

# TR-4-E-009 Radiated Emission Test Result

**Test Site** : DDT 3m Chamber 3#

D:\E3 6.111\2022 Report Data\Q22062728-2E MC-50BT\FCC ABOVE 1G .EM6

**Test Date** : 2022-07-27

**Tested By** : Bairong

**EUT** : Wireless Headphones with Wide-Band Active Noise Cancelling

**Model Number** : MC-50BT

**Power Supply** : Battery

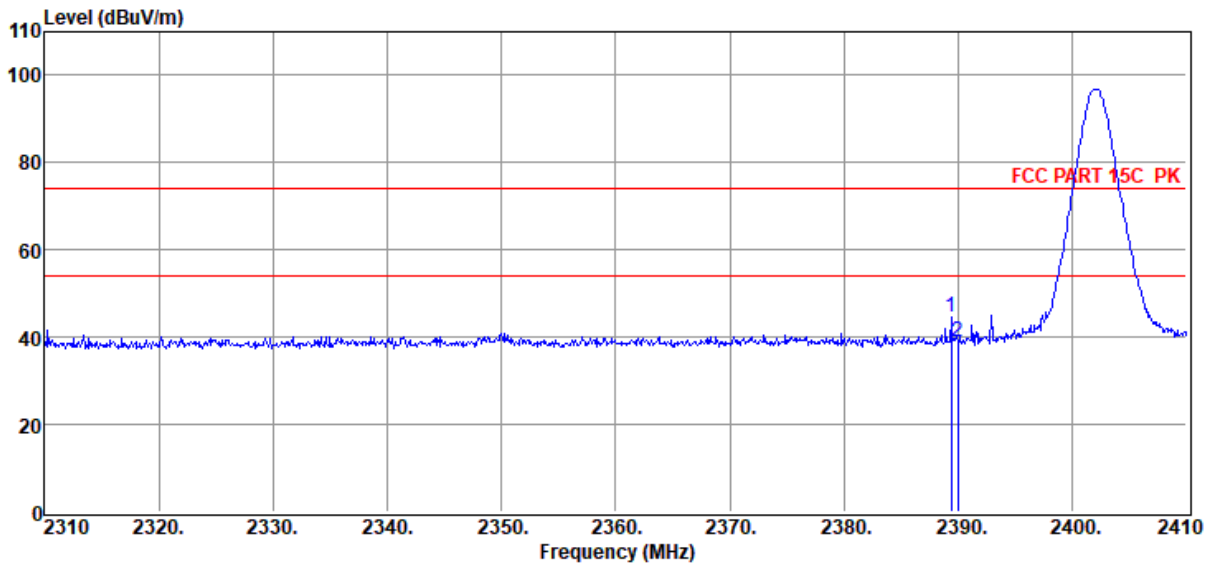
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D 3#/3m/VERTICAL

**Memo** : 3DH5 2402

Data: 18



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2389.40	54.19	27.40	39.59	1.71	0.72	44.43	74.00	-29.57	Peak	VERTICAL
2	2390.00	48.68	27.40	39.60	1.71	0.72	38.91	74.00	-35.09	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

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**Power Supply** : Battery

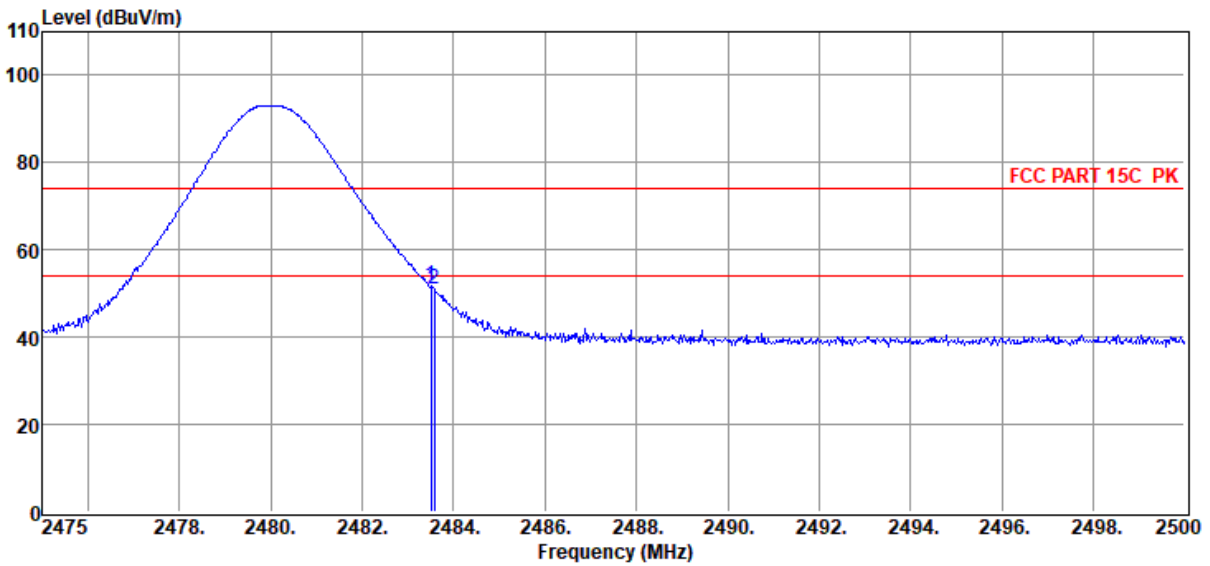
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D  
3#/3m/HORIZONTAL

**Memo** : DH5 2480

Data: 19



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	61.55	27.57	39.64	1.74	0.73	51.95	74.00	-22.05	Peak	HORIZONTAL
2	2483.58	60.73	27.57	39.64	1.74	0.73	51.13	74.00	-22.87	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

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**Model Number** : MC-50BT

**Power Supply** : Battery

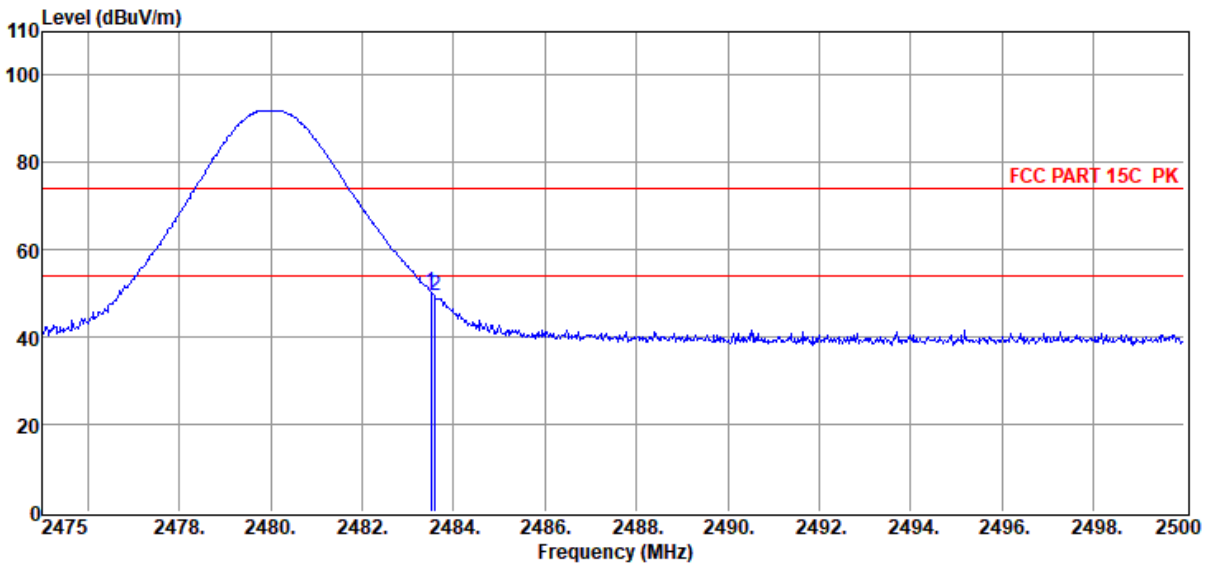
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D 3#/3m/VERTICAL

