



M1593CWT

L1: GPS, GLONASS, GALILEO, BEIDOU
L2: GPS L2C, GALILEO E5B, GLONASS L3OC
L5: GPS L5, GALILEO E5A
L-band

Part #: 100-00191-01

Description

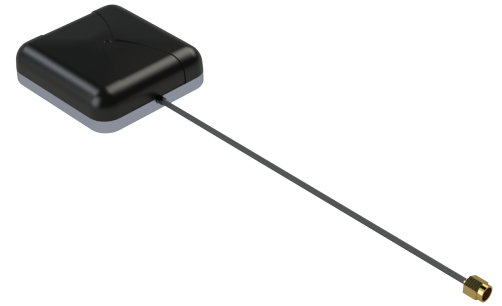
The M1593CWT is an active multi-frequency, high accuracy, GNSS antenna for the L1/ L2 GPS, Galileo, Beidou GLONASS, and L- band correction services. The antenna is designed for applications requiring greater accuracy than L1 only antennas can provide. The antenna's excellent radiation pattern, exceptional out-of-band rejection, minimal group delay variation, and low noise figure ensures optimal performance of GNSS systems. It features a 5 m cable with an integrated SMA connector. The M1593CWT is ideal for applications requiring minimal integration effort or for retrofitting existing products and is rated IP67. This antenna is built on Maxtena's proprietary ConformalWave technology providing expectational multipath rejection and noise mitigation. The M1593CWT is manufactured using automotive grade components and is also offered for embedded applications.

Electrical Specifications

Parameter	Specification	
Frequency Range	1197-1249 MHz	1559-1606 MHz
Peak Efficiency	39%	40%
Realized Gain	2.6 dB	3.3 dB
Axial Ratio	≤ 1.5 dB @ Zenith	≤ 2.7 dB @ Zenith
VSWR	≤ 2:1	≤ 2.3:1
Beamwidth	117°	100°
Polarization	RHCP	
Conducted Gain	28 dB ± 3 dB	
Noise Figure	≤ 2 dB	
Voltage	3.0 - 5.0 V	
Current	≤ 35 mA	
Out of Band Rejection	40 dB Typ.	
Group Delay Variation	Less than 5 ns over GNSS bands	
EMI Immunity Out of Band	30 V/m	
ESD Circuit Protection	15 kV human body model air discharge	

Phase Center Variation

Parameter	Specification
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



Features

- Concurrent GNSS reception on L1: GPS, GLONASS, Galileo, Beidou and L2: GPS L2C, Galileo E5B, and GLONASS L3OC
- L-band Correction services
- Rugged IP67 rating
- Small form factor
- GIS, RTK and other high accuracy GNSS applications
- Low Power Consumption
- Minimal phase center variation over azimuth and elevation
- Negligible group delay variation
- Automotive grade housing

