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Report No.: 2406TW5401-U2
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Issue Date: 2024-07-01

RF Exposure Evaluation

FCC ID	:	**CHQ7257TA4**
APPLICANT	:	**RHINE ELECTRONIC CO., LTD.**
Application Type	:	**Certification**
Product	:	**Transmitter**
Model No.	:	**UC7257TA4**
Brand Name	:	**RHINE**
FCC Rule Part(s):	:	**Part 2.1093 (Portable)**
Received Date	:	**June 12, 2024**

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Testing Laboratory
3261

Revision History

Report No.	Version	Description	Issue Date	Note
2406TW5401-U2	1.0	Original Report	2024-07-01	

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Transmitter
Model No.	UC7257TA4
Brand Name	RHINE
Frequency Range	433.92MHz

2. RF Exposure Evaluation

2.1. FCC Limits

According to FCC KDB 447498 D04V01 - SAR-Based Exemption

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula .

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

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_{20cm} is per Formula.

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

The example values shown as below are for illustration only.

Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

Note: when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

2.2. Test Result of RF Exposure Evaluation

Mode	Frequency Band (MHz)	Maximum EIRP (dBuV/m)	EIRP (mW)	FCC SAR Test Exclusion Threshold (mW)
Sub-1G	433.92	89.21	0.2501	22

Note:

$$mW = 10^{\frac{(\frac{dBuV}{m}@3m-95.23)}{10}}$$

So, this device can complies the SAR test exclusion.

The End