

## 14. LINE CONDUCTED EMISSION TEST

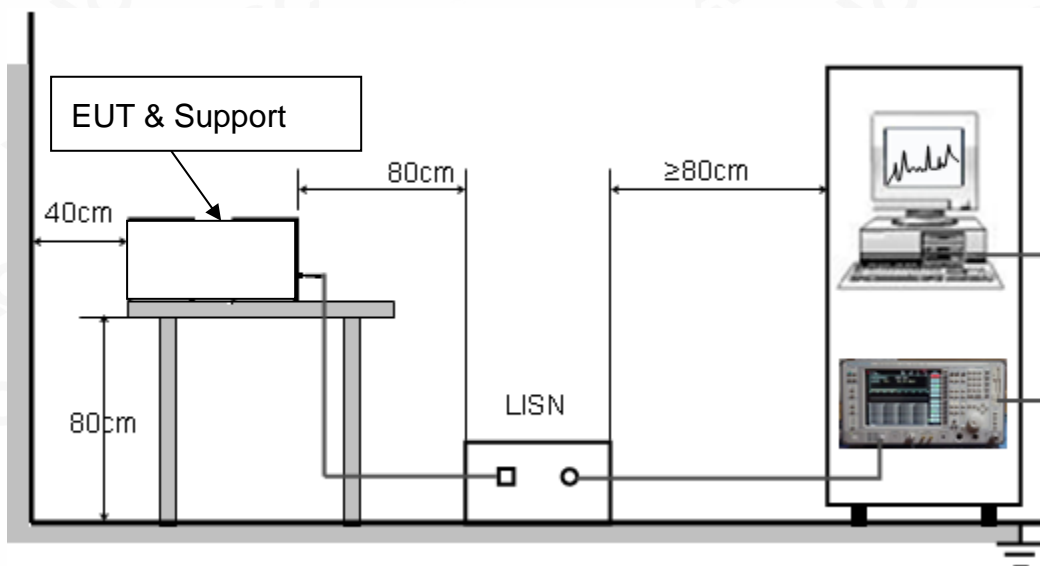
### 14.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P. (dB $\mu$ V)	Average (dB $\mu$ V)
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



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#### 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 equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC 5V 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.

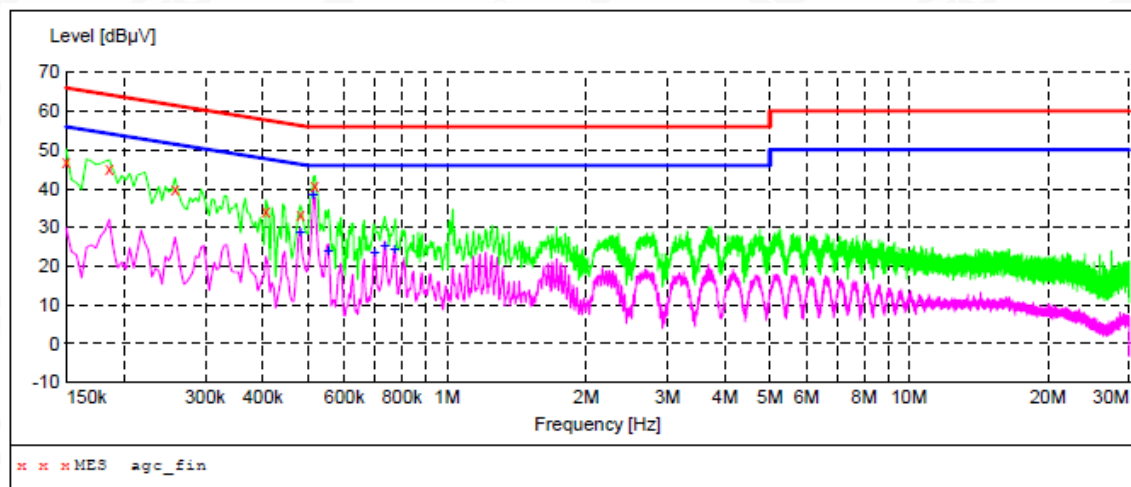
#### 14.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

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: "agc\_fin"

