12. BAND EDGE EMISSION

12.1. MEASUREMENT PROCEDURE

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

12.2. TEST SET-UP

same as 11.2

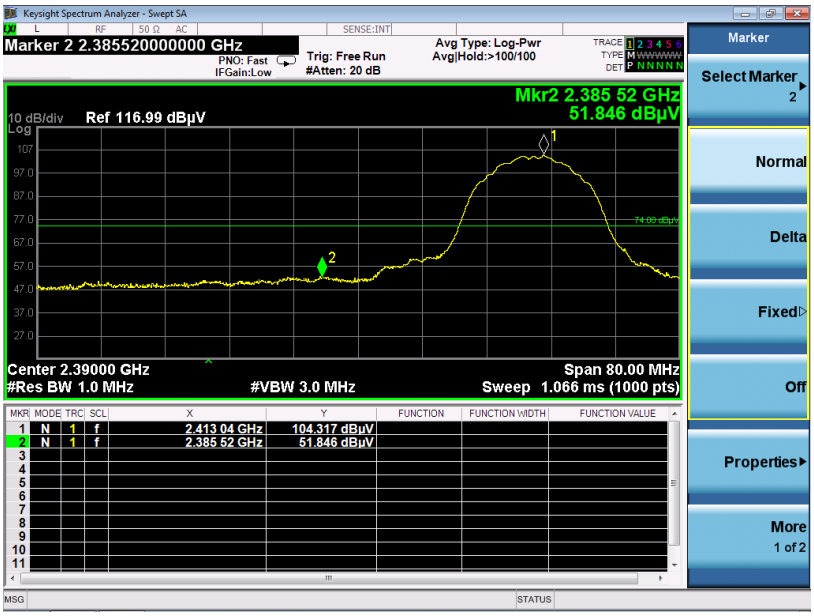
Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

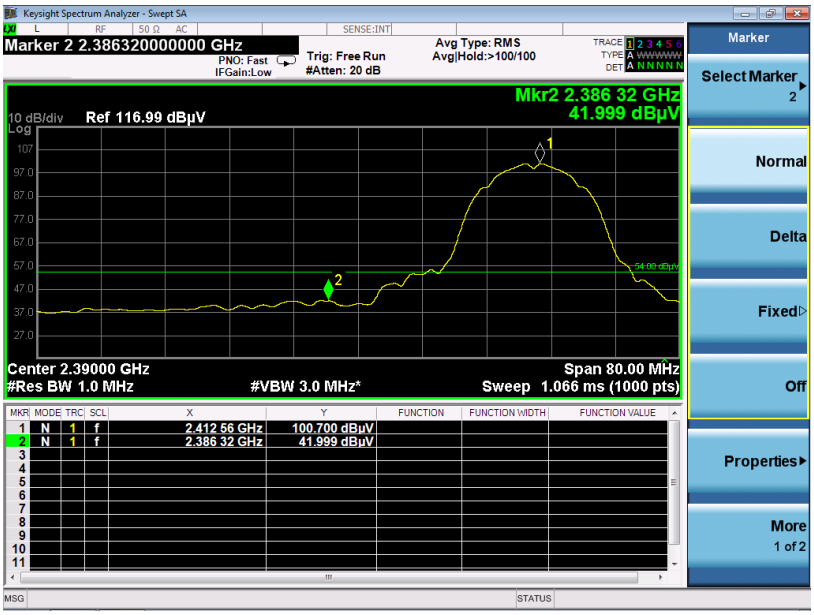
12.3. TEST RESULT

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	**Antenna**	Horizontal

PK



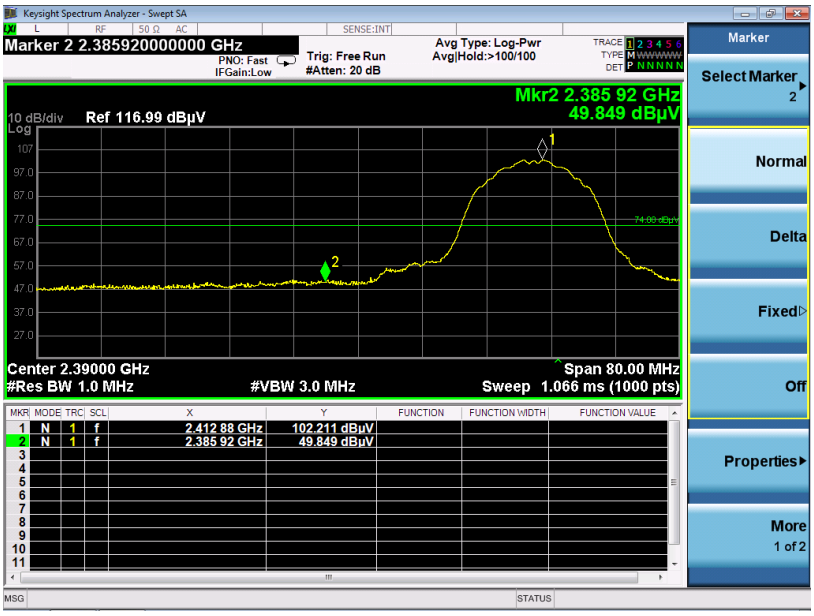
AV



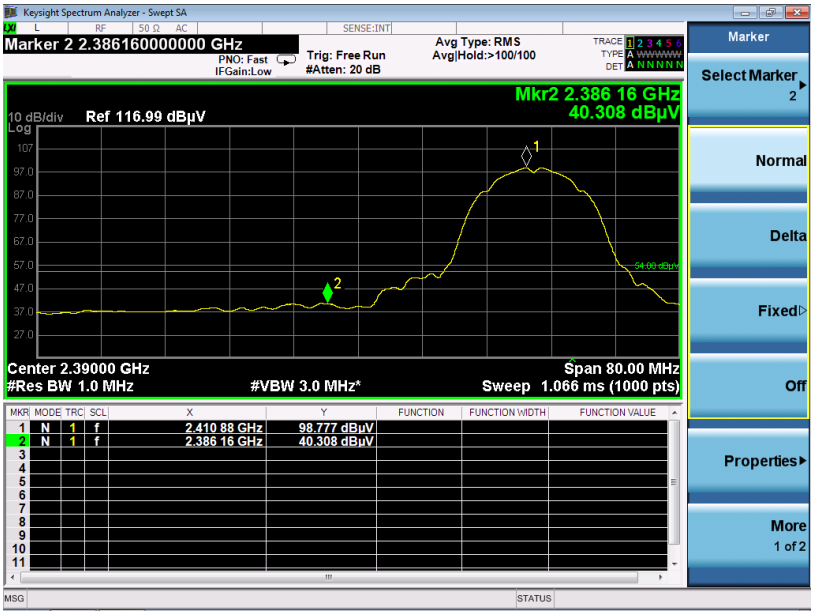
RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	**Antenna**	Vertical

PK



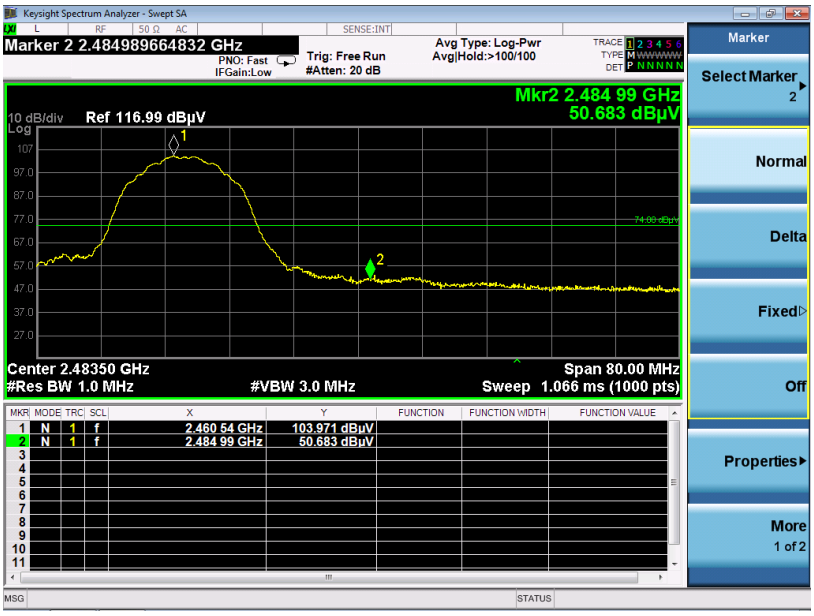
AV



RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	**Antenna**	Horizontal

PK



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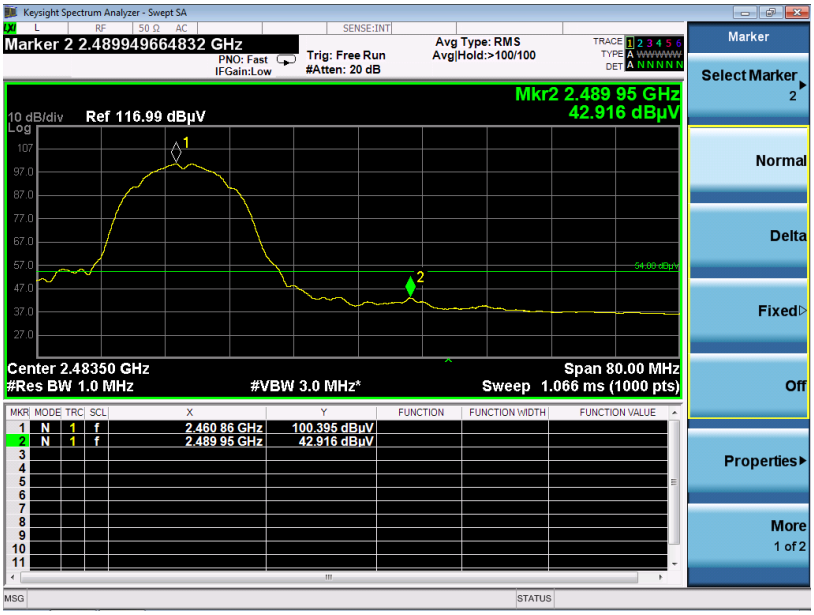
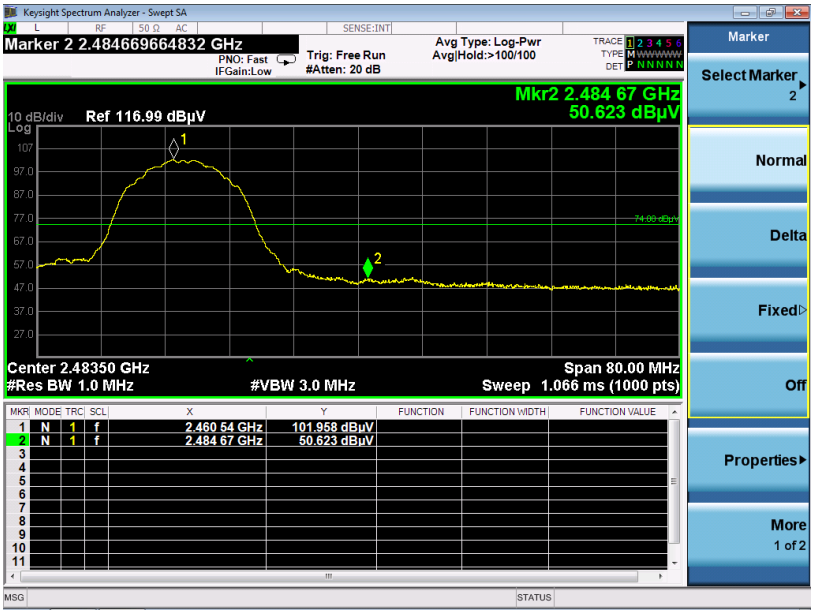


RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	**Antenna**	Vertical

PK



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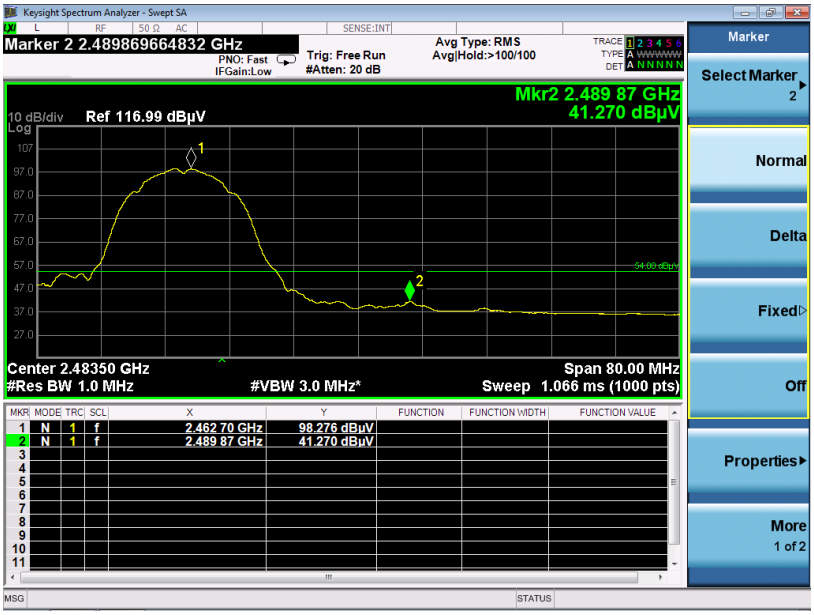
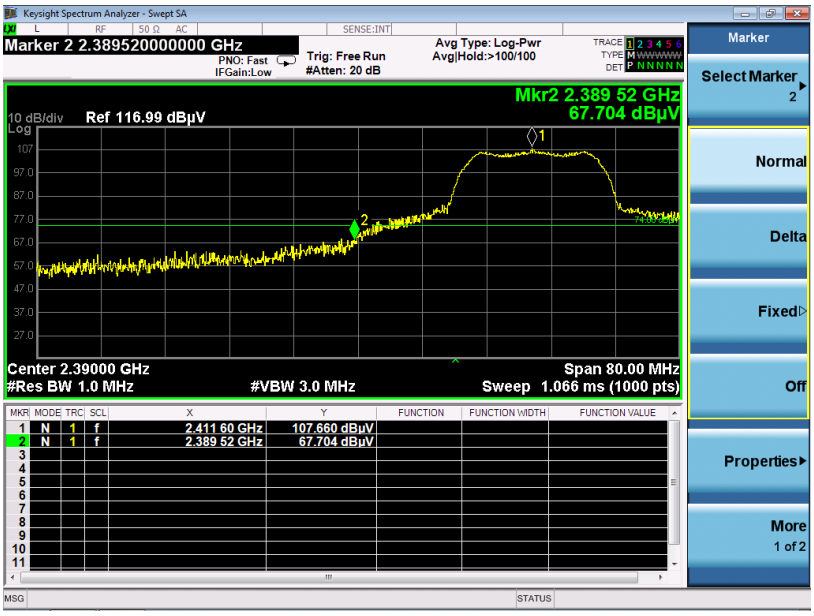


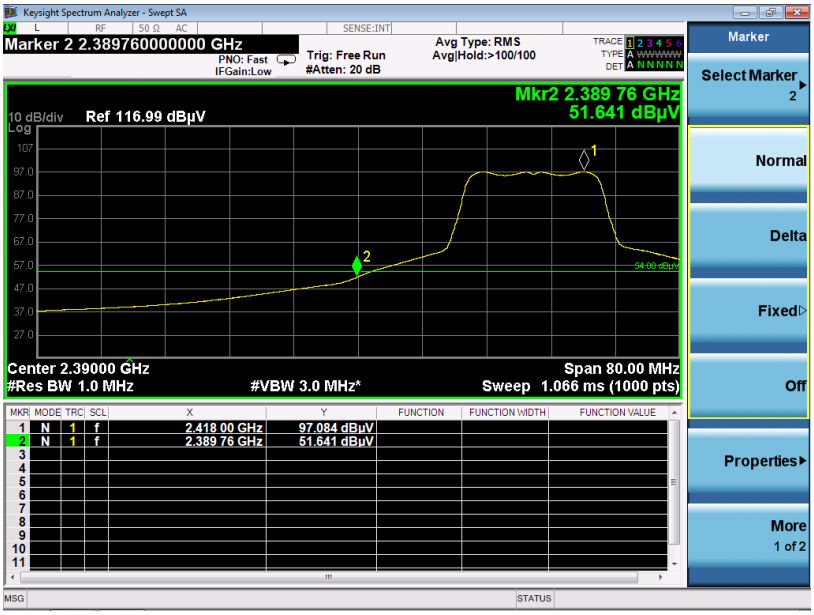
RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	**Antenna**	Horizontal

PK



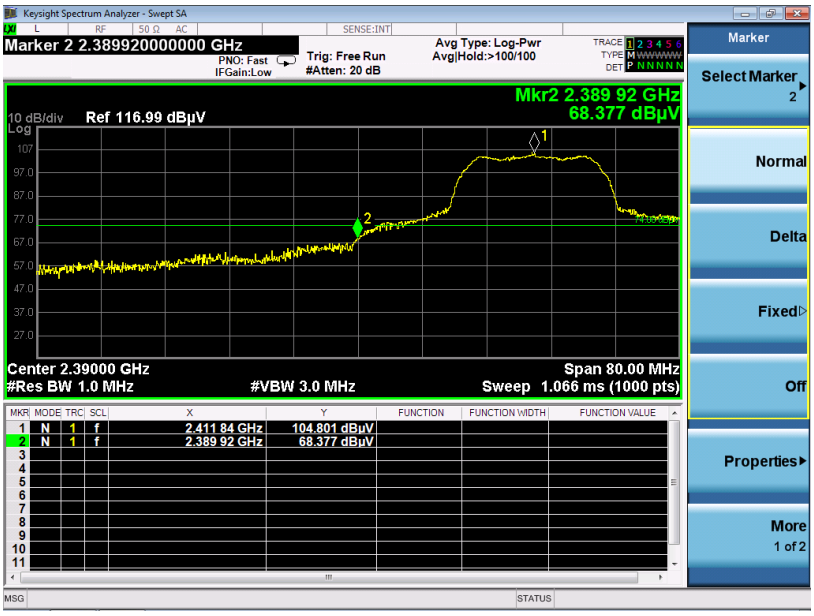
AV



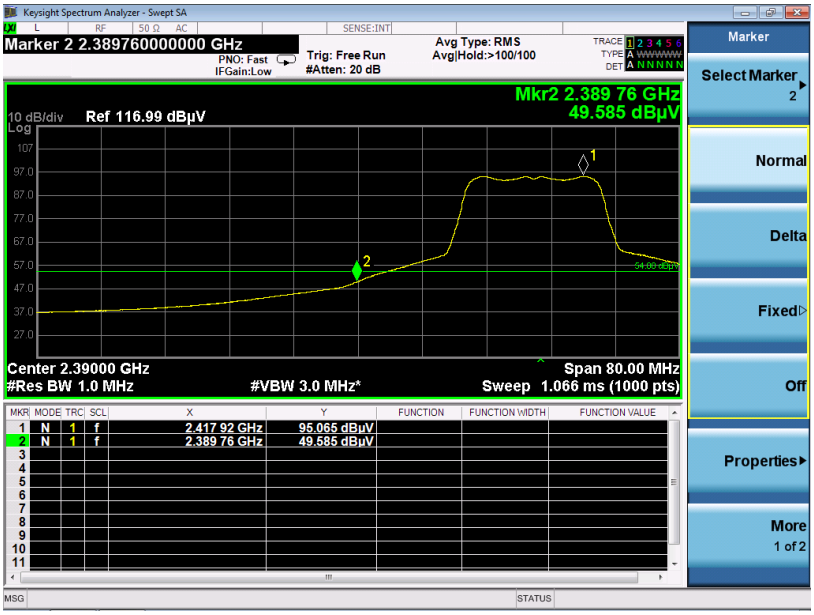
RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	**Antenna**	Vertical