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
- Rail and Automotive



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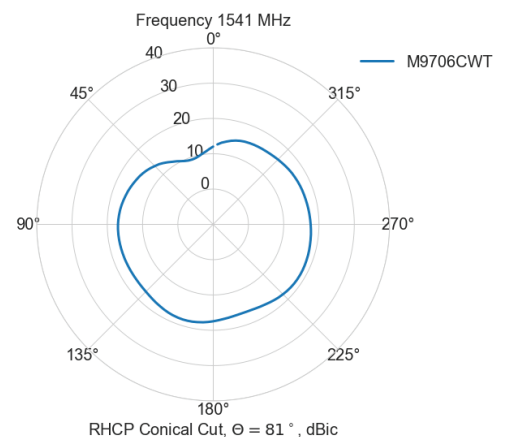
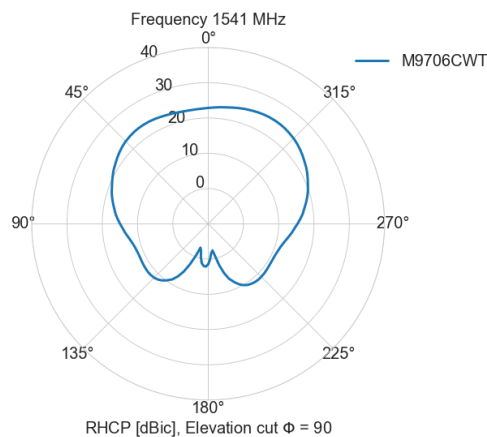
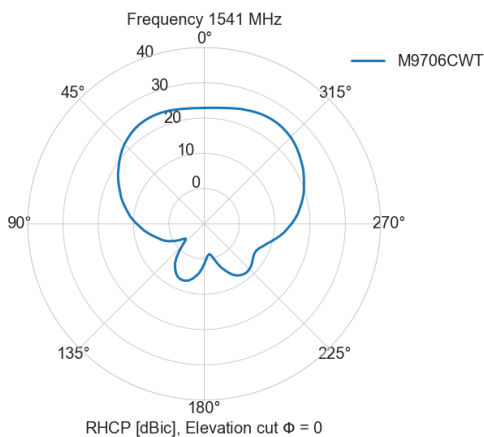
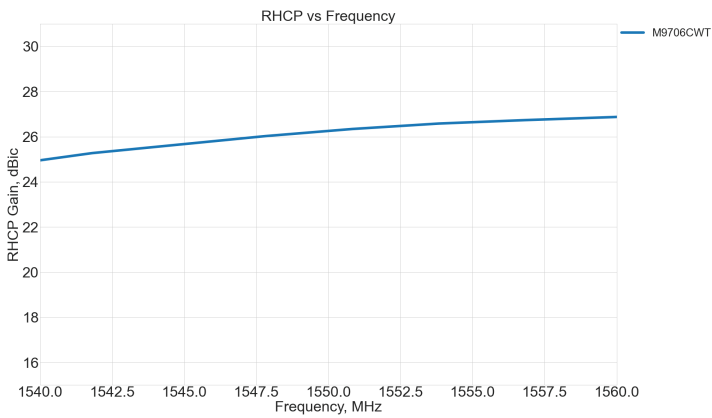
L-band corrections services:

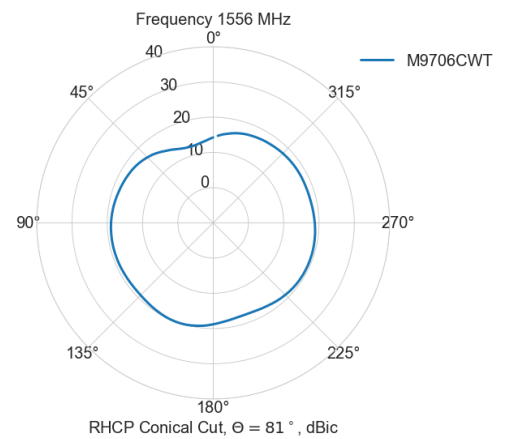
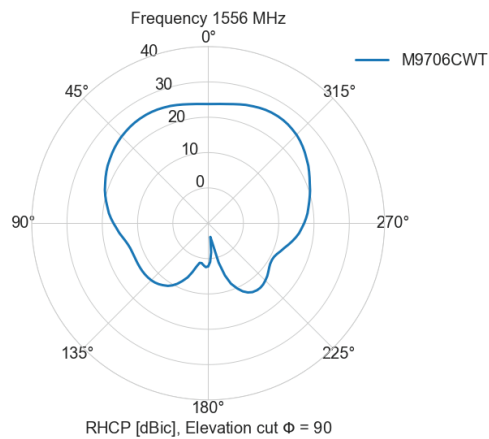
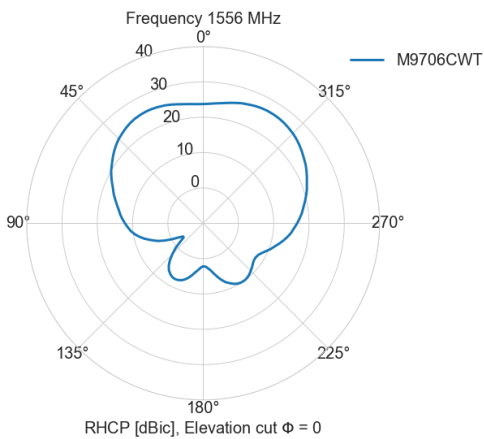
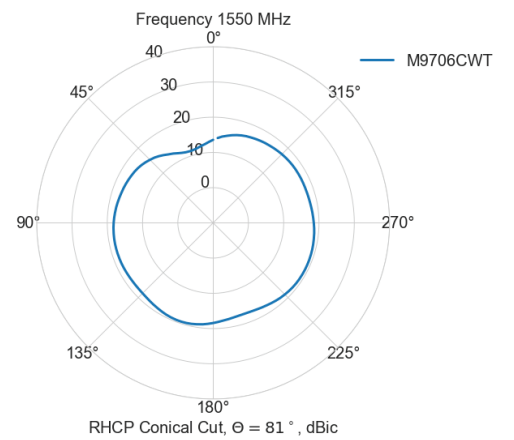
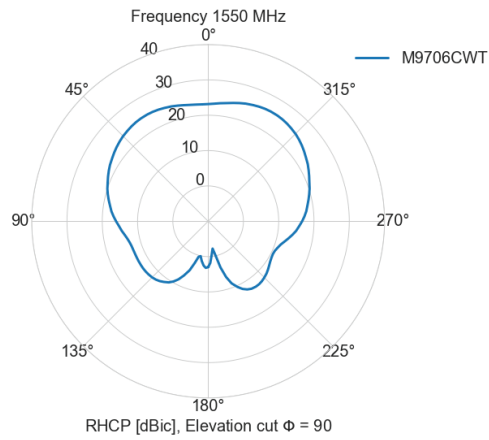
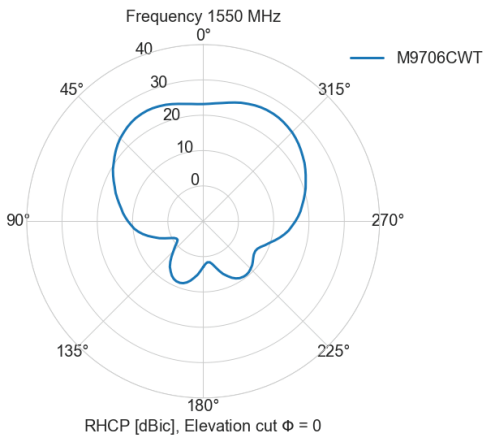
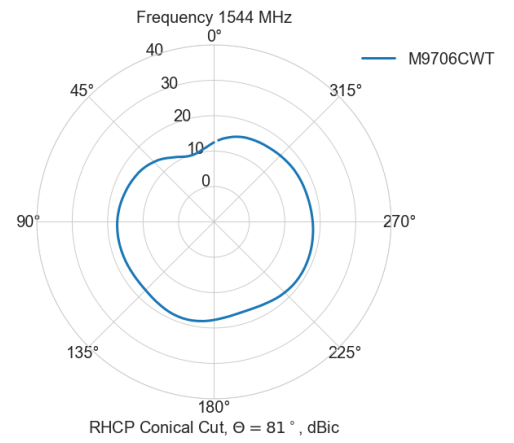
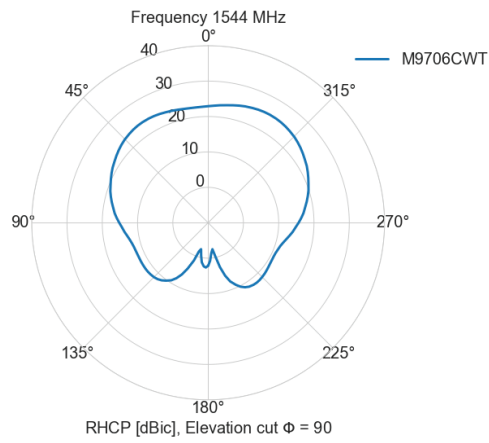
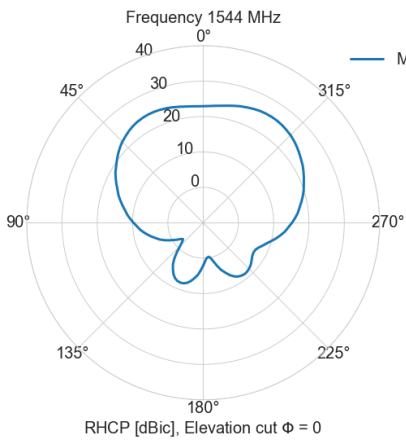
Parameter	Specification
Frequency	1539 - 1559 MHz
Gain	1.5 dB
Axial Ratio	≤ 0.5

