



FCC Test Report

Product Name : Rangefinder
Model No. : Pandar40P

Applicant : Hesai Technology Co., Ltd.
Address : No.2 Building, No.468 Xinlai Road, Jiading District,
Shanghai, China

Date of Receipt : Dec. 22, 2021
Test Date : N/A
Issued Date : Dec. 29, 2021
Report No. : 21C0756R-IT-US-P01V01
Report Template No. : TRF_FCC Part 15 Subpart 15B_EMC_V1.2

The test results presented in this report relate only to the object tested.
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Issued Date : Dec.29, 2021
Report No. : 21C0756R-IT-US-P01V01



Product Name : Rangefinder
Applicant : Hesai Technology Co., Ltd.
Address : No.2 Building, No.468 Xinlai Road, Jiading District, Shanghai,
China
Manufacturer : Hesai Technology Co., Ltd.
Address : No.2 Building, No.468 Xinlai Road, Jiading District, Shanghai,
China
Model No. : Pandar40P
Brand Name : HESAI  
EUT Voltage : AC 100-240V, 50/60Hz
Test Voltage : AC 120V,60Hz
Applicable Standard : FCC CFR Title 47 Part 15 Subpart B: 2020
ICES-003:2020 Issue 7
ANSI C63.4: 2014
Test Result : Complied
Performed Location : DEKRA Testing and Certification (Suzhou) Co., Ltd.
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,215006,
Jiangsu, China
TEL: +86-512-62515088 / FAX: +86-512-62515098

Tested By :

Marlon Mei

(Project Engineer: Marlon Mei)

Approved By :

Oscar Shi

(Manager: Oscar Shi)

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Document History

Report NO.	Date	Description
21C0756R-IT-US-P01V01	Dec.29, 2021	First release

1. General Information

1.1. EUT Description

Product Name	Rangefinder
Model No.	Pandar40P
Brand Name	HESAI  HESAI

Note 1: The EUT information is from customer declaration.

Note 2: There are two shapes of EUT. So we test two samples.

Note 3: The colour of EUT may be different.

Note 4: This report was based on report No. 19C2129E-IT-US-P01V03, the change as below:

1. Updated the name and address of the applicant.
2. Updated the name and address of the manufacturer.
3. Updated the standard version.
4. According to the customer's requirements, Delete the test photos and EUT photos in the original report. Test photos and EUT photos are shown in the report No. 19C2129E-IT-US-P01V03.

By the technology evaluation, no need to test. The following information are referenced the report No. 19C2129E-IT-US-P01V03.

1.2. Mode of Operation

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

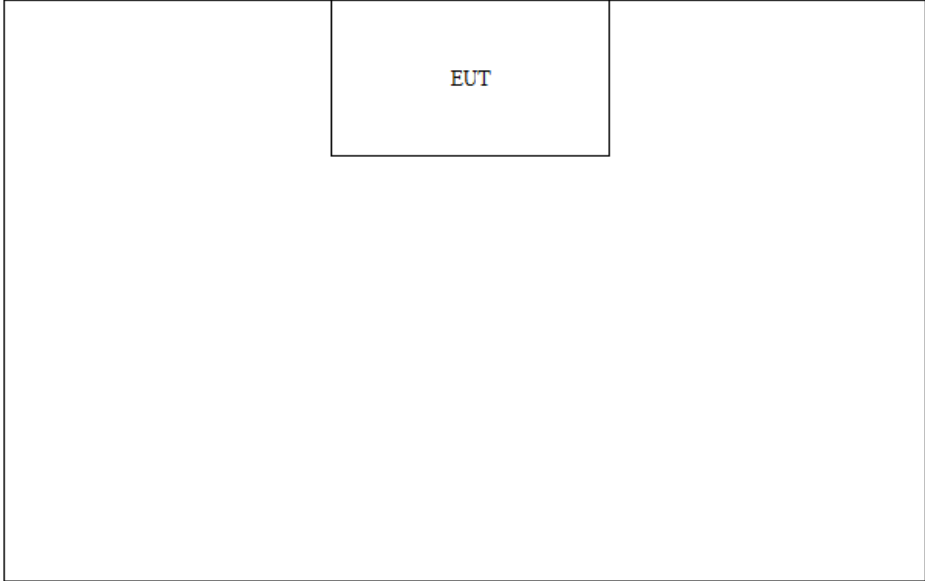
Pre Test Mode
Mode 1: Normal working (Shape 1: Fin style heat-sink on top cover)
Mode 2: Normal working (Shape 2: Circular radiator on black top cover)
Final Test Mode
Mode 1: Normal working (Shape 1: Fin style heat-sink on top cover)
Mode 2: Normal working (Shape 2: Circular radiator on black top cover)

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
--	--	--	--	--	--

1.4. Configuration of Tested System

Connection Diagram		
		
Signal Cable Type		Signal Cable Description
--	--	--

The network port is for monitoring only.

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	Turn on the EUT.
4	Start test.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

Emission			
Performed Test Item	Normative References	Test Performed	Deviation
Conducted disturbance	FCC CFR Title 47 Part 15 Subpart B: 2017 Class A ANSI C63.4: 2014	Yes	No
Radiated disturbance	FCC CFR Title 47 Part 15 Subpart B: 2017 Class A ANSI C63.4: 2014	Yes	No

2.2. List of Test Equipment

Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100906	2019.03.04	2020.03.04
Two-Line V-Network	R&S	ENV216	101190	2019.06.09	2020.06.09
Two-Line V-Network	R&S	ENV216	101044	2019.06.09	2020.06.09
Current Probe	R&S	EZ-17	100678	2019.03.07	2020.03.07
50ohm Termination	SHX	TF2	07081402	2019.09.08	2020.09.08
50ohm Termination	SHX	TF2	07081403	2019.09.08	2020.09.08
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Coaxial Cable	Suhner	RG 223	TR1-C1	2019.04.26	2020.04.26
Temperature/Humidity Meter	Ruitesi	RTS-8S	TR1-TH	2019.10.24	2020.10.24
Software	Quietek	EMI_V3	V3.0.0	N/A	N/A

Radiated Emission / AC1

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100175	2019.09.08	2020.09.08
EMI Test Receiver	R&S	ESCI	100726	2019.03.18	2020.03.18
Preamplifier	Quietek	AP-025C	CHM-0602008	2019.04.10	2020.04.10
Preamplifier	Quietek	AP-025C	CHM-0503006	2019.04.10	2020.04.10
Bilog Antenna	Schaffner	CBL6112B	2931	2019.05.18	2020.05.18
Bilog Antenna	Schaffner	CBL6112B	2933	2019.05.18	2020.05.18
Coaxial Cable	Huber+Suhner	RG 214 U	AC1-L	2019.10.10	2020.10.10
Coaxial Cable	Huber+Suhner	RG 214 U	AC1-R	2019.10.10	2020.10.10
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC1-TH	2019.10.24	2020.10.24
Software	Quietek	EMI_V3	V3.0.0	N/A	N/A

Radiated Emission / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100573	2019.03.04	2020.03.04
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2019.06.09	2020.06.09
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2019.02.28	2020.02.28
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC2-TH	2019.10.24	2020.10.24
Software	Quietek	EMI_V3	V3.0.0	N/A	N/A

Radiated Emission / AC3

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100176	2019.09.08	2020.09.08
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2019.06.09	2020.06.09
Coaxial Cable	Huber+Suhner	RG 214	AC3-C	2019.02.28	2020.02.28
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC3-TH	2019.10.24	2020.10.24
Software	Quietek	EMI_V3	V3.0.0	N/A	N/A

Radiated Emission / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cali. Date	Cali. Due Date
EMI Receiver	Agilent	N9038A	MY51210196	2019.06.09	2020.06.09
low Noise Amplifier	BXT	NA2651D	LNA17040209	2019.07.16	2020.07.16

DRG Horn Antenna	ETS-Lindgren	3117	00167055	2019.06.09	2020.06.09
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2019.02.28	2020.02.28
Pre-Amplifier	Chengyi	EMC184045SE	980263	2019.09.08	2020.09.08
Coaxial Cable	ROSENBERG ER	LA1-C011-2000/ 3000	AC5-40G	2019.02.08	2020.02.28
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2019.02.23	2020.02.23
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC5-TH	2019.10.24	2020.10.24
Software	Quietek	EMI_V3	V3.0.0	N/A	N/A

2.3. Test Environment

Tests have been performed in a controlled laboratory environment, where the environmental conditions are maintained within the applicable ranges.

