

RF EXPOSURE REPORT



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

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

Product Name: Industrial radio remote control systems

Brand Name: ARC

Model No.: FLEX 12PRO2

Family Model No. FLEX 4PRO2 、 FLEX 6PRO2 、 FLEX 8PRO2

Model Difference: 4PRO2: 4 Push button
6PRO2: 6 Push button
8PRO2: 8 Push button
12PRO2: 12 Push button

FCC ID R4UARCFLEXPRO2

Date of EUT Received: Mar. 03, 2025

Issue Date: May 05, 2025

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1093, KDB 447498 D01 v06.

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

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Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.
And are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Industrial radio remote control systems
Brand Name:	ARC
Model No.:	FLEX 12PRO2
Family Model No.	FLEX 4PRO2 、 FLEX 6PRO2 、 FLEX 8PRO2
Model Difference:	4PRO2: 4 Push button 6PRO2: 6 Push button 8PRO2: 8 Push button 12PRO2: 12 Push button

1.2 Antenna Information:

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
PCB	TEXAS INSTRUMENTS	CC-ANTENNA-DK2(Board#10)	433MHz	-0.68

Note: Antenna information is provided by the applicant.

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1.3 Rated Power

Freq. Range (MHz)	Channels	Max Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
433.000~434.550	32	-1.60	-0.68	-2.28	v

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2 RF EXPOSURE EVALUATION FOR PORTABLE CONDITIONS

2.1 FCC Standard Applicable:

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

2.1.1 As per KDB 447498 D01 4.3.1,

Step a: For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

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

- $f(\text{GHz})$ 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
- The values 3.0 and 7.5 are referred to as numeric thresholds in **step b)** below

Step b: For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Step c: For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz

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2.2 Measurement Result:**Step a:**

This is a portable device and the max. output power including tune-up tolerance is 0.692 (mW), lower than the threshold given and derived as formula given above, where

$$=0.692(\text{mW})/5(\text{mm})*\sqrt{0.43455(\text{GHz})} = 0.091 < 3.0$$

Frequency (MHz)	Max. output power including tune-up tolerance(dBm)	Max. output power including tune-up tolerance(mW)	Distance (mm)	Result	≤ 3.0 for 1-g SAR
434.55	-1.6	0.692	5	0.091	TRUE

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.

Frequency (MHz)	E-FIELD dBuV/m	Test Distance (m)	EIRP (dBm)	EIRP (mW)
434.55	92.87	3	-2.28757	0.5905314

Note:

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

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

~ End of Report ~

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