**Memo** : DH5 2480

Data: 20



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	59.95	27.57	39.64	1.74	0.73	50.35	74.00	-23.65	Peak	VERTICAL
2	2483.60	59.29	27.57	39.64	1.74	0.73	49.69	74.00	-24.31	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

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**EUT** : Wireless Headphones with Wide-Band Active Noise Cancelling

**Model Number** : MC-50BT

**Power Supply** : Battery

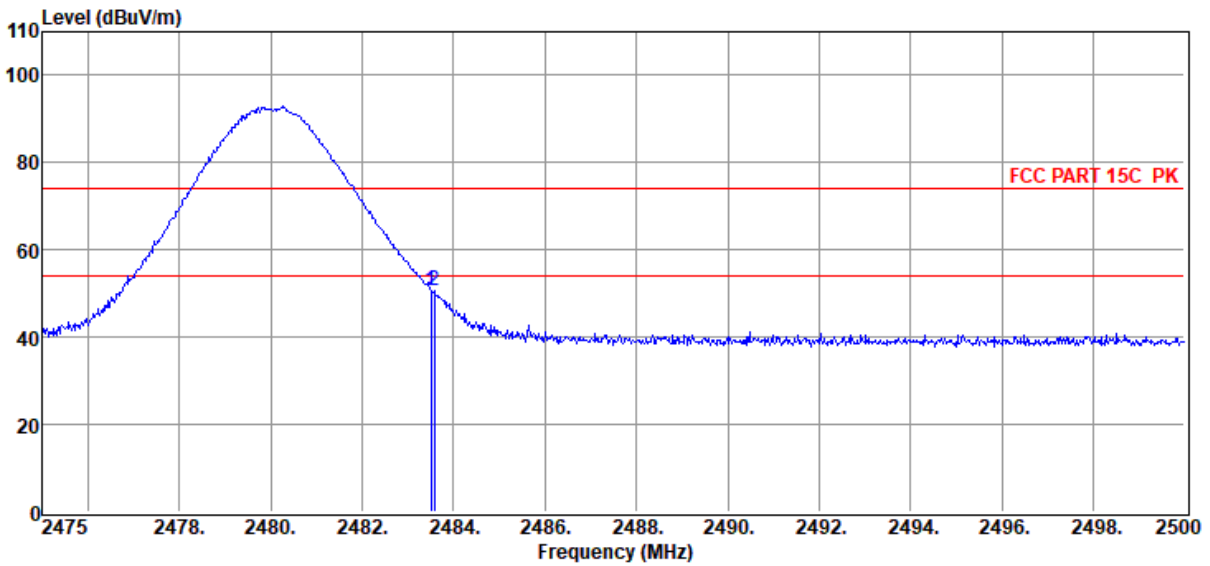
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D  
3#/3m/HORIZONTAL

**Memo** : 2DH5 2480

Data: 21



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	60.24	27.57	39.64	1.74	0.73	50.64	74.00	-23.36	Peak	HORIZONTAL
2	2483.58	60.18	27.57	39.64	1.74	0.73	50.58	74.00	-23.42	Peak	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

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**Tested By** : Bairong

**EUT** : Wireless Headphones with Wide-Band Active Noise Cancelling

**Model Number** : MC-50BT

**Power Supply** : Battery

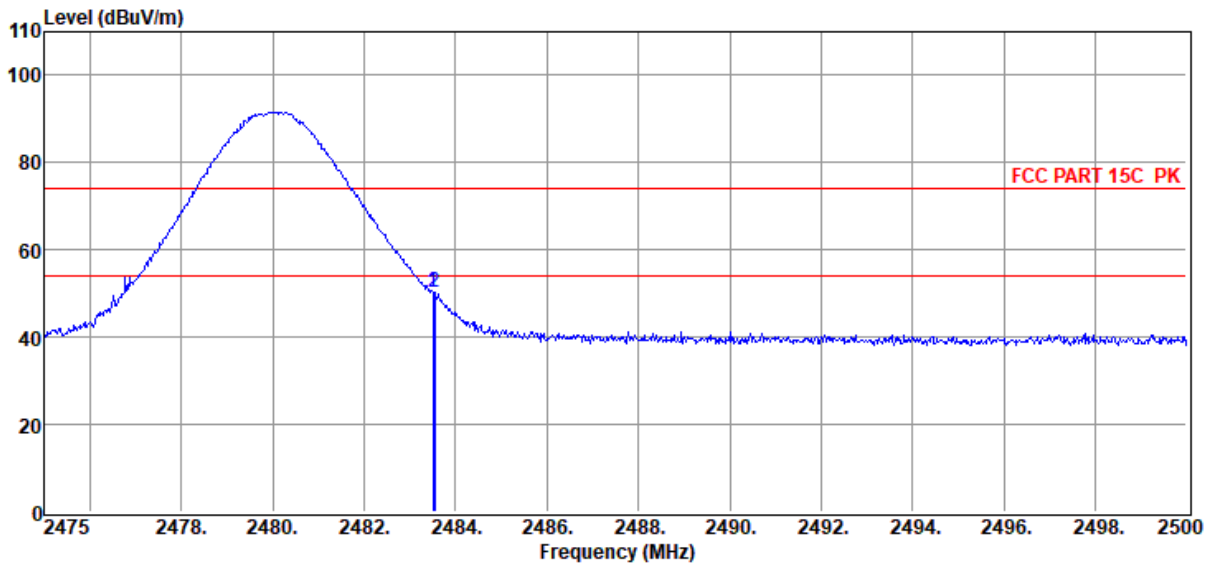
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D 3#/3m/VERTICAL

**Memo** : 2DH5 2480

Data: 22



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	59.69	27.57	39.64	1.74	0.73	50.09	74.00	-23.91	Peak	VERTICAL
2	2483.55	59.91	27.57	39.64	1.74	0.73	50.31	74.00	-23.69	Peak	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Site** : DDT 3m Chamber 3#

D:\E3 6.111\2022 Report Data\Q22062728-2E MC-50BT\FCC ABOVE 1G .EM6

**Test Date** : 2022-07-27

**Tested By** : Bairong

**EUT** : Wireless Headphones with Wide-Band Active Noise Cancelling

**Model Number** : MC-50BT

**Power Supply** : Battery

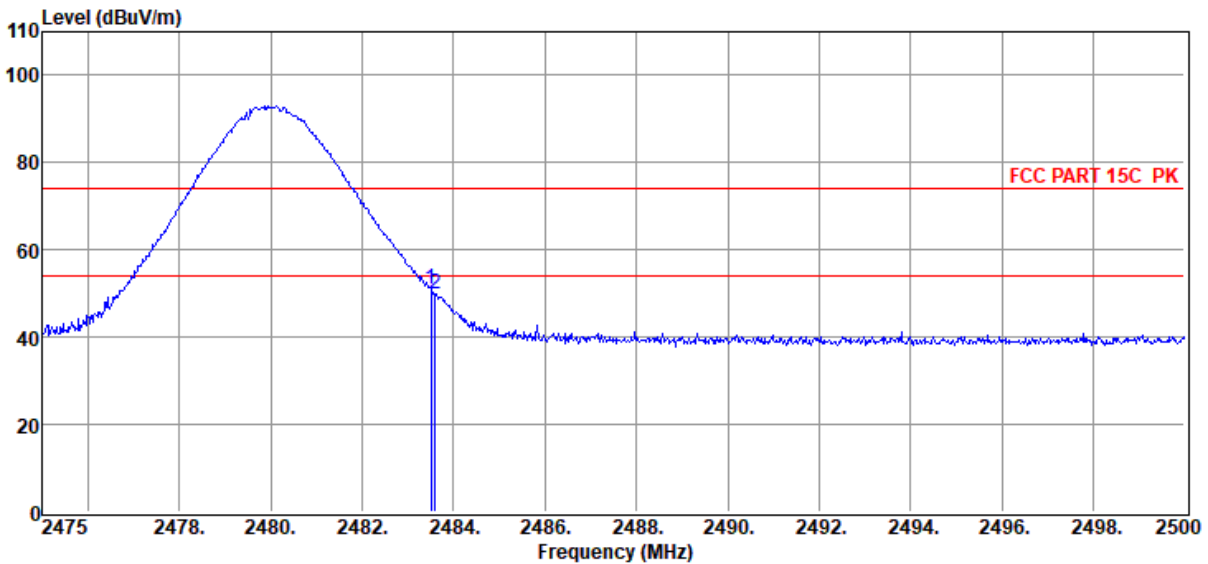
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D  
3#/3m/HORIZONTAL

