PRODUCT SERIES DATA SHEET

# GNSS Base Station Antenna

*OMP designs and builds a wide range of RF & Microwave Subsystems and Antennas.*

*This product series data sheet is one in a number of publications where we present general specifications of product series that we have developed.*

*These documents are intended to give an overview of the type of work we do and they will help in determining your requirements for a specific application.*

## Application

This antenna is one in our series of Geodetic, Rover and Aeronautical GNSS antennas. This antenna is typically used in reference stations and provides coverage of all GNSS frequencies with tight phase center stability.

A series of low noise amplifiers (LNA's) is available to meet the requirements of different types of users.

The overall concept of this geodetic antenna is modular and it can be retrofitted with various types of LNA's that cover different frequency bands.

## Configurations

The radiating element has been carefully designed for optimum hemispherical coverage with excellent axial ratio and multipath suppression. It supports all current and future GNSS frequency allocations in addition to the SBAS frequencies used by the augmentation systems.

The standard LNA has a gain of 50 dB and versions with 20, 30 or 40 dB of gain are available. It is optimized for low noise figure and a high intercept point. In combination with extensive low loss filtering this assures a reliable reception even with strong out-of-band interferers present.

## KEY FEATURES

- Covers GPS, Galileo, Glonass and Compass frequency ranges
- Low noise, high IP LNA
- Tight phase center stability
- High multi-path rejection ratio
- Superior axial ratio
- Extensive filtering
- Optional L-Band coverage
- Available with custom bandwidths

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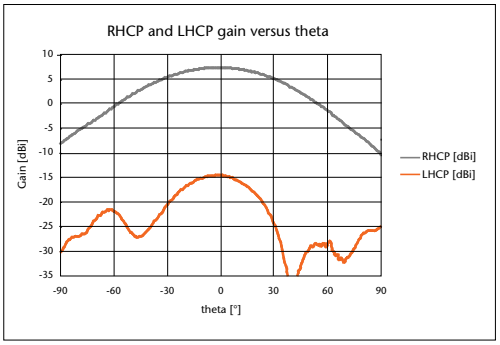
## Options

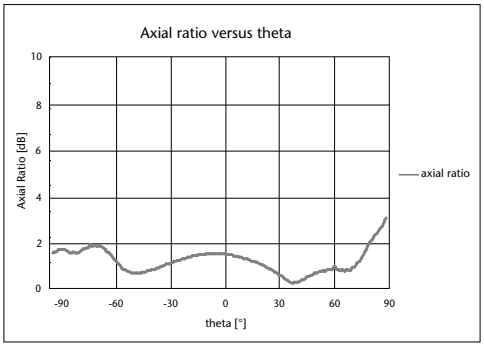
The standard antenna covers GPS L1, L2 and L5, Galileo L1, E5 and E6 as well as Glonass and Compass frequencies.

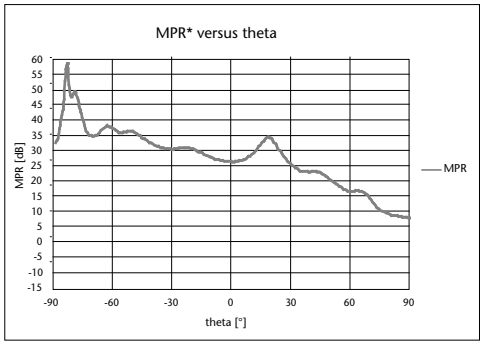
A version that additionally covers the SBAS frequencies and a version that covers GPS L1, L2 and L5 only are available.

This antenna is modular and LNA's with different frequency ranges can be retrofitted to protect your investment.

