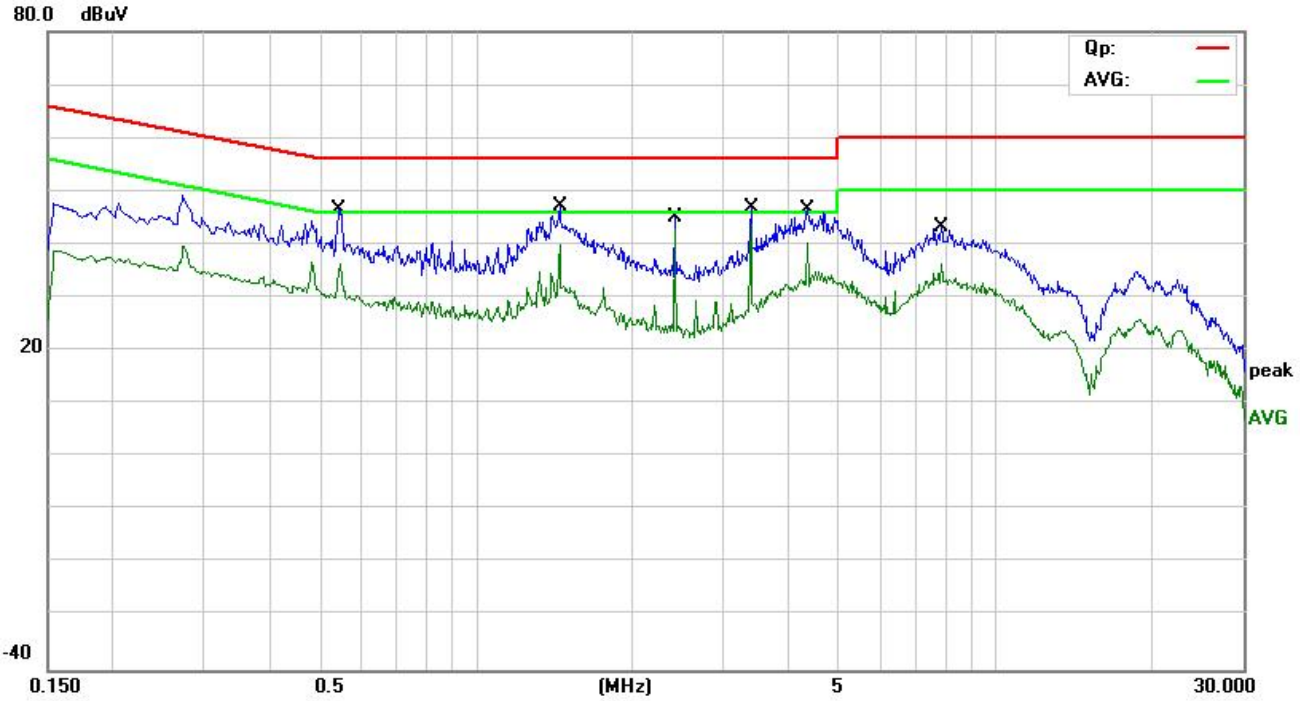
Power Supply	AC 120V / 60Hz	Line	L
M/N:	HS330U		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5500	36.06	9.59	45.65	56.00	-10.35	QP	
2		0.5500	26.76	9.59	36.35	46.00	-9.65	AVG	
3		1.4500	37.34	9.60	46.94	56.00	-9.06	QP	
4		1.4500	30.45	9.60	40.05	46.00	-5.95	AVG	
5		2.3180	25.84	9.61	35.45	56.00	-20.55	QP	
6		2.3180	15.35	9.61	24.96	46.00	-21.04	AVG	
7		3.3820	36.83	9.61	46.44	56.00	-9.56	QP	
8	*	3.3820	33.20	9.61	42.81	46.00	-3.19	AVG	
9		4.4060	36.15	9.62	45.77	56.00	-10.23	QP	
10		4.5660	24.99	9.63	34.62	46.00	-11.38	AVG	
11		7.9260	33.22	9.66	42.88	60.00	-17.12	QP	
12		8.0940	25.06	9.66	34.72	50.00	-15.28	AVG	

*:Maximum data x:Over limit !:over margin

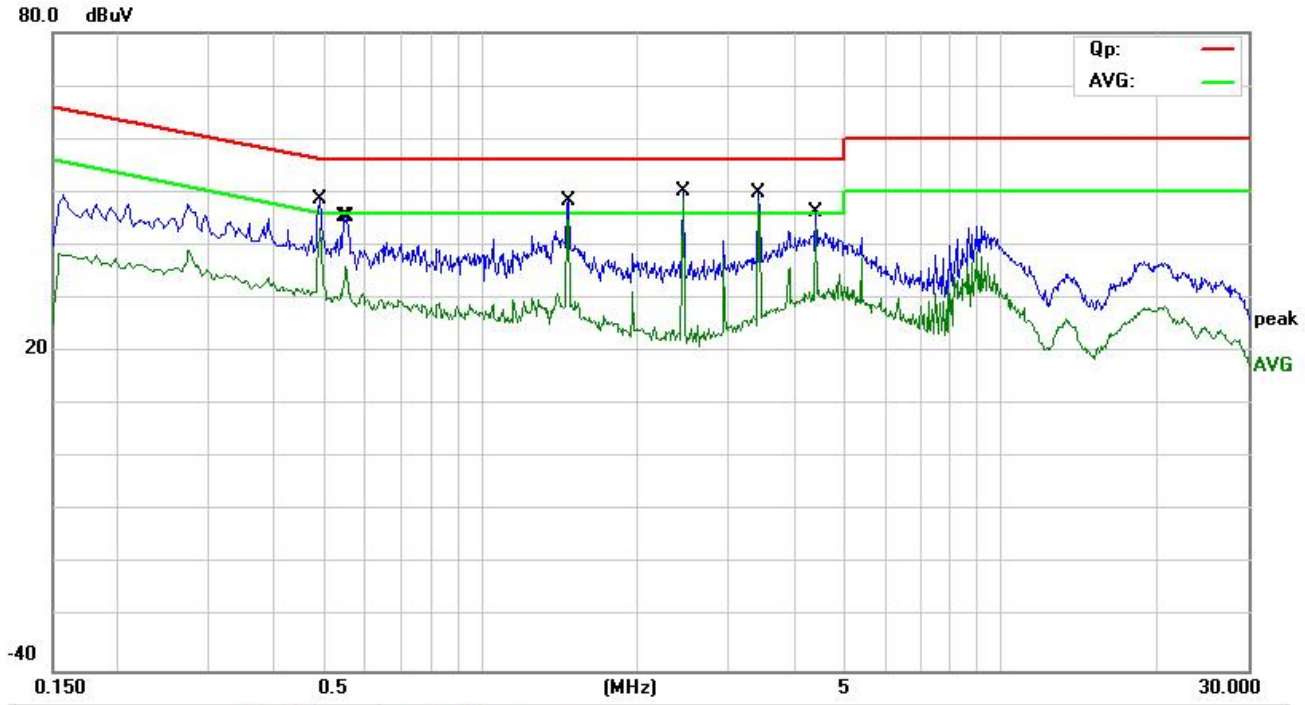
Power Supply	AC 120V / 60Hz	Line	N
M/N:	HS330U		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5460	37.03	9.59	46.62	56.00	-9.38	QP	
2		0.5500	26.61	9.59	36.20	46.00	-9.80	AVG	
3		1.4500	37.65	9.60	47.25	56.00	-8.75	QP	
4		1.4500	30.28	9.60	39.88	46.00	-6.12	AVG	
5		2.4180	35.39	9.61	45.00	56.00	-11.00	QP	
6	*	2.4180	33.29	9.61	42.90	46.00	-3.10	AVG	
7		3.3820	37.37	9.61	46.98	56.00	-9.02	QP	
8		3.3820	33.00	9.61	42.61	46.00	-3.39	AVG	
9		4.3500	36.86	9.62	46.48	56.00	-9.52	QP	
10		4.3500	30.62	9.62	40.24	46.00	-5.76	AVG	
11		7.8540	33.56	9.66	43.22	60.00	-16.78	QP	
12		7.8540	26.60	9.66	36.26	50.00	-13.74	AVG	

