

TW3972



When precision matters.®

TW3972 Triple-Band GNSS Antenna + L-band Correction Services

Frequency Coverage: L1/L2/L5/G1/G2/G3/E1/E5/B1/B2 + L-Band

Overview

The TW3972 is an Accutenna® technology antenna providing triple-band GPS L1/L2/L5, GLONASS G1/G2/G3, BeiDou B1/B2, Galileo E1/E5a+b plus L-band correction services coverage and is especially designed for precision triple frequency positioning. The TW3972 provides superior multi-path signal rejection, a linear phase response, and tight Phase Centre Variation (PCV). This antenna is ideal for precision agriculture, autonomous vehicle tracking and guidance, and other applications where precision matters.

The TW3972 features a precision tuned, twin circular dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wide-band LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output. The antenna also has a strong pre-filter to mitigate inter-modulated signal interference from LTE and other cellular bands. The TW3972 offers excellent axial ratio and a tightly grouped phase center variation. The TW3972 covers from 1164MHz to 1254MHz and 1525MHz to 1606MHz.

The TW3972 is housed in a through-hole mount, weather-proof enclosure for permanent installations. L Bracket or Pipe Mount (part numbers 23-0040-0, 23-0065-0 respectively) are available for non-rooftop installation. A 100 mm ground plane is recommended for non-roof-top installations. This product is also available in an OEM format (TW3967 for 28 dB and TW3972E for 35 dB)



Applications

- Precision GPS position
- Triple Frequency RTK receivers
- Safety & security

Features

- Very low noise preamp < 2.5 dB
- Axial ratio: < 2.0 dB typ.
- Tight phase center variation
- High-gain LNA: 37 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection: 15 kV
- Invariant performance from 2.5 to 16 VDC

Benefits

- Ideal for triple-band RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal-to-noise ratio
- IP67, REACH, and RoHS compliant

About Tallysman: With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at www.tallysman.com

Revision: 1.6

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Antenna

Technology Dual-feed Stacked RHCP ceramic patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	4	< 1
	L2	4	< 1
	L5	-1.5	< 1.5
GLONASS	G1	2.5	< 1.5
	G2	2.5	< 1.5
	G3	2.5	< 1.5
Galileo	E1	4	< 1
	E5A	-1.5	< 1.5
	E5B	2.5	< 1.5
	E6	-	-
BeiDou	B1	4	< 1
	B2	2.5	< 1.5
	B2a	-1.5	< 1.5
	B3	-	-
IRNSS / NavIC	L5	-1.5	< 1.5
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)		3.5	< 1
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio	-	Efficiency	-
PC Variation	-		

Mechanicals

Size	66 mm x 21 mm (see drawing on other page), 100 mm ground plane recommended
Weight	185 g
Radome	Radome: EXL9330, Base: Zamak White Metal
Mount	-

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-50 °C to +95 °C
Vibration	MIL-STD-810D Method 514.4 and 514.5
Shock	Vertical axis: 50 G, other axes: 30 G
Salt Fog	MIL-STD-810F Section 509.4
IP Rating	IP69K (housing)
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH, EN45545-2

Warranty:

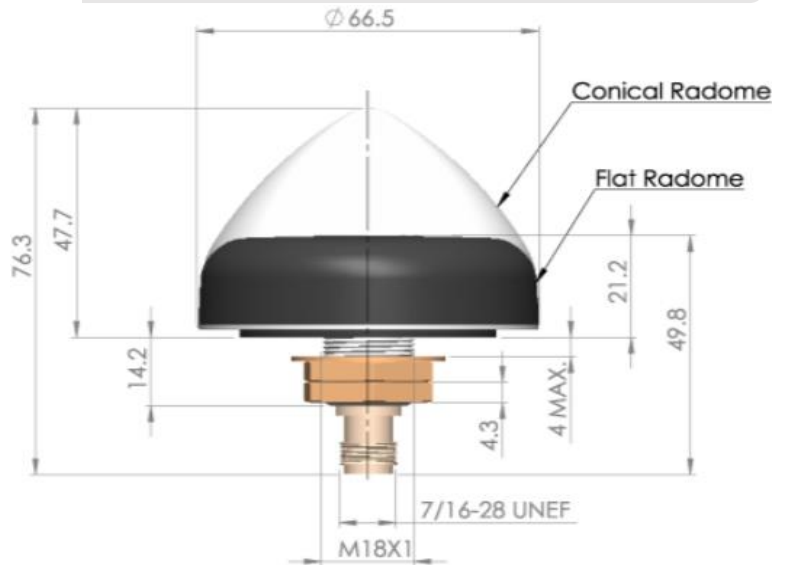
Parts and Labour	Three years standard warranty
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Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwith		Out of Band Rejection	
		Upper Band	Lower Band
1525-1606 MHz	1165-1254 MHz	< 1450 MHz > 30 dB > 1690 MHz > 30 dB > 1730 MHz > 40 dB	< 1050 MHz > 45 dB < 1125 MHz > 30 dB > 1350 MHz > 45 dB

Architecture	Non pre-filtered
Gain	37 dB typ, 35 dB min.
Noise Figure	2.5 dB typ. at 25 °C
VSWR	< 1.5:1 typ. 1.8:1 max.
Supply Voltage Range	2.5 to 16 VDC nominal, up to 50mV p-p ripple
Supply Current	24 mA typ. at 25 °C
ESD Circuit Protection	15 kV air discharge
P1dB Output	-
Group Delay Variation	-

Mechanical Diagram



Ordering Information

Part Number **33-3972-xx-yy-zzzz**

Where xx = connector type, yy = shape and colour of radome and zzzz = cable length in mm (where applicable)

Please refer to our **Ordering Guide** to review available radomes and connectors at: <https://www.tallysman.com/resource/tallysman-ordering-guide/>