



RF Exposure Evaluation

FCC ID: 2ARWY-G5

Applicant: SWIFF TECHNOLOGY CO., LTD.

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Longhua, Shenzhen, China

Manufacturer: SWIFF TECHNOLOGY CO., LTD.

Address: 5/F, Building B, Hengchangrong Industrial Park, No.52 Huaning Road.
Longhua, Shenzhen, China

EUT: Wireless Guitar System

Trade Mark: Westshell

Model Number: G5, G7, G8, G9, G10, G100

Date of Receipt: Mar. 06, 2025

Test Date: Mar. 06, 2025 - Mar. 17, 2025

Date of Report: Mar. 17, 2025

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

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Test Procedure: 47CFR § 1.1310, 47CFR § 2.1093
KDB447498 D01 General RF Exposure Guidance v06

Test Result: Pass

Report Number: DLE-250315001R-1

Prepared by(Engineer): Ken Tan

Reviewer(Supervisor): Jack Bu

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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.



Table of Contents	Page
1. TEST FACILITY	3
1.1 MEASUREMENT UNCERTAINTY.....	3
2. GENERAL INFORMATION	4
2.1 GENERAL DESCRIPTION OF EUT	4
3. METHOD OF MEASUREMENT	5
3.1 APPLICABLE STANDARD.....	5
3.2 EVALUATION METHOD AND LIMIT	5
4. EVALUATION RESULTS	6
4.1 STANDALONE EVALUATION.....	6



1 TEST FACILITY

Test lab: Shenzhen DL Testing Technology Co., Ltd.

101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1

Address: Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118

1.11.1 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(<1G)	$\pm 3.65\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	20dB Bandwidth	$\pm 0.2\text{MHz}$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wireless Guitar System
Trademark	Westshell
Model No.:	G5, G7, G8, G9, G10, G100
Model Difference	All models have same Power circuits diagram, RF Chip and PCB Layout, Internal construction and rated power. Only the model name is different.
Sample No.:	DLE-250315001-001#
Operation Frequency:	909.5~923MHz
Channel numbers:	10 Channels
Modulation technology:	ASK
Antenna Type:	Spring Antenna
Antenna gain:	0.64 dBi
Power supply:	DC 3.7V from battery DC 5V from charger

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.



3. METHOD OF MEASUREMENT

3.1 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: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1093: Radiofrequency radiation exposure evaluation: portable devices

3.2 EVALUATION METHOD AND LIMIT

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."

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

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

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 $[\sum \text{ of MPE ratios}] \leq 1.0$.



4. EVALUATION RESULTS

4.1 STANDALONE EVALUATION

For 902-928MHz

909.5MHz: $87.59 \text{ dBuV} + 20\log(3) - 104.7 = -7.57 \text{ dBm}$

tune-up power. (dBm)	Max. tune-up power. (dBm)	Tune-up power. (mW)	Frequency (MHz)	Min. distance(m m)	Calc. thresholds	Limit
-7.57 ± 1	-6.57	0.2203	909.5	5	0.042	3.0

Note: $\text{Result} = P \sqrt{F/D}$

P=Maximum turn-up power in mW

F=Channel frequency in GHz

D=Minimun test separation distance in mm

So a SAR test is not required

***** END OF REPORT *****