

11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission, the test records reported below are the worst result compared to other modes.

11.4. TEST RESULT**RADIATED EMISSION BELOW 30MHZ**

No emission found between lowest internal used/generated frequencies to 30MHz.



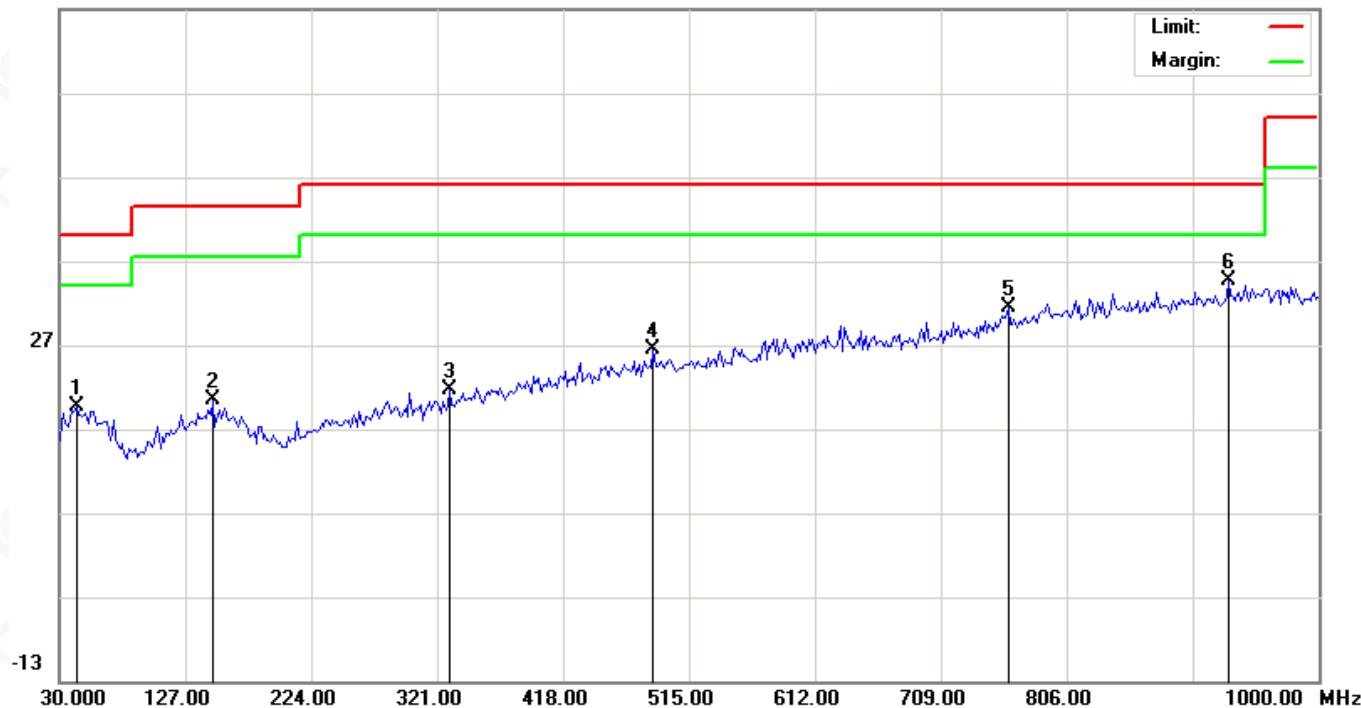
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RADIATED EMISSION BELOW 1GHZ

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Horizontal

66.9 dBuV/m



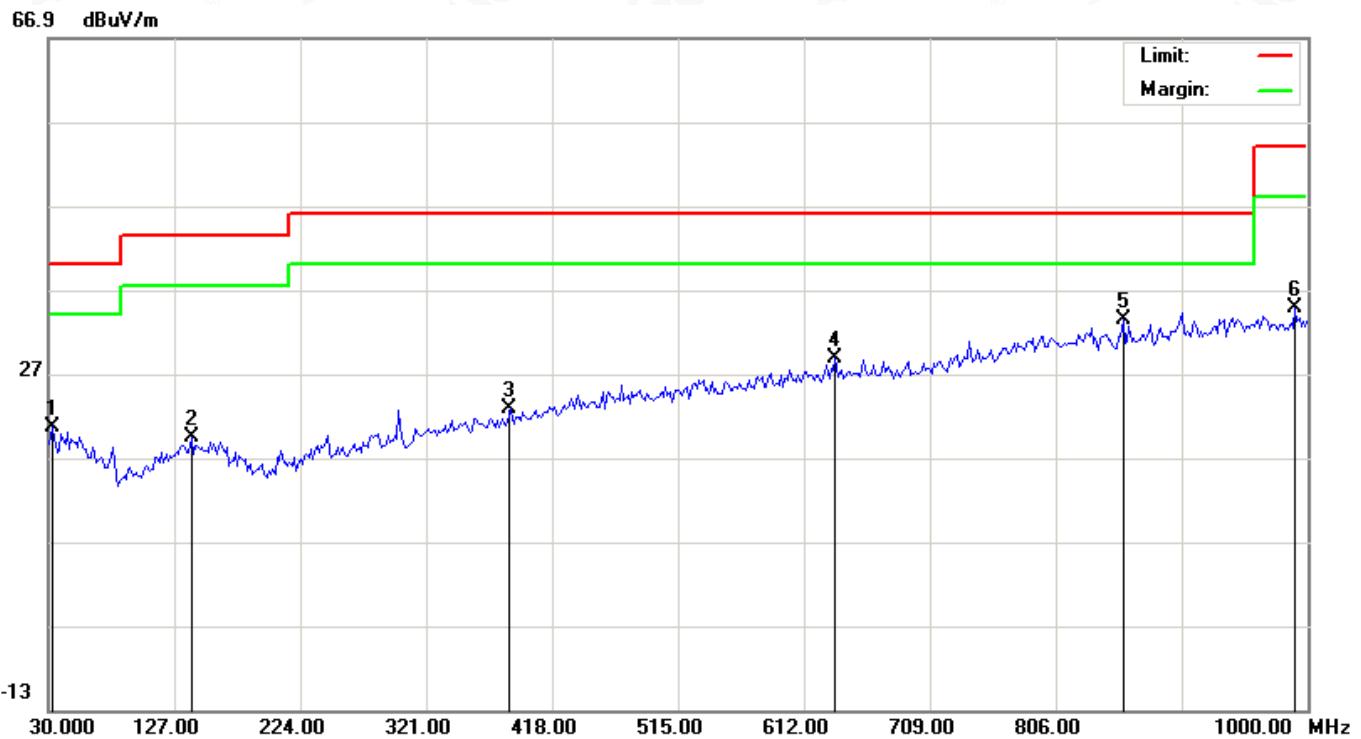
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		42.9333	-0.47	19.98	19.51	40.00	-20.49	peak			
2		148.0167	1.11	19.21	20.32	43.50	-23.18	peak			
3		330.7000	1.09	20.55	21.64	46.00	-24.36	peak			
4		487.5167	1.63	24.74	26.37	46.00	-19.63	peak			
5		760.7333	1.82	29.52	31.34	46.00	-14.66	peak			
6	*	930.4833	2.66	31.96	34.62	46.00	-11.38	peak			

