



# M9HCT-A-SMA

L1: GPS, GLONASS, GALILEO, BEIDOU  
L2: GPS L2C, GALILEO E5B, GLONASS L30C  
L5: GPS  
L-band  
Part #: 100-00174-01



## Description

The M9HCT-A-SMA is an active multi-frequency, high-accuracy, GNSS antenna 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 L1-only antennas can provide. The antenna is built on proprietary Maxtena Helicore® technology providing exceptional pattern control, polarization purity and high-efficiency in a compact form factor. It features an integrated SMA connector and rugged IP67 automotive grade components. The M9HCT-A-SMA is ideal for applications requiring minimal integration effort or for retrofitting existing products. The antenna is equipped with an O-ring.

## 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
- Rugged IP67 rating with SMA mount
- 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



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### 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

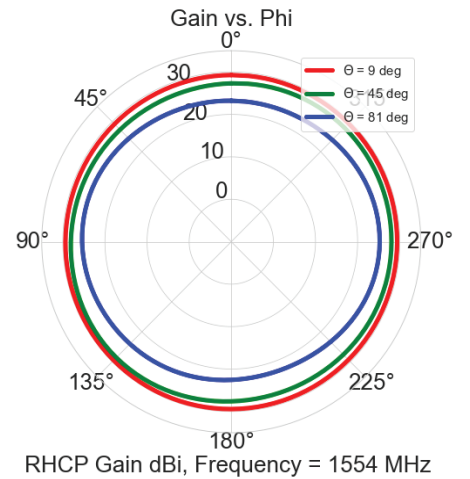
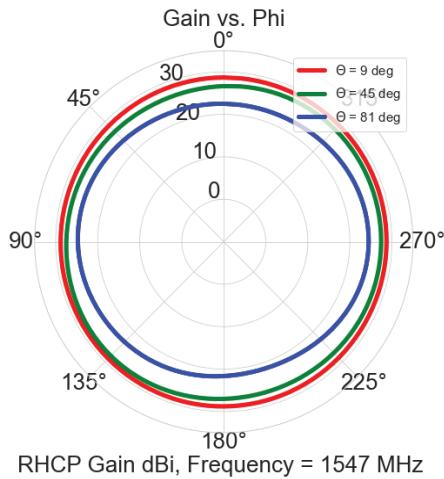
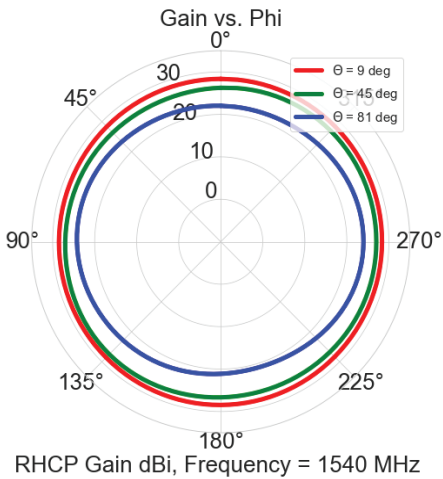
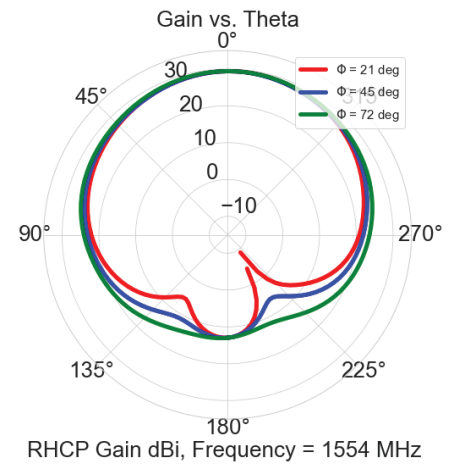
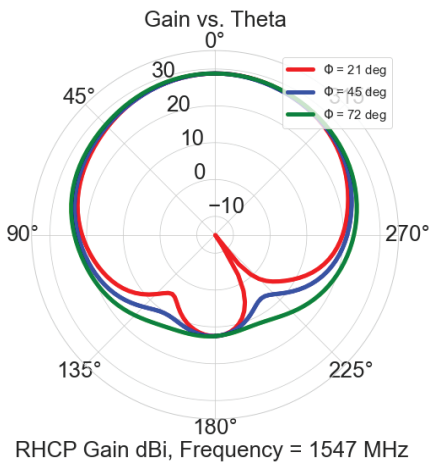
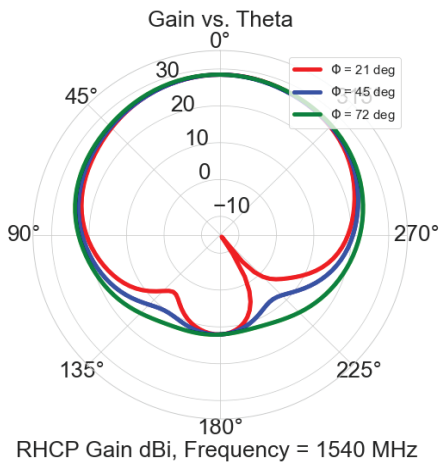
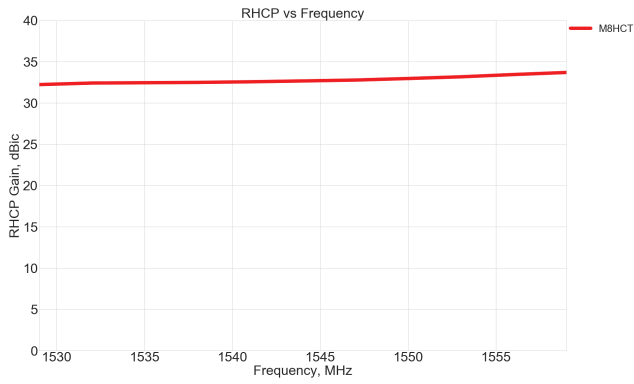
### RF Specifications

