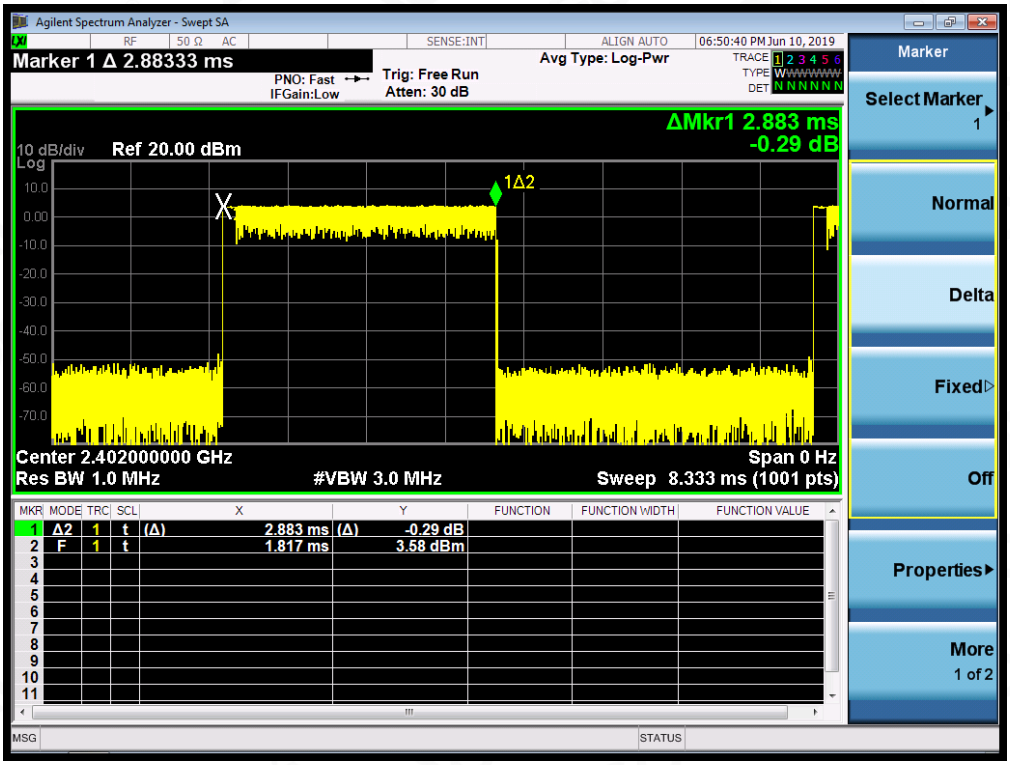
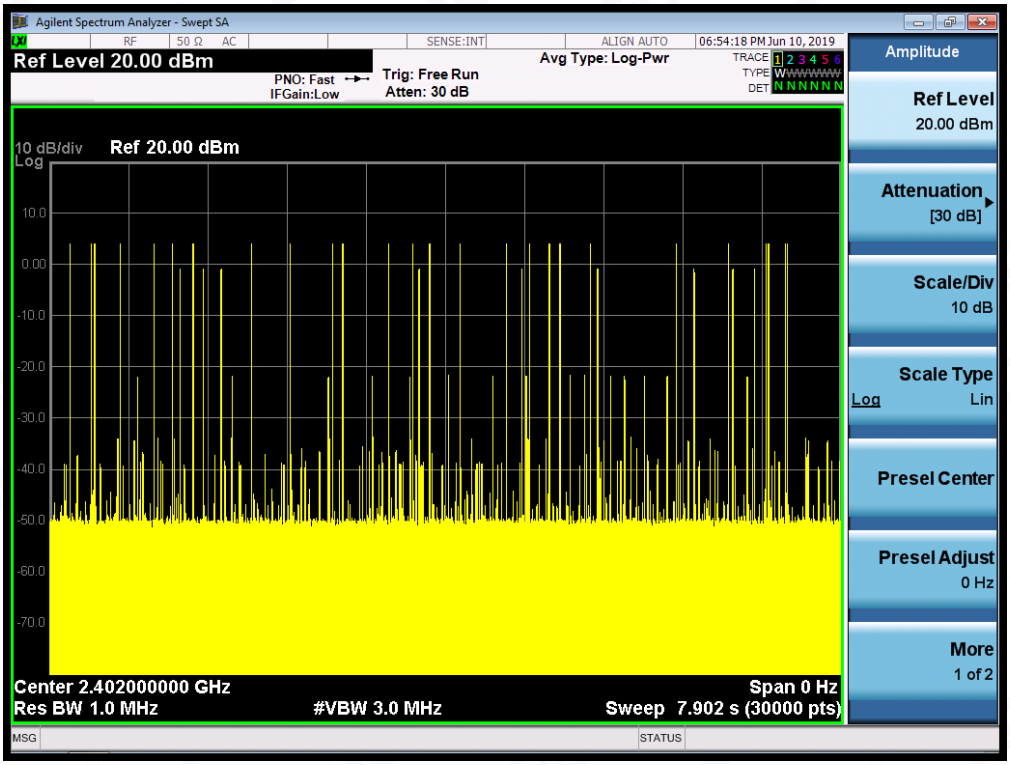
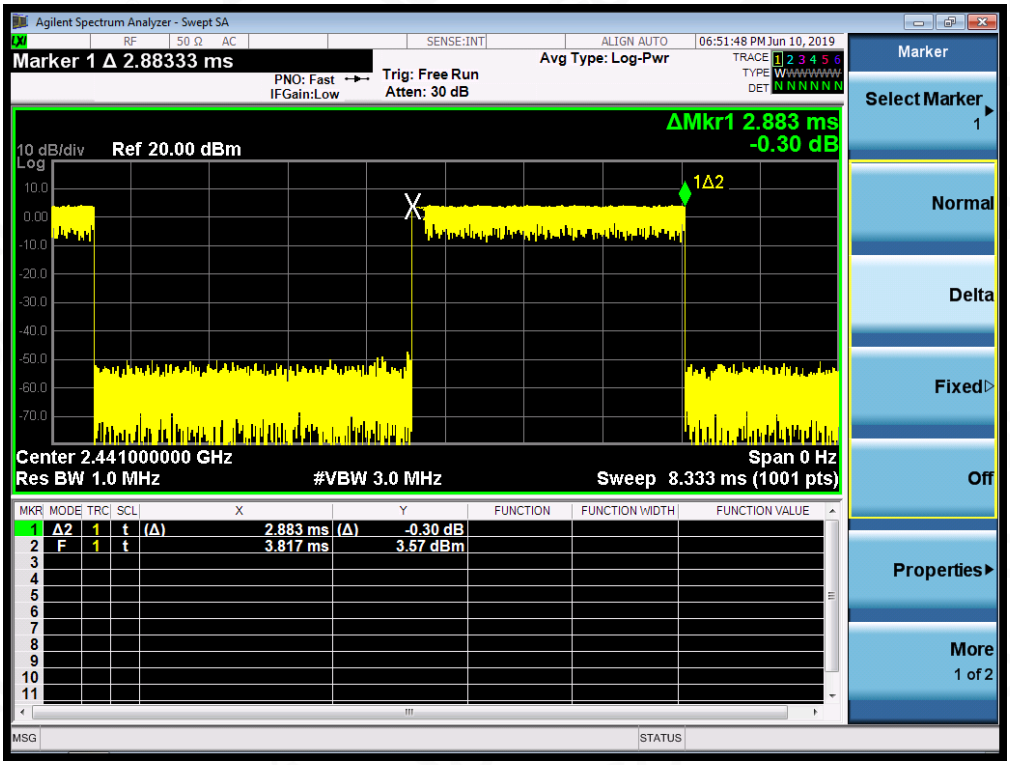
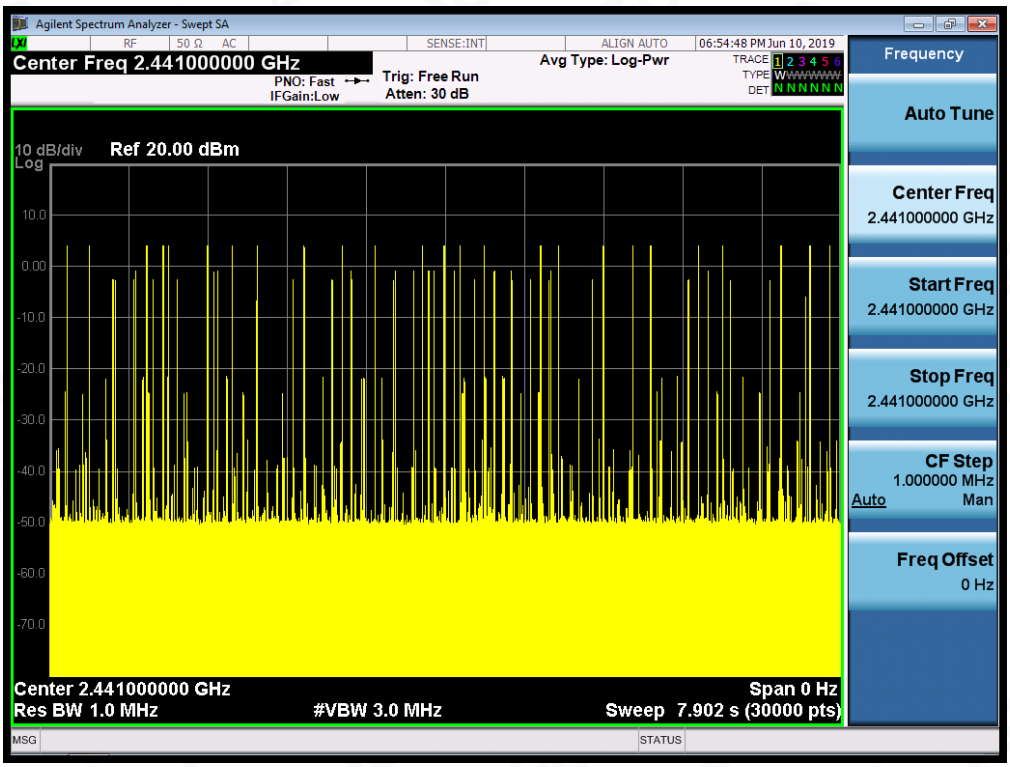
TEST PLOT OF LOW CHANNEL