2021/8/2 18:36

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	46.70	6.9	66	19.3	QP	L1	GND
0.186000	44.90	6.6	64	19.3	QP	L1	GND
0.258000	39.80	6.2	62	21.7	QP	L1	GND
0.406000	34.20	5.7	58	23.5	QP	L1	GND
0.482000	33.10	5.4	56	23.2	QP	L1	GND
0.518000	40.80	5.4	56	15.2	QP	L1	GND

##### MEASUREMENT RESULT: "agc\_fin2"

2021/8/2 18:36

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.482000	28.70	5.4	46	17.6	AV	L1	GND
0.514000	38.40	5.4	46	7.6	AV	L1	GND
0.554000	24.20	5.4	46	21.8	AV	L1	GND
0.698000	23.80	5.4	46	22.2	AV	L1	GND
0.734000	25.30	5.4	46	20.7	AV	L1	GND
0.770000	24.60	5.4	46	21.4	AV	L1	GND

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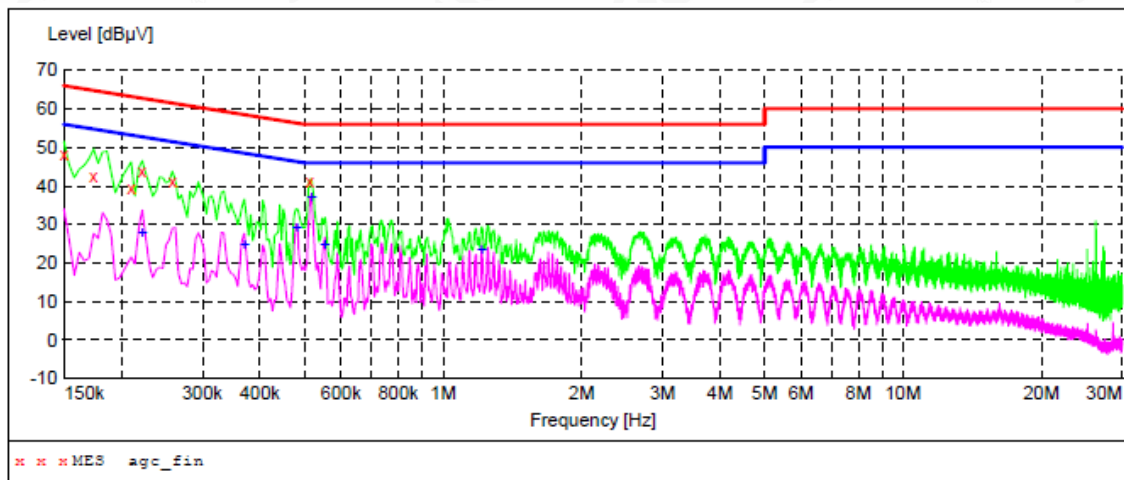
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### Line Conducted Emission Test Line 2-N



#### MEASUREMENT RESULT: "agc\_fin"

2021/8/2 18:33

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	48.10	6.9	66	17.9	QP	N	GND
0.174000	42.30	6.7	65	22.5	QP	N	GND
0.210000	39.30	6.5	63	23.9	QP	N	GND
0.222000	43.70	6.4	63	19.0	QP	N	GND
0.258000	41.10	6.2	62	20.4	QP	N	GND
0.514000	41.00	5.4	56	15.0	QP	N	GND

#### MEASUREMENT RESULT: "agc\_fin2"

2021/8/2 18:33

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.222000	28.10	6.4	53	24.6	AV	N	GND
0.370000	24.80	5.8	49	23.7	AV	N	GND
0.482000	29.30	5.4	46	17.0	AV	N	GND
0.518000	37.00	5.4	46	9.0	AV	N	GND
0.554000	24.70	5.4	46	21.3	AV	N	GND
1.214000	23.80	5.7	46	22.2	AV	N	GND

#### RESULT: PASS

Note: All the test modes had been tested, the mode 6 was the worst case. Only the data of the worst case would be record in this test report.

