

# KA-7005

DUAL BAND GNSS Active Antenna

## GNSS Active Antenna

The dual band (L1/L5) GPS active antenna KA-7005 filters and amplifies RF signals received from global navigation satellite systems (GNSS) and feed them to a GNSS receiver in the BTS. The GNSS receiver recovers timing and positioning data which is used to provide timing reference for phase synchronization. The antenna is designed with an in-built LNA to be able to be installed long distance from the BTS and with high selectivity to work in (very) close proximity to BTSs, protecting the GNSS receiver from possible co-location interference.



The dual band (L1/L5) antenna and receiver improves the system security. A dual band system gives remarkably better jamming and spoofing protection compared to a single band system. The good axial ratio improves the position accuracy in urban canyons where a lot of reflected and distorted GNSS signals are present.

The high gain, low noise figure and high out-of-band rejection provided by the antenna allows for using longer and cost effective cables, making it very easy and flexible to install.

The dual band (L1/L5) active antenna is a fully ruggedized weather-sealed outdoor unit compliant to IP67 standards and it is compatible with several existing mounting brackets. The antenna is DC fed through the RF cable and has built in lightning strike protection.

## Features

- Dual band
- Support multiple GNSS systems
- High gain
- Low noise figure
- Compatible with several existing mounting brackets
- Built in surge protection



### KA-7005-1110

GNSS Active Antenna and mounting kit,  
for pole (diameter 40-140 mm) or wall mounting.

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## Specifications and Layouts

Antenna						
Systems supported	GPS L1/L5	Galileo E1/E5	GLONASS G1	Beidou B1/B2	QZSS L1/L5	IRNSS L5
Frequency range	1559 - 1610.5   1164-1189 MHz					
Antenna gain at zenith (L1   L5)	4 dBi   4 dBi					
Horizontal beamwidth	360 degree					
Polarization	RHCP					
Axial ratio	1 dB at Zenith (typ)					

LNA	
Frequency range	1559 - 1610.5/1164-1189 MHz
Gain	34±2 dB
Noise figure (typical)	2.0 dB
Output impedance	50 Ohm
Output VSWR	<1.8
LNA 1 dB input compression level	< 496 MHz > 25 dBm < 960 MHz > 20 dBm 1427-1525 MHz > 14 dBm >1785 MHz > 12 dBm In band > -30 dBm
Group delay variation	<10 ns @GNSS system bandwidth
Out-of-band-rejection	< 1000 MHz > 80 dB < 1100 MHz > 60 dB 1270-1525 MHz > 60 dB > 1650 MHz > 70 dB
Input voltage	4 - 12 VDC
Input voltage without damage	-35 VDC +35 VDC
Current consumption	30 mA (typ), 35 mA (max)
Lightning protection	±5 kA, 10/350 µs shield to earth ± 600V/300A, 1.2/50 µs centre conductor to ground

ENVIRONMENTAL SPECIFICATION	
Temperature range	-40 to +85 °C
Ingress protection	IP 67
MTBF	> 2.5 M hours

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MECHANICAL SPECIFICATION	
Connector	N-Female
Grounding terminal	M6
Bracket	Compatible with several existing mounting brackets. Ordering version KA-7005-1110 includes a mounting bracket.
Color	White
Dimensions (diameter x height)	100 mm x 72 mm (excluding bracket)
Weight (excluding brackets)	0.3 kg   0.67 lbs)
Weight (including brackets)	0.5 kg (1.1 lbs)
Ingress protection	IP67
Operating temperature	-40°C to +85°C

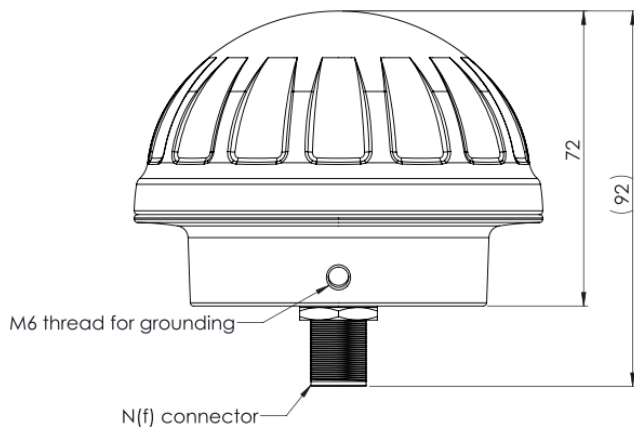
ODERING INFORMATION	
KA-7005-1010	GNSS active antenna only
KA-7005-1110	GNSS antenna and mounting bracket

