FCC Test Report

Product Name : Rangefinder
Model No. : Pandar64, Pandar40 2.0, Pandar20A, Pandar20B

Applicant : Hesai Photonics Technology Co.,Ltd.
Address : Rm. J385, Building 6, No. 1288, Yecheng Rd.,
Jiading Dist., Shanghai City, China

Date of Receipt : Jan. 14, 2019
Test Date : Jan. 21, 2019 ~ Mar. 18, 2019
Issued Date : Mar. 26, 2019
Report No. : 1912016E-IT-US-P01V01
Report Version : V1.0

Issued Date : Mar. 26, 2019
Report No. : 1912016E-IT-US-P01V01

Product Name	:	Rangefinder
Applicant	:	Hesai Photonics Technology Co.,Ltd.
Address	:	Rm. J385, Building 6, No. 1288, Yecheng Rd., Jiading Dist., Shanghai City, China
Manufacturer	:	Hesai Photonics Technology Co., Ltd.
Address	:	Building B, 468 Xinlai Rd, Xuhang Town, Jiading District, Shanghai City, China
Model No.	:	Pandar64, Pandar40 2.0, Pandar20A, Pandar20B
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: 2017 Class A 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

Documented By : Joanna Dai

(Project Officer: Joanna Dai)

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(Supervisor: Black Hao)

Approved By : Jerry Pan

(Manager: Jerry Pan)

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1. General Information

1.1. EUT Description

Product Name	Rangefinder
Model No.	Pandar64, Pandar40 2.0, Pandar20A, Pandar20B
Brand Name	HESAI

1. Pandar40 2.0、Pandar20A and Pandar20B are share a common structure with Pandar64. They all use the same laser emitter and optical design.
2. The energy of single laser pulse is the same for these products.
3. The main difference is that Pandar40 2.0 removes 24 laser channels and Pandar20A, Pandar20B removes 44 laser channels compared to Pandar64. Pandar20A and Pandar20B both have 20 emitting channels but their distribution (i.e. the emitting angles) are different. Laser emitting cycle remains unchanged while the unlighted laser channels still occupy the period. Another, Pandar64 is the appearance such as fin style heat-sink on top cover and mounting holes on the bottom. Pandar40 2.0、Pandar20A and Pandar20B have no fin style heat-sink on top cover.

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:

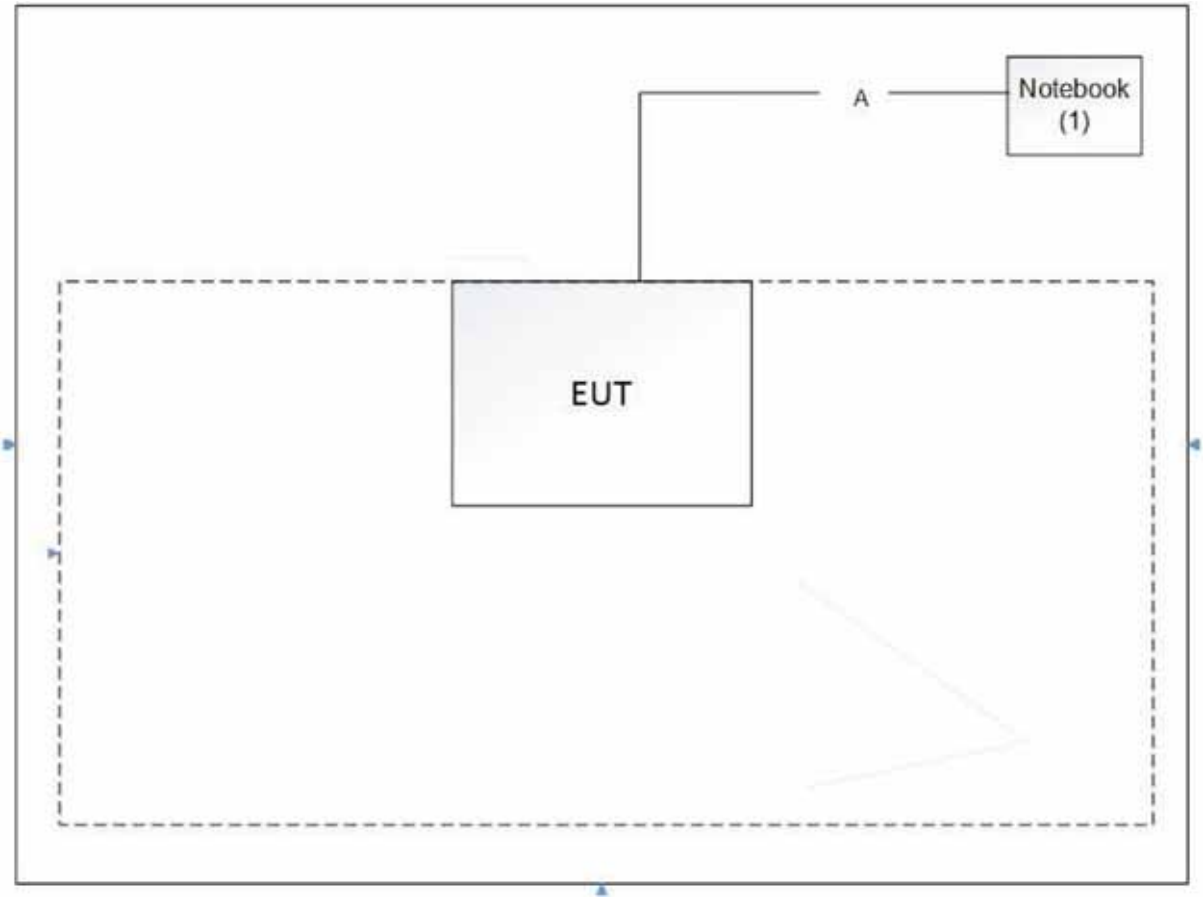
Pre Test Mode
Mode 1: Normal working (Model Pandar64)
Mode 2: Normal working (Model Pandar40 2.0)
Mode 3: Normal working (Model Pandar20A)
Mode 4: Normal working (Model Pandar20B)
Final Test Mode
Mode 1: Normal working (Model Pandar64)
Mode 2: Normal working (Model Pandar40 2.0)
Mode 3: Normal working (Model Pandar20A)
Mode 4: Normal working (Model Pandar20B)

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	Notebook	DELL	Latitude 3450	DTK1042	Power by adapter

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal Cable Description
A	LAN Cable	Non-Shielded, >10m

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	2018.06.09	2019.06.09
Two-Line V-Network	R&S	ENV216	101044	2018.06.09	2019.06.09
Current Probe	R&S	EZ-17	100678	2019.03.07	2020.03.07
50ohm Termination	SHX	TF2	07081402	2018.09.08	2019.09.08
50ohm Termination	SHX	TF2	07081403	2018.09.08	2019.09.08
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Coaxial Cable	Suhner	RG 223	TR1-C1	2018.04.26	2019.04.26
Temperature/Humidity Meter	Ruitesi	RTS-8S	TR1-TH	2018.10.24	2019.10.24
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	2018.09.08	2019.09.08
EMI Test Receiver	R&S	ESCI	100726	2019.03.18	2020.03.18
Preamplifier	Quietek	AP-025C	CHM-0602008	2018.04.10	2019.04.10
Preamplifier	Quietek	AP-025C	CHM-0503006	2018.04.10	2019.04.10
Bilog Antenna	Schaffner	CBL6112B	2931	2018.05.18	2019.05.18
Bilog Antenna	Schaffner	CBL6112B	2933	2018.05.18	2019.05.18
Coaxial Cable	Huber+Suhner	RG 214_U	AC1-L	2018.10.10	2019.10.10
Coaxial Cable	Huber+Suhner	RG 214_U	AC1-R	2018.10.10	2019.10.10
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC1-TH	2018.10.24	2019.10.24
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	2018.06.09	2019.06.09
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2019.02.28	2020.02.28
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC2-TH	2018.10.24	2019.10.24
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	2018.09.08	2019.09.08
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2018.06.09	2019.06.09
Coaxial Cable	Huber+Suhner	RG 214	AC3-C	2019.02.28	2020.02.28
Temperature/Humidity Meter	Ruitesi	RTS-8S	AC3-TH	2018.10.24	2019.10.24
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	2018.06.09	2019.06.09
low Noise Amplifier	BXT	NA2651D	LNA17040209	2018.07.16	2019.07.16

DRG Horn Antenna	ETS-Lindgren	3117	00167055	2018.06.09	2019.06.09
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2019.02.28	2020.02.28
Pre-Amplifier	Chengyi	EMC184045SE	980263	2018.09.08	2019.09.08
Coaxial Cable	ROSENBERGER	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	2018.10.24	2019.10.24
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

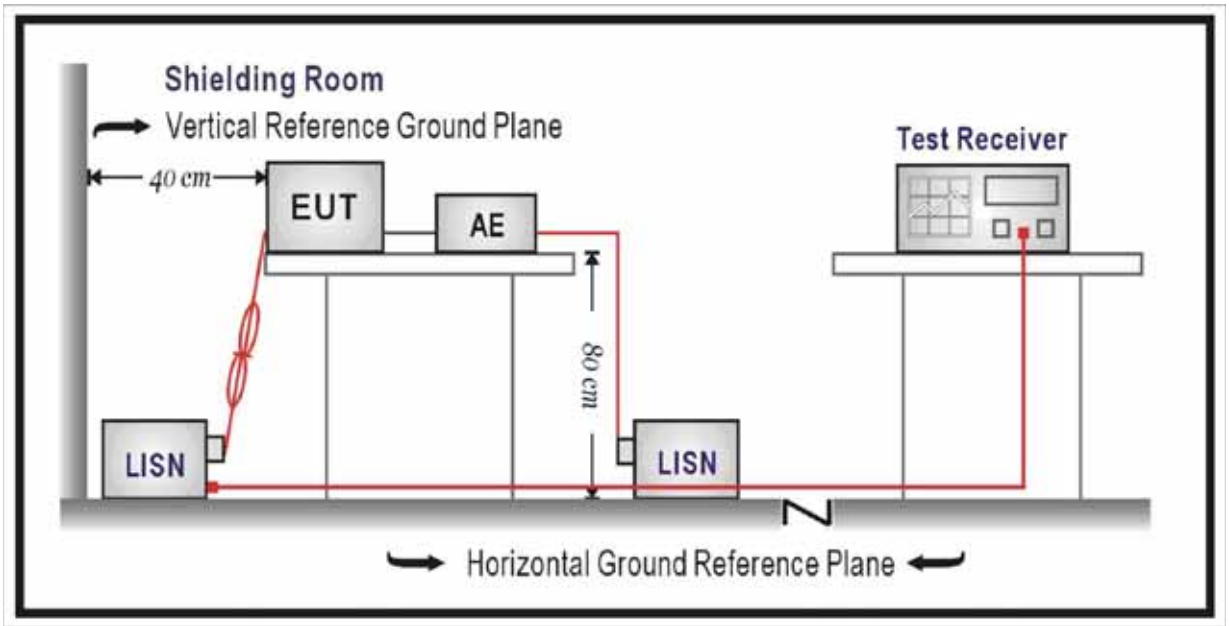
Conducted disturbance / TR1
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 2.80dB 150kHz~30MHz: 2.40dB
Radiated disturbance / AC1
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 3.50 dB 300MHz~1GHz: 3.20 dB 1GHz~18GHz: 4.80 dB Vertical: 30MHz~300MHz: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

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 50Ωtermination. (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.

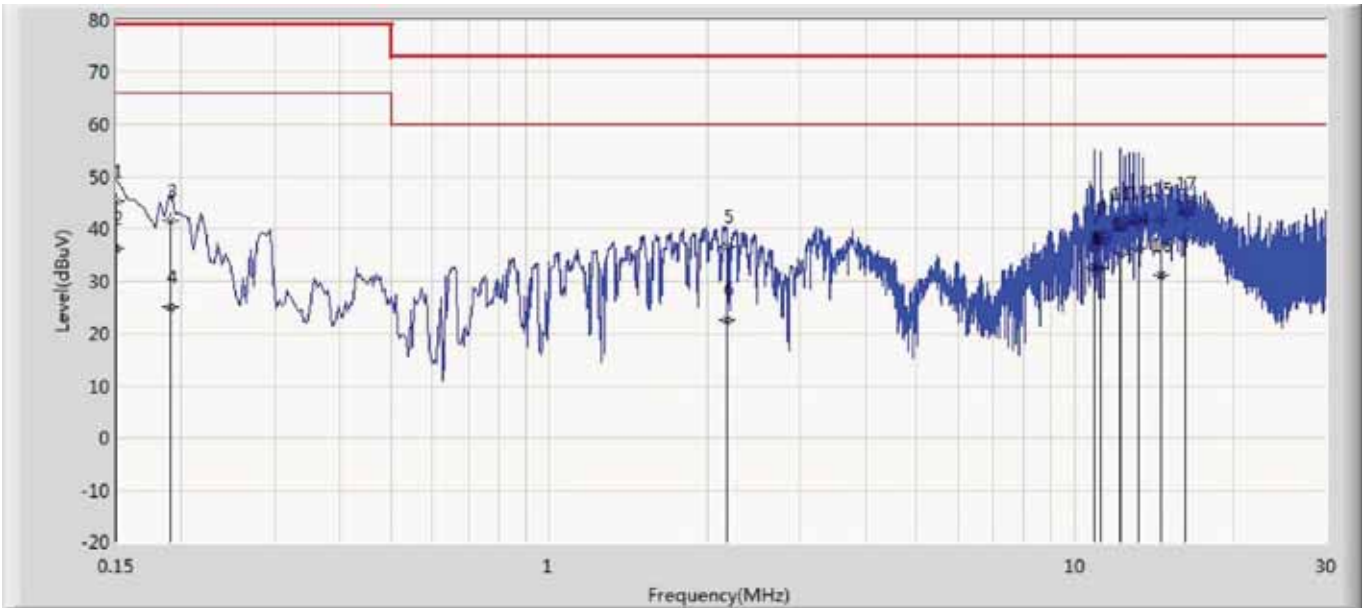
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

No deviation.

