

Test Report

FCC Part15 Subpart C

RSS-Gen Issue 4

Product Name : Door Panel
Model No. : SCEDP02
FCC ID : 2AC5T-SCEDP02
IC : 12325A-SCEDP02

Applicant : Scout Security, Inc.
Address : 210 N Racine Ave, Chicago IL 60607

Date of Receipt : Nov. 17, 2016
Test Date : Nov. 15, 2016~ Dec. 06, 2016
Issued Date : Jan. 11, 2017
Report No. : 16B2130R-RF-US-P06V01
Report Version : V1.1

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNAS, TAF or any agency of the government.

The test report shall not be reproduced without the written approval of Quietek Corporation.

Test Report Certification

Issued Date : Jan. 11, 2017
Report No. : 16B2130R-RF-US-P06V01



Product Name : Door Panel
Applicant : Scout Security, Inc.
Address : 210 N Racine Ave, Chicago IL 60607
Manufacturer : GoerTek Inc
Address : No.8877 Yingqian Street,High-Tech Industrial Development District,Weifang,Shandong,261031, P.R.China
Model No. : SCEDP02
FCC ID : 2AC5T-SCEDP02
IC : 12325A-SCEDP02
EUT Voltage : DC3V
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C
ANSI C63.4:2014
ANSI C63.10:2013
RSS-GEN Issue 4
Test Result : Complied
Performed Location : Quietek Corporation - Suzhou EMC Laboratory
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou, 215006, Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392
IC Lab code: 4075B

Documented By : Kathy Feng
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Approved By : Harry Zhao
(Engineering Manager: Harry Zhao)

Laboratory Information

We, **Quietek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	:	BSMI, NCC, TAF
USA	:	FCC
Japan	:	VCCI
China	:	CNAS

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://www.quietek.com/english/about/certificates.aspx?bval=5>
The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
16B2130R-RF-US-P06V01	V1.0	Initial Issued Report	Dec. 15, 2016
16B2130R-RF-US-P06V01	V1.1	Modified the Model No.	Jan. 11, 2017

1. General Information

1.1. EUT Description

Product Name	Door Panel
Model No.	SCEDP02
EUT Voltage	DC3V
Frequency Range	127kHz
Type of Modulation	OOK
Data Rate	1.95KBps
Channel Control	Auto

1.2. Mode of Operation

Test Modes List
Mode 1: Transmit

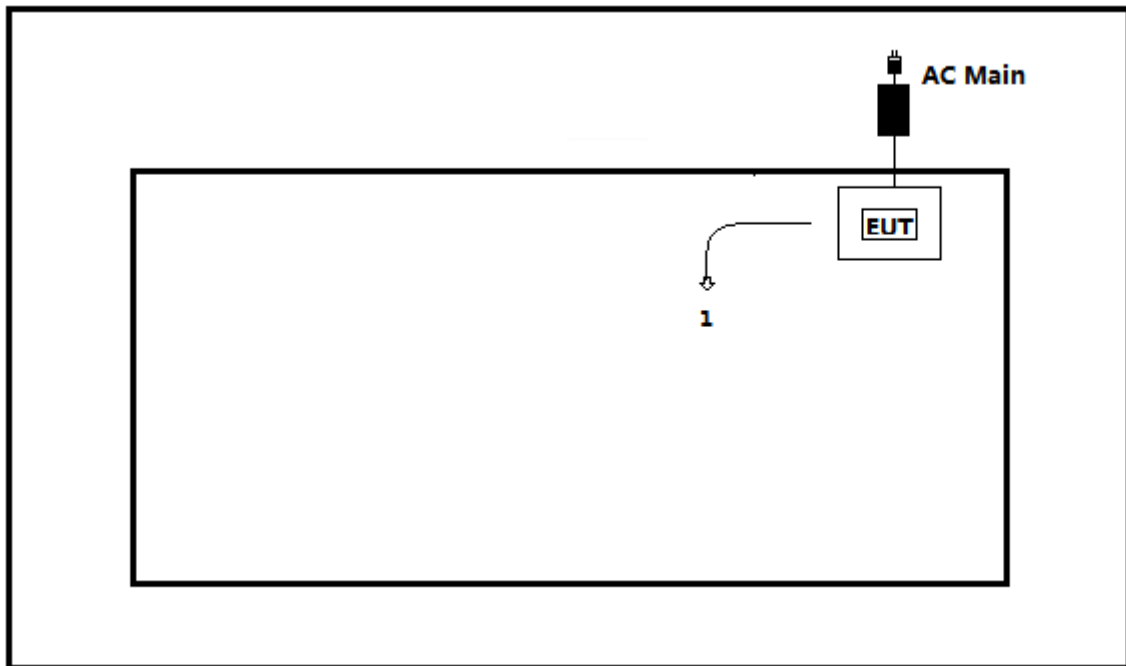
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