PK



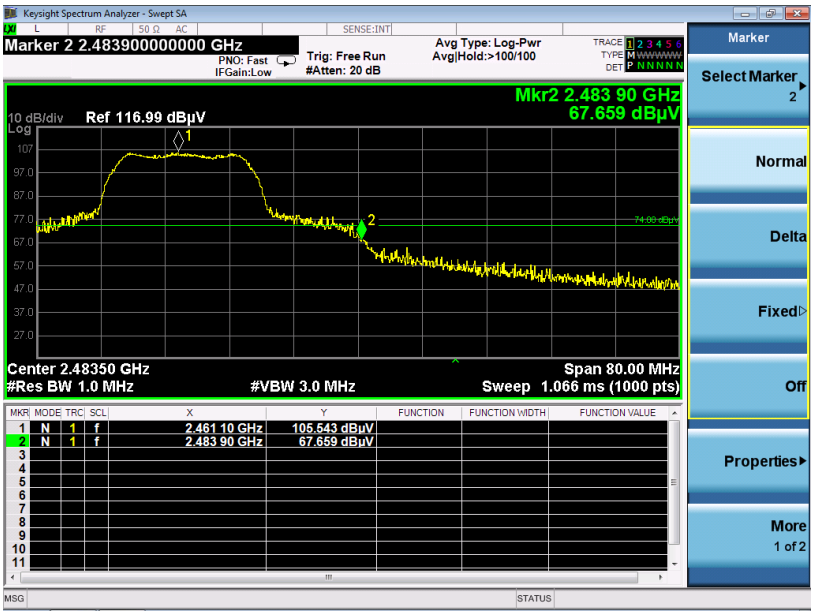
AV



RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	**Antenna**	Horizontal

PK



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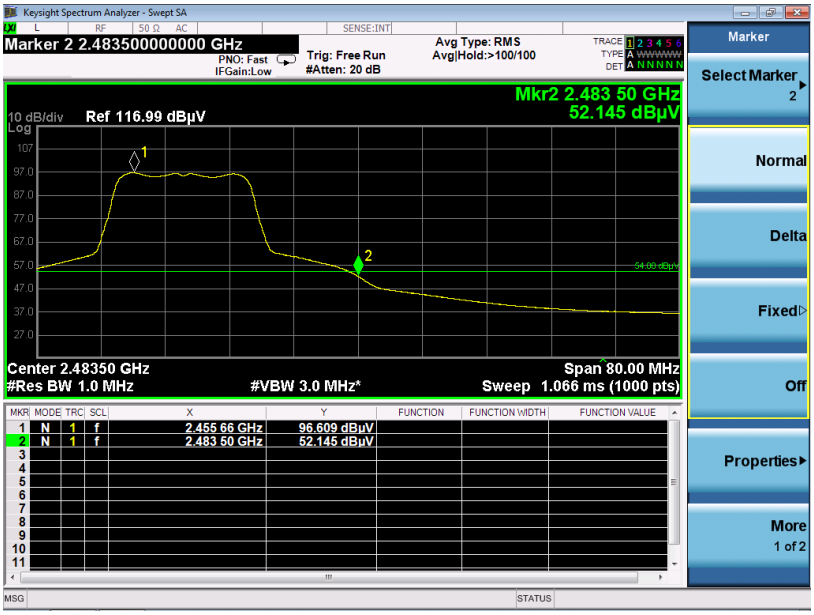
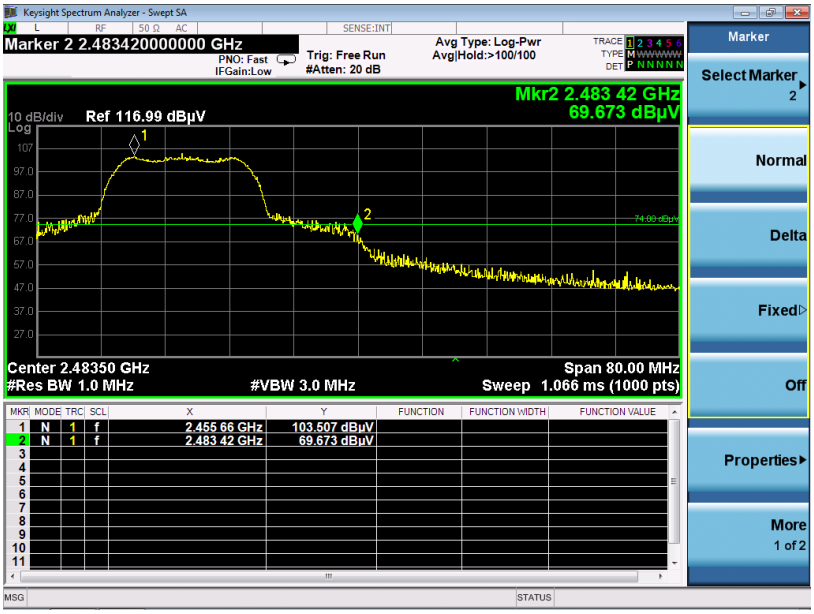


RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	**Antenna**	Vertical

PK



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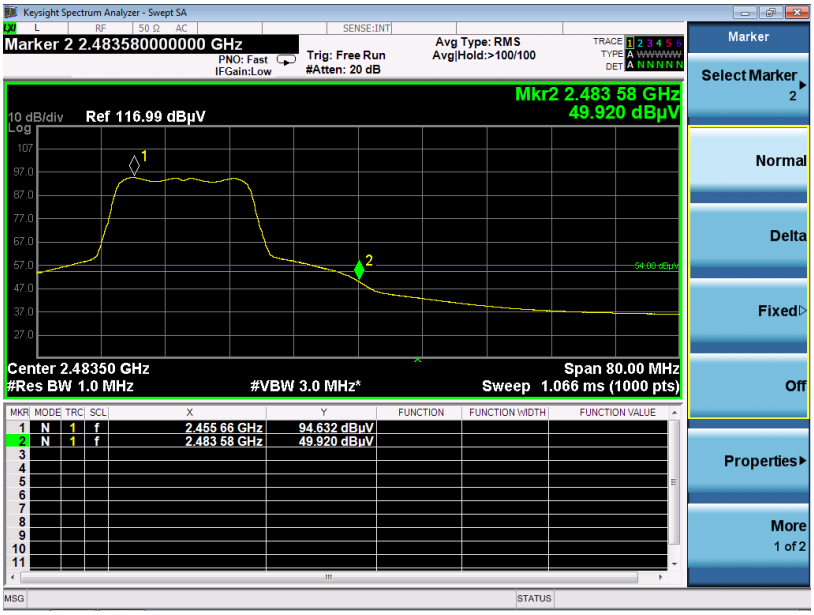
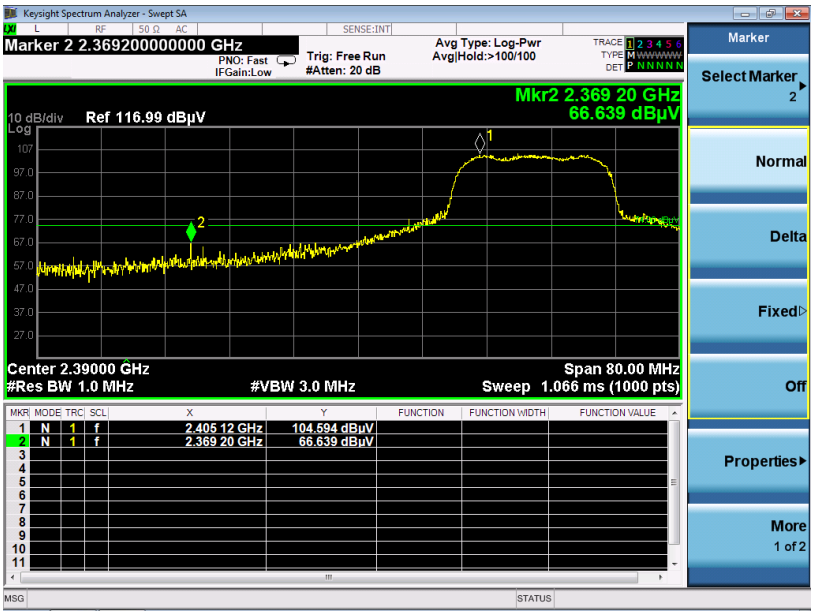


RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	**Antenna**	Horizontal

PK



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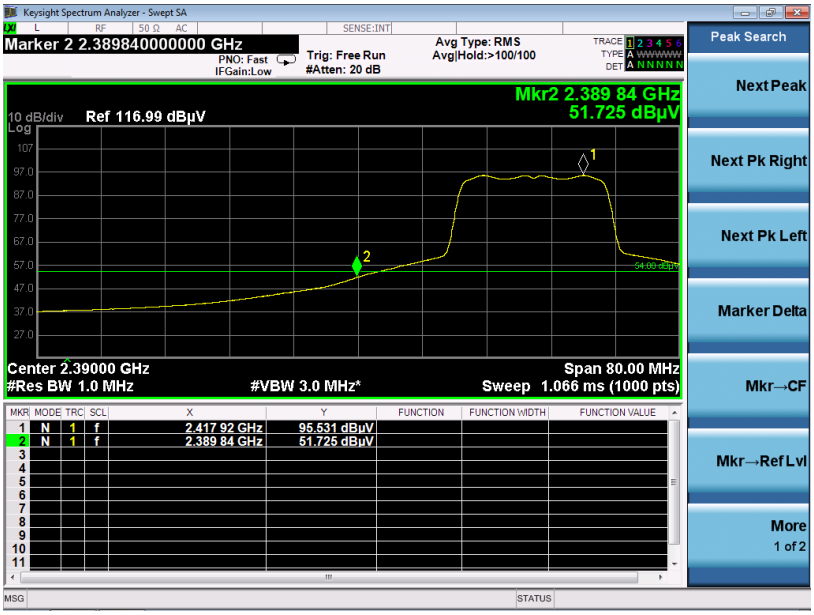
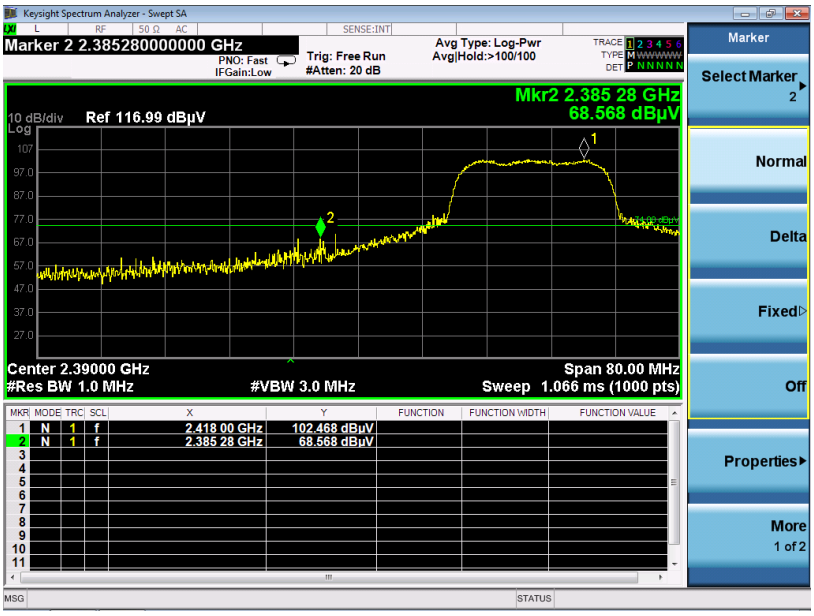


RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	**Antenna**	Vertical

PK



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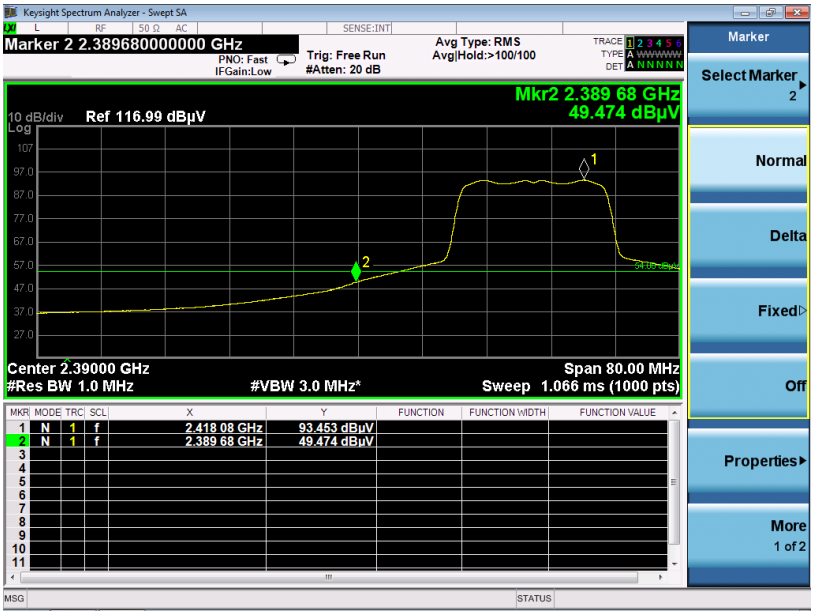
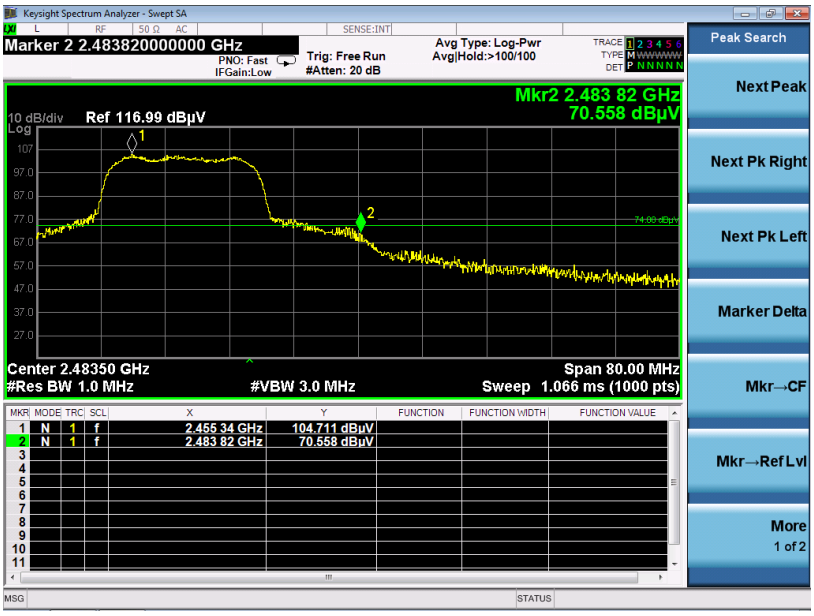


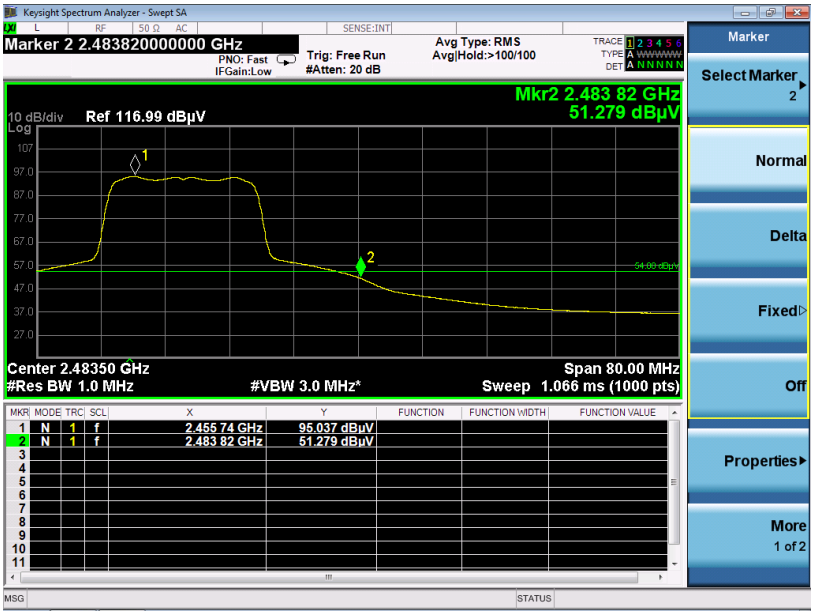
RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 20with data rate 6.5 2462MHZ	**Antenna**	Horizontal

PK



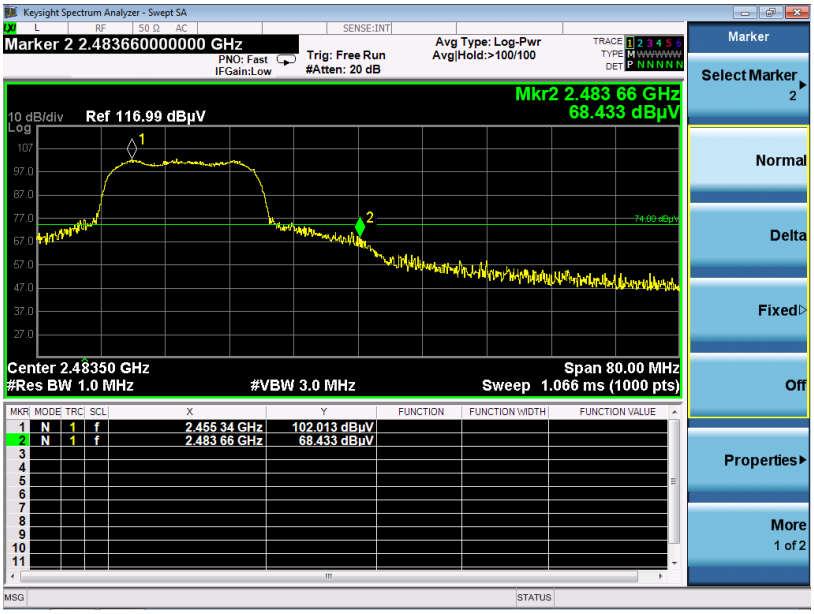
AV



RESULT: PASS

EUT	Efergy / Tendr CareHub	**Model Name**	CH1
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	**Antenna**	Vertical

PK



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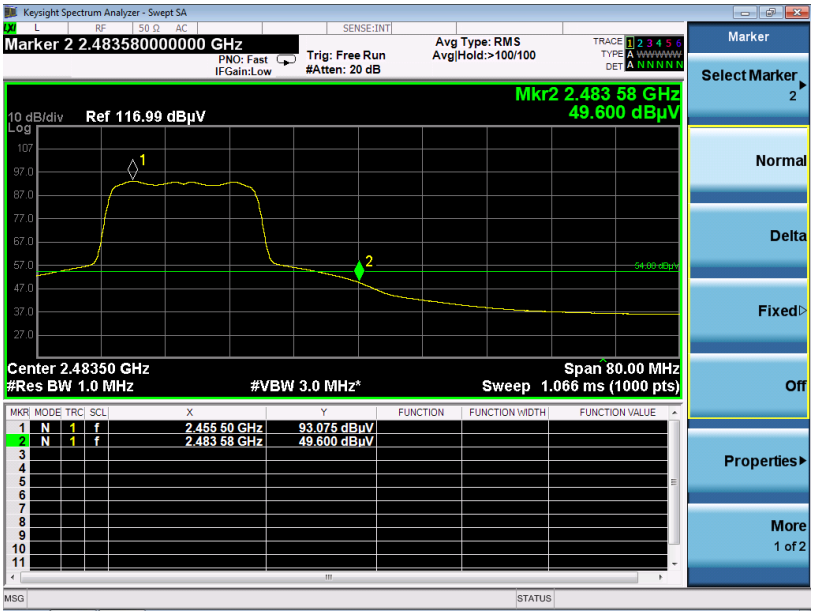


RESULT: PASS

13. FCC LINE CONDUCTED EMISSION TEST

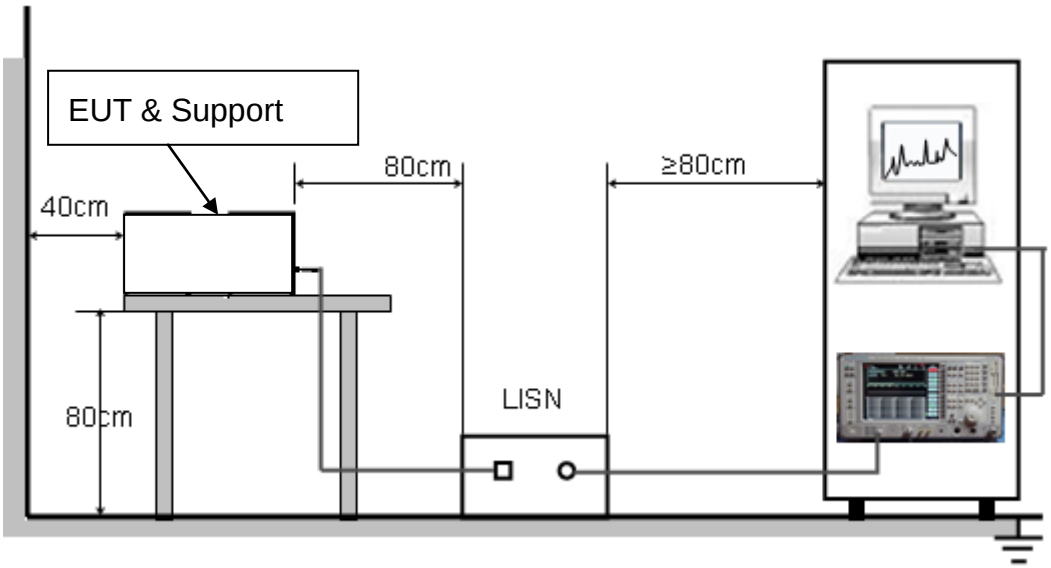
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

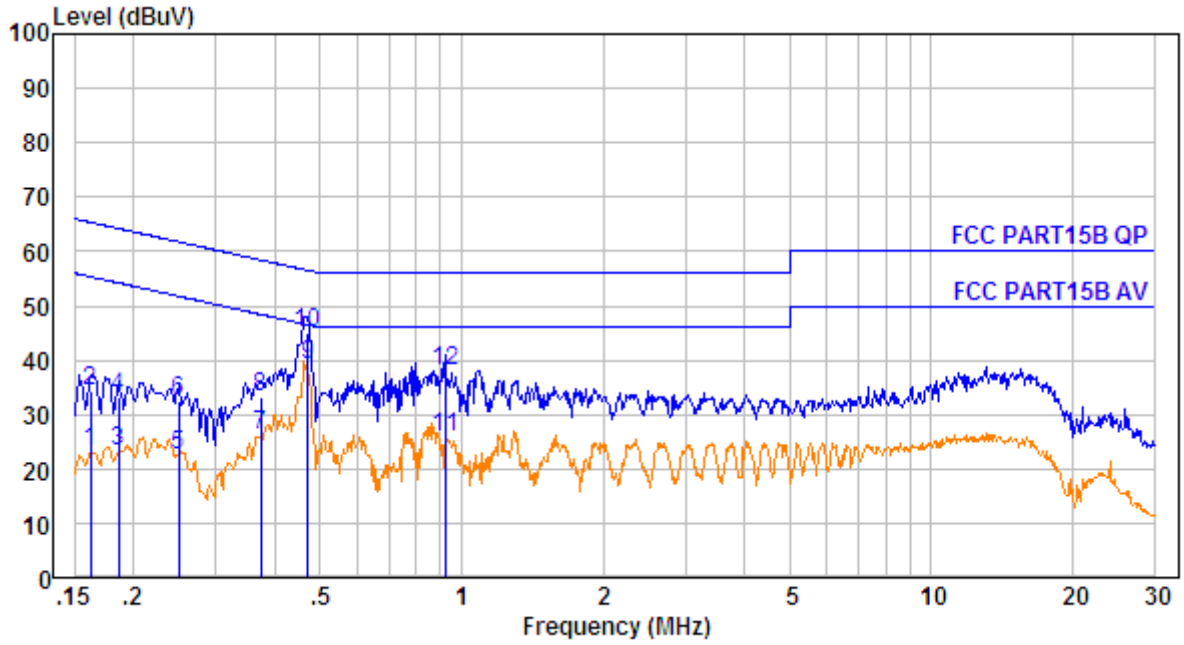
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

