# 660B
# 660BG
(Datasheet)

| | |
|---|---|
| **Type** | Combined antenna |
| **Frequencies** | AMPS (850 MHz)<br>GSM (900 MHz)<br>GPS/GLONASS/GALILEO (1572 – 1610 MHz)<br>DCS (1800 MHz)<br>PCS (1900 MHz)<br>3G (UMTS 2.1 GHz)<br>WIFI / BLUETOOTH (2.4 GHz) |
| **Mounting** | Body Mount |
| **Revision** | 02 |

D. Noble

# 1. PRODUCT SELECTOR

**660B** GPS L1/Galileo L1 version
**660BG** GPS/GLONASS/GALILEO version

# 2. SPECIFICATION

## *2.1. Electrical Specifications*

**Mobile (Cable 1)**

| | |
|---|---|
| Frequencies | AMPS (850 MHz)<br>GSM (900 MHz)<br>DCS (1800 MHz)<br>PCS (1900 MHz)<br>3G (UMTS 2.1 GHz)<br>WIFI / BLUETOOTH (2.4 GHz) |
| Impedance | 50 Ohms |
| Polarization | Linear |
| Gain | 2.2 dBi Max |
| VSWR | <2:1 |
| Power handling | 50W |

**Navigation (Cable2)**

| | **660B** | **660BG** |
|---|---|---|
| Frequencies | GPS (1575.42 MHz)<br>GALILEO L1 (1575.42 MHz) | GPS (1575.42 MHz)<br>GALILEO L1 (1575.42 MHz)<br>GLONASS (1592 - 1610 MHz) |
| Impedance | 50 Ohms | |
| Noise figure | 1.15dB | |
| Polarization | RHCP | |
| Patch Gain | 3dBiC min at zenith. | |
| LNA Gain | 26dB at 3V, 27dB at 5V | |
| VSWR | <1.2:1 | |
| Voltage supply | 2.7V - 5.5V | |
| Current | 15mA - 25mA | |
| Power (max.) | 138mW | |

## *2.2. General Specification*

| | |
|---|---|
| Operating temperature | -40°C to +85°C |
| IP rating | IP67 |

## 2.3. Connection Specifications

**Cable 1** (Mobile):

| | |
|---|---|
| Connector type: | *On request* |
| Cable: | RG174U |
| Cable length: | 250 cm |

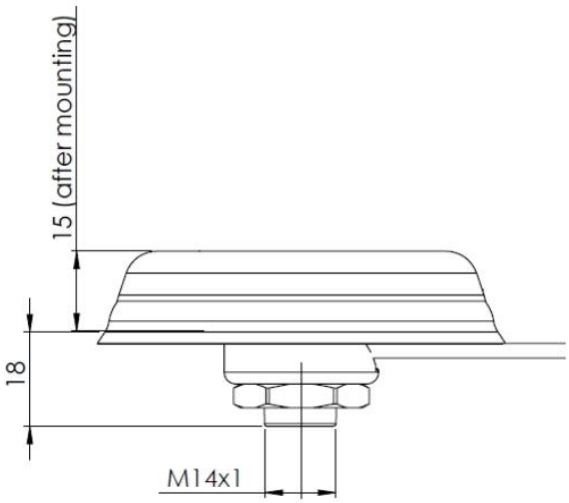
**Cable 2** (Navigation):

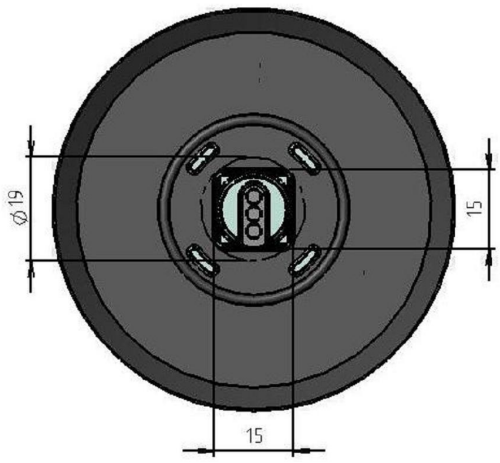
| | |
|---|---|
| Connector type: | *On request* |
| Cable: | RG174U |
| Cable length: | 250 cm |

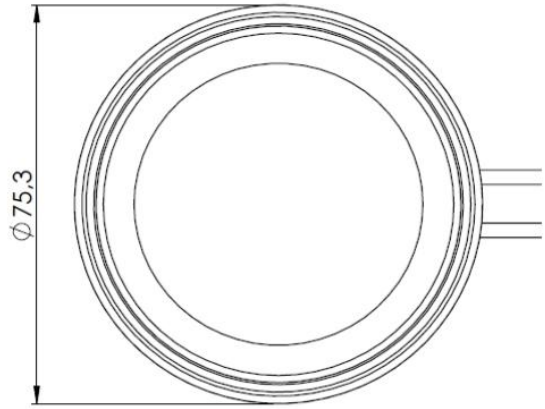
For different cable or connector type please our sales team.

