

TW162A

TW162A Automotive-Grade 1-to-2 Port Smart Power GNSS Signal Splitter

Frequency Coverage: Full GNSS Spectrum

Overview

The Tallysman[®] TW162A is an automotive-grade full GNSS band Smart Power signal splitter that connects one antenna to two receivers, and supports GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, BeiDou-B1/B2/B2a/B3, Galileo-E1/E5a/E5b/E6, NavIC-L5, and L-Band correction services.

GNSS has become a critical component in autonomous and automotive vehicle applications, all of which require very high availability. As a result, resilient fault-tolerant components are essential to avoid service interruptions. Tallysman[®]'s TW162A is designed with AEC-Q100-certified components, ensuring the unit will operate under extreme temperature conditions.

The TW162A provides two key features:

First, it accepts power from all attached GNSS receivers and selects power from a receiver using the following protocol. Port #1 is given priority if its voltage is within the specified range (3.0 - 12.5 VDC). However, if port #1's receiver is disconnected or if its receiver power goes below the under-voltage or above the over-voltage specification, the TW162A will switch to the next port in numerical order, as long as its power and voltage are within the expected range. The switching and port selection is, therefore, deterministic.

Second, if the antenna fails and does not draw current, the TW162A will provide all connectors with a current draw lower than 1 mA, indicating an antenna fault.

The TW162A offers the best in-class performance in terms of noise figure, isolation, and linearity. In addition, it is packaged in a robust, compact, lightweight, and aluminum housing.

The TW162A is available with FAKRA connectors (3x Z or A+B+C) and offers standard gain to compensate for signal-splitting loss.



Applications

- GNSS signal distribution
- GNSS receiver testing
- High-availability applications
- Network and infrastructure timing
- Autonomous and automotive vehicles

Features

- Accepts power from all attached receivers
- Automatically switches on power failure of one receiver
- Antenna failure detection/indication
- Rugged military-grade aluminum enclosure
- Amplification to compensate for signal-splitting loss
- Very low noise figure
- FAKRA connectors (3x Z or A+B+C)

Benefits

- Allows two GNSS receivers to share a single antenna
- Fits in-line with antenna cable
- Robust package

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: 1.0

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Electrical Specifications - Tested at 25°C unless otherwise specified

Parameter	Conditions / Description	Minimum	Typical	Maximum	Units
Frequency Range	Bandwidth supported	1100	-	1700	MHz
Gain	Measured within range: -40 °C to 85 °C	-1.0	0.0	1.0	dB
Impedance	-	-	50.0	-	Ω
Noise Figure	All Receiver Ports	-	3.6	4.0	dB
Output Isolation	-	47.0	-	-	dB
Input/Output SWR	-	-	1.3:1 1.1:1	1.5:1 1.2:1	ratio
Input Gain Compression Point (P1dB)	Gain = 0 dB	-20.0	-17.0	-14.0	dBm
3rd Order Intercept (IIP3)	Gain = 0 dB	-10.0	-7.0	-4.0	dBm
RF Input (Damage Threshold)	Maximum RF Input without damage	-	-	5.0	dBm
Amplitude Balance	Between Ports	-	0.1	0.5	dB
Phase Balance	Between Ports	-	2.0	5.0	degrees (°)
DC In	DC input on any port	3.0	-	12.5	VDC
Receiver Over-voltage	-	12.7	14.9	16.9	VDC
Receiver Under-voltage	-	2.3	2.5	2.8	VDC
Splitter Current	Current consumed by splitter	-	15.0	25.0	mA
Antenna Through Current	Maximum current provided to the antenna	-	-	230.0	mA
Group Delay Variation	Antenna to Ports	1.0	1.4	2.0	ns
	Adjacent Ports	0.0	0.3	0.5	ns
	Opposite Ports	0.0	0.5	1.0	ns

Mechanicals

Size	114.0 mm (L.) x 76.0 mm (w.) x 30.0 mm (h.)
Weight	83 g
Connectors	3x FAKRA connectors (3x Z or A+B+C)
Enclosure	-

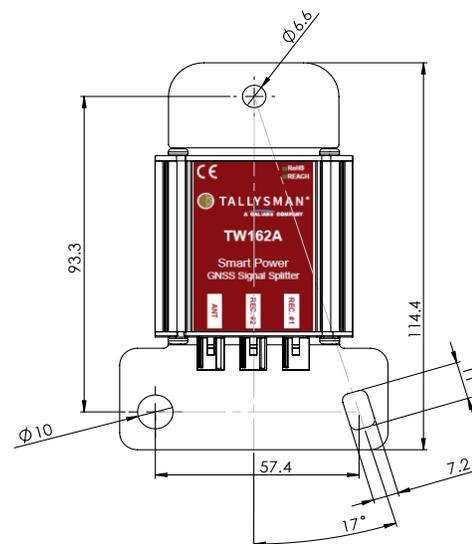
Environmental

Operating Temperature	-40 °C to 105 °C
Storage Temperature	-50 °C to 115 °C
Vibration	-
Shock	-
Salt Fog	-
IEC 60529 - IP Rating	-
Compliance	RoHS, REACH and WEEE, AEC-Q100 EN60950-1, RED / CE Certified MIL-STD-810, FCC Part 15B and R&TTE equivalent.

Warranty

Parts and Labour	3-year standard warranty
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Mechanical Diagram



Ordering Information

Part Number **32-0162A**

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