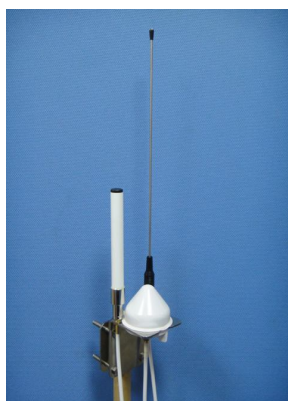


OUTSIDE GPS/GLONASS/VHF/GSM ANTENNA

MODEL: GVM-650G

FOR Base Antenna or Car / Marine GPS/GLONASS/VHF/GSM AVL/AIS/Orbcomm System



GPS Antenna Specifications: GA65G

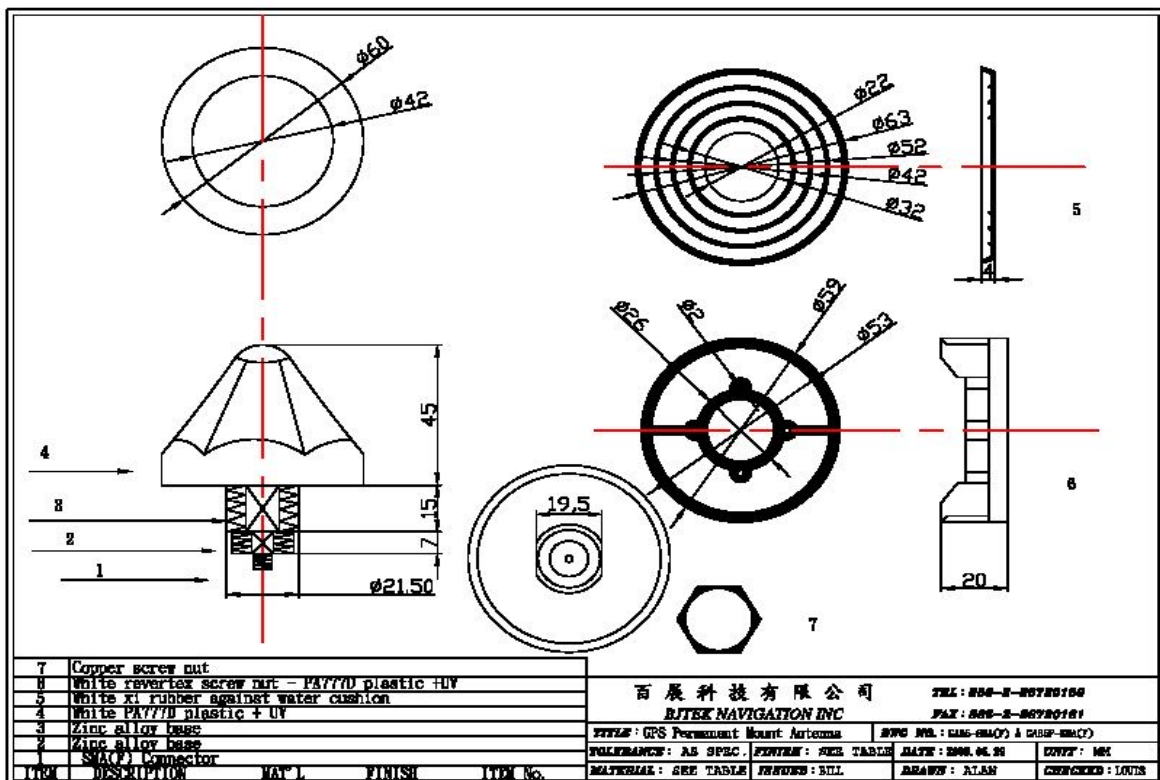
| PHYSICAL CONDITION | |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Constructions: | Polycarbonate radome, detachable cable/connector for easy mount, rubber-O-ring between top radome and 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 |
| Overall Performance: (antenna element, LNA & coax cable) | |
| 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 |
| Environmental | |
| Operating Temperature: | -40°C~ +85°C. |
| Storage Temperature: | -40°C~ +90°C. |
| Relative Humidity: | 95% non-condensing. |
| Water Resistance: | 100% waterproof. |

GA65G



FB6 SUS L- mounting :