**Memo** : 3DH5 2480

Data: 23



Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	60.54	27.57	39.64	1.74	0.73	50.94	74.00	-23.06	Peak	HORIZONTAL
2	2483.60	59.34	27.57	39.64	1.74	0.73	49.74	74.00	-24.26	Peak	HORIZONTAL

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Site** : DDT 3m Chamber 3#

D:\E3 6.111\2022 Report Data\Q22062728-2E MC-50BT\FCC ABOVE 1G .EM6

**Test Date** : 2022-07-27

**Tested By** : Bairong

**EUT** : Wireless Headphones with Wide-Band Active Noise Cancelling

**Model Number** : MC-50BT

**Power Supply** : Battery

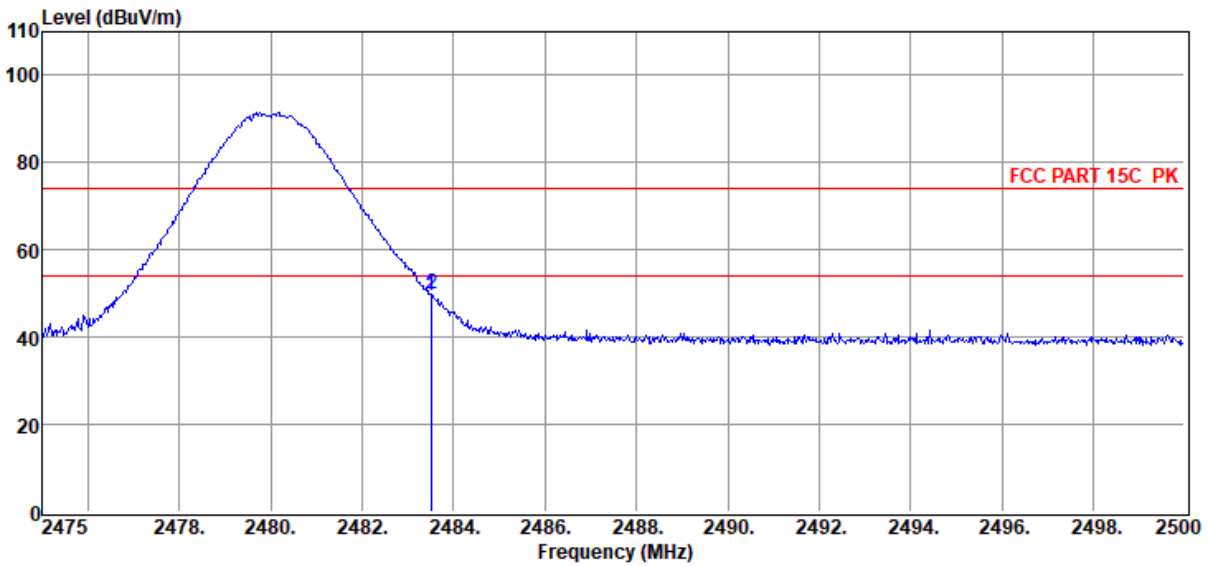
**Test Mode** : Tx Mode

**Condition** : Temp:22°C,Humi:59.4%,Press:100.3kPa

**Antenna/Distance** : 2021 BBHA 9120D 3#/3m/VERTICAL

**Memo** : 3DH5 2480

Data: 24

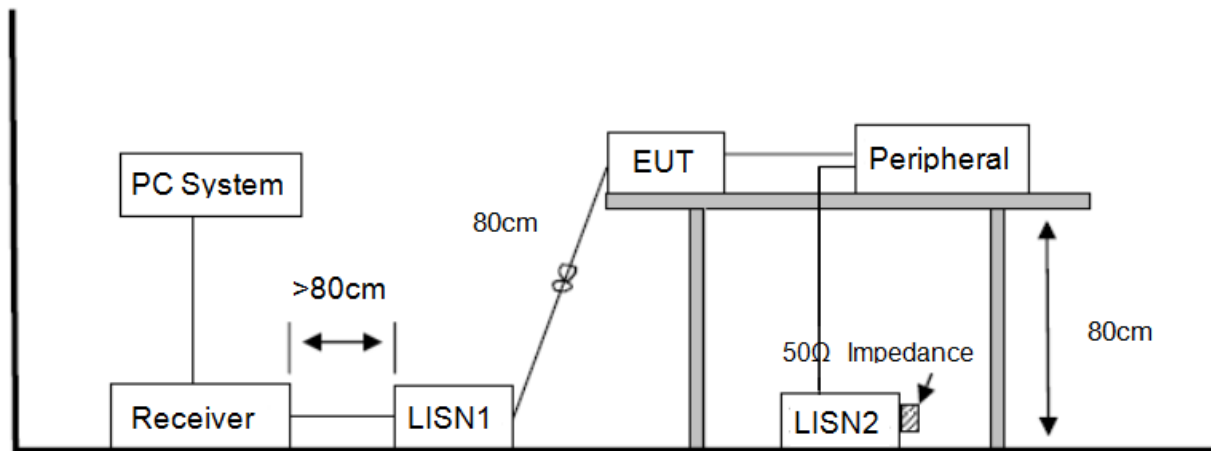


Item (Mark)	Freq. (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	PRM Factor (dB)	Cable Loss (dB)	Filter Factor (dB)	Result Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Detector	Polarization
1	2483.50	59.07	27.57	39.64	1.74	0.73	49.47	74.00	-24.53	Peak	VERTICAL
2	2483.53	59.45	27.57	39.64	1.74	0.73	49.85	74.00	-24.15	Peak	VERTICAL

- Note: 1. Result Level = Read Level + Antenna Factor + Cable loss + Filter Factor - PRM Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

## 13. Power Line Conducted Emission

### 13.1. Block diagram of test setup



### 13.2. Power line conducted emission limits

Frequency	Quasi-Peak Level dB( $\mu$ V)	Average Level dB( $\mu$ V)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: \* Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

### 13.3. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test setup as described in clause 13.1 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

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

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were



recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, 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.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

### 13.4. Test result

Pass. (See below detailed test result)

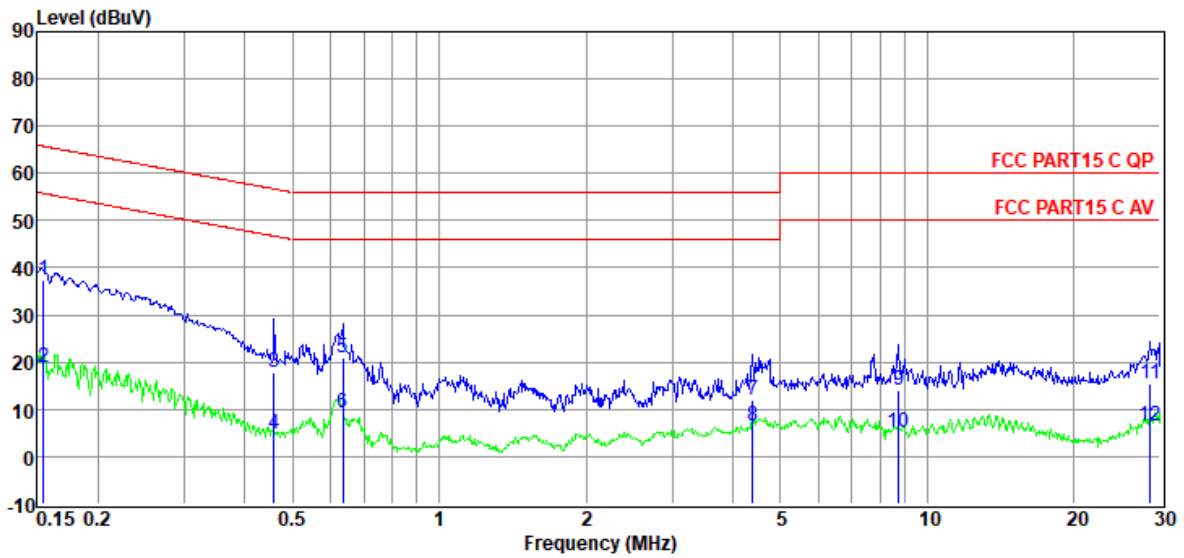
Note1: All emissions not reported below are too low against the prescribed limits.

