RADIATED EMISSION ABOVE 1GHZ

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	**Antenna**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.064	44.68	3.72	48.4	74	-25.6	peak
4824.093	39.08	3.72	42.8	54	-11.2	AVG
7236.102	42.28	8.15	50.43	74	-23.57	peak
7236.106	36.51	8.15	44.66	54	-9.34	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	**Antenna**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4824.073	44.23	3.72	47.95	74	-26.05	peak
4824.11	39.68	3.72	43.4	54	-10.6	AVG
7236.071	42.55	8.15	50.7	74	-23.3	peak
7236.055	37.94	8.15	46.09	54	-7.91	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	**Antenna**	Horizontal

Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Value Type
4874.063	47.17	3.75	50.92	74	-23.08	peak
4874.045	42.28	3.75	46.03	54	-7.97	AVG
7311.096	41.46	8.16	49.62	74	-24.38	peak
7311.109	37.87	8.16	46.03	54	-7.97	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	**Antenna**	Vertical

Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Value Type
4874.062	46.52	3.75	50.27	74	-23.73	peak
4874.022	40.33	3.75	44.08	54	-9.92	AVG
7311.026	43.22	8.16	51.38	74	-22.62	peak
7311.053	39.18	8.16	47.34	54	-6.66	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	**Antenna**	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.063	43.24	3.81	47.05	74	-26.95	peak
4924.04	40.52	3.81	44.33	54	-9.67	AVG
7386.119	40.77	8.19	48.96	74	-25.04	peak
7386.061	36.62	8.19	44.81	54	-9.19	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25°C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	**Antenna**	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4924.023	44.25	3.81	48.06	74	-25.94	peak
4924.051	39.43	3.81	43.24	54	-10.76	AVG
7386.062	38.52	8.19	46.71	74	-27.29	peak
7386.093	37.63	8.19	45.82	54	-8.18	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

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:

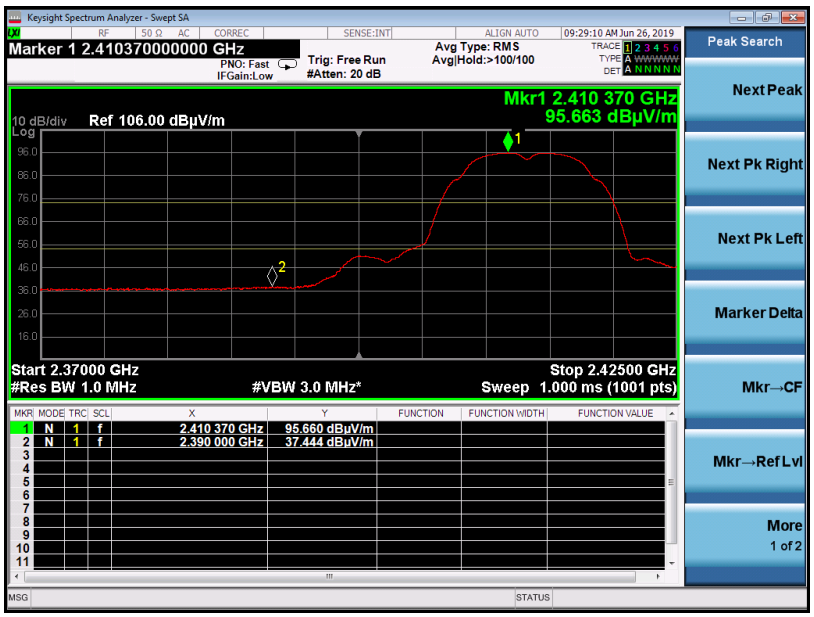
1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude.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

12.3. TEST RESULT

EUT	2.4G Camera	**Model Name**	WJ11
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	2.4G Camera	**Model Name**	WJ11
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	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	**Antenna**	Vertical

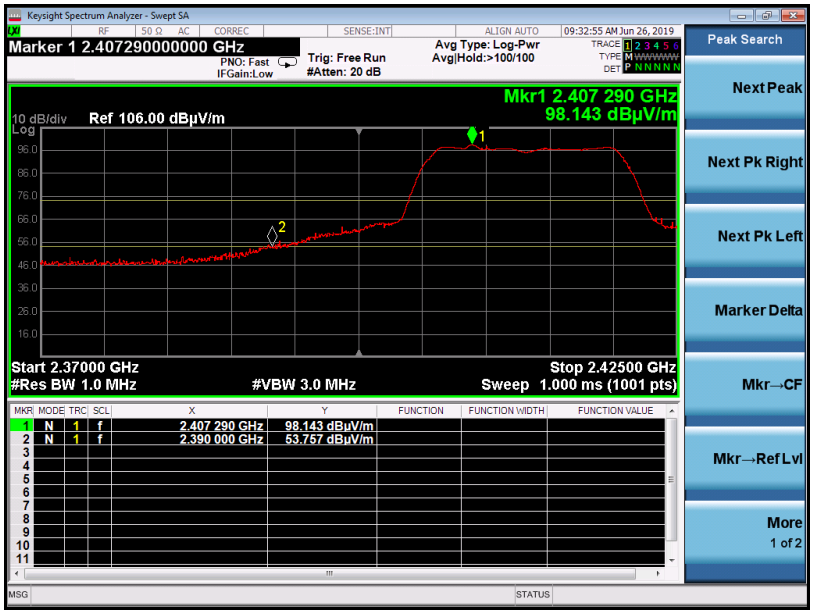
PK

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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



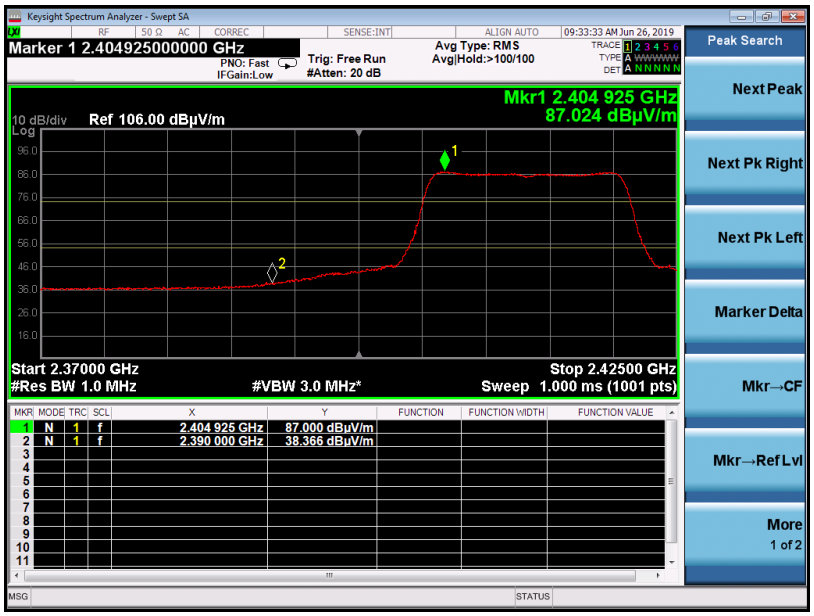
AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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**	Horizontal

PK

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
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

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2422MHZ	**Antenna**	Horizontal

PK

AV

RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2422MHZ	**Antenna**	Vertical

