



RF Exposure Evaluation Declaration

FCC ID: 2ACSOGDRD87

Applicant: Beijing GODA Instruments Co., LTD.

Application Type: Certification

Product: 80G Radar Level Meter

Model No.: GDRD81, GDRD82, GDRD83, GDRD84, GDRD85,
GDRD87, GDRD88, GDRD89

Brand Name: GODA

FCC Classification: LPR - Level Probing Radar

Reviewed By:

Sunny Sun

(Sunny Sun)

Approved By:

Robin Wu

(Robin Wu)



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
1901RSU029-U2	Rev. 01	Initial Report	03-26-2019	Valid

§2.1033 General Information

Applicant:	Beijing GODA Instruments Co., LTD.
Applicant Address:	Hongfu Enterprise Incubation Yard 10,No.2 Workshop 2-4, Chang Ping Dist.Beijing,102209 China
Manufacturer:	Beijing GODA Instruments Co., LTD.
Manufacturer Address:	Hongfu Enterprise Incubation Yard 10,No.2 Workshop 2-4, Chang Ping Dist.Beijing,102209 China
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
FCC Registration No.:	893164
Test Device Serial No.:	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	80G Radar Level Meter
Model No.:	GDRD81, GDRD82, GDRD83, GDRD84, GDRD85, GDRD87, GDRD88, GDRD89
Brand Name:	GODA
Frequency Range:	76 ~ 81GHz
Modulation Type:	FMCW
Antenna Type:	Horn Antenna
Input Power:	DC 24V

Model Difference					
Model No.	Classification	Shell material	Antenna Material	Installation	Max. Antenna Gain
GDRD81	Liquid	Plastic / Aluminium alloy / Stainless steel	FEP / PP	Thread	32 dBi
GDRD82	Liquid	Plastic / Aluminium alloy / Stainless steel	316L+PTFE	Flange	32 dBi
GDRD83	Liquid	Plastic / Aluminium alloy / Stainless steel	FEP / 316L+PTFE	Thread	15 dBi
GDRD84	Liquid	Plastic / Aluminium alloy / Stainless steel	PP	Hanging	32 dBi
GDRD85	Health	Stainless steel	PTFE	Clamped connection	23 dBi
GDRD87	Solid	Plastic / Aluminium alloy / Stainless steel	Aluminium+PP, 316L+PTFE / PP	Flange	34 dBi
GDRD88	Protection	PA66	PP	Hanging	23 dBi
GDRD89	Marine	Stainless steel	316L+PTFE	Flange	32 dBi

Note: The products are made up of electronic part, housing part, process connection part, installation accessories part and antenna. All electronic parts including RF circuit are same within these models, and differences of other parts such as Shell Material, Installation method etc. can not affect RF performance of the product. Only the differences of antennas can affect the RF performance and we selected the sample with the largest antenna gain for all RF testing. The following table is the information of our RF test sample.

Model No.	Shell material	Antenna Material	Installation	Max. Antenna Gain
GDRD87	Stainless steel	316L+PP	Flange	34 dBi

2. RF EXPOSURE EVALUATION

2.1. Limits

§1.1310 Radiofrequency radiation exposure limits.

Below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
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
300-1,500	--	--	f/1500	30
1,500-100,000	--	--	1.0	30

f= Frequency in MHz

* = Plane-wave equivalent power density

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

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

E = EIRP in mW

G = gain of antenna in linear scale

π = 3.14

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

2.2. Test Result of RF Exposure Evaluation

Product	80G Radar Level Meter
Test Item	RF Exposure Evaluation

Frequency Range (GHz)	Maximum EIRP (dBm)	Power Density at r = 20 cm (mW/cm ²)	Limit (mW/cm ²)
76 ~ 81	22.20	0.0330	1

CONCLUSION:

The **Power density** at 20cm as below:

$$P_d(20\text{cm}) = E/(4 \cdot \pi \cdot r^2) = 10^{(22.20/10)}/(4 \cdot 3.14 \cdot 20^2) \text{ mW/cm}^2 = 0.0330 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

Therefore the device is compliance with MPE limit..

_____ The End _____

Appendix A - Test Setup Photograph

Refer to "1901RSU029-UT" file.

Appendix B - EUT Photograph

Refer to "1901RSU029-UE" file.