RESULT: PASS


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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		33.2333	2.34	18.27	20.61	40.00	-19.39	peak			
2		139.9333	0.26	19.23	19.49	43.50	-24.01	peak			
3		385.6666	0.32	22.48	22.80	46.00	-23.20	peak			
4		636.2500	1.50	27.38	28.88	46.00	-17.12	peak			
5	*	857.7333	2.29	31.15	33.44	46.00	-12.56	peak			
6		990.3000	2.23	32.48	34.71	54.00	-19.29	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been tested. The mode 4 is the worst case and recorded in the report.



RADIATED EMISSION ABOVE 1GHZ

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4804.000	47.56	0.08	47.64	74	-26.36	peak
4804.000	39.33	0.08	39.41	54	-14.59	AVG
7206.000	46.34	2.21	48.55	74	-25.45	peak
7206.000	38.47	2.21	40.68	54	-13.32	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4804.000	47.13	0.08	47.21	74	-26.79	peak
4804.000	37.01	0.08	37.09	54	-16.91	AVG
7206.000	46.74	2.21	48.95	74	-25.05	peak
7206.000	35.18	2.21	37.39	54	-16.61	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4880.000	45.75	0.14	45.89	74	-28.11	peak
4880.000	39.24	0.14	39.38	54	-14.62	Avg
7320.000	44.87	2.36	47.23	74	-26.77	peak
7320.000	38.23	2.36	40.59	54	-13.41	Avg

Remark:
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4880.000	44.87	0.14	45.01	74	-28.99	peak
4880.000	36.19	0.14	36.33	54	-17.67	Avg
7320.000	43.71	2.36	46.07	74	-27.93	peak
7320.000	35.42	2.36	37.78	54	-16.22	Avg

Remark:
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4960.000	44.54	0.22	44.76	74	-29.24	peak
4960.000	35.16	0.22	35.38	54	-18.62	Avg
7440.000	43.79	2.64	46.43	74	-27.57	peak
7440.000	34.28	2.64	36.92	54	-17.08	Avg

Remark:
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4960.000	43.62	0.22	43.84	74	-30.16	peak
4960.000	33.74	0.22	33.96	54	-20.04	Avg
7440.000	42.83	2.64	45.47	74	-28.53	peak
7440.000	33.01	2.64	35.65	54	-18.35	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.



TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS (1M)

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

PK



AV



RESULT: PASS



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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

PK



Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr→CF

Mkr→Ref Lvl

 More
1 of 2

AV



Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr→CF

Mkr→Ref Lvl

 More
1 of 2

RESULT: PASS


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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

PK



AV



RESULT: PASS



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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

PK



AV



RESULT: PASS

Note: 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(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.



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Tel: +86-755 2523 4088

E-mail: agc@agc-cert.com

 Web: <http://cn.agc-cert.com/>

TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS (2M)

EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Horizontal

PK



AV



RESULT: PASS



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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 4	Antenna	Vertical

PK

AV

RESULT: PASS


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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 6	Antenna	Horizontal

PK



AV



RESULT: PASS



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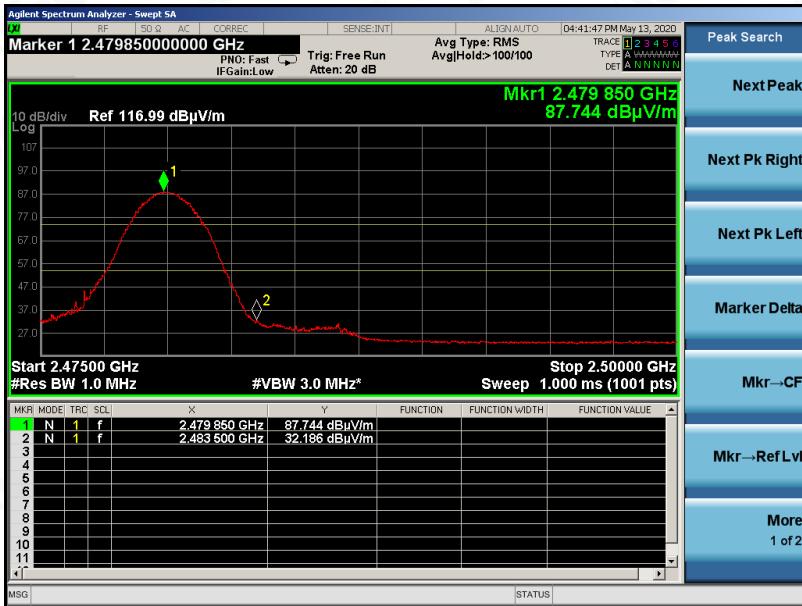
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EUT	Wireless Earphone	Model Name	JT20
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 6	Antenna	Vertical

PK



AV



RESULT: PASS

Note: 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. FCC LINE CONDUCTED EMISSION TEST