Note2: "----" means Peak detection; "----" means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worst case.

# TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 1# Shield Room D:\2022 CE report date\Q22062728-2E MC-50BT\FCC.EM6  
**Test Date** : 2022-07-26 **Tested By** : Bairong  
**EUT** : Wireless Headphones with Wide-Band **Model Number** : MC-50BT  
           : Active Noise Cancelling **Test Mode** : TX  
**Power Supply** : AC 120V/60Hz **LISN** : 2021 1# ENV216/NEUTRAL  
**Condition** : TEMP:22.8°C, RH:62.0%, BP:101.2kPa  
**Memo** : BT  
 Data: 2



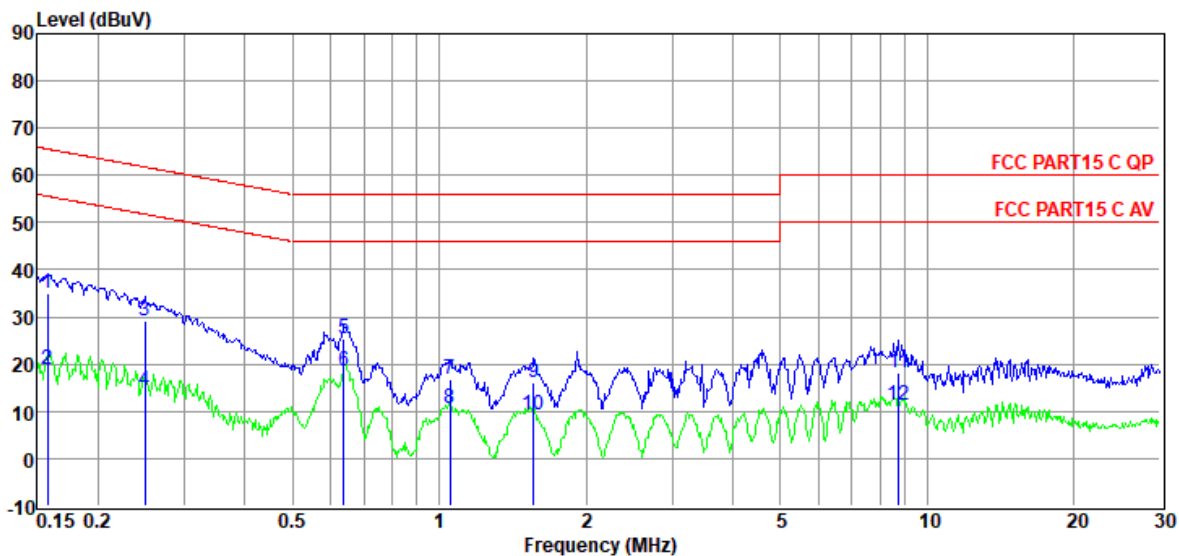
Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.15	17.54	9.80	0.01	9.92	37.27	65.74	-28.47	QP	NEUTRAL
2	0.15	-0.78	9.80	0.01	9.92	18.95	55.74	-36.79	Average	NEUTRAL
3	0.46	-1.51	9.53	0.02	9.91	17.95	56.71	-38.76	QP	NEUTRAL
4	0.46	-14.71	9.53	0.02	9.91	4.75	46.71	-41.96	Average	NEUTRAL
5	0.63	1.31	9.71	0.02	9.91	20.95	56.00	-35.05	QP	NEUTRAL
6	0.63	-10.38	9.71	0.02	9.91	9.26	46.00	-36.74	Average	NEUTRAL
7	4.38	-7.66	9.77	0.06	9.92	12.09	56.00	-43.91	QP	NEUTRAL
8	4.38	-13.28	9.77	0.06	9.92	6.47	46.00	-39.53	Average	NEUTRAL
9	8.73	-5.83	9.72	0.10	9.94	13.93	60.00	-46.07	QP	NEUTRAL
10	8.73	-14.77	9.72	0.10	9.94	4.99	50.00	-45.01	Average	NEUTRAL
11	28.60	-4.63	9.89	0.20	10.00	15.46	60.00	-44.54	QP	NEUTRAL
12	28.60	-13.71	9.89	0.20	10.00	6.38	50.00	-43.62	Average	NEUTRAL

**Note:**

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

# TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 1# Shield Room D:\2022 CE report date\Q22062728-2E MC-50BT\FCC.EM6  
**Test Date** : 2022-07-26 **Tested By** : Bairong  
**EUT** : Wireless Headphones with Wide-Band **Model Number** : MC-50BT  
           : Active Noise Cancelling **Test Mode** : TX  
**Power Supply** : AC 120V/60Hz **LISN** : 2021 1# ENV216/LINE  
**Condition** : TEMP:22.8°C, RH:62.0%, BP:101.2kPa  
**Memo** : BT  
 Data: 4



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	15.63	9.63	0.01	9.92	35.19	65.60	-30.41	QP	LINE
2	0.16	-0.69	9.63	0.01	9.92	18.87	55.60	-36.73	Average	LINE
3	0.25	9.64	9.75	0.02	9.92	29.33	61.78	-32.45	QP	LINE
4	0.25	-5.24	9.75	0.02	9.92	14.45	51.78	-37.33	Average	LINE
5	0.64	5.92	9.53	0.02	9.91	25.38	56.00	-30.62	QP	LINE
6	0.64	-0.92	9.53	0.02	9.91	18.54	46.00	-27.46	Average	LINE
7	1.05	-2.64	9.59	0.03	9.89	16.87	56.00	-39.13	QP	LINE
8	1.05	-8.92	9.59	0.03	9.89	10.59	46.00	-35.41	Average	LINE
9	1.56	-3.47	9.54	0.04	9.89	16.00	56.00	-40.00	QP	LINE
10	1.56	-10.13	9.54	0.04	9.89	9.34	46.00	-36.66	Average	LINE
11	8.73	-1.20	9.50	0.10	9.94	18.34	60.00	-41.66	QP	LINE
12	8.73	-8.40	9.50	0.10	9.94	11.14	50.00	-38.86	Average	LINE

Note:

1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## 14. Antenna Requirements

### 14.1. Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

For intentional device, according to RSS-Gen issue 5 section 6.8.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna.

The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

### 14.2. Result

The antenna used for this product is Ceramic antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 3.45 dBi.