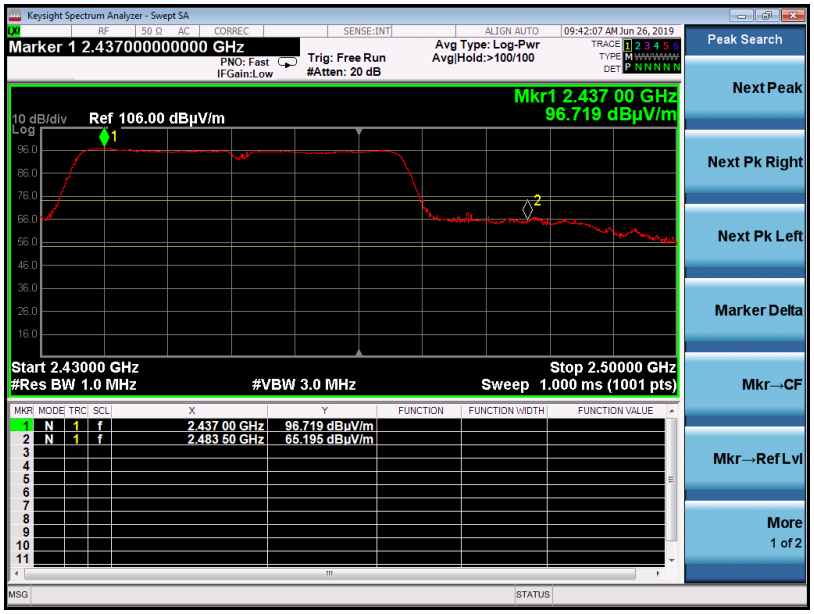
PK

AV

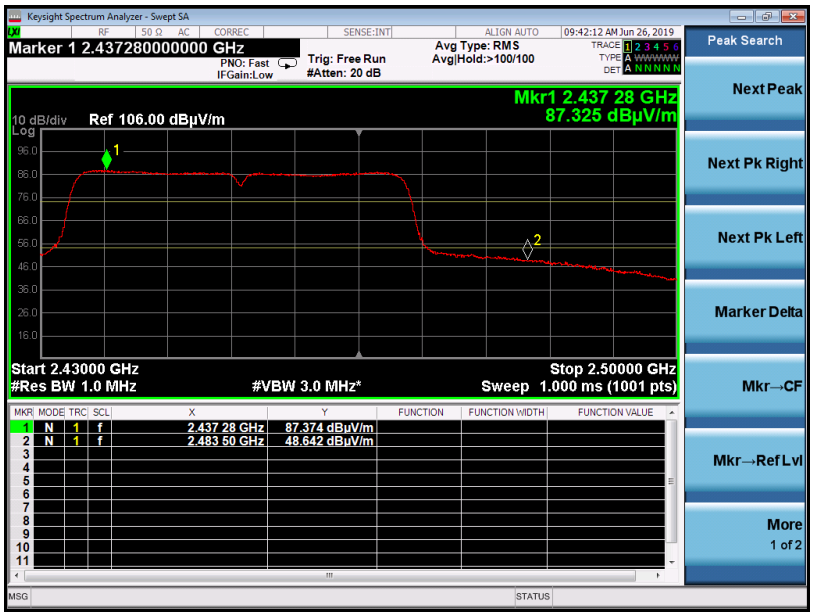
RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 40with data rate 13.5 2452MHZ	**Antenna**	Horizontal

PK



AV

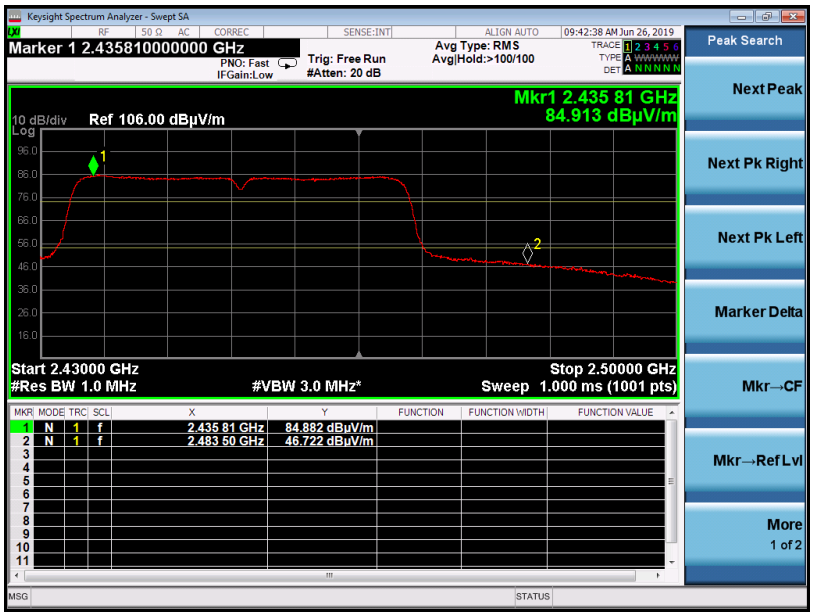


RESULT: PASS

EUT	2.4G Camera	**Model Name**	WJ11
Temperature	25˚C	**Relative Humidity**	55.4%
Pressure	960hPa	**Test Voltage**	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2452MHZ	**Antenna**	Vertical

PK

AV



RESULT: PASS

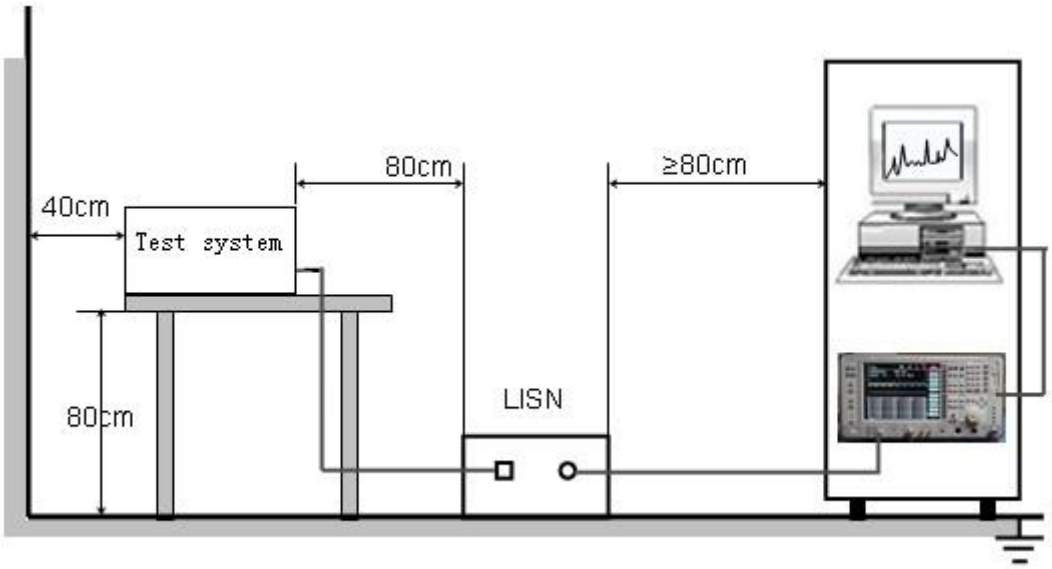
13. FCC LINE CONDUCTED EMISSION TEST

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 0.50MHz.

13.2. BLOCK DIAGRAM OF TEST SETUP



13.3. 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) The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.

(5) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.

(6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

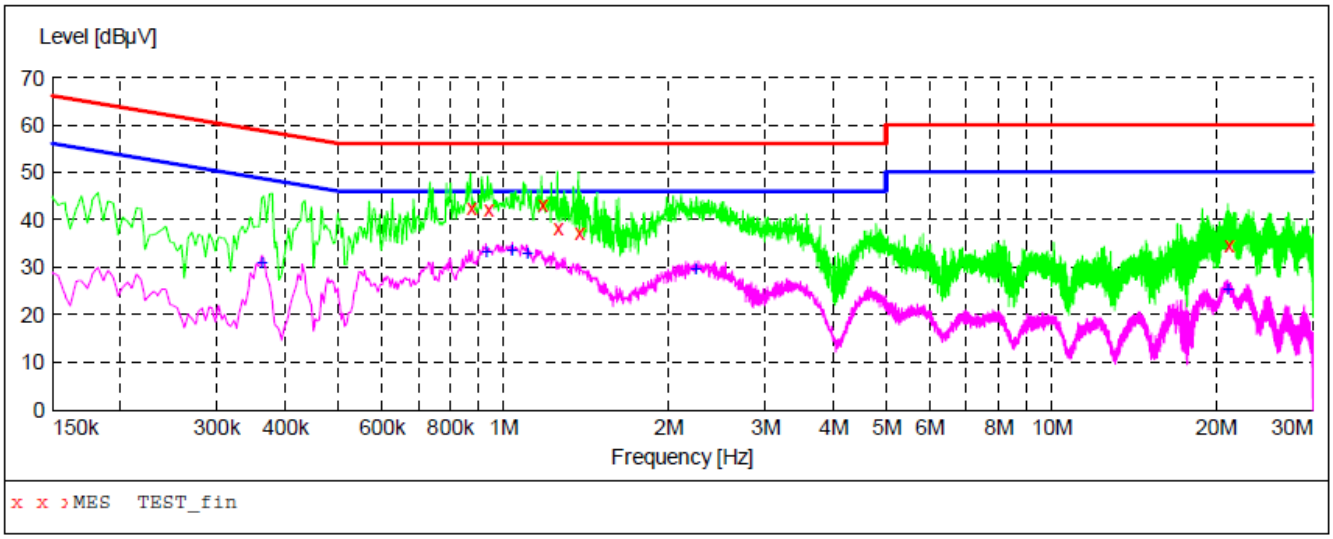
(7) During the above scans, the emissions were maximized by cable manipulation.

(8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.

(9) 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.