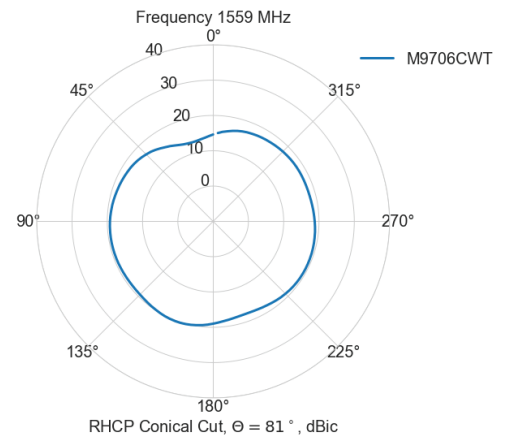
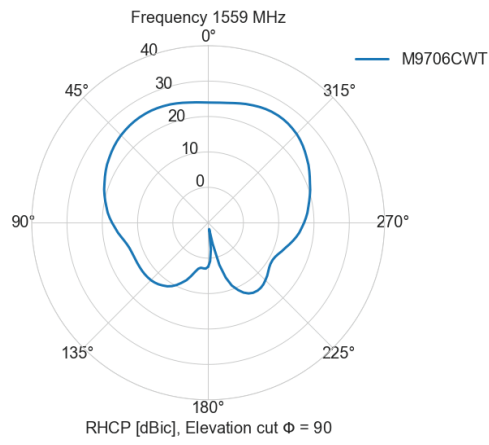
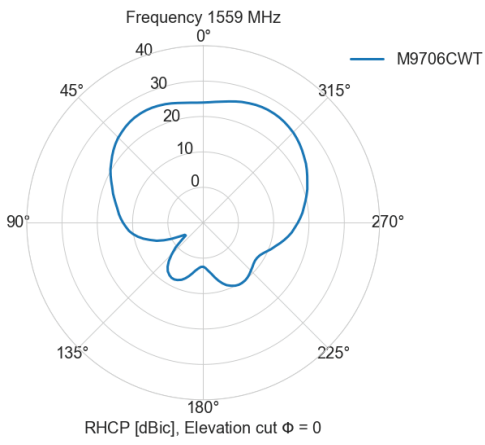
Mechanical Specification

Parameter	Specification
Antenna Dimensions	75 x 70 x 23 mm
Operating Temperature	-40°C to 105°C
Connector Type	SMA, SMB, MCX (customer choice)
Mounting Type	Magnetic base, fixed installation option
Weight	230 g (w/ cable) 167 g (w/o cable)
Radome color	Black
Certificates	IP67