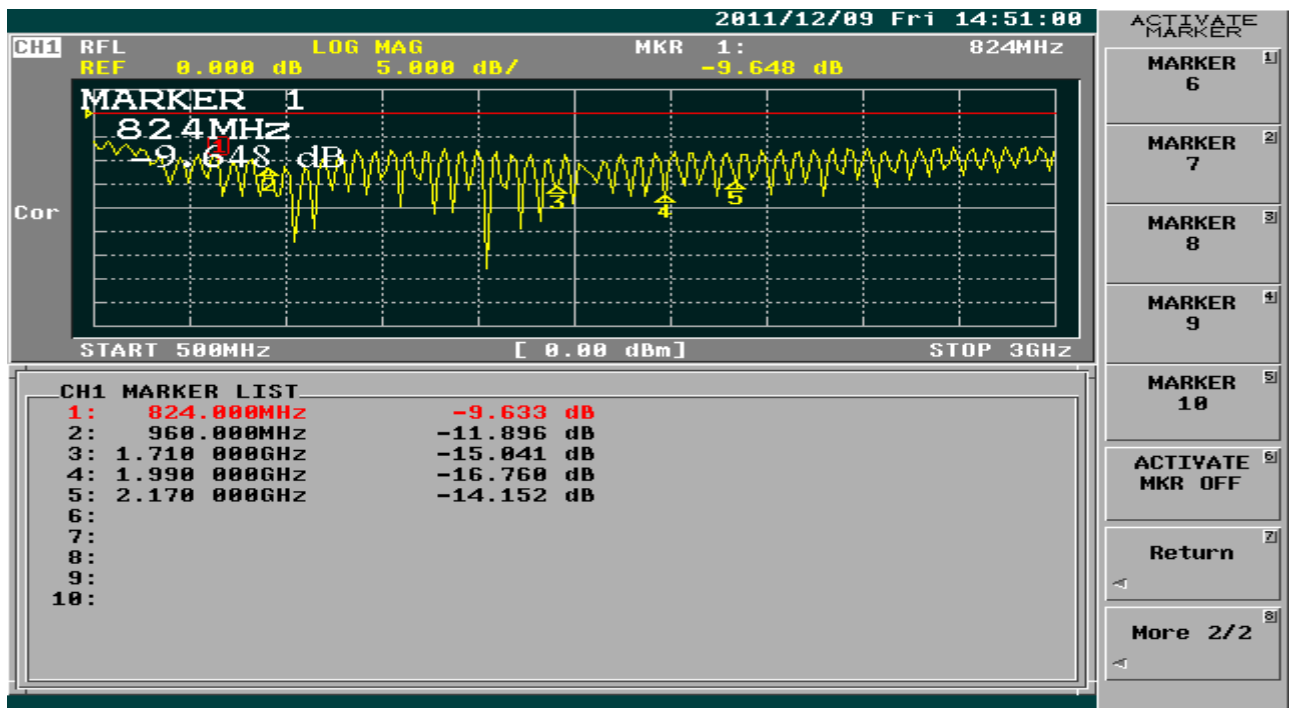


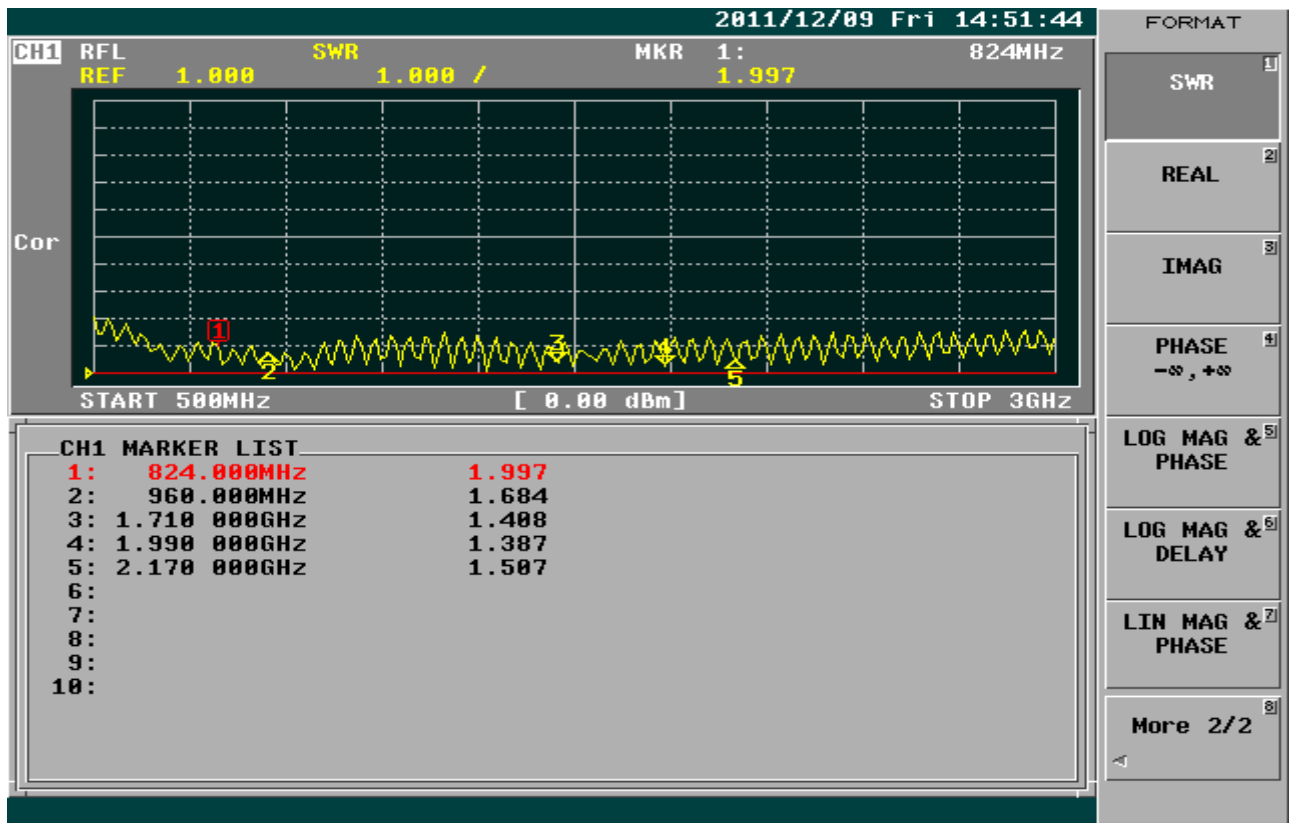
GSM Antenna Specifications: GSM-50A

| | |
|------------------------|---------------------------|
| Frequency range: | 850/900/1800/1900/2170Mhz |
| Gain: | 3dBi |
| V.S.W.R: | <2.0 |
| Impedence: | 50 ohm |
| Connector: | SMA male |
| Dimension: | 164mm +/-10 x OD16.2mm |
| Weight: | 64g |
