

MDL GPSGLONASS/GSM FKA C/D CODE RG174 3M

GNSP5-25U2W-S6-00-A

1. Application:

This application shall apply for antenna unit which shall be used with an engine for automobile

2. Appearance:

Antenna Unit (with radome, connector, and cable – refer to an attached drawing)

Dimensions	ϕ :70mm, H:31.5mm
Radome	#U2W
Weight	146.36g (typ.) - with cable / 65.81g (typ.) – without cable
Output Connector	FAKRA SMB FEMALE (C Code/D Code)
Cable	RG-174 3000/3000mm (black)

3. Operating Condition:

Operating Temperature	-40 ~ +85°C
Relative Humidity	20 ~ 95% RH

4. Storage Condition:

Storage Temperature	-40 ~ +95°C
Relative Humidity	20 ~ 95% RH
Recommended Storage condition	Store in room condition as listed below: Temperature -20°C ~ +45°C, Humidity 80% Max.

5. Electrical Specification:

*All value are defined at 25±15°C, 65±20 % RH, power handling 10 watt, air pressure 960 ±100 HPA unless otherwise noted.

*Antenna characteristics are measured with test housing in an anechoic chamber.

5-1 GPSGLONASS Antenna

Characteristics		Specification
Frequency Range		1575MHz ~ 1615MHz
Center Frequency		1593±5 MHz
VSWR		2.0 max
Zenith Gain	1575.42 MHz	1.4 dBic typ.
	1602 MHz	2.0 dBic typ.
Polarization		R.H.C.P.

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±

ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : UNIT : mm

DRAWN BY : 趙彥年 CHECKED BY:楊奇峯

DESIGNED BY:朱嘉宏 APPROVED BY: 蘇志銘

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5-2 GPSGLONASS LNA

Characteristics		Specification
Frequency Range		1575MHz ~ 1615MHz
Gain	1575.42 MHz	27±3 dB (at 3.0±0.1V) 32±3 dB (at 5.0±0.1V)
	1602 MHz	27±3 dB (at 3.0±0.1V) 32±3 dB (at 5.0±0.1V)
Noise Figure		2.5 dB typ
Filter Out band attenuation		60dB typ. fo±50MHz 60dB typ. fo±100MHz (fo=1593MHz)
Output V.S.W.R		2.0 max
Operation Voltage		DC= 3.0 ~ 5.0V
Current		10±3 mA (at 3.0±0.1V)
		16±3 mA (at 5.0±0.1V)

5-3 GPSGLONASS Overall Specifications (Through Antenna, LNA and 3m cable)

Characteristics		Specification
Frequency Range		1575MHz ~ 1615MHz
Zenith Gain	1575.42 MHz	28.4±3 dBic (at 3.0±0.1V) 33.4±3 dBic (at 5.0±0.1V)
	1602 MHz	29.0±3 dBic (at 3.0±0.1V) 34.0±3 dBic (at 5.0±0.1V)
Output Impedance		50 ohm
Output VSWR		2.0 typ
Operation Voltage		DC= 3.0 ~ 5.0V
Current		10±3 mA (at 3.0±0.1V)
		16±3 mA (at 5.0±0.1V)

* Antenna is tested on a 500 x 500mm ground plane

5-4 GSM Antenna Electrical Specifications: (with 3m cable)

Parameter	Electrical Specifications
Frequency Range	824 ~ 960MHz 1710 ~ 2170MHz
Polarization	Linear
VSWR(50ohm)	4:1(Max)
Peak Gain (dBi)	(824 ~ 960MHz) -2.0 ~ 0.3 (1710 ~ 2170MHz) 1.0 ~ 2.0
Average gain (dBi)	(824 ~ 960MHz) -6.7 ~ -4.9 (1710 ~ 2170MHz) -5.7 ~ -7.0
Efficiency (%)	(824 ~ 960MHz) 21 ~ 32 (1710 ~ 2170MHz) 19 ~ 26
Testing Condition	The antenna gain is measured through antenna and cable

* Antenna is tested on a 500 x 500mm ground plane

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5.5 GSM Antenna Efficiency (with 3m cable)

Antenna Gain Data & Efficiency

Frequency(MHz)	Peak Gain(dBi)	Average Gain(dBi)	Efficiency(%)
824	-2.08	-6.76	21.07
840	-1.59	-6.53	22.24
860	0.36	-5.13	30.69
880	-0.08	-4.94	32.08
894	0.04	-5.13	30.66
900	-0.16	-5.05	31.29
920	-0.14	-5.63	27.33
940	0.11	-5.79	26.37
960	-0.69	-6.49	22.42