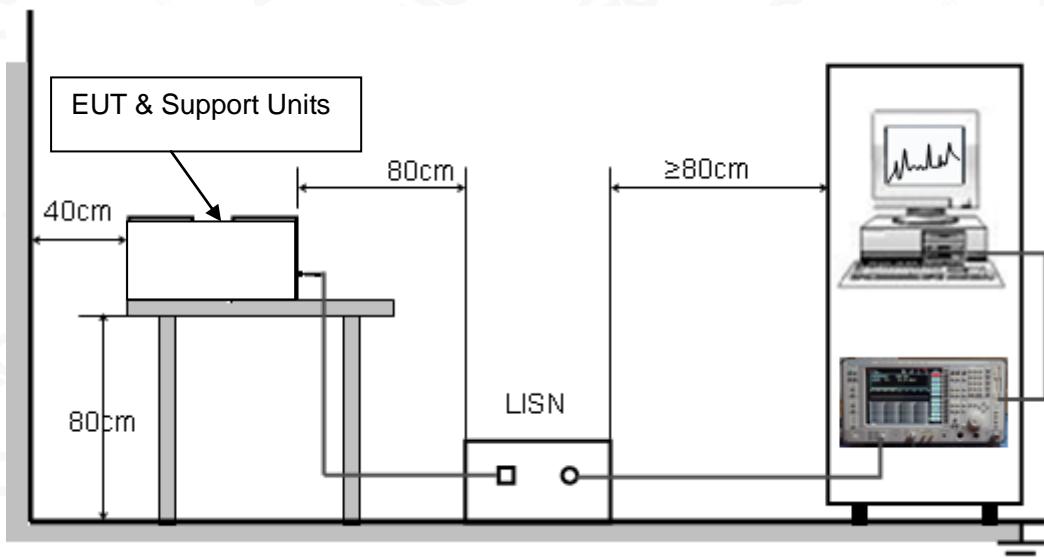
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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.

12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



12.3. 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 charging voltage by adapter which received AC120V/60Hz power 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.

12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

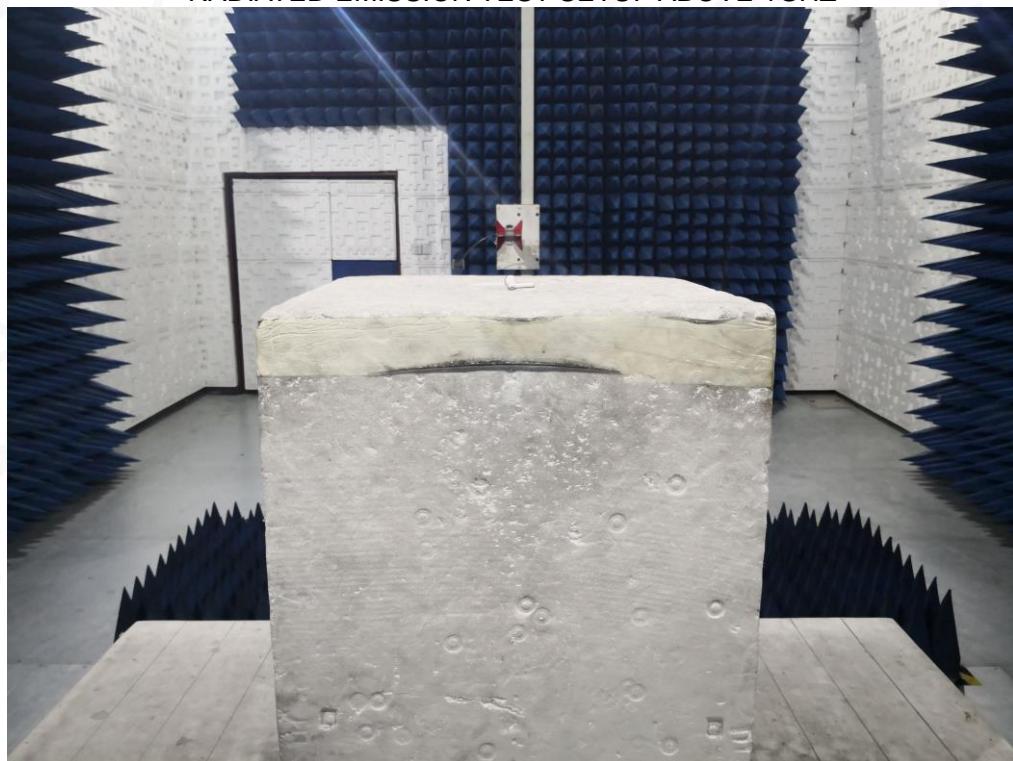
1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used 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.