### 15. Test Setup Photograph





### 16. Photos of the EUT



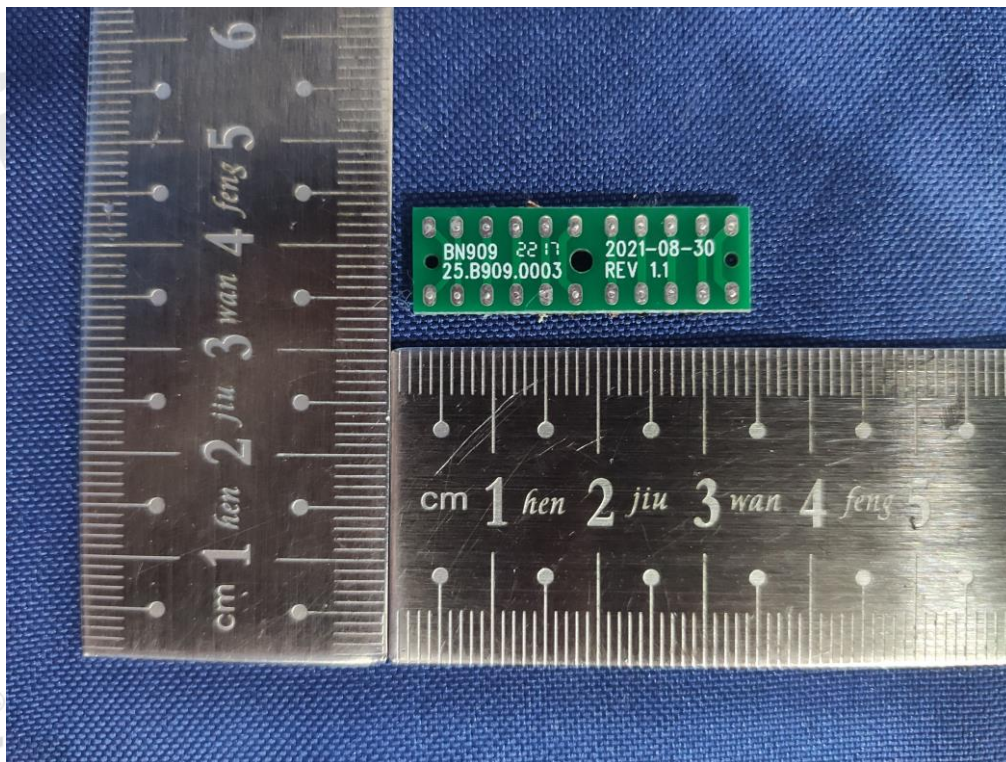
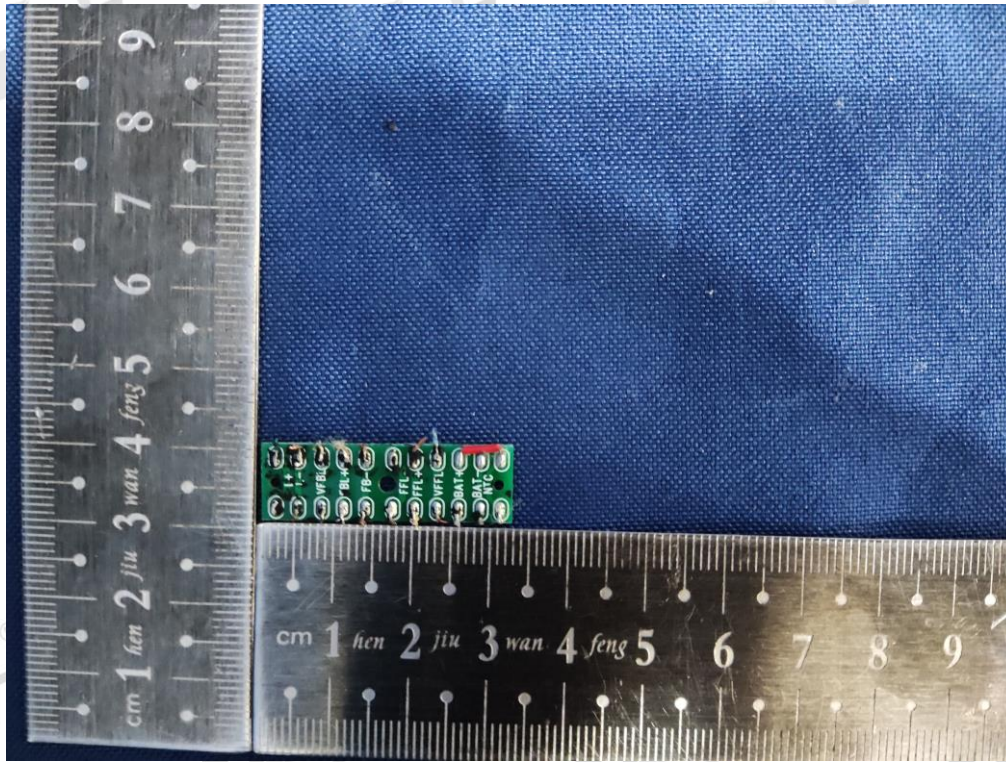


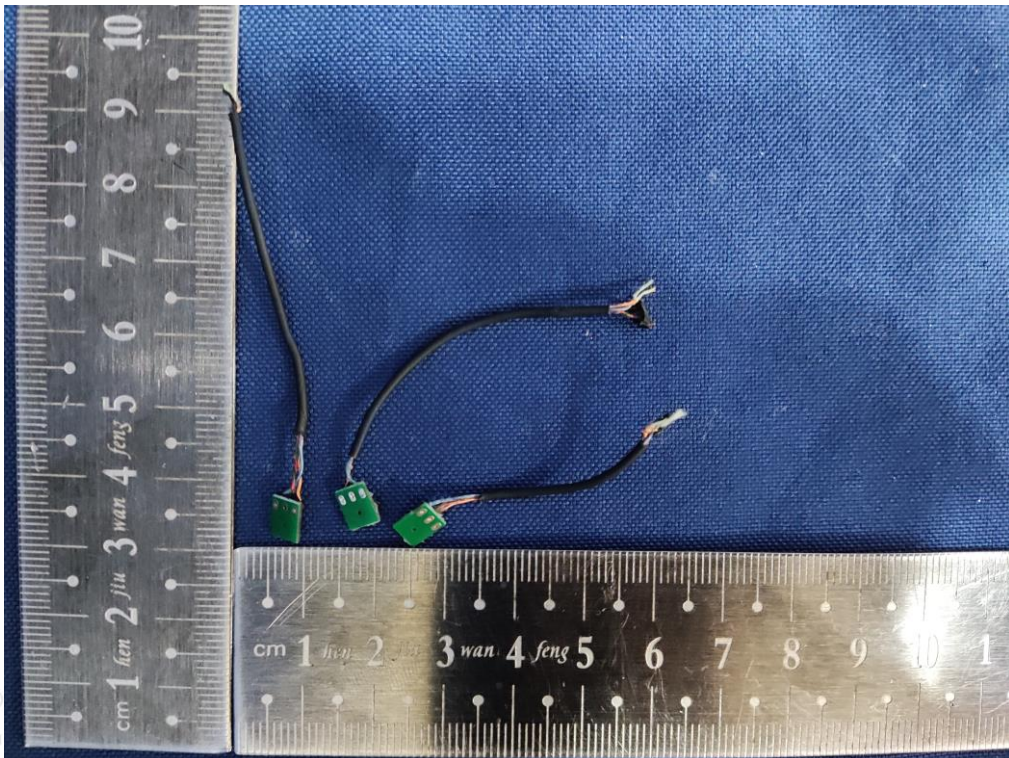
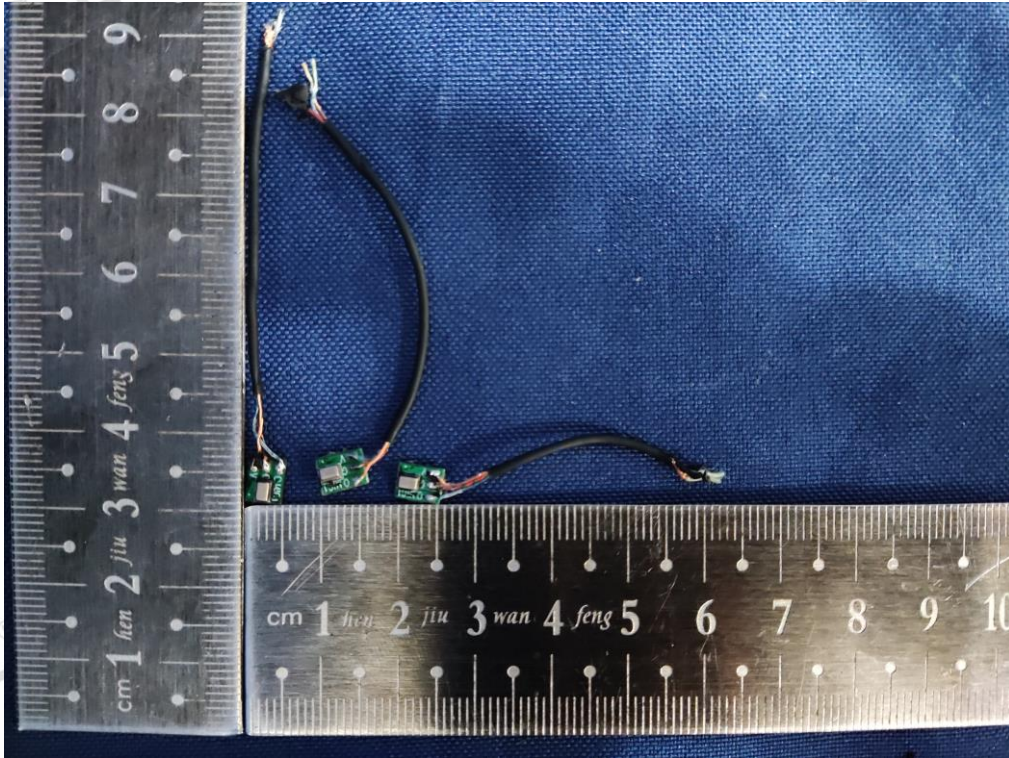


