

# OUTSIDE GPS/GLONASS/GSM Antenna

## MODEL: GMA-650GL

### FOR Base Antenna or Marine GPS/GSM System



### GPS/GLONASS Antenna Specifications: GA65G

PHYSICAL CONDITION	
Constructions:	Polycarbonate radome, detachable cable/connector for easy mount, rubber-O-ring between top radome and screw base for waterproof
Dimensions:	60mm(Dia.) x 45mm(H)
Weight:	65grams (w/o cable & connector).
Color:	Standard in ivory white, other colours available upon request.
Mounting:	Bulkhead mount with 0.8 inch threaded wing nut (standard accessory).
Cable & Connector	
RF cable:	TNC(M) +10 meter RG58 +BNC(M) (standard) other length (optional)
Pulling strength:	6 Kg @ 5sec. molded plastic on connector end for strain relief.
Connector	TNC(F)or SMA(F)
Antenna Element	
Center Frequency:	1575Mhz & 1596-1610 MHz
Polarization:	R.H.C.P. (Right Handed Circular Polarization).
Bandwidth	10 MHz min. @S11≤-10 dB, 24MHz typ. @S11<-8dB
Gain @ 10° Elevation:	2 dBi typical.
Axial Ratio:	3 dB max.
Output VSWR:	1.5 max
Output Impedance:	50 ohm
Low Noise Amplifier	
Power Gain:	1570 Mhz : 29db typ 1610 Mhz : 29db typ
Bandwidth:	50 MHz min.
Noise Figure:	1.5 typ
Outer Band Attenuation:	20 dB min. @ Fo +/-50 Mhz.
Supply Voltages:	2.3~5.5V DC.
Current Consumption:	2.5V : 6.6mA Typ. 3V: 10.6mA Typ. 4V: 14.6mA Typ. 5V: 20.6mA Typ.

Output Impedance:	50W ohm
<b>Overall Performance: (antenna element, LNA &amp; coax cable)</b>	
Center Frequency:	1570 ~1610 Mhz.
Gain:	At 90° vertical to sky 30 ± 4.5dBi (cable loss) Note:1 Mounted on the 60mm x 60mm square ground plane
Noise Figure:	2.0 max.
Axial Ratio:	3 dB max.
Bandwidth:	10MHz min.
VSWR:	2.0 max.
Output Impedance:	50W ohm
<b>Environmental</b>	
Operating Temperature:	-40°C~ +85°C.
Storage Temperature:	-40°C~ +90°C.
Relative Humidity:	95% non-condensing.
Water Resistance:	100% waterproof.

\* This specification is subject to change without prior notice

Data Updated: Sep.10, 2009

### GSM Antenna Specifications:

<b>Frequency range:</b>	<b>850/900/1800/1900/2170Mhz</b>
<b>Gain:</b>	<b>3dBi</b>
<b>V.S.W.R:</b>	<b>&lt;2.0</b>
<b>Impedence:</b>	<b>50 ohm</b>
<b>Connector:</b>	<b>SMA male</b>
<b>Dimension:</b>	<b>320mm +/-10 x OD16.2mm</b>
<b>Weight:</b>	<b>88g</b>
<b>Polarization :</b>	<b>vertical</b>
<b>Power handling :</b>	<b>50W</b>
<b>Colour :</b>	<b>white</b>
<b>Rated wind velocity :</b>	<b>60m/s</b>
<b>Working Temperature :</b>	<b>-40~60°C</b>
<b>Lightning Protection :</b>	<b>Direct Ground</b>

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Data Updated: July.07, 2009

**GA65G**



**FB6-SUS L-MOUNTING**