13.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L1（Worst Mode 4）



MEASUREMENT RESULT: "TEST_fin"

6/27/2019 8:08PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.870000	42.40	11.0	56	13.6	QP	L1	FLO
0.938000	42.30	11.2	56	13.7	QP	L1	FLO
1.174000	43.20	11.5	56	12.8	QP	L1	FLO
1.254000	38.30	11.5	56	17.7	QP	L1	FLO
1.374000	37.40	11.5	56	18.6	QP	L1	FLO
21.006000	34.80	12.5	60	25.2	QP	L1	FLO

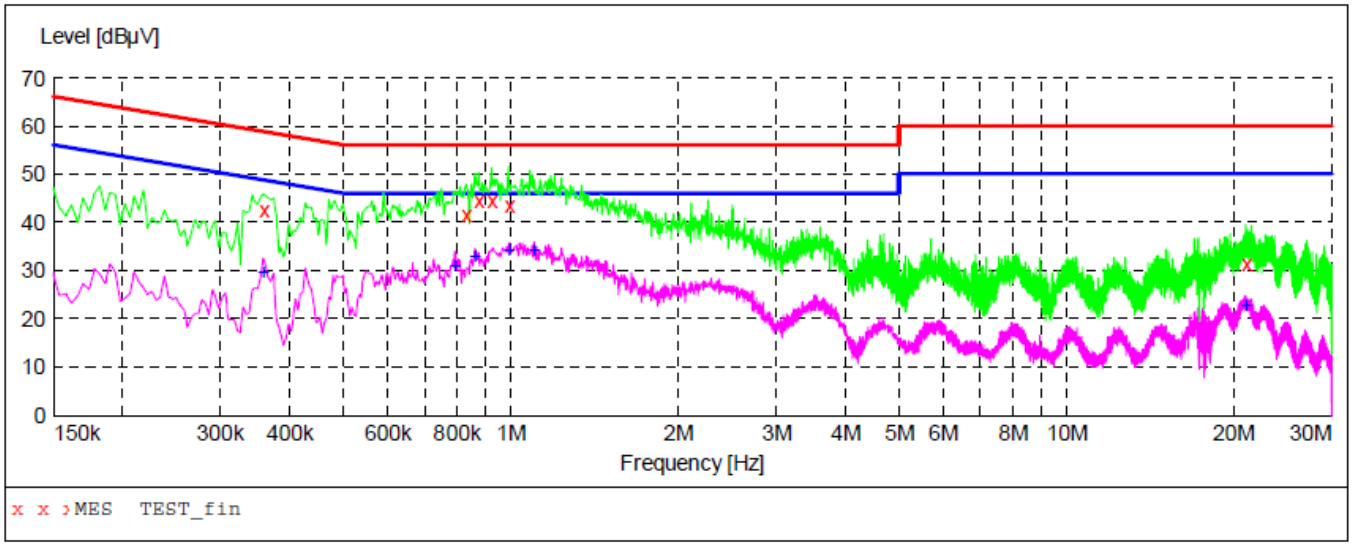
MEASUREMENT RESULT: "TEST_fin2"

6/27/2019 8:08PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.362000	31.00	10.5	49	17.7	AV	L1	FLO
0.930000	33.40	11.2	46	12.6	AV	L1	FLO
1.038000	33.80	11.4	46	12.2	AV	L1	FLO
1.106000	33.10	11.5	46	12.9	AV	L1	FLO
2.238000	29.60	11.5	46	16.4	AV	L1	FLO
20.946000	25.60	12.5	50	24.4	AV	L1	FLO

RESULT: PASS

LINE CONDUCTED EMISSION TEST-N（Worst Mode 4）



MEASUREMENT RESULT: "TEST_fin"

6/27/2019 8:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.358000	42.50	10.5	59	16.3	QP	N	FLO
0.830000	41.60	10.9	56	14.4	QP	N	FLO
0.874000	44.50	11.0	56	11.5	QP	N	FLO
0.922000	44.40	11.2	56	11.6	QP	N	FLO
0.990000	43.50	11.4	56	12.5	QP	N	FLO
21.026000	31.40	12.5	60	28.6	QP	N	FLO

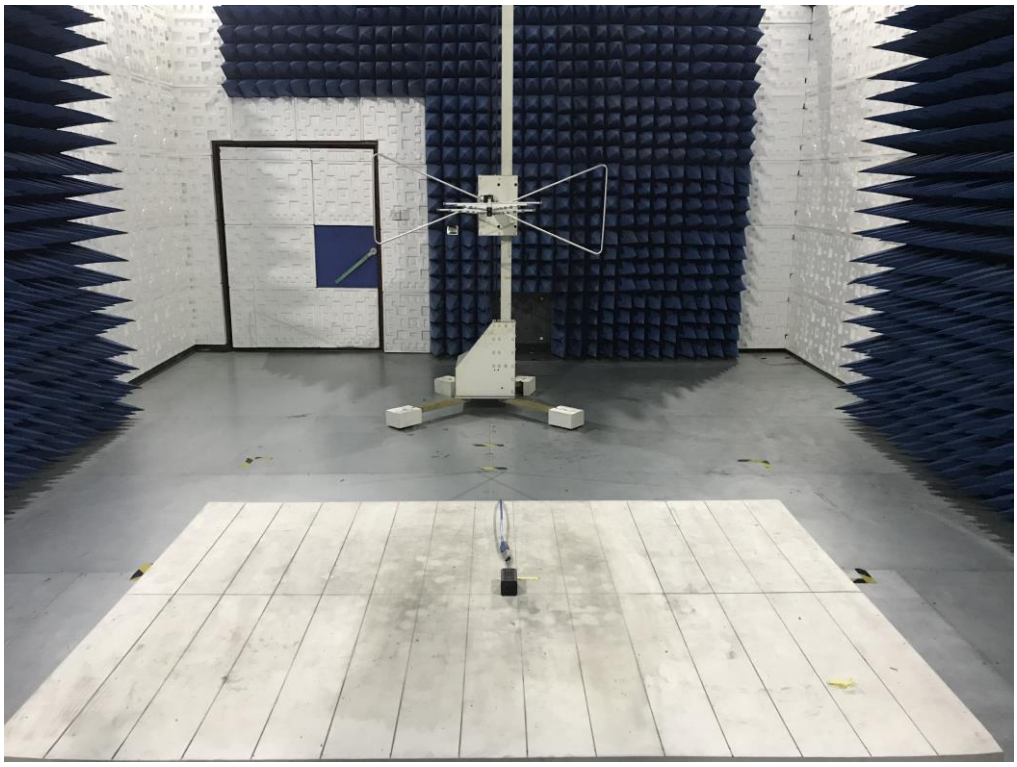
MEASUREMENT RESULT: "TEST_fin2"

6/27/2019 8:03PM

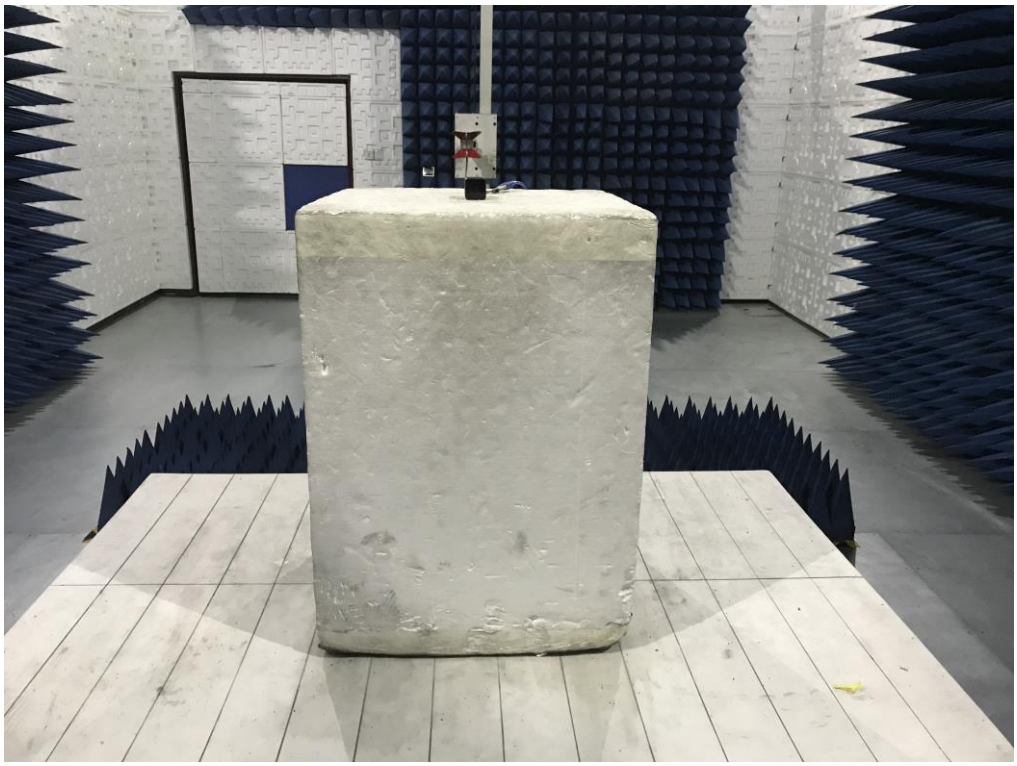
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.358000	29.70	10.5	49	19.1	AV	N	FLO
0.794000	31.10	10.7	46	14.9	AV	N	FLO
0.862000	33.00	11.0	46	13.0	AV	N	FLO
0.994000	34.30	11.4	46	11.7	AV	N	FLO
1.102000	34.20	11.5	46	11.8	AV	N	FLO
21.026000	23.00	12.5	50	27.0	AV	N	FLO

