

EMF TEST REPORT

Test Report No. : OT-264-RWD-080
Reception No. : 2509002935
Applicant : MPIA CO., LTD.
Address : 203-701, 388 Songnae-daero, Wonmi-gu, Bucheon-si, Gyeonggi-do, South Korea
Manufacturer : MPIA CO., LTD.
Address : 203-701, 388 Songnae-daero, Wonmi-gu, Bucheon-si, Gyeonggi-do, South Korea
Type of Equipment : Repeater
FCC ID. : 2BTDM-MWSR2-900
Model Name : MWSR2-900
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 7 pages (including this page)
Date of Incoming : March 29, 2026
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SUMMARY

The equipment complies with the regulation; **FCC CFR 47 PART 2.1091**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This test report is not associated with the accreditation granted by the Korean Laboratory Accreditation Scheme (KOLAS).





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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-264-RWD-080	April 29, 2026	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : MPIA CO., LTD.

Address : 203-701, 388 Songnae-daero, Wonmi-gu, Bucheon-si, Gyeonggi-do, South Korea

Contact Person : Jang chanson / Principal research engineer

Telephone No. : +82-32-666-8191

FCC ID : 2BTDM-MWSR2-900

Model Name : MWSR2-900

Brand Name : -

Serial Number : N/A

Date : April 29, 2026

EQUIPMENT CLASS	DSC - Part 15, Security/Remote Control Transmitter
E.U.T. DESCRIPTION	Repeater
THIS REPORT CONCERNS	Original grant
MEASUREMENT PROCEDURES	KDB 447498 D01 General RF Exposure Guidance v06
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	None

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The MPIA CO., LTD., Model MWSR2-900 (referred to as the EUT in this report) is a Repeater. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Repeater
Temperature Range	-20 °C ~ +60 °C
OPERATING FREQUENCY	433.92 MHz
MODULATION	FSK
ANTENNA TYPE	Whip Antenna
ANTENNA GAIN	0.546 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	26 MHz

2.2 Alternative type(s)/model(s); also covered by this test report.

-. None

3. EUT MODIFICATIONS

-. None

4. MAXIMUM PERMISSIBLE EXPOSURE

4.1 RF Exposure Calculation

According to the FCC rule 1.1310 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are $f/1500$ mW/cm² for the frequency range between 300 MHz and 1 500 MHz and 1.0 mW/cm² for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm² exposure is calculated as follows:

$$E = \sqrt{(30 * P * G) / d}, \text{ and } S = E^2 / Z = E^2 / 377, \text{ because } 1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$$

Where

S = Power density in mW/cm², Z = Impedance of free space, 377 Ω

E = Electric field strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combining equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 S)}$$

Changing to units of mW and cm, using P (mW) = P (W) / 1 000, d (cm) = 0.01 * d (m)

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm, P = Power in mW, G = Numeric antenna gain, and S = Power density in mW/cm²

4.2 EUT Description

Kind of EUT	Repeater
MAX. RF OUTPUT POWER	86.15 dB μ V/m
Device Category	☐ Portable (< 20 cm separation) ☒ Mobile (> 20 cm separation) ☐ Others
Exposure Evaluation Applied	☒ MPE ☐ SAR ☐ N/A

4.3 Calculated MPE Safe Distance

According to above equation, the following result was obtained.

Operating Freq. Band (MHz)	Operating Mode	Target Power W/tolerance (dBm)	Max tune up power		Antenna Gain		Safe Distance (cm)	Power Density (mW/cm ²) @ 20 cm Separation	Limit (mW/cm ²)
			(dBm)	(mW)	Log	Linear			
433.92	FSK	-9.11 ± 1.0	-8.11	0.15	0.546	1.134	0.118	0.000 035	0.289 280

$$E.I.R.P[dBm] = 86.15 \text{ dB}\mu\text{V/m} + 20\log(3) - 104.8 = -9.11 \text{ dBm}$$

According to above table, for 433.92 MHz, safe distance,

$$D = 0.282 * \sqrt{(0.15 * 1.134)/1.00} = 0.118 \text{ cm.}$$

For getting power density at 20 cm separation in above table, following formula was used.

$$S = P * G / (4\pi * R^2) = 0.15 * 1.134 / (4 * \pi * 20^2) = 0.000 035$$

Where:

S = Power Density,

P = Power input to the external antenna (Output power from the EUT antenna port (dBm) – cable loss (dB)),

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna