



M9HCT-A-EMB

Embedded Active antenna
 L1: GPS, GLONASS, GALILEO, BEIDOU
 L2: GPS L2C, GALILEO E5B, GLONASS L3OC
 L5: GPS L-band
 Part #: 108-00082-01



Description

The M9HCT-A-EMB is Maxtena's latest high performance active embedded antenna designed for the L1/L2/L5 GPS, Galileo, Beidou, GLONASS bands, and as well as L-band correction services. The antenna is designed for applications requiring greater accuracy than what L1 only antennas can provide. The antenna is built on proprietary Maxtena Helicore® technology. This technology provides exceptional pattern control, polarization purity and high efficiency in a very compact form factor. It is an embedded antenna design, featuring an SMA connector. This antenna has superior filtering performance and is rated for 50 V/m out of band interference. The M9HCT-A-EMB is ideal for UAV, UGV and high precision applications and is GNSS receiver agnostic.

Passive Antenna Performance (L2, B2, G2, G3, E5B)

Parameter	Specification
Frequency	1192-1231 MHz
Peak Efficiency	46%
Polarization	RHCP
Realized Gain	1.1 dB
Axial Ratio	Max 1.2 dB at the Zenith
VSWR	Max 2:1
Beamwidth	135°

Passive Antenna Performance (L1, E1, B1, B1-2, G1)

Parameter	Specification
Frequency	1559-1606 MHz (L1, E1,
Peak Efficiency	49%
Polarization	RHCP
Realized Gain	0.5 dB
Axial Ratio	Max 0.9 dB at the Zenith
VSWR	Max 2:1
Beamwidth	125°

Passive Antenna Performance (L5)

Parameter	Specification
Frequency	1164-1189 MHz (L5)
Peak Efficiency	40%
Polarization	RHCP
Realized Gain	0.5 dB
Axial Ratio	1.1 dB at the Zenith
VSWR	Max 1:1
Beamwidth	112°

Features

- GNSS/QZSS-L1/L2, QZSS-L6, GLONASS-G1/G2, Galileo-E1/E6, Beidou-B1/B3 + L-band
- Small form factor
- Ground plane independent
- GIS, RTK and other high accuracy GNSS applications
- Low power consumption
- Low phase center variation over azimuth and elevation and among different samples
- Ultra-lightweight
- Automotive grade electronics

Applications

- Autonomous unmanned aerial vehicles (UAVs)
- GNSS positioning
- GNSS timing
- Sea and land container tracking
- Fleet management and asset tracking
- Marine and avionics systems
- Law enforcement
- Public safety

L-band corrections services:

Parameter	Specification
Frequency	1539 - 1559 MHz
Gain	1.5 dB
Axial Ratio	≤ 0.5

Phase Center Variation

Maximum Phase Center Variation	
In azimuth plane	Max 10 mm
As low as 40 degree elevation	Max 10 mm
Between samples	Max 5 mm
Over frequency band	Max 10 mm

