



# M9HCT-A-SMA

L1: GPS, GLONASS, GALILEO, BEIDOU  
L2: GPS L2C, GALILEO E5B, GLONASS L3OC  
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 | $\leq 0.5$      |

#### 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

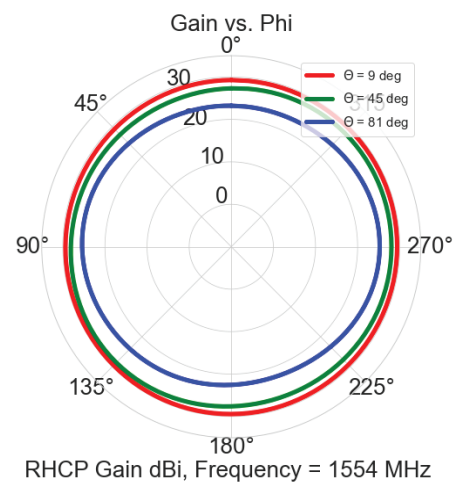
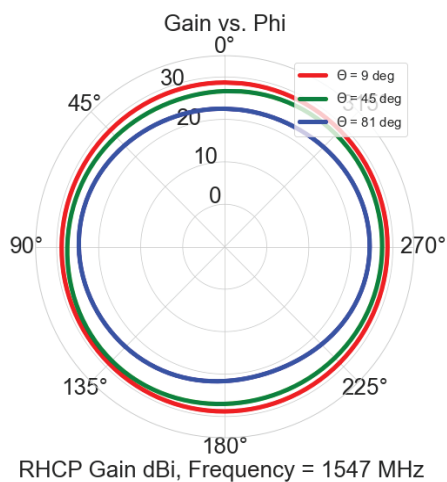
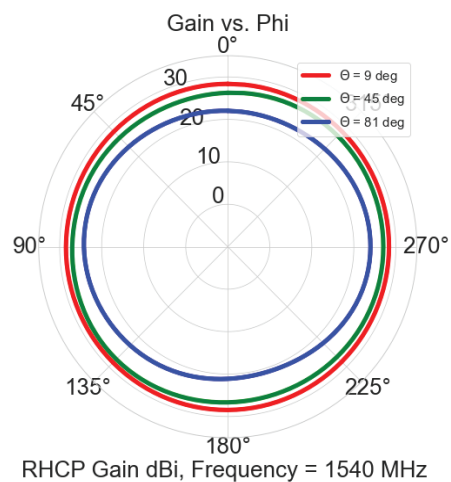
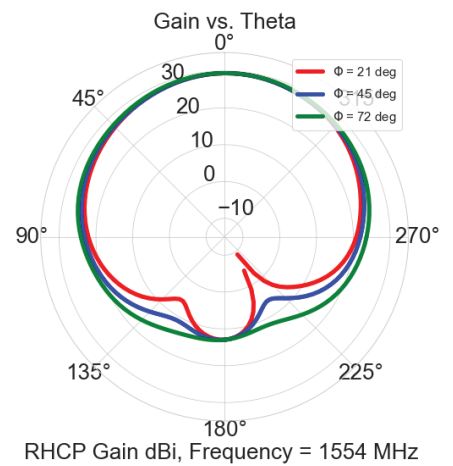
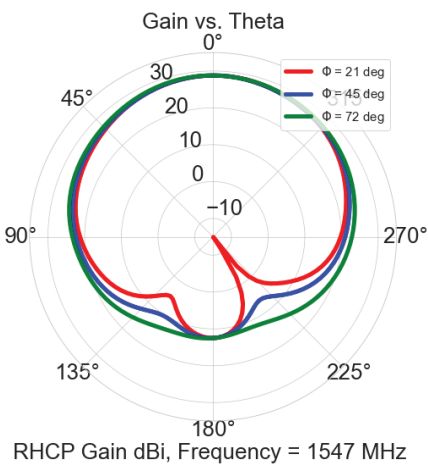
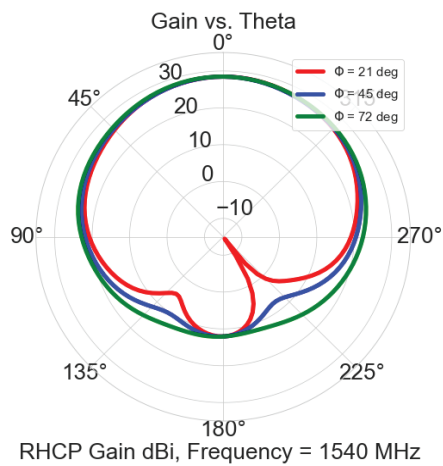
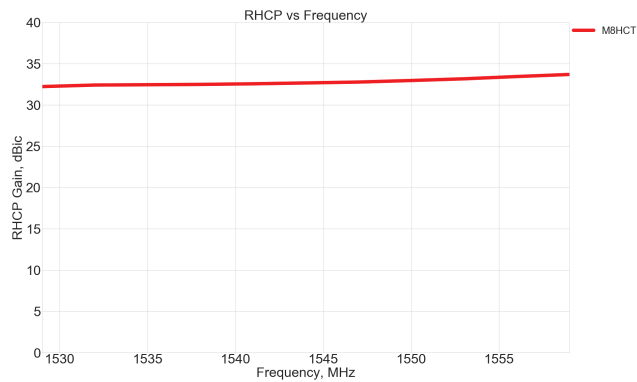
| Parameter                |                                      |
|--------------------------|--------------------------------------|
| Conducted Gain           | $30 \pm 3$ dBi                       |
| Noise Figure             | 1.5 dB typical, 2 dB max             |
| Voltage                  | 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 | $\varnothing 34 \times 51$ mm |
| Environmental Standards     | IP67 rating                   |
| Operating Temperature Range | -40 to +105°C                 |
| Cabling and Connector       | No cable, male SMA connector  |



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