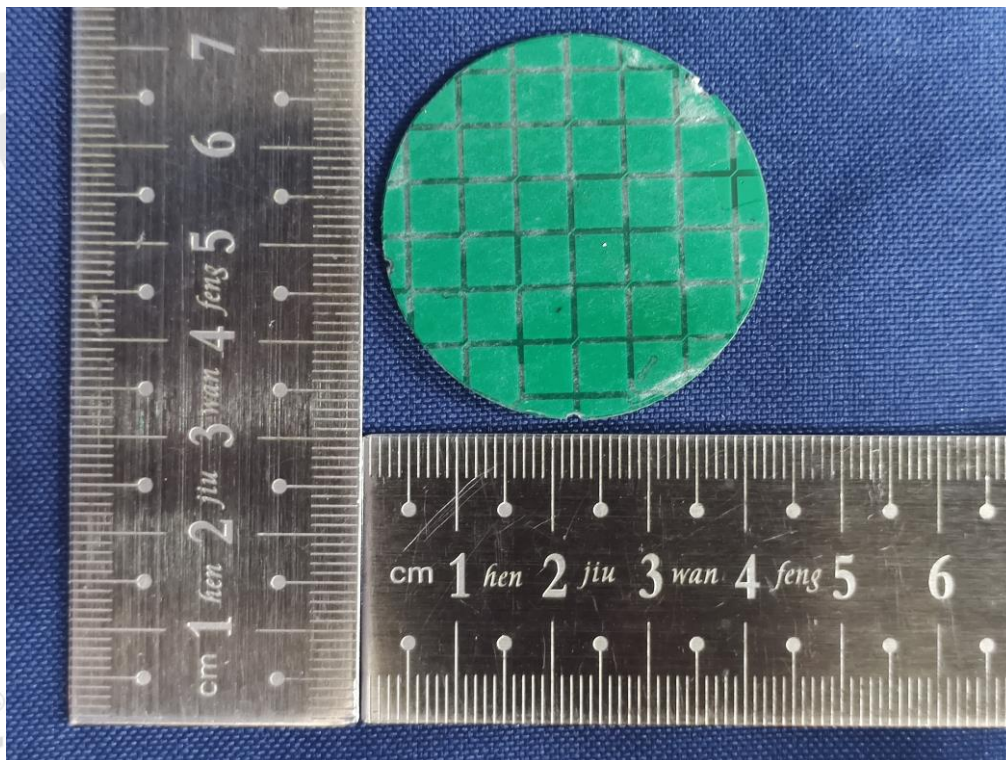
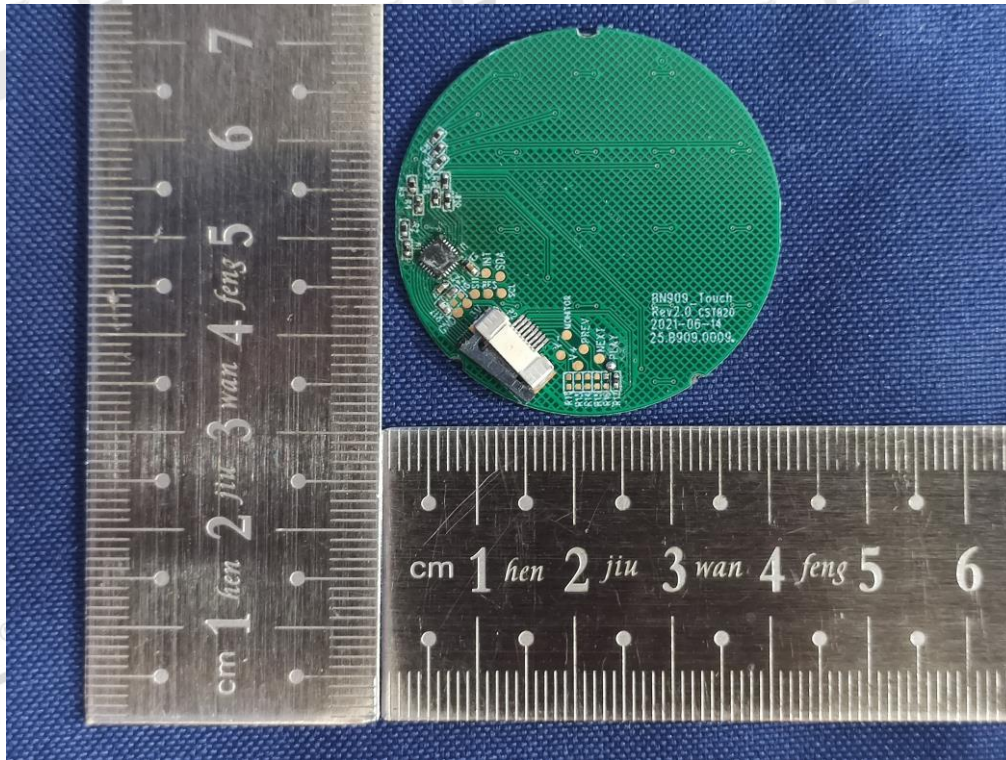