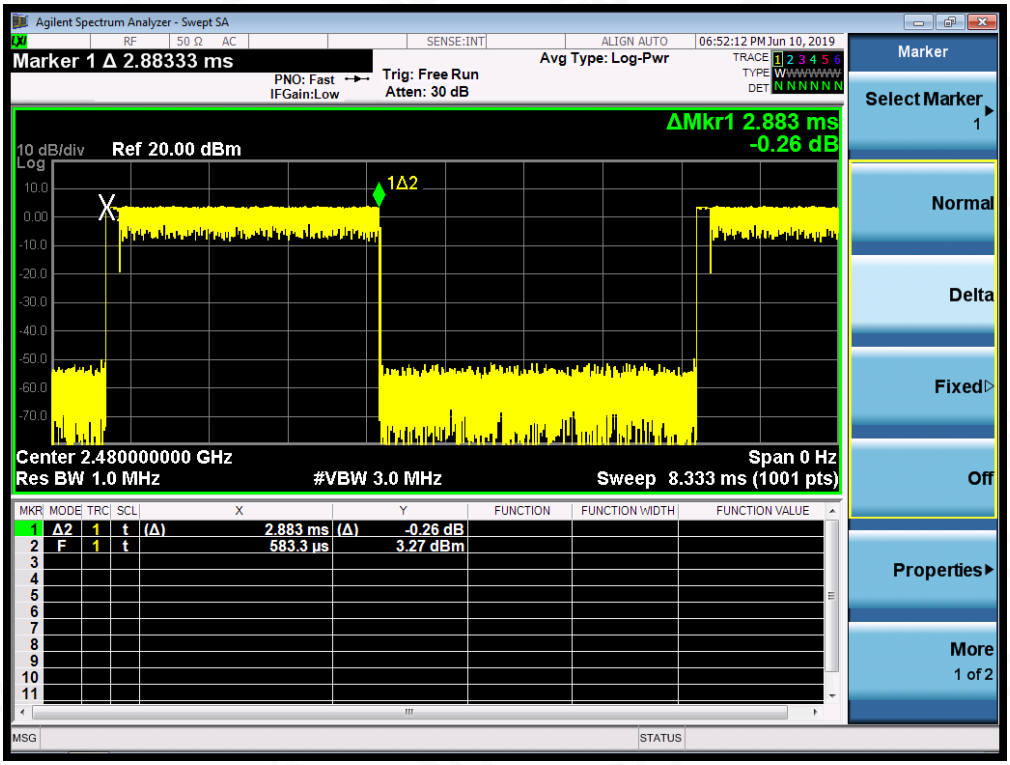


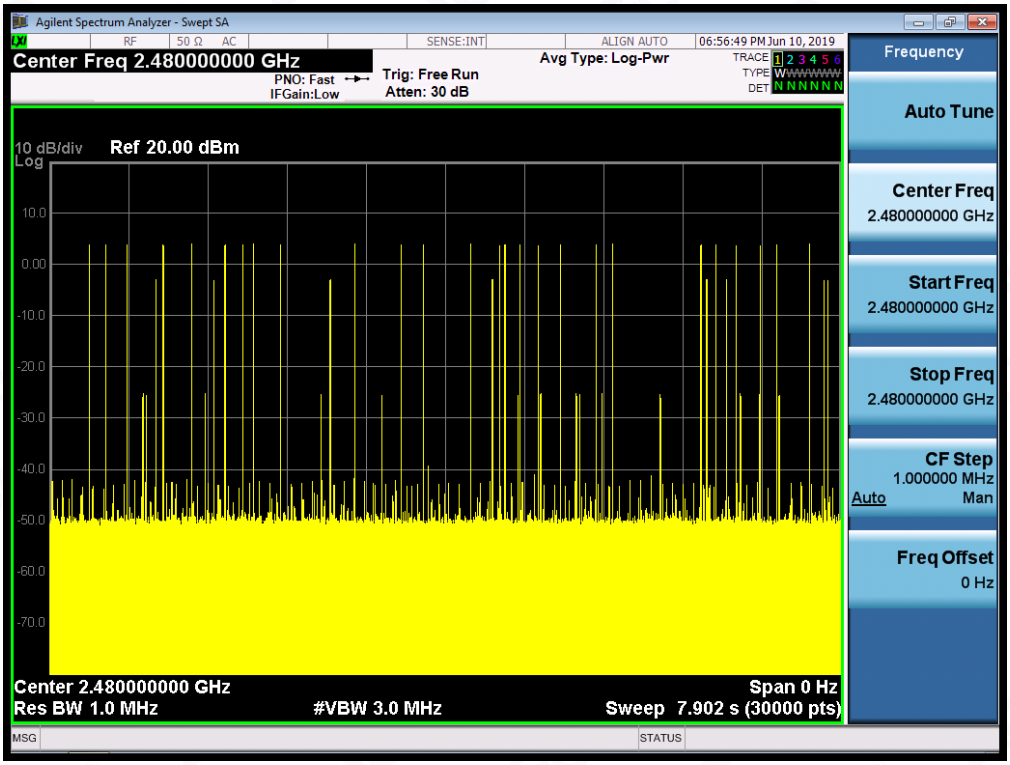
TEST PLOT OF MIDDLE CHANNEL





TEST PLOT OF HIGH CHANNEL





13. FREQUENCY SEPARATION

13.1. MEASUREMENT PROCEDURE

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:
1. Span: Wide enough to capture the peaks of two adjacent channels.
2. RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
3. Video (or average) bandwidth (VBW) ≥ RBW.
4. Sweep: Auto. e) Detector function: Peak. f) Trace: Max hold. g) Allow the trace to stabilize.
Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