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ

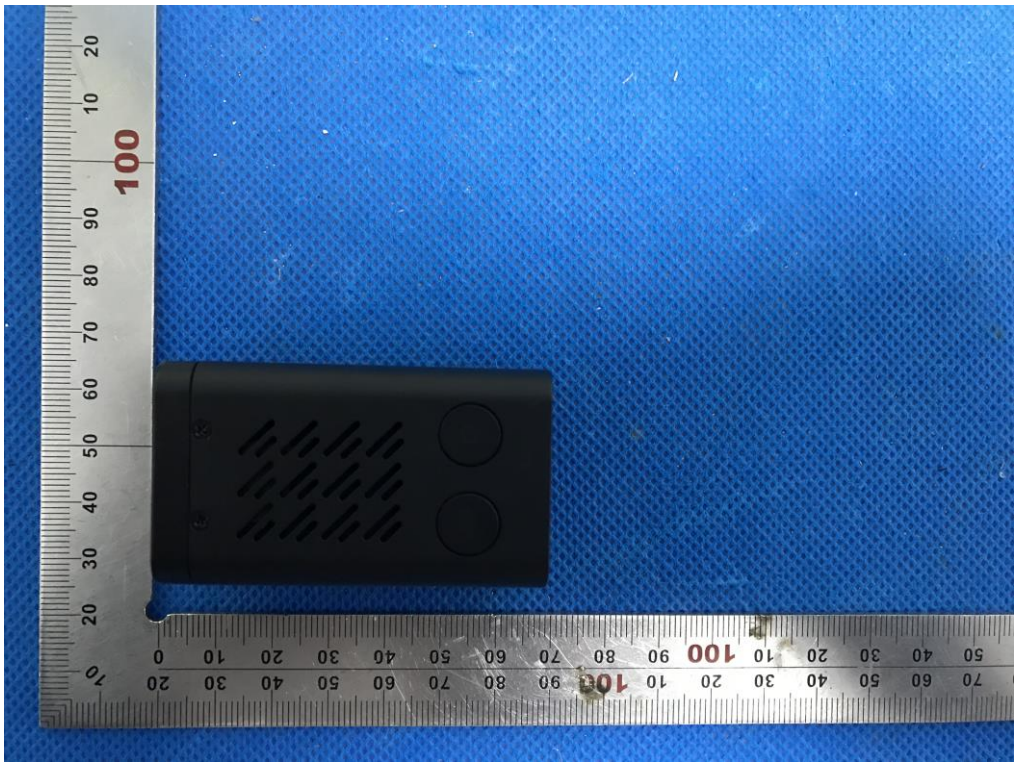


FCC CONDUCTED EMISSION TEST SETUP

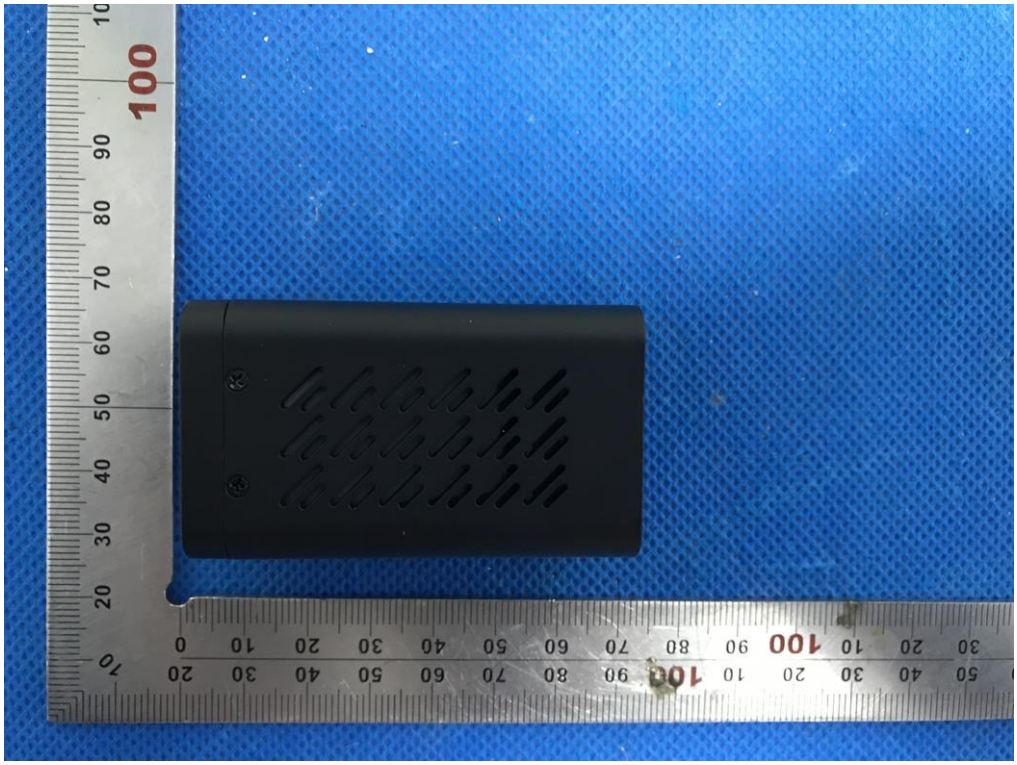
APPENDIX B: PHOTOGRAPHS OF EUT

ALL VIEW OF EUT

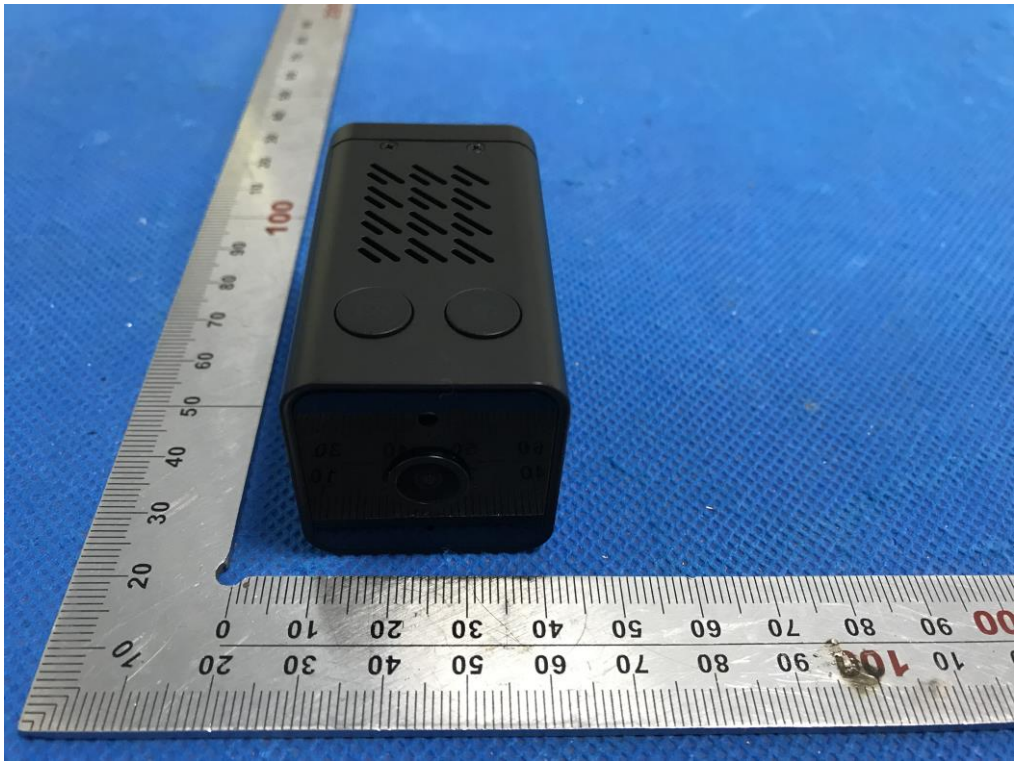