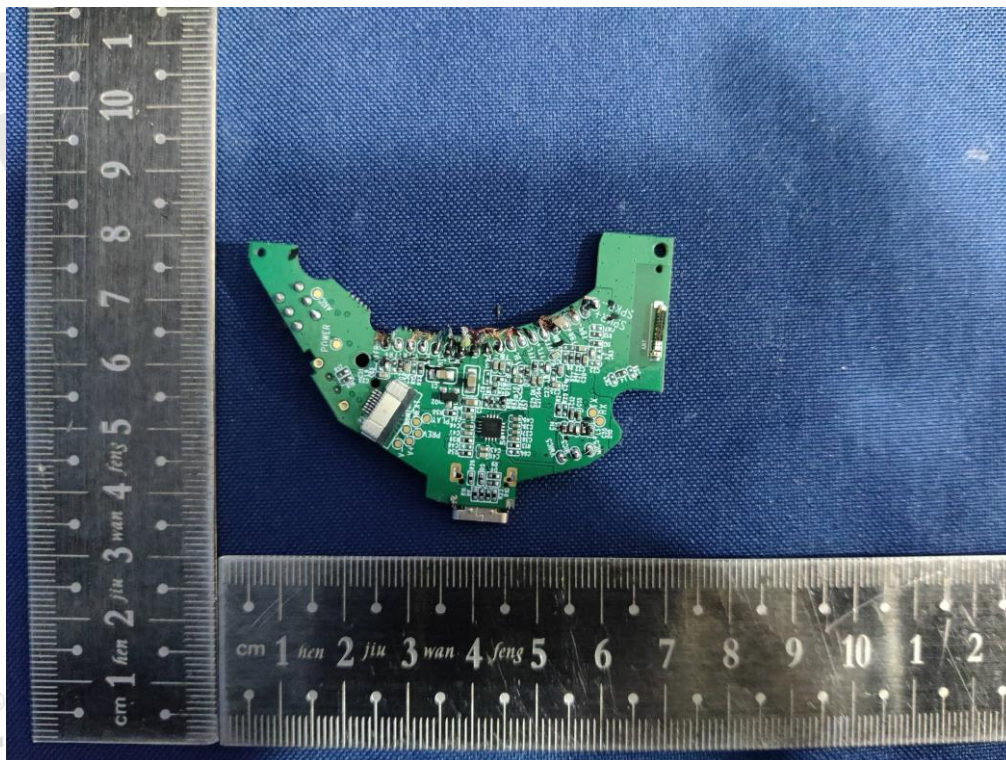
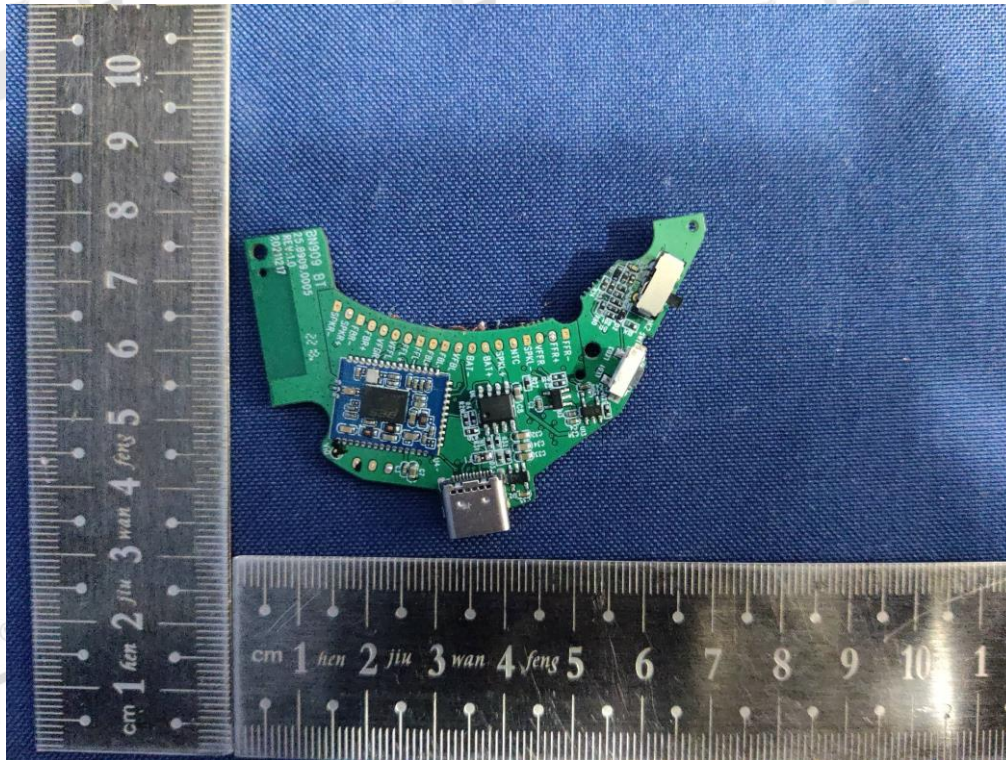


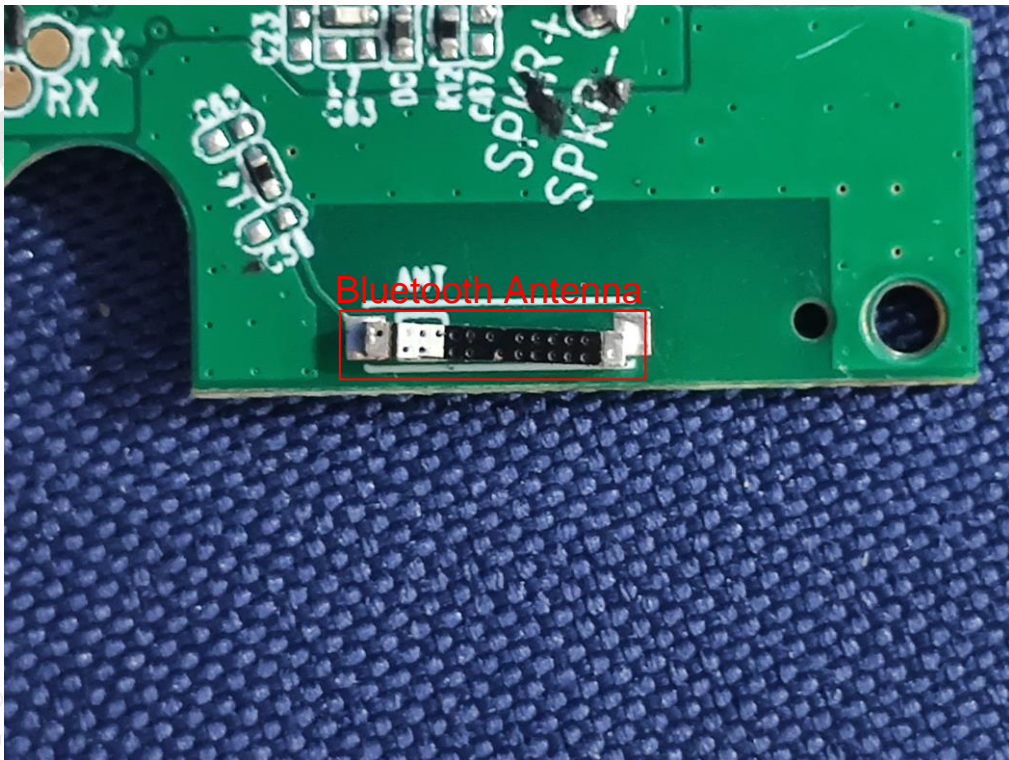
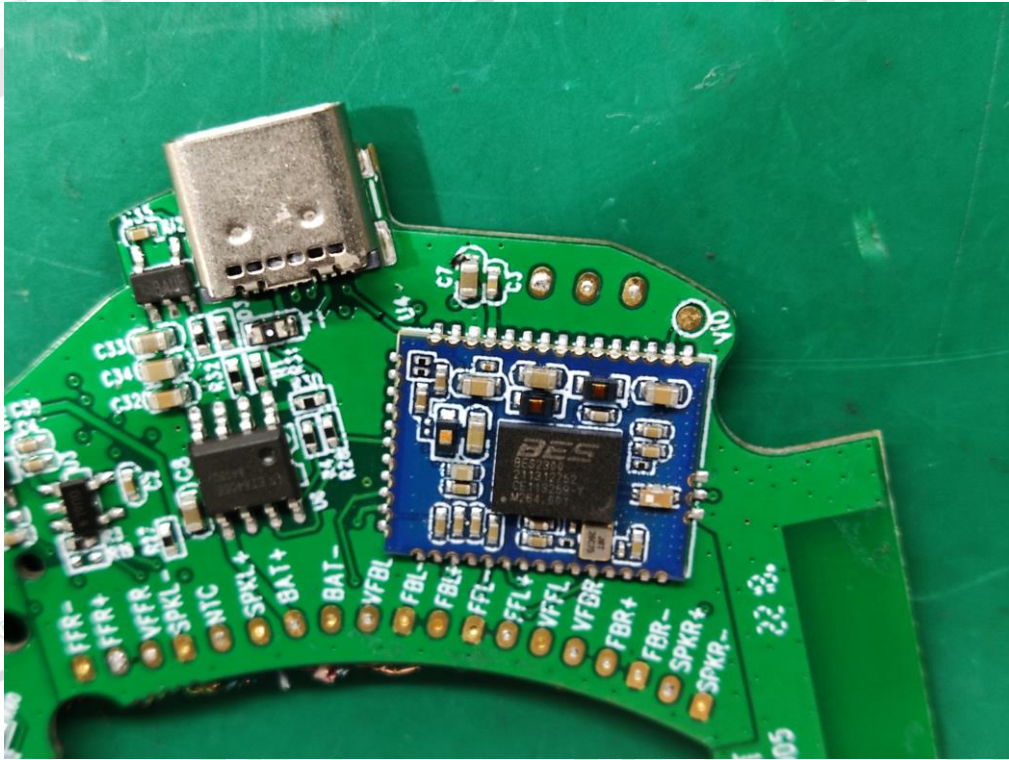