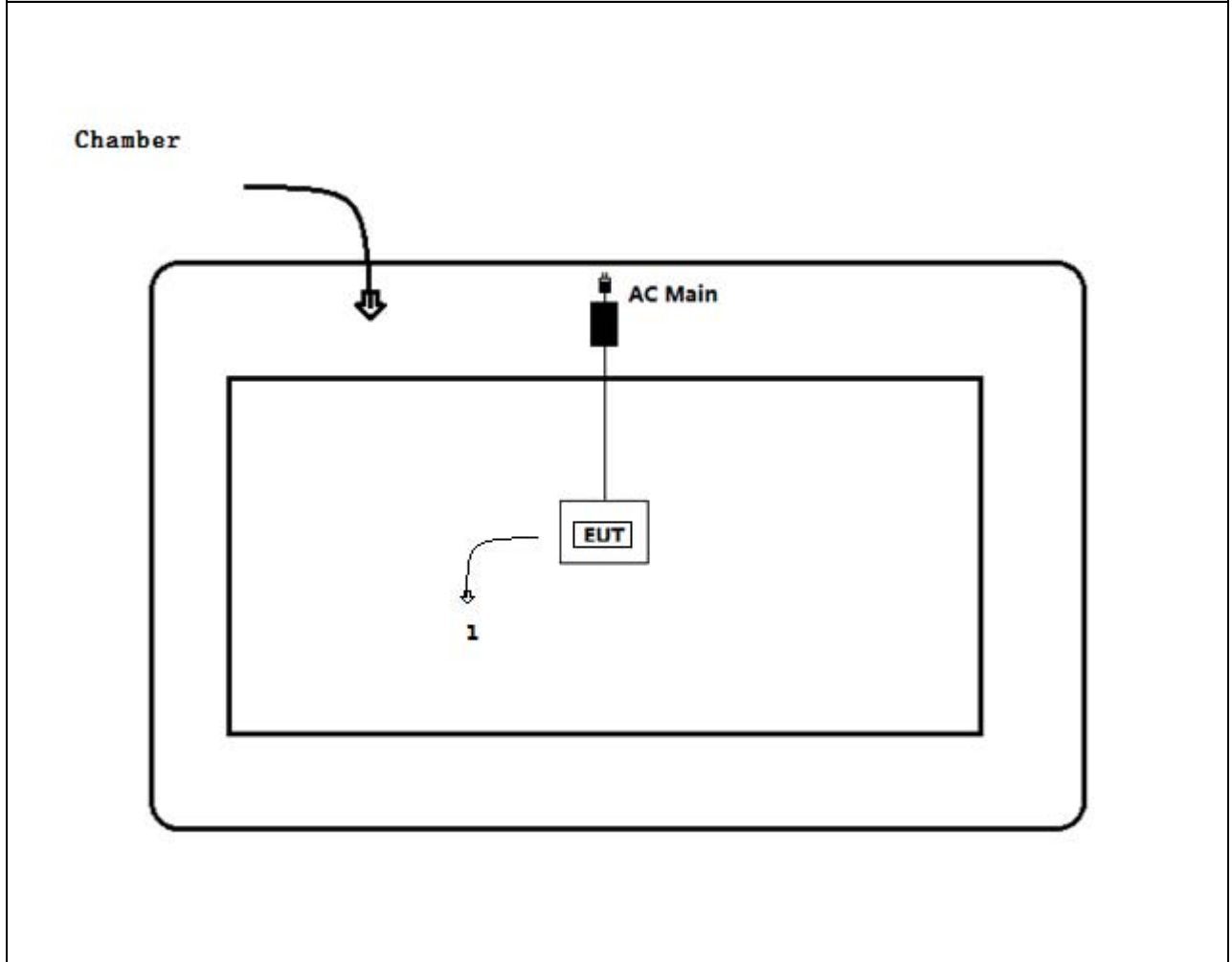
No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Series Port	N/A	N/A	N/A	N/A

1.4. Configuration of Tested System

Test setup Diagram- AC Line Conducted Emission Test



Test setup Diagram- Radiated Emission



2. Technical Test

2.1. Summary of Test Result

For FCC

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	FCC 15.207	PASS
Emissions in restricted frequency bands	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	FCC 15.209	PASS

For IC

Performed Test Item	Normative References	Limit	Result
AC Power Line Conducted Emission	RSS-GEN Section 8.8	RSS-GEN	PASS
Emissions in restricted frequency bands	RSS-GEN Section 8.9	RSS-GEN	PASS

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

2.3. Measurement Uncertainty

Test Items	Uncertainty
AC Power Line Conducted Emission	$\pm 2.02\text{dB}$
Radiated Emission	Below 1GHz $\pm 3.8\text{ dB}$
	Above 1GHz $\pm 3.9\text{ dB}$
RF Antenna Port Conducted Emission	$\pm 1.27\text{dB}$
Radiated Emission Band Edge	$\pm 3.9\text{dB}$
Occupied Bandwidth	$\pm 1\text{kHz}$
Power Spectral Density	$\pm 1.27\text{dB}$