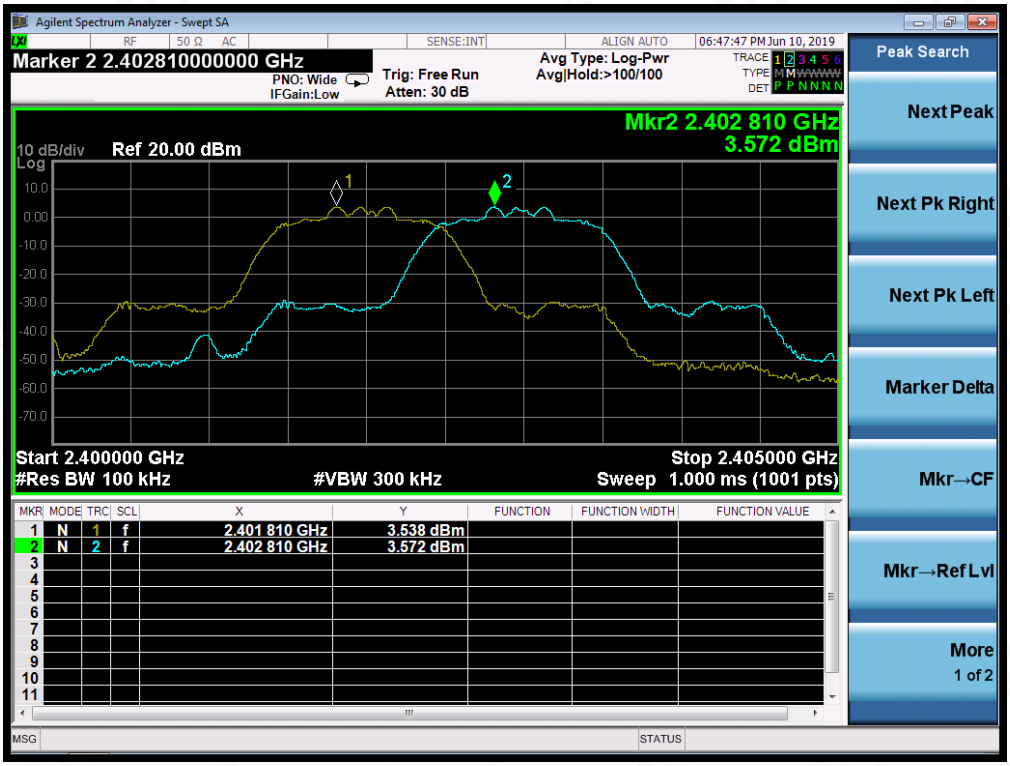
13.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

13.4. LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	Pass
CH01-CH02	1000	>=25 KHz or 2/3 20 dB BW	

TEST PLOT FOR FREQUENCY SEPARATION



Note: The π /4-DQPSK modulation is the worst case and recorded in the report.

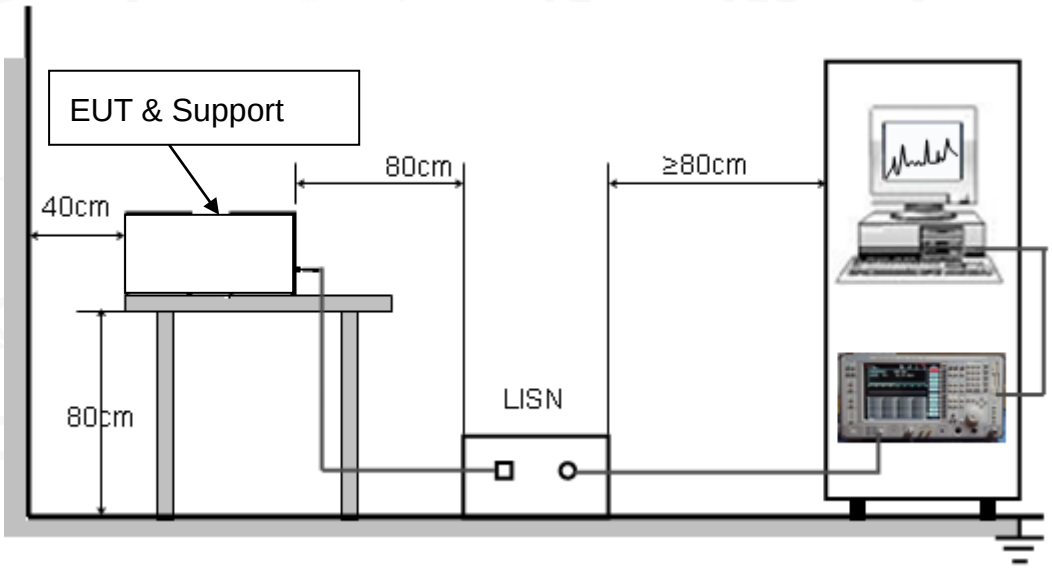
14. FCC LINE CONDUCTED EMISSION TEST

14.1. 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.

14.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



14.3. 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 DC 15V power from adapter which received AC120V/60Hz power from 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.

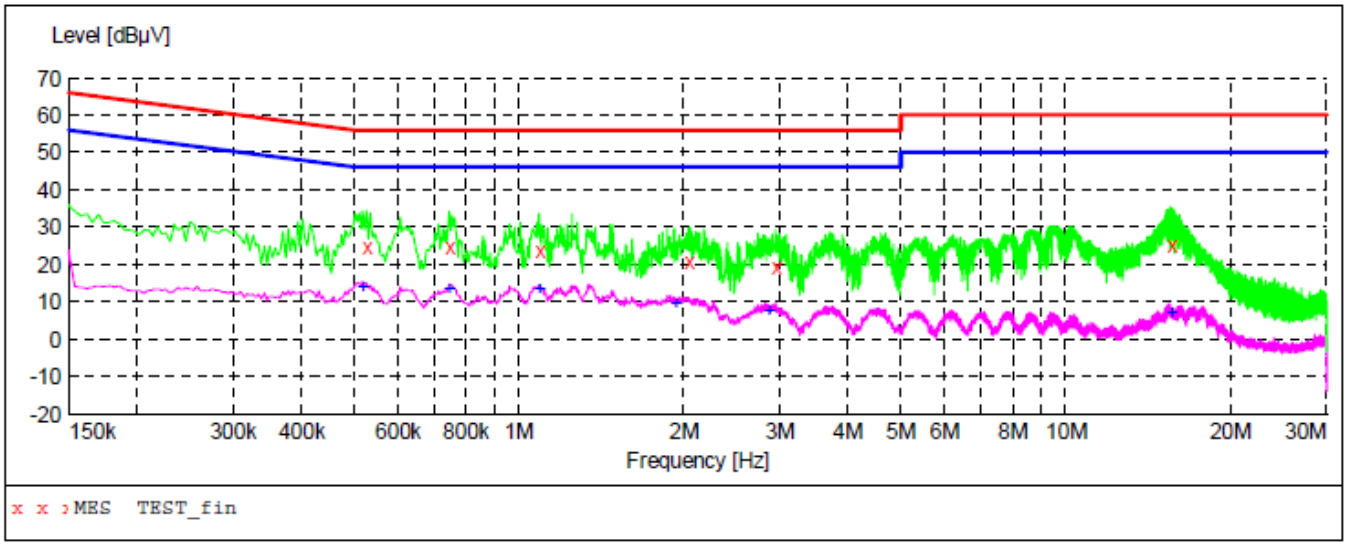
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

14.4. 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.