*:Maximum data x:Over limit !:over margin

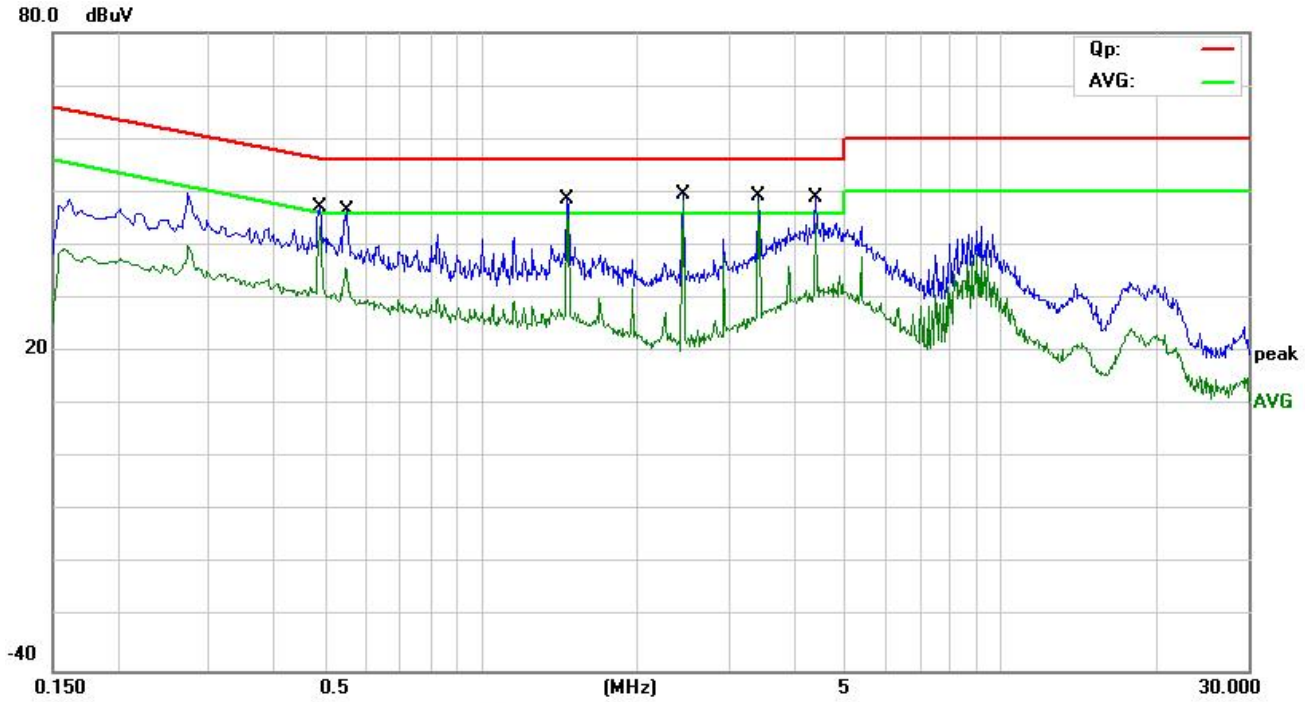
Power Supply	AC 120V / 60Hz	Line	L
M/N:	HS330U+Scanner Base		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4900	38.99	9.59	48.58	56.17	-7.59	QP	
2	*	0.4900	33.50	9.59	43.09	46.17	-3.08	AVG	
3		0.5460	35.67	9.59	45.26	56.00	-10.74	QP	
4		0.5500	26.33	9.59	35.92	46.00	-10.08	AVG	
5		1.4740	38.74	9.60	48.34	56.00	-7.66	QP	
6		1.4740	31.90	9.60	41.50	46.00	-4.50	AVG	
7		2.4540	40.49	9.61	50.10	56.00	-5.90	QP	
8		2.4540	33.10	9.61	42.71	46.00	-3.29	AVG	
9		3.4340	40.26	9.61	49.87	56.00	-6.13	QP	
10		3.4340	33.30	9.61	42.91	46.00	-3.09	AVG	
11		4.4140	36.62	9.62	46.24	56.00	-9.76	QP	
12		4.4140	32.15	9.62	41.77	46.00	-4.23	AVG	

*:Maximum data x:Over limit !:over margin

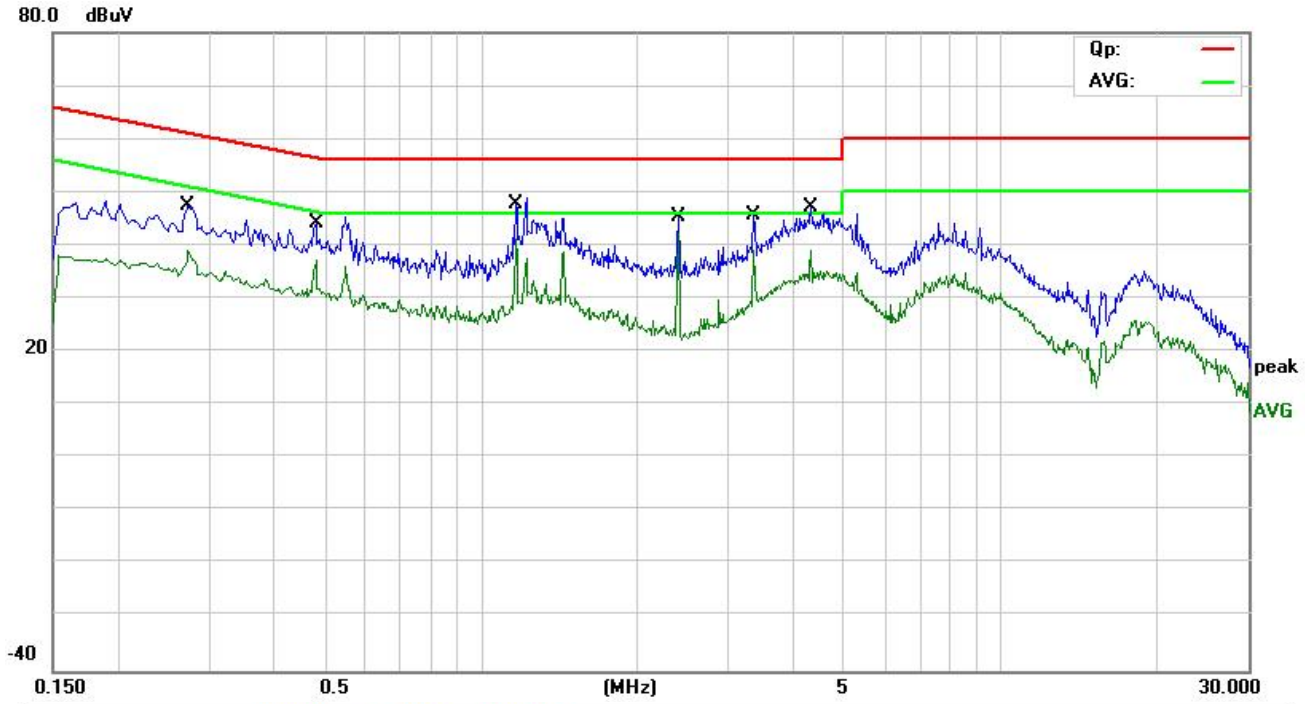
Power Supply	AC 120V / 60Hz	Line	N
M/N:	HS330U+Scanner Base		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4900	37.53	9.59	47.12	56.17	-9.05	QP	
2		0.4900	33.00	9.59	42.59	46.17	-3.58	AVG	
3		0.5500	26.02	9.59	35.61	46.00	-10.39	AVG	
4		0.5540	36.98	9.59	46.57	56.00	-9.43	QP	
5		1.4700	39.19	9.60	48.79	56.00	-7.21	QP	
6		1.4700	32.80	9.60	42.40	46.00	-3.60	AVG	
7		2.4540	39.83	9.61	49.44	56.00	-6.56	QP	
8		2.4540	32.60	9.61	42.21	46.00	-3.79	AVG	
9		3.4340	39.54	9.61	49.15	56.00	-6.85	QP	
10	*	3.4340	33.20	9.61	42.81	46.00	-3.19	AVG	
11		4.4140	39.25	9.62	48.87	56.00	-7.13	QP	
12		4.4140	33.00	9.62	42.62	46.00	-3.38	AVG	

*:Maximum data x:Over limit !:over margin

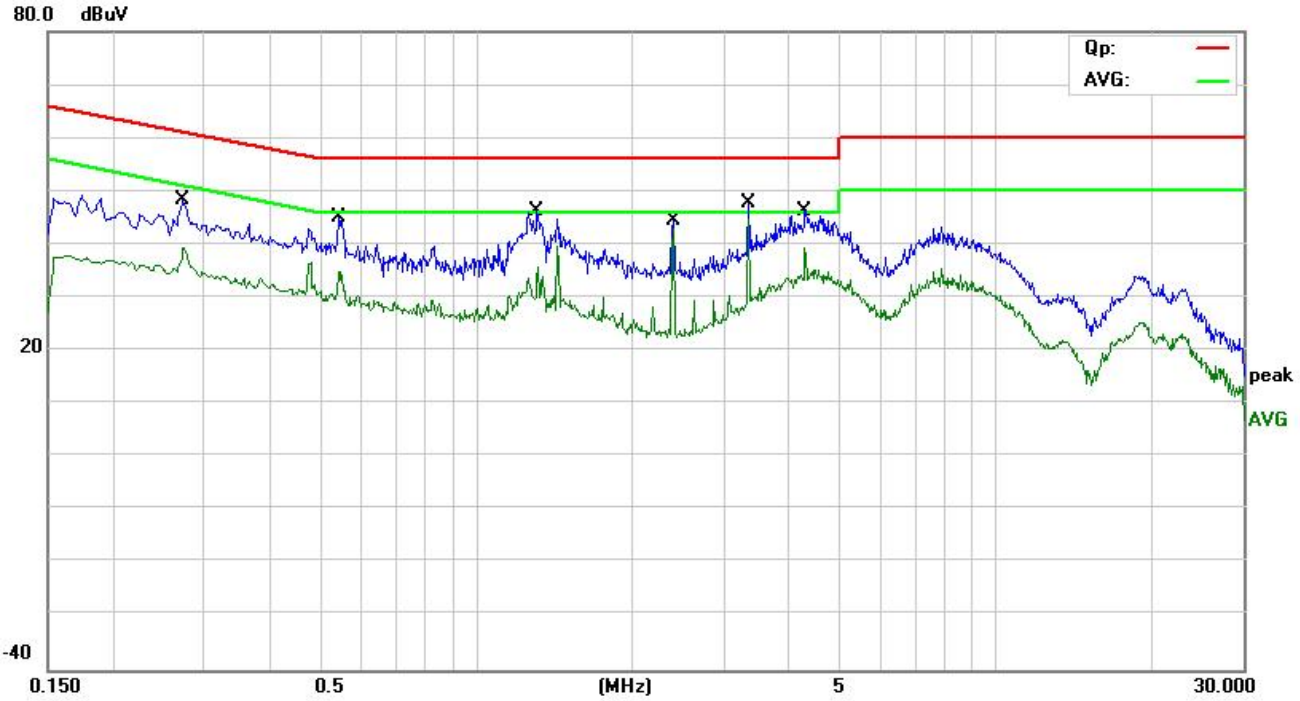
Power Supply	AC 120V / 60Hz	Line	L
M/N:	HS330U+Paypod Base(without cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2740	37.77	9.60	47.37	61.00	-13.63	QP	
2		0.2740	29.34	9.60	38.94	51.00	-12.06	AVG	
3		0.4820	34.49	9.59	44.08	56.30	-12.22	QP	
4		0.4820	27.62	9.59	37.21	46.30	-9.09	AVG	
5		1.1700	38.28	9.60	47.88	56.00	-8.12	QP	
6		1.1700	31.65	9.60	41.25	46.00	-4.75	AVG	
7		2.3980	35.84	9.61	45.45	56.00	-10.55	QP	
8	*	2.3980	32.80	9.61	42.41	46.00	-3.59	AVG	
9		3.3620	35.89	9.61	45.50	56.00	-10.50	QP	
10		3.3620	29.39	9.61	39.00	46.00	-7.00	AVG	
11		4.3180	37.55	9.62	47.17	56.00	-8.83	QP	
12		4.3180	29.58	9.62	39.20	46.00	-6.80	AVG	