12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

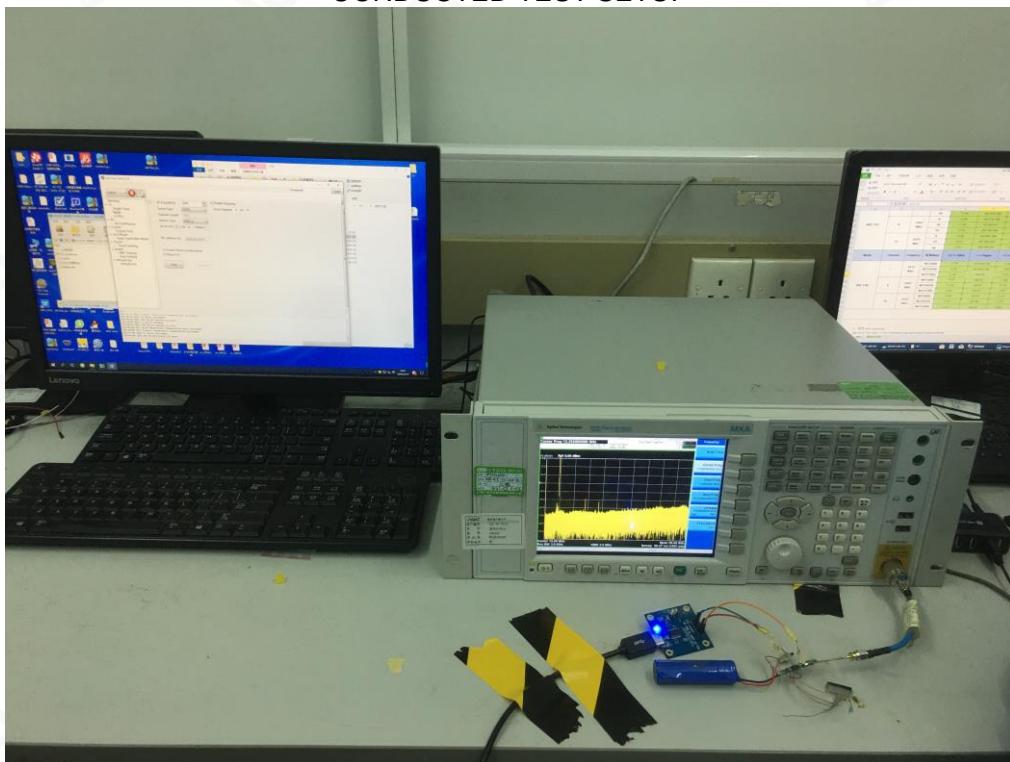
N/A

Note: The EUT can not use the BT function with charging.



APPENDIX A: PHOTOGRAPHS OF TEST SETUP**RADIATED EMISSION TEST SETUP BELOW 1GHZ****RADIATED EMISSION TEST SETUP ABOVE 1GHZ**

CONDUCTED TEST SETUP



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Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: <http://cn.agc-cert.com/>