## 2.4. Mechanical Specifications and Dimensions

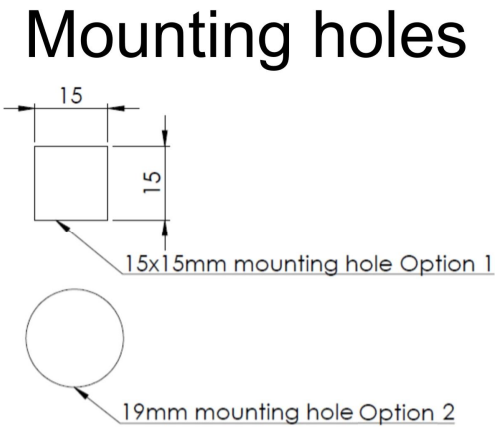
| | |
|---|---|
| Material: | Lid: ABS / Base: Zamak / Gasket: TPE |
| Max. Dimensions: | 77.3 mm x 15 mm (D x H after mounting) |
| Weight: | 200 g 'weight with connection above' |
| Colour: | Black (for different colours please ask our sales team) |
| Mounting hole: | • Square 15mm x 15mm<br>• Diameter 19mm |
| Max. surface thickness: | 4.5mm (for thicker surface ask our sales team) |
| Recommended torque: | 6 Nm |
| Wrench size: | 22mm |



Basic shape of base




Optional shape of base with full thread

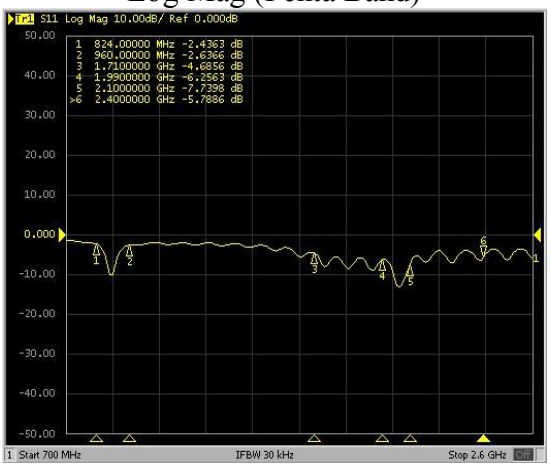
Screw M14x1

# 3. MEASUREMENT

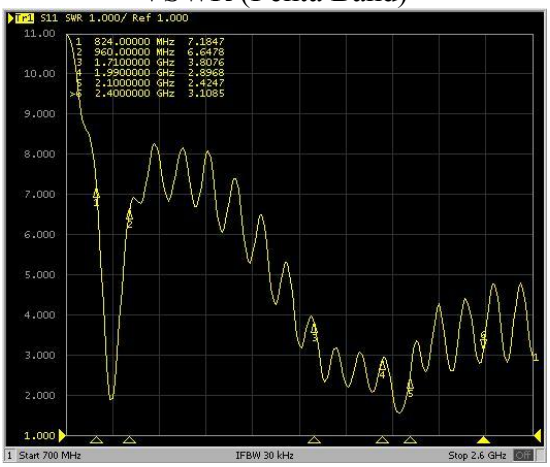
## *3.1. S11*

- Tested with 50cm cable length on 50 cm x 50 cm ground plane.

