

PRODUCT NAME	PART NUMBER	SERIES	REV - DATE	PAGE	ROHS
MULTIBAND-HELIX-1539	100-00049-01	ANTENNA	Rev 1.1 - 03/03/15	1/2	COMPLIANT

Introduction

This compact multi-band antenna is designed by Maxtena using an 8 element RHCP helix antenna, with optional integrated filter. The filter improves filtering and rejection, which reduces the real estate required on the main application board. The antenna operates across; BeiDou, GPS L1, GLONASS, and Omni-star bands and offers an excellent axial ratio and gain performance.



Fig 1: Prototype sample shown. Image not to scale.

The MULTIBAND-HELIX-1539 is a high performance antenna, built on proprietary Maxtena Helicore™ technology. This technology provides exceptional pattern control, polarization purity and high efficiency in a very compact form factor. The antenna includes a short U.FL pigtail connector for easy installation.

This antenna requires the sale of service ahead of the sale of antennas, such as feasibility studies, prototyping, and chamber measurement. The antenna is mounted on the inside of the applications housing, allowing it to be hidden. The antenna element is custom tuned to the applications enclosure.

Features

- Ultra Compact 8 Element Multiband RHCP Helix
- Multiple Operating bands 1539MHz-1610 MHz - Beidou/GPS L1/GLONASS/Omni-star
- Maxtena patented Helicore™ light-weight air-dielectric design
- U.FL coaxial 50 Ohm termination

Electrical & Environmental Specifications

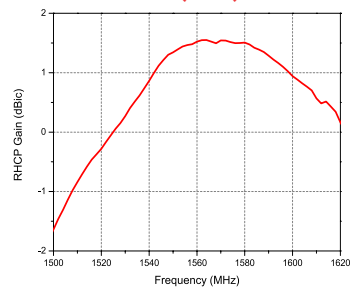
Parameter	Specifications	Specifications (with filter)
Operating frequency (3 dB bandwidth)	1539 MHz-1610 MHz	
Minimum bore-sight gain	0 dBic (min)	-1.6 dBic (min)
Peak bore-sight gain	1.5 dBic (typical) @1575MHz	0.2 dBic (typical) @1575 MHz
Min gain at 0 elevation	-7 dBic (typical) @1575MHz	-7 dBic (typical) @1575MHz
Polarization	RHCP	
Axial ratio (max)	2.0 dB (typical) @bore-sight	
VSWR (max) (3 dB bandwidth)	2.0:1 (max) @ 50 Ohm U.FL connector	
Relative humidity range	0-95%	
Operating temp. range	from -40°C to 85°C	
Storage temp. range	from -40°C to 100°C	
RF connector	U.FL	
ROHS compliant	Yes	
Frequency temp. coefficient	10 ppm/°C max (-40 to 105°C)	

* Declared peak gain and reported radiation pattern are intended for a rotationally symmetrical plastic radome.

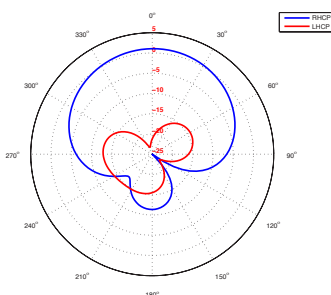
Applications

- Vehicle and fleet tracking
- Military & security
- Asset tracking
- Oil & gas industries
- Navigation devices
- Mining equipment
- LBS & M2M applications
- Handheld devices

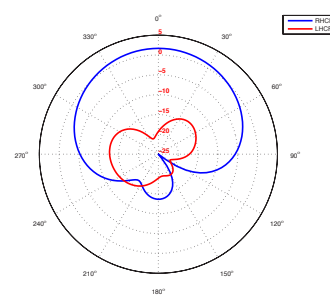
Multi-band Gain (dBic)



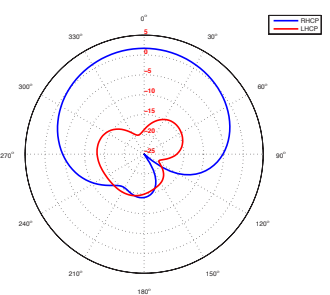
1540 MHz Omni-star Gain (dBic)



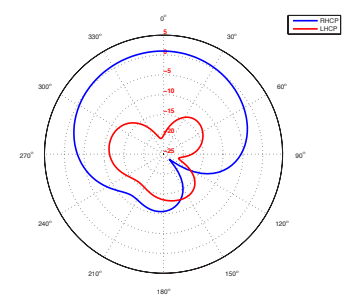
1558 MHz Omni-star Gain (dBic)