TOP VIEW OF EUT



BOTTOM VIEW OF EUT

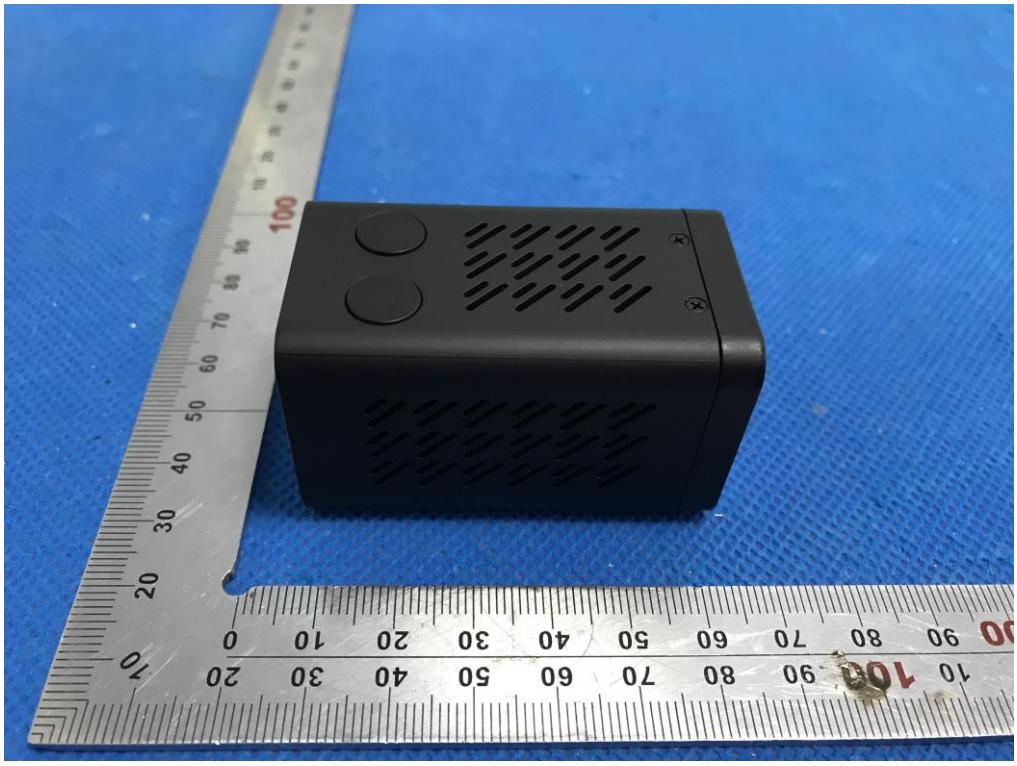


FRONT VIEW OF EUT

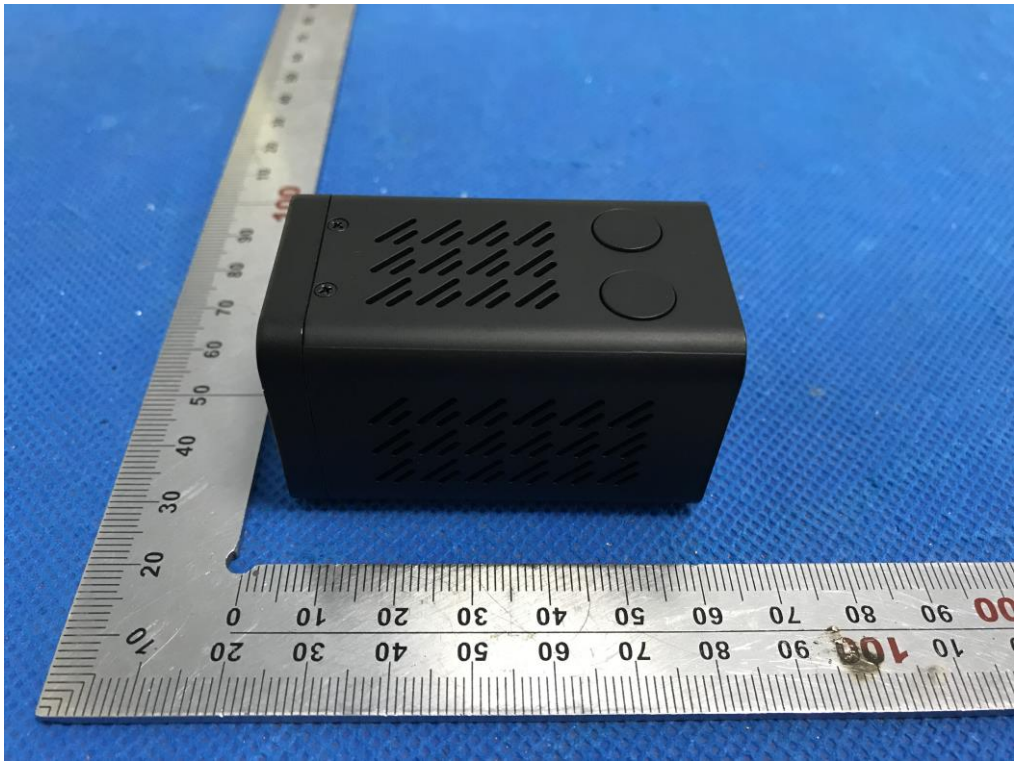


BACK VIEW OF EUT

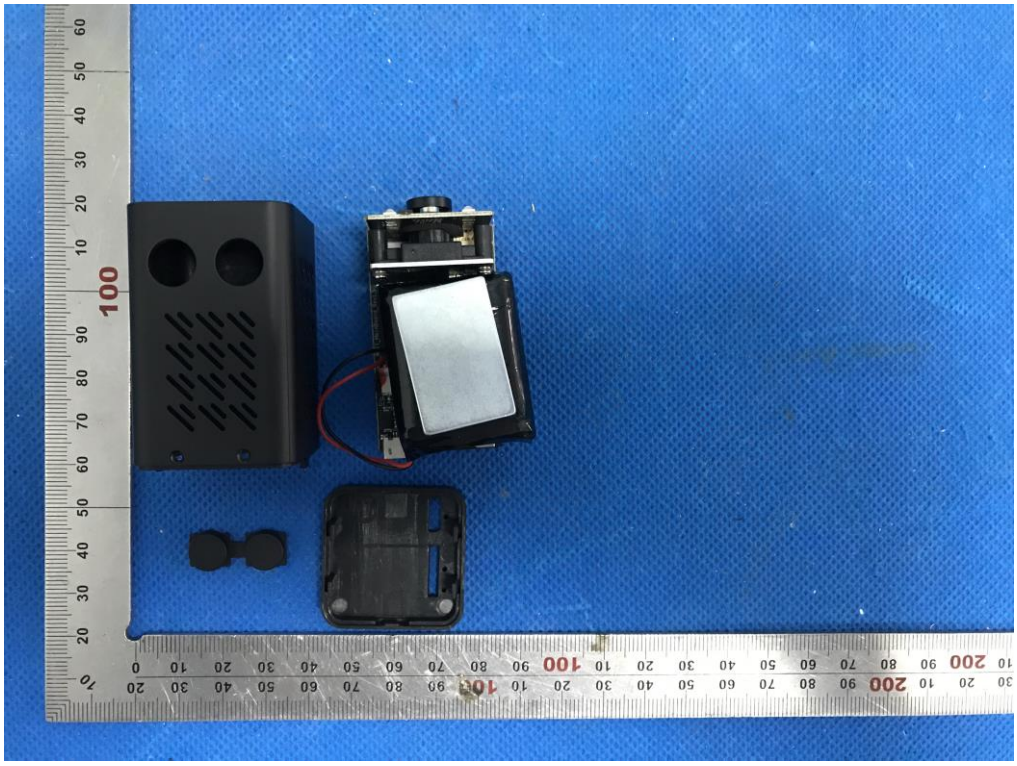
LEFT VIEW OF EUT