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10-40	23
	Humidity (%RH)	25-75	40
	Barometric pressure (mbar)	860-1060	1016
Radiated Emission (30~1000MHz)	Temperature (°C)	10-40	24
	Humidity (%RH)	25-75	41
	Barometric pressure (mbar)	860-1060	1014
Radiated Emission (1~40GHz)	Temperature (°C)	10-40	24
	Humidity (%RH)	25-75	41
	Barometric pressure (mbar)	860-1060	1014

2.4. Measurement Uncertainty

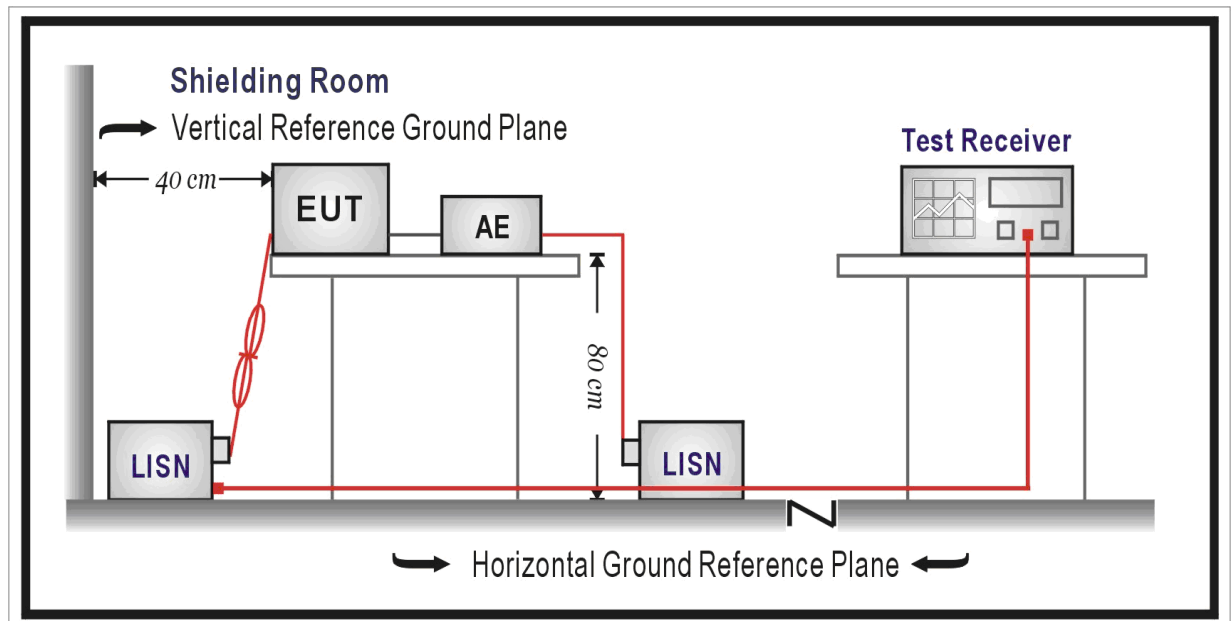
Conducted disturbance / TR1
<p>The maximum measurement uncertainty is evaluated as:</p> <p>9kHz~150kHz: 2.80dB</p> <p>150kHz~30MHz: 2.40dB</p>
Radiated disturbance / AC1
<p>The maximum measurement uncertainty is evaluated as:</p> <p>Horizontal: 30MHz~300MHz: 3.50 dB</p> <p>300MHz~1GHz: 3.20 dB</p> <p>1GHz~18GHz: 4.80 dB</p> <p>Vertical: 30MHz~300MHz: 3.60 dB</p> <p>300MHz~1GHz: 3.10 dB</p> <p>1GHz~18GHz: 4.50 dB</p>
Radiated disturbance / AC2
<p>The maximum measurement uncertainty is evaluated as:</p> <p>Horizontal: 30MHz~300MHz: 3.60 dB</p> <p>300MHz~1GHz: 3.10 dB</p> <p>Vertical: 30MHz~300MHz: 3.20 dB</p> <p>300MHz~1GHz: 3.20 dB</p>
Radiated disturbance / AC3
<p>The maximum measurement uncertainty is evaluated as:</p> <p>Horizontal: 30MHz~300MHz: 3.50 dB</p> <p>300MHz~1GHz: 3.60 dB</p> <p>Vertical: 30MHz~300MHz: 3.60 dB</p> <p>300MHz~1GHz: 3.50 dB</p>
Radiated disturbance / AC5
<p>The maximum measurement uncertainty is evaluated as:</p> <p>Horizontal: 30MHz~300MHz: 3.90 dB</p> <p>300MHz~1GHz: 3.60 dB</p> <p>1GHz~18GHz: 5.00 dB</p> <p>Vertical: 30MHz~300MHz: 3.80 dB</p> <p>300MHz~1GHz: 3.50 dB</p> <p>1GHz~18GHz: 4.80 dB</p>

3. Conducted disturbance

3.1. Test Specification

According to Standard: FCC Part 15.107 Class A, ANSI C63.4

3.2. Test Setup



3.3. Limit

Limits for conducted disturbance of class A ITE		
Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	79	66
0.50 to 30	73	60

NOTE: The lower limit shall apply at the transition frequency.

Limits for conducted disturbance of class B ITE		
Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 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 0.15MHz to 0.50MHz.

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 50Ω / 50μH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50Ω / 50μH coupling impedance with 50Ω 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.

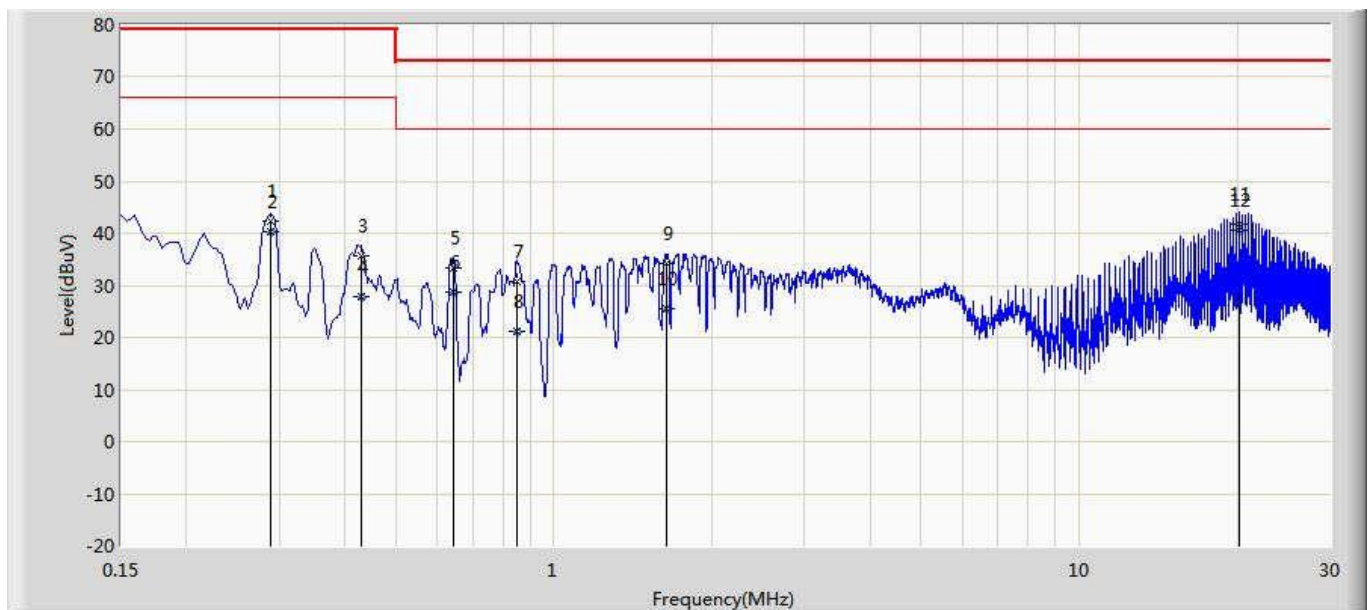
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Engineer: Shuo	
Site: TR1	Time: 2019/12/26
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	