3.6. Test Result

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	



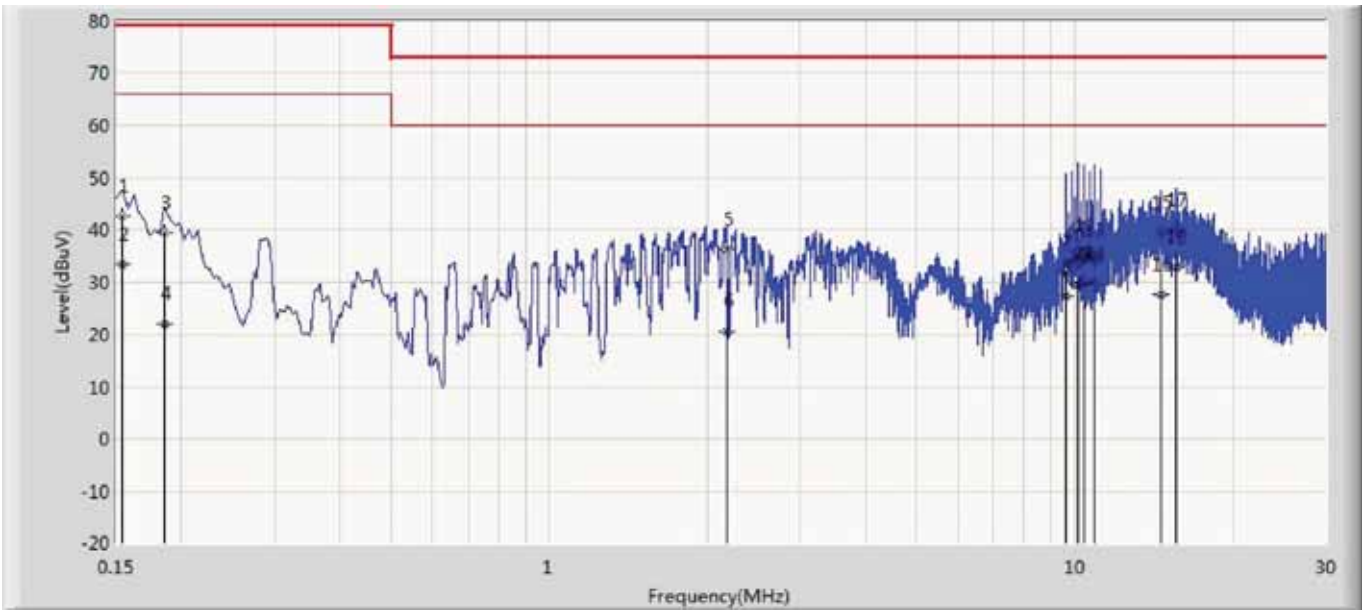
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	45.163	35.524	-33.837	79.000	9.610	0.029	0.000	QP
2		0.150	36.260	26.622	-29.740	66.000	9.610	0.029	0.000	AV
3		0.190	41.552	31.922	-37.448	79.000	9.602	0.028	0.000	QP
4		0.190	25.010	15.380	-40.990	66.000	9.602	0.028	0.000	AV
5		2.178	36.651	26.946	-36.349	73.000	9.613	0.092	0.000	QP
6		2.178	22.467	12.762	-37.533	60.000	9.613	0.092	0.000	AV
7		10.910	36.251	26.247	-36.749	73.000	9.793	0.210	0.000	QP
8		10.910	32.390	22.386	-27.610	60.000	9.793	0.210	0.000	AV
9		11.166	38.179	28.165	-34.821	73.000	9.800	0.213	0.000	QP
10		11.166	32.399	22.386	-27.601	60.000	9.800	0.213	0.000	AV
11		12.194	40.926	30.876	-32.074	73.000	9.827	0.223	0.000	QP
12		12.194	35.171	25.121	-24.829	60.000	9.827	0.223	0.000	AV
13		13.222	41.304	31.217	-31.696	73.000	9.854	0.233	0.000	QP
14		13.222	36.181	26.094	-23.819	60.000	9.854	0.233	0.000	AV
15		14.578	41.831	31.698	-31.169	73.000	9.889	0.245	0.000	QP

16		14.578	31.059	20.925	-28.941	60.000	9.889	0.245	0.000	AV
17		16.230	43.037	32.819	-29.963	73.000	9.959	0.259	0.000	QP
18	*	16.230	38.231	28.014	-21.769	60.000	9.959	0.259	0.000	AV

Note:

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 1	



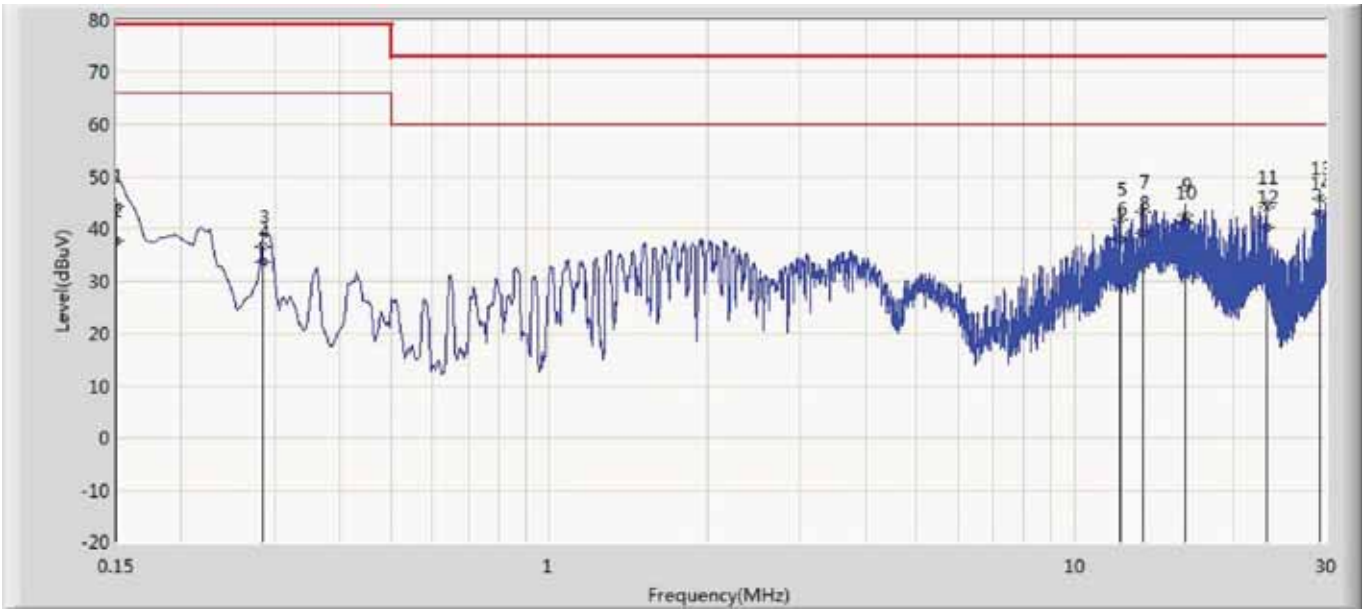
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	42.642	33.020	-36.358	79.000	9.593	0.029	0.000	QP
2		0.154	33.239	23.617	-32.761	66.000	9.593	0.029	0.000	AV
3		0.186	39.382	29.757	-39.618	79.000	9.597	0.028	0.000	QP
4		0.186	22.114	12.489	-43.886	66.000	9.597	0.028	0.000	AV
5		2.178	36.298	26.594	-36.702	73.000	9.612	0.092	0.000	QP
6		2.178	20.448	10.744	-39.552	60.000	9.612	0.092	0.000	AV
7		9.630	31.936	21.959	-41.064	73.000	9.779	0.198	0.000	QP
8		9.630	27.265	17.288	-32.735	60.000	9.779	0.198	0.000	AV
9		10.142	33.367	23.369	-39.633	73.000	9.795	0.203	0.000	QP
10		10.142	29.166	19.168	-30.834	60.000	9.795	0.203	0.000	AV
11		10.398	35.073	25.064	-37.927	73.000	9.803	0.205	0.000	QP
12		10.398	29.733	19.725	-30.267	60.000	9.803	0.205	0.000	AV
13		10.910	34.266	24.235	-38.734	73.000	9.820	0.210	0.000	QP
14		10.910	29.572	19.541	-30.428	60.000	9.820	0.210	0.000	AV
15		14.582	39.374	29.183	-33.626	73.000	9.946	0.245	0.000	QP
16		14.582	27.677	17.487	-32.323	60.000	9.946	0.245	0.000	AV

17		15.618	39.990	29.749	-33.010	73.000	9.987	0.253	0.000	QP
18	*	15.618	32.763	22.523	-27.237	60.000	9.987	0.253	0.000	AV

Note:

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	



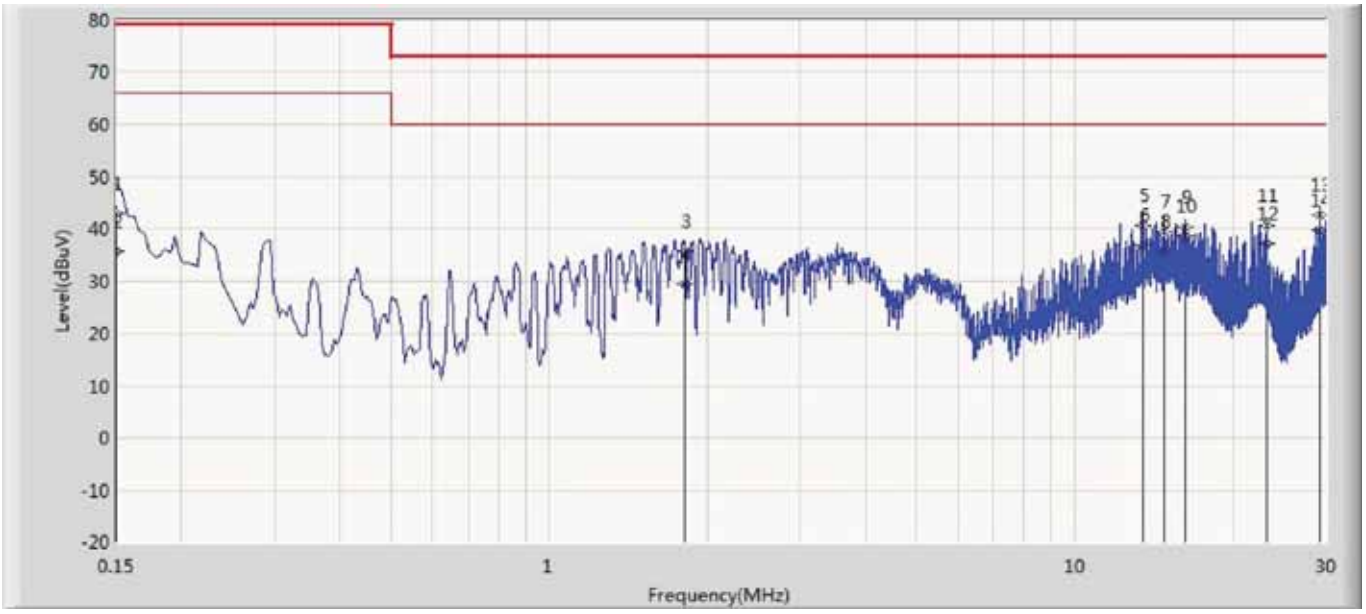
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	44.203	34.564	-34.797	79.000	9.610	0.029	0.000	QP
2		0.150	37.605	27.966	-28.395	66.000	9.610	0.029	0.000	AV
3		0.286	36.519	26.886	-42.481	79.000	9.600	0.034	0.000	QP
4		0.286	33.687	24.053	-32.313	66.000	9.600	0.034	0.000	AV
5		12.198	41.764	31.714	-31.236	73.000	9.827	0.223	0.000	QP
6		12.198	37.827	27.776	-22.173	60.000	9.827	0.223	0.000	AV
7		13.478	43.231	33.136	-29.769	73.000	9.860	0.235	0.000	QP
8		13.478	39.142	29.047	-20.858	60.000	9.860	0.235	0.000	AV
9		16.230	42.694	32.476	-30.306	73.000	9.959	0.259	0.000	QP
10		16.230	41.102	30.884	-18.898	60.000	9.959	0.259	0.000	AV
11		23.130	43.931	33.273	-29.069	73.000	10.347	0.311	0.000	QP
12		23.130	40.318	29.660	-19.682	60.000	10.347	0.311	0.000	AV
13		29.234	45.906	35.161	-27.094	73.000	10.394	0.352	0.000	QP
14	*	29.234	43.021	32.275	-16.979	60.000	10.394	0.352	0.000	AV

Note:

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

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 2	



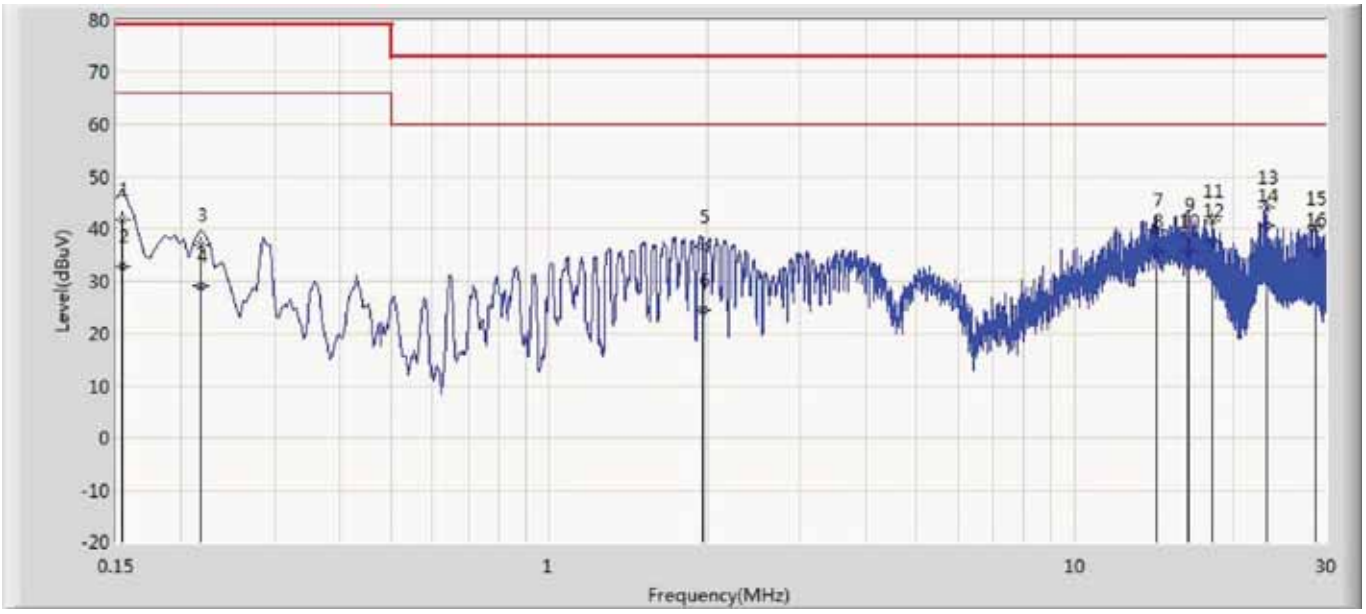
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	42.861	33.238	-36.139	79.000	9.594	0.029	0.000	QP
2		0.150	35.631	26.008	-30.369	66.000	9.594	0.029	0.000	AV
3		1.810	35.578	25.890	-37.422	73.000	9.606	0.083	0.000	QP
4		1.810	29.145	19.457	-30.855	60.000	9.606	0.083	0.000	AV
5		13.482	40.468	30.325	-32.532	73.000	9.908	0.235	0.000	QP
6		13.482	36.798	26.655	-23.202	60.000	9.908	0.235	0.000	AV
7		14.762	39.460	29.262	-33.540	73.000	9.952	0.246	0.000	QP
8		14.762	35.609	25.411	-24.391	60.000	9.952	0.246	0.000	AV
9		16.226	40.285	30.012	-32.715	73.000	10.014	0.259	0.000	QP
10		16.226	38.589	28.316	-21.411	60.000	10.014	0.259	0.000	AV
11		23.130	40.622	29.830	-32.378	73.000	10.481	0.311	0.000	QP
12		23.130	37.067	26.275	-22.933	60.000	10.481	0.311	0.000	AV
13		29.234	42.684	31.723	-30.316	73.000	10.609	0.352	0.000	QP
14	*	29.234	39.736	28.775	-20.264	60.000	10.609	0.352	0.000	AV

Note:

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

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 3	

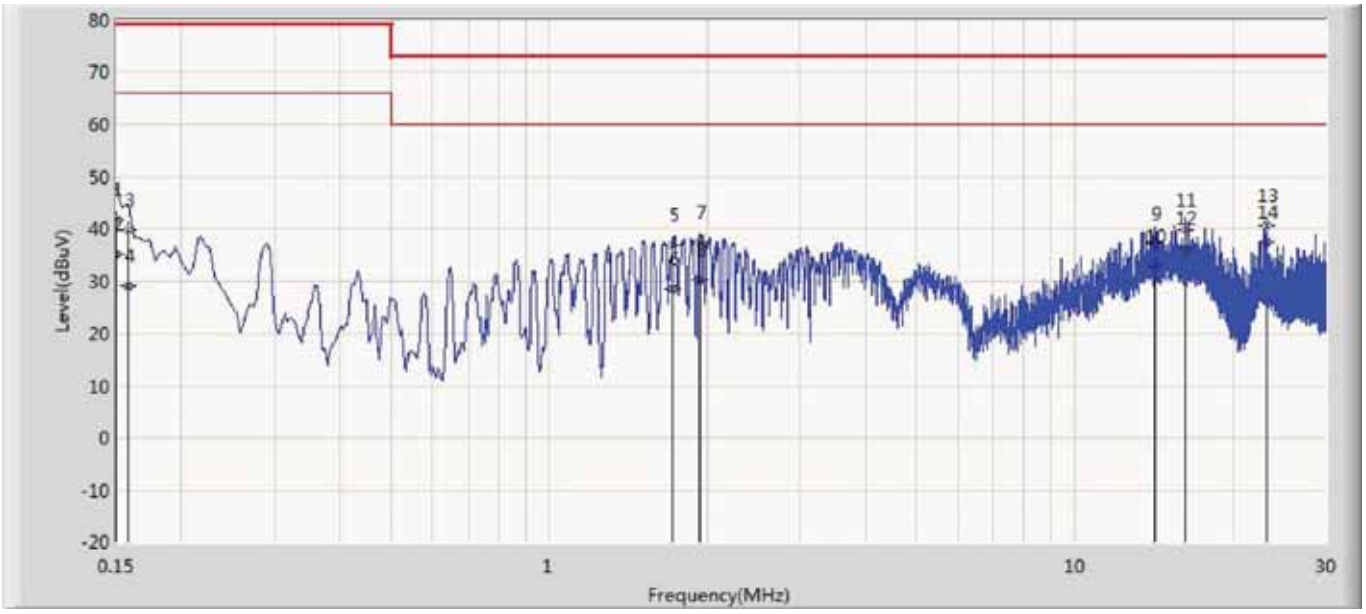


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.154	41.740	32.118	-37.260	79.000	9.593	0.029	0.000	QP
2		0.154	32.715	23.094	-33.285	66.000	9.593	0.029	0.000	AV
3		0.218	36.837	27.209	-42.163	79.000	9.599	0.029	0.000	QP
4		0.218	28.901	19.273	-37.099	66.000	9.599	0.029	0.000	AV
5		1.954	36.504	26.809	-36.496	73.000	9.609	0.086	0.000	QP
6		1.954	24.428	14.733	-35.572	60.000	9.609	0.086	0.000	AV
7		14.274	39.777	29.600	-33.223	73.000	9.936	0.242	0.000	QP
8		14.274	35.742	25.564	-24.258	60.000	9.936	0.242	0.000	AV
9		16.470	38.861	28.576	-34.139	73.000	10.025	0.260	0.000	QP
10		16.470	35.536	25.251	-24.464	60.000	10.025	0.260	0.000	AV
11		18.242	41.416	31.038	-31.584	73.000	10.103	0.275	0.000	QP
12		18.242	37.702	27.324	-22.298	60.000	10.103	0.275	0.000	AV
13		23.130	44.063	33.271	-28.937	73.000	10.481	0.311	0.000	QP
14	*	23.130	40.669	29.877	-19.331	60.000	10.481	0.311	0.000	AV
15		28.562	39.934	28.970	-33.066	73.000	10.617	0.347	0.000	QP
16		28.562	35.820	24.856	-24.180	60.000	10.617	0.347	0.000	AV

Note:

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 3	



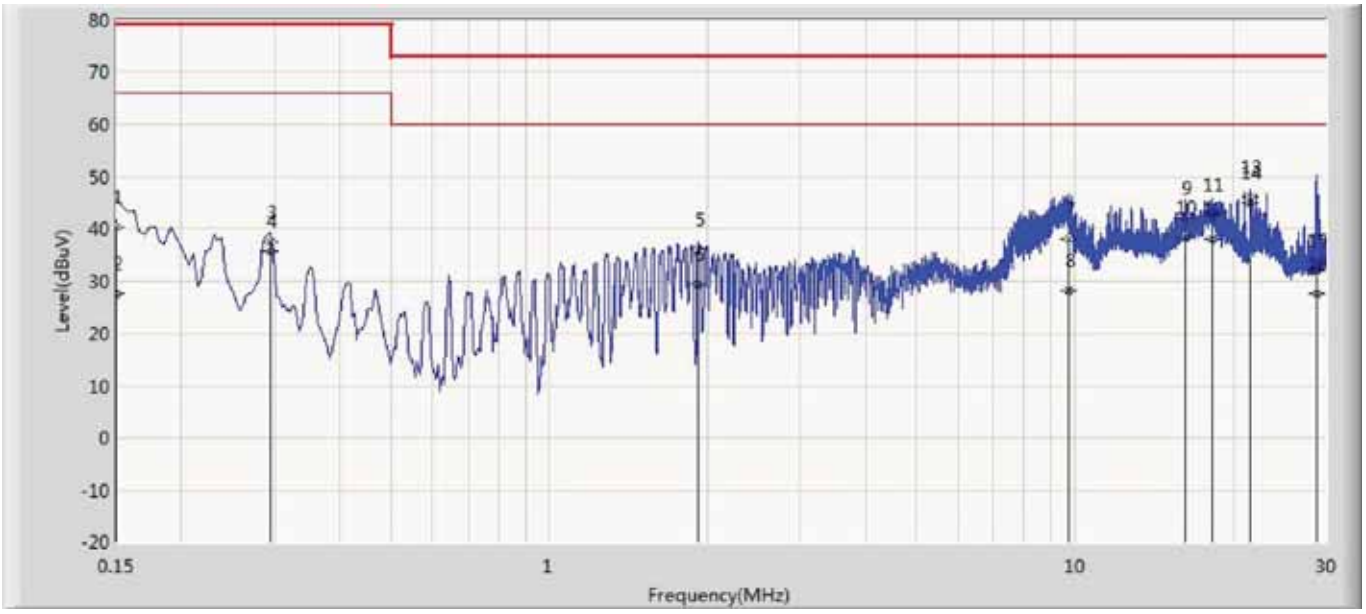
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	41.730	32.107	-37.270	79.000	9.594	0.029	0.000	QP
2		0.150	35.110	25.488	-30.890	66.000	9.594	0.029	0.000	AV
3		0.158	39.633	30.012	-39.367	79.000	9.592	0.029	0.000	QP
4		0.158	29.064	19.443	-36.936	66.000	9.592	0.029	0.000	AV
5		1.718	36.892	27.208	-36.108	73.000	9.604	0.080	0.000	QP
6		1.718	28.524	18.840	-31.476	60.000	9.604	0.080	0.000	AV
7		1.934	37.304	27.609	-35.696	73.000	9.609	0.086	0.000	QP
8		1.934	30.098	20.403	-29.902	60.000	9.609	0.086	0.000	AV
9		14.154	37.228	27.055	-35.772	73.000	9.932	0.241	0.000	QP
10		14.154	32.811	22.638	-27.189	60.000	9.932	0.241	0.000	AV
11		16.226	39.759	29.487	-33.241	73.000	10.014	0.259	0.000	QP
12		16.226	36.282	26.010	-23.718	60.000	10.014	0.259	0.000	AV
13		23.130	40.553	29.761	-32.447	73.000	10.481	0.311	0.000	QP
14	*	23.130	37.349	26.557	-22.651	60.000	10.481	0.311	0.000	AV

Note:

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

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 4	

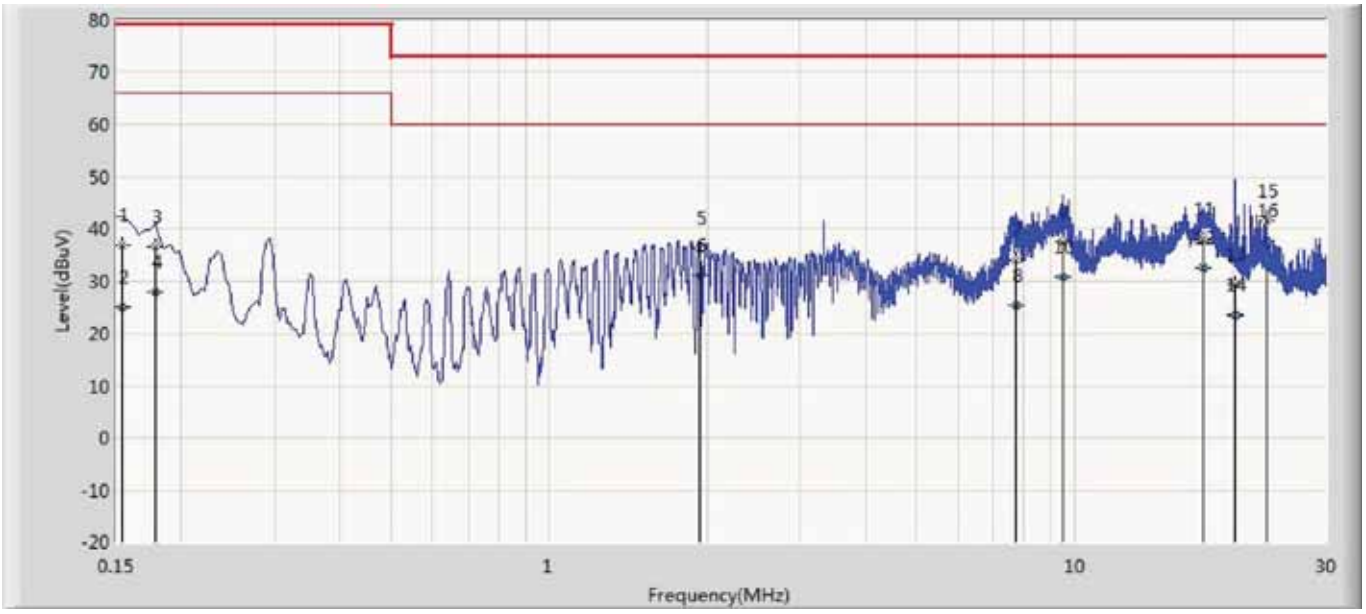


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.150	40.361	30.723	-38.639	79.000	9.610	0.029	0.000	QP
2		0.150	27.494	17.855	-38.506	66.000	9.610	0.029	0.000	AV
3		0.294	37.336	27.702	-41.664	79.000	9.600	0.034	0.000	QP
4		0.294	35.636	26.003	-30.364	66.000	9.600	0.034	0.000	AV
5		1.922	35.843	26.147	-37.157	73.000	9.610	0.085	0.000	QP
6		1.922	29.184	19.488	-30.816	60.000	9.610	0.085	0.000	AV
7		9.754	37.990	28.027	-35.010	73.000	9.764	0.198	0.000	QP
8		9.754	28.227	18.265	-31.773	60.000	9.764	0.198	0.000	AV
9		16.226	42.171	31.953	-30.829	73.000	9.959	0.259	0.000	QP
10		16.226	38.397	28.179	-21.603	60.000	9.959	0.259	0.000	AV
11		18.242	42.487	32.156	-30.513	73.000	10.056	0.275	0.000	QP
12		18.242	37.857	27.526	-22.143	60.000	10.056	0.275	0.000	AV
13		21.570	45.946	35.402	-27.054	73.000	10.244	0.300	0.000	QP
14	*	21.570	45.022	34.478	-14.978	60.000	10.244	0.300	0.000	AV
15		28.750	31.762	21.012	-41.238	73.000	10.403	0.348	0.000	QP
16		28.750	27.515	16.764	-32.485	60.000	10.403	0.348	0.000	AV