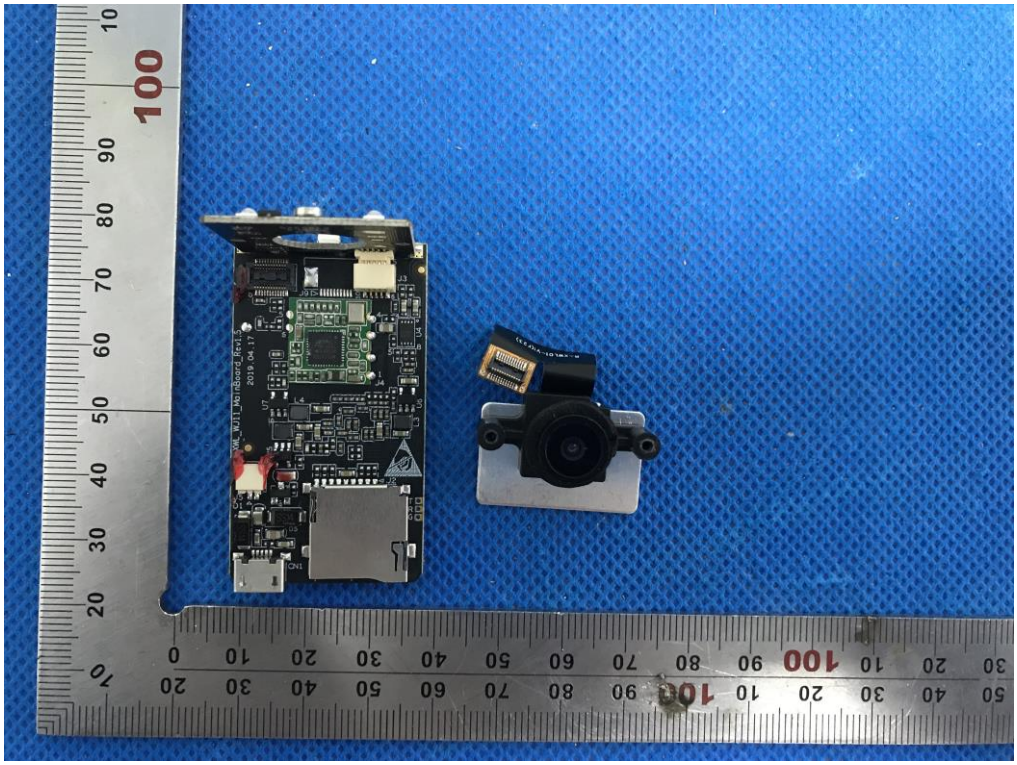
RIGHT VIEW OF EUT



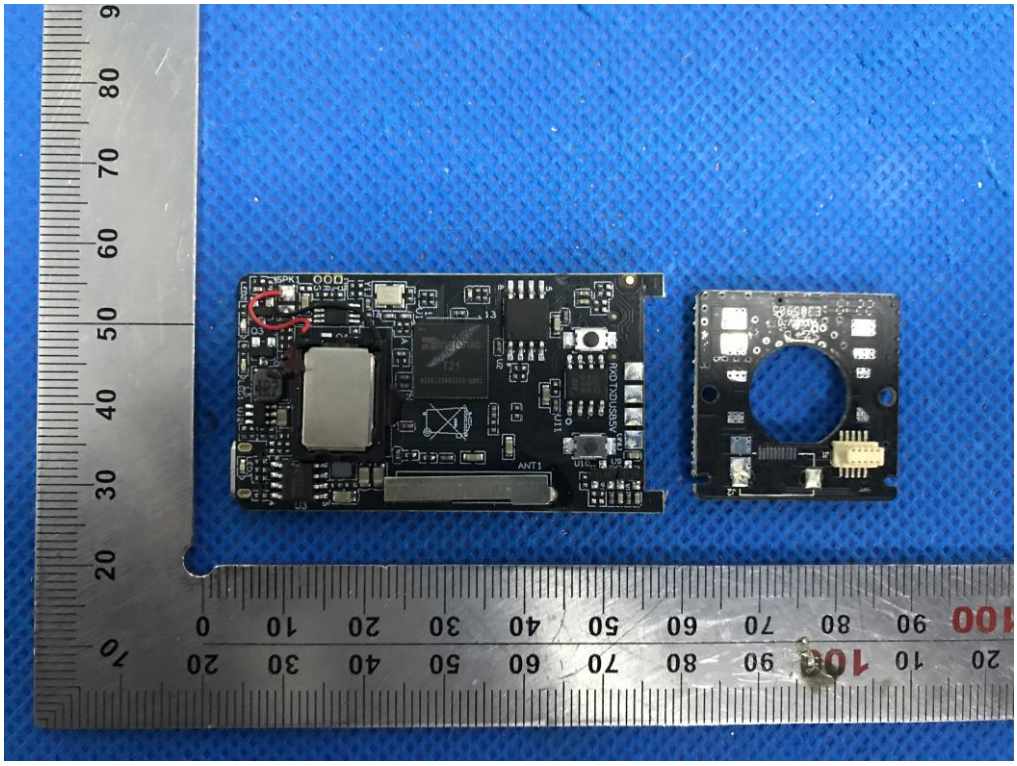
OPEN VIEW OF EUT



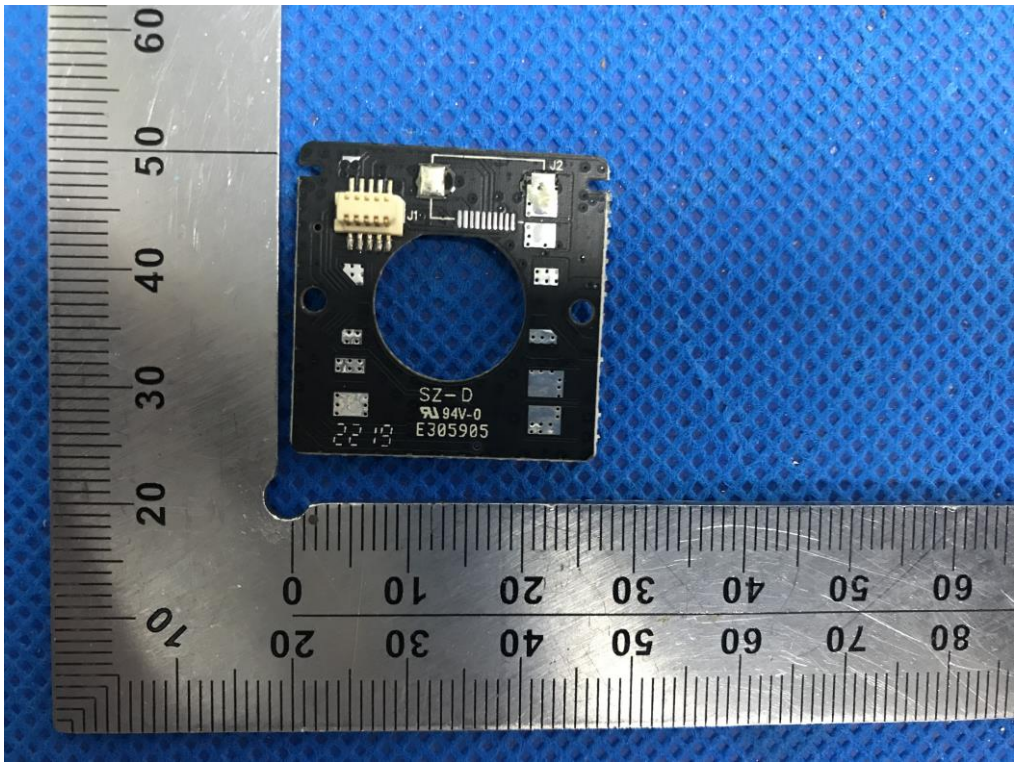
INTERNAL VIEW OF EUT-1



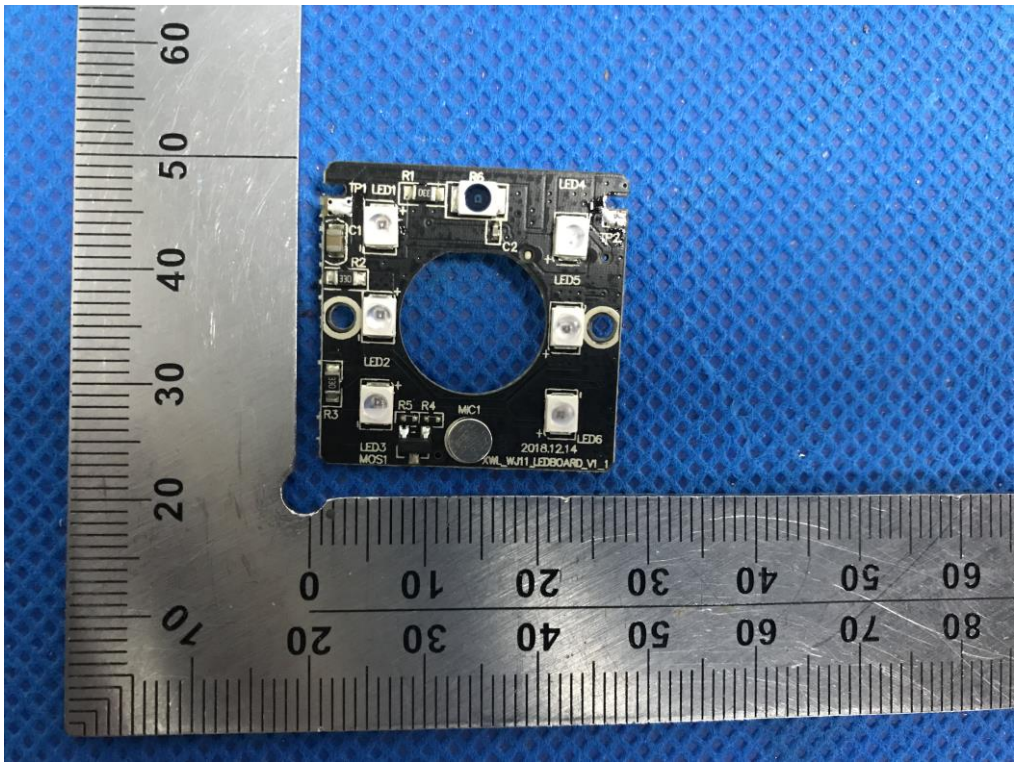
INTERNAL VIEW OF EUT-2