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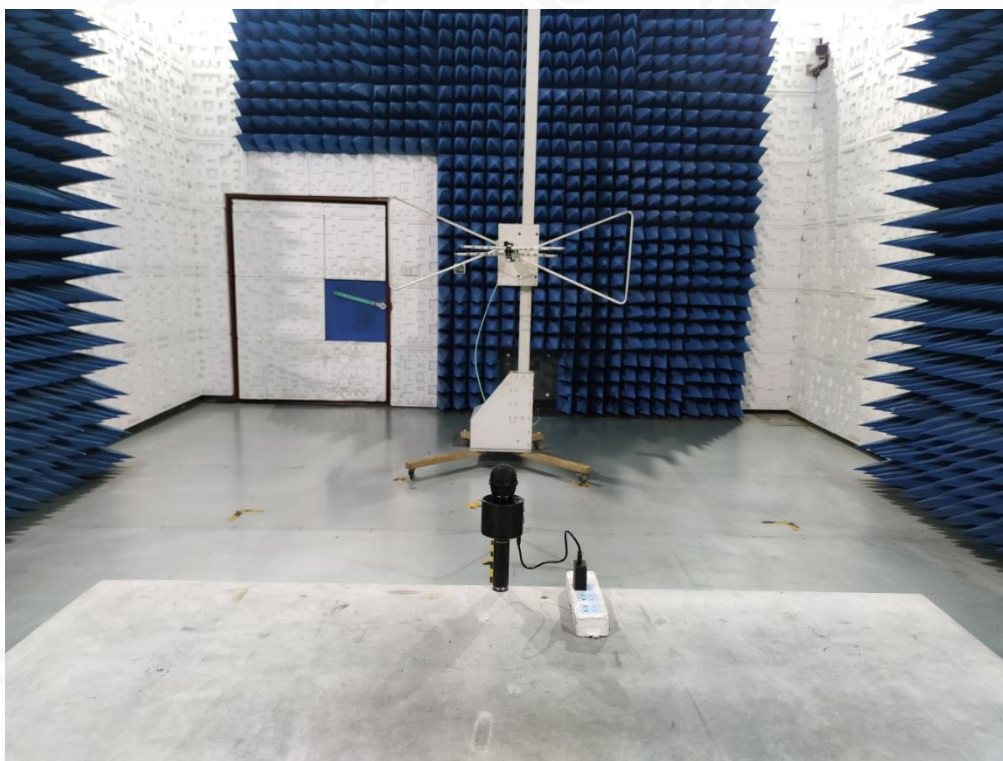
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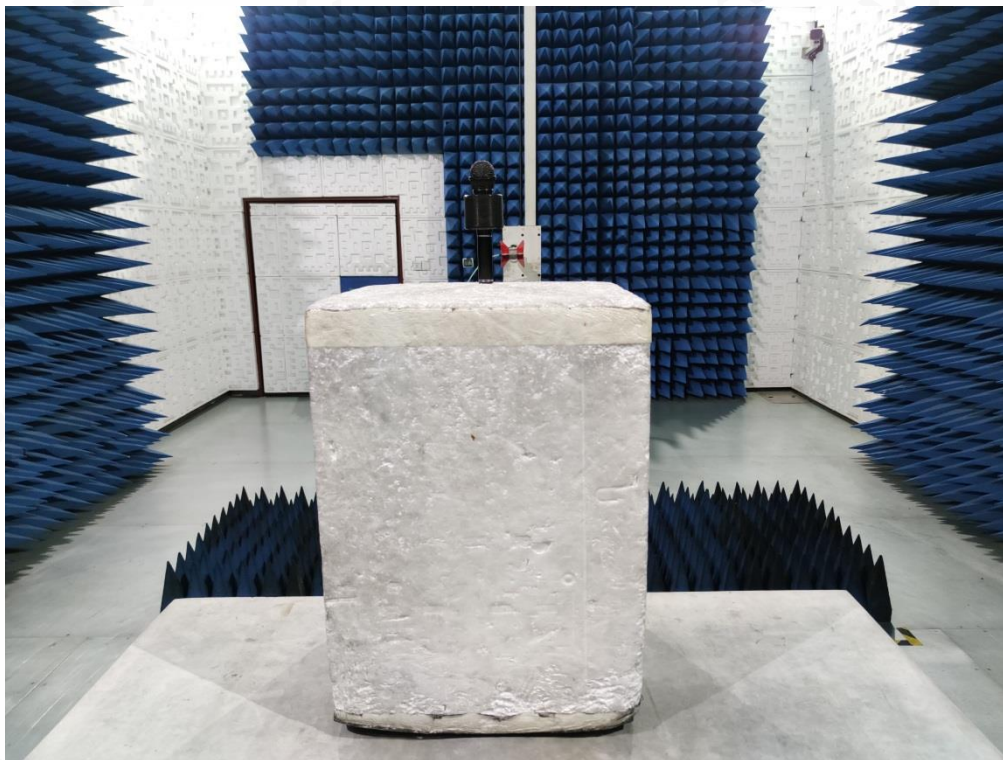


## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

### RADIATED EMISSION TEST SETUP BELOW 1GHz



### RADIATED EMISSION TEST SETUP ABOVE 1GHz



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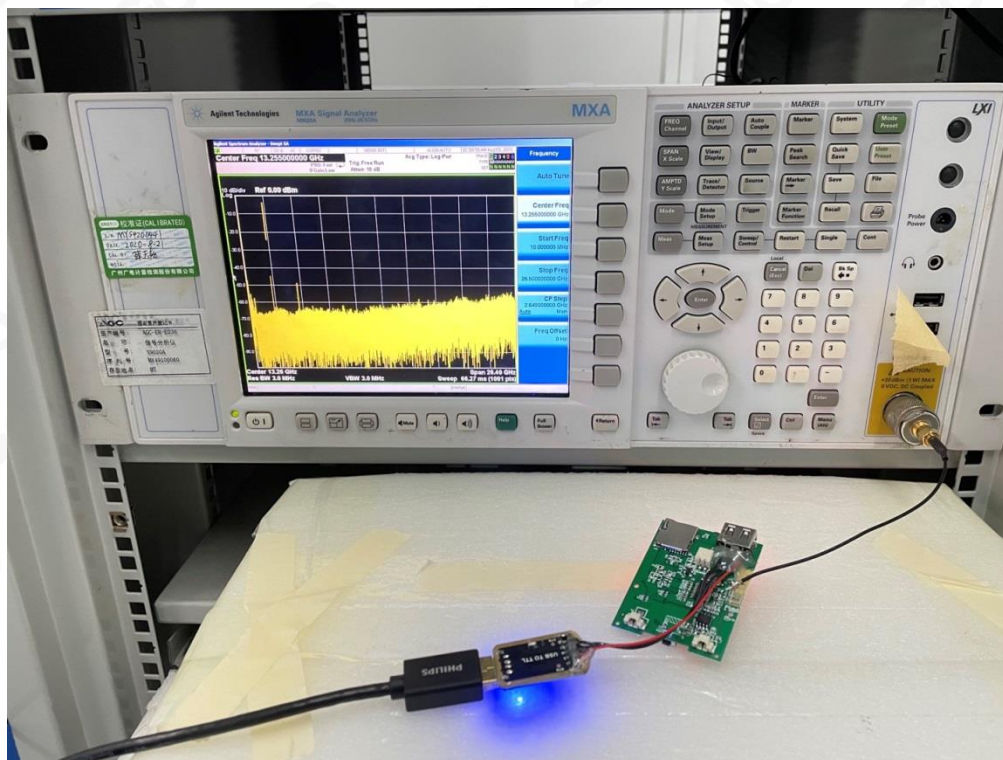




## CONDUCTED EMISSION TEST SETUP



## CONDUCTED TEST SETUP



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## APPENDIX B: PHOTOGRAPHS OF EUT