Note:

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

Engineer: Aaron	
Site: TR1	Time: 2019/01/21
Limit: FCC_Part15.107_CE_AC Power_ClassA	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 4	



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	36.800	27.178	-42.200	79.000	9.593	0.029	0.000	QP
2		0.154	24.944	15.322	-41.056	66.000	9.593	0.029	0.000	AV
3		0.178	36.505	26.881	-42.495	79.000	9.596	0.028	0.000	QP
4		0.178	27.876	18.252	-38.124	66.000	9.596	0.028	0.000	AV
5		1.930	36.173	26.479	-36.827	73.000	9.609	0.086	0.000	QP
6		1.930	31.152	21.458	-28.848	60.000	9.609	0.086	0.000	AV
7		7.730	33.780	23.881	-39.220	73.000	9.722	0.177	0.000	QP
8		7.730	25.264	15.365	-34.736	60.000	9.722	0.177	0.000	AV
9		9.450	37.510	27.541	-35.490	73.000	9.774	0.195	0.000	QP
10		9.450	30.856	20.887	-29.144	60.000	9.774	0.195	0.000	AV
11		17.514	37.976	27.636	-35.024	73.000	10.071	0.270	0.000	QP
12		17.514	32.423	22.083	-27.577	60.000	10.071	0.270	0.000	AV
13		20.210	29.243	18.753	-43.757	73.000	10.200	0.290	0.000	QP
14		20.210	23.364	12.874	-36.636	60.000	10.200	0.290	0.000	AV
15		23.130	41.547	30.755	-31.453	73.000	10.481	0.311	0.000	QP
16	*	23.130	37.586	26.794	-22.414	60.000	10.481	0.311	0.000	AV

Note:

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

3.7. Test Photograph

Test Mode: Mode 1-4

Description: Front View of Conducted disturbance Test Setup

Test Mode: Mode 1-4

Description: Side View of Conducted disturbance Test Setup

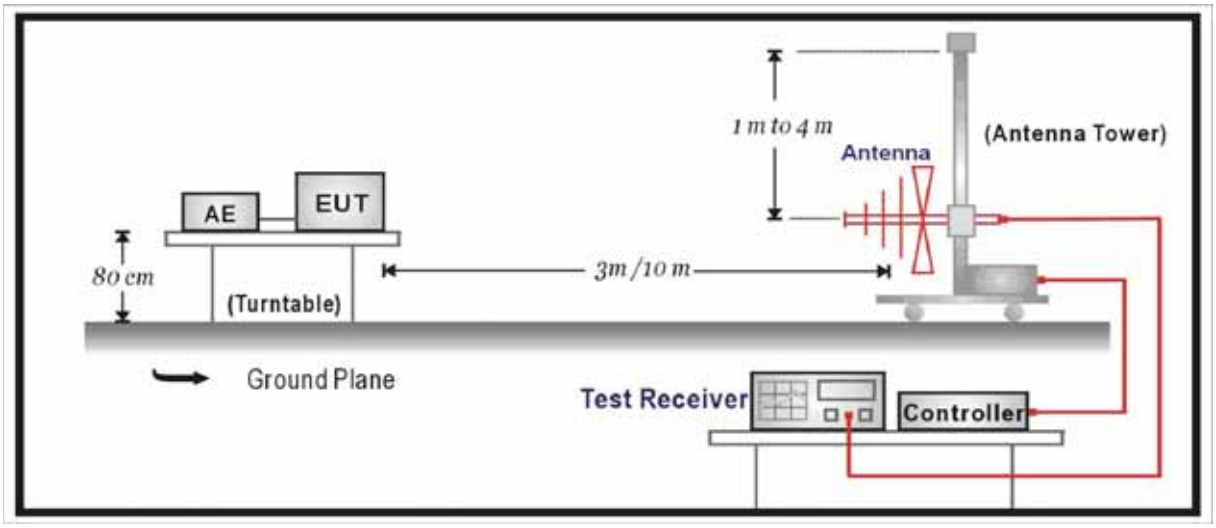
4. Radiated disturbance

4.1. Test Specification

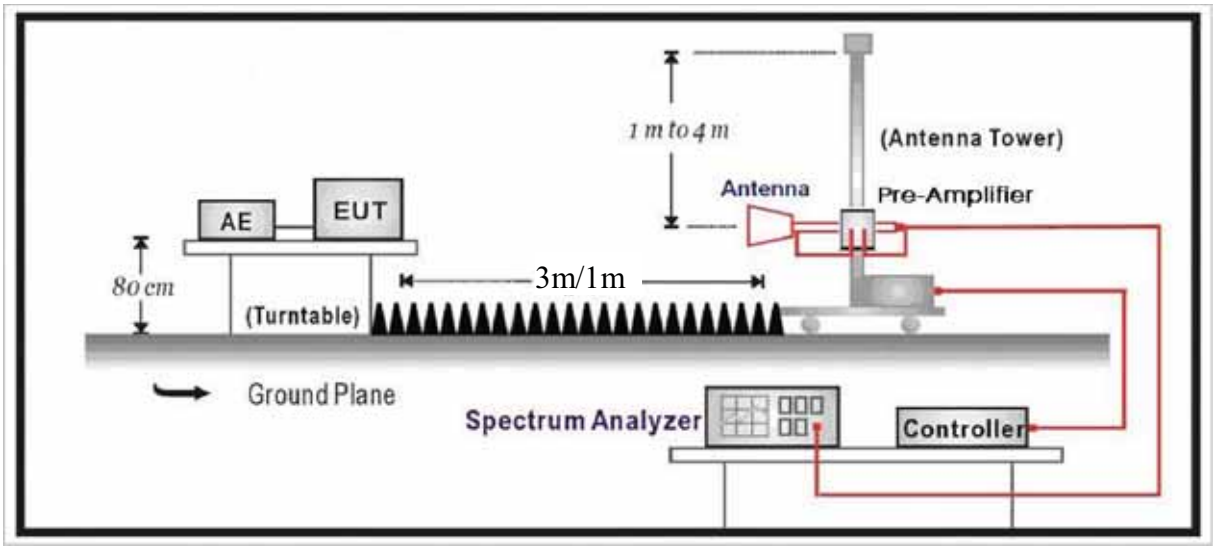
According to Standard: FCC Part 15.109 Class A, ANSI C63.4

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(μV/m)
18000-40000	63.5
NOTE: The lower limit shall apply at the transition frequency.	

4.4. Test Procedure

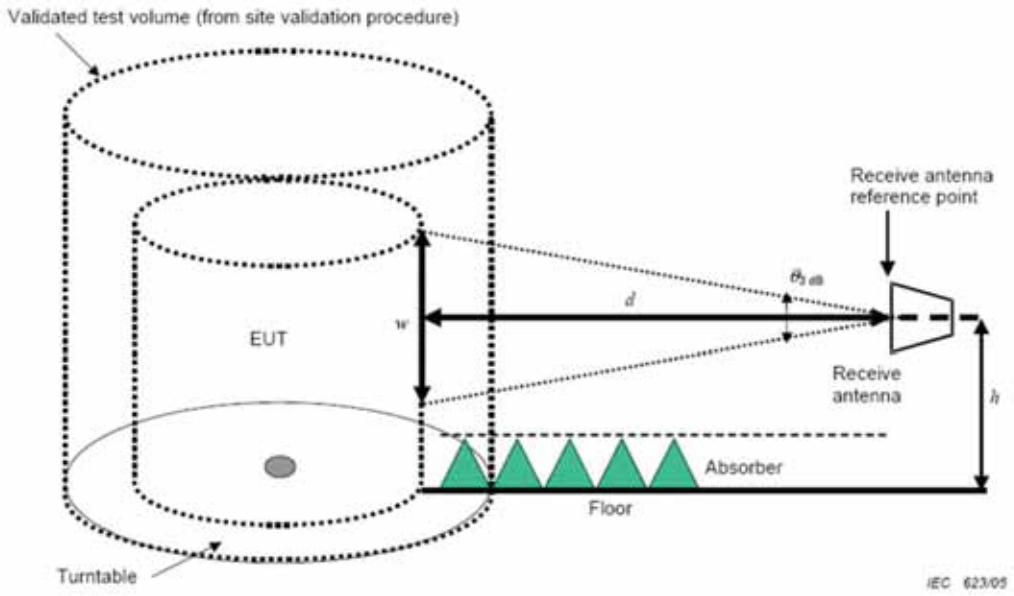
The EUT and its simulators are placed on a turntable which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and 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 8.3.3of 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 aremotely 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.

θ 3 dB: The minimum 3 dB beamwidth of the receive antenna at each frequency of interest. θ3 dB is the minimum of both the E-plane and H-plane values at each frequency. θ 3dB 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 θ 3 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:

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

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

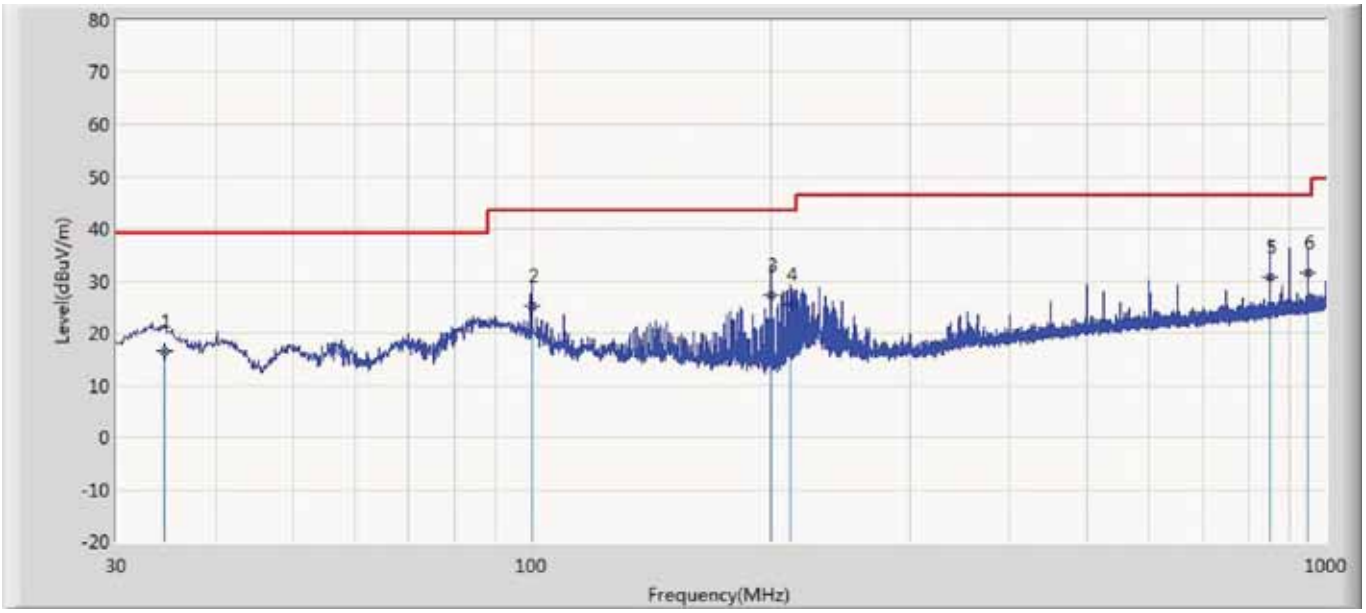
Note: The antenna's moving up and down is determined by ω value for above 1GHz, to ensure that the acceptable range of the testing antenna can cover the whole range of EUT.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Engineer: Canon	
Site: AC1	Time: 2019/01/21
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 with core	