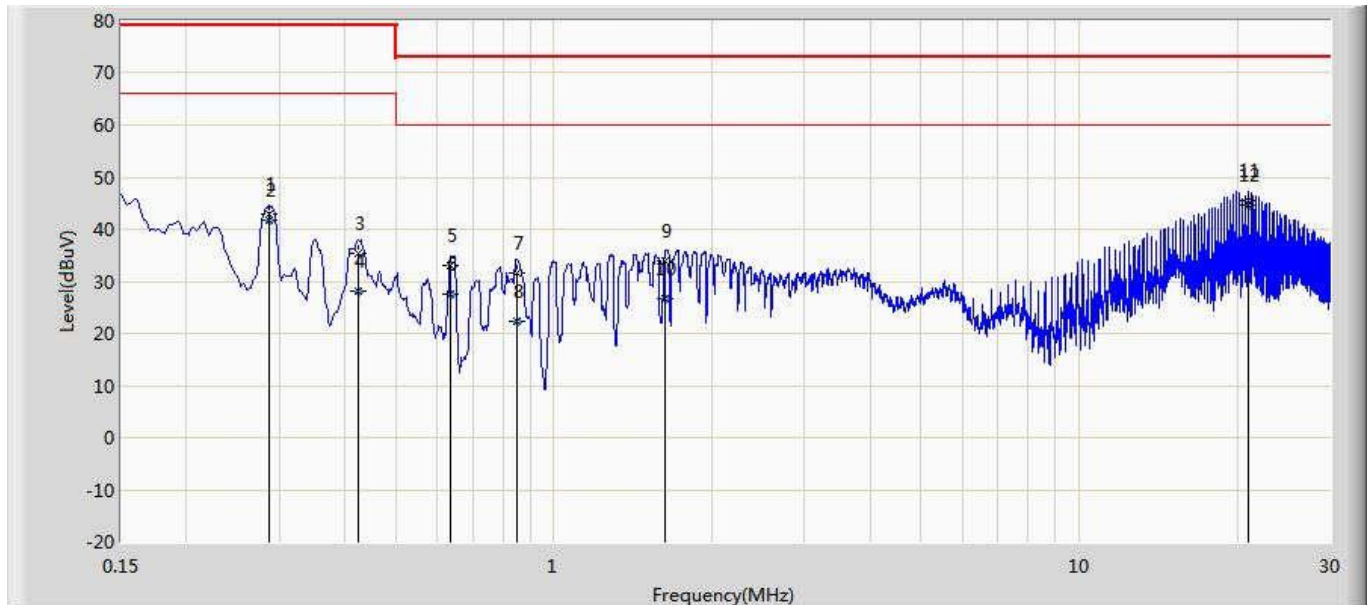
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.289	42.230	32.343	-36.770	79.000	9.853	0.034	0.000	QP
2		0.289	40.216	30.329	-25.784	66.000	9.853	0.034	0.000	AV
3		0.429	35.746	25.848	-43.254	79.000	9.859	0.040	0.000	QP
4		0.429	27.876	17.978	-38.124	66.000	9.859	0.040	0.000	AV
5		0.645	33.467	23.551	-39.533	73.000	9.868	0.048	0.000	QP
6		0.645	28.598	18.682	-31.402	60.000	9.868	0.048	0.000	AV
7		0.850	30.862	21.062	-42.138	73.000	9.745	0.054	0.000	QP
8		0.850	21.275	11.476	-38.725	60.000	9.745	0.054	0.000	AV
9		1.642	34.195	24.484	-38.805	73.000	9.633	0.078	0.000	QP
10		1.642	25.434	15.723	-34.566	60.000	9.633	0.078	0.000	AV
11		20.180	41.596	31.665	-31.404	73.000	9.641	0.290	0.000	QP
12	*	20.180	40.543	30.612	-19.457	60.000	9.641	0.290	0.000	AV

Note:

1. " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: Shuo	
Site: TR1	Time: 2019/12/26
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	

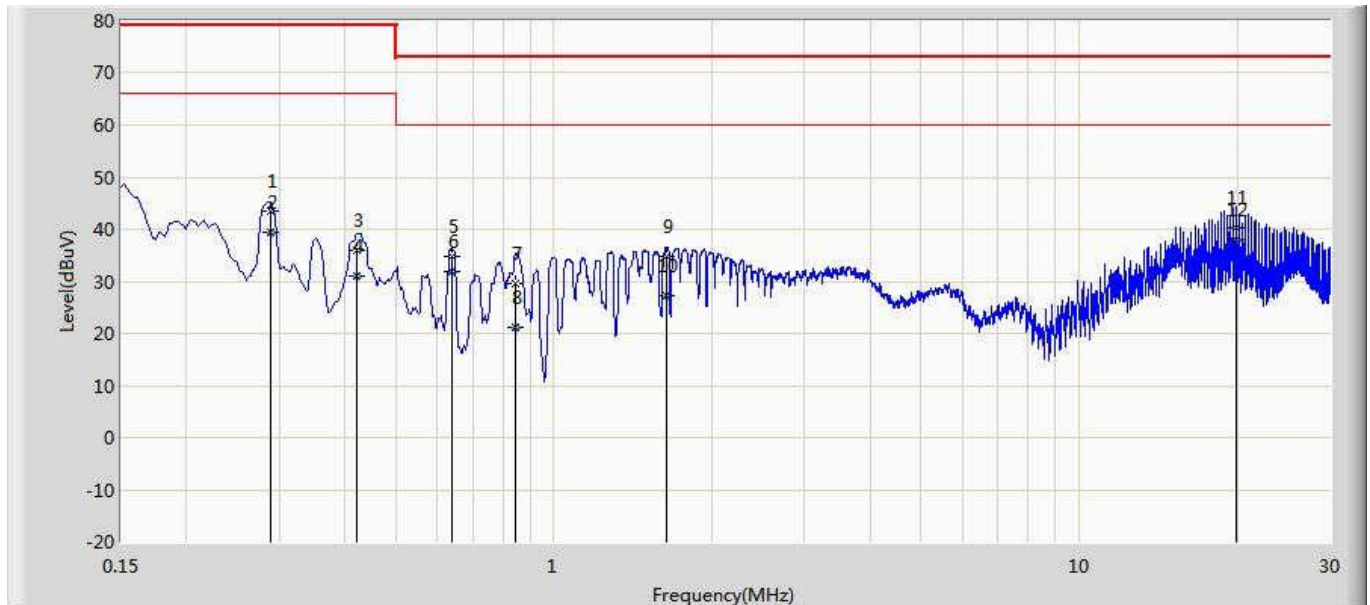


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.287	42.956	33.059	-36.044	79.000	9.863	0.034	0.000	QP
2		0.287	41.603	31.706	-24.397	66.000	9.863	0.034	0.000	AV
3		0.424	35.350	25.443	-43.650	79.000	9.868	0.039	0.000	QP
4		0.424	27.989	18.082	-38.011	66.000	9.868	0.039	0.000	AV
5		0.636	32.943	23.019	-40.057	73.000	9.877	0.048	0.000	QP
6		0.636	27.641	17.717	-32.359	60.000	9.877	0.048	0.000	AV
7		0.852	31.519	21.645	-41.481	73.000	9.820	0.054	0.000	QP
8		0.852	22.287	12.413	-37.713	60.000	9.820	0.054	0.000	AV
9		1.631	34.055	24.187	-38.945	73.000	9.791	0.077	0.000	QP
10		1.631	26.658	16.790	-33.342	60.000	9.791	0.077	0.000	AV
11		20.954	45.392	35.053	-27.608	73.000	10.043	0.296	0.000	QP
12	*	20.954	44.642	34.304	-15.358	60.000	10.043	0.296	0.000	AV

Note:

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

Engineer: Shuo	
Site: TR1	Time: 2019/12/26
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	

