

# TW3865



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## TW3865 GPS/QZSS L1/L2 + GLONASS G1/G2 + BeiDou B1 + Galileo E1

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

### Overview

The TW3865 employs Tallysman's unique Accutenna technology providing dual band GPS/QZSS L1 & L2, GLONASS G1 & G2, BeiDou B1, and Galileo E1 coverage and is especially designed for precision dual frequency positioning.

The antenna 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.

TW3865 offers excellent axial ratio and a tightly grouped phase center.

It covers GPS/QZSS L2 (1227.6 MHz), GLONASS G2 (1248 MHz centre), GPS/QZSS L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS G1 (1602 MHz, centre), BeiDou B1 (1575.42 MHz), and Galileo E1 (1575.42 MHz).

The OEM antenna is supplied with a standard 60 mm diameter circular ground plane, with a coaxial cable terminated with your choice of connector (right angle MCX is shown in the drawing).

Mounting holes are provided for attachment to larger ground planes. Custom tuning and ground plane options may be available, depending on purchase level commitment.



### Applications

- Precision GPS position
- Dual Frequency RTK receivers
- Military & Security
- Network Timing and Synchronization

### Features

- Very low Noise Preamp,
- Axial ratio: <2dB typ.; <1 dB at Zenith
- Tight Phase Center Variation
- LNA Gain 28 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 12VDC

### Benefits

- Ideal for dual frequency RTK and PPP surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- RoHS and REACH 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](http://www.tallysman.com)

Revision: 3.6

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

## Antenna

Technology Dual-feed Stacked RHCP ceramic Patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
<b>GNSS</b>			
GPS / QZSS	L1	4.5	≤ 1
	L2	3	<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)			
<b>Satellite Communications</b>			
Iridium		-	-
Globalstar		-	-
<b>Other</b>			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-		

## Mechanicals

Size	60mm diameter, 0.75mm thick, see mechanical drawing
Weight	70 g (excluding cable)
Radome	-
Mount	-

## Environmental

Operating Temperature	- 40 °C to + 85 °C
Storage Temperature	- 50 °C to + 95 °C
Vibration	MIL-STD-810-D
Shock	Vertical axis: 50G, other axes: 30G
Salt Fog	-
IP Rating	Not Applicable
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

## Warranty:

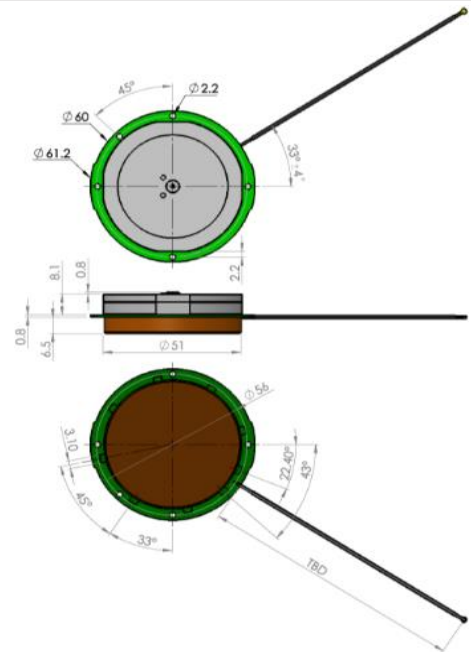
Parts and Labour	One year (Extended warranty available)
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## Low Noise Amplifier (LNA) - Measured at 3V and 25°C

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

Architecture	Non Pre-filtered
Gain	28 dB typ, 25 dB min.
Noise Figure	1.5 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 50 mV p-p ripple
Supply Current	24 mA typ. at 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 **33-3865-xx-yyyy-zz**

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/>

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