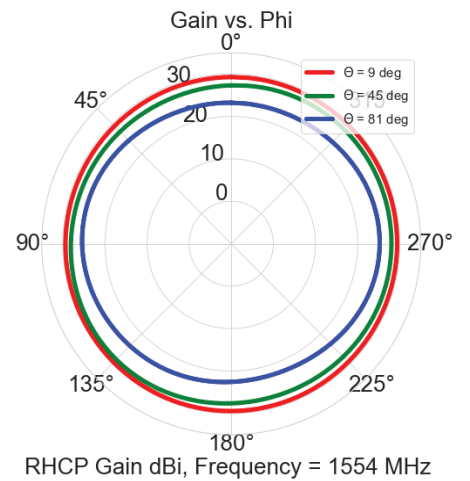
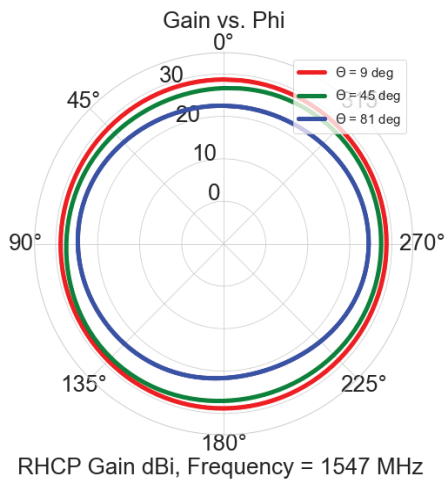
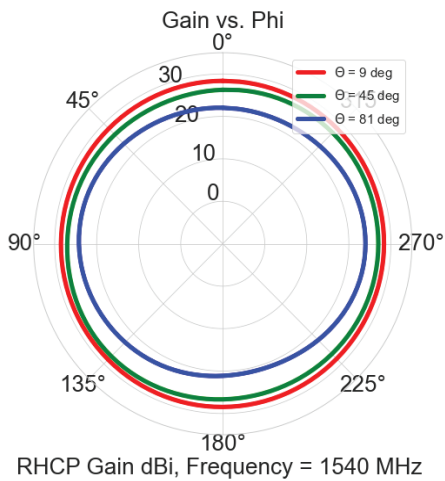
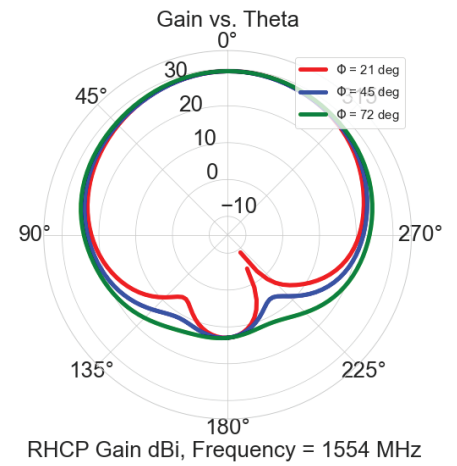
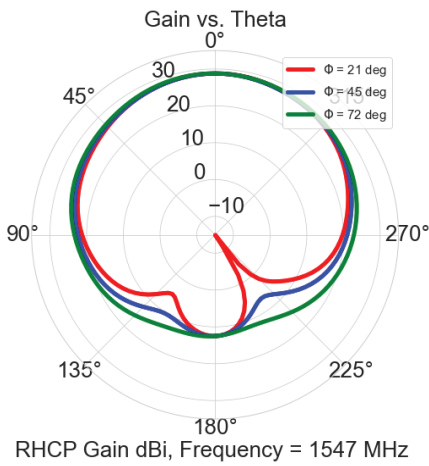
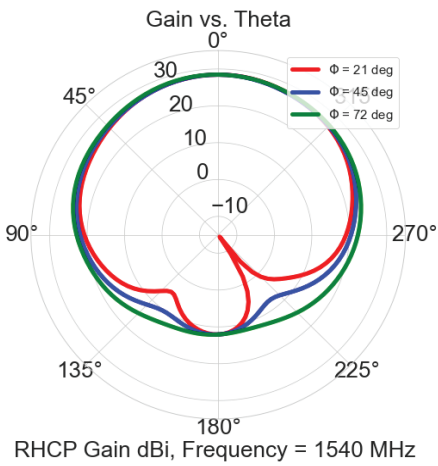
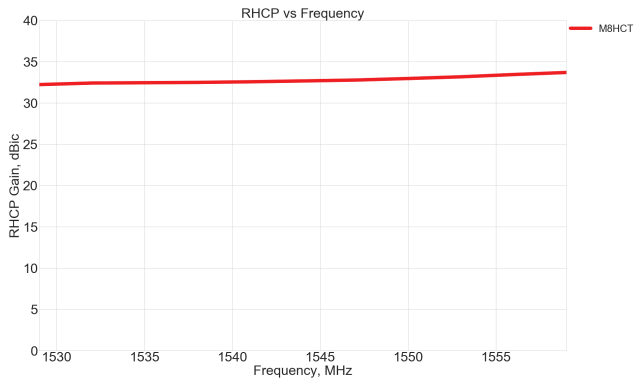
RF Specifications

Parameter	Specification
Conducted Gain	30 ± 3 dBi
Noise Figure	1.5 dB typical, 2 dB max
Voltage	3.0 to 5.0 V
Current	25 mA max
Out of Band Rejection	40 dBc
Group Delay Variation	Less than 5ns over GNSS bands
EMI Immunity Out of Band	30 V/m
ESD Circuit Protection	15 kv human body model air discharge