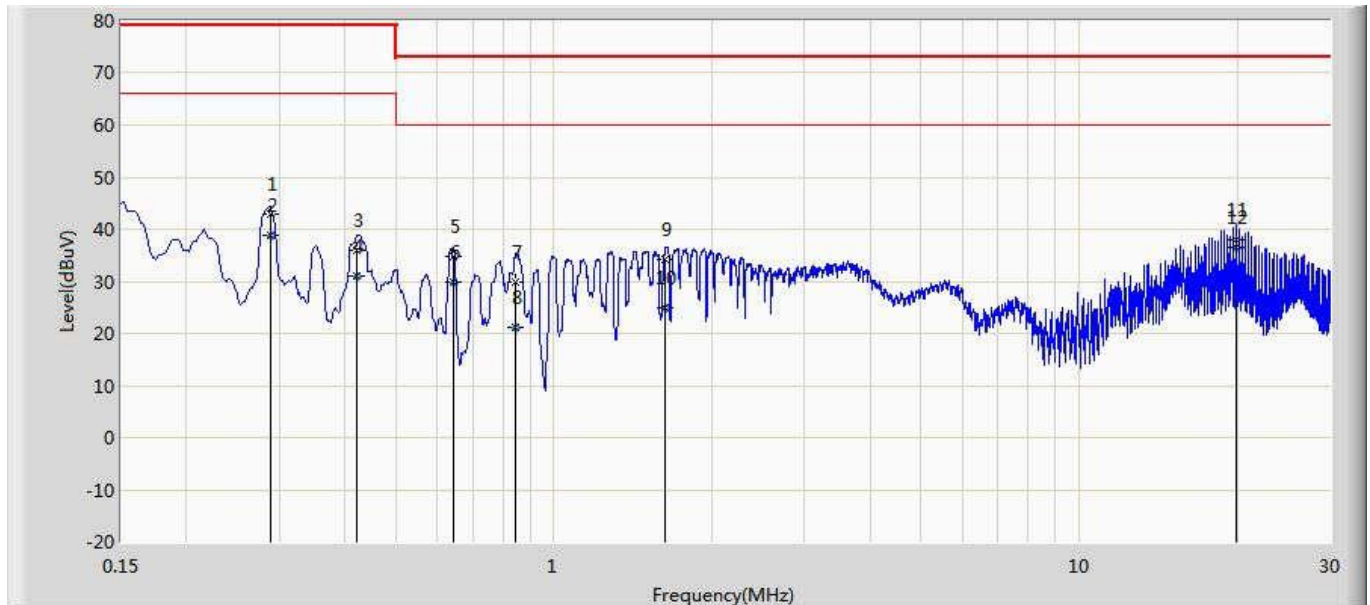


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.289	43.363	33.466	-35.637	79.000	9.863	0.034	0.000	QP
2		0.289	39.456	29.559	-26.544	66.000	9.863	0.034	0.000	AV
3		0.422	36.034	26.127	-42.966	79.000	9.868	0.039	0.000	QP
4		0.422	31.077	21.170	-34.923	66.000	9.868	0.039	0.000	AV
5		0.638	34.672	24.747	-38.328	73.000	9.877	0.048	0.000	QP
6		0.638	31.953	22.028	-28.047	60.000	9.877	0.048	0.000	AV
7		0.843	29.594	19.716	-43.406	73.000	9.823	0.054	0.000	QP
8		0.843	21.165	11.288	-38.835	60.000	9.823	0.054	0.000	AV
9		1.642	34.903	25.033	-38.097	73.000	9.792	0.078	0.000	QP
10		1.642	27.288	17.418	-32.712	60.000	9.792	0.078	0.000	AV
11		19.939	40.185	29.927	-32.815	73.000	9.970	0.288	0.000	QP
12	*	19.939	38.085	27.827	-21.915	60.000	9.970	0.288	0.000	AV

Note:

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

Engineer: Shuo	
Site: TR1	Time: 2019/12/26
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.289	42.853	32.966	-36.147	79.000	9.853	0.034	0.000	QP
2		0.289	38.921	29.034	-27.079	66.000	9.853	0.034	0.000	AV
3		0.422	35.912	26.014	-43.088	79.000	9.859	0.039	0.000	QP
4		0.422	30.943	21.045	-35.057	66.000	9.859	0.039	0.000	AV
5		0.645	34.700	24.784	-38.300	73.000	9.868	0.048	0.000	QP
6		0.645	29.893	19.977	-30.107	60.000	9.868	0.048	0.000	AV
7		0.843	29.912	20.107	-43.088	73.000	9.751	0.054	0.000	QP
8		0.843	21.253	11.448	-38.747	60.000	9.751	0.054	0.000	AV
9		1.628	34.319	24.609	-38.681	73.000	9.633	0.077	0.000	QP
10		1.628	24.877	15.167	-35.123	60.000	9.633	0.077	0.000	AV
11		19.941	38.047	28.117	-34.953	73.000	9.642	0.288	0.000	QP
12	*	19.941	36.576	26.645	-23.424	60.000	9.642	0.288	0.000	AV

Note:

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

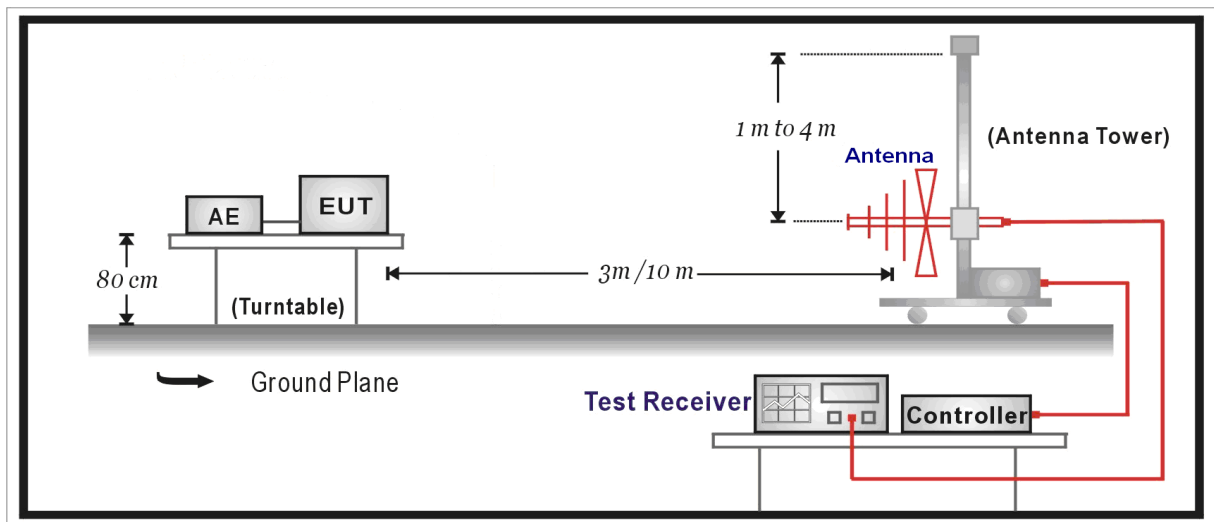
4. Radiated disturbance

4.1. Test Specification

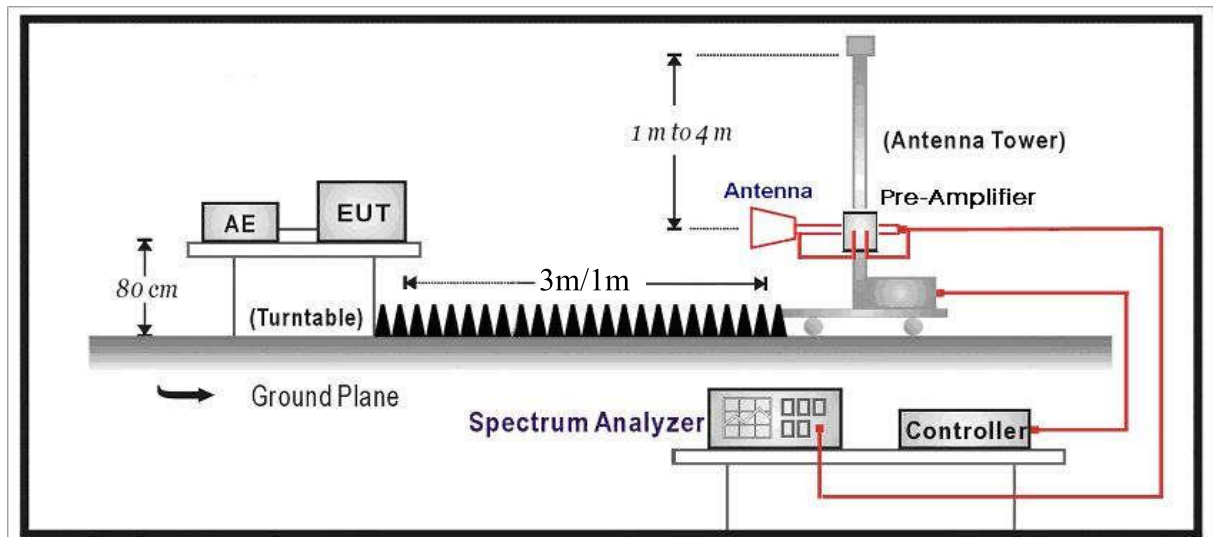
According to Standard: FCC Part 15.109 Class A, ANSI C63.4

4.2. Test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup



4.3. Limit

Limits for Radiated disturbance of class A ITE at a measuring distance of 10m	
Frequency of Emission (MHz)	Field Strength dB(μV/m)
30 to 88	39
88 to 216	43.5
216 to 960	46.4
Above 960	49.5
NOTE: The lower limit shall apply at the transition frequency.	