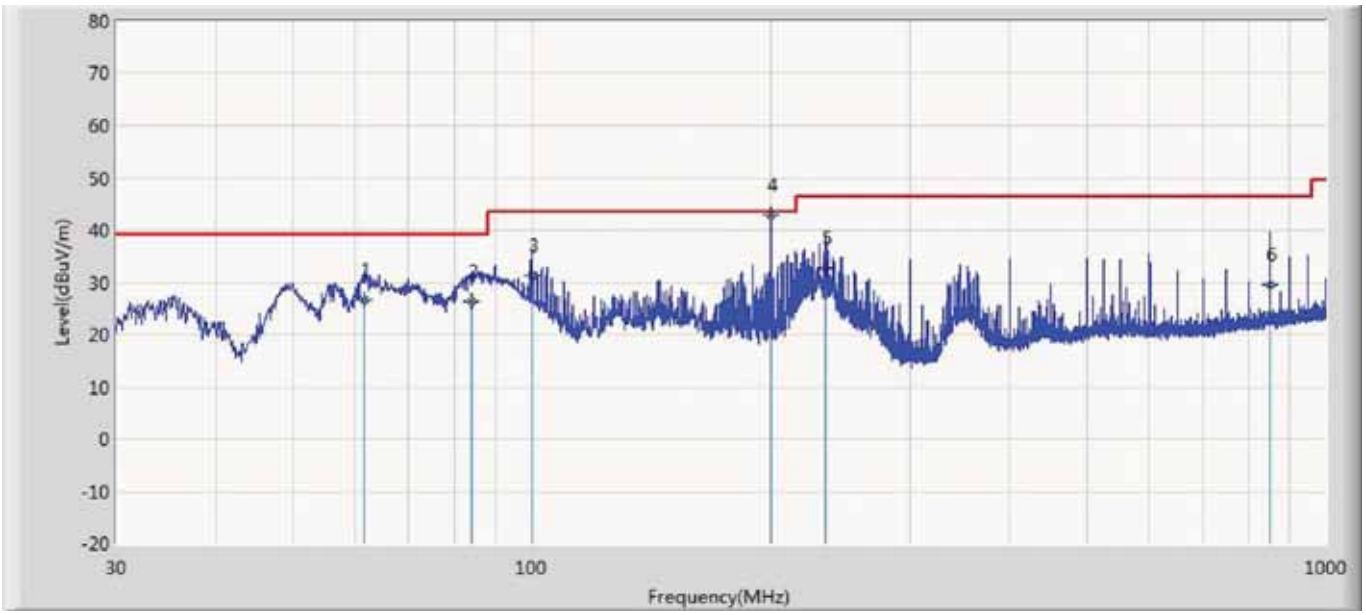


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		34.486	16.473	22.165	-22.527	39.000	15.552	1.037	22.281	100	165	QP
2		99.961	25.189	35.156	-18.311	43.500	10.485	1.855	22.306	100	52	QP
3		199.992	27.198	37.666	-16.302	43.500	9.045	2.737	22.251	200	192	QP
4		211.511	25.536	35.561	-17.964	43.500	9.364	2.828	22.217	200	116	QP
5		850.014	30.607	24.611	-15.793	46.400	20.374	6.486	20.864	100	261	QP
6	*	950.045	31.701	24.611	-14.699	46.400	21.057	6.957	20.924	200	162	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
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 with core	

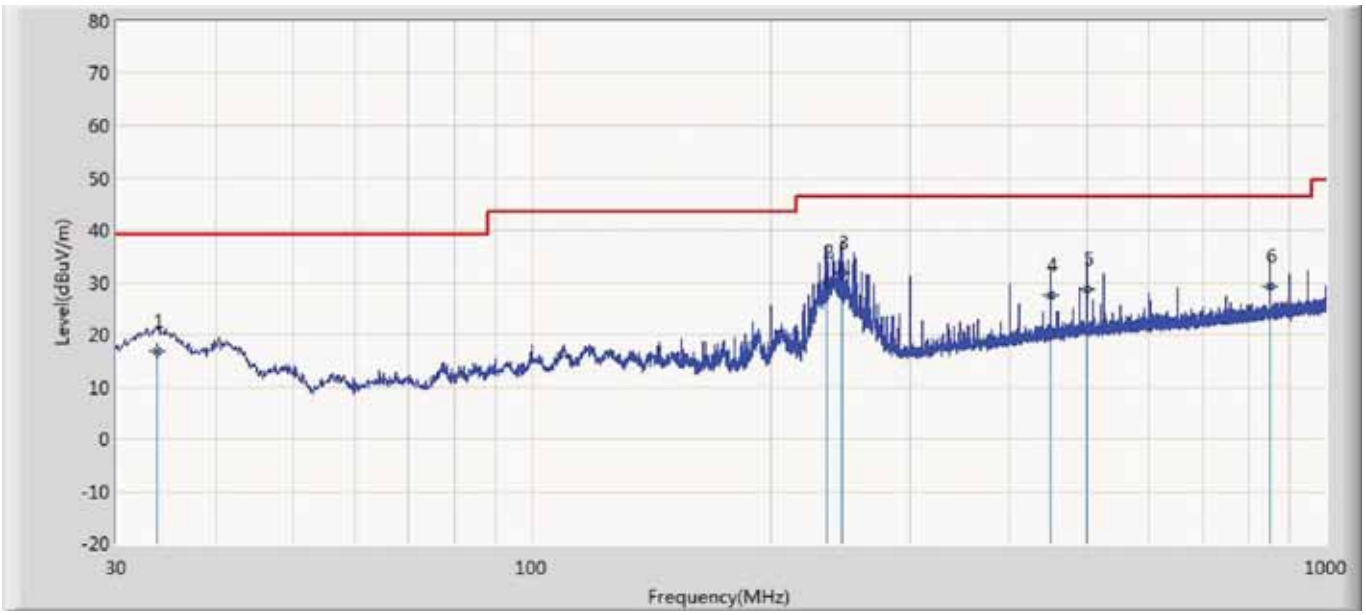


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		61.646	26.665	43.106	-12.335	39.000	5.344	1.587	23.372	100	162	QP
2		84.099	26.369	40.155	-12.631	39.000	7.702	1.876	23.364	200	169	QP
3		99.961	31.258	42.161	-12.242	43.500	10.408	2.066	23.377	100	41	QP
4	*	199.999	43.036	53.500	-0.464	43.500	9.301	3.047	22.812	100	7	QP
5		234.428	32.807	42.611	-13.593	46.400	10.201	3.337	23.342	200	192	QP
6		850.014	29.574	24.621	-16.826	46.400	20.344	7.195	22.586	200	162	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
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 with core	

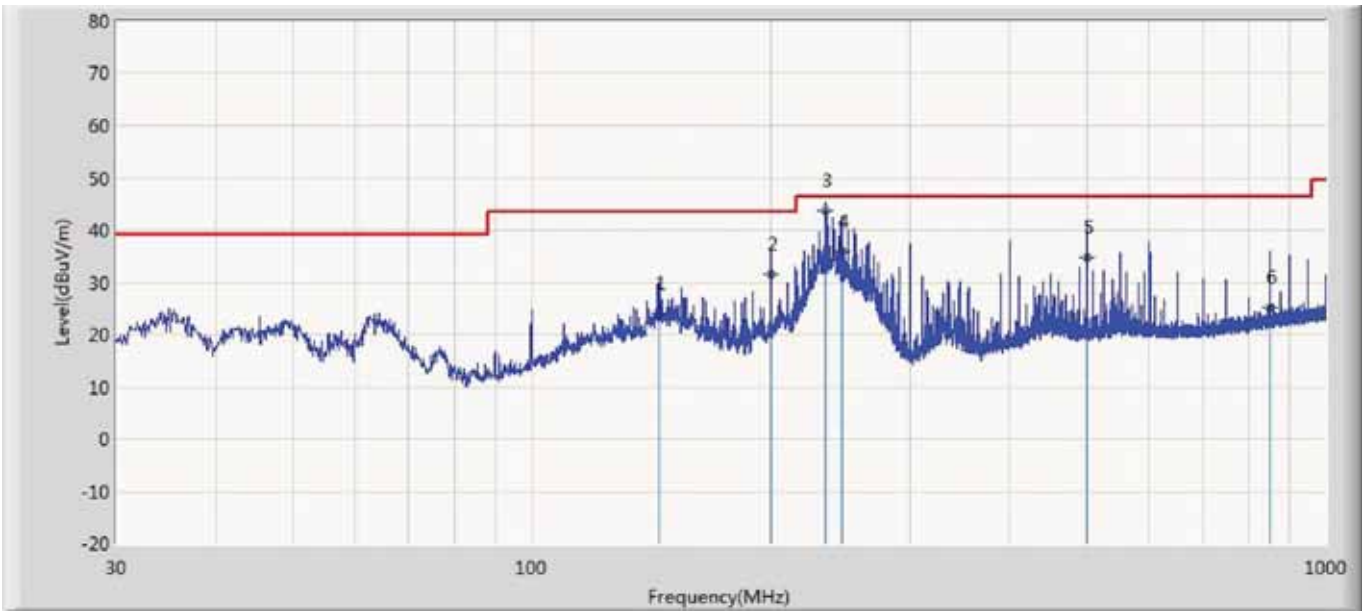


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		33.759	16.853	22.156	-22.147	39.000	15.933	1.023	22.259	100	162	QP
2		235.519	30.247	39.122	-16.153	46.400	10.318	3.008	22.201	200	142	QP
3	*	245.583	31.842	40.152	-14.558	46.400	10.762	3.080	22.153	100	145	QP
4		450.010	27.495	28.162	-18.905	46.400	16.683	4.399	21.749	100	291	QP
5		499.965	28.732	28.155	-17.668	46.400	17.562	4.685	21.670	100	162	QP
6		850.014	29.162	23.166	-17.238	46.400	20.374	6.486	20.864	200	308	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
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 with core	

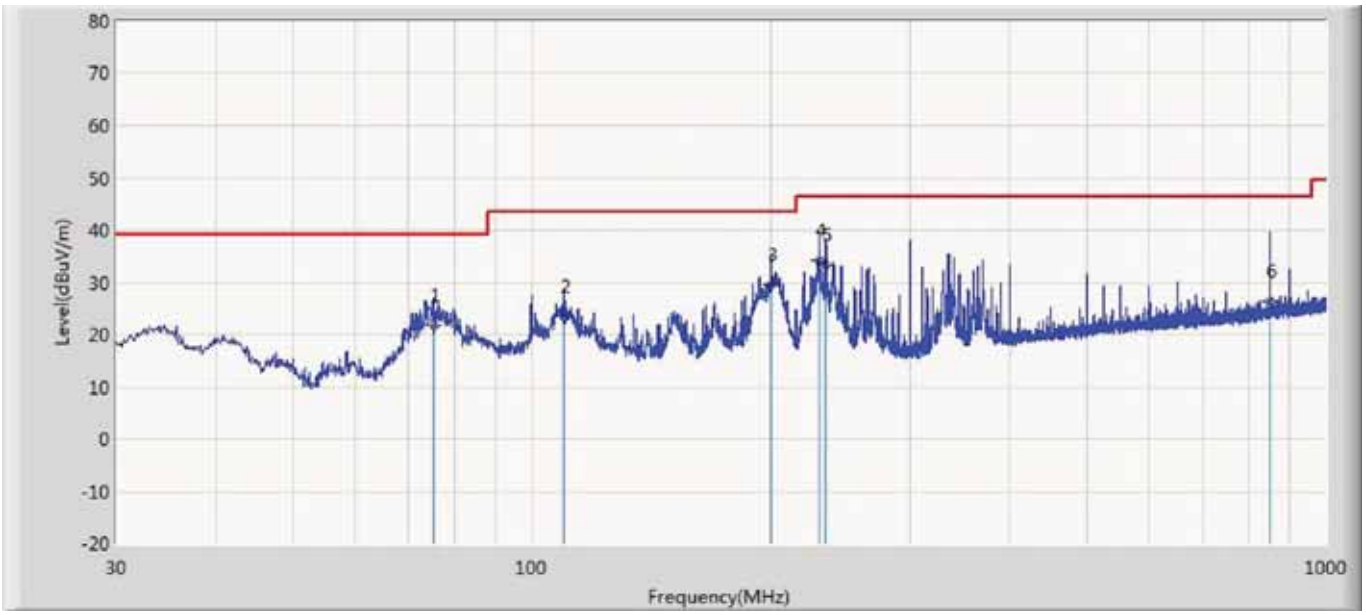


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		144.460	24.111	35.155	-19.389	43.500	9.812	2.532	23.388	200	112	QP
2		199.992	31.582	43.232	-11.918	43.500	8.674	3.046	23.371	200	126	QP
3	*	234.443	43.826	52.700	-2.574	46.400	10.575	3.337	22.786	100	345	QP
4		245.583	35.912	45.161	-10.488	46.400	10.653	3.425	23.327	100	261	QP
5		499.965	34.682	35.162	-11.718	46.400	17.316	5.204	23.000	100	216	QP
6		850.014	25.108	20.155	-21.292	46.400	20.344	7.195	22.586	100	41	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2931(30-1000MHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 3 without core	

