

# TEST REPORT

**Product Name** : Bluetooth speaker  
**Model Number** : CT02089, 25179  
**FCC ID** : 2ABHA0127

**Prepared for** : Ningbo Cstar Imp & Exp CO., LTD  
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**Report Number** : EDG2308240045E00202R  
**Date(s) of Tests** : August 24, 2023 to September 13 2023  
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## 1. TEST RESULT CERTIFICATION

Applicant : Ningbo Cstar Imp & Exp CO., LTD  
 Address : Floor 4,Building E, No. 655-90,Qiming Road, Yinzhou Investment &Innovation Center, Ningbo, China  
 Manufacturer : Ningbo Cstar Imp & Exp CO., LTD  
 Address : Floor 4,Building E, No. 655-90,Qiming Road, Yinzhou Investment &Innovation Center, Ningbo, China  
 EUT : Bluetooth speaker  
 Model Name : CT02089, 25179  
 Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
§ 15.247(i), § 2.1093	PASS

The above equipment was tested by EMTEK(DONGGUAN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules FCC § 15.247(i), § 2.1093.

The test results of this report relate only to the tested sample identified in this report

Date of Test : August 24, 2023 to September 13 2023

Prepared by : Warren Deng

Warren Deng /Editor

Reviewer : Tim Dong

Tim Dong /Supervisor

Approve & Authorized Signer : Sam Lv

Sam Lv /Manager



## Modified History

Version	Report No.	Revision Date	Summary
	EDG2308240045E00202R	/	Original Report



## 2. EUT Specification

Characteristics	Description
<b>Product:</b>	Bluetooth speaker
<b>Model Number:</b>	CT02089, 25179 These model are the same expect the model name, Here select CT02089 for test.
<b>Sample:</b>	1#
<b>Data Rate:</b>	1Mbps for GFSK modulation 2Mbps for $\pi/4$ -DQPSK modulation 3Mbps for 8DPSK modulation
<b>Modulation:</b>	GFSK, $\pi/4$ -DQPSK, 8DPSK
<b>Operating Frequency Range(s) :</b>	2402-2480MHz
<b>Number of Channels:</b>	79 channels for BT
<b>Transmit Power Max:</b>	-6.39 dBm(0.000230 W)
<b>Antenna Gain:</b>	-0.58 dBi
<b>Power supply:</b>	DC 5V from USB DC 3.7V from battery
<b>Evaluation applied:</b>	<input type="checkbox"/> MPE Evaluation <input checked="" type="checkbox"/> SAR Evaluation

### 3. Test Requirement

#### RF EXPOSURE EVALUATION

According to 447498 D01 V06, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances*  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR,<sup>24</sup> where

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>25</sup>
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is  $< 5$  mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval. One antenna is available for the EUT. The minimum separation distance is 5mm.

## 4. Measurement Result

Antenna gain: -0.58 dBi

When a single module works, the measurement results are as follows:

Transmit Frequency (MHz)	Mode	Measured Power (dBm)	E.I.R.P.(dBm)	Tune upPower (dBm)	Max tune up power (dBm)	Calculation Result	1-g SAR
2402	GFSK	-9.69	-10.27	-10±1	-9	0.0390226	3
2441	GFSK	-8.49	-9.07	-9±1	-8	0.0495238	3
2480	GFSK	-8.53	-9.11	-9±1	-8	0.0499178	3
2402	Π/4-DQPSK	-8.37	-8.95	-9±1	-8	0.0491266	3
2441	Π/4-DQPSK	-7.07	-7.65	-8±1	-7	0.0623468	3
2480	Π/4-DQPSK	-6.84	-7.42	-7±1	-6	0.0791145	3
2402	8DPSK	-7.48	-8.06	-8±1	-7	0.0618467	3
2441	8DPSK	-7	-7.58	-7±1	-6	0.0784899	3
2480	8DPSK	-9.69	-10.27	-10±1	-9	0.0390226	3

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

\*\*\* End of Report \*\*\*