14.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



MEASUREMENT RESULT: "TEST_fin"

6/10/2019 2:12PM

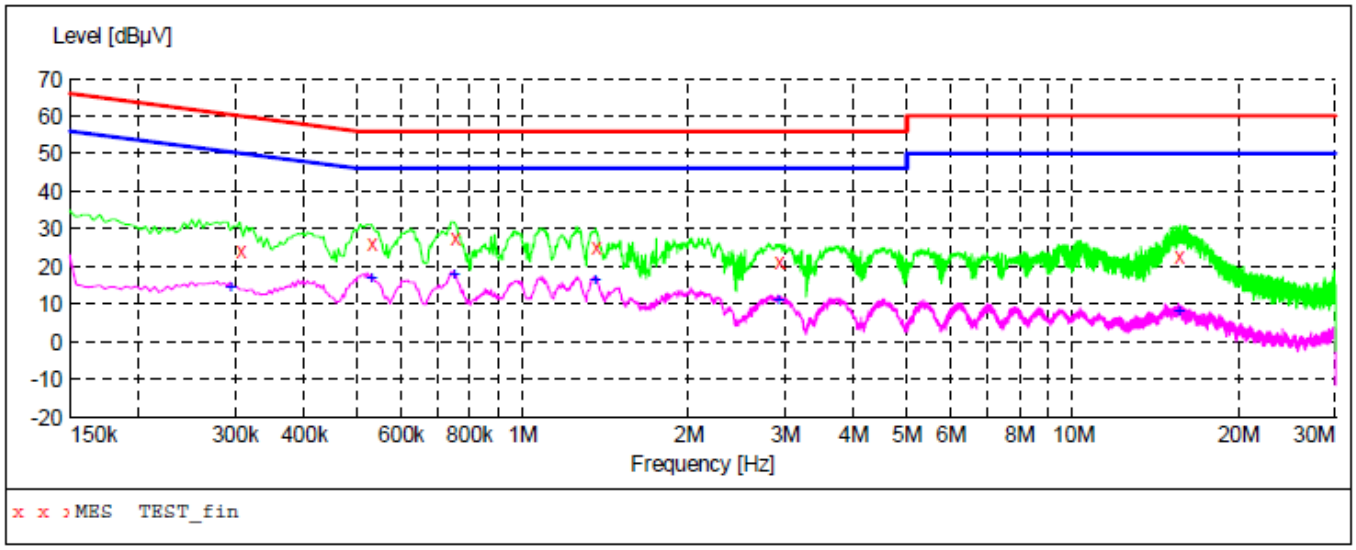
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.526000	24.60	11.1	56	31.4	QP	N	FLO
0.746000	24.60	10.5	56	31.4	QP	N	FLO
1.086000	23.90	11.4	56	32.1	QP	N	FLO
2.042000	20.70	11.5	56	35.3	QP	N	FLO
2.946000	19.50	11.5	56	36.5	QP	N	FLO
15.610000	25.40	12.2	60	34.6	QP	N	FLO

MEASUREMENT RESULT: "TEST_fin2"

6/10/2019 2:12PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.518000	14.00	11.1	46	32.0	AV	N	FLO
0.746000	13.60	10.5	46	32.4	AV	N	FLO
1.086000	13.40	11.4	46	32.6	AV	N	FLO
1.934000	9.40	11.5	46	36.6	AV	N	FLO
2.862000	7.70	11.5	46	38.3	AV	N	FLO
15.610000	6.90	12.2	50	43.1	AV	N	FLO

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "TEST_fin"

6/10/2019 2:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.306000	24.40	10.9	60	35.7	QP	L1	FLO
0.530000	26.30	11.1	56	29.7	QP	L1	FLO
0.750000	27.80	10.6	56	28.2	QP	L1	FLO
1.350000	25.20	11.5	56	30.8	QP	L1	FLO
2.918000	21.10	11.5	56	34.9	QP	L1	FLO
15.602000	22.80	12.2	60	37.2	QP	L1	FLO

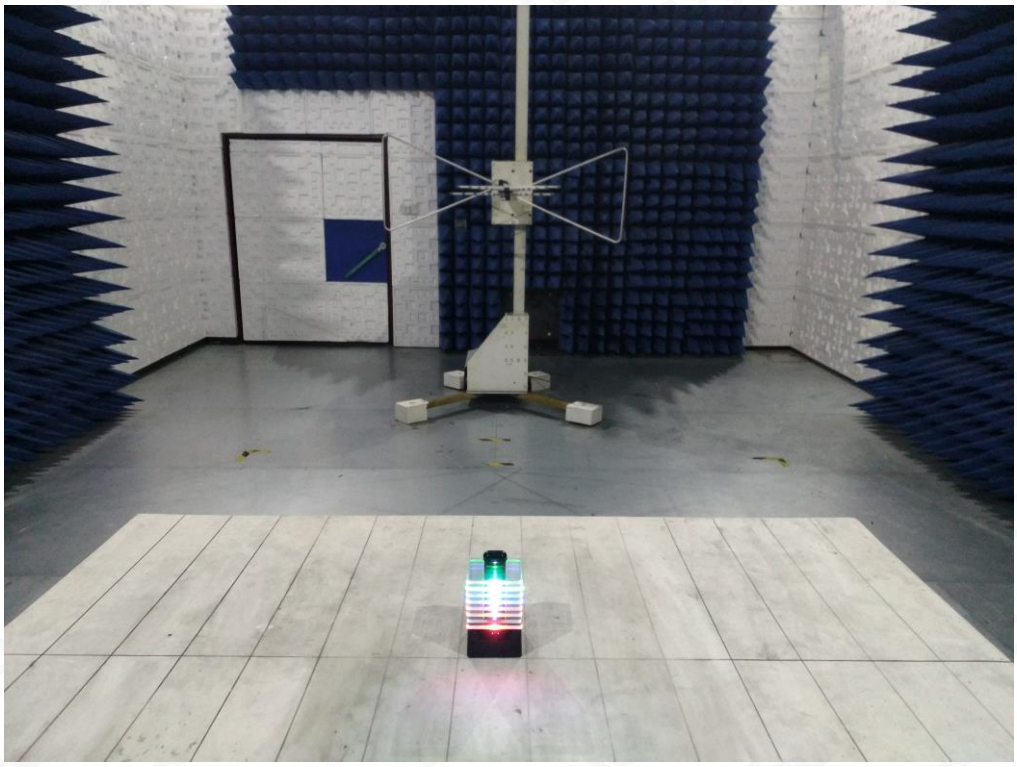
MEASUREMENT RESULT: "TEST_fin2"

6/10/2019 2:07PM

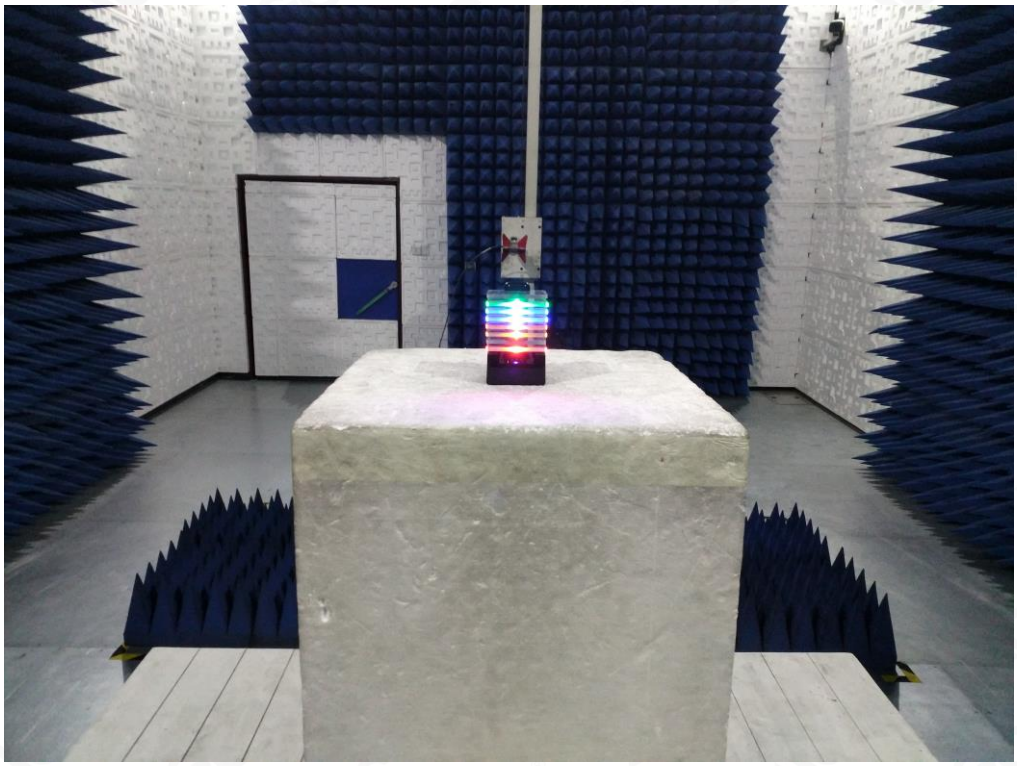
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.294000	14.40	10.9	50	36.0	AV	L1	FLO
0.530000	16.60	11.1	46	29.4	AV	L1	FLO
0.750000	17.80	10.6	46	28.2	AV	L1	FLO
1.350000	16.40	11.5	46	29.6	AV	L1	FLO
2.918000	11.00	11.5	46	35.0	AV	L1	FLO
15.602000	8.00	12.2	50	42.0	AV	L1	FLO