| Polarization : | vertical |
| Power handling : | 50W |
| Colour : | white |
| Rated wind velocity : | 60m/s |
| Working Temperature : | -40~60°C |
| Lightning Protection : | Direct Ground |

* This specification is subject to change without prior notice

Data Updated: Dec.07, 2011





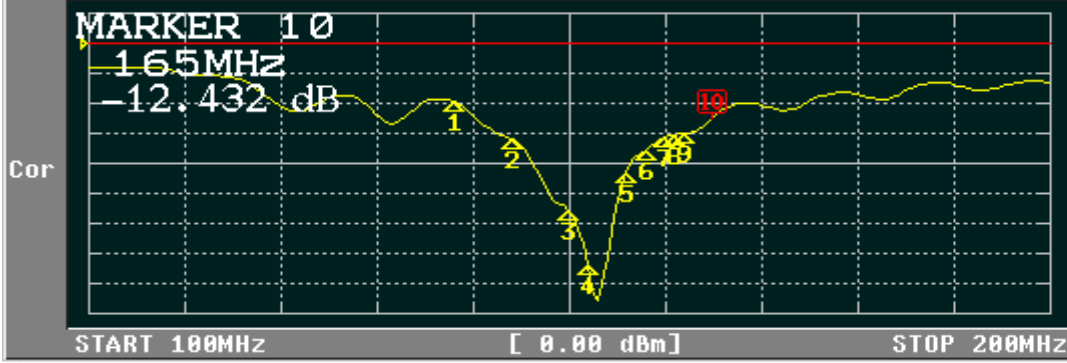
VHF Antenna Specifications: TH160B-SUS Whip Antenna

