TW4020 Wideband GPS Antenna

The TW4020 is a commercial grade wideband GNSS antenna covering the GPS L1, frequency band. It features a small patch element with 40% wider bandwidth than typical GPS L1 antennas.

The TW4020 features a high performance custom tuned ceramic patch element, 15 KV ESD circuit protection, a high gain two-stage low noise amplifier (LNA) with a mid-section high rejection SAW filter. It covers the GPS L1 and SBAS (WAAS/EGNOS/MSAS) frequency band (1572.5 to 1578 MHz), and it offers great circular polarized signal reception.

Even with the wider bandwidth, the TW4020 antenna is among the smallest high performance antenna available. It is housed in a compact IP67 magnetic mount enclosure, it comes with 3 metres of cable and a SMA connectors.

Applications
- Cost Sensitive Positioning
- Fleet Management & Asset Tracking
- Covert surveillance

Features
- 40% wider bandwidth, small footprint
- Axial ratio: 6 dB max (GPS)
- Low noise LNA: 1 dB
- High rejection SAW filter
- High gain: 28 dB typ.
- Wide voltage input range: 2.5 to 16 VDC
- IP67 weather proof housing

Benefits
- Increased system accuracy
- Excellent signal to noise ratio
- RoHS compliant
- Ideal for harsh environments
- Excellent out of band signal rejection

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**Specifications**

### Antenna

- **Architecture**: Wideband Single Feed Patch
- **1 dB Bandwidth**: 31 MHz
- **10dB Return Loss Bandwidth**: 45 MHz
- **Antenna Gain (with 100mm ground plane)**: 4.5 dBi
- **Axial Ratio over Bandwidth (over full bandwidth)**: 4 dB @ Fcenter, 6 dB max

### Electrical

- **Architecture**: LNA stage 1 -> SAW filter -> LNA stage 2
- **Filtered LNA Frequency Bandwidth**: 1565 to 1585 MHz
- **Polarization**: RHCP
- **Gain**: 28 dB min., 1575.42 MHz
- **Gain flatness**: +/- 2 dB, 1575 to 1606 MHz
- **Out-of-Band Rejection**:
  - <1500 MHz: -45 dB (typical)
  - <1550 MHz: -25 dB (typical)
  - >1640 MHz: -40 dB (typical)
- **VSWR (at LNA output)**: <1.5:1
- **Noise Figure**: 1 dB typ.
- **Supply Voltage Range (over coaxial cable)**: +2.5 to 16 VDC nominal
- **Supply Current**: 12 mA max
- **ESD Circuit Protection**: 15 KV air discharge

### Mechanicals & Environmental

- **Mechanical Size**: 38mm x 38mm dia. x 14.3mm H
- **Connectors**: SMA male, others available
- **Cable**: RG174 / 5 metres, other lengths optional
- **Operating Temp. Range**: 40 to +85 °C
- **Enclosure**: Radome and base: ASA plastic
- **Weight**: 73 g (enclosure 34 gm, 3m cable 39 gm)
- **Attachment Method**: Magnetic
- **Environmental**: IP67 and RoHS compliant
- **Shock**: Vertical axis: 50 G, other axes: 30 G
- **Vibration**: 3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G
- **Warranty**: One year, parts and labour

### Ordering Information

TW4020 – Wideband GPS Antenna, 3 metre cable, SMA Male

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