Limits for Radiated disturbance of class A ITE at a measuring distance of 3m	
Frequency of Emission (MHz)	Field Strength dB(μV/m)
1000 to 18000	60
NOTE: The lower limit shall apply at the transition frequency.	

Limits for Radiated disturbance of class A ITE at a measuring distance of 1m	
Frequency of Emission (MHz)	Field Strength dB(μV/m)
18000 to 40000	69.5
NOTE: The lower limit shall apply at the transition frequency.	

Limits for Radiated disturbance of class B ITE at a measuring distance of 3m	
Frequency of Emission (MHz)	Field Strength dB(μV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
960 to 18000	54
NOTE: The lower limit shall apply at the transition frequency.	

Limits for Radiated disturbance of class B ITE at a measuring distance of 1m	
Frequency of Emission (MHz)	Field Strength dB(μ V/m)
18000-40000	63.5
NOTE: The lower limit shall apply at the transition frequency.	

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 below 1GHz setting on the receiver is 120kHz and above 1GHz is 1MHz.

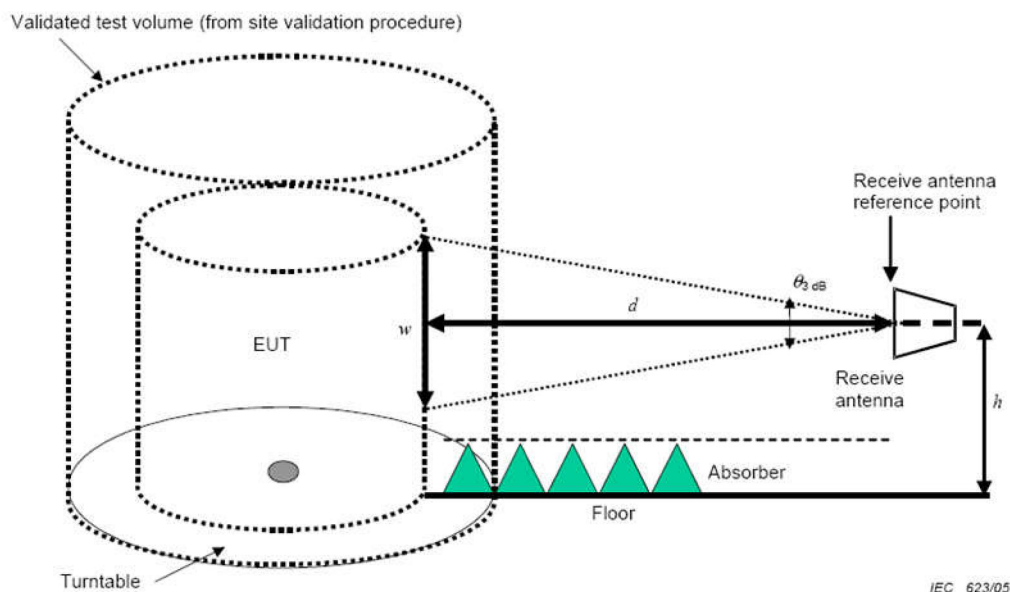
For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 to 108	1000
108 to 500	2000
500 to 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40GHz, whichever is lower

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.

The radiated field measurement method above 1 GHz is based on measurement of the maximum electric field emitted from the EUT as shown below



Measurement method above 1 GHz, receive antenna in vertical polarization

- **Definitions referring to Figure**

Validated test volume: The volume validated during the site validation procedure (see 8.3.3 of CISPR 16-1-4). Typically, this is the largest diameter EUT that can be used in the test facility.

EUT: The smallest diameter cylinder that will fully encompass all portions of the actual EUT, including cable racks and a minimum length of 30 cm of cables. The EUT that is located within this cylinder must be capable of rotating about its centre (typically by a remotely controlled turntable). The EUT must be located within the validated test volume. A maximum of 30 cm of ω (see definition of ω below) may be below the height of absorbers on the floor only when the EUT is floor standing and cannot be raised above the height of the absorbers.

$\theta_{3\text{ dB}}$: The minimum 3 dB beamwidth of the receive antenna at each frequency of interest. $\theta_{3\text{ dB}}$ is the minimum of both the E-plane and H-plane values at each frequency. $\theta_{3\text{ dB}}$ may be obtained from manufacturer provided data for the receive antenna.

d: The measurement distance (in meters). This is measured as the horizontal distance between the periphery of the EUT and the reference point of the receive antenna.

ω : The dimension of the line tangent to the EUT formed by $\theta_{3\text{ dB}}$ at the measurement distance d. Equation (10) shall be used to calculate ω for each actual antenna and measurement distance used. The values of ω shall be included in the test report. This calculation may be based on the manufacturer-provided receive-antenna beamwidth specifications:

$$\omega = 2 \times d \times \tan(0,5 \times \theta_{3\text{ dB}})$$

DRG Horn Antenna (M/N: 3117) test dimension of ω

Frequency GHz	θ 3 dB (min) °	ω_m
1	90	6.00
2	60	3.46
3	75	4.60
4	60	3.46
5	60	3.46
6	50	2.80
7	45	2.49
8	40	2.18
9	35	1.89
10	30	1.61
11	35	1.89
12	40	2.18
13	35	1.89
14	35	1.89
15	35	1.89
16	35	1.89
17	30	1.61
18	20	1.06

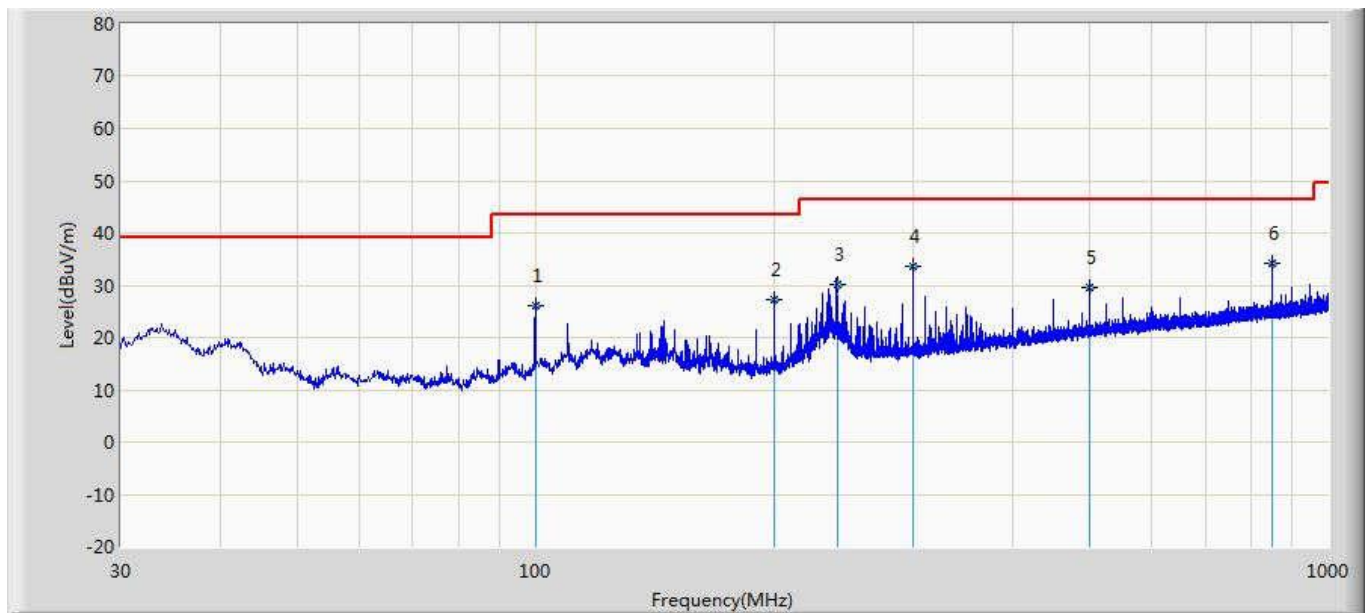
Note: The antenna's moving up and down is determined by ω value for above 1GHz, to ensure that the acceptable range of the testing antenna can cover the whole range of EUT.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Engineer: Beck	
Site: AC1	Time: 2019/12/24
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2931(30-1000MHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	