| | |
|------------------------|----------------------------------------|
| Frequency range: | 138-165Mhz |
| Gain: | 1dBi |
| V.S.W.R: | <2.0 |
| Impedence: | 50 ohm |
| Connector: | SMA male |
| Dimension: | 355mm +/-10 x OD14.7mm(SUS Whip 3.0mm) |
| Weight: | 45g |
| Polarization : | vertical |
| Power handling : | 50W |
| Colour : | Black |
| Rated wind velocity : | 60m/s |
| Working Temperature : | -40~60°C |
| Lightning Protection : | Direct Ground |

* This specification is subject to change without prior notice

Data Updated: Dec.07, 2011

CH1 RFL LOG MAG MKR 10: 165MHz
 REF 0.000 dB 5.000 dB/ -12.432 dB



CH1 MARKER LIST

| | | |
|-----|------------|------------|
| 1: | 138.000MHz | -9.641 dB |
| 2: | 144.000MHz | -15.907 dB |
| 3: | 150.000MHz | -27.773 dB |
| 4: | 152.000MHz | -36.742 dB |
| 5: | 156.000MHz | -21.487 dB |
| 6: | 158.000MHz | -17.735 dB |
| 7: | 160.000MHz | -15.588 dB |
| 8: | 161.000MHz | -15.159 dB |
| 9: | 162.000MHz | -15.001 dB |
| 10: | 165.000MHz | -12.432 dB |

ACTIVATE MARKER

MARKER 6

MARKER 7

MARKER 8

MARKER 9

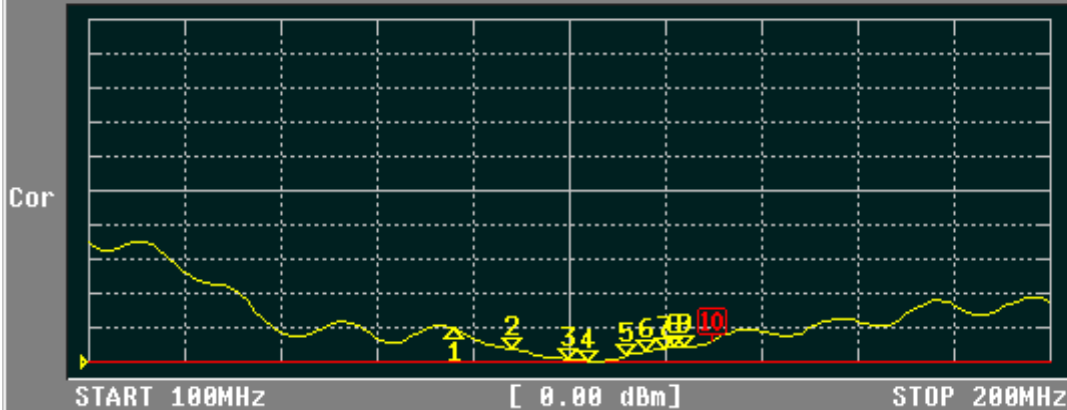
MARKER 10

ACTIVATE MKR OFF

Return

More 2/2

CH1 RFL SWR MKR 10: 165MHz
 REF 1.000 1.000 / 1.628



CH1 MARKER LIST

| | | |
|-----|------------|-------|
| 1: | 138.000MHz | 1.981 |
| 2: | 144.000MHz | 1.381 |
| 3: | 150.000MHz | 1.085 |
| 4: | 152.000MHz | 1.030 |
| 5: | 156.000MHz | 1.184 |
| 6: | 158.000MHz | 1.298 |
| 7: | 160.000MHz | 1.397 |
| 8: | 161.000MHz | 1.423 |
| 9: | 162.000MHz | 1.433 |
| 10: | 165.000MHz | 1.627 |

FORMAT

SWR

REAL

IMAG

PHASE
-90, +90

LOG MAG & PHASE

LOG MAG & DELAY

LIN MAG & PHASE

More 2/2