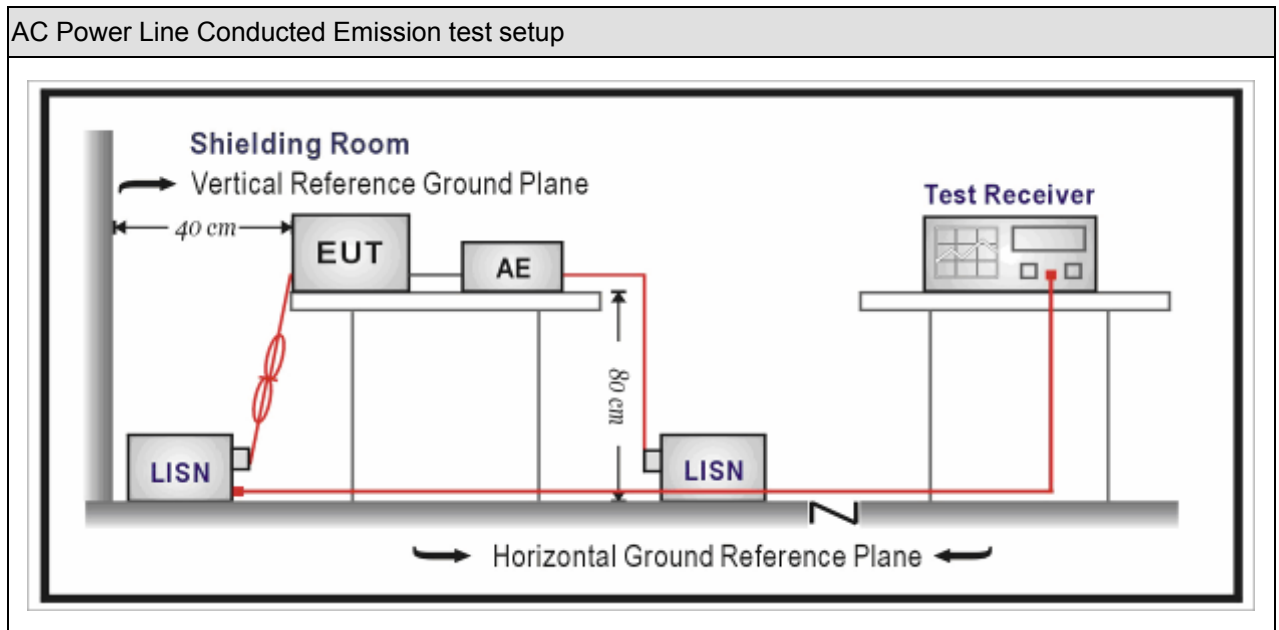
3. AC Power Line Conducted Emission

3.1. Test Equipment

AC Power Line Conducted Emission / TR-1					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100906	2016.03.05	2017.03.05
Two-Line V-Network	R&S	ENV 216	101189	2016.07.16	2017.07.16
Two-Line V-Network	R&S	ENV 216	101044	2016.09.16	2017.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
50ohm Termination	SHX	TF2	07081402	2016.09.16	2017.09.16
Temperature/Humidity Meter	Zhichen	ZC1-2	TR1-TH	2016.01.05	2017.01.05

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

Frequency of Emission (MHz)	Conducted Limit	
	Quasi-peak (dB μ V)	Average (dB μ V)
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Note 1: The lower limit shall apply at the transition frequencies.
 Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

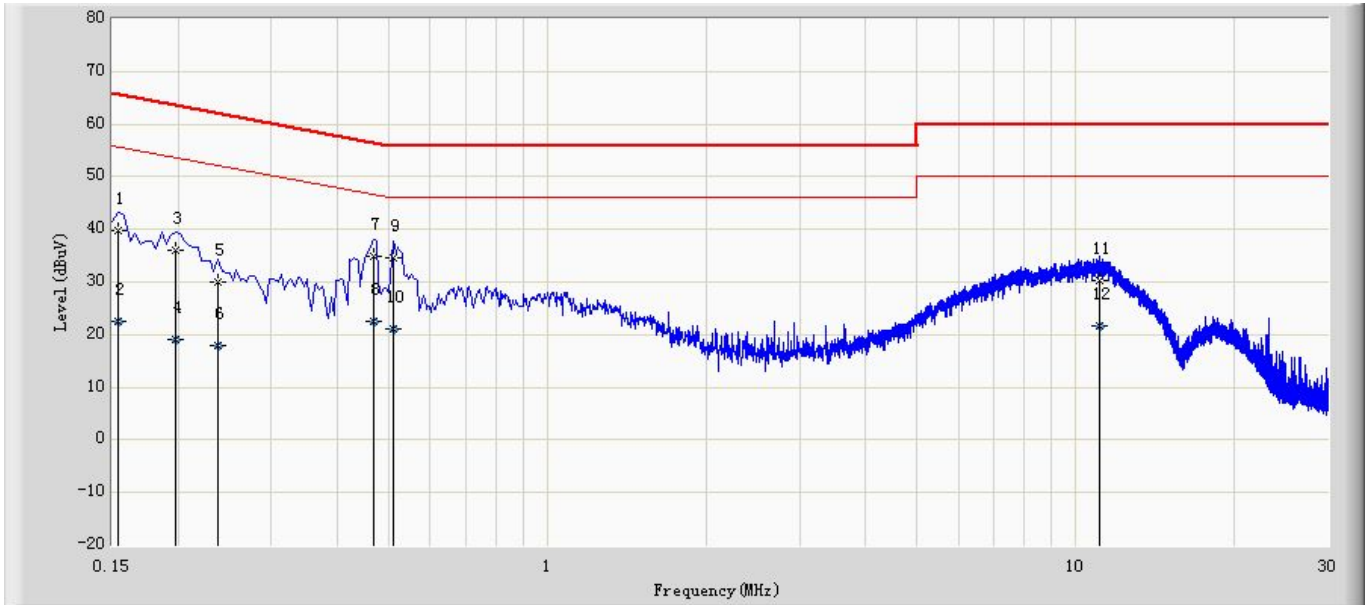
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 Ω / 50 μ H coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 Ω / 50 μ H coupling impedance with 50 Ω termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Test Result