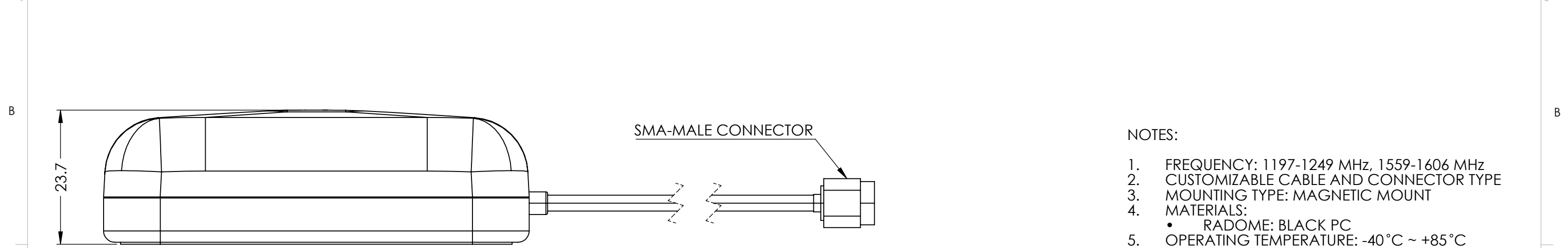
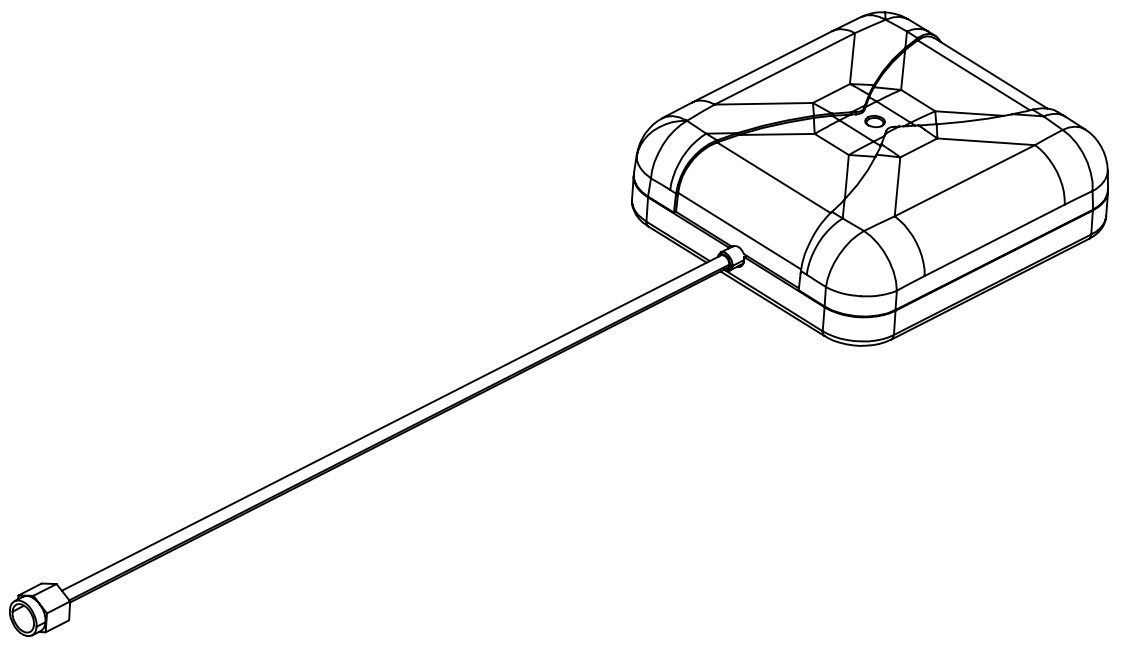
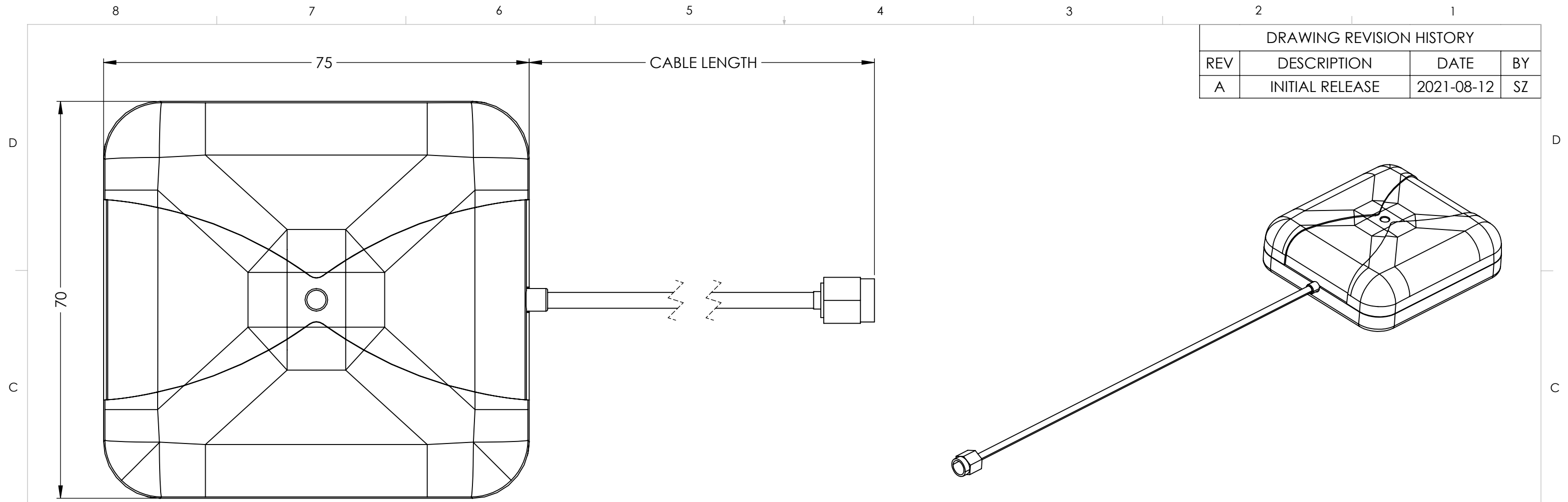
*Mounted on Ground Plane of 15 x 15 cm







