

CR7712EXF



Anti-Jam Two Element Controlled Reception Pattern Antenna (CRPA)

Frequency Coverage: GPS L1 | GALILEO E1 | BEIDOU B1

Calian's CR7712EXF embedded Controlled Reception Pattern Antenna (CRPA) GNSS antenna steers 1 planar null to mitigate interference or jamming signals in the upper GNSS band (1559 - 1591 MHz). The output of the CR7712EXF is a standard RF signal (compatible with all Commercial Off The Shelf (COTS) GNSS receivers) with the interference/jamming signals removed. The CR7712EXF also has a serial interface that provides antenna state information indicating jamming detected or not. This feature allows the user to quickly understand the GNSS signal status.

The CR7712EXF is a 2-element CRPA designed for single-band Global Navigation Satellite System (GNSS) signal reception. It supports: GPS L1, Galileo E1 and BeiDou B1 signal bands. The wide bandwidth antenna elements support the GPS M-Codes on L1.

The CR7712EXF utilizes the patented Tallysman Accutenna® technology and a new very low power analog interference detection and mitigation methodology. The product integrates the antenna, interference mitigation, and null forming technology into a light weight and compact package.

Intentional and unintentional interference or jamming can saturate a standard GNSS antenna's Low Noise Amplifier (LNA) such that it may not provide a usable signal. Calian's CR7712EXF employs two interference mitigating technologies: eXtended Filtering (XF) and Controlled Reception Pattern Antenna (CRPA). XF provides > 80 dB of out of band rejection from 400 MHz to 3000 MHz. Additionally, XF has very sharp band edges around the GNSS bands. CRPA technology creates radio frequency nulls in the direction of the interference/jammer and as a result the antenna provides a clean GNSS signal.

The CR7712EXF embedded CRPA is surface mounted using screws. A standard antenna radio frequency MMCX connector and a serial interface connector are the interfaces provided.

Trust Calian to provide a clean RF signal in a noisy RF world.



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Applications

- Critical Timing
- Navigation in contested environs
- Critical Infrastructure GNSS (airports, etc.)
- Law enforcement and public safety

Features

- Formation of 1 planar null
- Single band GNSS signal support
- Supports eXtended Filtering (XF) providing sharp out-of-band signal rejection
- Up to 20 dB null depth
- Serial Interface provides state information

Benefits

- Compatible with standard GNSS receivers
- Very low power consumption (60 mA typ.)
- Small, lightweight, and low-profile form factor makes it ideal for many uses
- Supports situation awareness, indicates CRPA state



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Antenna

Technology Dual-element dual-feed patch CRPA

		Coverage Map	
GNSS			
GPS / QZSS	L1	✓	
	L2	-	
	L5	-	
GLONASS	G1	-	
	G2	-	
	G3	-	
Galileo	E1	✓	
	E5A	-	
	E5B	-	
	E6	-	
BeiDou	B1	✓	
	B2b	-	
	B2a	-	
	B3	-	
IRNSS / NavIC	L5	-	
QZSS	L6	-	
L-Band Services (1525 MHz - 1559 MHz)			-
Satellite Communications			
Iridium			-
Globalstar			-
Other			
Elements	2	Serial Interface	RS232, JST GH 6-pin
Nulls (per band)	1	Null Depth	20 dB typ.

Mechanicals

Size	126 (L) x 50 (W) x 10 (H) mm
Weight	72 g
Radome	-
Mount	Screw Holes
Available Connectors	MCX

Environmental

Operating Temperature	-40 °C to 85 °C
Storage Temperature	-55 °C to 95 °C
Vibration	TBD
Shock	TBD
Salt Fog	-
IP Rating	-
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

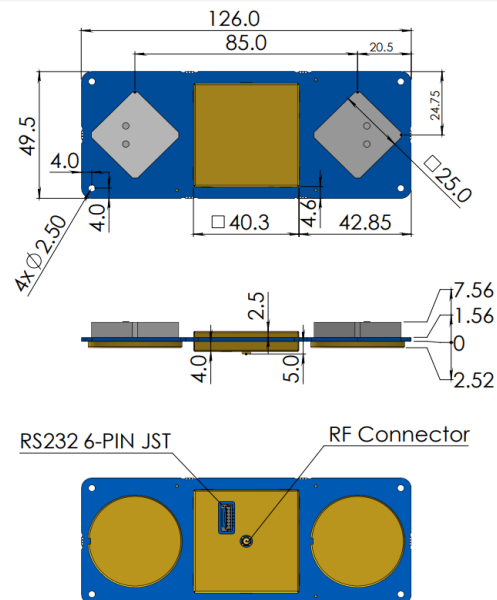
Parts and Labour	1-year standard warranty
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Low Noise Amplifier (LNA) - Measured at 5V and 25°C

Frequency Bandwidth		Out of Band Rejection
Lower Band	-	-
L-Band Corr.	-	-
Upper Band	1559 - 1591 MHz	> 55 dB @ < 1500 MHz > 45 dB @ < 1536 MHz > 70 dB @ > 1621 MHz

Architecture	eXtended Filtering
Gain	28 dB typ.
Noise Figure	3.0 dB typ.
VSWR	< 1.5:1 typ., 1.8:1 max.
Supply Voltage Range	5 to 36 VDC nominal, up to 50mV p-p ripple
Supply Current	60 mA max.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	11 dBm typ.
Power Input	-

Mechanical Diagram - Units in 'mm'



Ordering Information

Part Number **33-CR7712EXF**

Please refer to our **Ordering Guide** to review available radomes and connectors at: <https://at.calian.com/gnss/information-support/part-number-ordering-guide/>



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