Site: TR1	Time: 2016/11/16
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-L1	Polarity: Line
EUT: Door Panel	Power: AC 120V/60Hz
Note: Mode 1: Transmit	

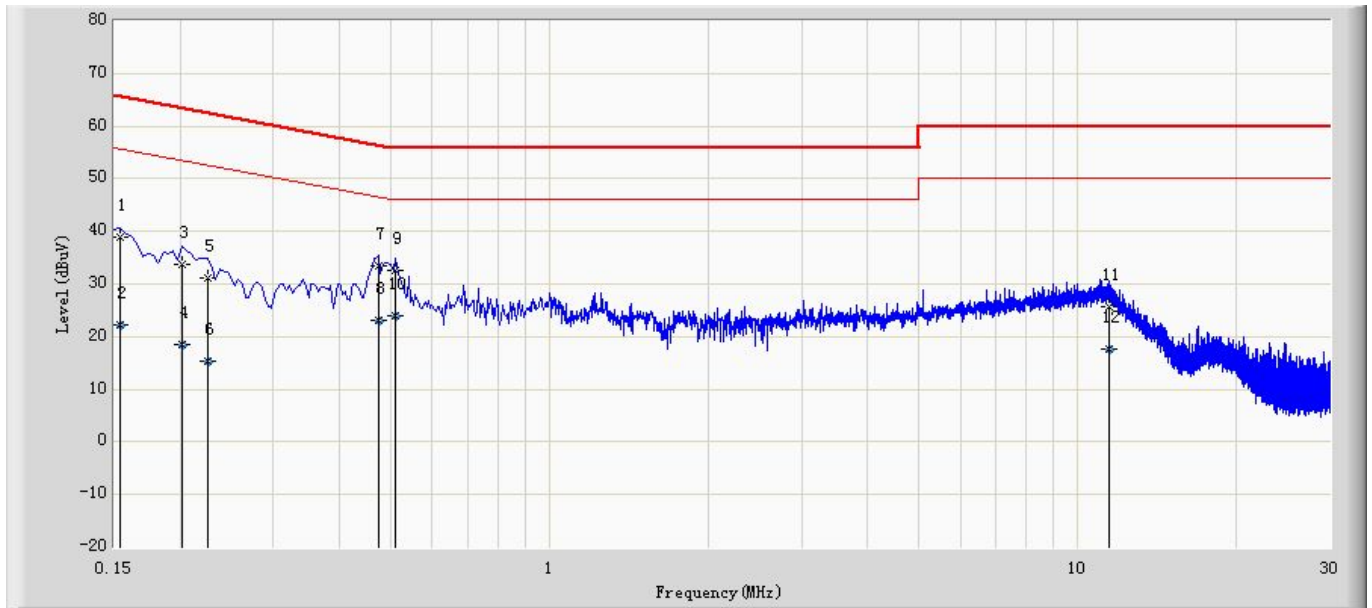


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	39.628	29.895	-26.153	65.781	9.673	0.060	0.000	QP
2		0.154	22.513	12.780	-33.268	55.781	9.673	0.060	0.000	AV
3		0.198	36.176	26.466	-27.518	63.694	9.650	0.060	0.000	QP
4		0.198	19.205	9.495	-34.489	53.694	9.650	0.060	0.000	AV
5		0.238	30.041	20.331	-32.125	62.166	9.650	0.060	0.000	QP
6		0.238	18.036	8.326	-34.130	52.166	9.650	0.060	0.000	AV
7		0.470	34.887	25.187	-21.627	56.514	9.630	0.070	0.000	QP
8		0.470	22.536	12.836	-23.978	46.514	9.630	0.070	0.000	AV
9	*	0.510	34.709	25.009	-21.291	56.000	9.630	0.070	0.000	QP
10		0.510	21.133	11.433	-24.867	46.000	9.630	0.070	0.000	AV
11		11.110	30.388	20.358	-29.612	60.000	9.740	0.290	0.000	QP
12		11.110	21.736	11.706	-28.264	50.000	9.740	0.290	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: TR1	Time: 2016/11/16
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216-N	Polarity: Neutral
EUT: Door Panel	Power: AC 120V/60Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	38.853	29.120	-26.928	65.781	9.673	0.060	0.000	QP
2		0.154	22.155	12.422	-33.626	55.781	9.673	0.060	0.000	AV
3		0.202	33.682	23.962	-29.846	63.528	9.660	0.060	0.000	QP
4		0.202	18.499	8.779	-35.029	53.528	9.660	0.060	0.000	AV
5		0.226	31.099	21.379	-31.496	62.595	9.660	0.060	0.000	QP
6		0.226	15.429	5.709	-37.166	52.595	9.660	0.060	0.000	AV
7		0.474	33.561	23.861	-22.883	56.444	9.630	0.070	0.000	QP
8		0.474	23.022	13.322	-23.422	46.444	9.630	0.070	0.000	AV
9		0.510	32.567	22.867	-23.433	56.000	9.630	0.070	0.000	QP
10	*	0.510	23.994	14.294	-22.006	46.000	9.630	0.070	0.000	AV
11		11.430	25.671	15.631	-34.329	60.000	9.750	0.290	0.000	QP
12		11.430	17.698	7.658	-32.302	50.000	9.750	0.290	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4. Radiated Emission