APPENDIX B: PHOTOGRAPHS OF EUT**TOTAL VIEW OF EUT****TOP VIEW OF EUT**

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E-mail: agc@agc-cert.com

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BOTTOM VIEW OF EUT



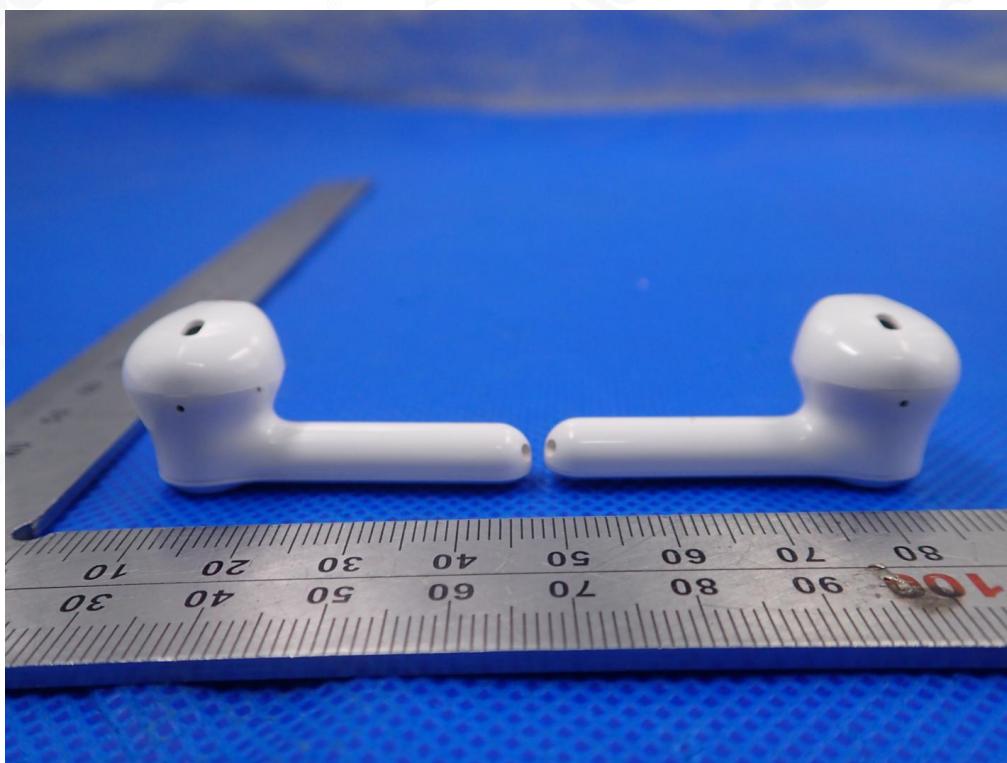
