

RF Exposure Estimation

1. Introduction

Applicant:	ZHEJIANG JIECANG LINEAR MOTION TECHNOLOGY CO., LTD
Address:	No.19 XinTao Road, Provincial High Tech Park, XINCHANG ZHEJIANG 312500 China.
Product:	RF Repeater
FCC ID:	2ANKDJCD-RP290
Model No.:	JCD-RP290
Reference RF report #	70950232676-00A

2. B.2 Blanket 1 mW Blanket Exemption

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance. The 1 mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph § 1.1307(b)(3)(ii)(A). The 1 mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

3. RF Exposure Evaluation

Per the test report included herein, for 433.92MHz

According to C63.10 Annex G

$$EIRP = pt \times gt = (E \times d)^2 / 30, \text{ so } pt = (E \times d)^2 / 30 \times gt$$

where

pt is the transmitter output power in watts

gt is the numeric gain of the transmitting antenna (dimensionless)

E is the electric field strength in V/m

d is the measurement distance in meters (m)

transmitter output power for 433.92MHz Function

Field strength (E):	82.91 (dBuV/m) = 0.0252 (V/m)
Measurement distance (D):	3 (m)
Antenna Gain, typical (dBi):	-10.098
Numerical gain of the transmit antenna (gt):	0.1
Transmitter output power (TP):	0.0006(W)
Transmitter output power (TP):	0.6(mW)

We used the maximum ERP/EIRP to perform RF exposure exemption evaluation.

	Evaluation method	Exempt Limit (mW)	Verdict
<input checked="" type="checkbox"/>	Blanket 1 mW Blanket Exemption	1mW	Yes
<input type="checkbox"/>	MPE-based Exemption (ERP)	7mW (ERP)	N/A
<input type="checkbox"/>	SAR-based Exemption (Pth)	3060mW	N/A

So, the device is qualified for SAR test exemption, the exemption report is in lieu of the SAR report.

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch

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Date: May 15, 2023

EMC Project Engineer

Date: May 15, 2023

EMC Test Engineer

Date: May 15, 2023

-----End of Test Report-----