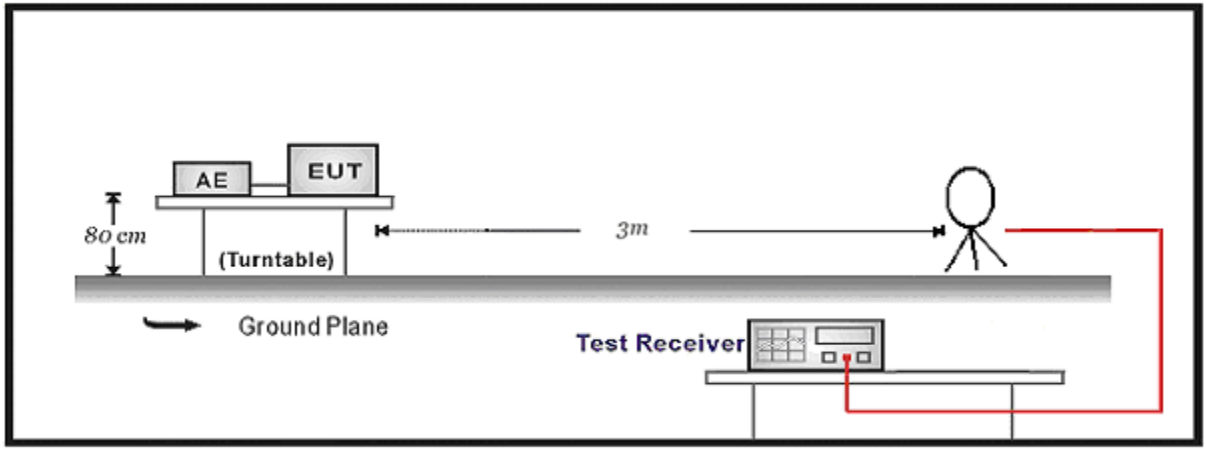
4.1. Test Equipment

Radiated Emission(Below 1GHz) / AC-2					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2016.03.29	2017.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2016.11.16	2017.11.17
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2016.10.16	2017.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2016.03.02	2017.03.01
Temperature/Humidity Meter	Zhichen	ZC1-2	AC2-TH	2016.01.04	2017.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

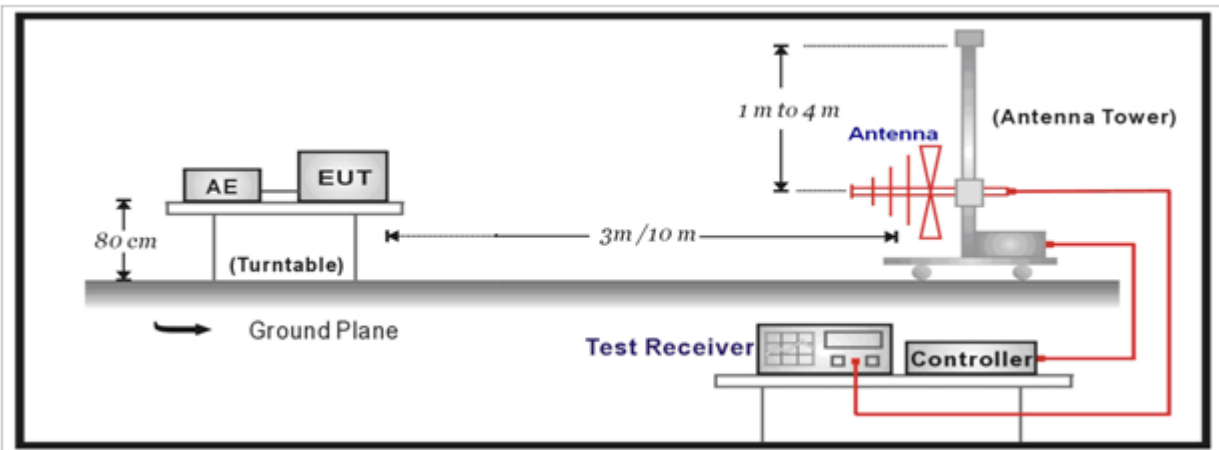
Radiated Emission(Above 1GHz) / AC-5					
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.04	2017.01.03
Preamplifier	Miteq	NSP1800-25	1364185	2016.05.06	2017.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2016.05.06	2017.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.22	2017.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.11.25	2017.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.03.02	2017.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2016.03.02	2017.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2016.06.10	2017.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.04	2017.01.03
Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.					

