



RF Exposure Evaluation

FCC ID: 2BGEJ-GTHDWL50D

Applicant: Zhuhai Bigway Electronic Co.,Ltd.

Address: Guangtai Electronics, Room 401, 4th Floor, Building 7, Wanqu Intl Ind. Park, Doumen, Zhuhai China

Manufacturer: Zhuhai Bigway Electronic Co.,Ltd.

Address: Guangtai Electronics, Room 401, 4th Floor, Building 7, Wanqu Intl Ind. Park, Doumen, Zhuhai China

EUT: WIRELESS HDMI Transmitter and Receiver

Trade Mark: N/A

Model Number: GT-HDWL50D

Date of Receipt: Mar. 04, 25

Test Date: Mar. 04, 2025 to Mar. 20, 2025

Date of Report: Mar. 21, 2025

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: 47CFR§1.1310, 47CFR§2.1093
KDB 447498 D01 General RF Exposure Guidance v06

Test Result: Pass

Report Number: DLE-250407017R-1

Prepared (Test Engineer): Alisa Song

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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1. Product Information

Product Name:	WIRELESS HDMI Transmitter and Receiver
Trademark	N/A
Model No.:	GT-HDWL50D
Model Difference	N/A
Operation Frequency:	5745-5825 MHz for 802.11a/n/ac (20M); 5755-5795 MHz for 802.11n/ac (40M); 5775 MHz for 802.11 ac (80M).
Channel numbers:	5 channels for 802.11 a/n/ac (20M) in the 5745-5825MHz band; 2 channels for 802.11 n/ac (40M) in the 5755-5795 MHz band; 1 channels for 802.11 ac (80M) in the 5775MHz band.
Channel separation:	20MHz/40MHz/80MHz
Modulation technology:	802.11a(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11ac(OFDM): BPSK,QPSK,16-QAM,64-QAM,256-QAM
Rate of Transmitter	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps 802.11n/ac: Up to 500Mbps
Antenna Type:	PCB antenna
Antenna gain:	2.12dBi
Power Supply:	DC 5V
Sample Number:	DLE-250407017R01

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The EUT's all information provided by client.



2. Test laboratory information

Test Lab: Shenzhen DL Testing Technology Co., Ltd.
101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong
Address: Industrial Zone, Baolong Street, Longgang District, Shenzhen,
Guangdong, China
FCC Test Firm Registration Number: 854456
Designation Number: CN1307
IC Registered No.: 27485
CAB ID.: CN0118

3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.56\text{dB}$
2	RF power,conducted	$\pm 0.42\text{dB}$
3	Spurious emissions,conducted	$\pm 2.76\text{dB}$
4	All emissions,radiated(<30MHz)	$\pm 3.54\text{dB}$
5	All emissions,radiated(<1G)	$\pm 3.65\text{dB}$
6	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
7	Occupied bandwidth	$\pm 1.28\text{MHz}$
8	PSD	$\pm 0.69\text{dB}$
9	Temperature	$\pm 0.5^\circ \text{C}$
10	Humidity	$\pm 2\%$



4. METHOD OF MEASUREMENT

4.1 APPLICABLE STANDARD

ANSI C95.1 – 1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

FCC CFR 47 part1 1.1310: Radio frequency radiation exposure limits.

FCC CFR 47 part2 2.1093: Radio frequency radiation exposure evaluation: portable devices.

4.2 APPLICABLE STANDARD

According to KDB447498 D01 General RF Exposure Guidance v06 Section 4.3.1 Standalone SAR test exclusion considerations: “Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.”

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f} \text{ (GHz)}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where:}$$

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- 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 ≤ 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 f) in section 4.1 is applied to determine SAR test exclusion.



When one of the following test exclusion conditions is satisfied for all combinations of simultaneous transmission configurations, further equipment approval is not required to incorporate transmitter modules in host devices that operate in the mixed mobile and portable host platform exposure conditions. The grantee is responsible for documenting this according to Class I permissive change requirements. Antennas that qualify for standalone SAR test exclusion must apply the estimated standalone SAR to determine simultaneous transmission test exclusion.

The $[\Sigma \text{ of (the highest measured or estimated SAR for each standalone antenna configuration, adjusted for maximum tune-up tolerance) / 1.6 W/kg} + [\Sigma \text{ of MPE ratios}]]$ is ≤ 1.0 .

The SAR to peak location separation ratios of all simultaneously transmitting antenna pairs operating in portable device exposure conditions are all ≤ 0.04 , and the $[\Sigma \text{ of MPE ratios}]$ is ≤ 1.0 .



5. EVALUATION RESULTS

Tune-up Power

Mode	Frequency (GHz)	Max Power(dBm)	Tune-up Power(dBm) ± 1	Max Power(mW)	Min. distance(mm)	Calc. thresholds	limit
802.11a	5.785	5.90	6	5.012	5	2.411	3.0
802.11n(HT20)	5.745	4.97	5	3.981	5	1.908	3.0
802.11n(HT40)	5.755	5.23	5	3.981	5	1.910	3.0
802.11ac(VHT20)	5.745	5.35	5	3.981	5	1.908	3.0
802.11ac(VHT40)	5.755	4.48	5	3.981	5	1.910	3.0
802.11ac(VHT80)	5.775	4.82	5	3.981	5	1.913	3.0

So a SAR test is not required

****END OF REPORT****