

RF EXPOSURE REPORT



FCC Applicant: ADVANCED RADIOTECH CORPORATION
No. 3, South 1st Road, Chien Chen District, Kaohsiung, Taiwan.

Product Name: Industrial radio remote control system

Brand Name: ARC

Model No.: FLEX 2JB

Report Number: TESA2206000154ES

FCC ID R4UARCFLEX2JB

Issue Date: Oct. 17, 2022

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1093.

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2206000154ES	00	Original	Sep. 28, 2022	Kimmy Chiou	*
TESA2206000154ES	01	Modify comment	Oct. 17, 2022	Kimmy Chiou	

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Industrial radio remote control system
Brand Name:	ARC
Model No.:	FLEX 2JB
Power Supply:	6Vdc

1.2 Reference Test Report

Test Lab:	SGS Taiwan Ltd. Central RF Lab
Report Number:	TERF2206000819ER

1.3 Antenna Information:

Antenna Type	Freq. (MHz)
PCB	433 MHz

The antenna information is provided by the applicant.

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2 RF EXPOSURE EVALUATION FOR PORTABLE CONDITIONS

2.1 SAR-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged ERP, whichever is greater.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

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2.2 Measurement Result:

Mode	Frequency (MHz)	Distance (cm)	E-FIELD dBuV/m	EIRP (dBm)	EIRP (mW)	ERP (dBm)	ERP (mW)	x	ERP _{20cm} (mW)	P _{th} (mW)	P or ERP /P _{th}
TX 433 MHz	433	0.5	86.12	-9.038	0.1247958	-11.188	0.0760677	0.986	883.32	23.25	0.003271729

Note:

$$\text{EIRP (dBm)} = (\text{E-FIELD(dBuV/m)} + 20\log(d(m)) - 104.7$$

$$\text{EIRP(mW)} = (10^{(\text{EIRP(dBm)}/10)})$$

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the permissible minimum separation distance of that band.

~ End of Report ~

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