4.2. Test Setup

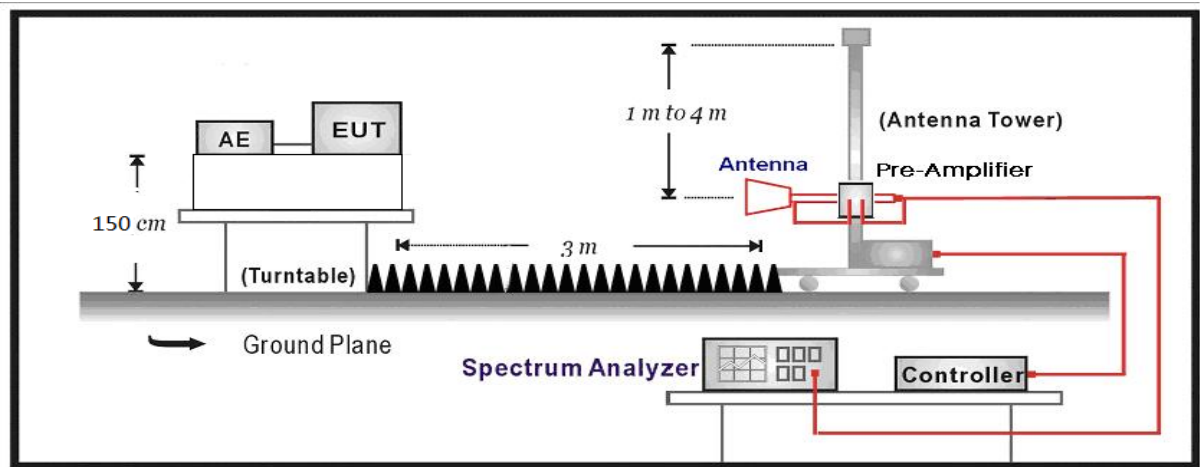
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 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	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	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
8.81425 – 8.81475	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	
13.36 – 13.41			

Restricted Band Emissions Limit			
Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.4. Test Procedure

The EUT and its simulators are placed on a turntable which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

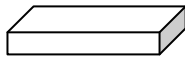
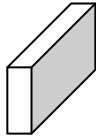
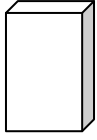
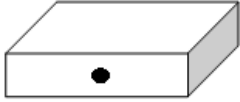


Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be changed during radiated measurement.

The bandwidth from 9K to 150K setting on the receiver is 200Hz, from 150K to 30MHz setting on the receiver is 9KHz and from 30MHz to 1G on the receiver is 120KHz and above 1GHz is 1MHz.

On any frequency or frequencies below or equal to 1000MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000MHz, the radiated limits shown are based measuring equipment employing an average detector function.

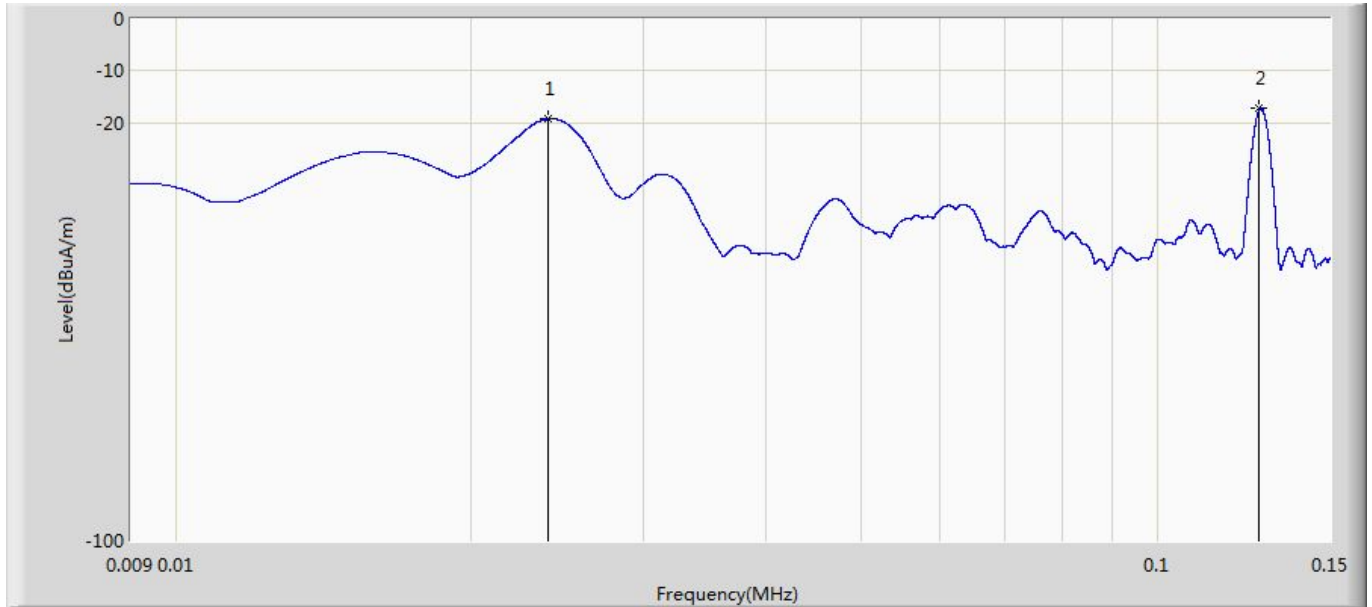
When average radiated emission measurement are included emission measurement Above 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

4.5. EUT test Axis definition

Item	Radiated Emissions			
Device Category	<input checked="" type="checkbox"/>	Fixed position use		
	<input type="checkbox"/>	Mobile position use		
Test mode	Mode 1			
Test method	<input checked="" type="checkbox"/>	Radiated		
		X Axis	Y Axis	Z Axis
				
		Worst Axis <input type="checkbox"/>	Worst Axis <input type="checkbox"/>	Worst Axis <input checked="" type="checkbox"/>
	<input type="checkbox"/>	Conducted		
	<input type="checkbox"/>	Chain 1		
				
	<input type="checkbox"/>	Chain 1	Chain 2	
				
	<input type="checkbox"/>	Chain 1	Chain 2	Chain 3
				

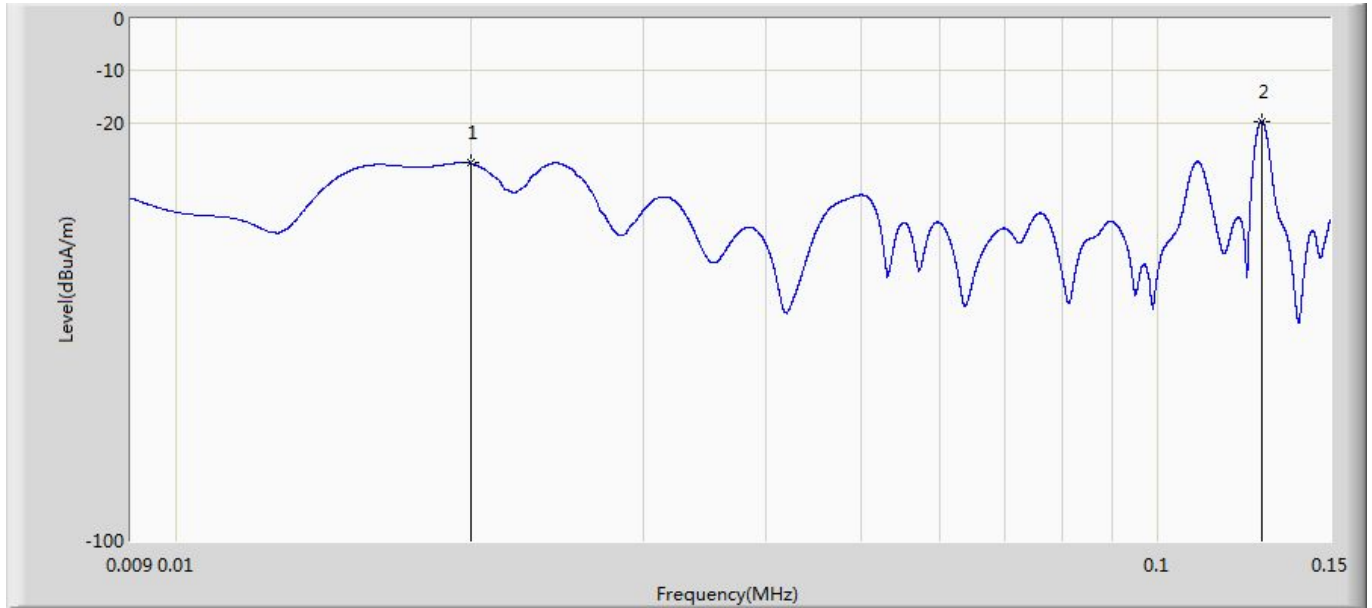
4.6. Test Result

Engineer: Bruce	
Site: AC3	Time: 2016/11/28 - 17:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: HFH2-Z2_833799(0.009-30MHz)	Polarity: Horizontal
EUT:SCEPD02	Power: 120V/60Hz
Note: Mode 1:Transmit at 127KHz	



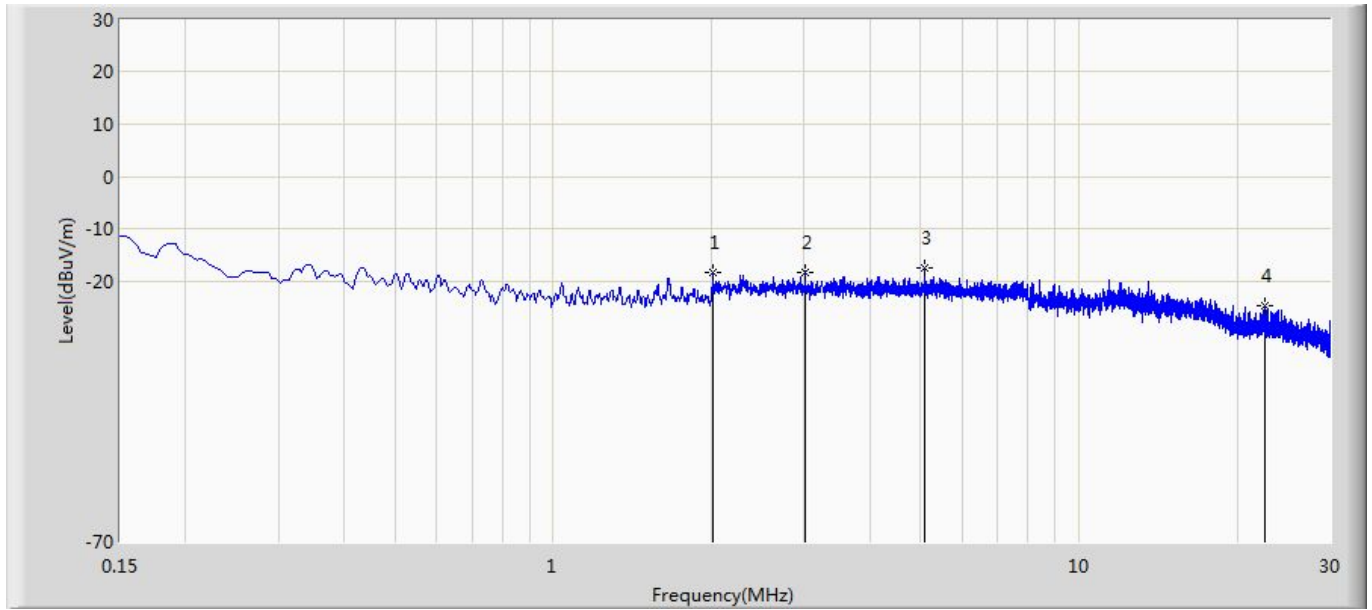
No	Mark	Frequency (MHz)	Measure Level (dBuA/m)	Reading Level (dBuA)	Over Limit (dB)	Limit (dBuA/m)	Factor (dB)	Type
1		0.024	-19.161	9.858	-139.147	119.985	-29.019	PK
2	*	0.127	-17.235	11.410	-122.757	105.521	-28.645	PK