*:Maximum data x:Over limit !:over margin

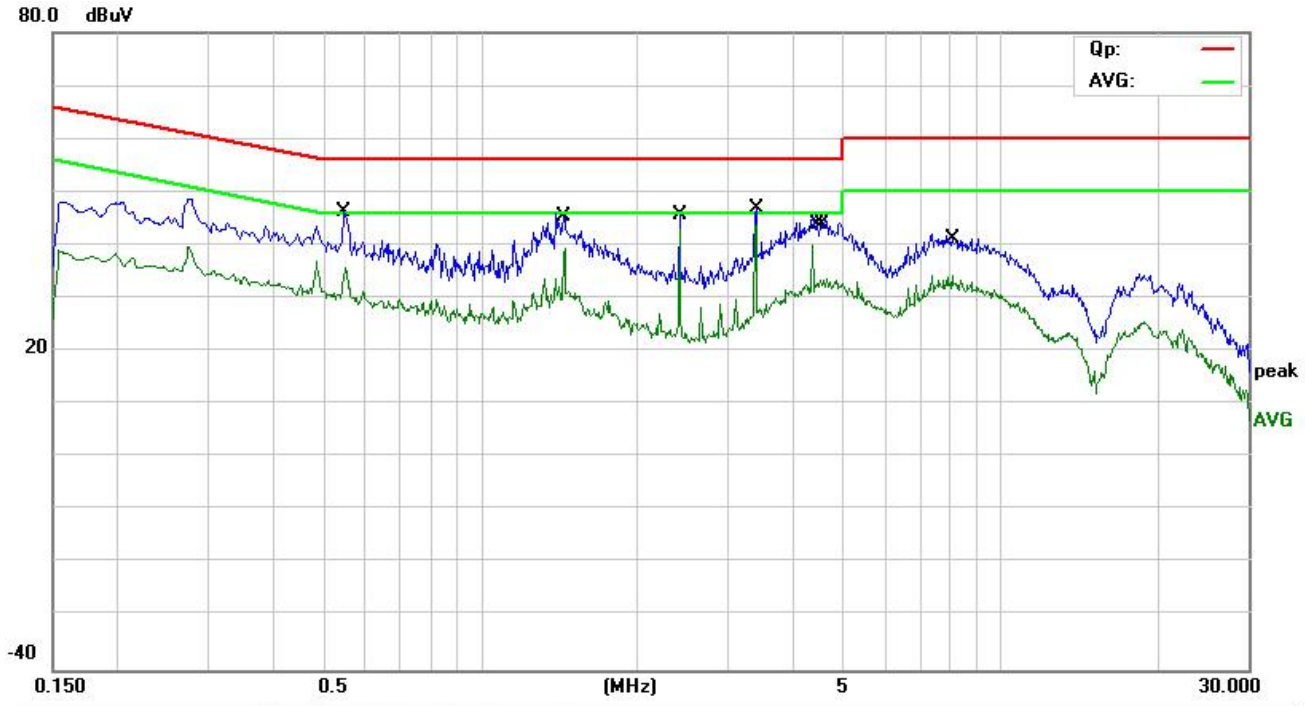
Power Supply	AC 120V / 60Hz	Line	N
M/N:	HS330U+Paypod Base(without cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2740	38.64	9.60	48.24	61.00	-12.76	QP	
2		0.2740	29.76	9.60	39.36	51.00	-11.64	AVG	
3		0.5460	35.40	9.59	44.99	56.00	-11.01	QP	
4		0.5460	25.38	9.59	34.97	46.00	-11.03	AVG	
5		1.3140	36.58	9.60	46.18	56.00	-9.82	QP	
6		1.3180	26.19	9.60	35.79	46.00	-10.21	AVG	
7		2.3980	34.94	9.61	44.55	56.00	-11.45	QP	
8	*	2.3980	33.30	9.61	42.91	46.00	-3.09	AVG	
9		3.3580	38.11	9.61	47.72	56.00	-8.28	QP	
10		3.3580	32.50	9.61	42.11	46.00	-3.89	AVG	
11		4.3140	36.69	9.62	46.31	56.00	-9.69	QP	
12		4.3140	29.70	9.62	39.32	46.00	-6.68	AVG	

*:Maximum data x:Over limit !:over margin

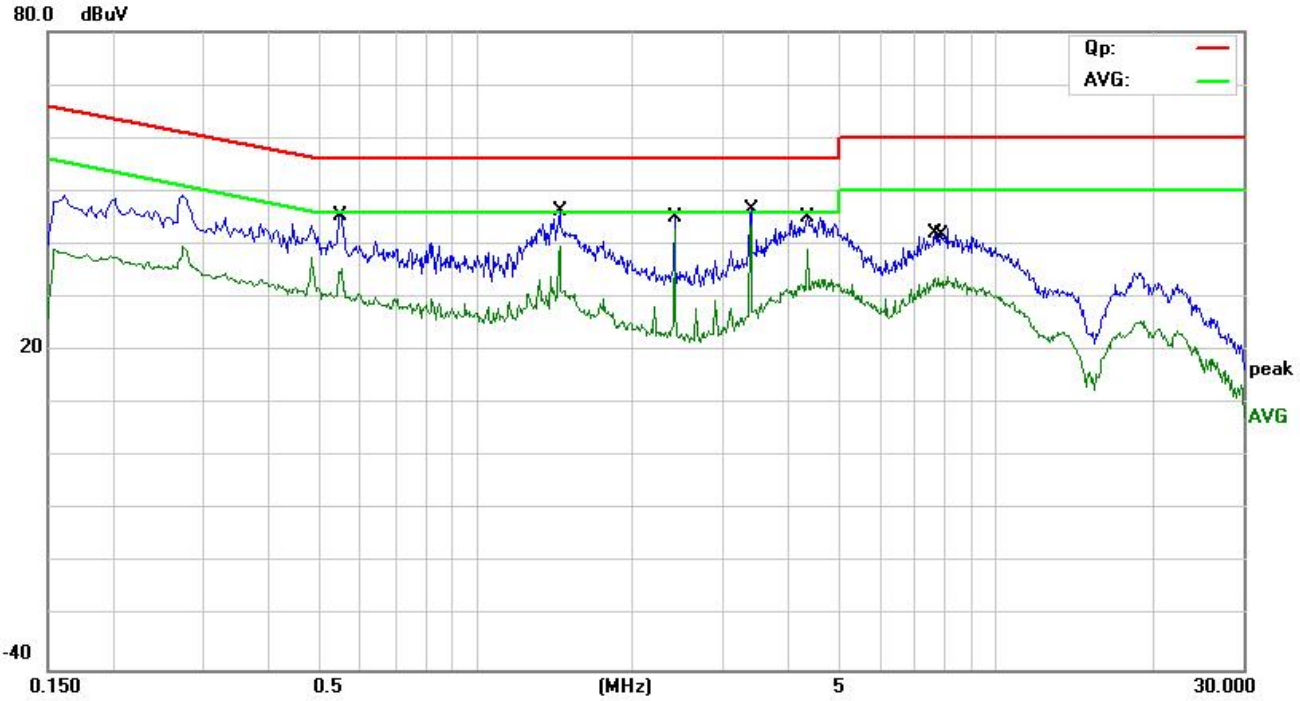
Power Supply	AC 120V / 60Hz	Line	L
M/N:	HS330U+Paypod Base(with cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5460	36.76	9.59	46.35	56.00	-9.65	QP	
2		0.5500	26.18	9.59	35.77	46.00	-10.23	AVG	
3		1.4460	35.67	9.60	45.27	56.00	-10.73	QP	
4		1.4500	29.88	9.60	39.48	46.00	-6.52	AVG	
5		2.4140	35.91	9.61	45.52	56.00	-10.48	QP	
6		2.4140	33.15	9.61	42.76	46.00	-3.24	AVG	
7		3.3820	37.16	9.61	46.77	56.00	-9.23	QP	
8	*	3.3820	33.20	9.61	42.81	46.00	-3.19	AVG	
9		4.4380	34.35	9.62	43.97	56.00	-12.03	QP	
10		4.5020	23.86	9.63	33.49	46.00	-12.51	AVG	
11		8.0980	31.63	9.66	41.29	60.00	-18.71	QP	
12		8.0980	24.53	9.66	34.19	50.00	-15.81	AVG	

*:Maximum data x:Over limit !:over margin

Power Supply	AC 120V / 60Hz	Line	N
M/N:	HS330U+Paypod Base(with cash module)		



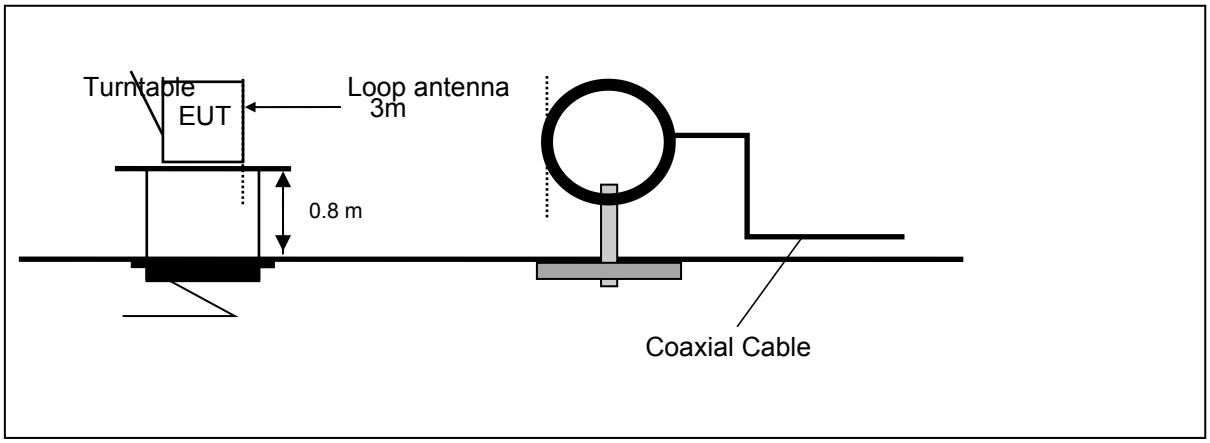
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.5500	35.76	9.59	45.35	56.00	-10.65	QP	
2		0.5540	25.82	9.59	35.41	46.00	-10.59	AVG	
3		1.4500	36.67	9.60	46.27	56.00	-9.73	QP	
4		1.4500	29.91	9.60	39.51	46.00	-6.49	AVG	
5		2.4140	35.45	9.61	45.06	56.00	-10.94	QP	
6	*	2.4140	33.37	9.61	42.98	46.00	-3.02	AVG	
7		3.3820	37.08	9.61	46.69	56.00	-9.31	QP	
8		3.3820	32.60	9.61	42.21	46.00	-3.79	AVG	
9		4.3460	35.36	9.62	44.98	56.00	-11.02	QP	
10		4.3460	29.54	9.62	39.16	46.00	-6.84	AVG	
11		7.6580	24.04	9.66	33.70	50.00	-16.30	AVG	
12		7.8540	32.19	9.66	41.85	60.00	-18.15	QP	

*:Maximum data x:Over limit !:over margin

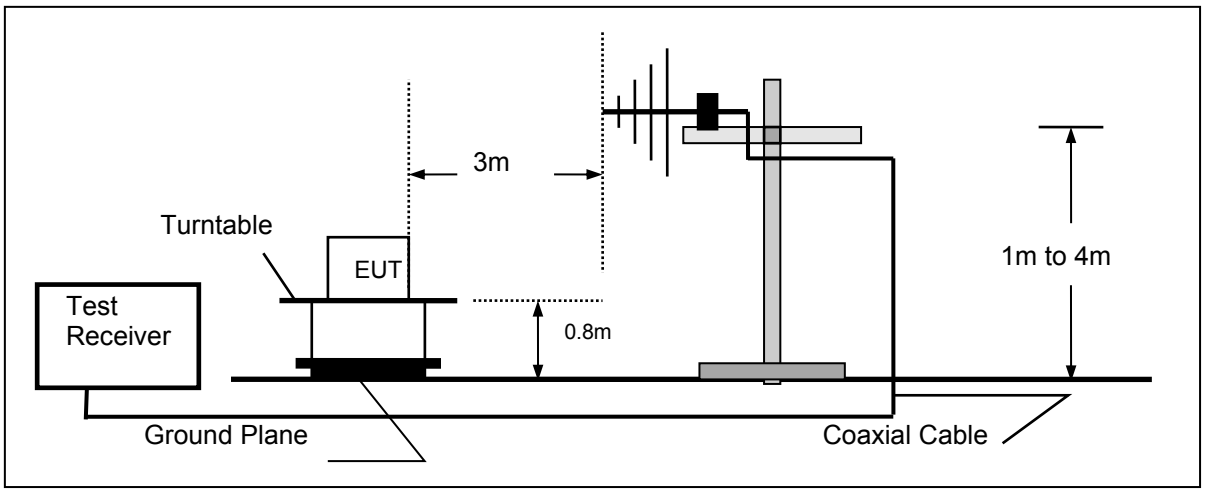
7.2. Radiated Emission

TEST CONFIGURATION

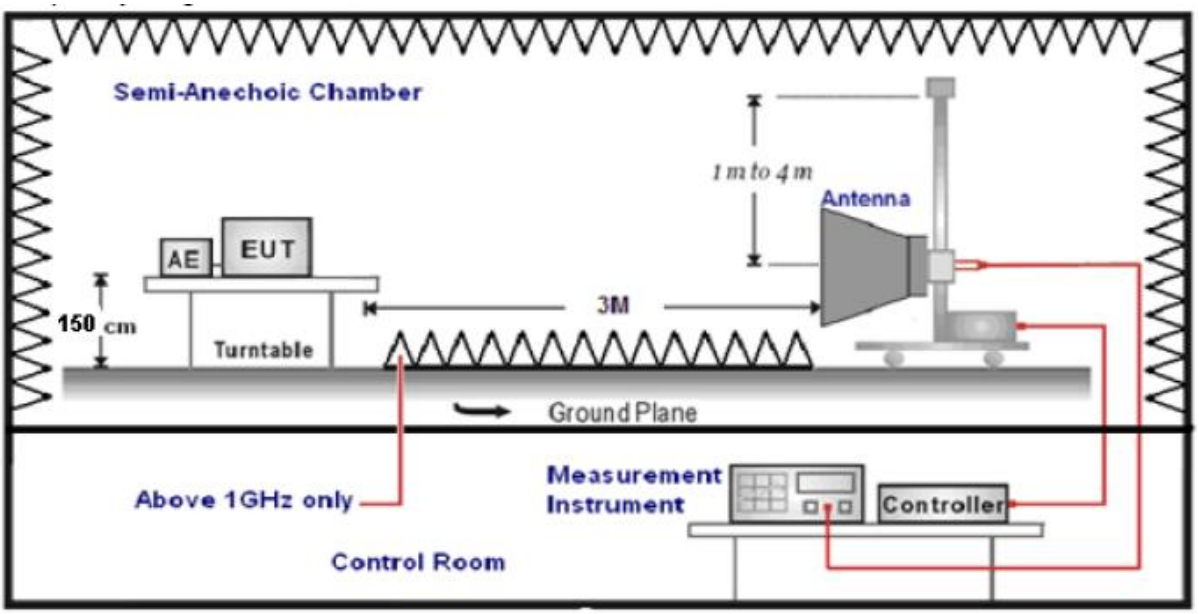
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz-25GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing frequency range 1GHz – 25GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT minimum operation frequency was 32.768KHz and maximum operation frequency was 2480MHz.so radiated emission test frequency band from 9KHz to 25GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Transd=AF +CL-AG

RADIATION LIMIT

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Except when the requirements applicable to a given device state otherwise, emissions from licence‑exempt transmitters shall comply with the field strength limits shown in table below. Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission

Unwanted emissions that fall into restricted bands shall comply with the limits specified in RSS-Gen; and Unwanted emissions that do not fall within the restricted frequency bands shall comply either with the limits specified in the applicable RSS or with those specified in this RSS-Gen.

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	49.0	100
88-216	3	53.5	150
216-960	3	56.0	200
Above 960	3	64.0	500

According to FCC Part 15.205,Rastricted bands

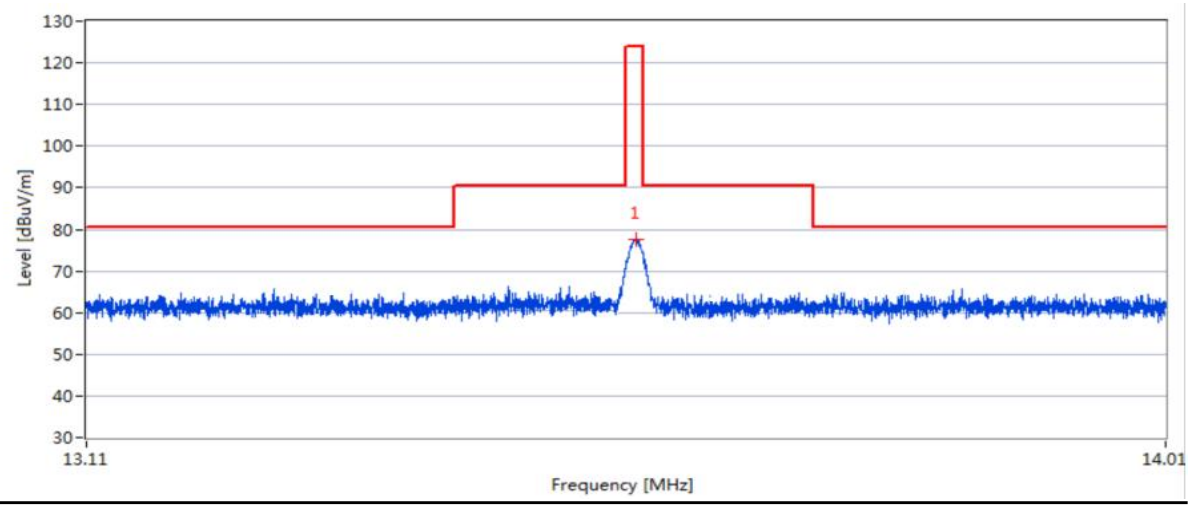
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.225)

(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, equal to 124dBuV/m at 3 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, equal to 90.5dBuV/m at 3 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, equal to 80.5dBuV/m at 3 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.