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED EMISSION TEST SETUP BELOW 1GHZ



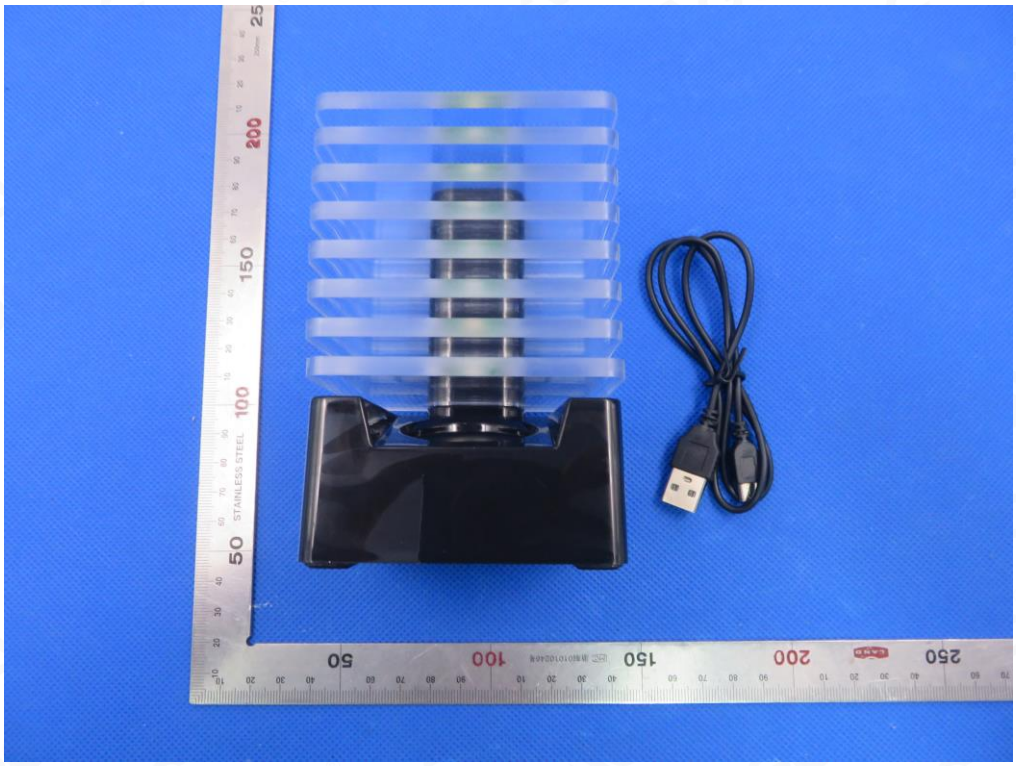
RADIATED EMISSION TEST SETUP ABOVE 1GHZ



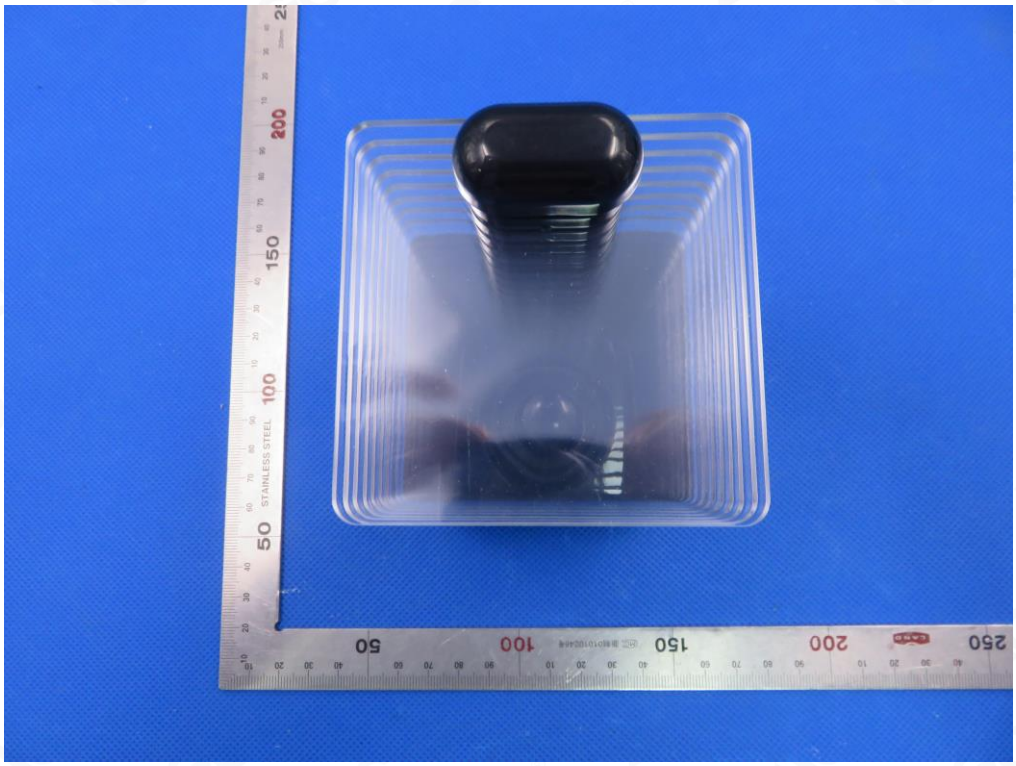
CONDUCTED EMISSION TEST SETUP