Frequency(MHz)	Peak Gain(dBi)	Average Gain(dBi)	Efficiency(%)
1710	1.82	-6.61	21.83
1730	2.03	-6.38	23.03
1750	1.48	-6.33	23.29
1775	1.00	-6.35	23.20
1800	1.15	-6.04	24.92
1825	1.06	-6.13	24.37
1850	1.27	-6.20	23.99
1880	1.40	-6.04	24.89
1920	1.15	-6.07	24.74
1950	1.54	-5.97	25.31
1990	1.85	-5.72	26.78
2050	1.40	-6.16	24.21
2100	1.44	-6.34	23.22
2150	1.44	-6.58	21.99
2170	1.19	-7.02	19.87

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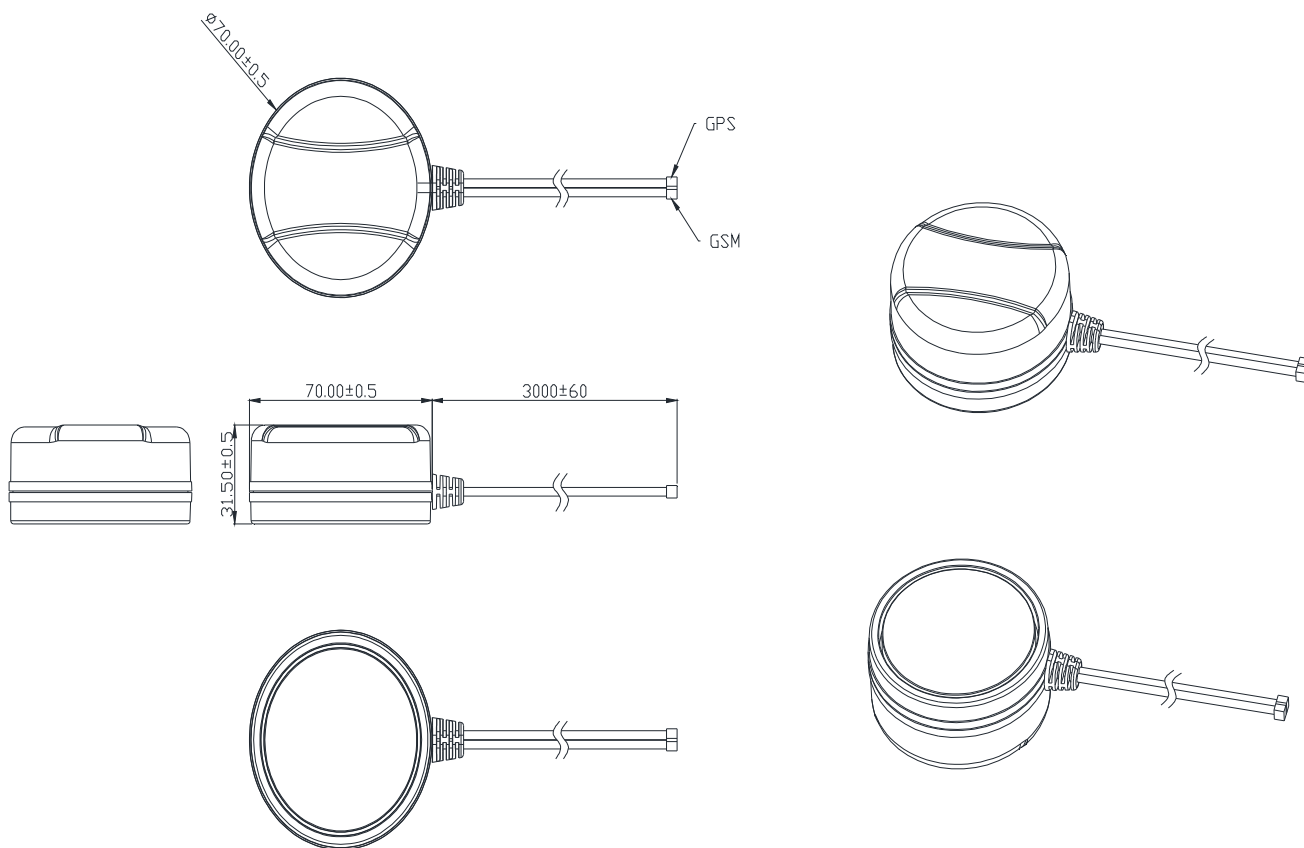
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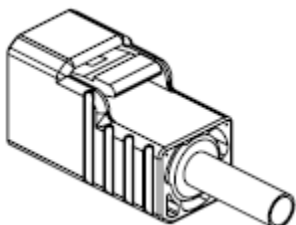
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6. Antenna Dimension:



Connector appearance: FAKRA SMB FEMALE

(It can be changed to the other parts, like GT5/GT16 or SMA/SMA or BNC/BNC...etc.)



Coding		Color
	C	Blue
	D	Violet

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