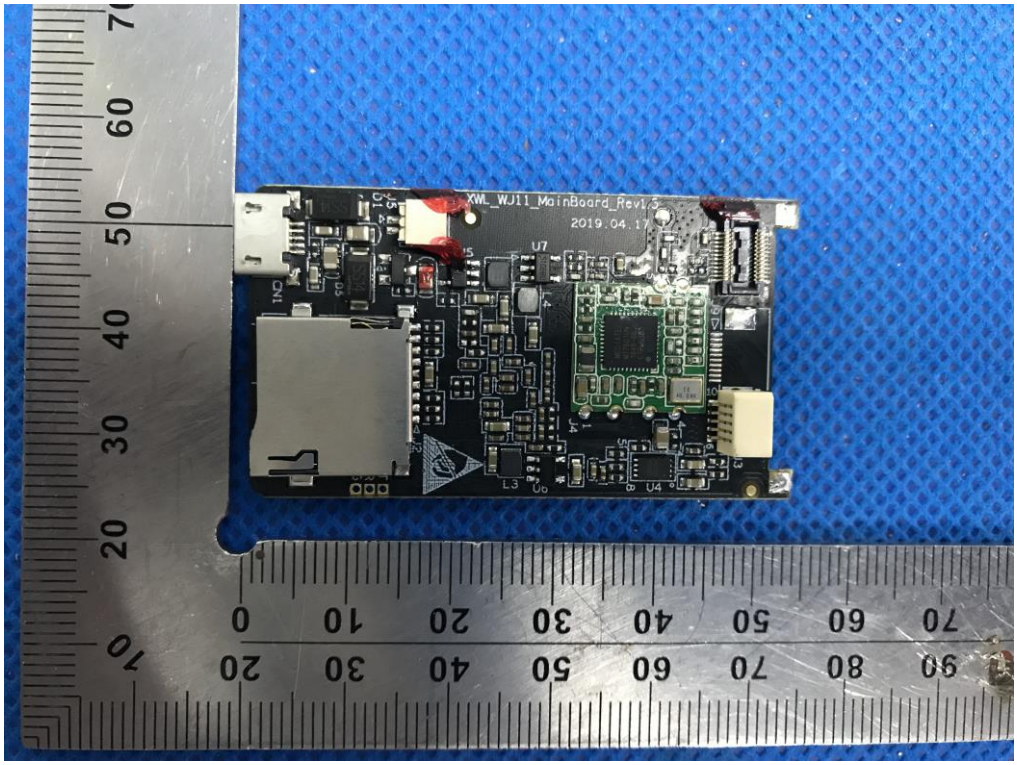
INTERNAL VIEW OF EUT-3



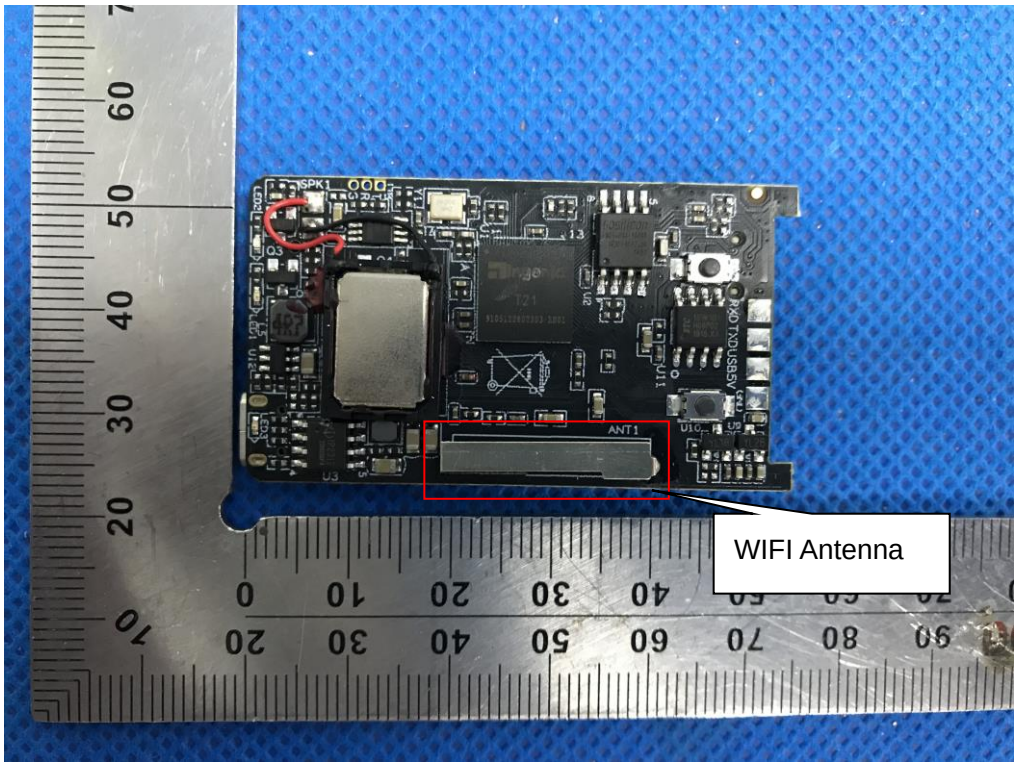
INTERNAL VIEW OF EUT-4



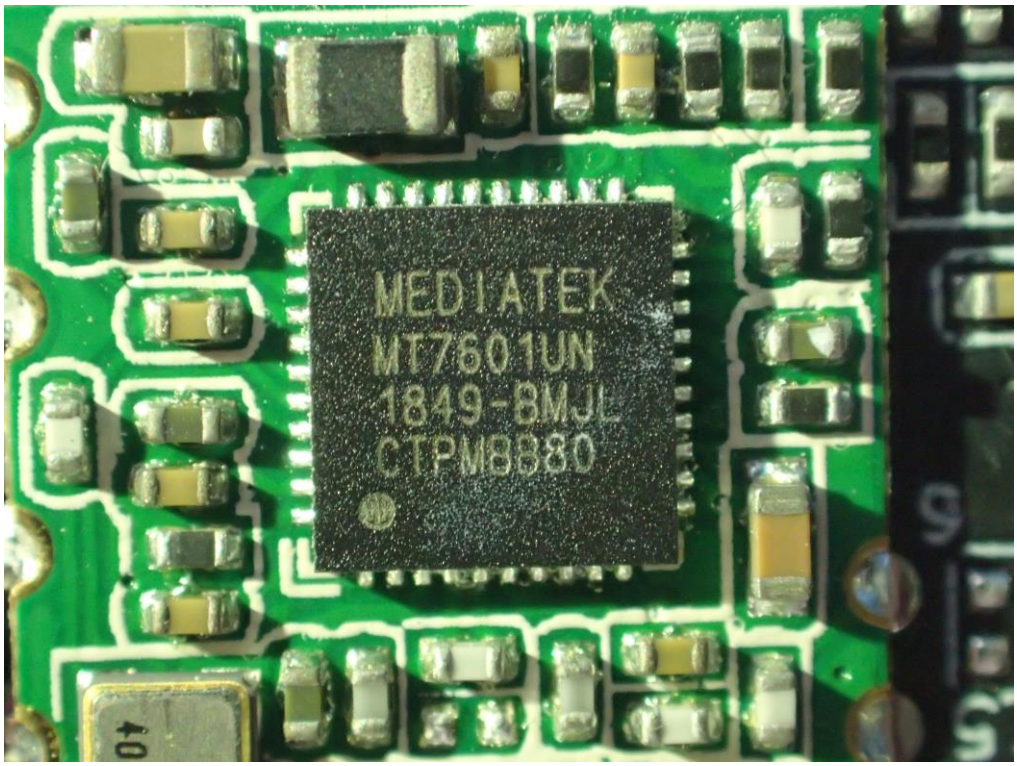
INTERNAL VIEW OF EUT-5



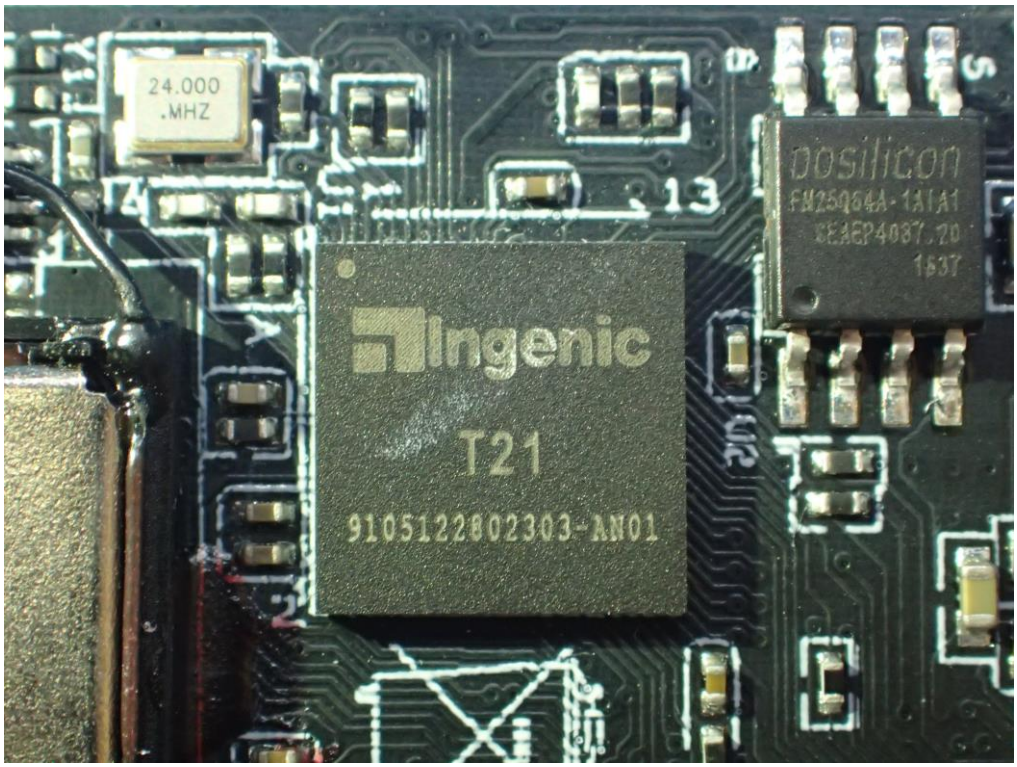