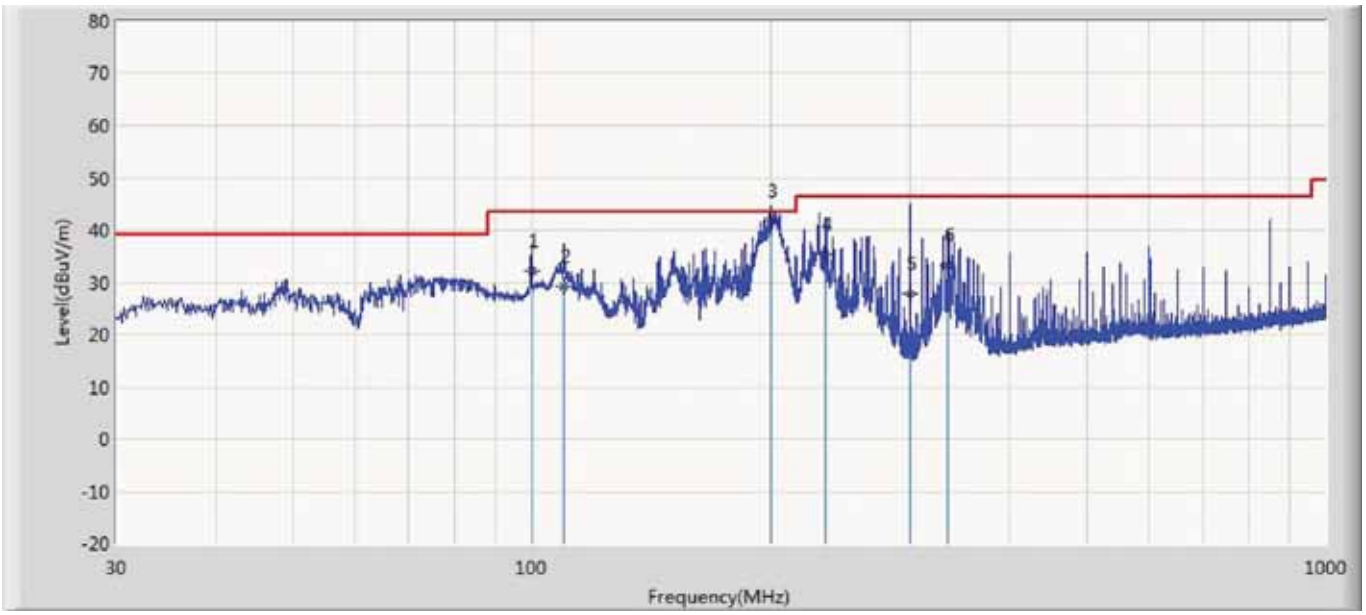


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		75.226	21.706	36.156	-17.294	39.000	6.281	1.580	22.311	100	165	QP
2		110.025	23.401	33.165	-20.099	43.500	10.592	1.954	22.309	100	132	QP
3		199.992	29.689	40.157	-13.811	43.500	9.045	2.737	22.251	200	41	QP
4	*	229.941	34.152	43.165	-12.248	46.400	10.223	2.967	22.203	100	145	QP
5		234.428	33.302	42.166	-13.098	46.400	10.299	3.003	22.166	200	281	QP
6		850.014	26.451	20.455	-19.949	46.400	20.374	6.486	20.864	100	162	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2933(30-1000MHz)	Polarity: Vertical
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 3 without core	

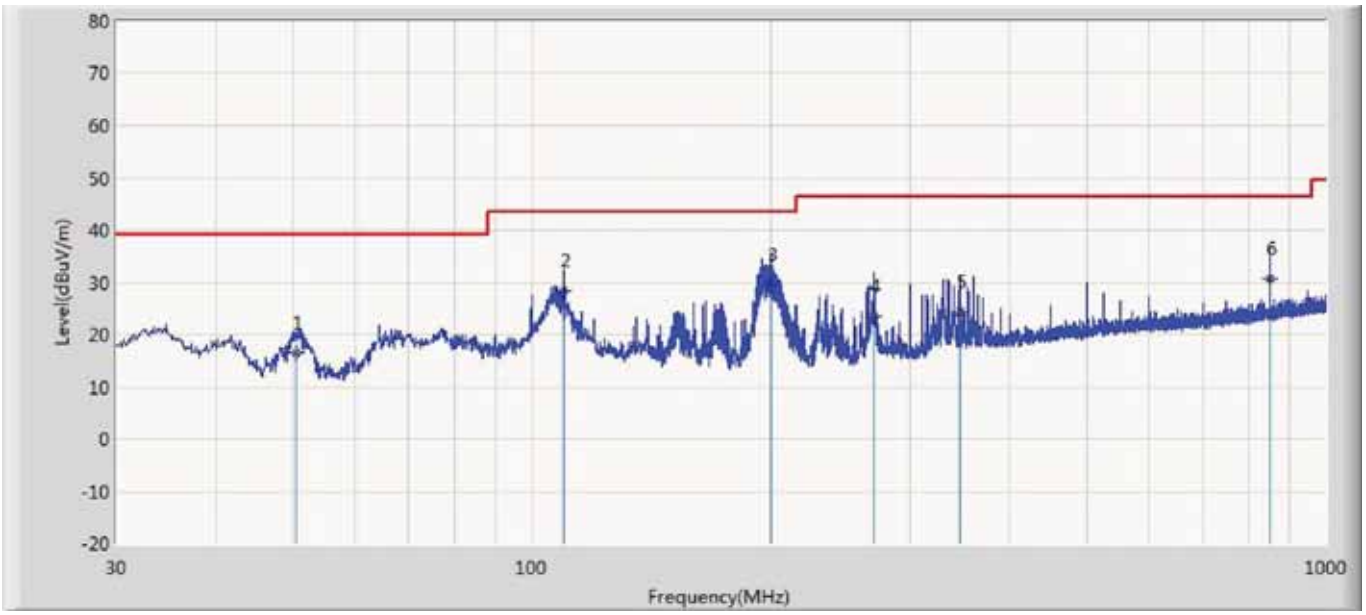


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		99.961	32.222	43.125	-11.278	43.500	10.408	2.066	23.377	100	161	QP
2		110.025	29.211	40.156	-14.289	43.500	10.281	2.182	23.408	100	162	QP
3	*	199.998	41.650	53.300	-1.850	43.500	8.675	3.047	23.371	100	157	QP
4		234.428	35.351	45.155	-11.049	46.400	10.201	3.337	23.342	200	194	QP
5		300.024	27.913	34.165	-18.487	46.400	13.186	3.842	23.280	100	165	QP
6		334.459	33.193	38.155	-13.207	46.400	14.153	4.100	23.215	200	46	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2931(30-1000MHz)	Polarity: Horizontal
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 4 without core	

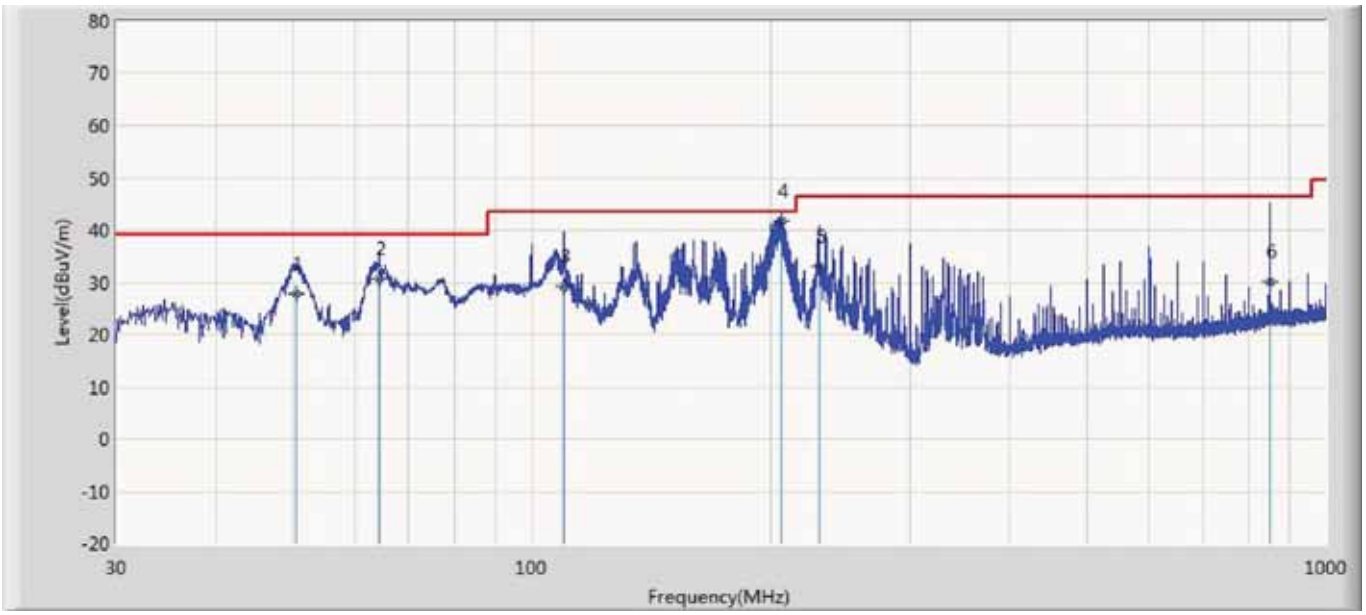


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		50.612	16.619	30.152	-22.381	39.000	7.470	1.278	22.281	200	196	QP
2		109.904	28.388	38.155	-15.112	43.500	10.593	1.953	22.313	200	162	QP
3	*	199.992	29.688	40.156	-13.812	43.500	9.045	2.737	22.251	200	315	QP
4		269.954	23.558	30.511	-22.842	46.400	11.948	3.256	22.157	200	296	QP
5		345.492	24.360	28.155	-22.040	46.400	14.440	3.760	21.995	100	146	QP
6		850.014	30.646	24.650	-15.754	46.400	20.374	6.486	20.864	100	128	QP

Note:

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

Engineer: Canon	
Site: AC1	Time: 2019/01/21
Limit: FCC_Part15.109_RE(10m)_ClassA	Margin: 0
Probe: CBL6112B_2933(30-1000MHz)	Polarity: Vertical
EUT: Rangefinder	Power: AC 120V/60Hz
Note: Mode 4 without core	

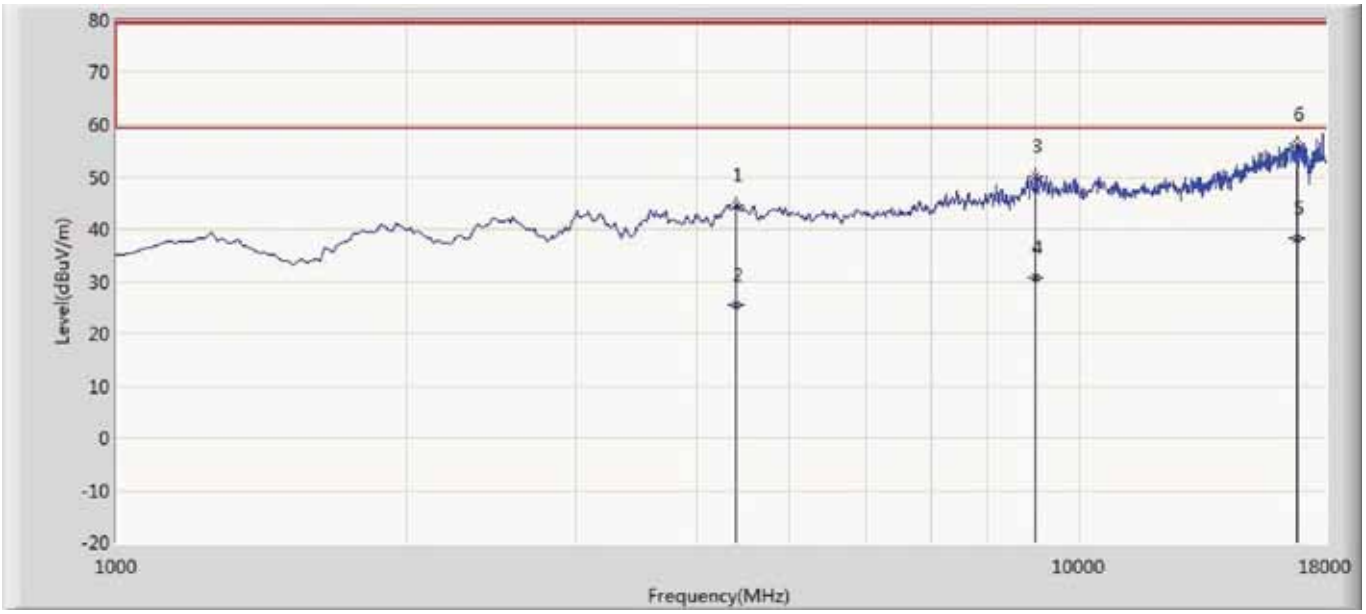


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		50.612	27.807	42.150	-11.193	39.000	7.579	1.424	23.346	100	162	QP
2		64.435	30.838	47.155	-8.162	39.000	5.402	1.628	23.347	100	163	QP
3		110.025	29.211	40.156	-14.289	43.500	10.281	2.182	23.408	200	356	QP
4	*	205.966	41.803	52.000	-1.697	43.500	9.521	3.095	22.813	100	293	QP
5		229.941	33.032	43.025	-13.368	46.400	10.074	3.299	23.366	200	319	QP
6		850.014	30.119	25.166	-16.281	46.400	20.344	7.195	22.586	100	162	QP

