

ARM933XF



ARM933XF Extended-Filter Triple-Band GNSS Antenna + L-Band

Frequency Coverage: GPS/QZSS-L1/L2/L5, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b, BeiDou-B1/B2a/B2b, NavIC-L5 + L-band correction services

Overview

Tallysman® Wireless is excited to announce that it has added the ARM933XF triple-band plus L-Band GNSS antenna to its industry-leading line of GNSS antenna products. The ARM933XF employs Tallysman's patented Accutenna® technology providing GPS/QZSS L1/L2/L5, GLONASS-G1/G2/G3, Galileo E1/E5a/E5b, and BeiDou B1/B2a/B2b + L-Band coverage. The ARM933XF antenna is designed for precision triple-frequency positioning where lightweight and a low profile are important.

The ARM933XF antenna is available in two form factors one includes a 100 mm integrated ground plane, weighing 140 g, and the other one is 83mm in diameter and weighs 138 grams. Both are 19 mm tall and support the ARINC mini bolt pattern of 2.0" x 1.66". Tallysman's ARM933XF is one of the smallest and lightest housed triple-band precision Mini ARINC GNSS antennas on the market. It has a very tight average phase center variation of less than 10 mm for all frequencies and overall azimuths and elevation angles. In addition to supporting two form factors both models are available with Low Earth Orbit (LEO) qualified components.

Housed in a weatherproof (IP67) enclosure, the ARM933XF is available in four versions. Model ARM933XF-1 (ARM933XF-1-S LEO Space qualified components) has an integrated 100mm ground plane, Model ARM933XF-2 (ARM933XF-2-S LEO Space qualified components) is 83 mm in diameter. All models are available with either a female SMA or TNC connector.

The new ARM933XF antenna supports Tallysman's eXtended Filtering (XF) technology. Worldwide the radio frequency spectrum has become congested as many new LTE bands have been activated, and their signals or harmonic frequencies can affect GNSS antennas and receivers. In North America, the planned Ligado service, which will broadcast in the frequency range of 1526 to 1536 MHz, can affect GNSS signals. Similarly, new LTE signals in Europe [Band 32 (1452 – 1496 MHz)] and Japan [Bands 11 and 21 (1476 – 1511 MHz)] have also affected GNSS signals. Tallysman's XF technology mitigates all these signals.



Configuration -1



Configuration -2

Applications

- Autonomous vehicle tracking and guidance
- Precise GNSS positioning
- Precision agriculture
- Triple-frequency RTK and PPP receivers
- Law enforcement and public safety
- Augmented GNSS positioning

Features

- Very low noise preamp (< 2.5 dB typ.)
- Tight phase centre variation
- High-gain LNA (33 dB typ.)
- Low current (45 mA typ.)
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC
- IP69K, REACH, RoHS, and S-9401.V1.0 compliant

Benefits

- Excellent interference mitigation
- Excellent multipath rejection
- Increased system accuracy
- Excellent signal-to-noise ratio

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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Antenna

Technology Dual-feed Stacked RHCP ceramic patch

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4.0	< 1.0
	L2	4.0	< 1.0
	L5	-1.5	< 1.5
GLONASS	G1	2.5	< 1.5
	G2	2.5	< 1.5
	G3	2.5	< 1.5
Galileo	E1	4.0	< 1.0
	E5A	-1.5	< 1.5
	E5B	2.5	< 1.5
	E6	-	-
BeiDou	B1	4.0	< 1.0
	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	< 1.0
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	± 10 mm	PCO	-

Mechanicals

Size See mechanical drawing
 Weight 140 g
 Radome Radome: ULTEM 2200, Base: Aluminum 6061-T6
 Mount ARINC Mini (2" * 1.66")
 Available Connectors TNC and SMA Female

Environmental

Operating Temperature -70 °C to 85 °C
 Storage Temperature -70 °C to 95 °C
 Vibration TBD
 Shock TBD
 Salt Fog TBD
 IP Rating IP67
 Compliance IPC-A-610, FCC, RED / CE Mark, RoHS, REACH, S-9401.V1.0, EN45545-2, EN50121, EN50155,

Warranty:

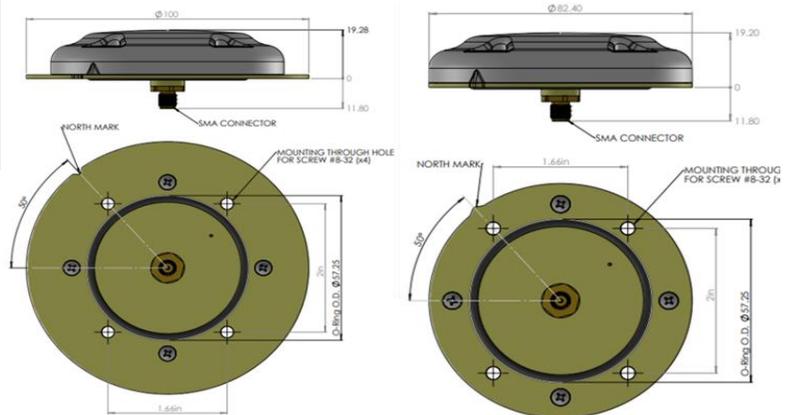
Parts and Labour 3-year standard warranty

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

Frequency Bandwidth	Out of Band Rejection
Lower Band	1164- 1255 MHz
	≥ 70 dB @ ≤ 1050 MHz ≥ 65 dB @ ≤ 1125 MHz ≥ 70 dB @ ≥ 1350 MHz
L-Band - Correction Services	1539-1559 MHz
	≥ 65 dB @ ≤ 1500 MHz ≥ 45 dB @ ≤ 1525 MHz ≥ 05 dB @ ≤ 1536 MHz
Upper Band	1559 - 1606 MHz
	≥ 30 dB @ ≥ 1626 MHz ≥ 65 dB @ ≥ 1650 MHz

Architecture Pre-filter → LNA stage 1 → filter → LNA stage 2
 Gain 33 dB typ. | 30 dB min.
 Noise Figure 2.5 dB typ.
 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 45 mA typ.
 ESD Circuit Protection 15 kV air discharge
 P 1dB Output 5.5 dBm typ.
 Group Delay 12 ns @ (L1+G1) | 7 ns @ (L5+L2+G2)

Mechanical Diagram



Configuration -1

Configuration -2

Ordering Information

Part Number **ARM933XF-Y-XX; add -S for 'Space'**

where Y = configuration: 1 = 10cm GP | 2 = Standard GP
 where XX = female connector: 01 = TNC | 07 = SMA
 S = LEO Space Qualified Components

Please refer to our **Ordering Guide** to review available radomes and connectors at:

<https://www.tallysman.com/resource/tallysman-ordering-guide/>

www.tallysman.com