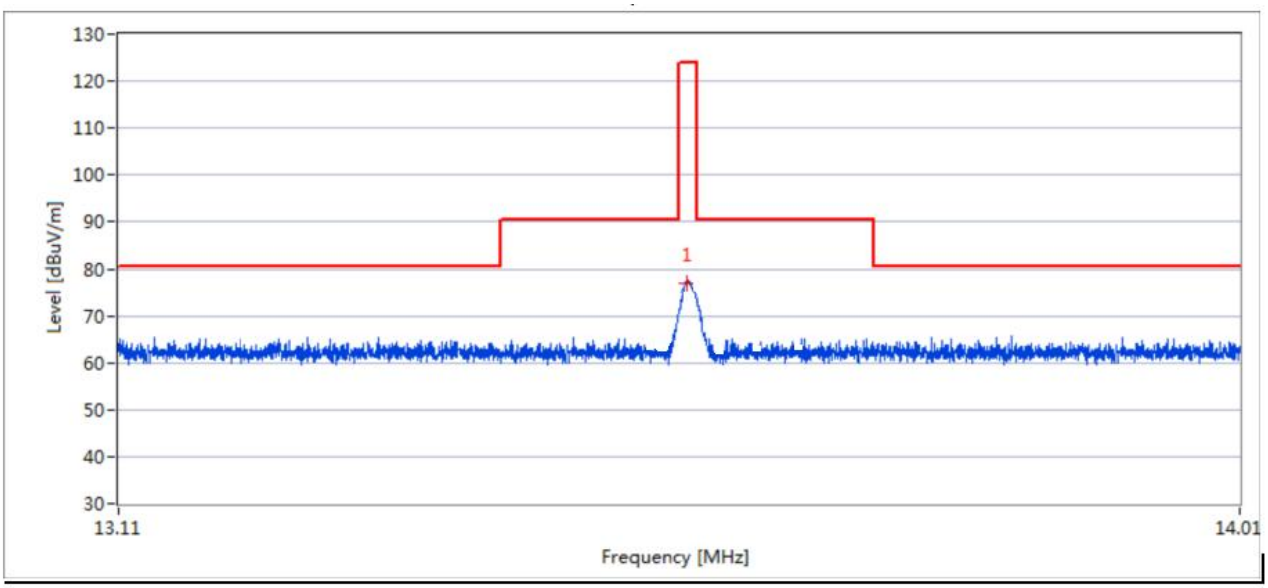
TEST RESULTS (BELOW 30MHz)

1: This test was performed with EUT in X, Y, Z position and the worse case was found when EUT in X position.
2: Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9 KHz to 30MHz and not recorded in this report.

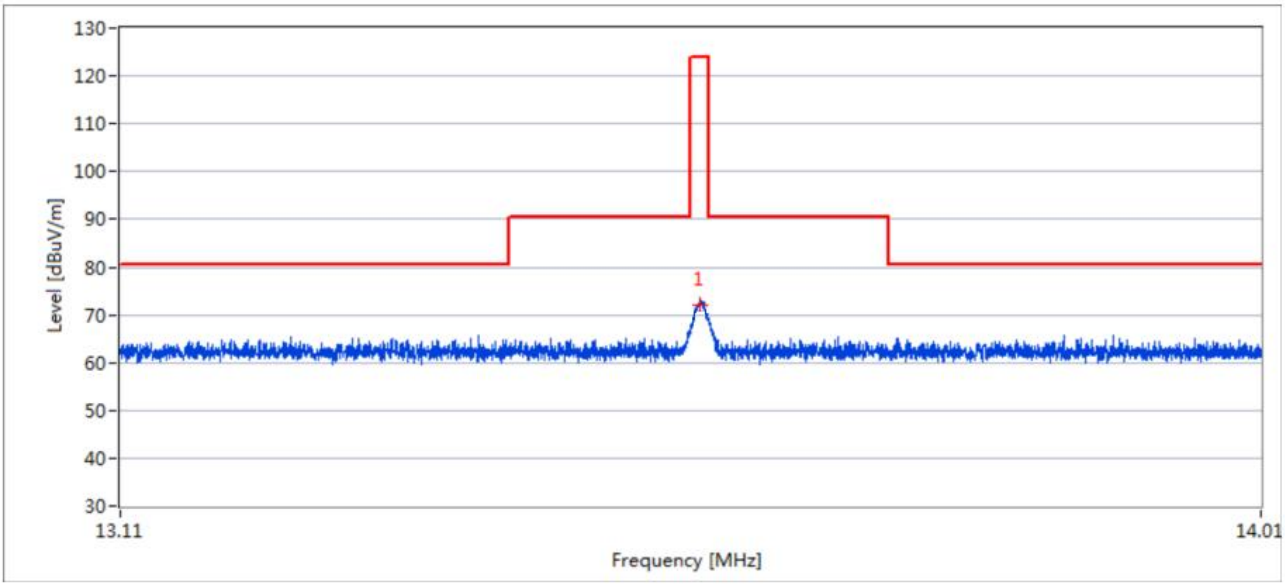


Frequency	Pre-scan Level MaxPeak	Final Test Level MaxPeak	Limit MaxPeak	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
13.56	78.6	78.6	124.0	45.8

Y



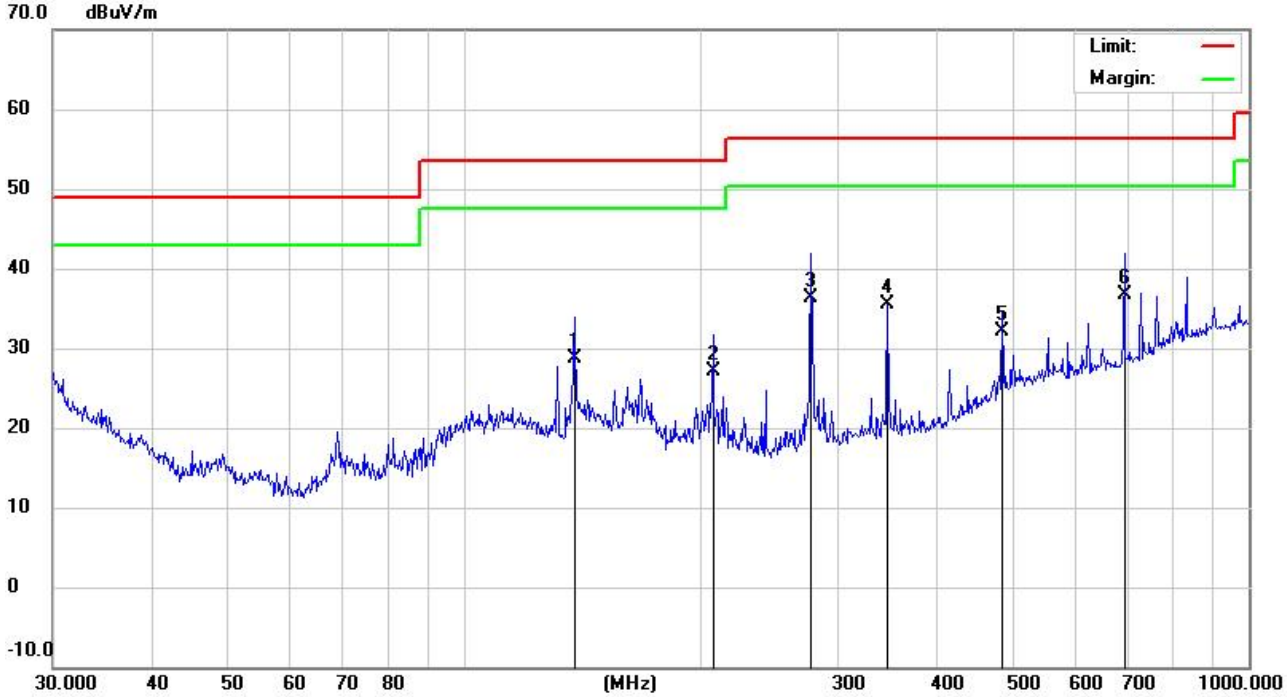
Frequency	Pre-scan Level MaxPeak	Final Test Level MaxPeak	Limit MaxPeak	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
13.56	77.2	77.2	124.0	46.5



Frequency	Pre-scan Level MaxPeak	Final Test Level MaxPeak	Limit MaxPeak	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
13.56	73.3	73.3	124.0	51.5