INTERNAL VIEW OF EUT-6



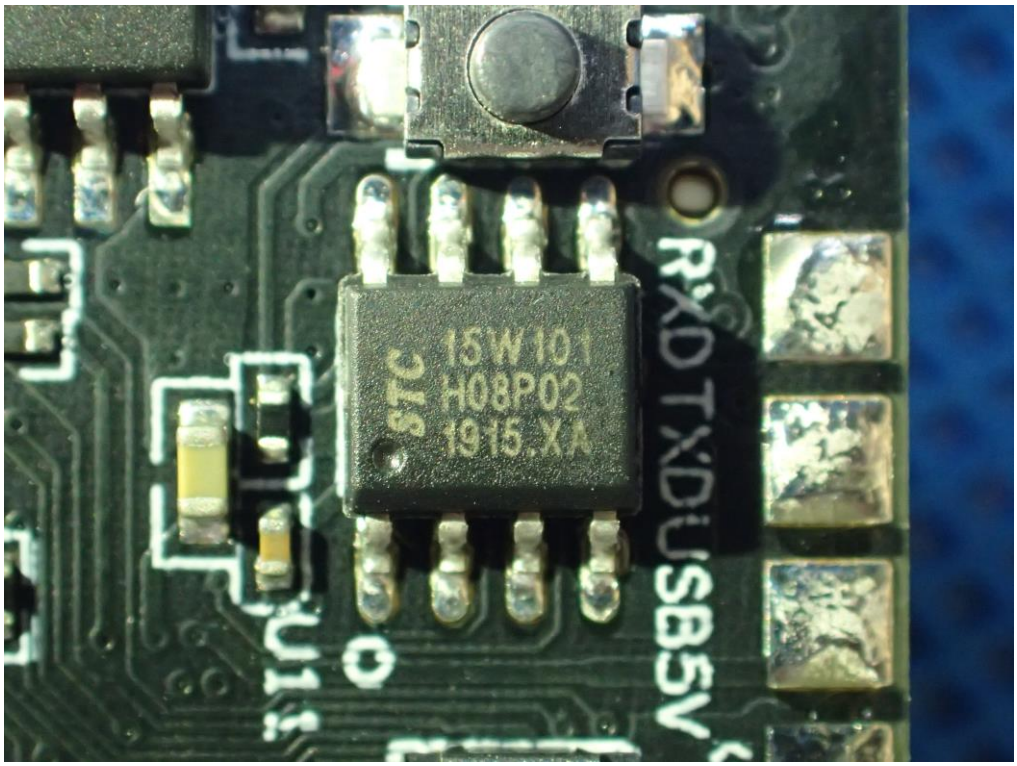
INTERNAL VIEW OF EUT-7



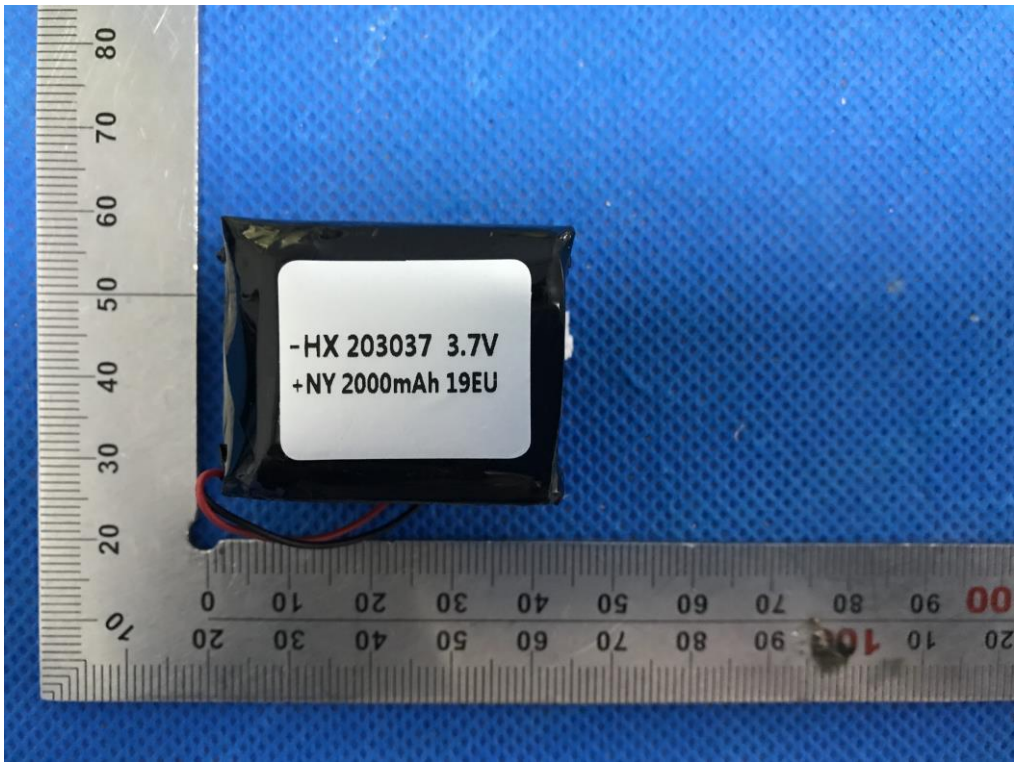
INTERNAL VIEW OF EUT-8



INTERNAL VIEW OF EUT-9



VIEW OF Battery



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