Engineer: Bruce	
Site: AC3	Time: 2016/11/28 - 17:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: HFH2-Z2_833799(0.009-30MHz)	Polarity: Vertical
EUT: SCGUB02	Power:
Note: Mode 1:Transmit at 127KHz	



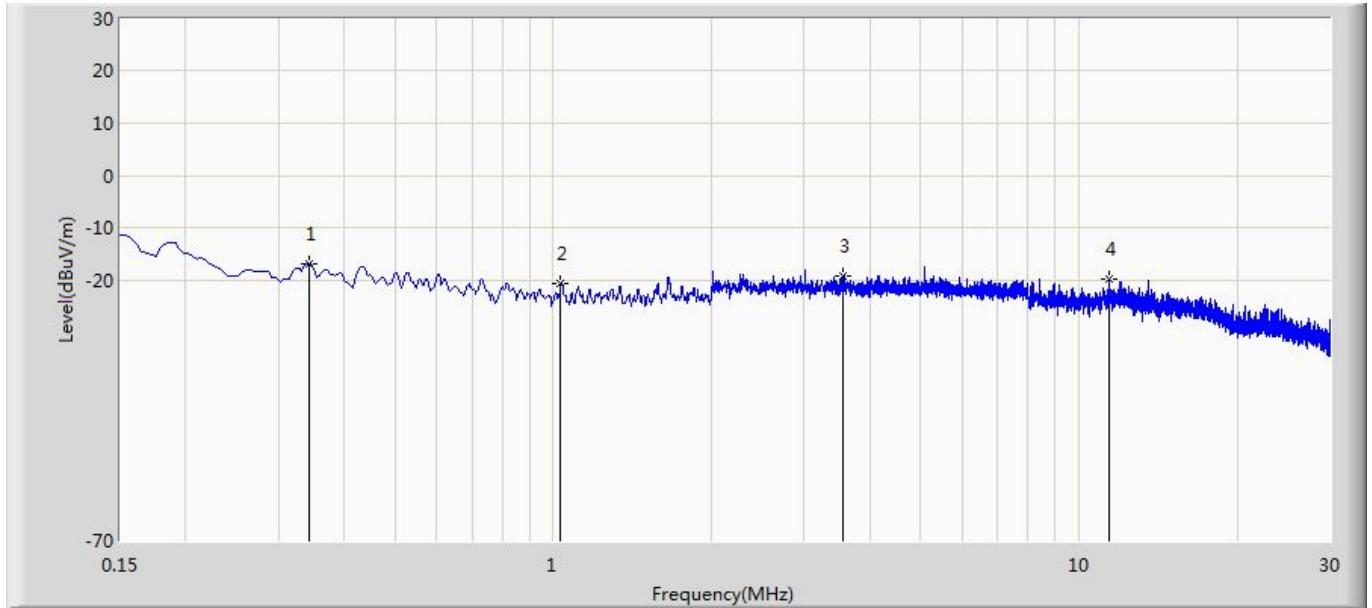
No	Mark	Frequency (MHz)	Measure Level (dBuA/m)	Reading Level (dBuA)	Over Limit (dB)	Limit (dBuA/m)	Factor (dB)	Type
1		0.020	-27.657	1.488	-149.225	121.568	-29.145	PK
2	*	0.128	-19.714	8.932	-125.167	105.453	-28.646	PK

Engineer: Frank	
Site: AC2	Time: 2016/12/05 - 11:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: HFH2-Z2_833799(0.009-30MHz)	Polarity: Horizontal
EUT: SCEPD02	Power: AC 120V/60Hz
Note: Mode 1:Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2.012	-18.418	11.184	-87.918	69.500	-29.602	PK
2		3.008	-18.371	11.345	-87.871	69.500	-29.716	PK
3	*	5.079	-17.661	12.294	-87.161	69.500	-29.955	PK
4		22.586	-24.794	4.781	-94.294	69.500	-29.575	PK

Engineer: frank	
Site: AC2	Time: 2016/12/05 - 11:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: HFH2-Z2_833799(0.009-30MHz)	Polarity: Vertical
EUT: SCEPD02	Power: AC 120V/60Hz
Note: Mode 1:Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.344	-17.040	11.839	-113.911	96.871	-28.879	PK
2	*	1.034	-20.737	9.823	-88.068	67.332	-30.560	PK
3		3.545	-19.202	10.581	-88.702	69.500	-29.783	PK
4		11.377	-19.787	9.933	-89.287	69.500	-29.720	PK

_____ The End _____