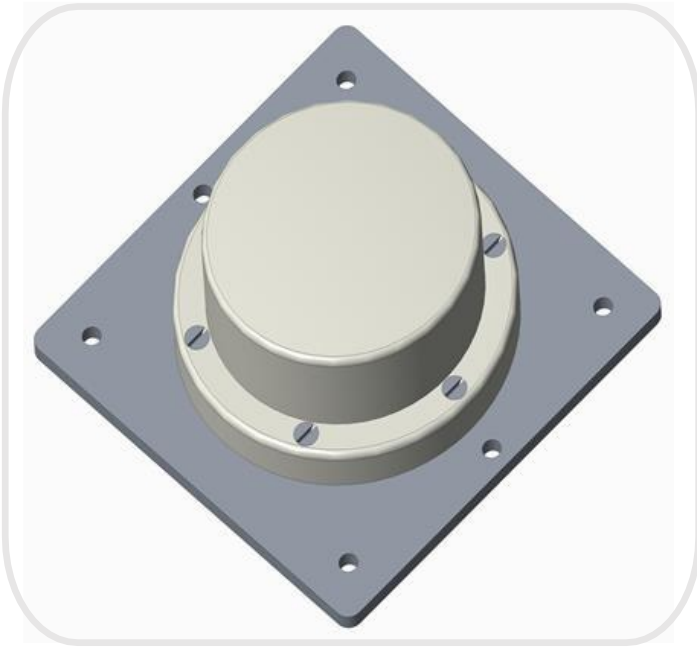


## QUAD BAND AVIONIC ANTENNA – TTSL - QBNA-23



### Key Features

- Best Signal Reception in Multi - constellation mode.
- Excellent Multipath rejection
- Good Signal to Noise ratio and Out of band Rejection
- The Low Power consumption
- Lightweight with small form factor for easier integration.

The TTSL-QBNA-23 is a High Performance Rugged QUAD band GNSS Antenna designed to operate at GPS, GLONASS, Galileo, BeiDou and the IRNSS bands making it suitable for Multi Constellation GNSS signal reception. The Antenna has a good gain in each of the bands with a low noise figure and a high rejection at out of band frequencies making it suitable for High Precision GNSS based Navigational Applications

The antenna geometrical center and the electrical phase centers of L1, L2, L5 and S bands are co-located in X and Y coordinates and have very minimal variations in the Z co-ordinate which helps in high precision position measurements and makes installation easier. It also includes a novel technique for suppression of multi-path signals.

The Compact design which meets the environmental conditions like marine applications the ruggedized enclosure with Aluminum Alloy (AA-2014) base and FRP Radome. The TTSL-QBNA-23 is housed in a pre- tapped screw-hole mount, weather-proof enclosure for permanent installations.

## Technical Specifications

Electrical Specifications	
IRNSS L5	1176.45 MHz ( $\pm 12$ MHz)
IRNSS S	2492 MHz ( $\pm 8.25$ MHz)
GPS L1	1575 MHz ( $\pm 10$ MHz)
GPS L2	1227.26 MHz ( $\pm 10$ MHz)
GLONASS L1	1598 MHz-1606 MHz
GLONASS L2	1242 MHz – 1249 MHz
VSWR	$\leq 2.0 :1$
Passive Gain	$> +3.5$ dBi at Bore sight or better $> +0.5$ dBi up to $\theta = \pm 60^\circ$ from zenith $> -2.0$ dBi up to $\theta = \pm 60^\circ$ to $\pm 75^\circ$ from zenith $> -3.0$ dBi up to $\theta = \pm 75^\circ$ to $\pm 90^\circ$ from Zenith
LNA Gain	38 $\pm 2$ dB (L Band) 35 $\pm 2$ dB (S Band)
LNA Power Consumption	5V - < 100mA
Out of Band Rejection	60dB
Noise Figure	$\leq 2.5$ dB
Output Impedance	50 Ohms
Axial Ratio	< 3 dB
Lightening Protection	DC Grounding
Burnout Limit	+20dBm @ CW Input
Power Handling	1 Watt
Connector	TNC - (F)

Environmental Specifications	
Mounting	Standard Screw Mounting
Finish	Polyurethane Enamel
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Humidity	95% RH at 45°C
MTBF	1,00,000 Hrs.

Mechanical Specifications	
Dimension Excluding Connector (L x W x H)	Length 110 $\pm 0.3$ mm Width 110 $\pm 0.3$ mm Height 40 $\pm 0.3$ mm
Dimension Including Connector (L x W x H)	Length 110 $\pm 0.3$ mm Width 110 $\pm 0.3$ mm Height 56.5 $\pm 0.3$ mm
Weight	400 $\pm 10$ grams.

Environmental Stress Screening	
Mechanical Vibration	MIL-STD-810G / JSS 55555
Functional Shock	MIL-STD-810G / JSS 55555
Crash hazard	MIL-STD-810G / JSS 55555
Temperature and Altitude	MIL-STD-810G / JSS 55555
Humidity	MIL-STD-810G / JSS 55555
Temperature Shock	MIL-STD-810G / JSS 55555
Salt Fog	MIL-STD-810G / JSS 55555
Fungus	MIL-STD-810G / JSS 55555
Sand and Dust	MIL-STD-810G / JSS 55555
EMI & EMC	MIL-STD-461F