Log Mag (Penta Band)

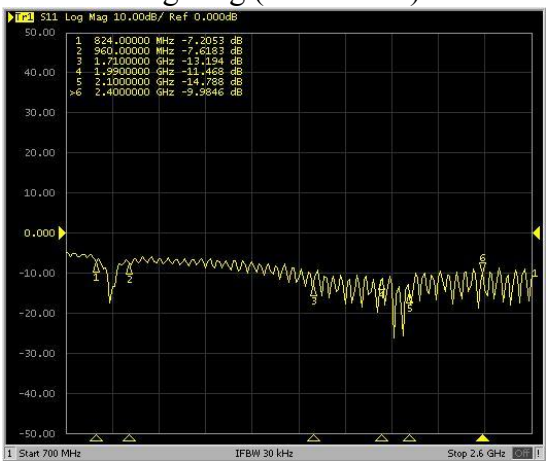



VSWR (Penta Band)

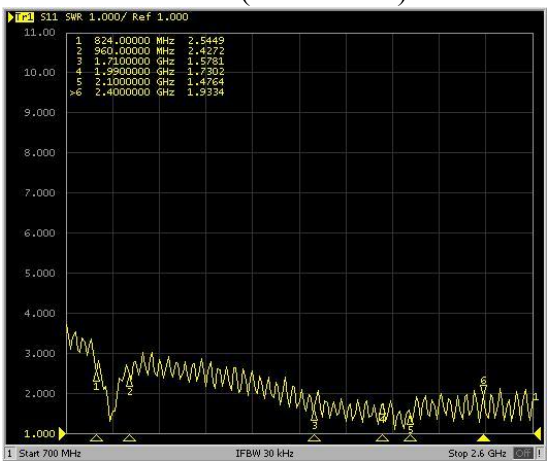



- Tested with 2.5m cable length on 50 cm x 50 cm ground plane.

Log Mag (Penta Band)

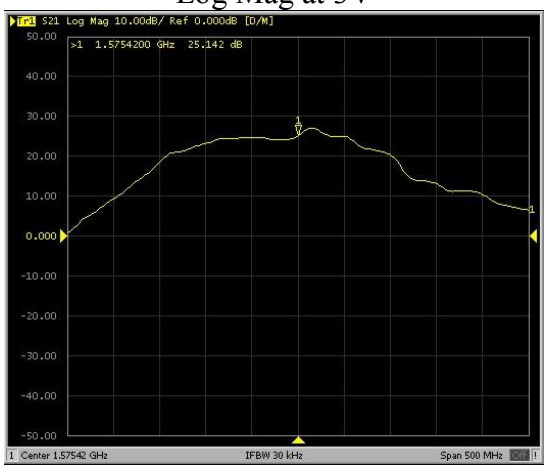



VSWR (Penta Band)



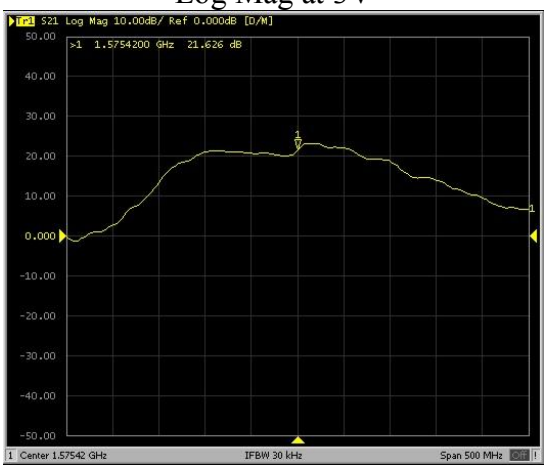

GNSS:

Log Mag at 3V




Tested with 2.5m cable length - RG174 with C20N

Log Mag at 3V




Tested with 5m cable length - RG174 with C20N

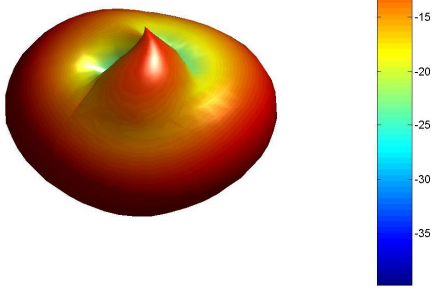
## 3.2. 3D radiation pattern

### 3.2.1. GSM

- Tested with 30cm cable length on 25 cm x 25 cm ground plane.