FRONT VIEW OF EUT



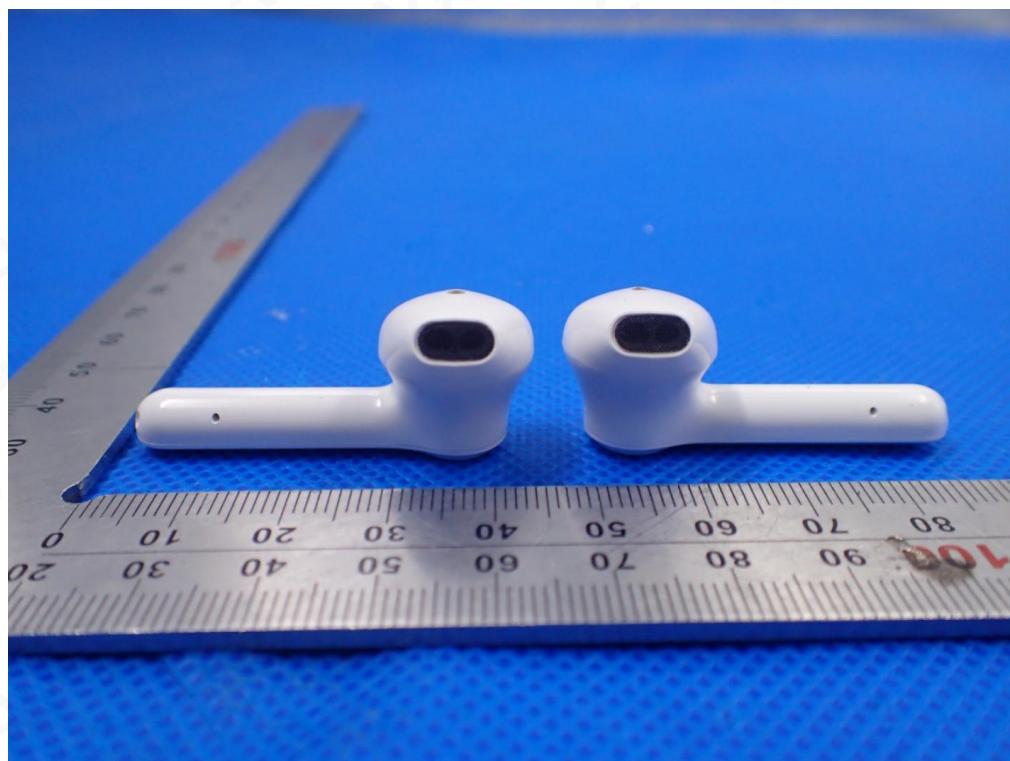
BACK VIEW OF EUT



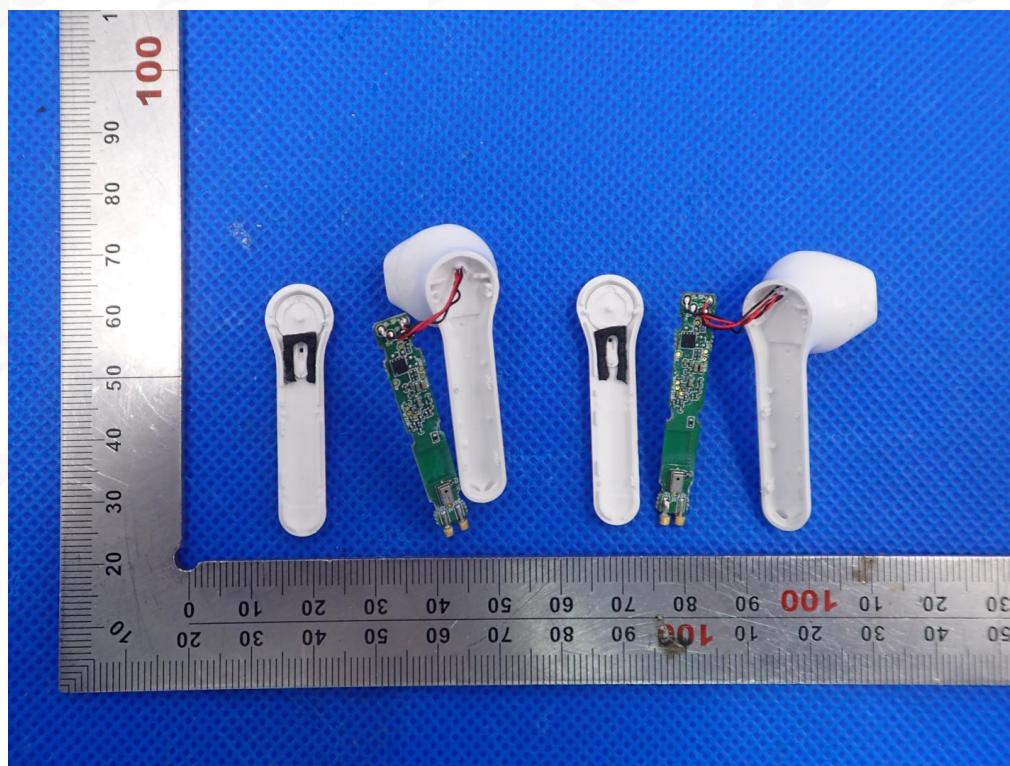
LEFT VIEW OF EUT



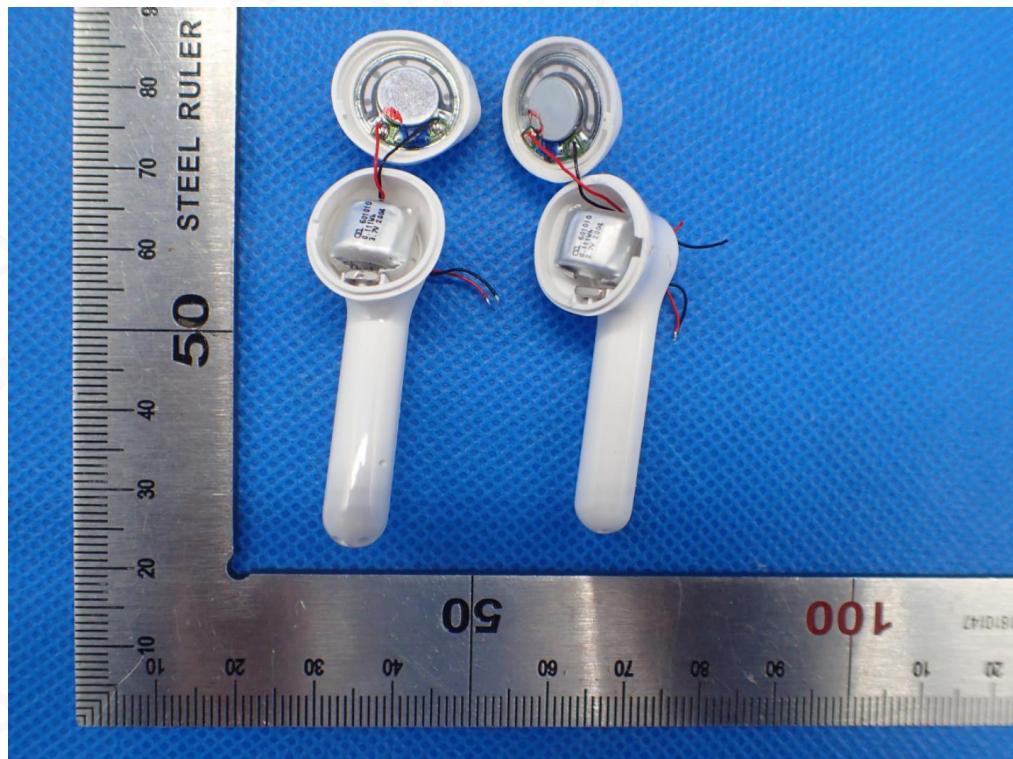
RIGHT VIEW OF EUT



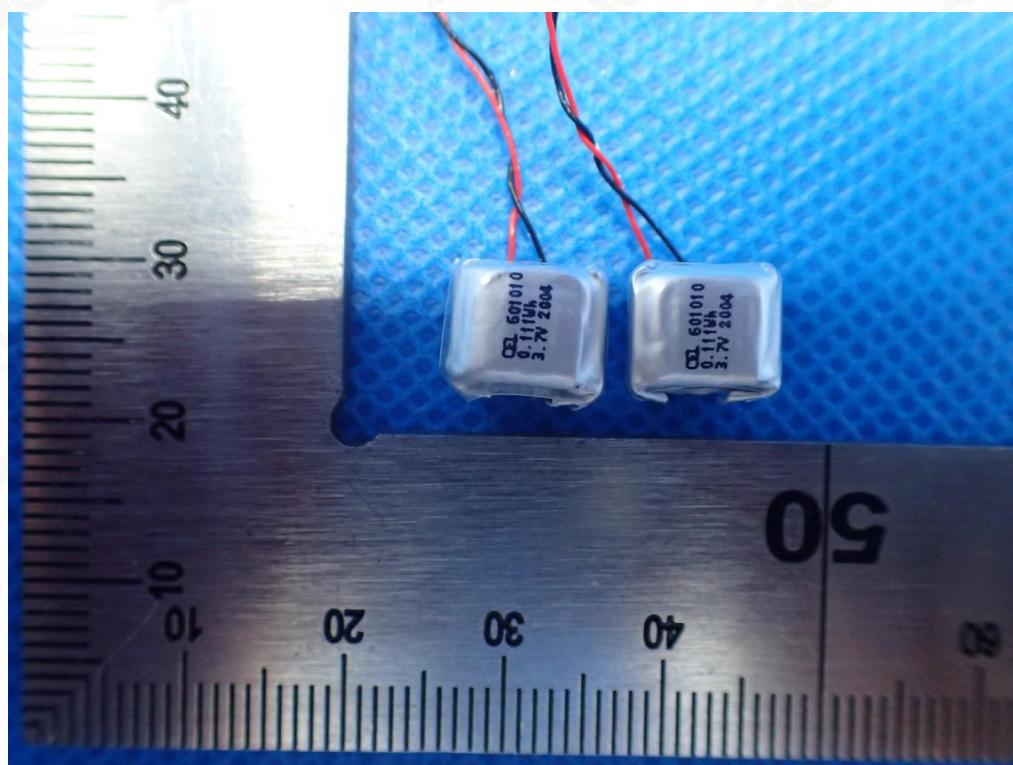
