

# Intelligent Connected Vehicle Antenna HX-AULT002

Harxon HX-AULT002 is a highly integrated high performance multiband automotive antenna solution that provide swift, reliable connectivity to meet the increasing demands of seamless communication experience for Intelligent Transportation System (ITS) applications. This integrated antenna solution supports dedicated short range (DSRC) and Cellular vehicle-to-everything (C-V2X) communication. It equips multiple 5G antennas for multiple input and output of data to achieve swift internet download speed in 5G networks. HX-AULT002 also embeds a premium GNSS antenna with high gain for consistent and reliable precise positioning service. This versatile antenna provides the ability to connect vehicles as unmanned commercial vehicles including unmanned short distance delivery vehicles, main line logistic unmanned heavy-duty trucks, and intercity shuttle bus to networks, clouds, other vehicles, roadside infrastructure, and road users of ITS and makes itself an ideal option for OBU, RSU, chipset integrator and Tier-1 manufacturers of the modern automotive industry.



## RELIABLE AND CONSISTENT PERFORMANCE

HX-AULT002 antenna seamlessly integrates multi-constellation multi-band GNSS antenna for reliable precise positioning as well as consistent V2X communication with uniform radiation element. Plus embedding 4 units of 5G antennas ensures smooth internet access makes the antenna a catch in the application of ITS market.

## SEAMLESS INTEGRATION

HX-AULT002 employs a Harxon patented modular structure layout to seamlessly integrate 7 units of broadband antennas into one compact enclosure with effective constrain of fusion noise that arises from antennas integration by effectively managing the balance of space and distance among antennas and ensures great isolation performance among different frequencies. The antenna also takes expandable possibility into consideration by saving space for firmware upgrade.

## RUGGED HOUSING FOR HASH ENVIRONMENTS

The antenna adopts a pleasing low profile radome design to minimize the damage from the overhead objects on the road as well as reduce wind resistance for moving vehicles. The rugged and robust housing ensures the durability and long life while used in tough environment as vibration, harsh weather and high speed travel.

## CUSTOMIZABLE OPTIONS AVAILABLE

To seamlessly deliver versatile antenna solution for integrators of automotive industry, Harxon HX-AULT002 is open for flexible customizable requests as hardware connector, LNA and function expandable options as DSRC, C-V2X, UWB, AM/FM, WIFI dual-frequency.

## KEY FEATURES

- Highly integrated automotive antenna for reliable connectivity
- Pleasing low profile radome design minimizes damage from overhead objects
- Modular design for easy integration for various requirements
- Multiple input multiple output(MIMO) design for fast data transmit
- Rugged housing ensures durability in tough environment as vibration, harsh weather, and high speed travel
- Customizable V2X LNA and connector available
- UWB, AM/FM, WIFI dual-frequency antennas available upon customizable request
- IP67 ruggedized protection

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## Performance

<b>Frequency Range</b>	
1x GNSS Antenna	L1/L2/ L5/B1/B2 /G1/G2/E1/E5/E6
5G 1/2 Antenna	824-960M & 1710-2690M 3.3-3.6G & 4.8-5G
5G 3/4 Antenna	1710-2690M 3.3-3.6G & 4.8-5G
2x V2X	5.85-5.925G
<b>Impedance</b>	50 Ohms
<b>Polarization</b>	
GNSS	RHCP
5G/ V2X	linear polarization
<b>Azimuth Coverage</b>	360°
<b>VSWR</b>	
GNSS	≤2.0
5G	≤4
V2X	≤2.0
<b>Gain/Efficiency (typical/average)</b>	
GNSS	4.0dBic
5G 1/2	824M-960M≥35% 1710M-2170M≥40% 2300M-2690M≥40% 3.3-3.6&4.8-5G≥35%

5G 3/4	1710M-2170M35% 2300M-2690M≥35% 3.3-3.6&4.8-5G≥35%
V2X Average Gain	-2.0dBi
<b>GNSS Phase Center Variation</b>	≤2.5mm
<b>Isolation</b>	interelement≤-10dB intersystem≤-15dB

## LNA

<b>LNA Gain</b>	38±2dB
<b>Noise Figure</b>	≤2dB
<b>Output/Input VSWR</b>	≤2.0
<b>Passband Ripple</b>	±2dB
<b>Operation Voltage</b>	+3.3~+12VDC
<b>Operation Current</b>	≤100mA
<b>Differential Propagation Delay</b>	≤5ns
<b>V2X Vice LNA</b>	customizable
<b>V2X Vice LNA Operation Voltage</b>	3.3~12V
<b>V2X Main LNA</b>	customizable
<b>V2X Main LNA Operation Voltage</b>	3.3~12V

## Mechanical

<b>Dimensions</b>	φ135*H57mm (rubber mat/fixed frame not included)
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### Connector

FAKRA-Z female connector, RG174 line (Irradiation), Exterior line length 20cm (Total length 25cm) (DL Line)

<b>Installation</b>	screws fixed
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## Environmental

<b>Operation Temperature</b>	-40°C~+85°C
<b>Storage Temperature</b>	-55°C~+105°C
<b>Humidity</b>	95% no condensation

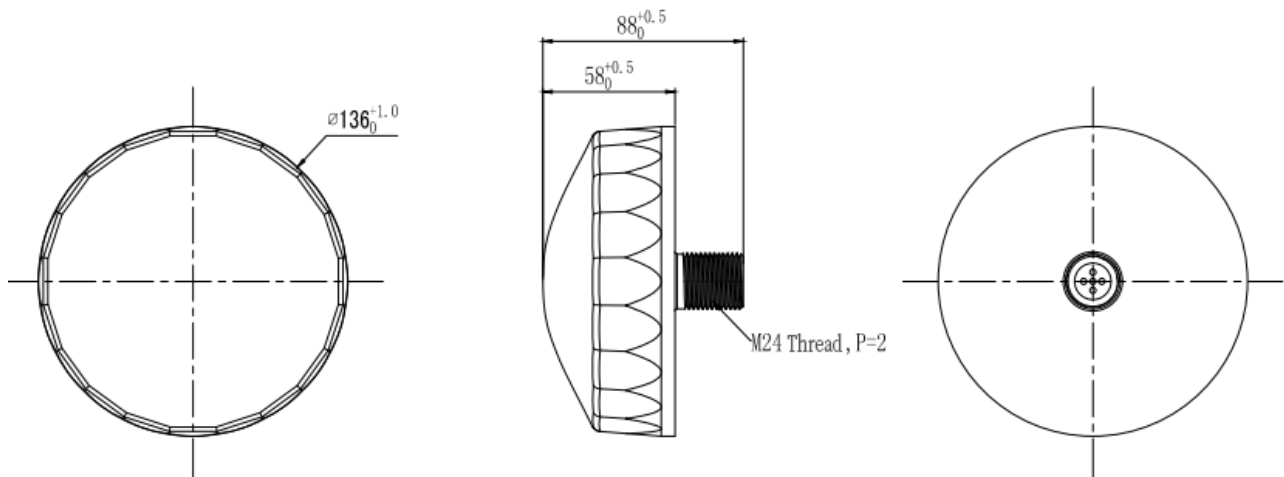
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## Structure Diagram(mm)



TOP VIEW

SIDE VIEW

BOTTOM VIEW

Undeclared Tolerance:±0.3mm