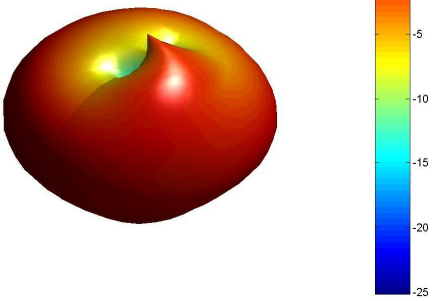
850MHz

Freq = 0.8500GHz Az= 45 EL= 45



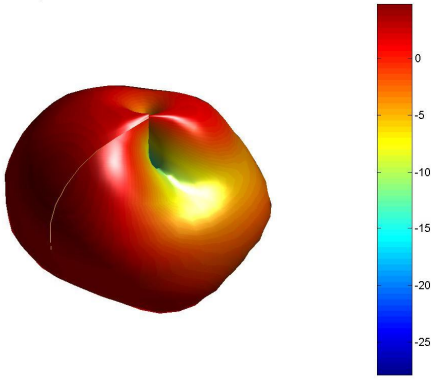

900MHz

Freq = 0.9GHz Az= 45 EL= 45



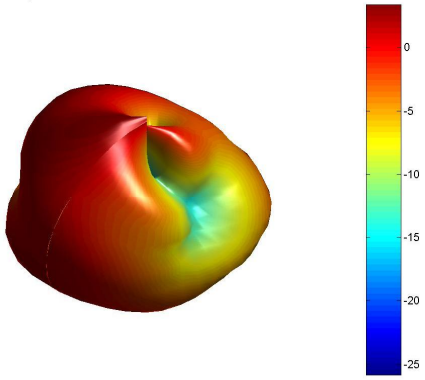

1800MHz

Freq = 1.8GHz Az= 45 EL= 45



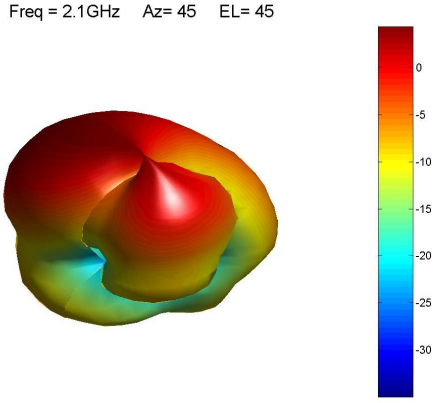

1900MHz

Freq = 1.9GHz Az= 45 EL= 45



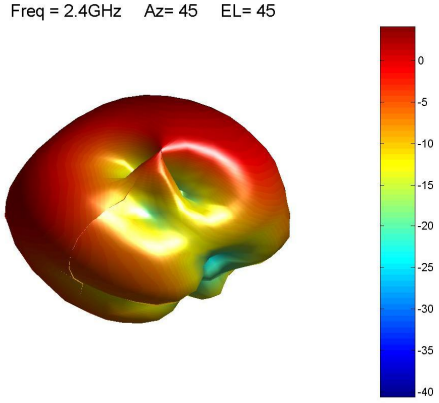

2100MHz

Freq = 2.1GHz Az= 45 EL= 45




2400MHz

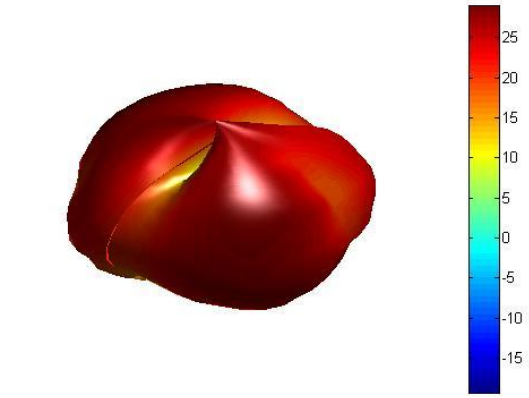
Freq = 2.4GHz Az= 45 EL= 45



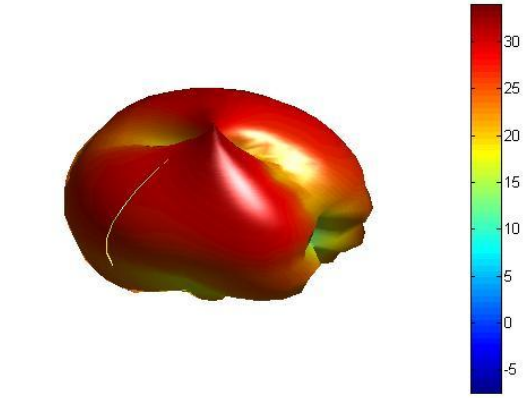
### 3.2.2. GNSS

- Tested with 30cm cable length on 25 cm x 25 cm ground plane and 5V power supply.

1575.42MHz




1610MHz




## 4. IMAGES