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 without core	

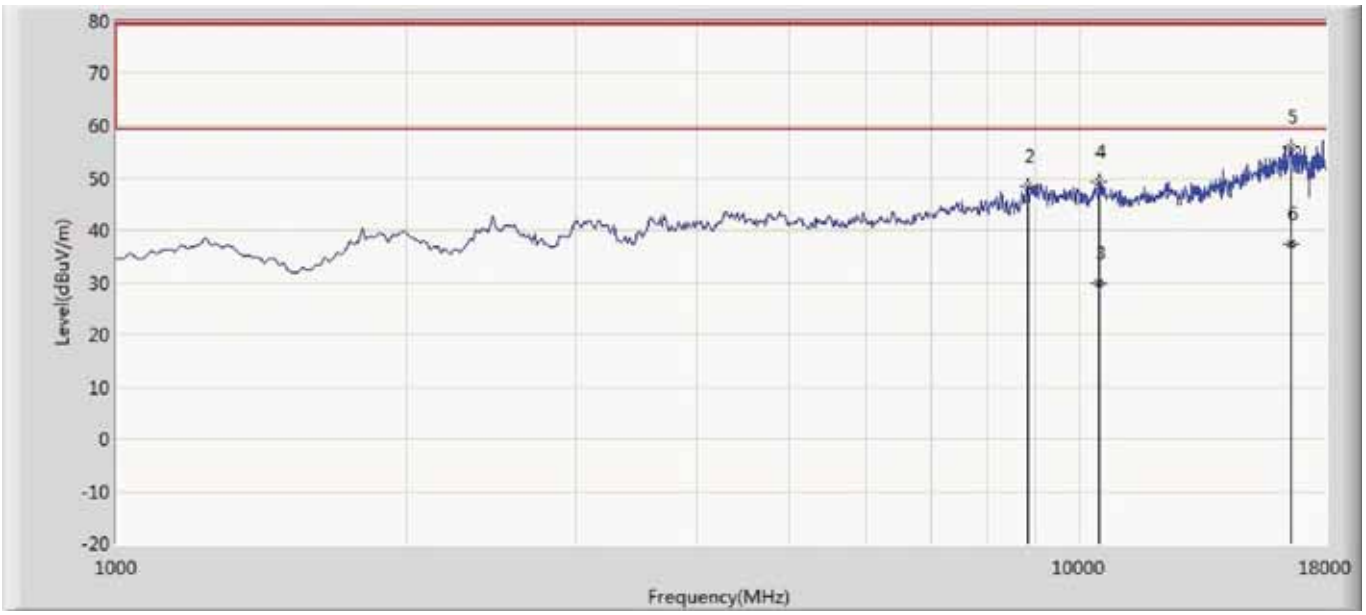


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		4400.000	44.556	43.669	-34.944	79.500	33.800	7.787	40.700	100	300	PK
2		4401.260	25.377	24.513	-34.123	59.500	33.801	7.780	40.717	100	300	AV
3		9007.000	50.085	41.478	-29.415	79.500	36.304	12.286	39.983	100	120	PK
4		9007.210	30.835	22.229	-28.665	59.500	36.304	12.284	39.981	100	120	AV
5	*	16809.150	38.274	18.541	-21.226	59.500	41.362	13.472	35.102	100	320	AV
6		16810.000	56.244	36.402	-23.256	79.500	41.362	13.510	35.030	100	320	PK

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 without core	

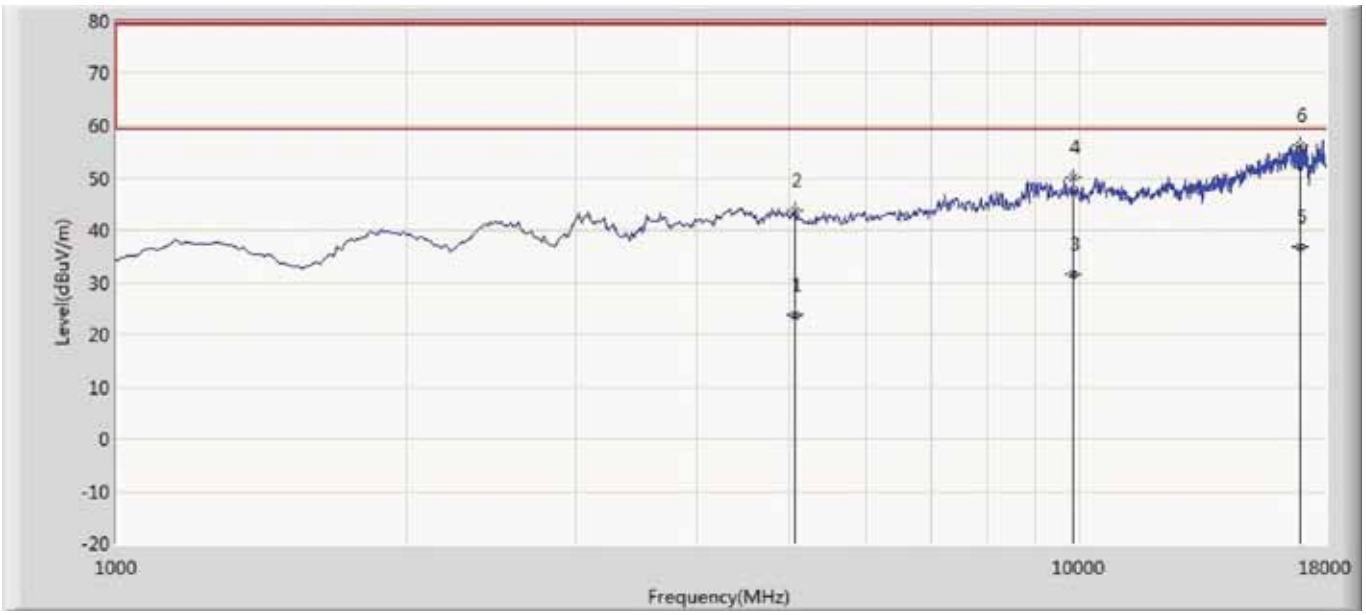


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		821.290	10.338	20.256	NaN	NaN	28.700	2.743	41.361	100	150	AV
2		8820.000	48.465	40.260	-31.035	79.500	36.156	11.668	39.619	100	150	PK
3		10485.540	29.909	19.264	-29.591	59.500	37.686	11.481	38.521	100	203	AV
4		10486.000	49.286	38.605	-30.214	79.500	37.686	11.483	38.488	100	203	PK
5		16538.000	55.867	36.897	-23.633	79.500	41.308	14.015	36.353	100	205	PK
6	*	16539.210	37.466	18.664	-22.034	59.500	41.308	13.933	36.439	100	205	AV

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 without core	

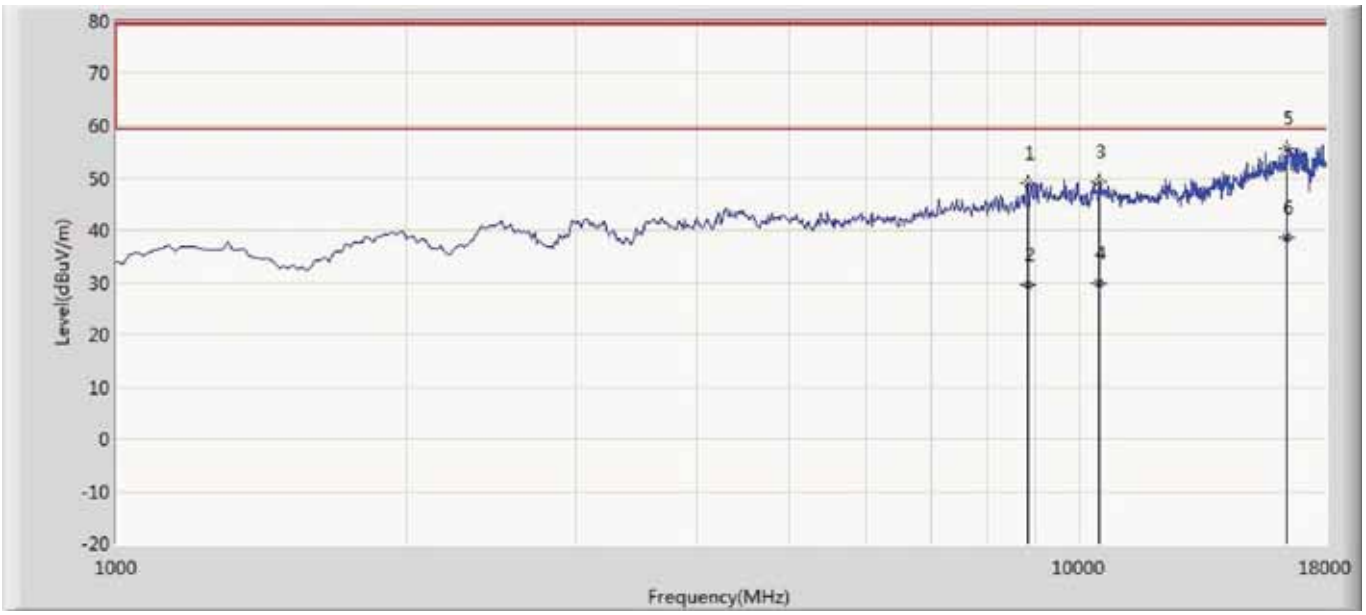


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		5062.130	23.811	23.155	-35.689	59.500	34.062	7.185	40.591	100	200	AV
2		5063.000	43.789	43.121	-35.711	79.500	34.063	7.201	40.596	100	200	PK
3		9839.130	31.516	22.394	-27.984	59.500	37.007	11.923	39.808	100	160	AV
4		9840.000	50.288	41.105	-29.212	79.500	37.008	11.940	39.765	100	160	PK
5	*	16911.136	36.779	17.216	-22.721	59.500	41.382	13.308	35.127	100	180	AV
6		16912.000	56.172	36.460	-23.328	79.500	41.382	13.359	35.029	100	180	PK

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 without core	

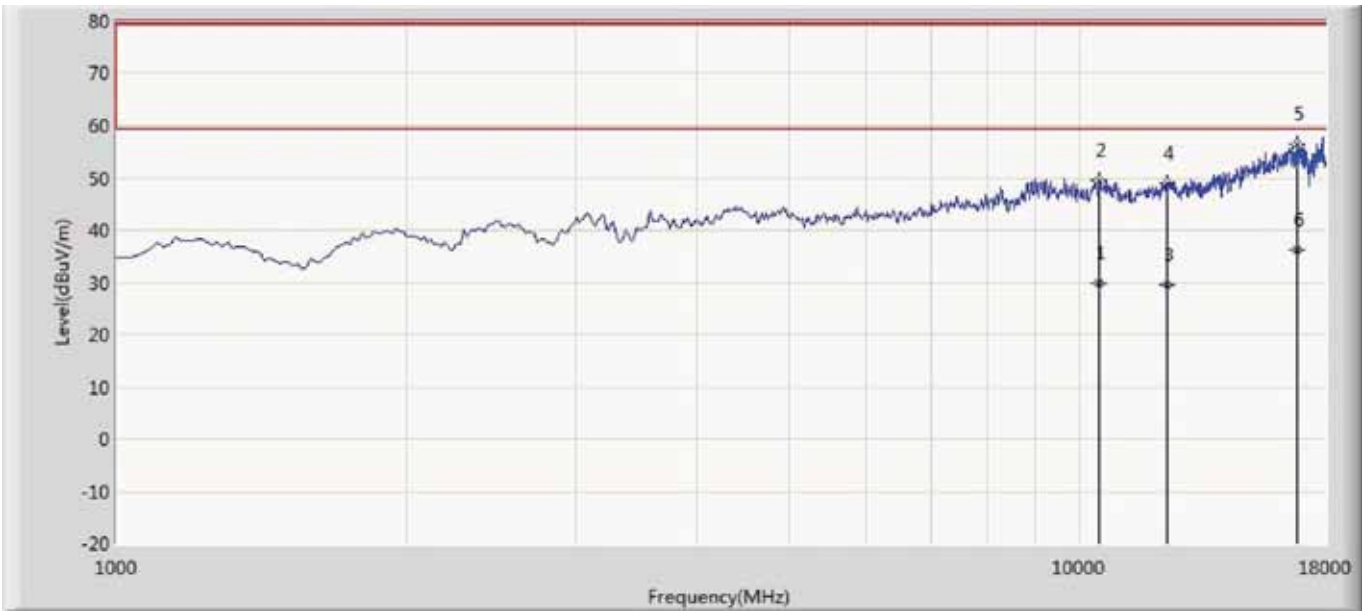


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		8820.000	49.061	40.856	-30.439	79.500	36.156	11.668	39.619	100	140	PK
2		8821.610	29.435	21.316	-30.065	59.500	36.157	11.510	39.548	100	140	AV
3		10486.000	49.326	38.645	-30.174	79.500	37.686	11.483	38.488	100	230	PK
4		10486.310	29.826	19.164	-29.674	59.500	37.686	11.467	38.491	100	230	AV
5		16402.000	55.663	36.336	-23.837	79.500	41.202	14.016	35.891	100	140	PK
6	*	16402.650	38.440	19.136	-21.060	59.500	41.203	14.032	35.931	100	140	AV

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 3 without core	

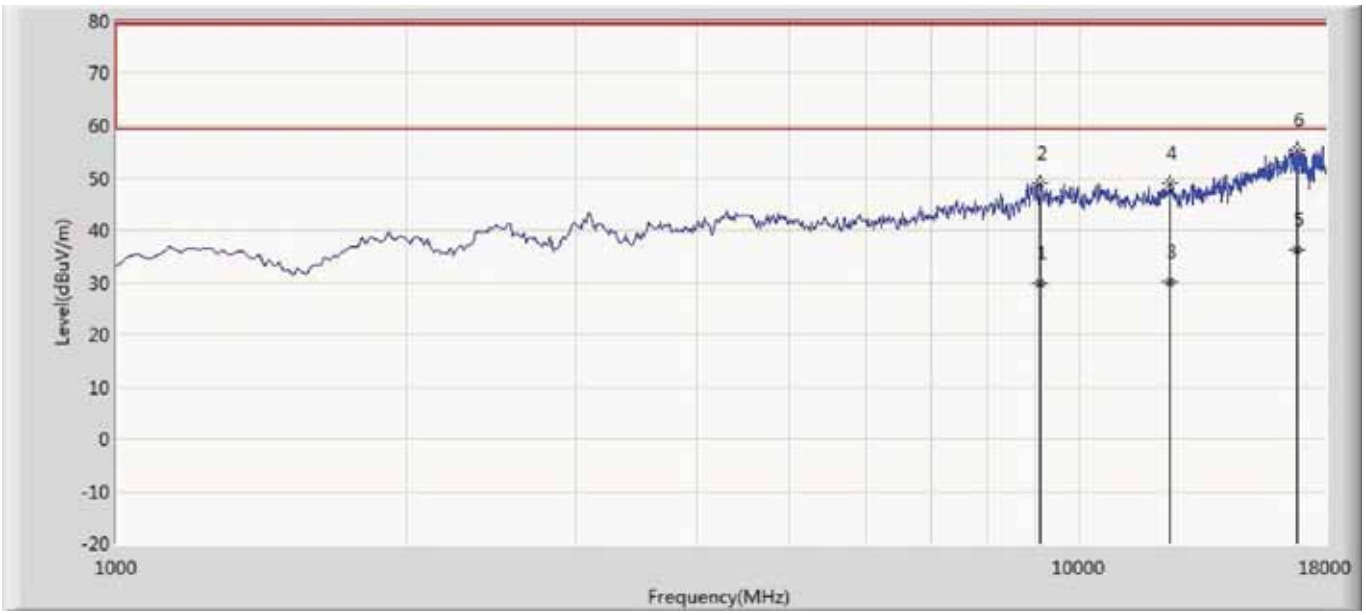


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		10485.460	29.800	19.161	-29.700	59.500	37.685	11.481	38.527	100	160	AV
2		10486.000	49.563	38.882	-29.937	79.500	37.686	11.483	38.488	100	160	PK
3		12338.650	29.608	18.351	-29.892	59.500	39.303	10.668	38.714	100	120	AV
4		12339.000	49.117	37.845	-30.383	79.500	39.303	10.678	38.709	100	120	PK
5	*	16827.000	56.546	36.377	-22.954	79.500	41.365	14.959	36.155	100	204	PK
6		16828.360	36.236	16.189	-23.264	59.500	41.365	14.869	36.187	100	204	AV