1576 MHz GPS L1 Gain (dBic)

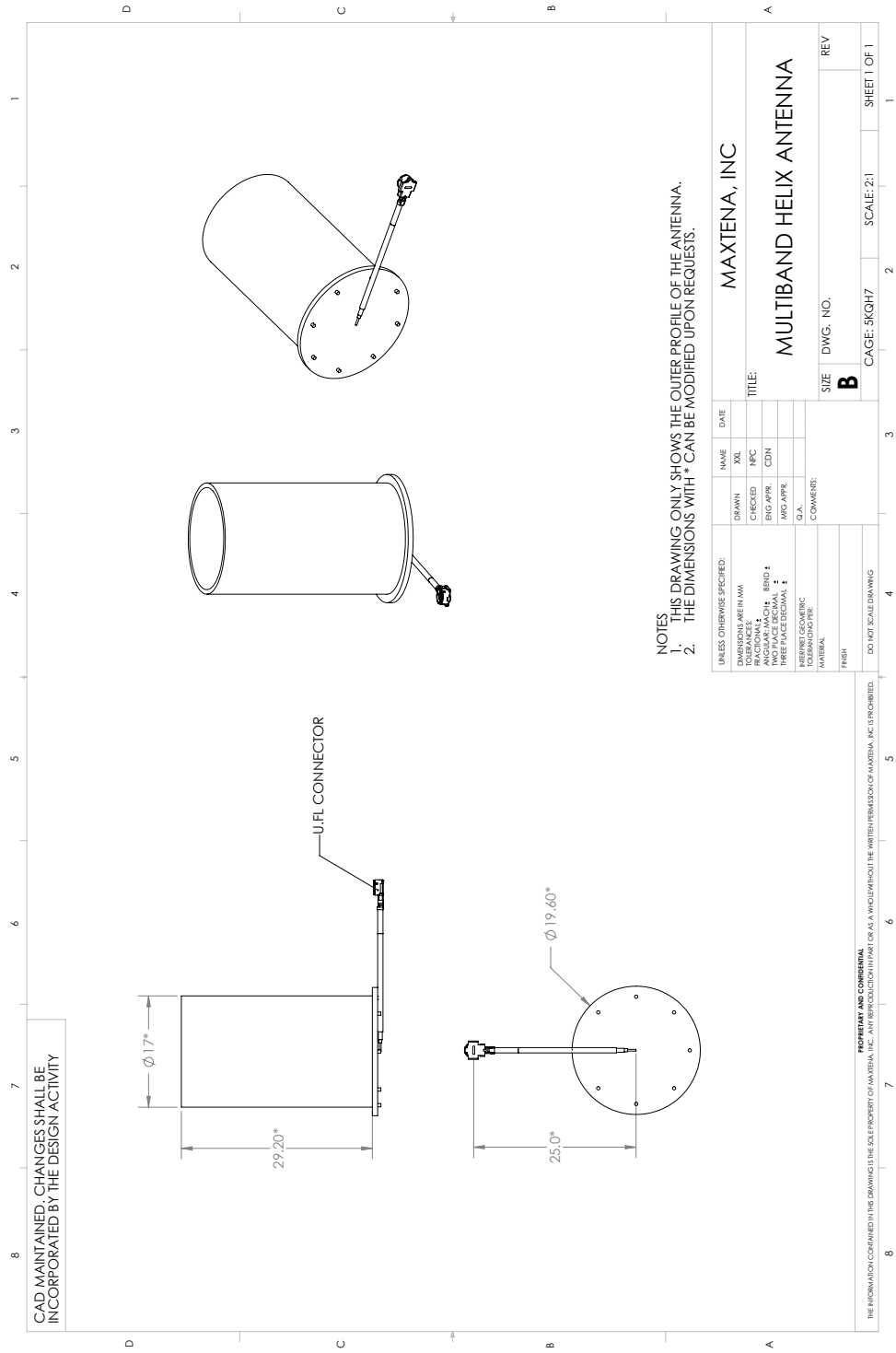


1604 MHz GLONASS Gain (dBic)



Mechanical Specifications & Dimensions

dimensions are in mm



CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

NOTES
 1. THIS DRAWING ONLY SHOWS THE OUTER PROFILE OF THE ANTENNA.
 2. THE DIMENSIONS WITH * CAN BE MODIFIED UPON REQUESTS.

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DRAWN	CHECKED	XXL	
DESIGNED	ENG APPR.	NFC	
MANUFACTURED	MFG APPR.	CDN	
ASSEMBLED	ASSEMBL		
TESTED	TEST		
TOLERANCING PER:	Q.A.		
FINISH:	COMMENTS:		
DO NOT SCALE DRAWING			

MAXTENA, INC	
TITLE:	
MULTIBAND HELIX ANTENNA	
SIZE	DWG. NO.
B	
CAGE: SKQH7	SCALE: 2:1
SHEET 1 OF 1	

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