APPENDIX B: PHOTOGRAPHS OF EUT

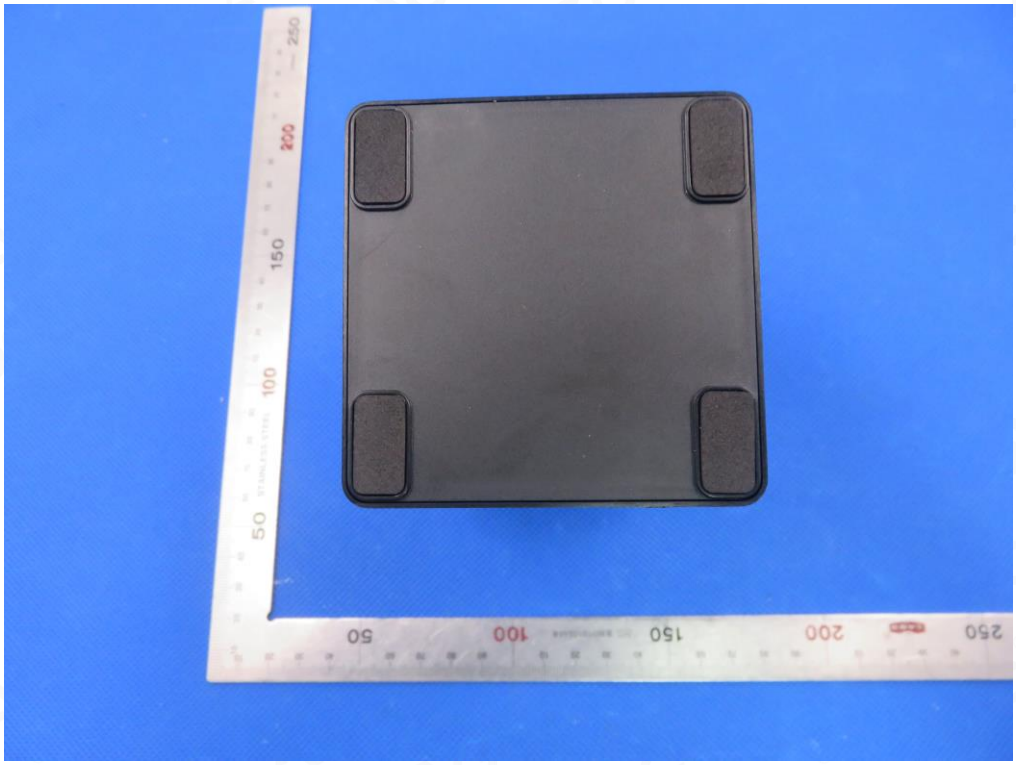
TOTAL VIEW OF EUT



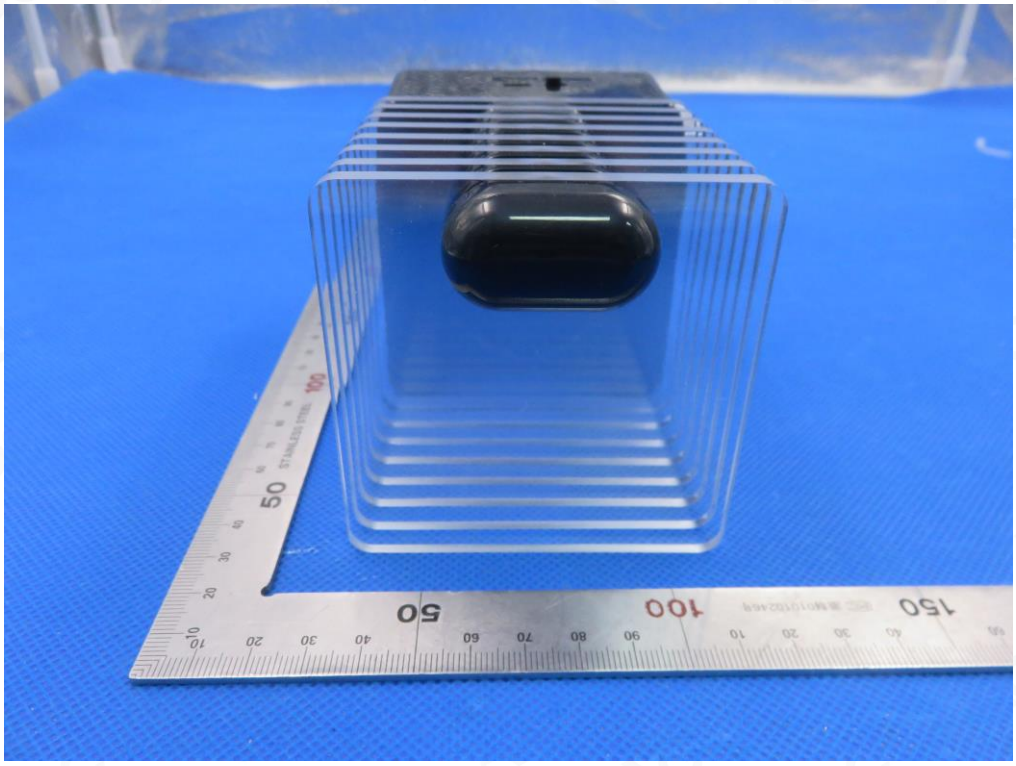
TOP VIEW OF EUT



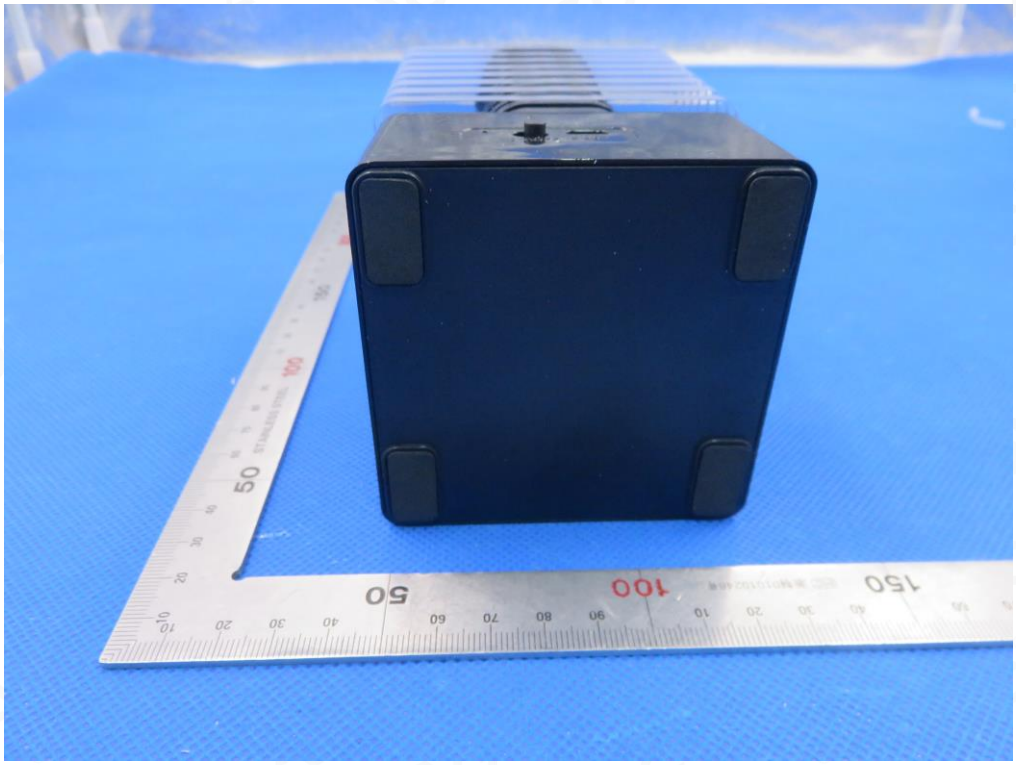
BOTTOM VIEW OF EUT



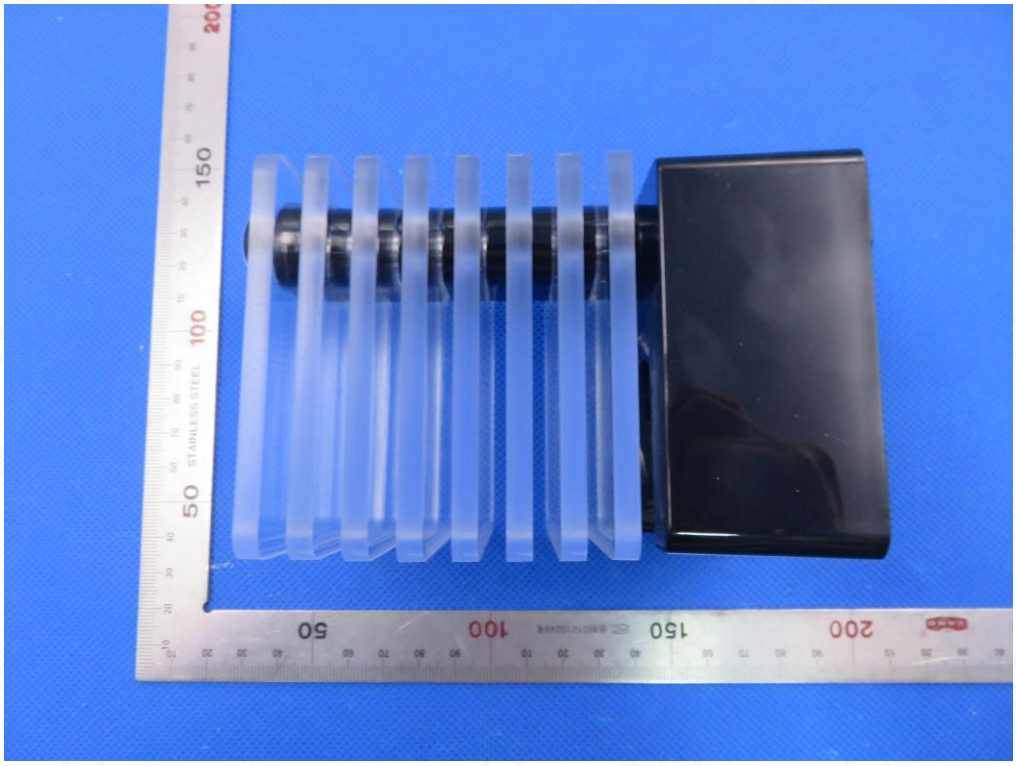