### WHOLE VIEW OF EUT



TOP VIEW OF EUT



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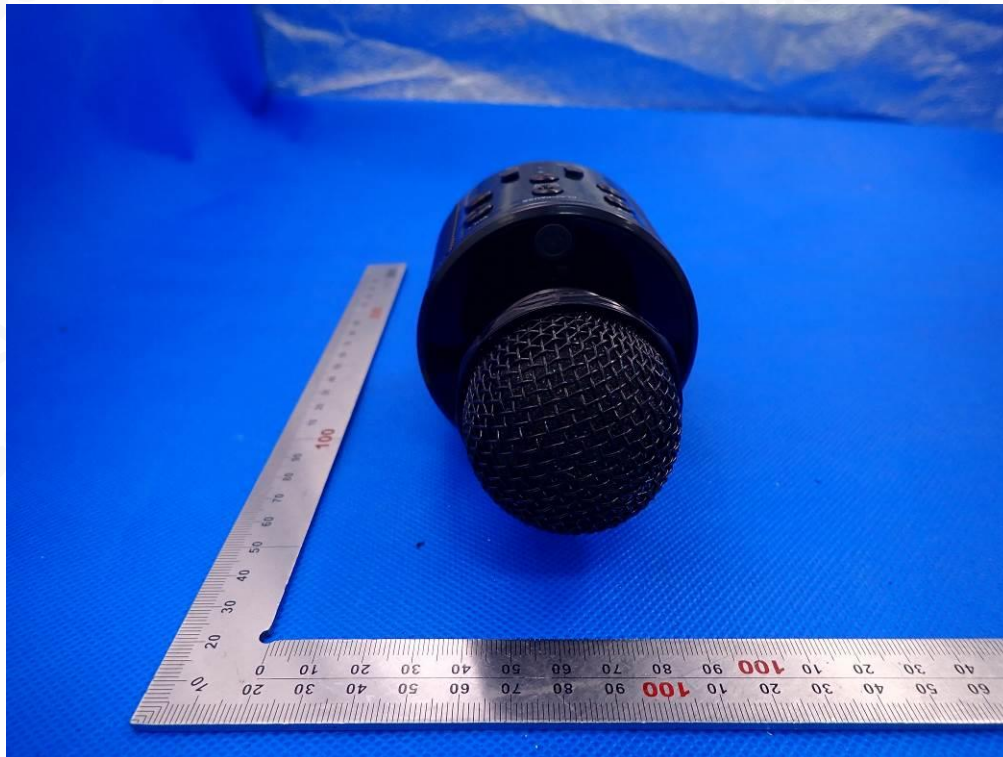




**BOTTOM VIEW OF EUT**



**FRONT VIEW OF EUT**



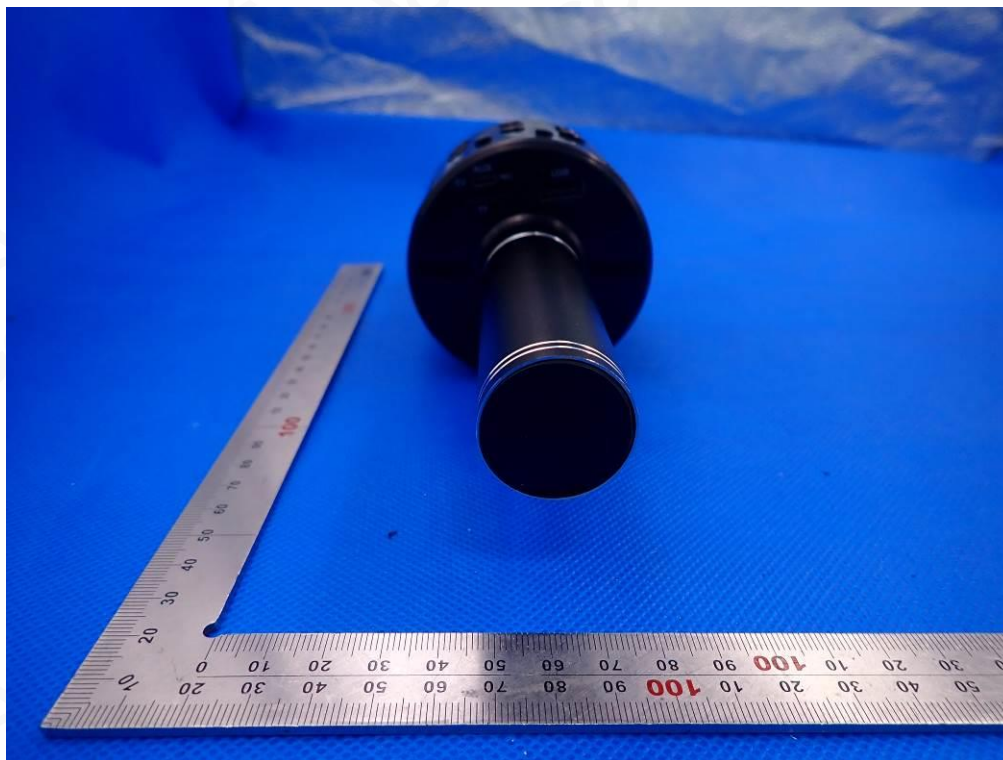
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BACK VIEW OF EUT



