

TW3870

TW3870 GPS-L1/L2 + GLONASS-G1/G2 + BeiDou B1 + Galileo E1

Frequency: L1/L2/G1/G2/E1/B1
Coverage:

Overview

The TW3870 employs Tallysman's patented Accutenna[®] technology providing dual-band GPS-L1/L2, GLONASS-G1/G2 + BeiDou B1 + Galileo E1 coverage and is especially designed for precision dual frequency positioning.

The TW3870 features a precision tuned, circular dual-feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wideband LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW3870 offers excellent axial ratio and a tightly grouped phase centre variation. The TW3870 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS-L1/WAAS/EGNOS/MSAS (1575.42 Mhz), GLONASS-G1 (1602 Mhz, centre), BeiDou B1 and Galileo E1. (1561 and 1589 MHz).

The TW3870 is housed in a through-hole mount, weatherproof 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 provided with the antenna, which ensures optimal performance.

This product is also available in an OEM formats (TW3865, TW3870E, TW3872E, and TW3868)



Applications

- Precision GPS position
- Dual-frequency RTK receivers
- Mission Critical GPS Timing
- Law enforcement and public safety
- Network timing & synchronization

Features

- Very low noise preamp < 1.5 dB
- Axial ratio: < 2.0 dB typ.
- Tight phase centre variation
- High-gain LNA: 35 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC

Benefits

- Ideal for L1/L2 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

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TW3870 GPS-L1/L2 + GLONASS-G1/G2 + BeiDou B1 + Galileo E1

Frequency Coverage: L1/L2/G1/G2/E1/B1

Antenna			
Technology		Dual-feed Stacked RHCP ceramic patch	
		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4.5	≤ 1
	L2	3.8	< 1.5
	L5	-	-
GLONASS	G1	4	≤ 1
	G2	4	< 1.5
	G3	-	-
Galileo	E1	4	≤ 1
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	4	≤ 1
	B2	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)			
Satellite Communications			
Iridium	-	-	-
Globalstar	-	-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-	PCO	-

Mechanicals	
Size	66 mm (dia.) x 21 mm (h.) 100 mm ground plane provided
Weight	185 g
Radome	Radome: EXL9330 , Base: Zamak White Metal
Mount	19 mm through hole
Available Connectors	Please refer to ordering guide

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
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

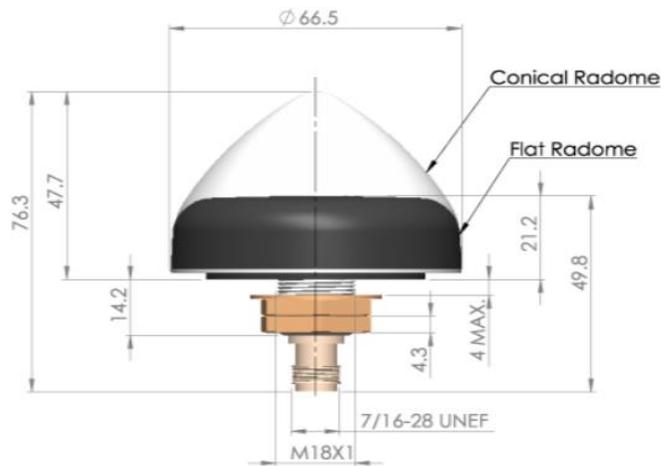
Warranty:	
Parts and Labour	1-year standard warranty

Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth		Out of Band Rejection
Lower Band	1215-1254 MHz	< 1180 MHz > 40 dB < 1190 MHz > 30 dB > 1284 MHz > 32 dB
L-Band - Correction Services	-	-
Upper Band	1559-1606 MHz	< 1450 MHz > 40 dB < 1520 MHz > 30 dB > 1650 MHz > 35 dB

Architecture	Non pre-filtered
Gain	35 dB typ, 32 dB min.
Noise Figure	1.5 dB typ. @ 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
Max. Input Power	24 mA typ. @ 25 °C, 25 mA max. at 75 °C.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay	-

Mechanical Diagram



Ordering Information

Part Number **33-3870-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/>