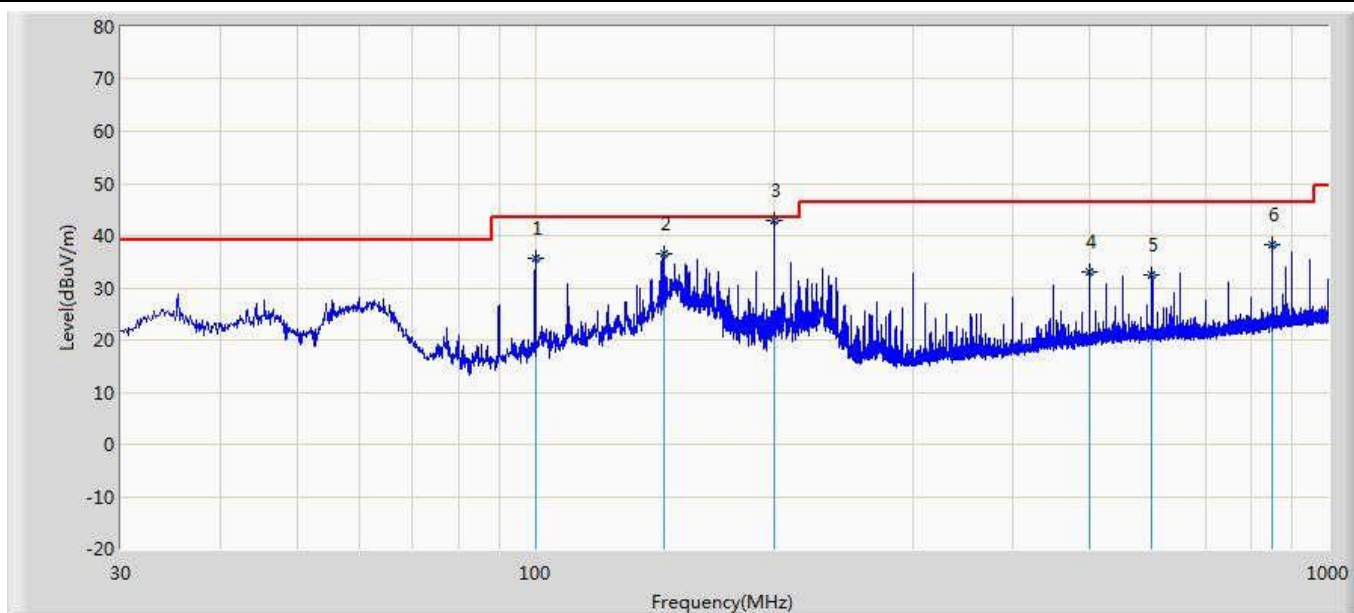


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		100.120	26.108	35.900	-17.392	43.500	10.024	1.856	21.672	100	221	QP
2		200.135	27.380	36.900	-16.120	43.500	9.308	2.738	21.565	100	169	QP
3		240.130	30.256	37.900	-16.144	46.400	10.825	3.044	21.514	200	101	QP
4		300.135	33.559	38.420	-12.841	46.400	13.101	3.460	21.423	100	223	QP
5		500.136	29.509	28.600	-16.891	46.400	17.201	4.687	20.979	200	36	QP
6	*	850.135	34.226	28.120	-12.174	46.400	19.751	6.486	20.131	100	221	QP

Note:

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

Engineer: Beck	
Site: AC1	Time: 2019/12/24
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2933(30-1000MHz)	Polarity: Vertical
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	

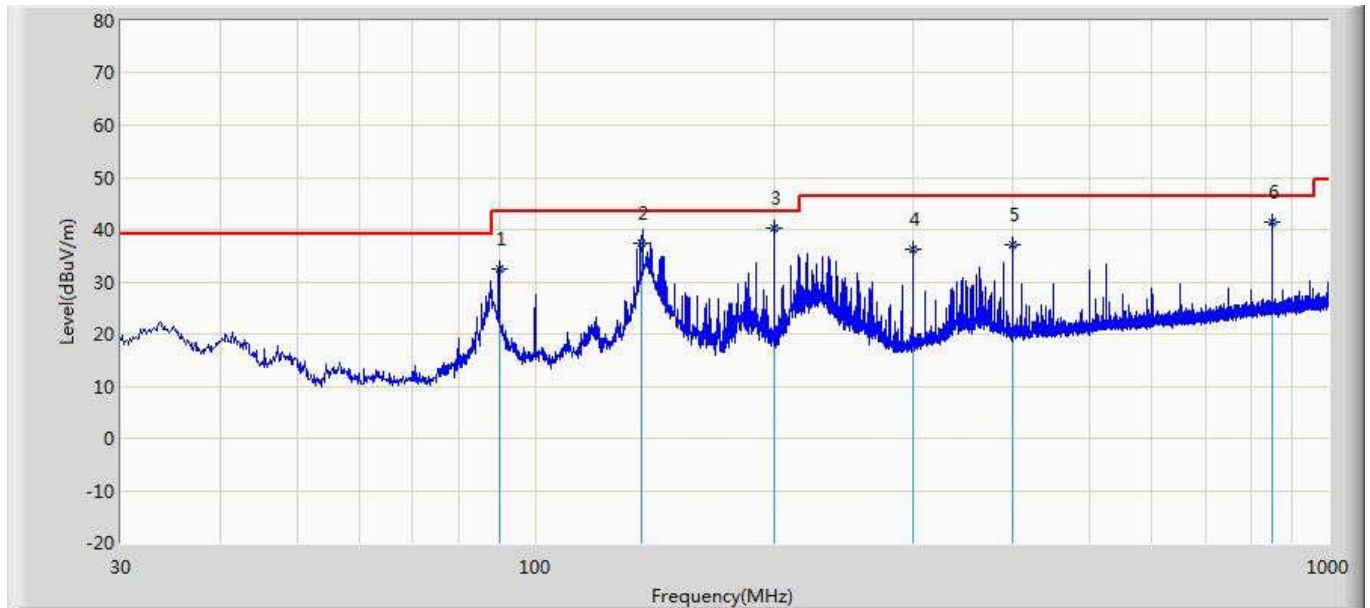


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		100.101	35.650	46.320	-7.850	43.500	10.115	2.067	22.853	100	221	QP
2		145.635	36.479	45.865	-7.021	43.500	10.913	2.546	22.845	200	86	QP
3	*	200.104	42.841	53.300	-0.659	43.500	9.305	3.048	22.812	100	15	QP
4		500.012	33.030	33.120	-13.370	46.400	17.199	5.205	22.494	300	112	QP
5		600.012	32.533	30.860	-13.867	46.400	18.198	5.810	22.336	100	158	QP
6		850.124	38.200	33.200	-8.200	46.400	19.801	7.195	21.996	200	12	QP

Note:

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

Engineer: Beck	
Site: AC1	Time: 2019/12/24
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2931(30-1000MHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	