LEFT VIEW OF EUT



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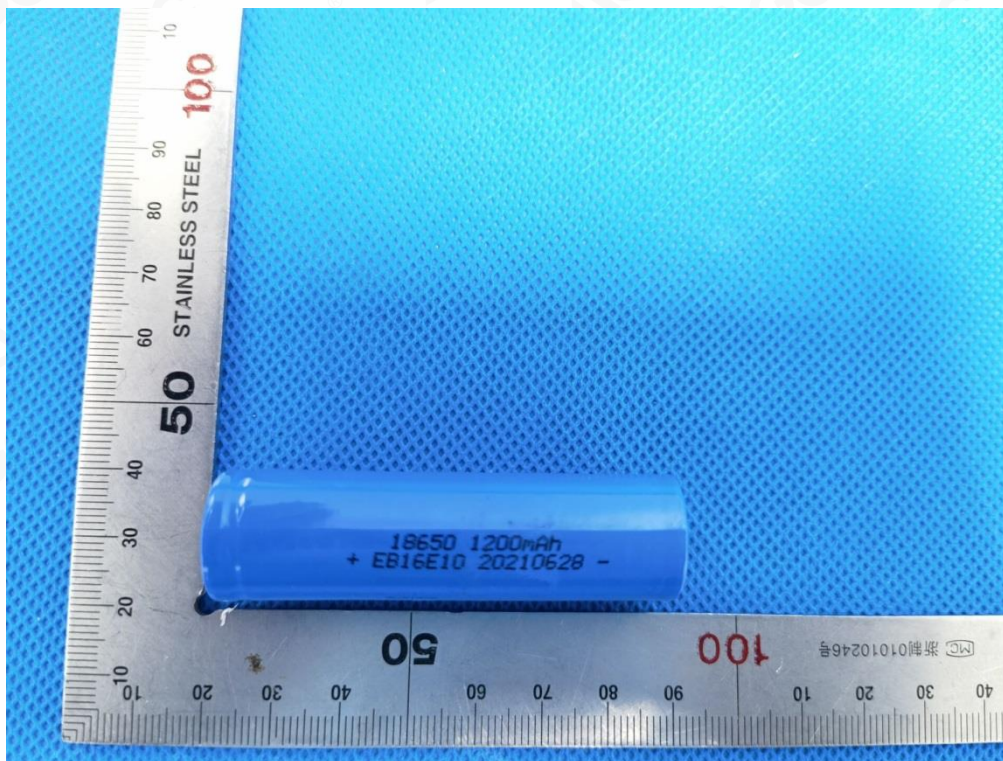




RIGHT VIEW OF EUT



BATTERY OF EUT



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VIEW OF EUT(PORT)