For 30MHz-1GHz

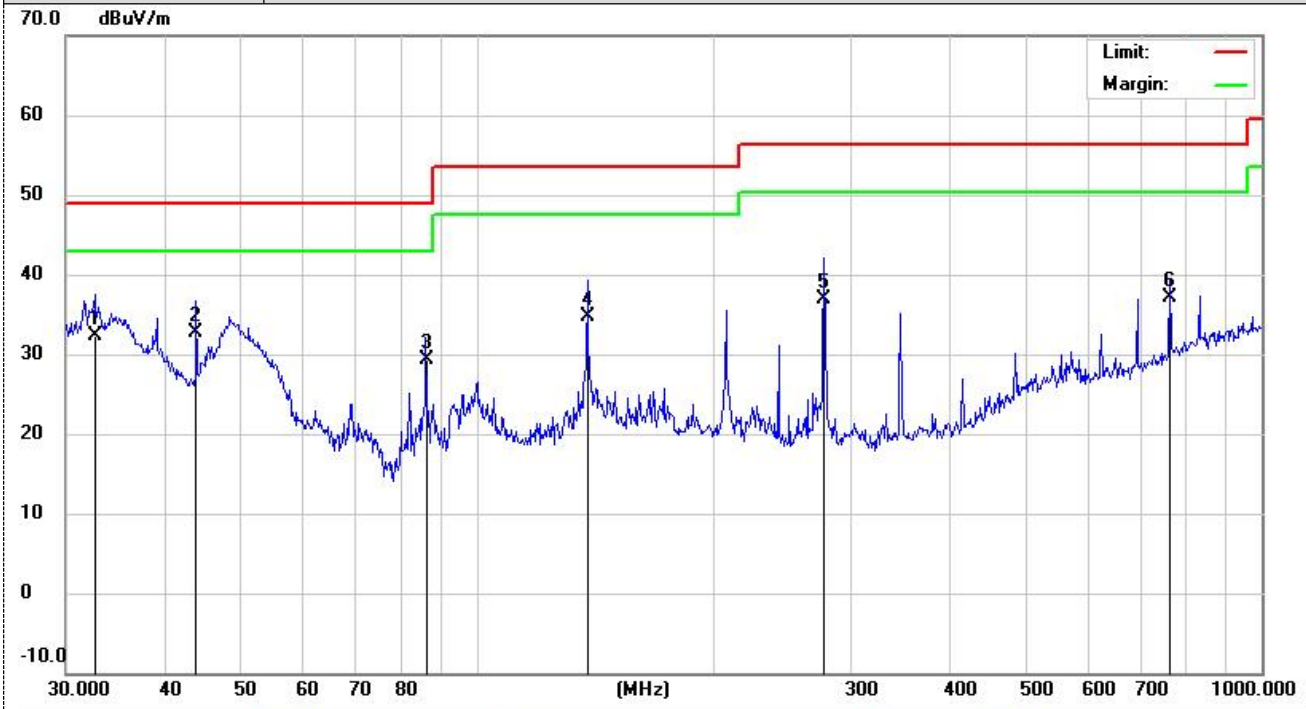
Power Supply	AC 120V / 60Hz	Polarization	Horizontal
M/N:	HS330U		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		138.3873	12.36	16.36	28.72	53.50	-24.78	QP	200	10	
2		207.8501	12.14	14.98	27.12	53.50	-26.38	QP	200	70	
3		277.0935	21.52	14.72	36.24	56.40	-20.16	QP	200	150	
4		346.8092	19.18	16.39	35.57	56.40	-20.83	QP	200	200	
5		485.6092	10.26	21.94	32.20	56.40	-24.20	QP	200	260	
6	*	694.4174	11.64	25.03	36.67	56.40	-19.73	QP	200	300	

*:Maximum data x:Over limit !:over margin

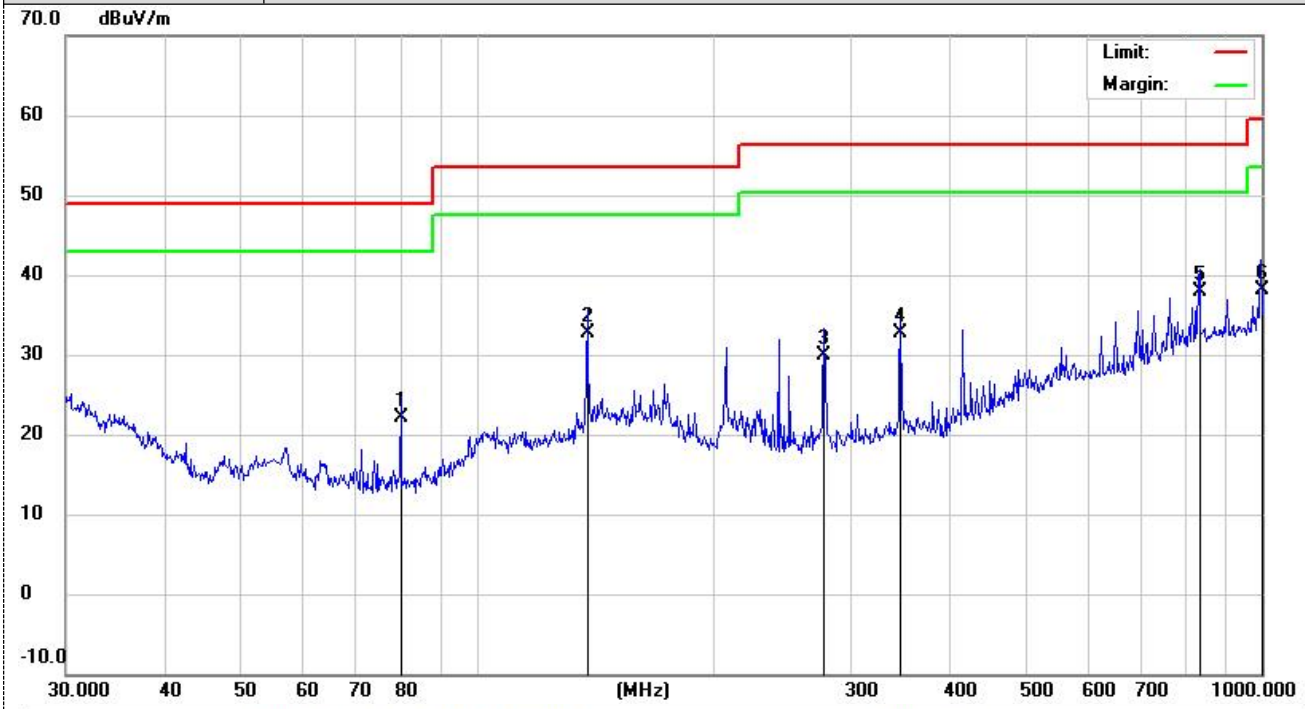
Power Supply	AC 120V / 60Hz	Polarization	Vertical
M/N:	HS330U		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		32.6340	13.25	19.11	32.36	49.00	-16.64	QP	100	10	
2	*	43.9658	21.44	11.18	32.62	49.00	-16.38	QP	100	40	
3		86.2001	19.36	9.98	29.34	49.00	-19.66	QP	100	100	
4		138.3873	18.25	16.36	34.61	53.50	-18.89	QP	100	150	
5		277.0935	22.16	14.72	36.88	56.40	-19.52	QP	100	200	
6		763.3757	10.29	26.87	37.16	56.40	-19.24	QP	100	250	

*:Maximum data x:Over limit !:over margin

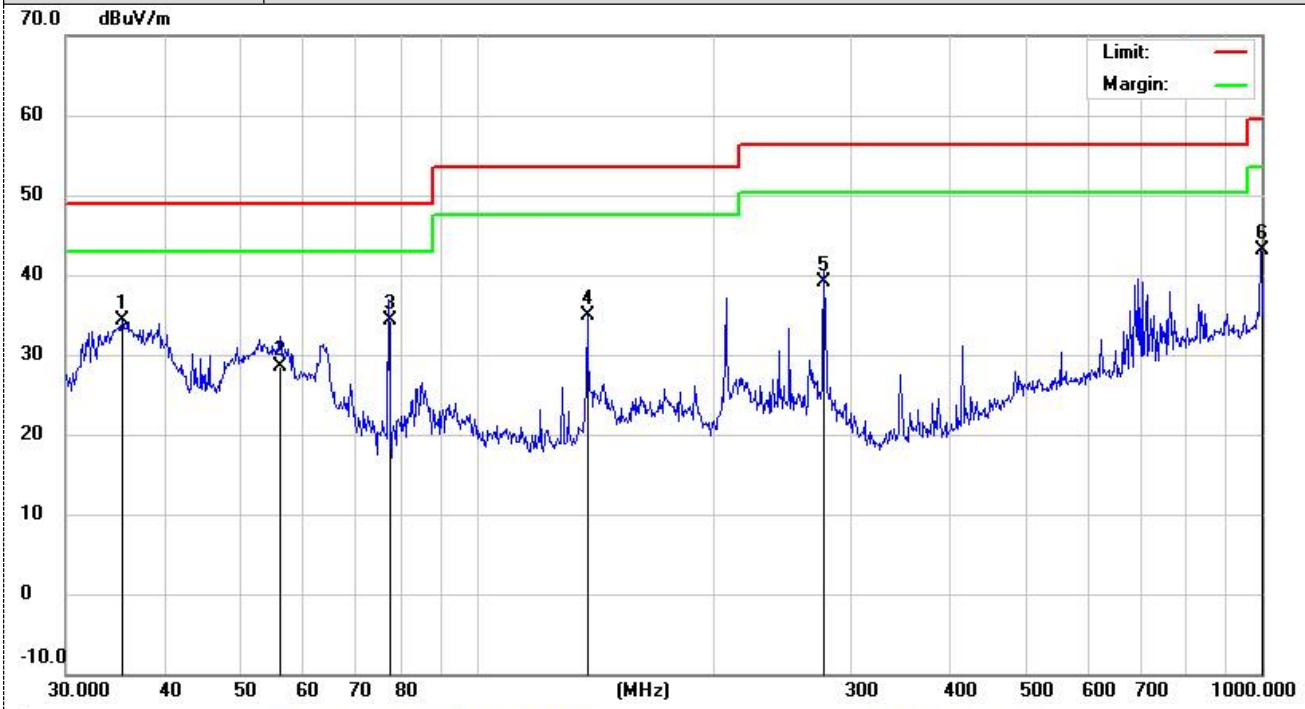
Power Supply	AC 120V / 60Hz	Polarization	Horizontal
M/N:	HS330U+Scanner Base		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		80.0806	12.05	10.10	22.15	49.00	-26.85	QP	200	10	
2		138.3873	16.35	16.36	32.71	53.50	-20.79	QP	200	50	
3		277.0935	15.28	14.72	30.00	56.40	-26.40	QP	200	80	
4		346.8092	16.22	16.39	32.61	56.40	-23.79	QP	200	120	
5	*	833.3171	9.66	28.27	37.93	56.40	-18.47	QP	200	200	
6		996.4996	8.15	29.96	38.11	59.50	-21.39	QP	200	320	