DRAWING REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
A	INITIAL RELEASE	2021-08-12	SZ



NOTES:

1. FREQUENCY: 1197-1249 MHz, 1559-1606 MHz
2. CUSTOMIZABLE CABLE AND CONNECTOR TYPE
3. MOUNTING TYPE: MAGNETIC MOUNT
4. MATERIALS:
 - RADOME: BLACK PC
5. OPERATING TEMPERATURE: -40°C ~ +85°C
6. STORAGE TEMPERATURE: -40°C ~ +85°C
7. CERTIFICATIONS: IP67

ITEM 100-00191 REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
1	INITIAL RELEASE	2021-08-12	SZ

100-00191 CONFIGURATION TABLE			
DASH NO	CABLE TYPE	CABLE LENGTH	CONNECTOR TYPE
-01	LMR100	5m	SMA-MALE

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN MM
 TOLERANCES:
 FRACTIONAL: ±
 ANGULAR: MACH ± .5° BEND ±
 ONE PLACE DECIMAL ± 1.0
 TWO PLACE DECIMAL ± .50

	NAME	DATE
DRAWN	SZ	2021-08-12
CHECKED	ZX	2021-08-12
ENG APPR.	NPC	2021-08-12
MFG APPR.		
	Q.A.	

INTERPRET GEOMETRIC TOLERANCING PER:

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

MAXTENA, INC

TITLE: 100-00191 M1593CWT

SIZE	DWG. NO.	REV
B	117-00484-01	A

CAGE CODE: 5KQH7 SCALE: NONE SHEET 1 OF 1