

TEST REPORT

Product Name : STAR PROJECTOR
Model Number : BTSP-1001
FCC ID : 2A8AE-BTSP-1001

Prepared for : THE MODERN MERCHANT LLC
Address : 12025 TOWN SQUARE ST. UNIT 1305 RESTON, VA
20190

Prepared by : EMTEK (DONGGUAN) CO., LTD.
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Report Number : EDG2208150150E00102R
Date(s) of Tests : August 15, 2022 to August 29, 2022
Date of issue : August 29, 2022

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1. TEST RESULT CERTIFICATION

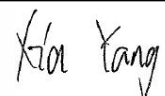
Applicant : THE MODERN MERCHANT LLC
 Address : 12025 TOWN SQUARE ST. UNIT 1305 RESTON, VA 20190
 Manufacturer : THE MODERN MERCHANT LLC
 Address : 12025 TOWN SQUARE ST. UNIT 1305 RESTON, VA 20190
 Factory : Fuzhou Haojing Network Technology Co,Ltd
 Address : Baihua Road , Shenglong building , cangshan, District , Fujian , Fuzhou
 EUT : STAR PROJECTOR
 Model Name : BTSP-1001
 Trademark : ILLUMI DREAMS
 Measurement Procedure Used:

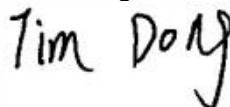
APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 1.1310: §1.1307(b)	PASS

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 1.1310: §1.1307(b).

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

Date of Test : August 15, 2022 to August 29, 2022

Prepared by : 
 Xia Yang /Editor

Reviewer : 
 Tim Dong/ Supervisor

Approve & Authorized Signer :  
 Sam Lv / Manager

Modified History

Version	Report No.	Revision Date	Summary
	EDG2208150150E00102R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	STAR PROJECTOR
Model Number:	BTSP-1001
Sample:	1#
Device Type:	Bluetooth V5.3
Data Rate:	1Mbps for GFSK modulation 2Mbps for $\pi/4$ -DQPSK modulation 3Mbps for 8DPSK modulation
Modulation:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Operating Frequency Range(s) :	2402-2480MHz
Number of Channels:	79 channels
Transmit Power Max:	-2.08 dBm (0.000619 W)
Antenna Gain:	-0.58 dBi
Power supply:	AC 100-240V 50/60Hz from adaptor
Evaluation applied:	☒ MPE Evaluation ☐ SAR Evaluation

3. Test Requirement:

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

4. Measurement Result

Antenna gain:-0.58 dBi

Mode	Frequency (MHz)	Output Power (dBm)	Target Power W/tolerance (dBm)	Max tune up power tolerance (dBm)	Max tune up power tolerance (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
GFSK	2402	-3.03	-4±1	-3	0.50	0.000087	1.0	PASS
	2441	-2.28	-3±1	-2	0.63	0.000110	1.0	PASS
	2480	-3.14	-4±1	-3	0.50	0.000087	1.0	PASS
pi/4-DQPSK	2402	-2.86	-3±1	-2	0.63	0.000110	1.0	PASS
	2441	-2.17	-3±1	-2	0.63	0.000110	1.0	PASS
	2480	-3.04	-4±1	-3	0.50	0.000087	1.0	PASS
8-DPSK	2402	-2.77	-3±1	-2	0.63	0.000110	1.0	PASS
	2441	-2.08	-3±1	-2	0.63	0.000110	1.0	PASS
	2480	-2.98	-3±1	-2	0.63	0.000110	1.0	PASS

*** End of Report ***