SHIPPING INFORMATION	
Dimensions (WxLxD)	150 x150 x 135 mm (5.9 x 5.9 x 5.3 in)
Weight	0.65 kg (1.4 lbs)

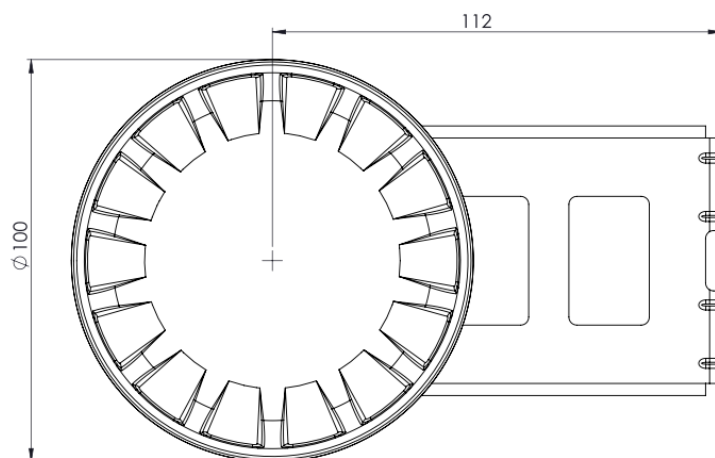
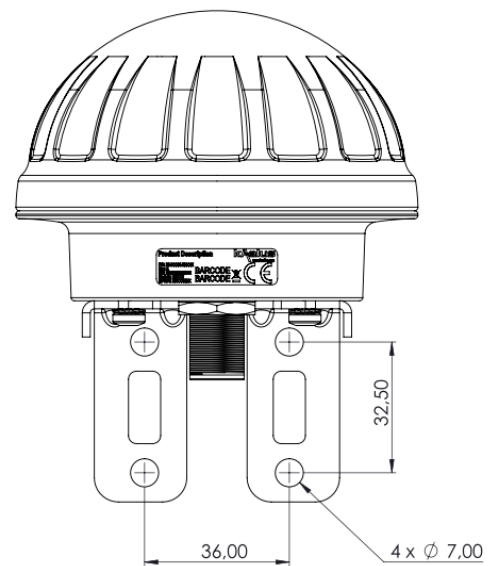
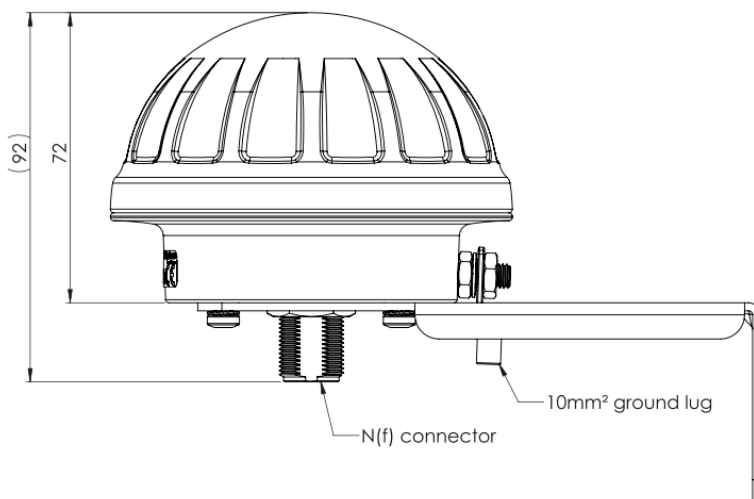
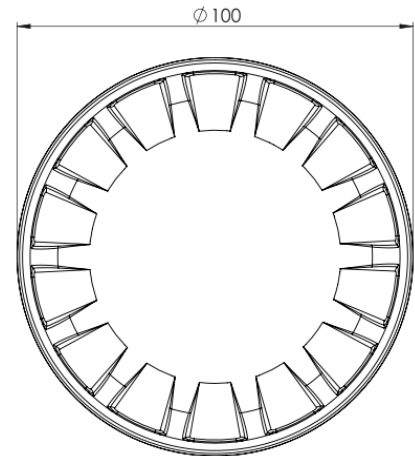
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## Mechanical drawings



This drawing shows KA-7005-1010



This drawing shows KA-7005-1110 with bracket mounted