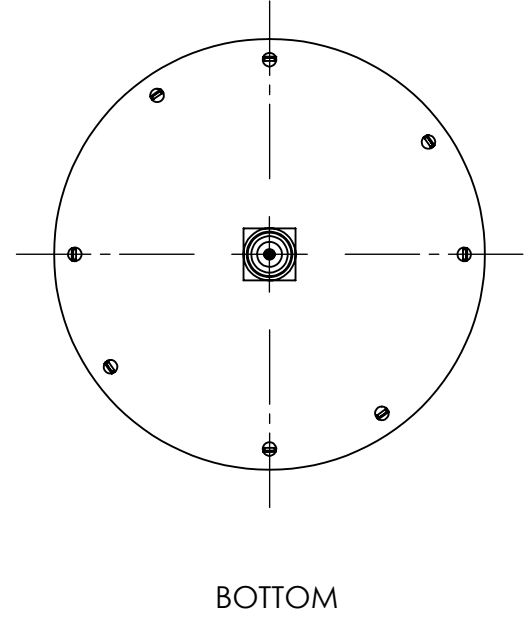
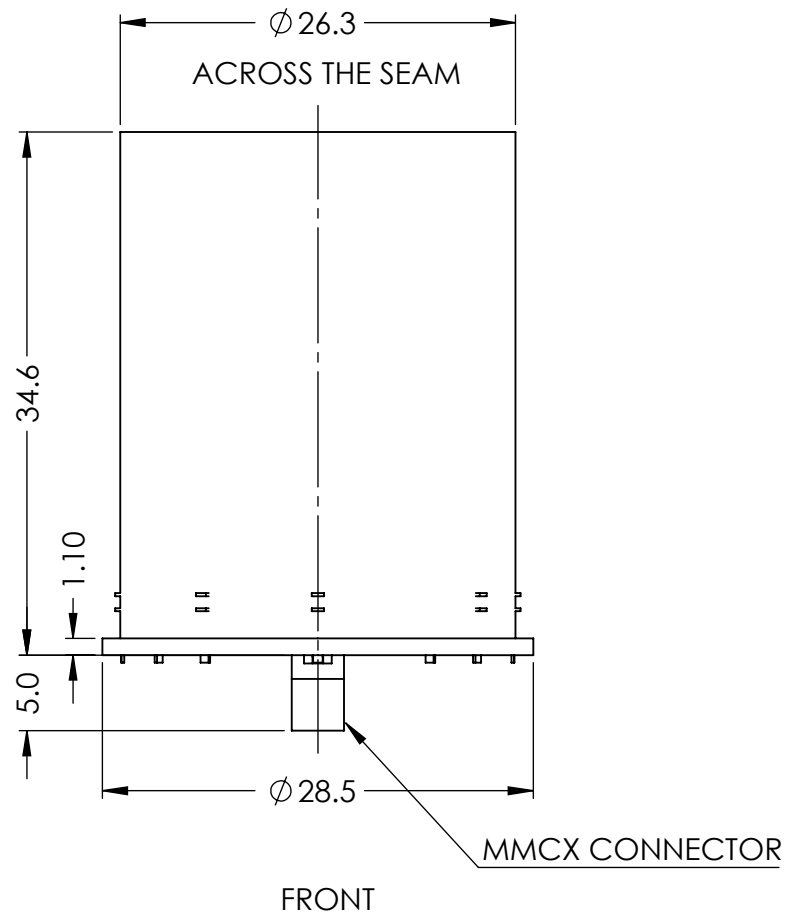
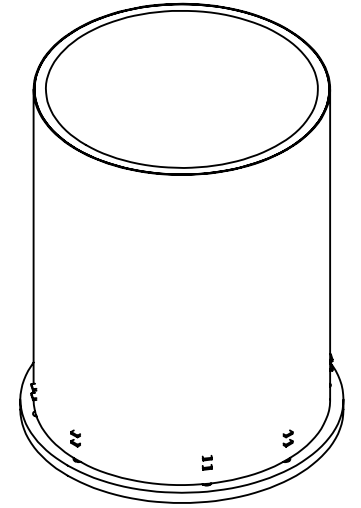
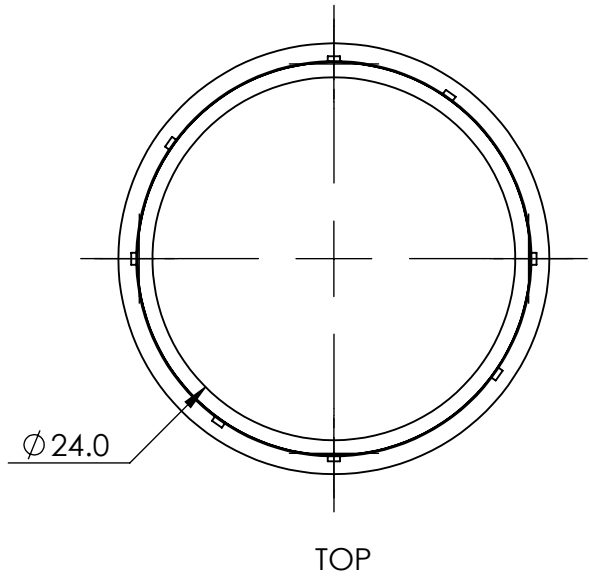
Mechanical Specifications

Parameter	Specification
Operating Temperature Range	-40 to +105°C
Cabling and Connector	No cable, male SMA connector





DRAWING REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE	2021-12-15	SZ



ITEM 108-00082-01 REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE	2021-12-15	SZ

UNLESS OTHERWISE SPECIFIED:	NAME	DATE
DIMENSIONS ARE IN MM	DRAWN	SZ 2021-12-15
TOLERANCES:	CHECKED	ZX 2021-12-15
FRACTIONAL \pm	ENG APPR.	NPC 2021-12-15
ANGULAR: MACH $\pm .5^\circ$ BEND \pm	MFG APPR.	
ONE PLACE DECIMAL ± 1.0	Q.A.	
TWO PLACE DECIMAL $\pm .50$		
INTERPRET GEOMETRIC TOLERANCING PER:	CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.	
	DO NOT SCALE DRAWING	

MAXTENA, INC		
TITLE: 108-00082-01 M9HCT-EMB		
SIZE	DWG. NO.	REV
B	117-00547-01	A
CAGE CODE: 5KQH7	SCALE: NONE	SHEET 1 OF 1

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