OPEN VIEW OF EUT-1



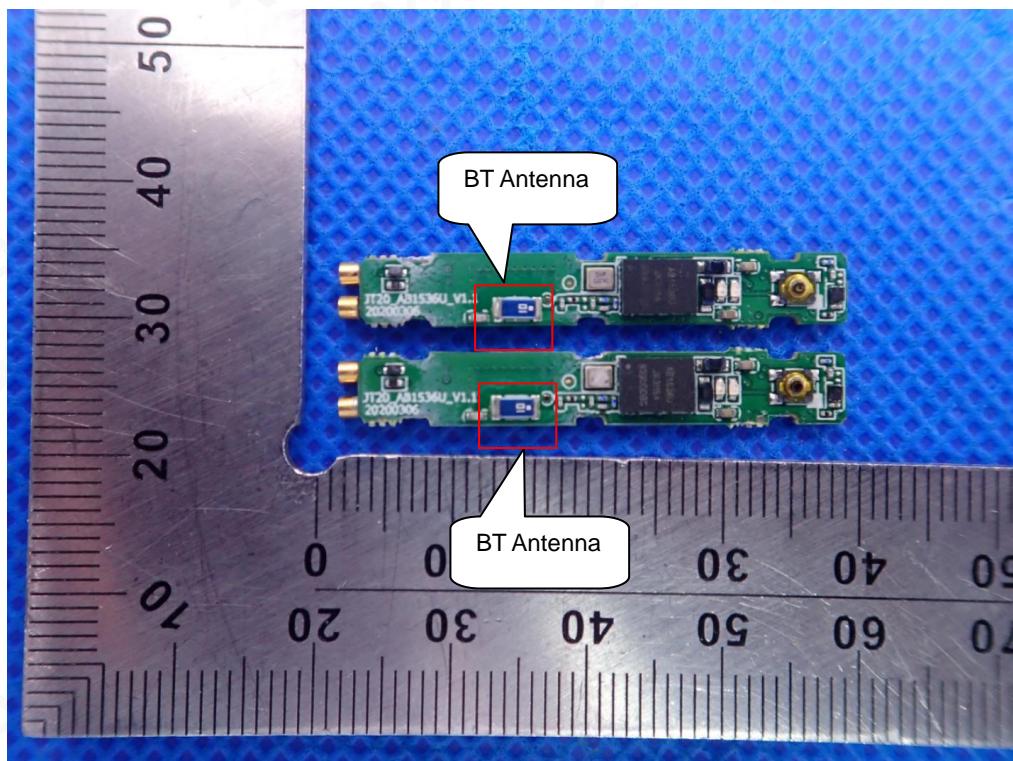
OPEN VIEW OF EUT-2



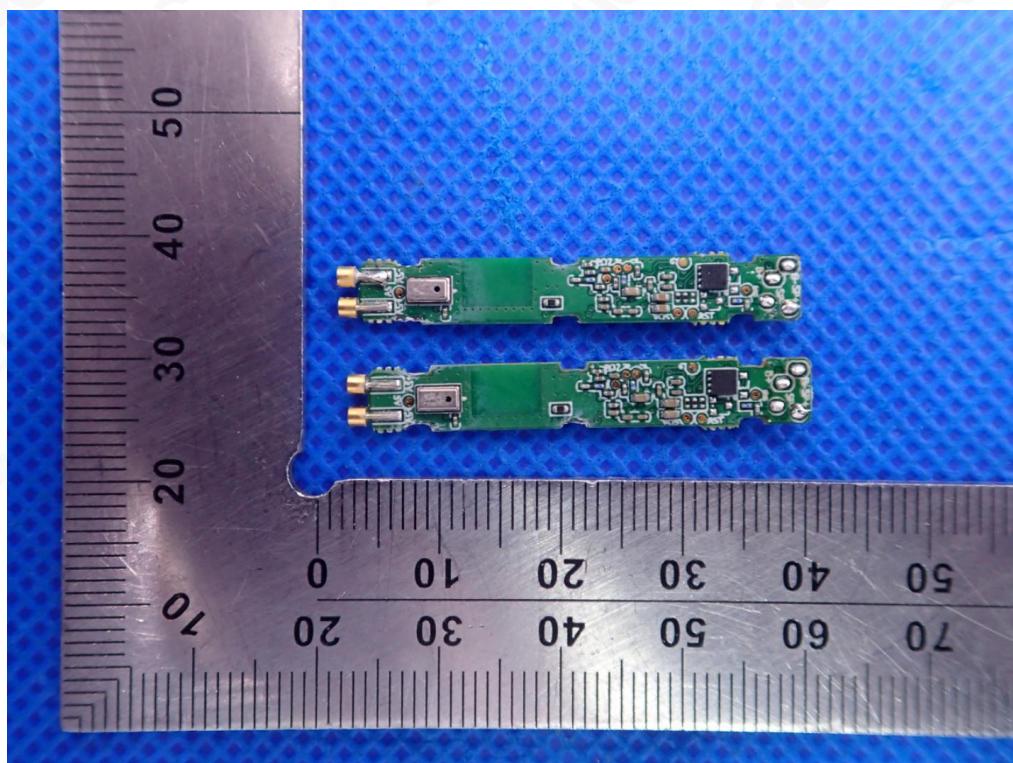
VIEW OF BATTERY



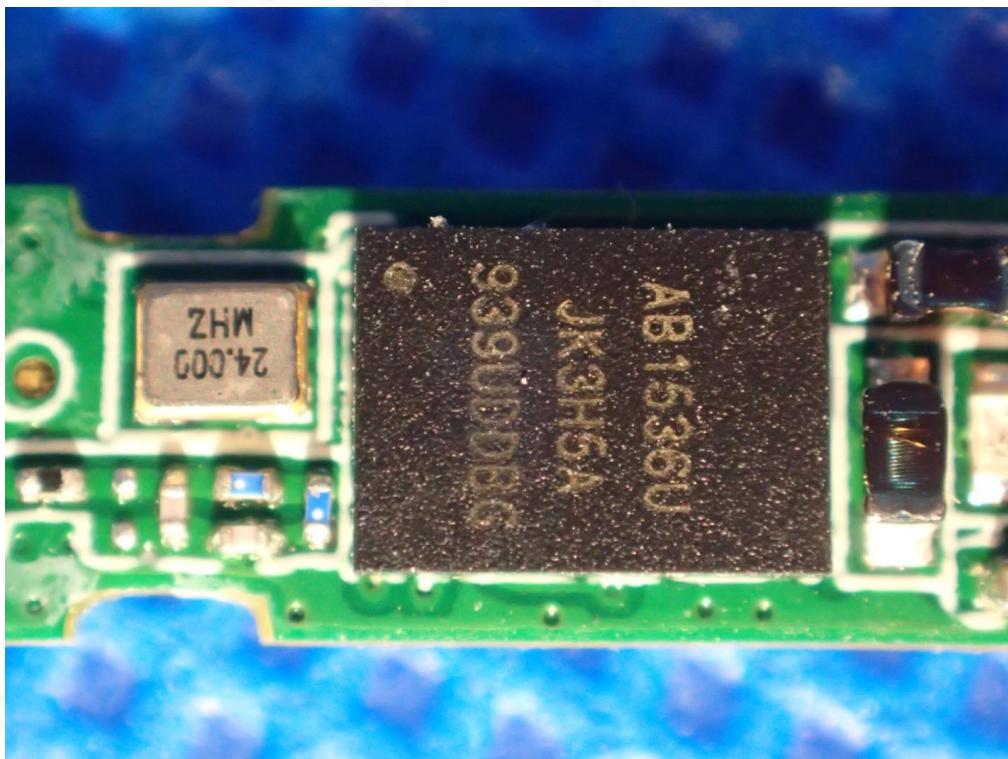
INTERNAL VIEW OF EUT-1



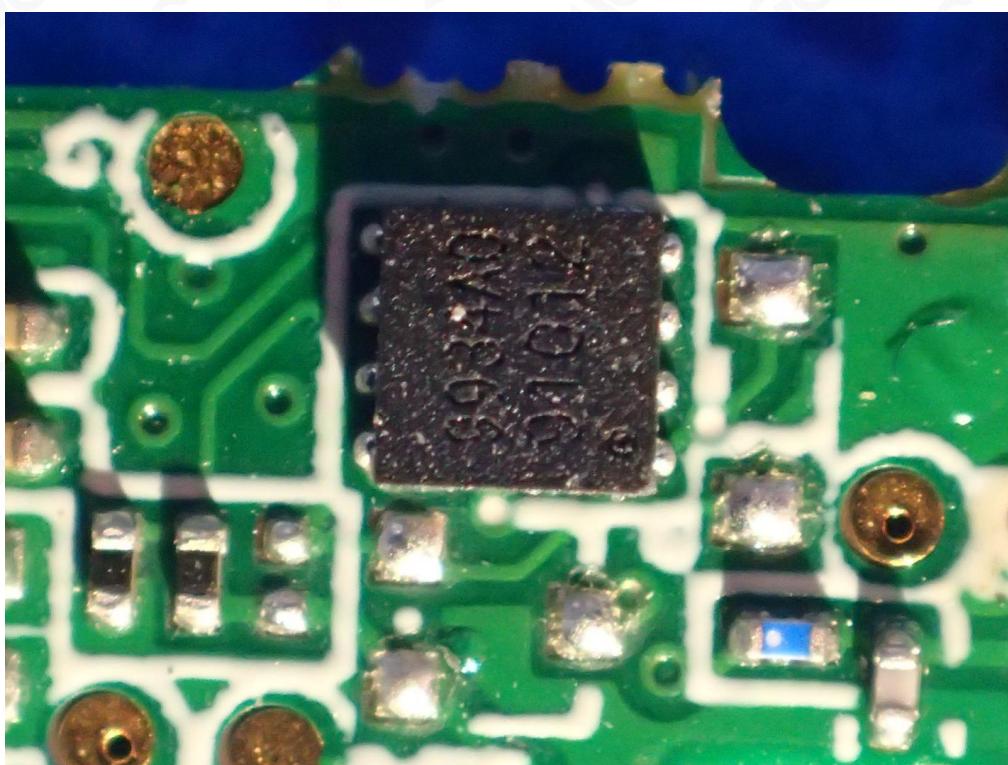