OPEN VIEW OF EUT



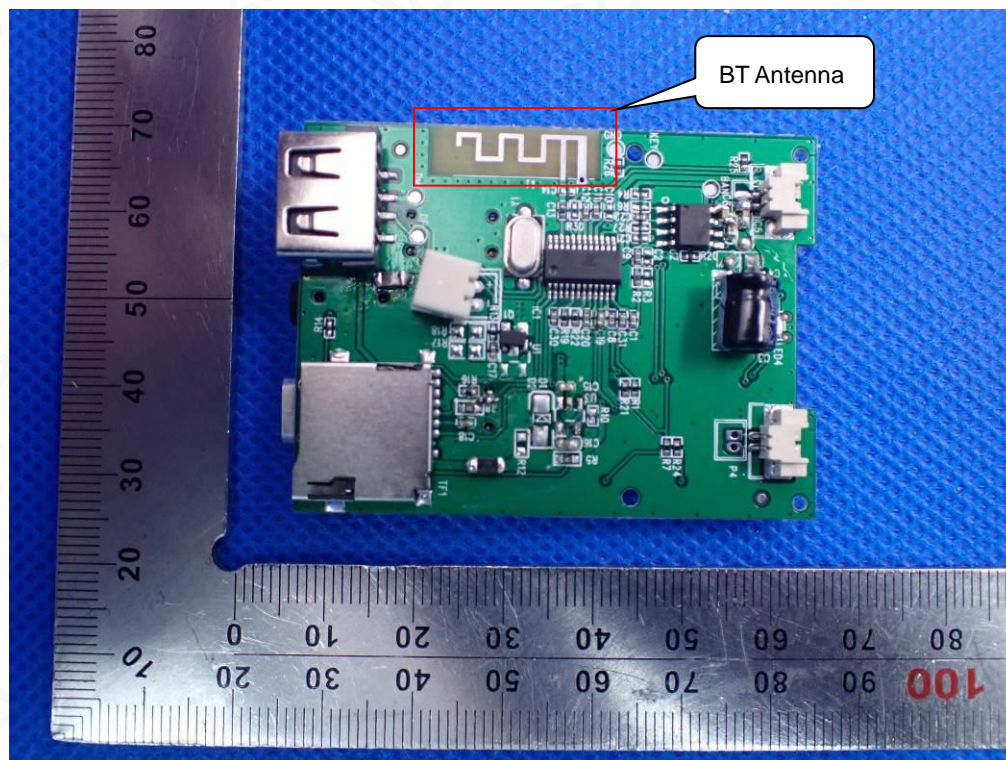
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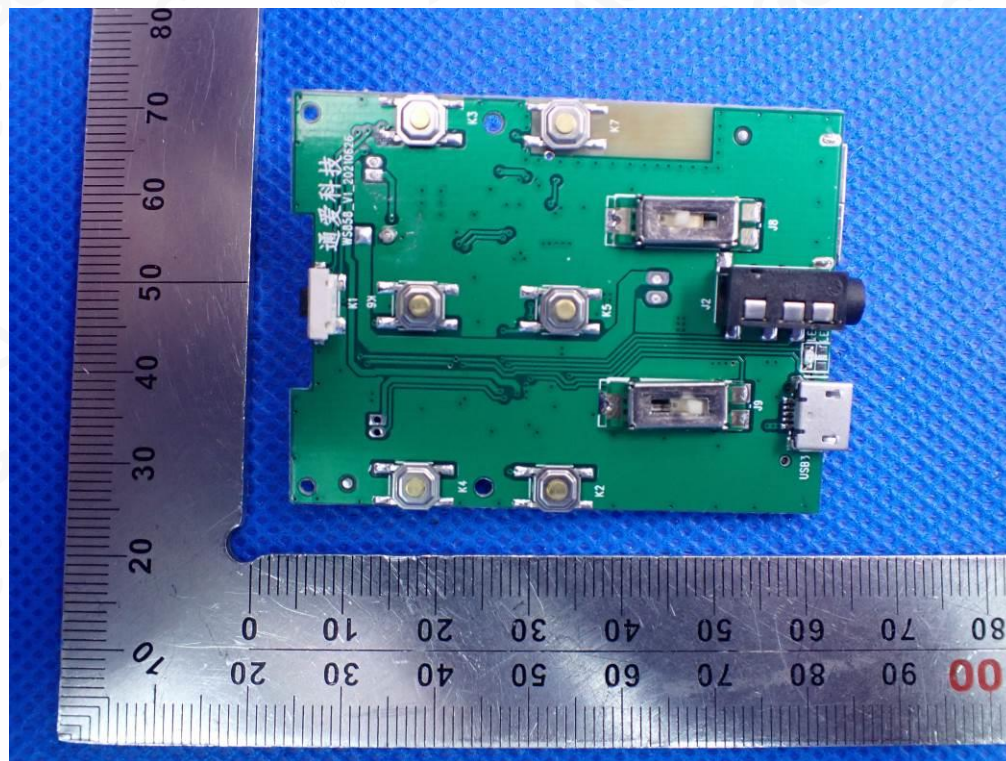