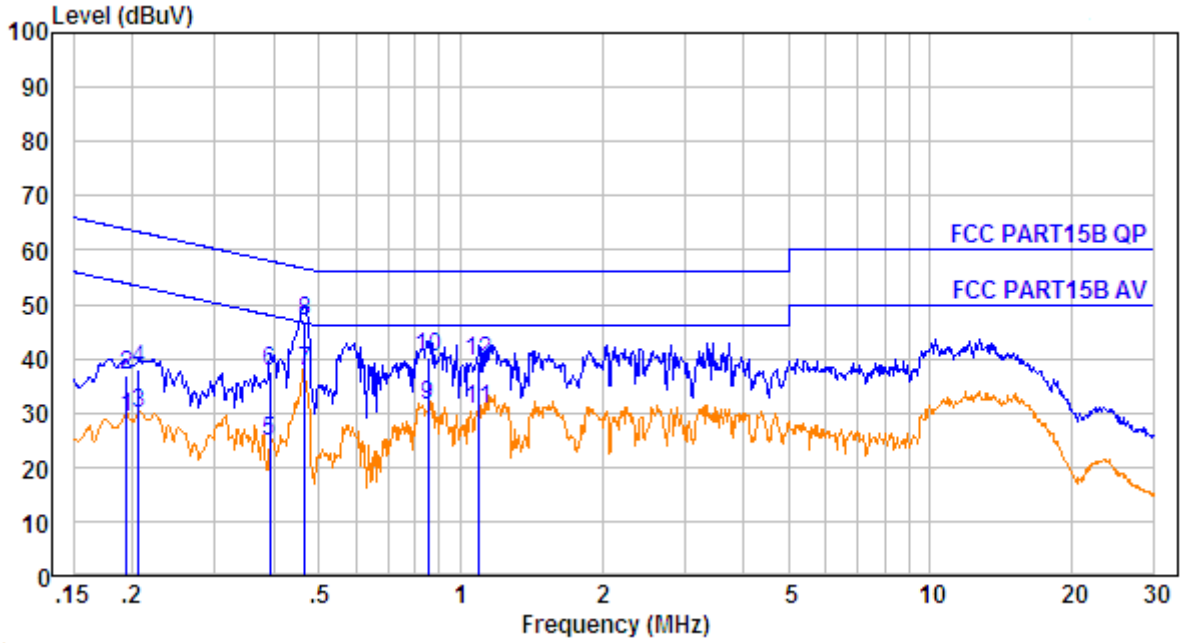
LINE CONDUCTED EMISSION TEST LINE 1-L



No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.162	10.60	0.60	12.19	23.39	55.34	-31.95	Average
2.	0.162	10.60	0.60	23.19	34.39	65.34	-30.95	QP
3.	0.186	10.61	0.60	12.09	23.30	54.20	-30.90	Average
4.	0.186	10.61	0.60	22.09	33.30	64.20	-30.90	QP
5.	0.249	10.62	0.60	11.29	22.51	51.78	-29.27	Average
6.	0.249	10.62	0.60	21.29	32.51	61.78	-29.27	QP
7.	0.373	10.63	0.60	15.07	26.30	48.43	-22.13	Average
8.	0.373	10.63	0.60	22.07	33.30	58.43	-25.13	QP
9.	0.471	10.64	0.60	27.79	39.03	46.49	-7.46	Average
10.	0.471	10.64	0.60	33.79	45.03	56.49	-11.46	QP
11.	0.923	10.67	0.60	14.63	25.90	46.00	-20.10	Average
12.	0.923	10.67	0.60	26.63	37.90	56.00	-18.10	QP

RESULT: PASS

Line Conducted Emission Test Line 2-N

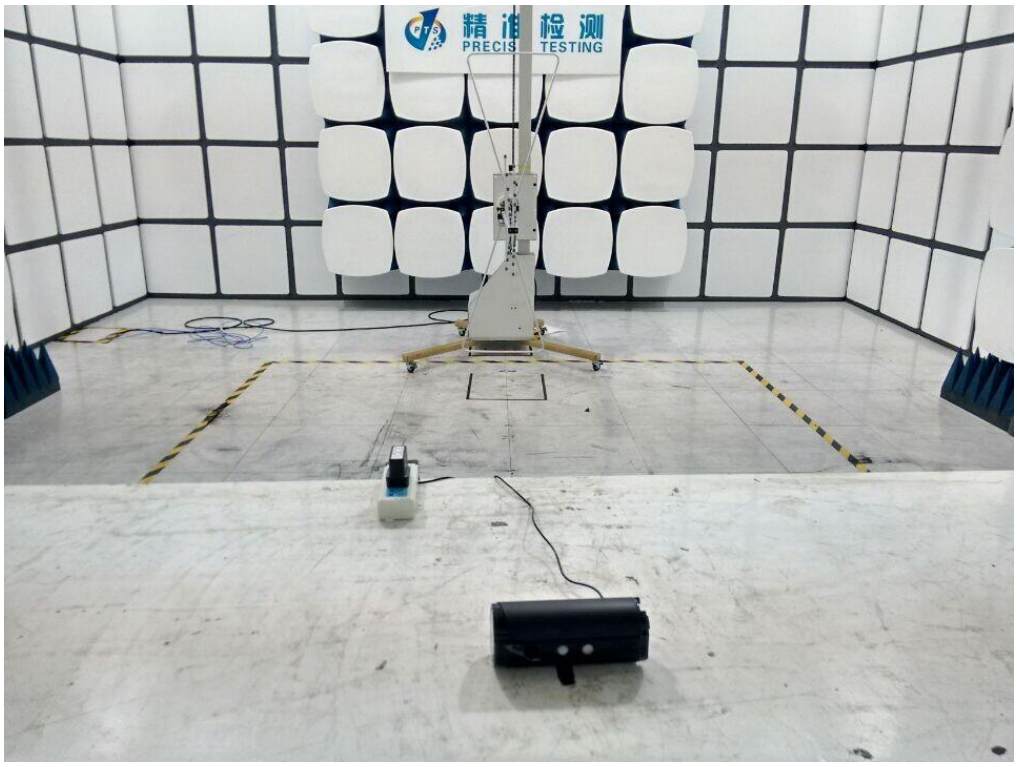


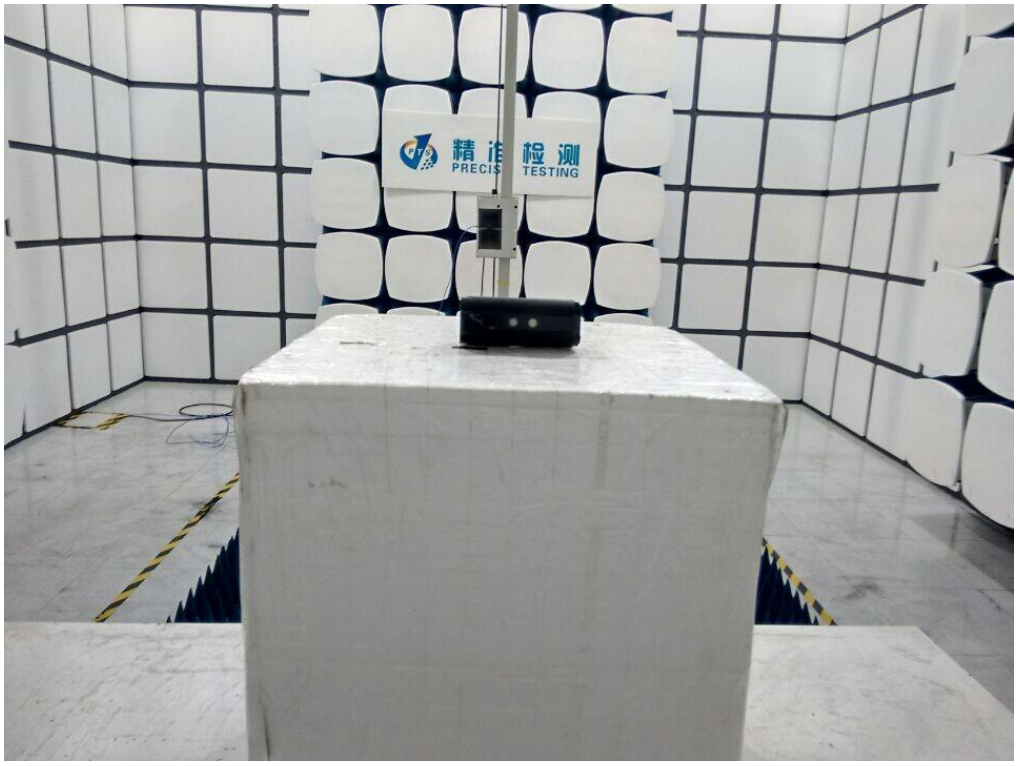
No.	Freq MHz	Cable Loss dB	AMN Factor dB	Receiver Reading dBuV	Emission Level dBuV	Limit dBuV	Over Limit dB	Remark
1.	0.194	10.61	0.60	17.81	29.02	53.84	-24.82	Average
2.	0.194	10.61	0.60	25.81	37.02	63.84	-26.82	QP
3.	0.206	10.61	0.60	18.69	29.90	53.36	-23.46	Average
4.	0.206	10.61	0.60	26.69	37.90	63.36	-25.46	QP
5.	0.393	10.64	0.60	13.40	24.64	47.99	-23.35	Average
6.	0.393	10.64	0.60	26.40	37.64	57.99	-20.35	QP
7.	0.466	10.64	0.60	26.53	37.77	46.58	-8.81	Average
8.	0.466	10.64	0.60	35.53	46.77	56.58	-9.81	QP
9.	0.853	10.67	0.60	19.96	31.23	46.00	-14.77	Average
10.	0.853	10.67	0.60	28.96	40.23	56.00	-15.77	QP
11.	1.094	10.68	0.60	19.26	30.54	46.00	-15.46	Average
12.	1.094	10.68	0.60	28.26	39.54	56.00	-16.46	QP