INTERNAL VIEW OF EUT-2



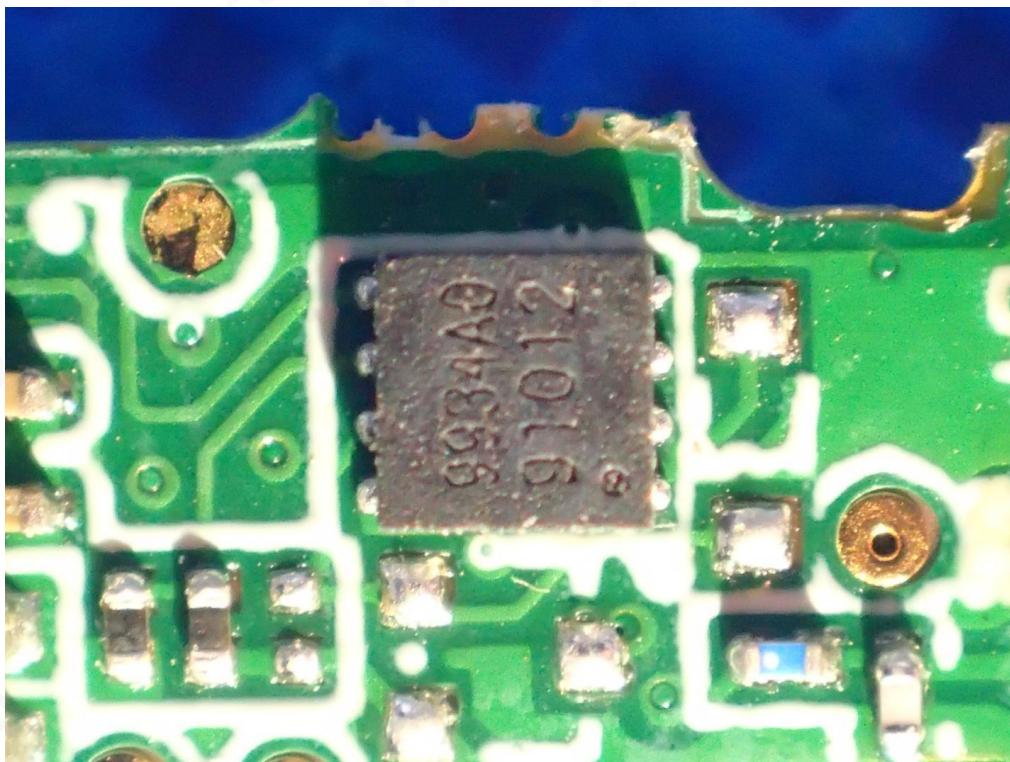
INTERNAL VIEW OF EUT-3



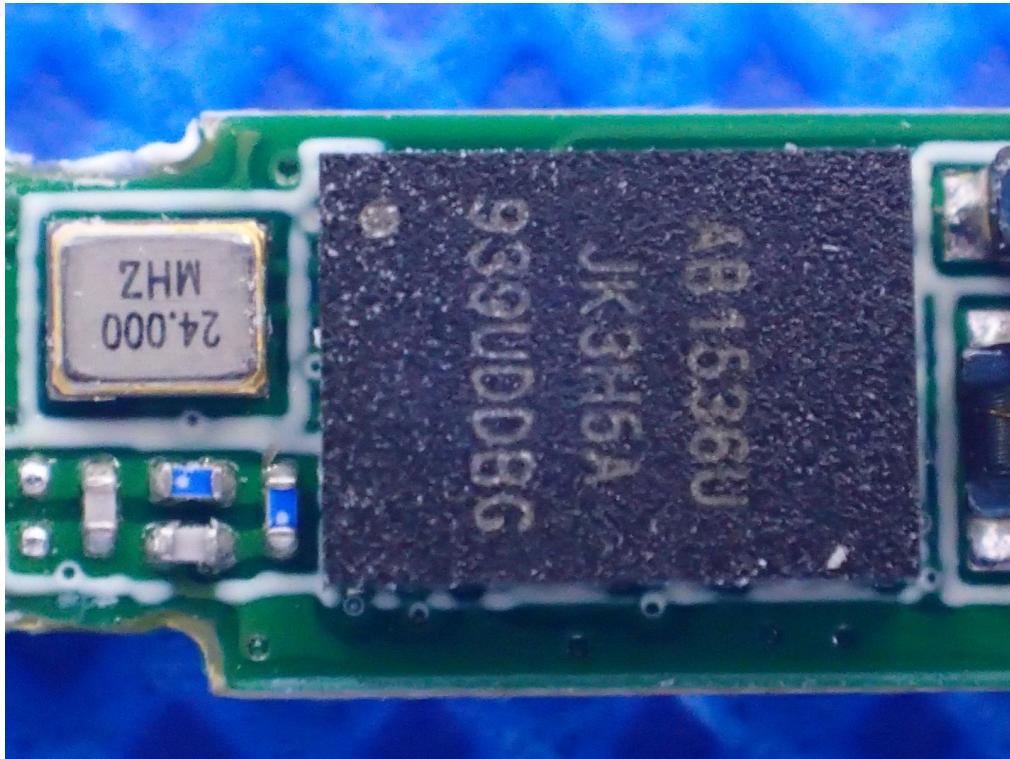
INTERNAL VIEW OF EUT-4



INTERNAL VIEW OF EUT-5



INTERNAL VIEW OF EUT-6



----END OF REPORT----