Parameter	
Conducted Gain	30 dB ±3 dB
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

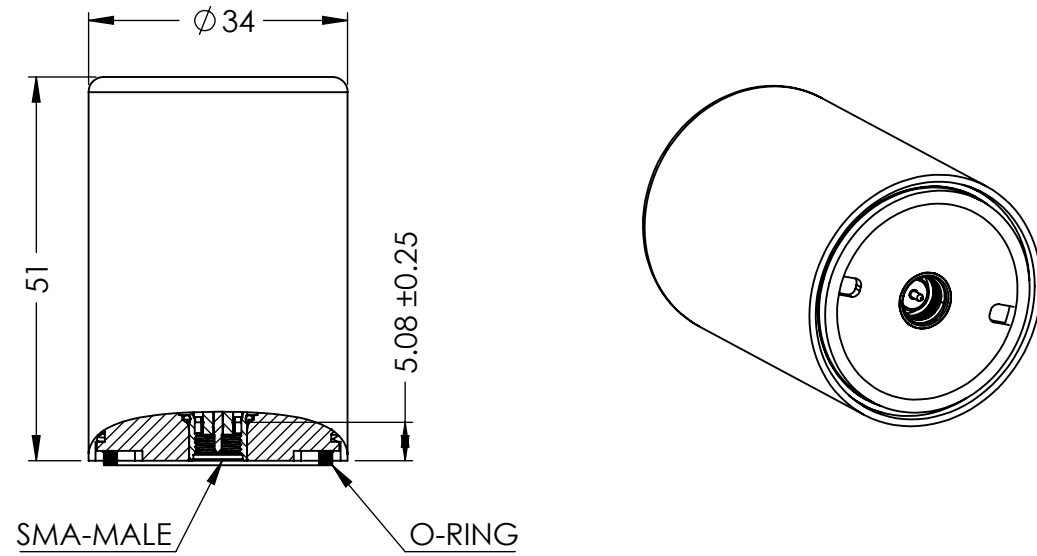
### Mechanical Specifications

Parameter	Specification
Operating Temperature Range	Ø 34 x 51 mm
Environmental Standards	IP67 rating
Operating Temperature Range	-40 to +105°C
Cabling and Connector	No cable, male SMA connector