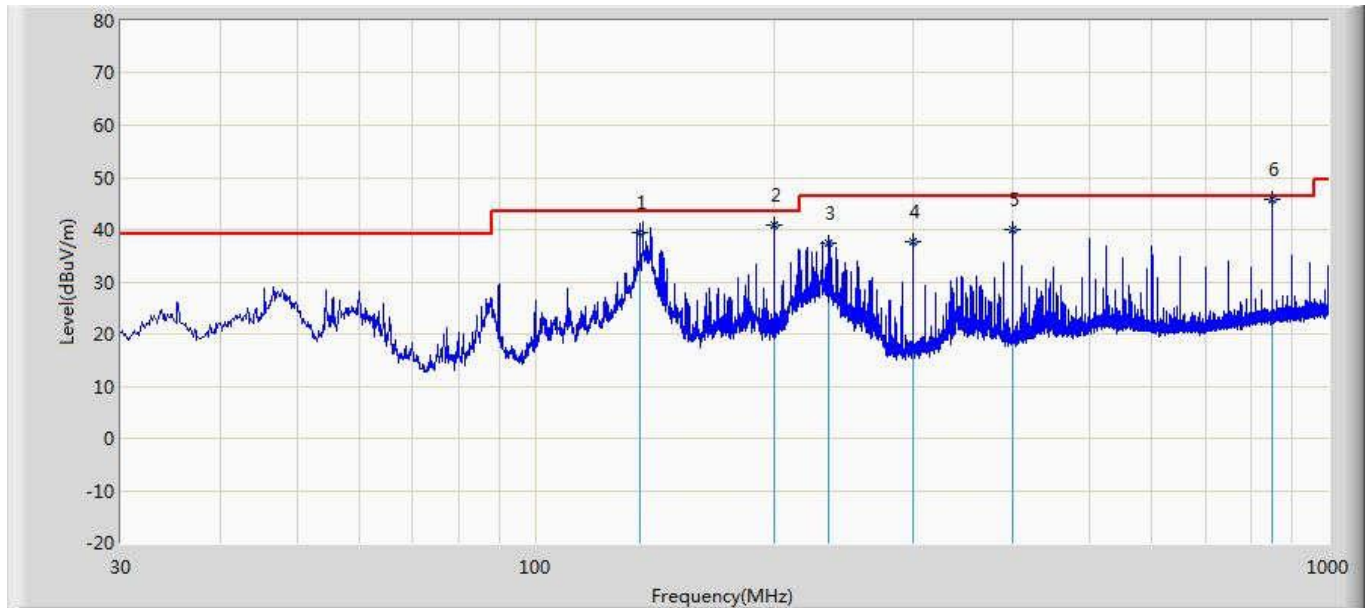


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		90.122	32.380	43.500	-11.120	43.500	8.814	1.749	21.683	100	212	QP
2		136.352	37.503	45.960	-5.997	43.500	10.983	2.200	21.640	400	201	QP
3	*	200.130	40.340	49.860	-3.160	43.500	9.308	2.738	21.565	200	223	QP
4		300.133	36.374	41.235	-10.026	46.400	13.101	3.460	21.423	200	112	QP
5		400.123	37.181	38.600	-9.219	46.400	15.700	4.101	21.220	200	152	QP
6		850.132	41.306	35.200	-5.094	46.400	19.751	6.486	20.131	200	12	QP

Note:

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

Engineer: Beck	
Site: AC1	Time: 2019/12/24
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2933(30-1000MHz)	Polarity: Vertical
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	

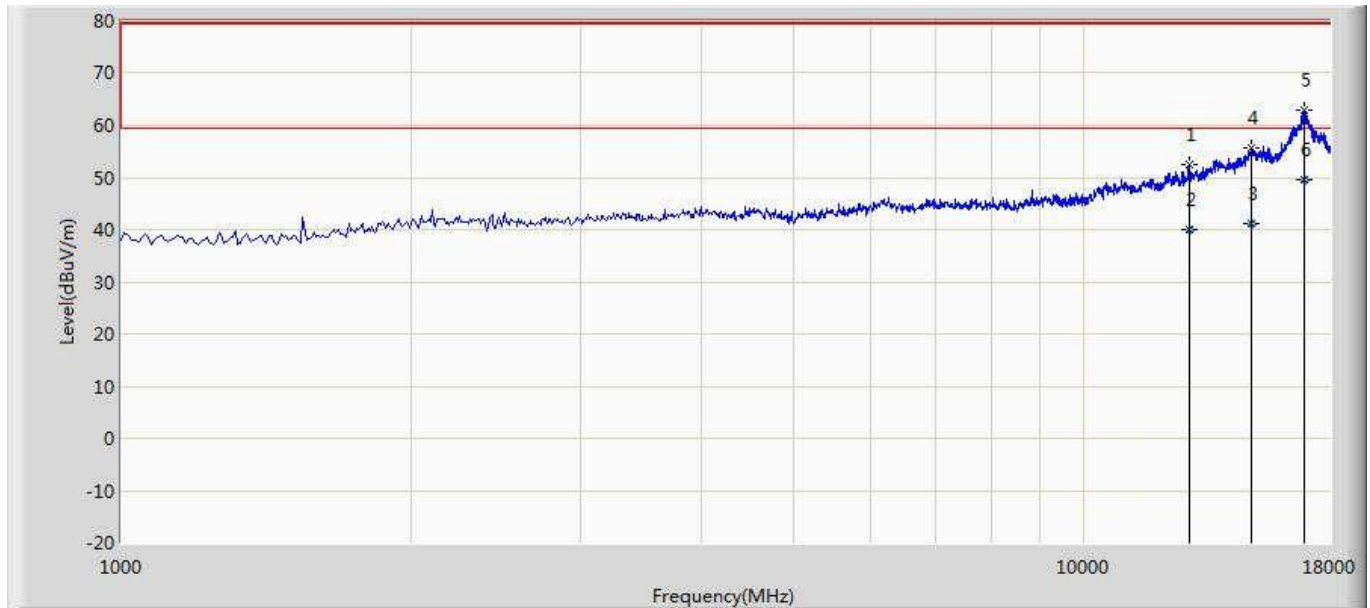


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		135.235	39.364	48.635	-4.136	43.500	11.134	2.445	22.849	100	265	QP
2		200.135	40.892	51.350	-2.608	43.500	9.306	3.048	22.812	100	118	QP
3		234.352	37.356	46.235	-9.044	46.400	10.571	3.336	22.786	400	12	QP
4		300.135	37.666	43.562	-8.734	46.400	13.001	3.842	22.740	300	155	QP
5		400.135	40.118	42.562	-6.282	46.400	15.601	4.555	22.599	100	112	QP
6	*	850.013	45.800	40.800	-0.600	46.400	19.800	7.195	21.995	200	15	QP

Note:

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

Engineer: ADELE	
Site: AC5	Time: 2019/12/26
Limit: FCC_Part15.109_RE(3m)_ClassA	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	

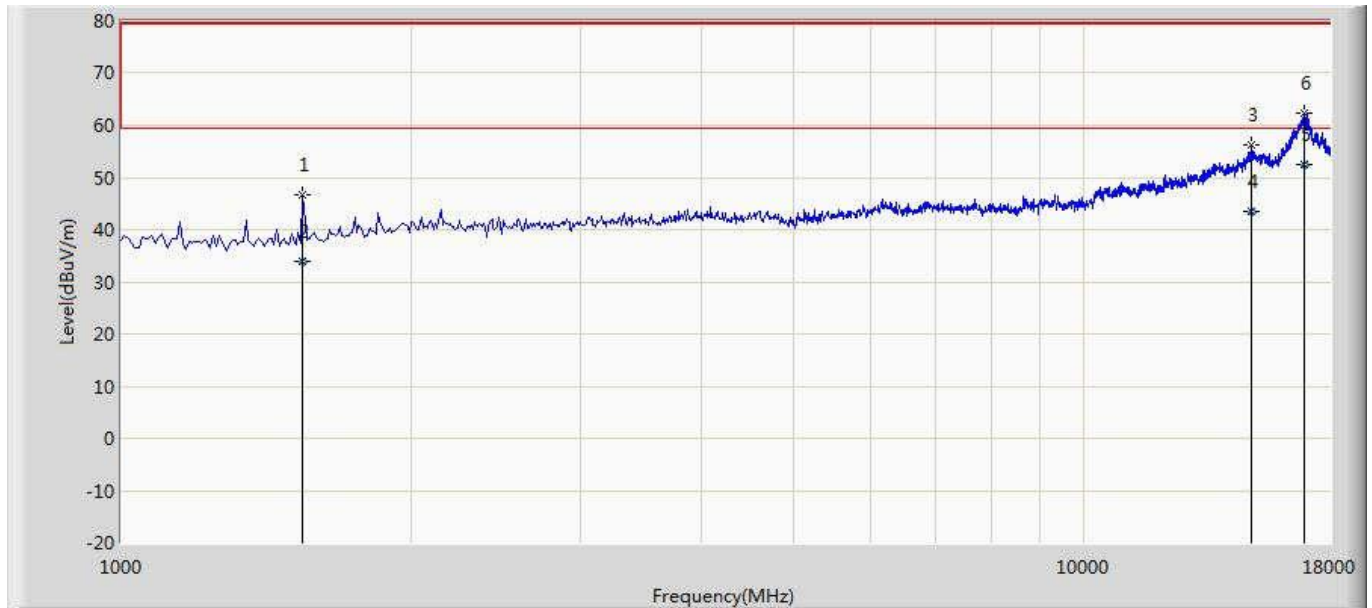


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		12883.000	52.329	34.553	-27.171	79.500	39.553	11.048	32.825	100	201	PK
2		12883.265	40.031	22.265	-19.469	59.500	39.553	11.049	32.835	100	201	AV
3		14914.125	41.128	21.265	-18.372	59.500	40.863	13.117	34.117	100	265	AV
4		14914.500	55.623	35.759	-23.877	79.500	40.864	13.117	34.117	100	265	PK
5		16929.000	62.859	36.674	-16.641	79.500	41.228	17.898	32.941	100	219	PK
6	*	16929.356	49.445	23.265	-10.055	59.500	41.228	17.900	32.948	100	219	AV