FRONT VIEW OF EUT



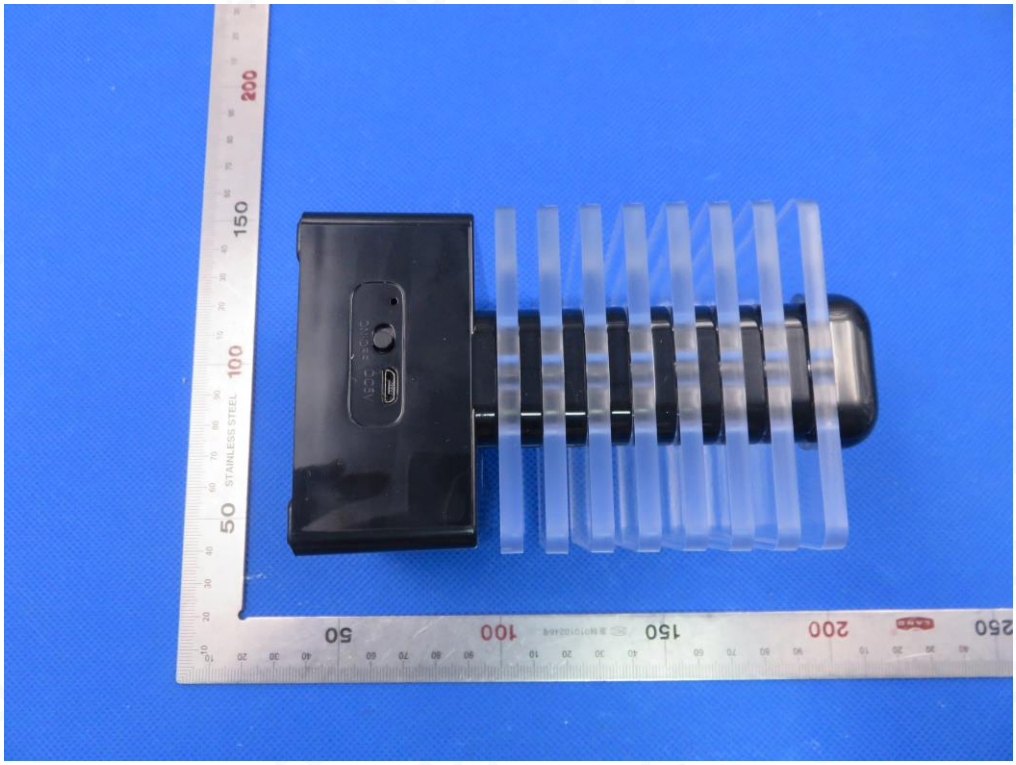
BACK VIEW OF EUT



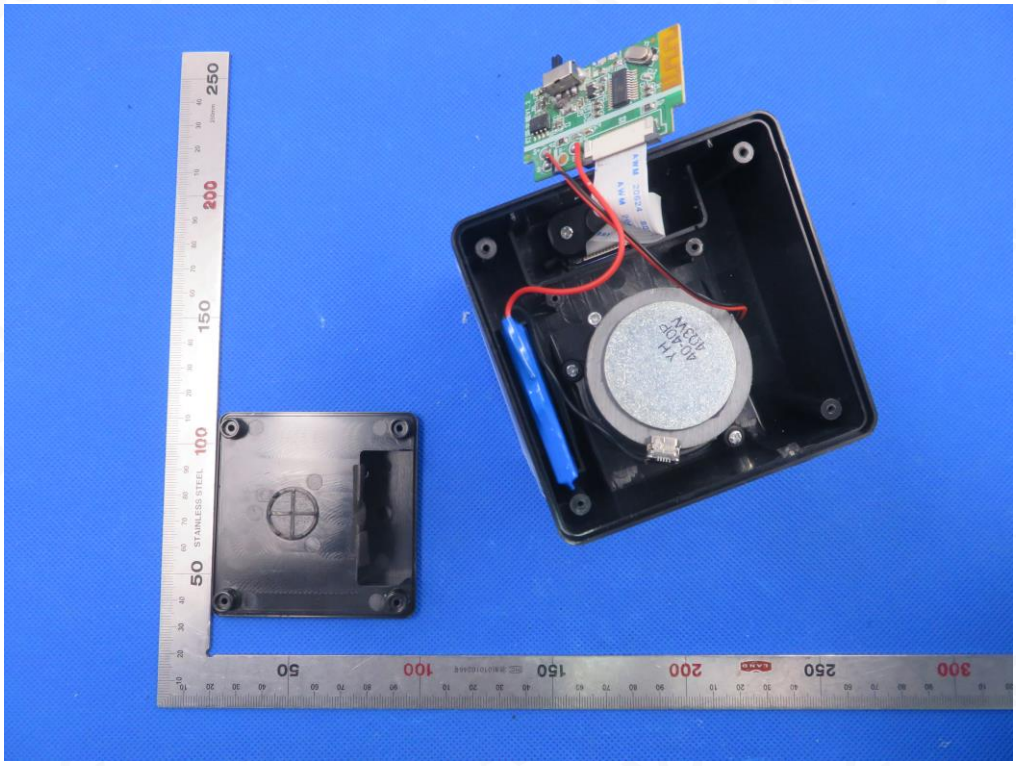
LEFT VIEW OF EUT



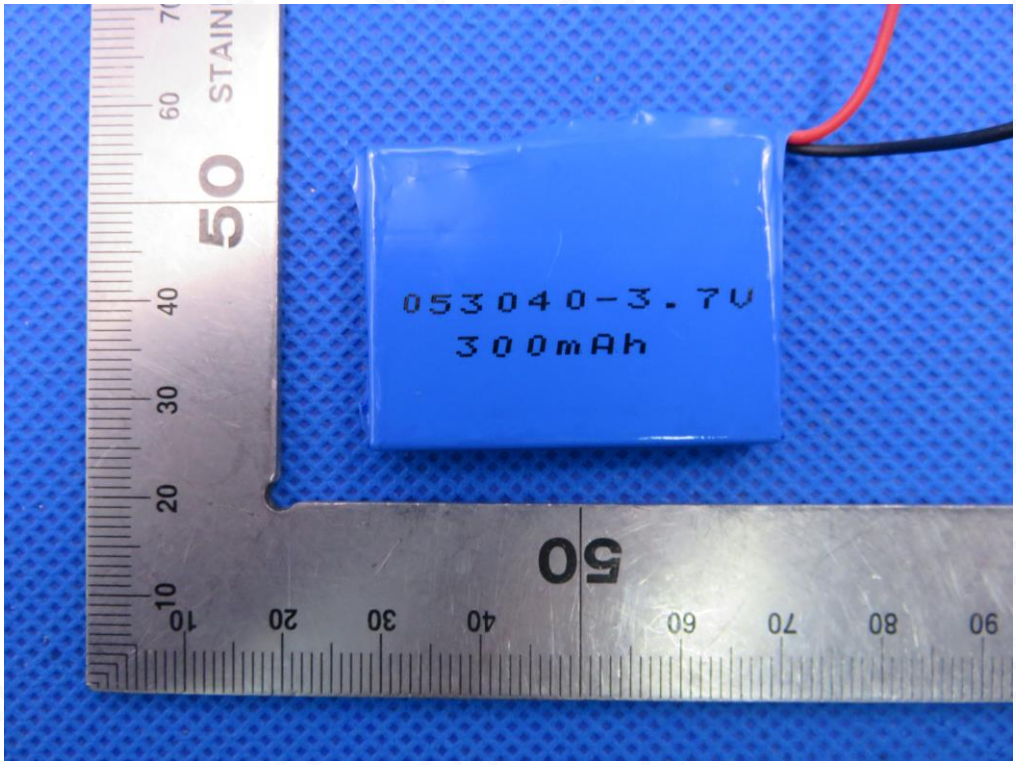
RIGHT VIEW OF EUT



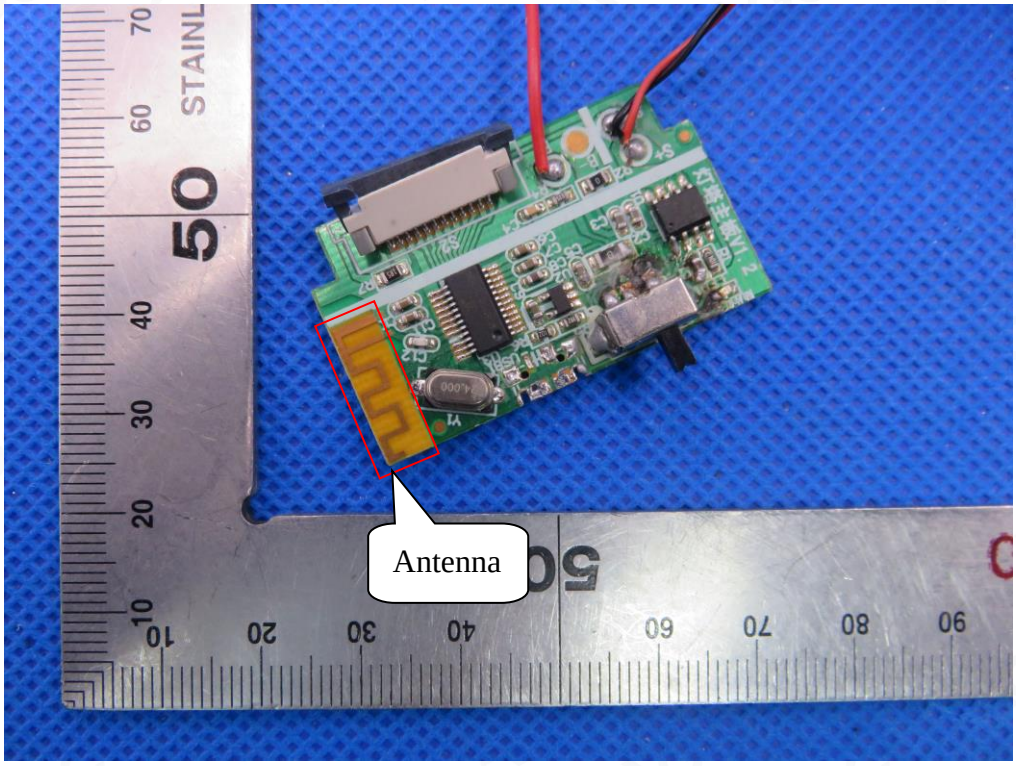