*:Maximum data x:Over limit l:over margin

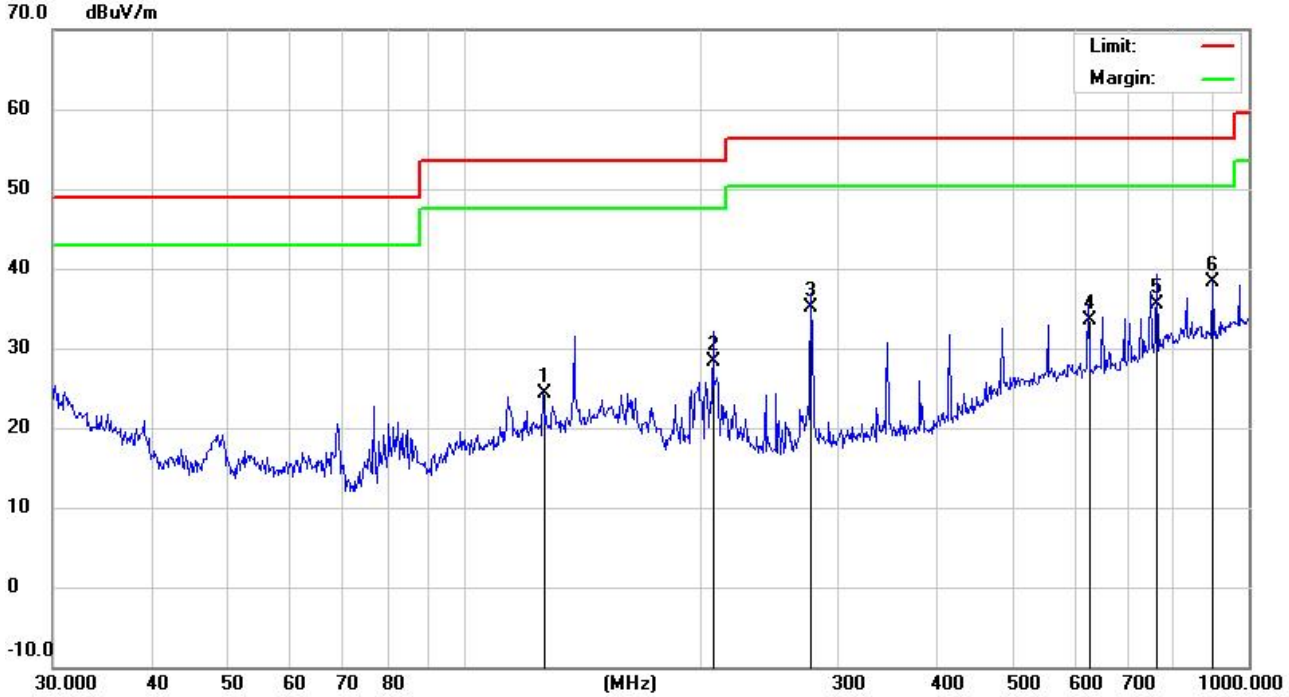
Power Supply	AC 120V / 60Hz	Polarization	Vertical
M/N:	HS330U+Scanner Base		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	35.3750	17.08	17.22	34.30	49.00	-14.70	QP	100	20	
2		56.1974	20.14	8.41	28.55	49.00	-20.45	QP	100	50	
3		77.3212	24.36	9.89	34.25	49.00	-14.75	QP	100	70	
4		138.3873	18.55	16.36	34.91	53.50	-18.59	QP	100	100	
5		277.0935	24.30	14.72	39.02	56.40	-17.38	QP	100	150	
6		996.4996	13.13	29.96	43.09	59.50	-16.41	QP	100	300	

*:Maximum data x:Over limit !:over margin

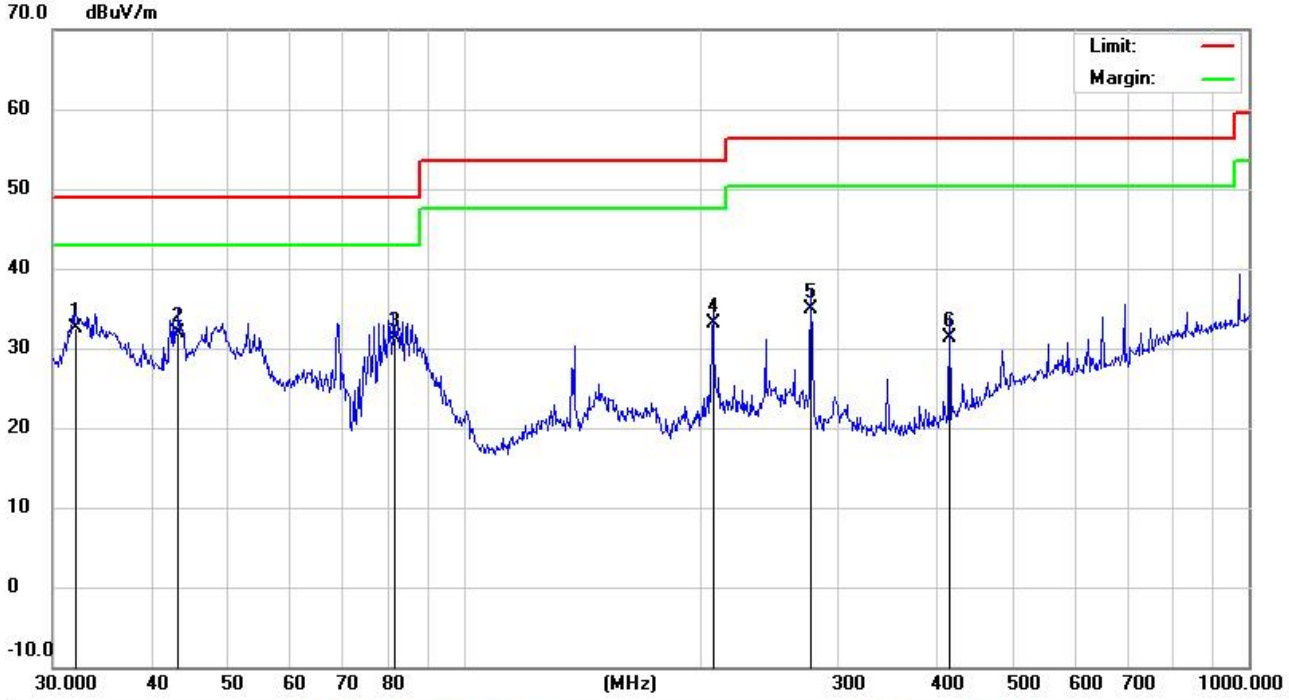
Power Supply	AC 120V / 60Hz	Polarization	Horizontal
M/N:	HS330U+Paypod Base(without cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		126.3286	8.33	16.04	24.37	53.50	-29.13	QP	200	20	
2		207.8501	13.26	14.98	28.24	53.50	-25.26	QP	200	40	
3		277.0935	20.30	14.72	35.02	56.40	-21.38	QP	200	50	
4		625.0780	9.34	24.13	33.47	56.40	-22.93	QP	200	120	
5		763.3757	8.63	26.87	35.50	56.40	-20.90	QP	200	200	
6	*	900.1474	9.39	29.00	38.39	56.40	-18.01	QP	200	300	