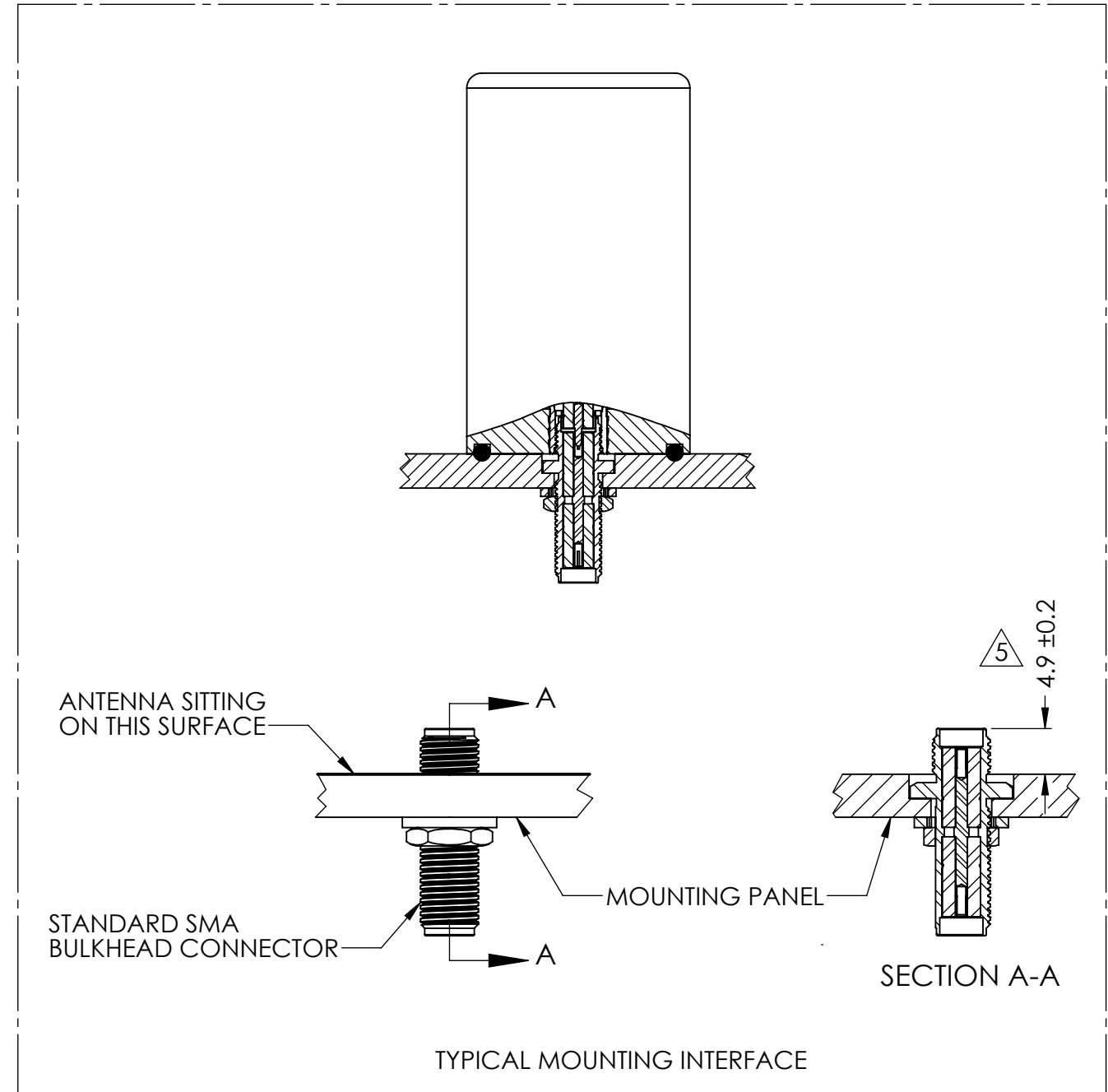


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NOTES:

- CONNECTOR TYPE: SMA-MALE.
- HOUSING MATERIA: ABS/PC.
- COLAR: BLACK.
- DUST AND WATER-RESISTANCE: IP67.
- RECOMMEND A 4.9MM MOUNTING HEIGHT FOR MOUNTING INTERFACE SEALING AND ELECTRICAL CONNECTION
- ASSEMBLY TORQUE SHALL BE NO MORE THAN 8 IN\*LB

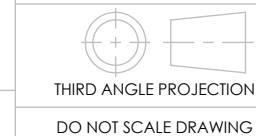


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TOLERANCES:	CHECKED	ZX 2021-06-10
FRACTIONAL ±	ENG APPR.	NPC 2021-06-10
ANGULAR: MACH ± .5° BEND ±	MFG APPR.	
INTEGER ± 2	Q.A.	
ONE PLACE DECIMAL ± 1.0		
TWO PLACE DECIMAL ± 0.50		
INTERPRET GEOMETRIC TOLERANCING PER:		



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SIZE <b>B</b>	DWG. NO. <b>117-00437-01</b>	REV <b>A</b>
CAGE CODE: 5KQH7	SCALE: NONE	SHEET 1 OF 1