OPEN VIEW OF EUT



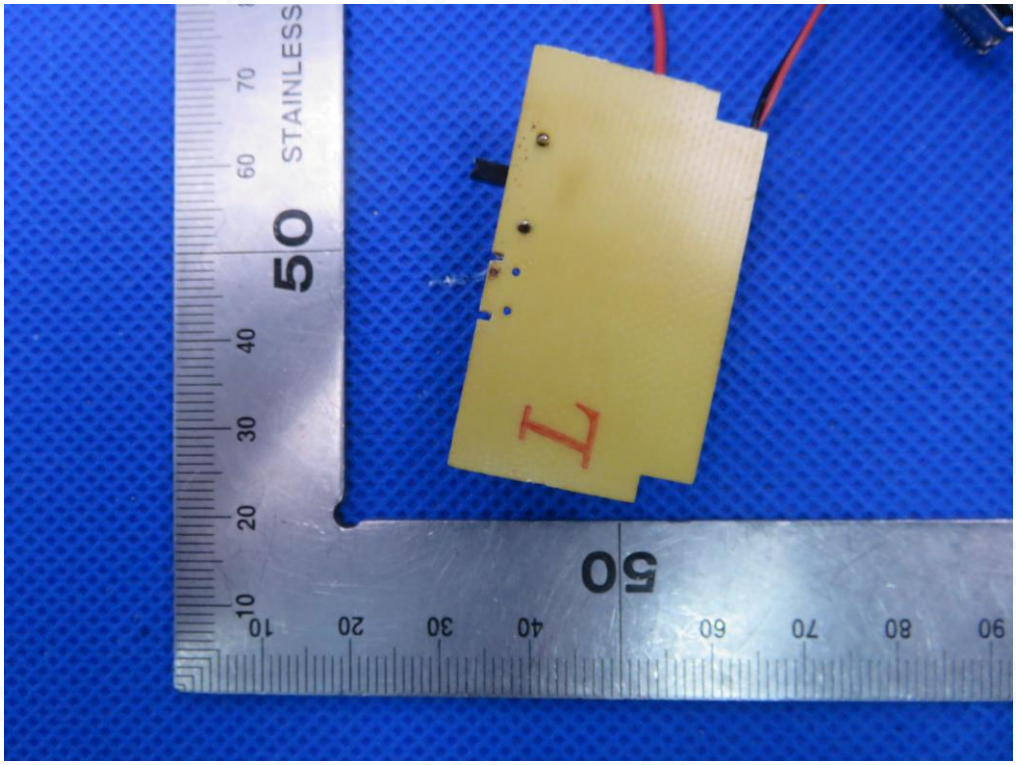
VIEW OF BATTERY



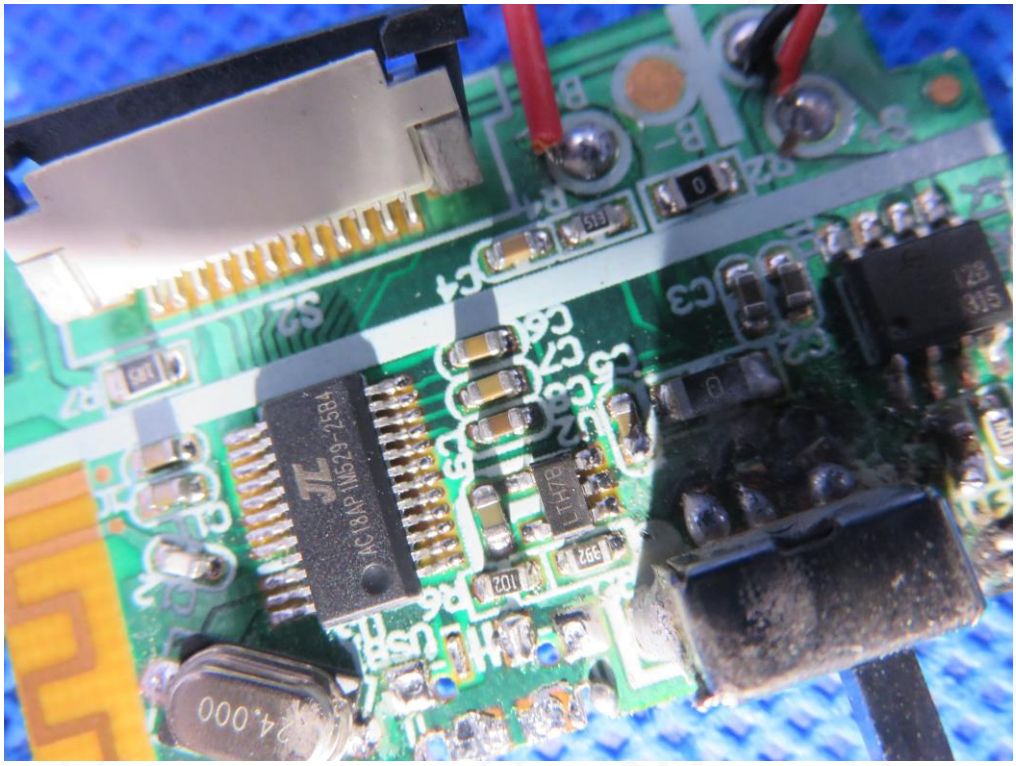
INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



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