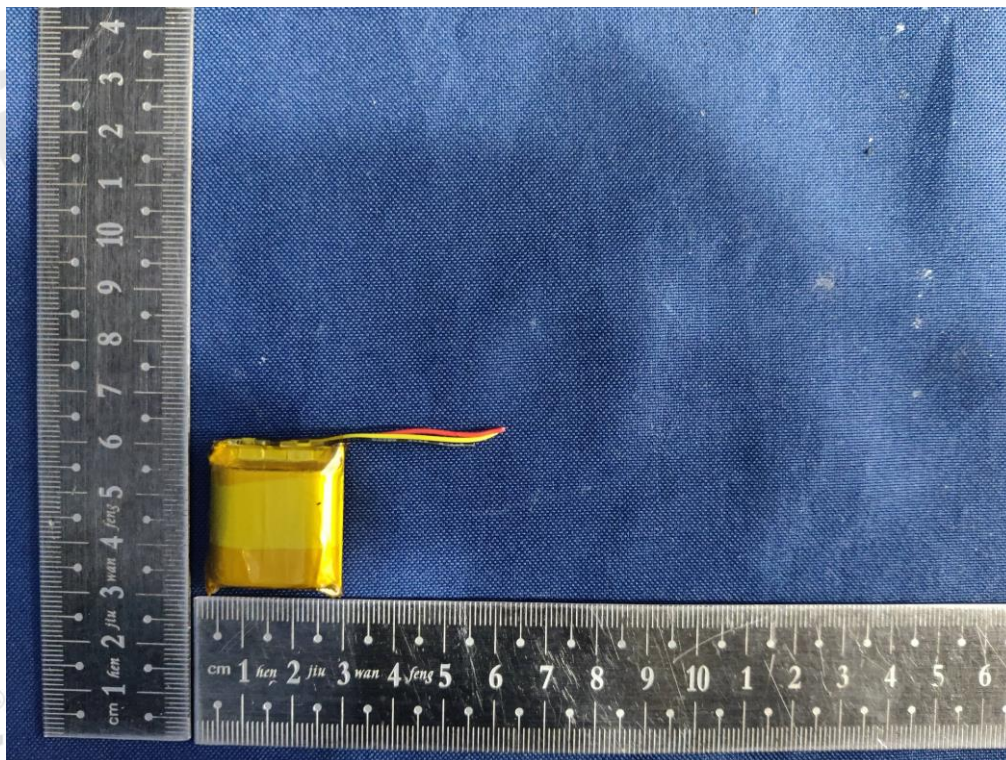
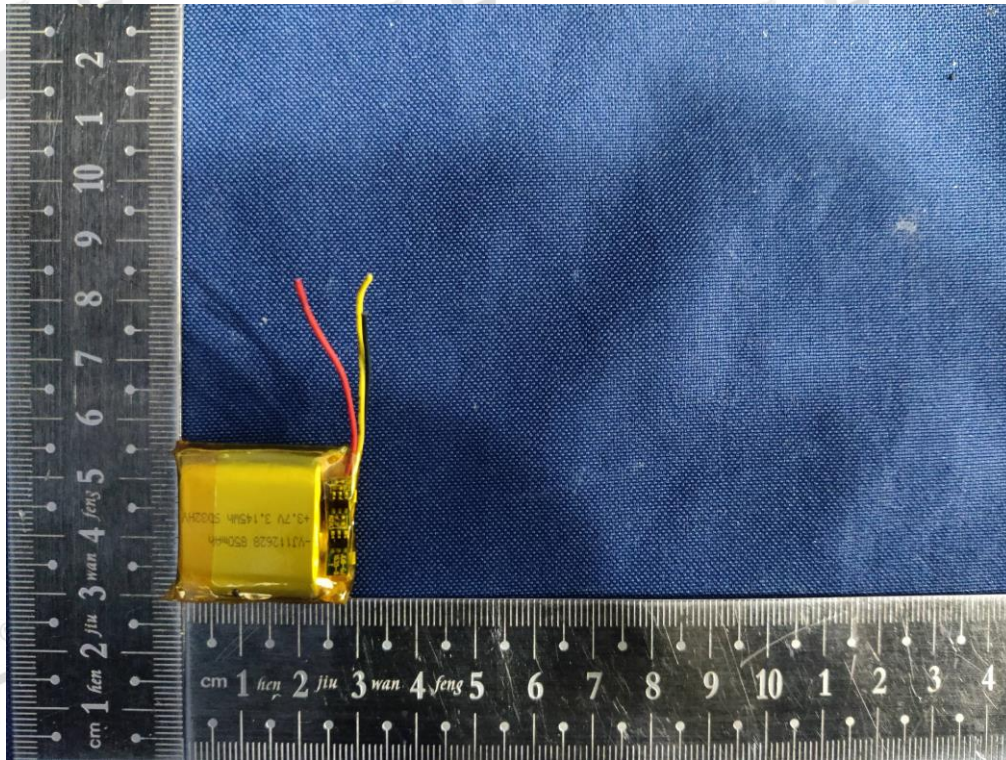


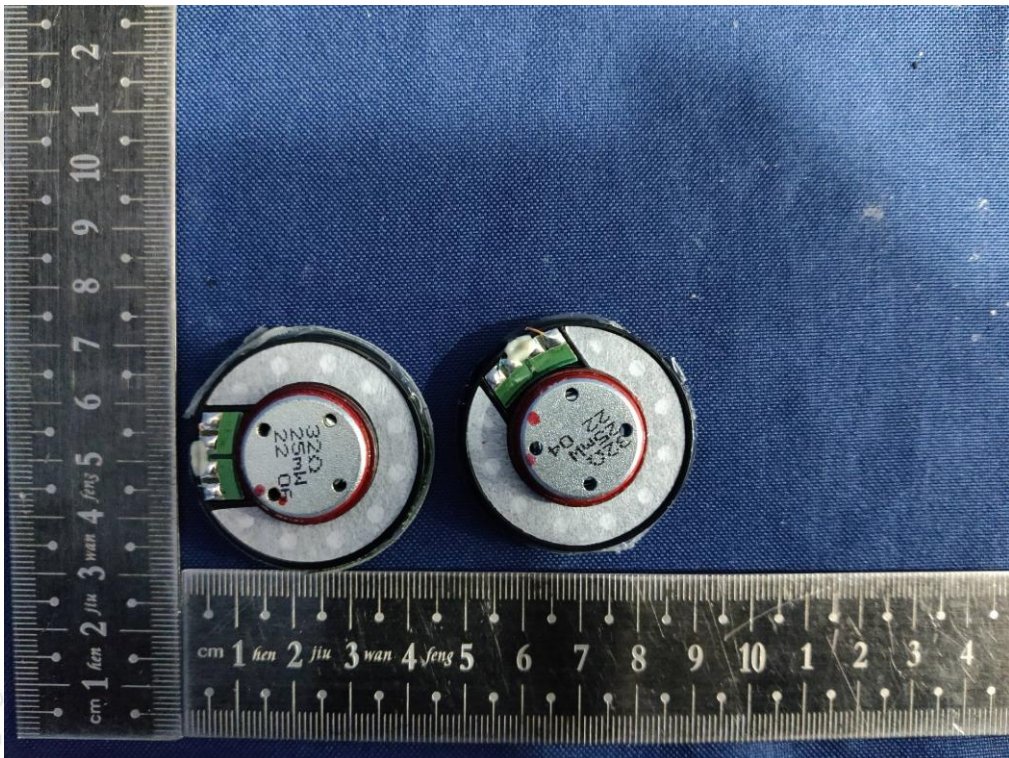












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