

RF Exposure Report

Report No.: MFBGDY-WTW-P24060505 R1

FCC ID: 2AV6KH

Test Model: Level Probing Radar OPTIWAVE 1520
Level Probing Radar OPTIWAVE 1540

Received Date: 2024/6/20

Date of Evaluation: 2024/6/20

Issued Date: 2024/9/13

Applicant: KROHNE Messtechnik GmbH

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
MFBGDY-WTW-P24060505	Original Release	2024/7/4
MFBGDY-WTW-P24060505 R1	Add simultaneous Transmission	2024/9/13

1 Certificate of Conformity

Product: Level Probing Radar with BTLE

Brand: KROHNE Messtechnik GmbH

Test Model: Level Probing Radar OPTIWAVE 1520
Level Probing Radar OPTIWAVE 1540

Sample Status: Engineering sample

Applicant: KROHNE Messtechnik GmbH

Date of Evaluation: 2024/6/20

FCC Rule Part: FCC Part 2 (Section 2.1091)

Standards: KDB 447498 D01 General RF Exposure Guidance v06

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen, **Date:** 2024/9/13
Pettie Chen / Senior Specialist

Approved by : Jeremy Lin, **Date:** 2024/9/13
Jeremy Lin / Project Engineer

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

r = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Operation Mode	Frequency Band (MHz)	Max EIRP Power (dBm)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Bluetooth	2402-2480	6.1	4.6	1.5	20	0.0008	1
Radar	77000-81000	-5.4	-32.2	26.8	20	0.000057	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

Conclusion:

Both of the Bluetooth & Radar can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{Bluetooth} + \text{Radar} = 0.0008 / 1 + 0.000057 / 1 = 0.000857$$

Therefore, the maximum calculations of above situations are less than the "1" limit.

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