RESULT: PASS

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP



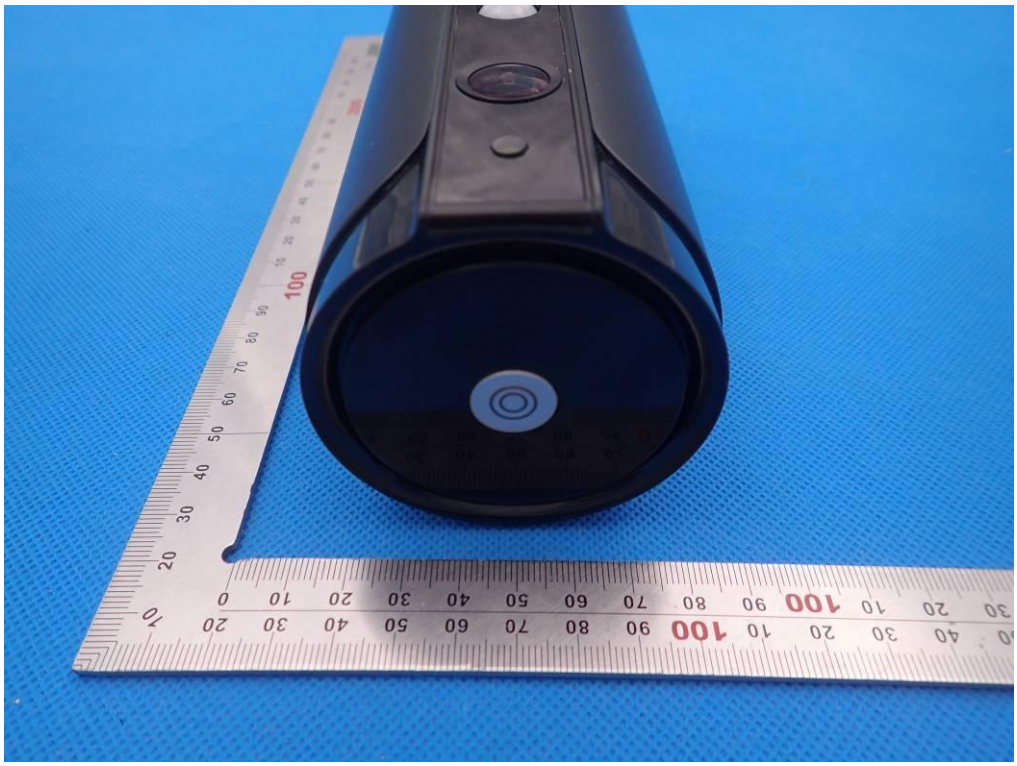


FCC LINE CONDUCTED EMISSION TEST SETUP

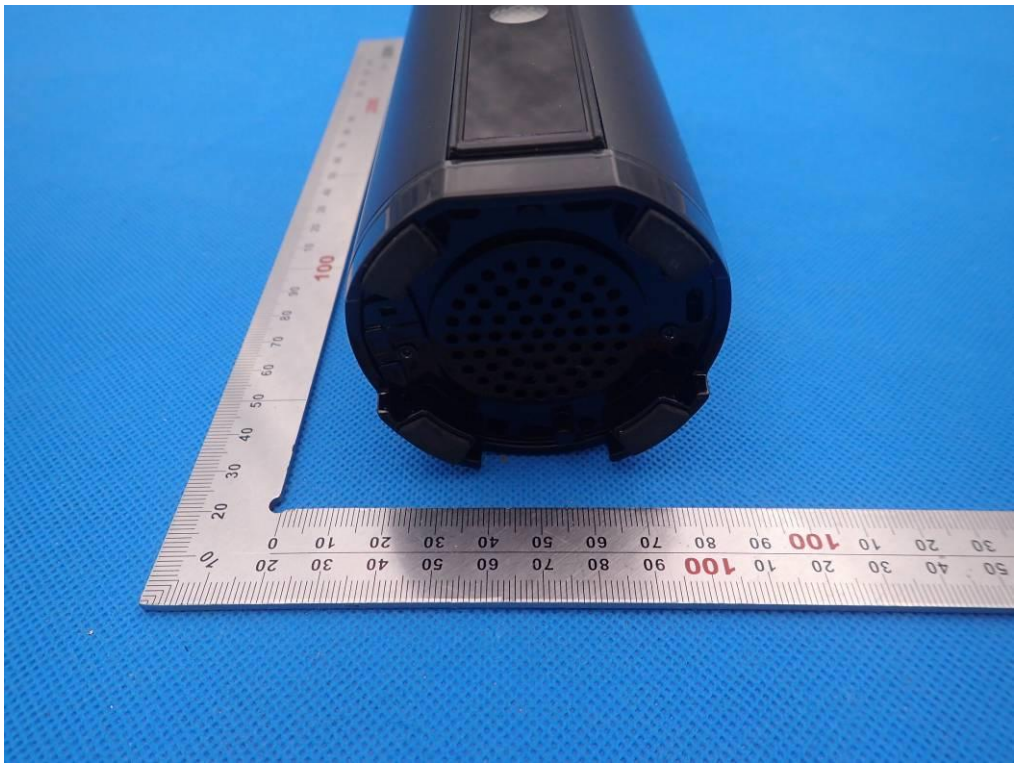
APPENDIX B: PHOTOGRAPHS OF EUT

All VIEW OF EUT

TOP VIEW OF EUT



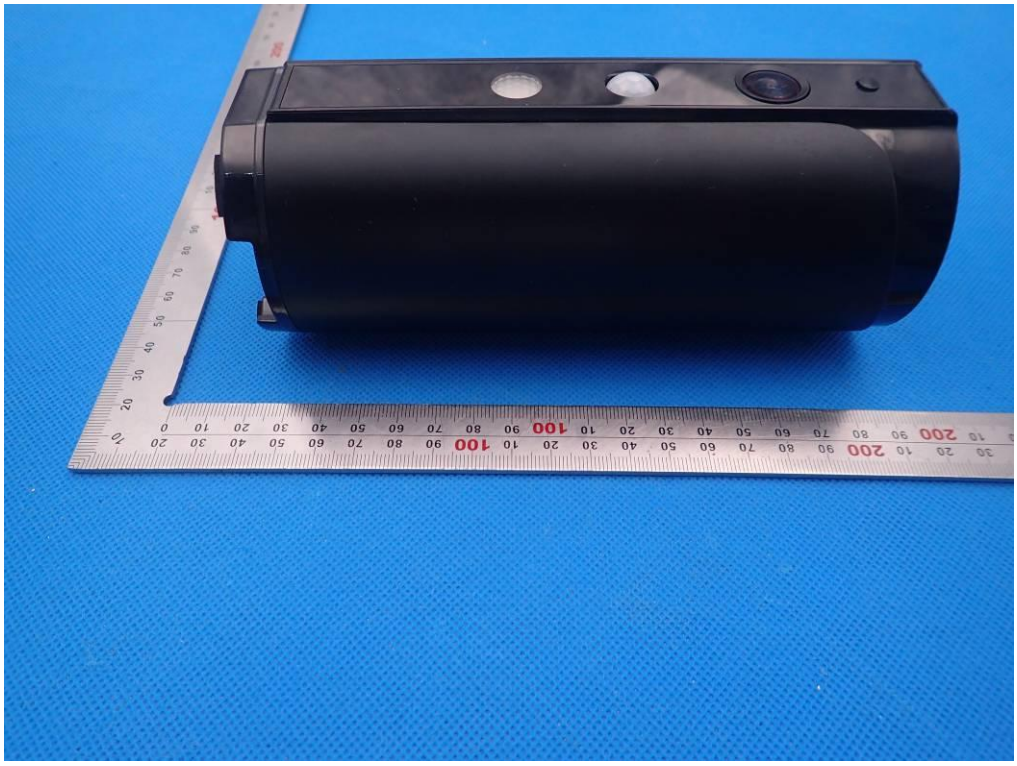
BOTTOM VIEW OF EUT



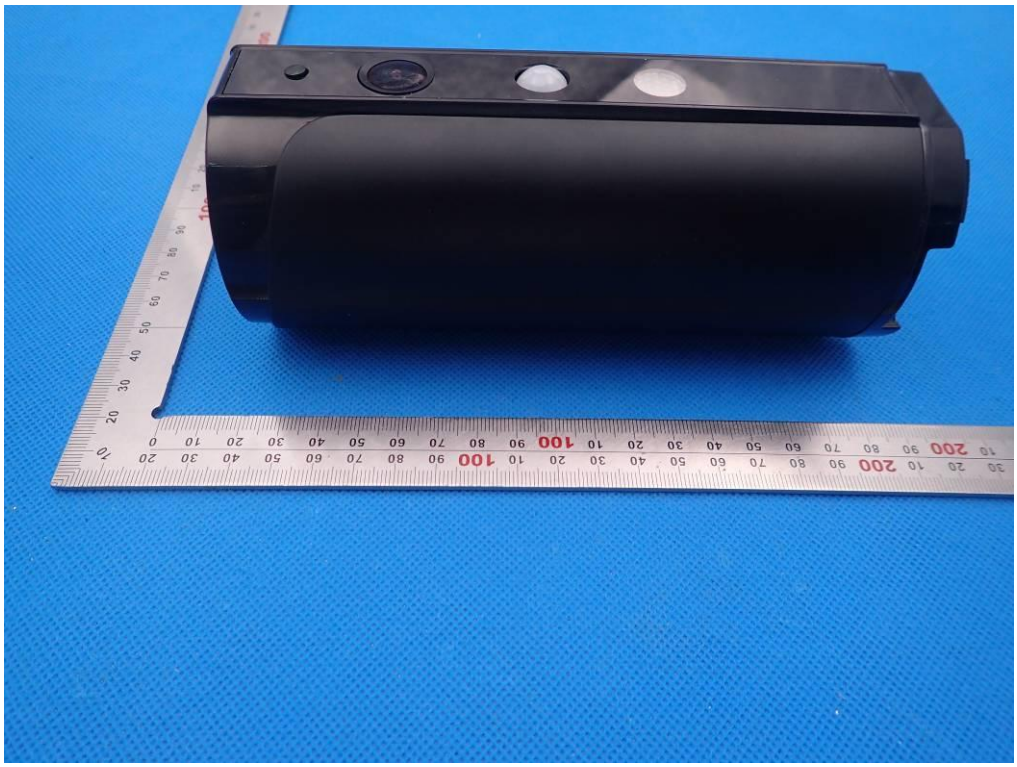