Note:

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

Engineer: ADELE	
Site: AC5	Time: 2019/12/26
Limit: FCC_Part15.109_RE(3m)_ClassA	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		1544.000	46.728	49.109	-32.772	79.500	28.726	2.969	34.076	100	149	PK
2		1544.354	33.887	36.265	-25.613	59.500	28.729	2.970	34.076	100	149	AV
3		14940.000	56.237	36.045	-23.263	79.500	40.904	13.139	33.851	100	254	PK
4		14940.249	43.469	23.265	-16.031	59.500	40.904	13.139	33.839	100	254	AV
5	*	16937.265	52.327	26.265	-7.173	59.500	41.225	17.948	33.111	100	168	AV
6		16937.500	62.218	36.159	-17.282	79.500	41.225	17.949	33.115	100	168	PK

Note:

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

Engineer: ADELE

Site: AC5

Time: 2019/12/26

Limit: FCC_Part15.109_RE(3m)_ClassA

Margin: 0

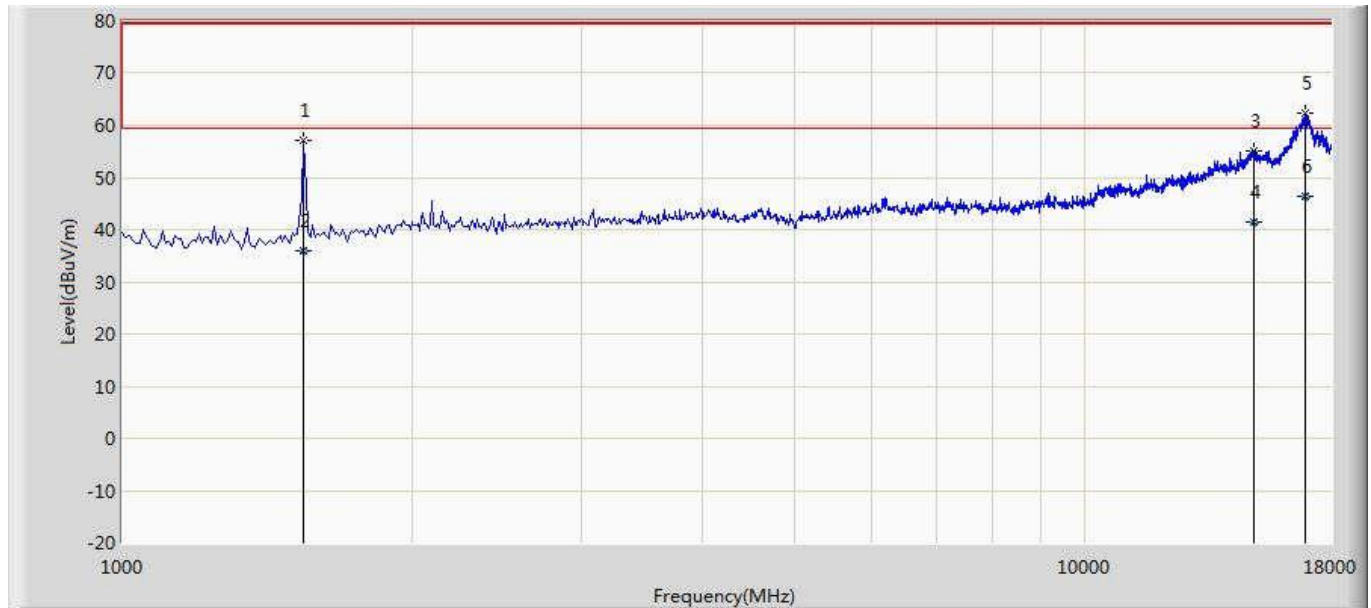
Probe: Horn_3117_00167055(1-18GHz)

Polarity: Vertical

EUT: Rangefinder

Power: AC 120V/60Hz

Note: Mode 2



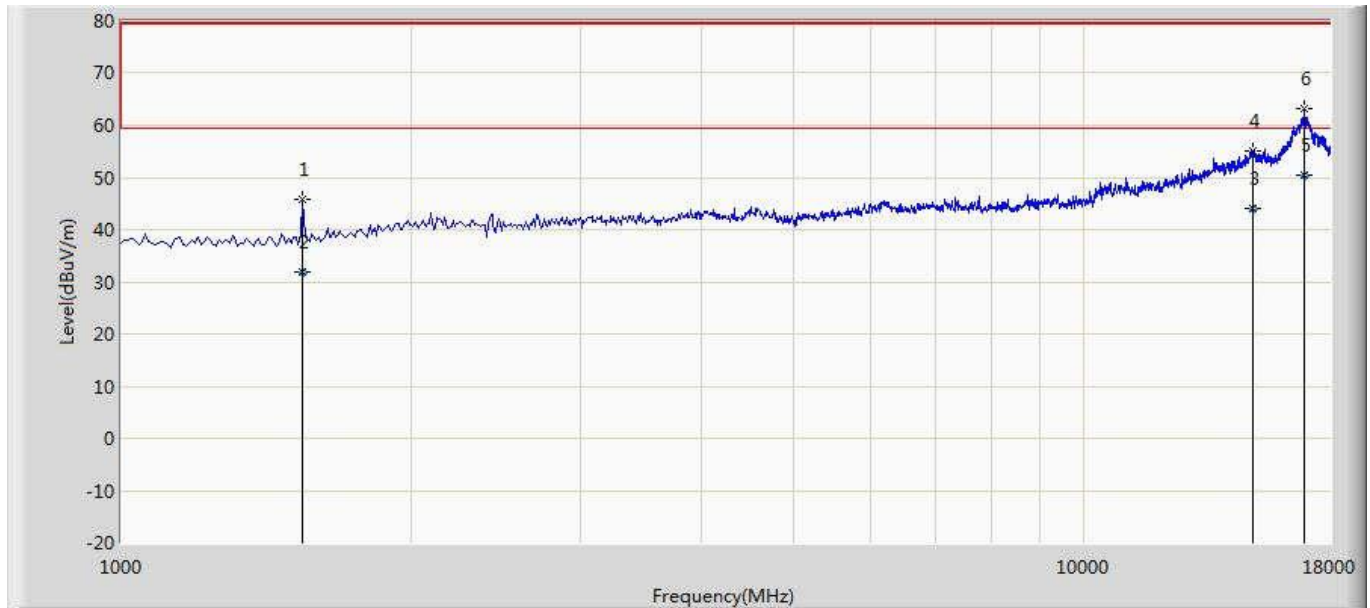
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		1544.000	57.082	59.463	-22.418	79.500	28.726	2.969	34.076	100	125	PK
2		1544.126	35.884	38.264	-23.616	59.500	28.727	2.969	34.076	100	125	AV
3		14991.000	55.029	34.890	-24.471	79.500	40.986	13.182	34.029	100	169	PK
4		14991.268	41.384	21.236	-18.116	59.500	40.986	13.182	34.020	100	169	AV
5		16912.000	62.435	36.284	-17.065	79.500	41.235	17.795	32.879	100	218	PK
6	*	16912.028	46.387	20.236	-13.113	59.500	41.235	17.795	32.879	100	218	AV

Note:

1. " * ", means this data is the worst emission level.

2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Engineer: ADELE	
Site: AC5	Time: 2019/12/26
Limit: FCC_Part15.109_RE(3m)_ClassA	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		1544.000	45.700	48.081	-33.800	79.500	28.726	2.969	34.076	100	260	PK
2		1544.265	31.856	34.235	-27.644	59.500	28.728	2.969	34.076	100	260	AV
3		14965.265	44.014	23.265	-15.486	59.500	40.944	13.160	33.355	100	168	AV
4		14965.500	55.154	34.414	-24.346	79.500	40.944	13.160	33.364	100	168	PK
5	*	16920.249	50.433	24.265	-9.067	59.500	41.232	17.845	32.909	100	129	AV
6		16920.500	63.183	37.015	-16.317	79.500	41.231	17.846	32.910	100	129	PK

Note:

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

5. Attachment

Remark: The test photo and EUT photo please see 21C0756R-IT-US-P02V01

_____ The End _____