# INTERNAL VIEW OF EUT-1



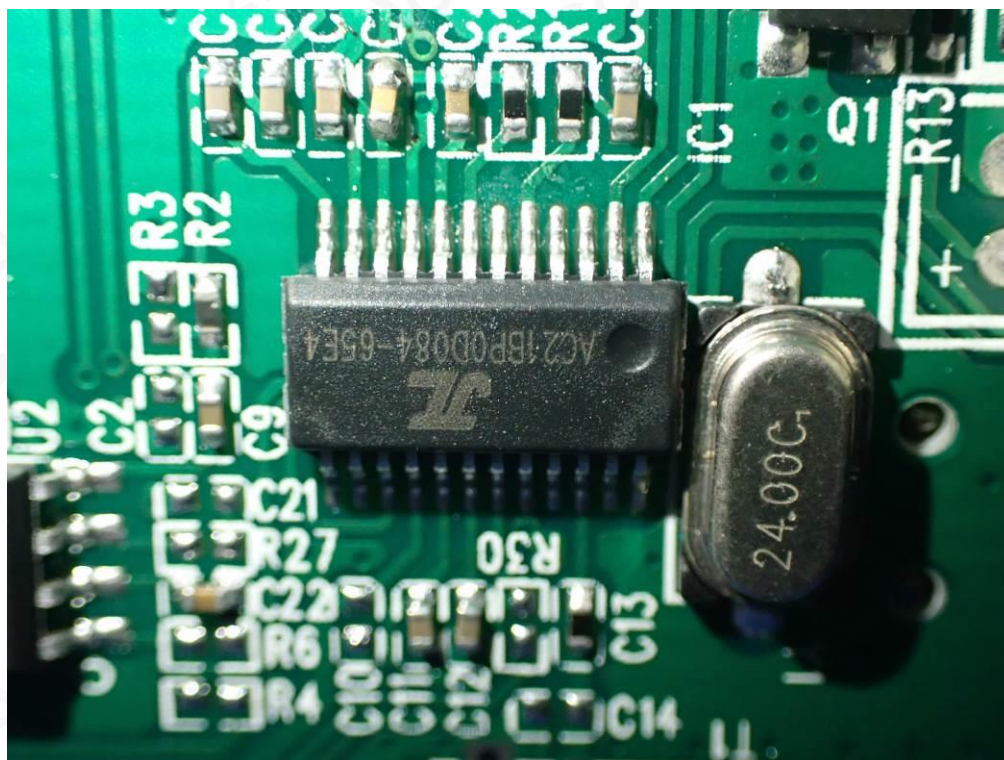
# INTERNAL VIEW OF EUT-2



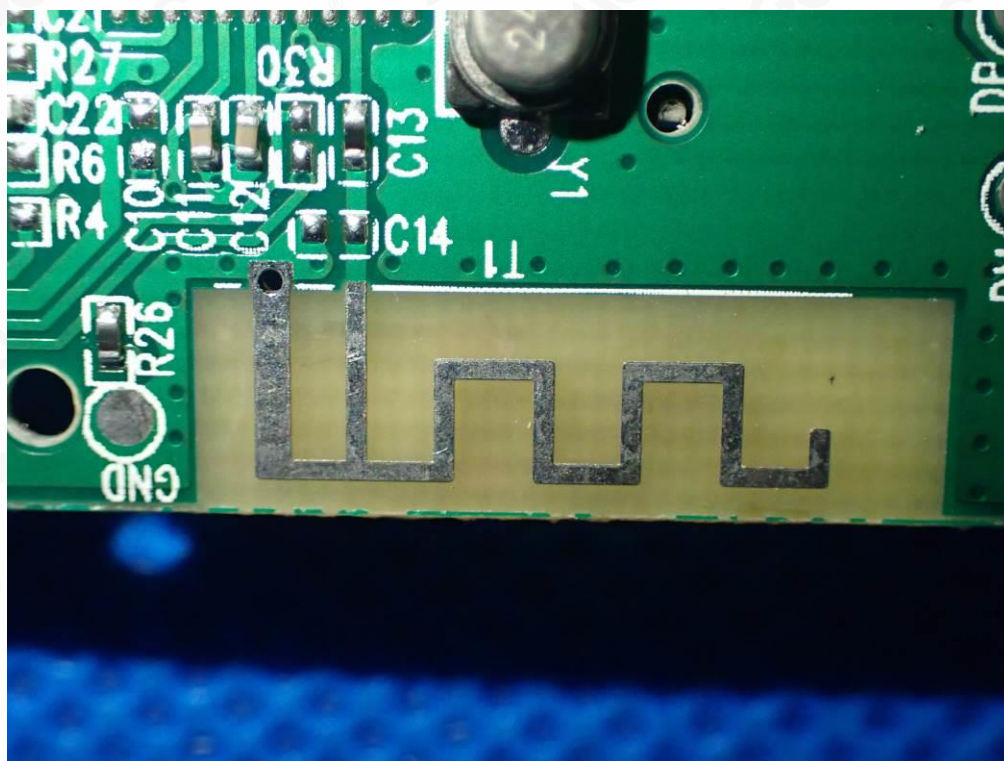
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INTERNAL VIEW OF EUT-3



INTERNAL VIEW OF EUT-4



----END OF REPORT----

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6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
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9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
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