FRONT VIEW OF EUT

BACK VIEW OF EUT

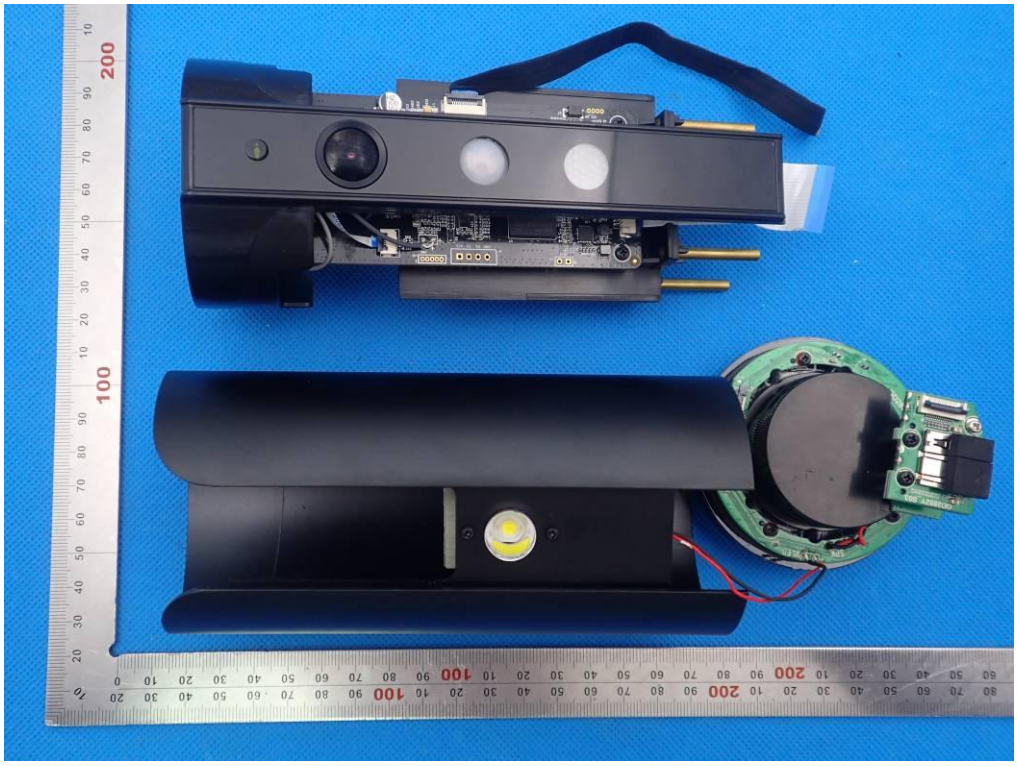
LEFT VIEW OF EUT



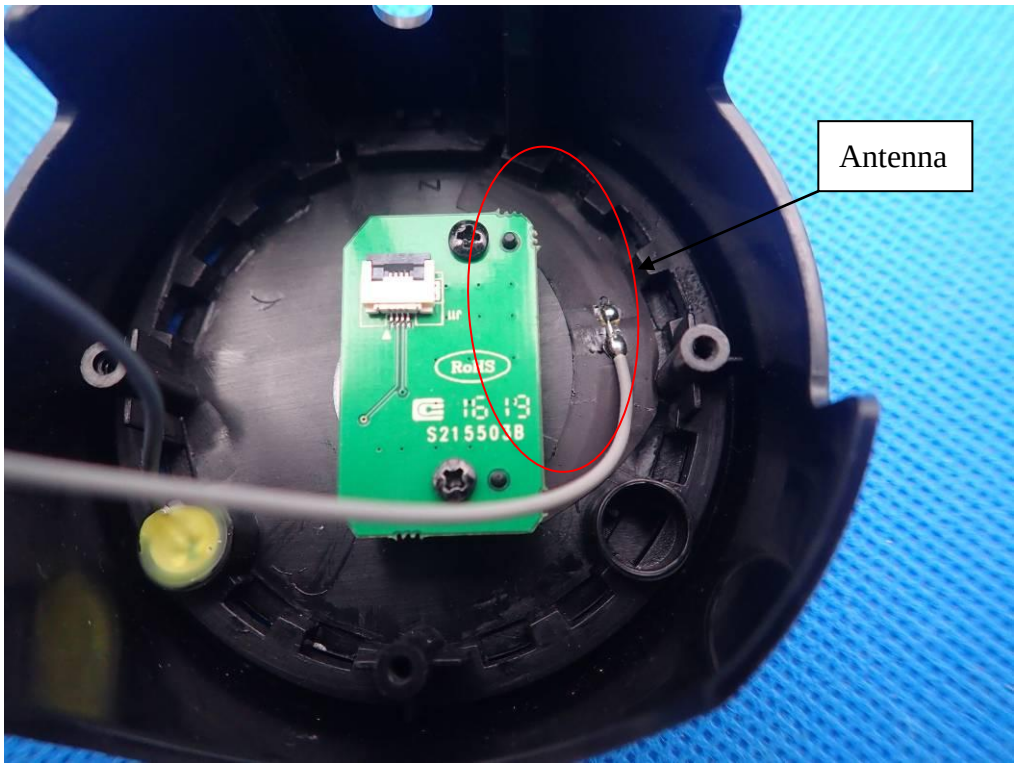
RIGHT VIEW OF EUT



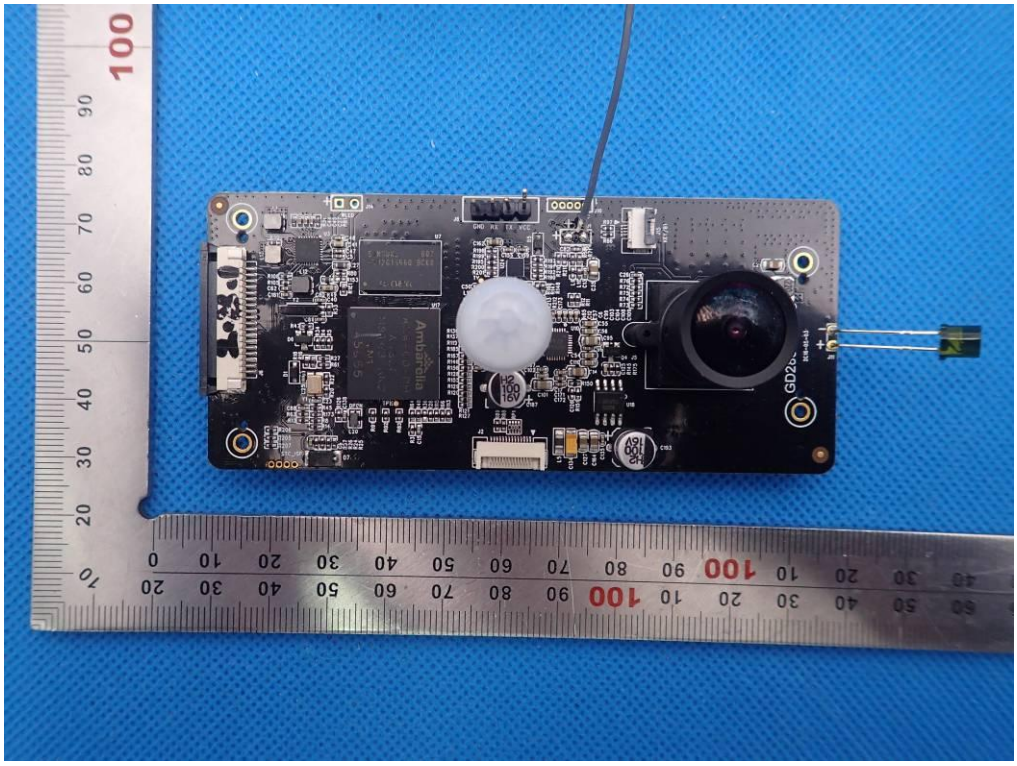
OPEN VIEW OF EUT



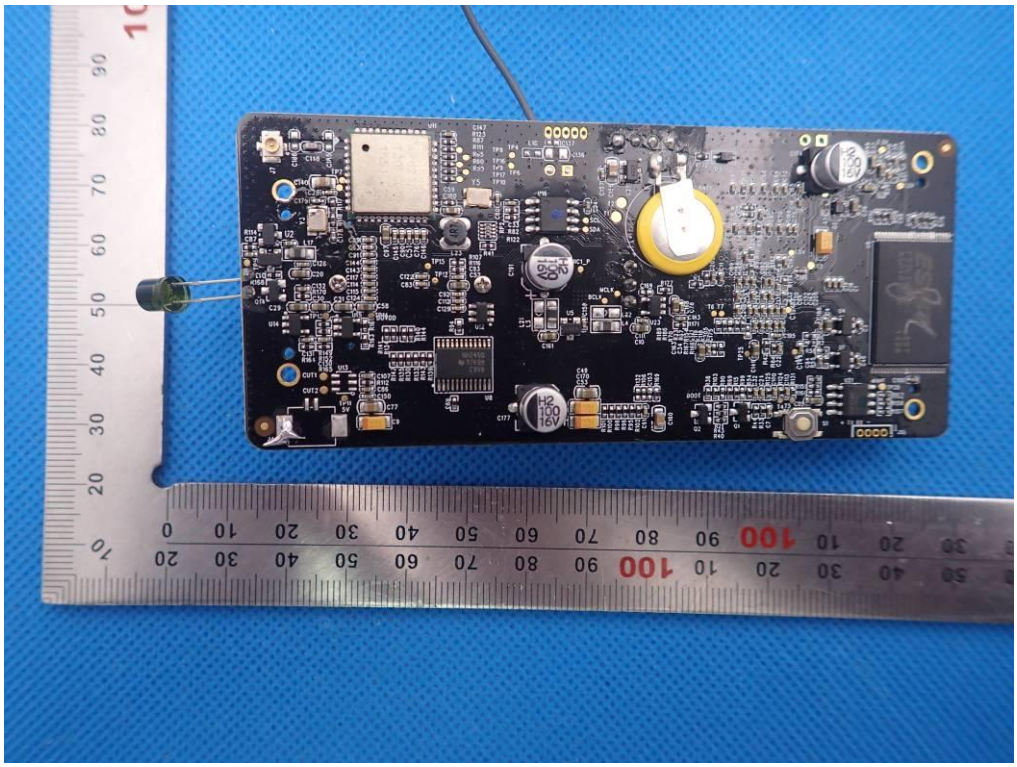
INTERNAL VIEW OF EUT-1



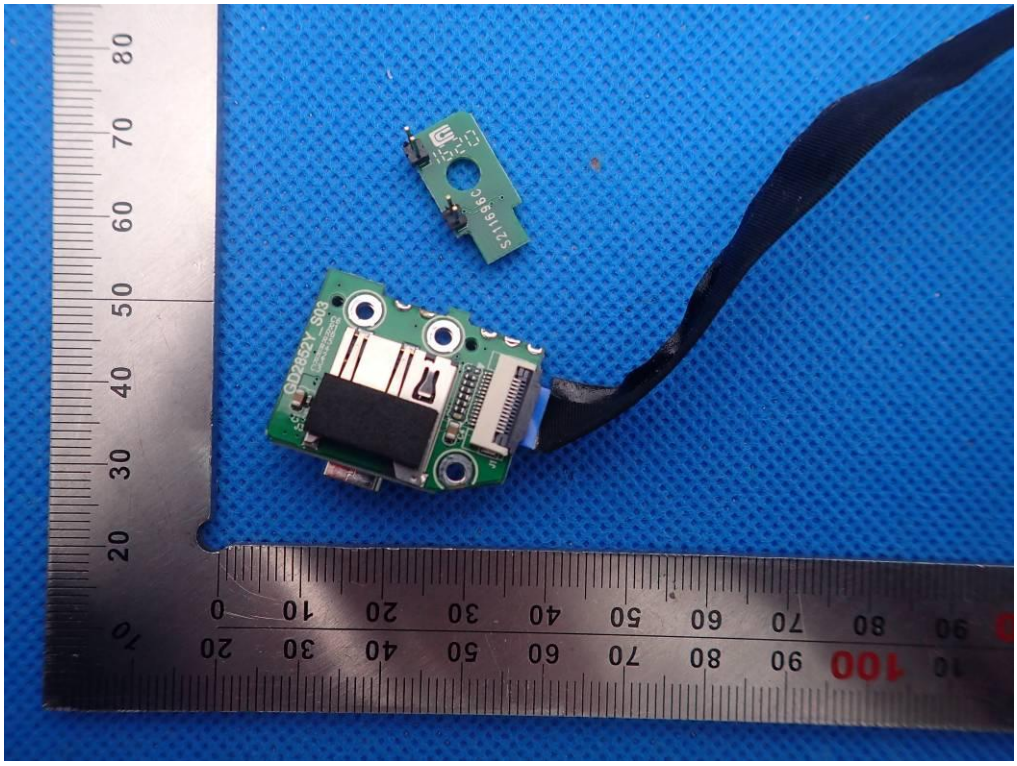
INTERNAL VIEW OF EUT-2