*:Maximum data x:Over limit l:over margin

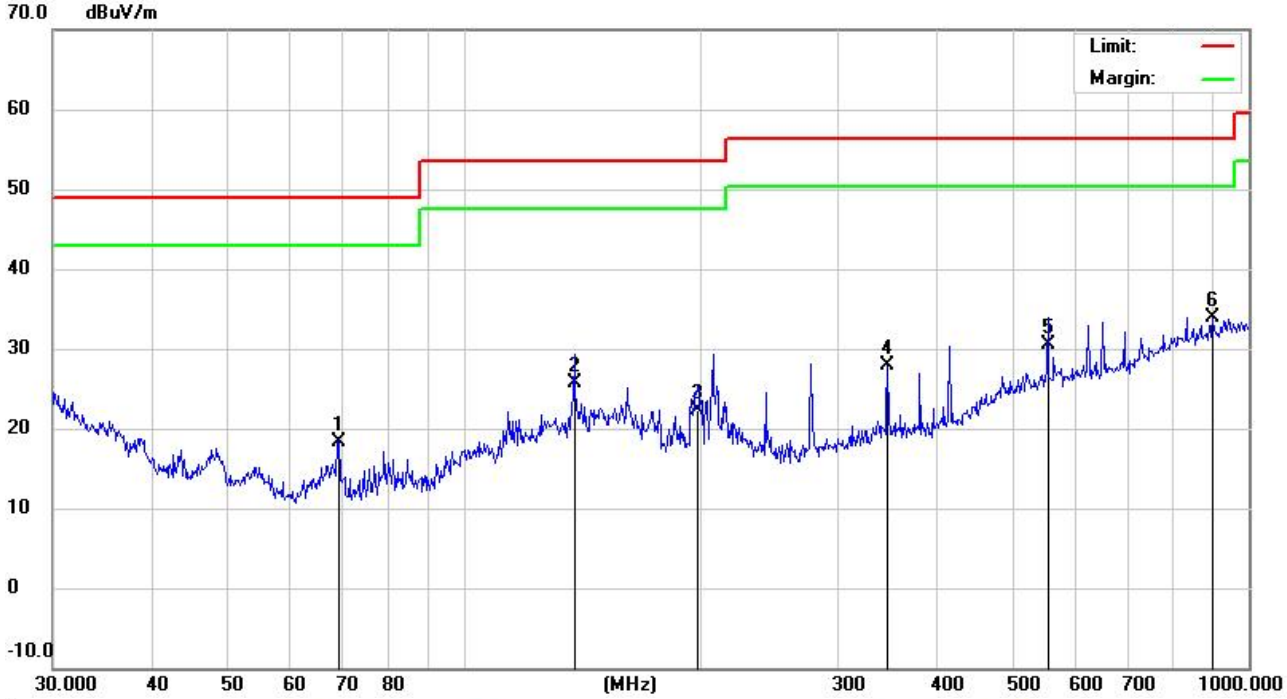
Power Supply	AC 120V / 60Hz	Polarization	Vertical
M/N:	HS330U+Paypod Base(without cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	32.0667	13.02	19.49	32.51	49.00	-16.49	QP	100	10	
2		43.3534	20.30	11.59	31.89	49.00	-17.11	QP	100	80	
3		81.4970	21.30	10.07	31.37	49.00	-17.63	QP	100	120	
4		207.8501	18.20	14.98	33.18	53.50	-20.32	QP	100	200	
5		277.0935	20.13	14.72	34.85	56.40	-21.55	QP	100	230	
6		416.1791	13.04	18.26	31.30	56.40	-25.10	QP	100	300	

*:Maximum data x:Over limit !:over margin

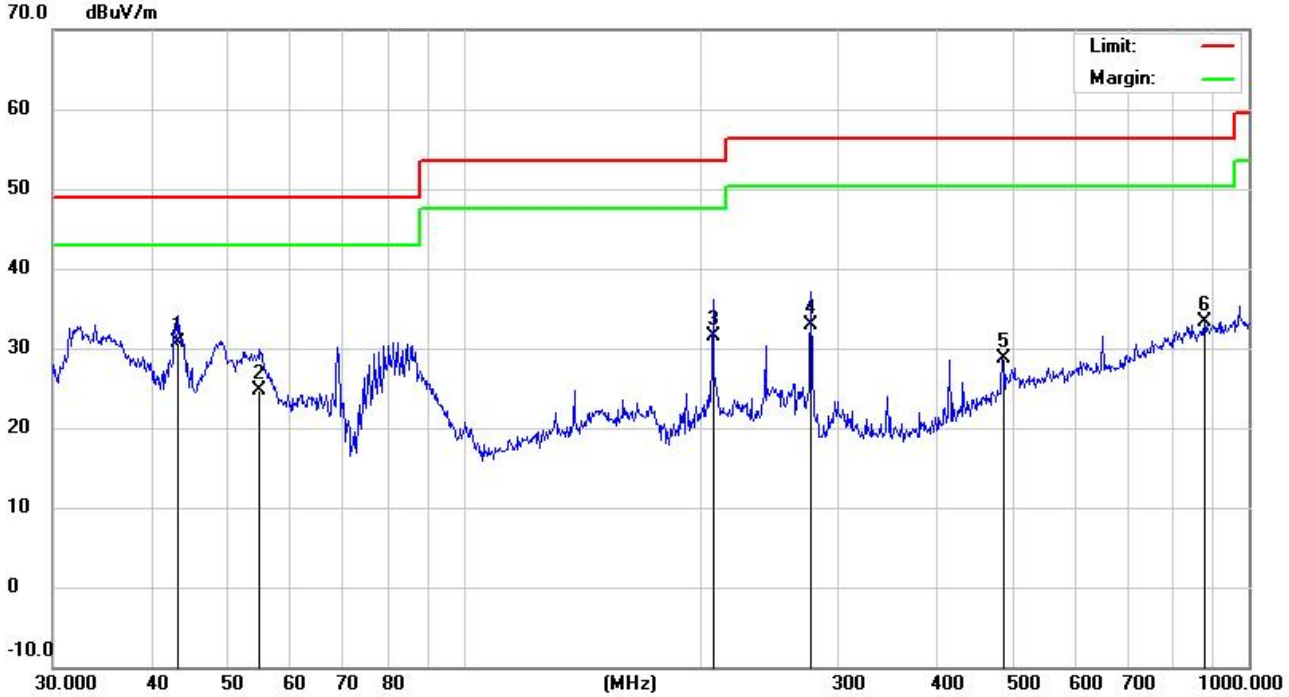
Power Supply	AC 120V / 60Hz	Polarization	Horizontal
M/N:	HS330U+Paypod Base(with cash module)		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		69.3568	9.07	9.25	18.32	49.00	-30.68	QP	200	20	
2		138.3873	9.35	16.36	25.71	53.50	-27.79	QP	200	70	
3		198.5879	7.20	15.16	22.36	53.50	-31.14	QP	200	100	
4		346.8092	11.58	16.39	27.97	56.40	-28.43	QP	200	150	
5		554.8254	7.15	23.30	30.45	56.40	-25.95	QP	200	200	
6	*	900.1474	4.90	29.00	33.90	56.40	-22.50	QP	200	350	

*:Maximum data x:Over limit !:over margin

Power Supply	AC 120V / 60Hz	Polarization	Vertical
M/N:	HS330U+Paypod Base(with cash module)		

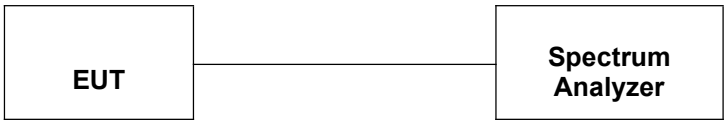


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	43.3534	19.20	11.59	30.79	49.00	-18.21	QP	100	20	
2		55.0274	16.38	8.35	24.73	49.00	-24.27	QP	100	70	
3		207.8501	16.52	14.98	31.50	53.50	-22.00	QP	100	150	
4		277.0935	18.27	14.72	32.99	56.40	-23.41	QP	100	200	
5		485.6093	6.68	21.94	28.62	56.40	-27.78	QP	100	300	
6		878.3214	4.46	28.76	33.22	56.40	-23.18	QP	100	350	

*:Maximum data x:Over limit I:over margin

7.3. 20dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

The 20dB bandwidth and 99% bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.
The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission

TEST RESULTS

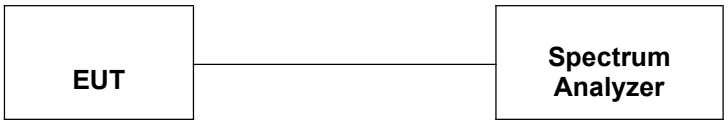
Modulation	Channel Frequency (MHz)	20dB bandwidth (KHz)	Result
ASK	13.56	27.9	Pass

Test plot as follows:

ASK Modulation

7.4. FREQUENCY TOLERANCE

TEST CONFIGURATION



TEST PROCEDURE

The EUT was placed on a turn table which is 0.8m above ground plane.

Set EUT as normal operation
Set SPA Center Frequency = fundamental frequency, RBW, VBW= 10kHz, Span=100K
Set SPA Max hold. Mark peak.

TEST RESULTS

Power Supply	Temperature(℃)	Measured Frequency (MHz)	Frequency Error (MHz)	Result(ppm)	Part 15.225 Limit
AC 240V	-20	13.560078	0.000078	5.77	+/- 0.01%(100ppm)
	20	13.560046	0.000046	3.41	+/- 0.01%(100ppm)
	50	13.560053	0.000053	3.87	+/- 0.01%(100ppm)
AC 120V	-20	13.560051	0.000051	3.78	+/- 0.01%(100ppm)
	20	13.560034	0.000034	2.53	+/- 0.01%(100ppm)
	50	13.560066	0.000066	4.85	+/- 0.01%(100ppm)
AC 100V	-20	13.560025	0.000025	1.84	+/- 0.01%(100ppm)
	20	13.560029	0.000029	2.16	+/- 0.01%(100ppm)
	50	13.560053	0.000053	3.89	+/- 0.01%(100ppm)

7.5. Antenna Requirement

Standard Applicable

For intentional device, according to FCC 225 CFR Section 15.203:

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

Test Result:

The directional gains of antenna used for transmitting is 3dBi, and the antenna is and PCB Antenna and no consideration of replacement. Please see EUT photo for details.

Results: Compliance.