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 3 without core	

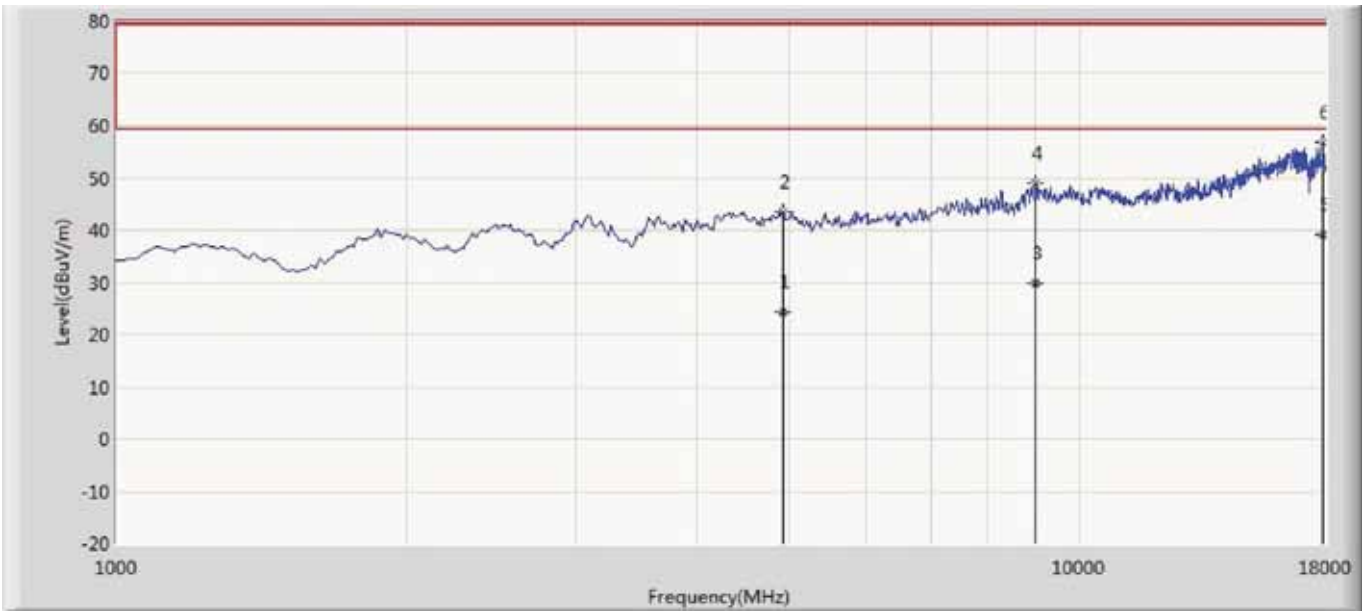


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		9108.150	29.947	21.254	-29.553	59.500	36.364	12.176	39.848	100	181	AV
2		9109.000	48.885	40.174	-30.615	79.500	36.365	12.191	39.845	100	181	PK
3		12423.540	30.235	18.583	-29.265	59.500	39.354	11.176	38.877	100	160	AV
4		12424.000	48.846	37.192	-30.654	79.500	39.354	11.182	38.882	100	160	PK
5	*	16809.310	36.264	16.511	-23.236	59.500	41.362	13.480	35.088	100	140	AV
6		16810.000	55.436	35.594	-24.064	79.500	41.362	13.510	35.030	100	140	PK

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 4 without core	

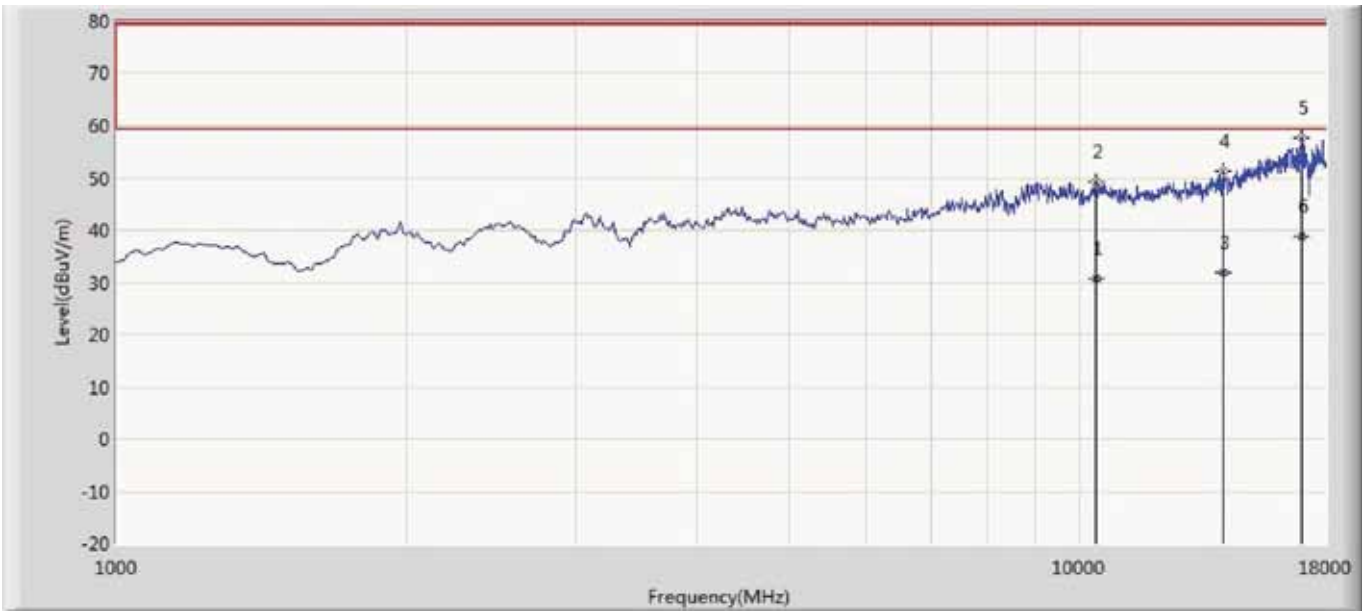


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Probe (dB/m)	Cable (dB)	Amp (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		4926.650	24.395	24.132	-35.105	59.500	33.985	6.832	40.553	100	150	AV
2		4927.000	43.393	43.126	-36.107	79.500	33.985	6.830	40.548	100	150	PK
3		9006.540	29.783	21.216	-29.717	59.500	36.304	12.262	39.999	100	200	AV
4		9007.000	48.887	40.280	-30.613	79.500	36.304	12.286	39.983	100	200	PK
5	*	17862.340	39.100	16.165	-20.400	59.500	41.045	17.670	35.780	100	310	AV
6		17864.000	56.760	33.478	-22.740	79.500	41.046	17.961	35.725	100	310	PK

Note:

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

Engineer: Canon	
Site: AC5	Time: 2019/03/18
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 4 without core	



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		10383.310	30.864	21.135	-28.636	59.500	37.583	11.058	38.913	100	120	AV
2		10384.000	49.192	39.423	-30.308	79.500	37.584	11.051	38.866	100	120	PK
3		14072.350	31.956	16.135	-27.544	59.500	39.172	13.824	37.176	100	162	AV
4		14073.000	51.448	35.534	-28.052	79.500	39.173	13.845	37.104	100	162	PK
5		17014.000	57.600	38.355	-21.900	79.500	41.386	13.470	35.611	100	320	PK
6	*	17015.130	38.862	19.581	-20.638	59.500	41.385	13.547	35.651	100	320	AV

Note:

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

4.7. Test Photograph

Test Mode: Mode 1-4

Description: Front View of Radiated disturbance Test Setup (Below 1GHz)

Test Mode: Mode 1-4

Description: Rear View of Radiated disturbance Test Setup (Below 1GHz)

Test Mode: Mode 1-4

Description: Front View of Radiated disturbance Test Setup (Above 1GHz)

Test Mode: Mode 1-4

Description: Rear View of Radiated disturbance Test Setup (Above 1GHz)

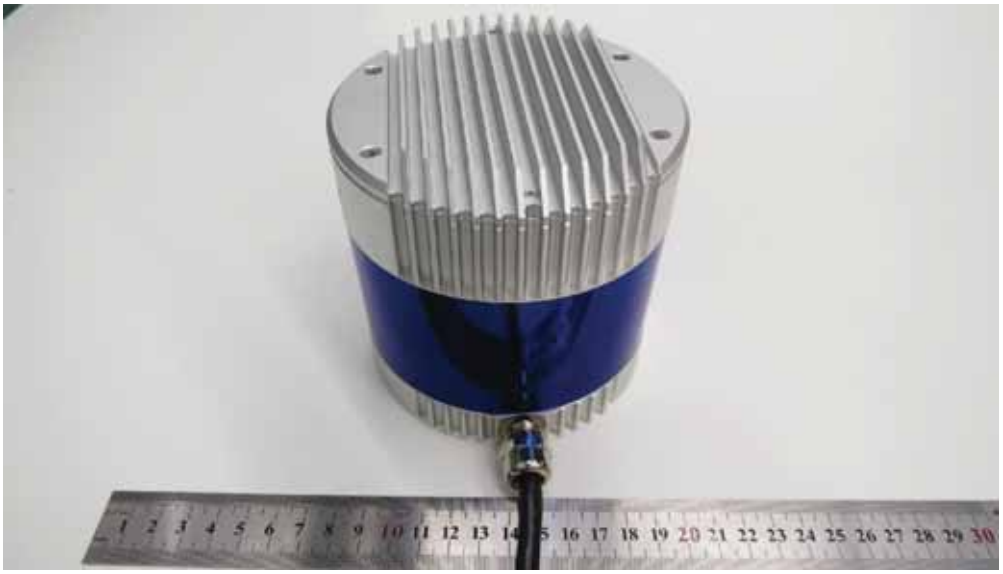
5. Attachment

EUT Photograph

(1) EUT Photo (Pandar64)

(2) EUT Photo (Pandar64)

(3) EUT Photo (Pandar64)



(4) EUT Photo (Pandar64)

(5) EUT Photo (Pandar64)

(6) EUT Photo (Pandar64)

(7) EUT Photo (Pandar64)

(8) EUT Photo (Pandar40 2.0)

(9) EUT Photo (Pandar40 2.0)

(10) EUT Photo (Pandar40 2.0)

(11) EUT Photo (Pandar40 2.0)

(12) EUT Photo (Pandar40 2.0)

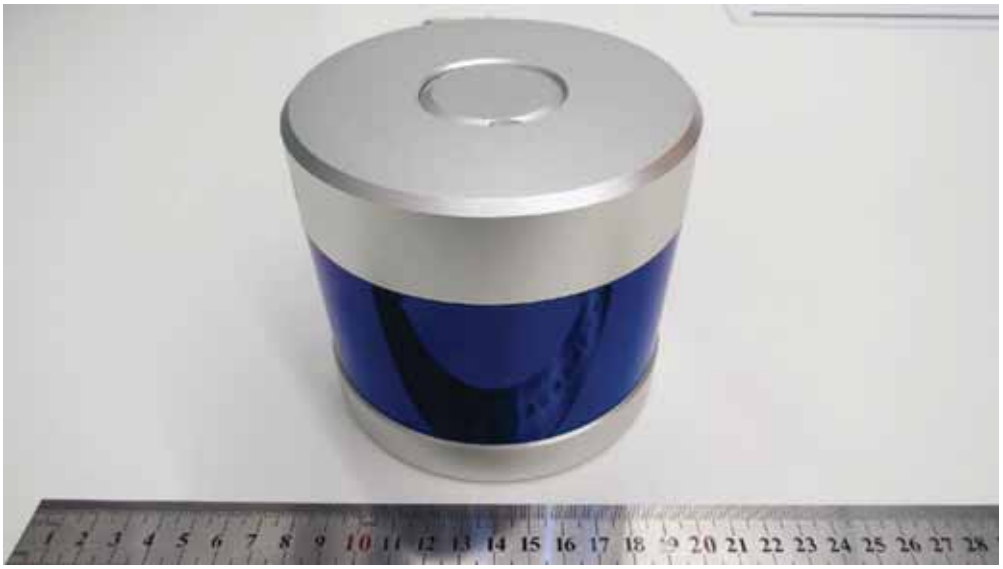
(13) EUT Photo (Pandar20A, Pandar20B)

(14) EUT Photo (Pandar20A, Pandar20B)

(15) EUT Photo (Pandar20A, Pandar20B)

(16) EUT Photo (Pandar20A, Pandar20B)

(17) EUT Photo (Pandar20A, Pandar20B)



(18) EUT Photo (Pandar20A, Pandar20B)

(19) EUT Photo

(20) EUT Photo

The End