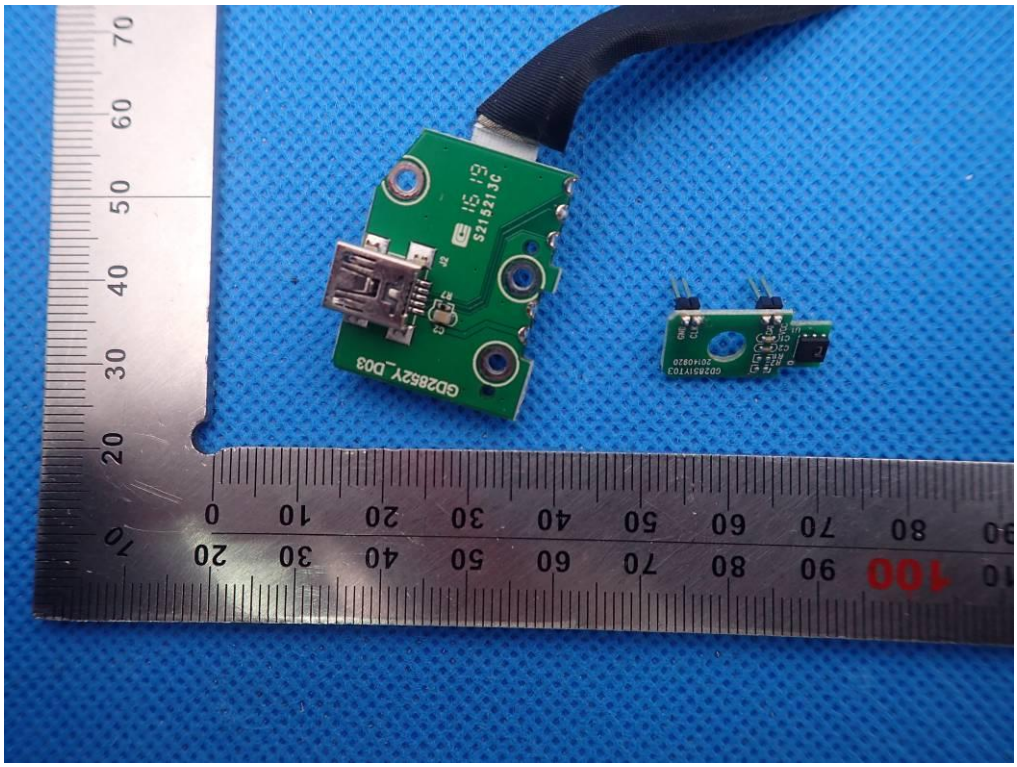
INTERNAL VIEW OF EUT-3



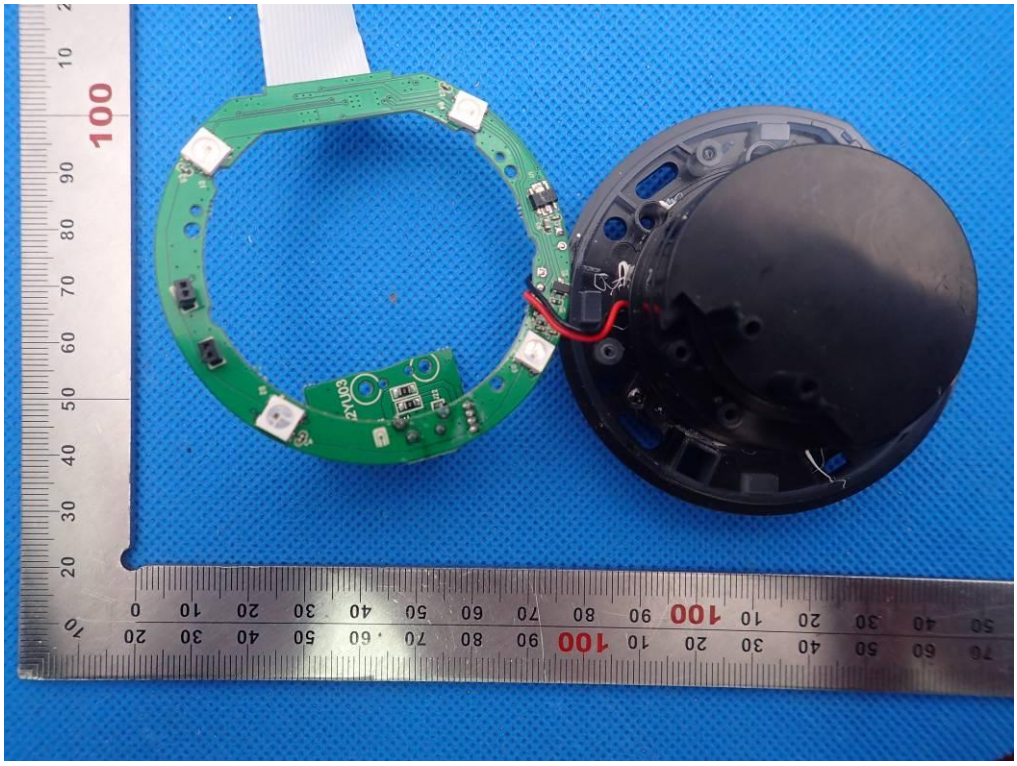
INTERNAL VIEW OF EUT-4



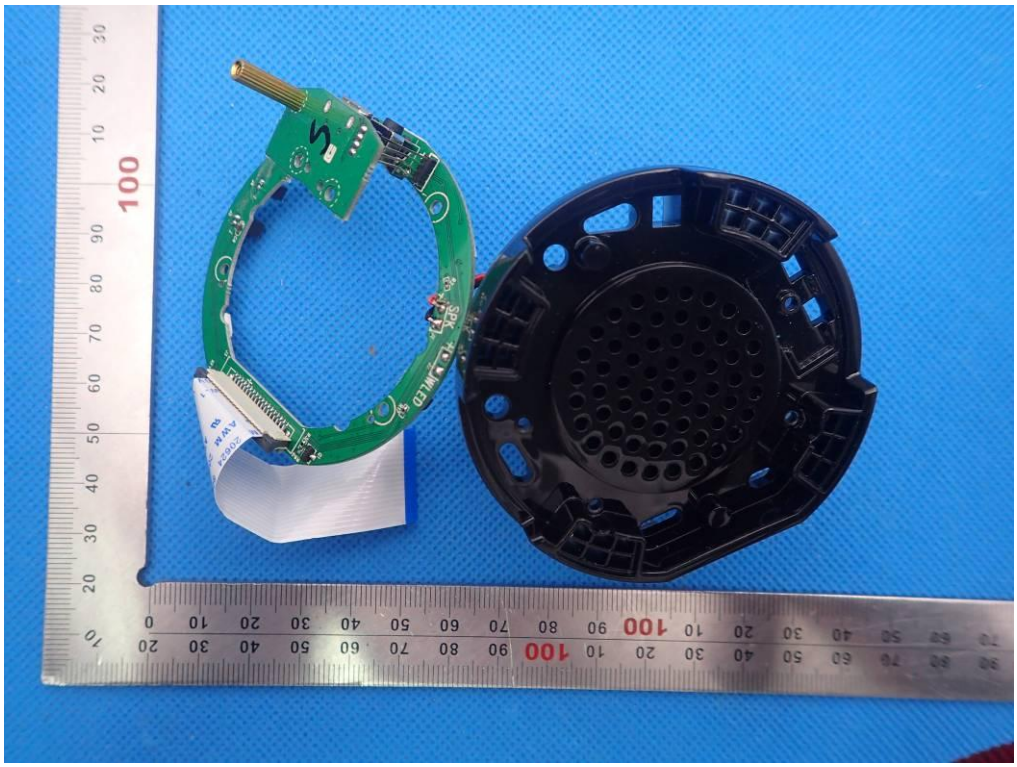
INTERNAL VIEW OF EUT-5



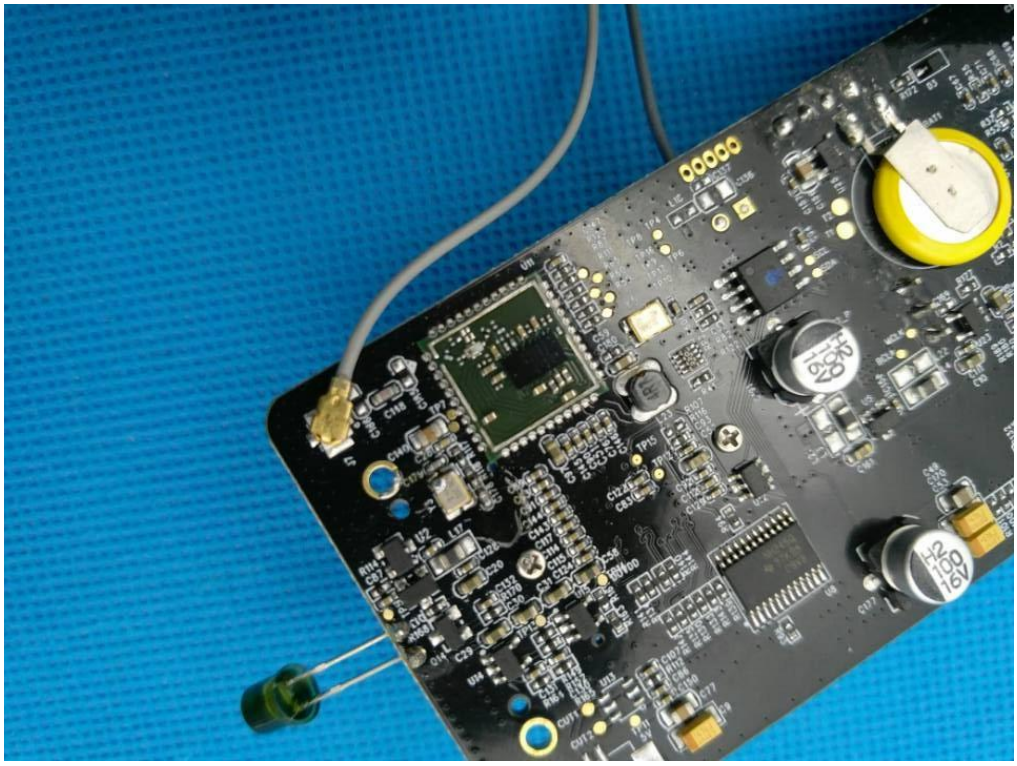
INTERNAL VIEW OF EUT-6



INTERNAL VIEW OF EUT-7



INTERNAL VIEW OF EUT-8



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