## Radiation Pattern, AR and MPR at L1

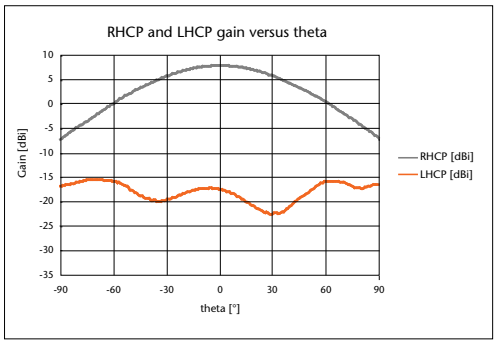


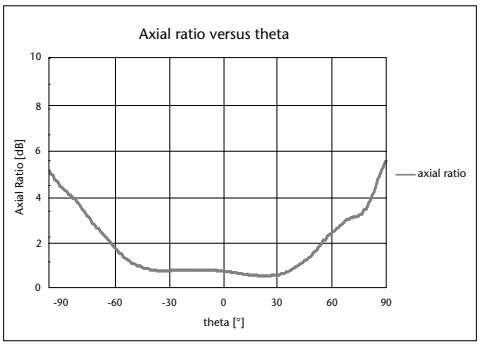



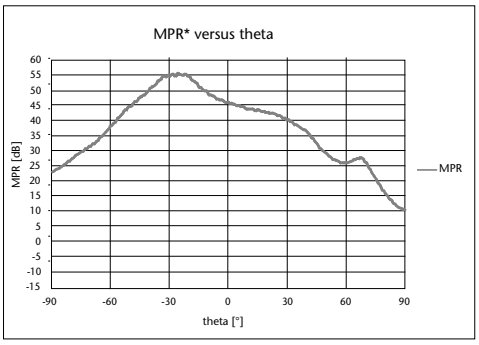




* MPR is calculated as $MPR = \frac{E_{RHCP}(q)}{E_{LHCP}(180° - q)}$.

## Radiation Pattern, AR and MPR at L5



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## Specifications

| Parameter | Value |
|---|---|
| **Electrical Specificiations** | |
| Frequency coverage | GPS L1, L2, L5<br>Galileo L1, E5,E6<br>GLONASS<br>COMPASS |
| LNA gain | 50 dB |
| Connector type | N Female |
| Operating temperature range | -40°C to +70°C<br>-40°F to +158°F |
| Power supply | 3.7 to 20 V @ 50 mA<br>Supplied via coax cable |
| **Mechanical Specificiations** | |
| Dimensions | 31 cm diameter by 25 cm height<br>12” diameter by 10” height |
| Weight | 5 kg – 11 lb |
| Mounting | 5/8” by 11 threaded insert |
| Radome | Extremely durable, weather and impact resistant thermo-plastic |

| Optional Custom Modifications: |
|---|
| TNC type connector |
| 20, 30 or 40 dB of LNA gain |
| Additional L-Band/SBAS frequency coverage |
| Custom frequency ranges |
| Heating element |
| Custom radome |
| Custom marking |

If you have different requirements for a similar design or a completely new set of requirements, please contact us at the numbers listed below or via mail or refer to the sales page on our website for a representative in your area.

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# GNSS Base Station Antenna

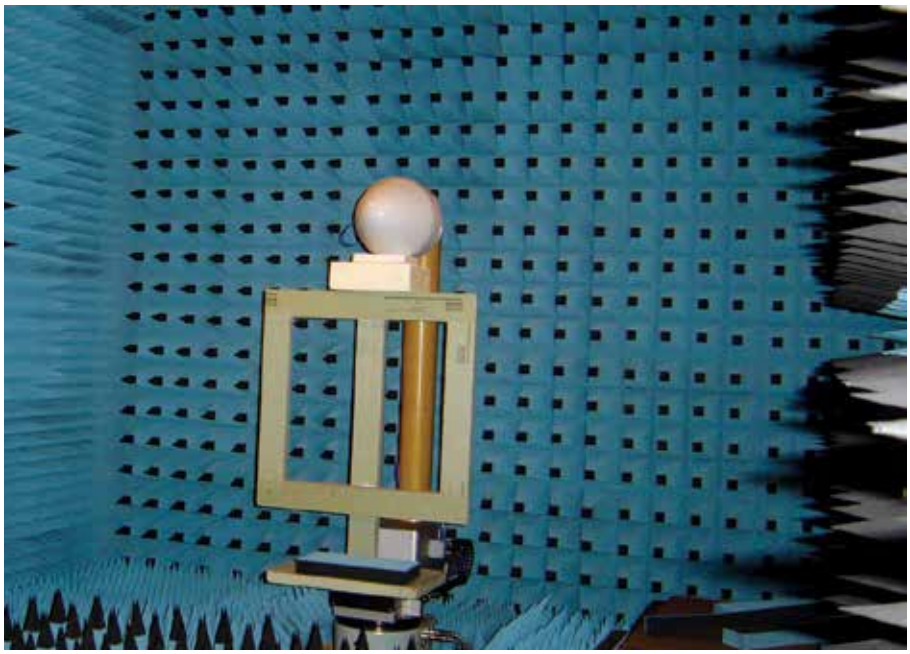
OMP was established in 1996 and specializes in the design, manufacture and support of a wide range of RF & Microwave and Antenna Subsystems.

Our products are integrated in a wide range of applications serving various markets.

Our typical customer is unable to locate a standard product to fit his requirements or may not have an in house design and build capability.

We are an economic, complete and quick answer to this need.

Since we are not a catalog manufacturer who depends on high volume production, your custom requirement is our only priority. We have been exclusively making specials for years, we have produced numerous variations and we draw on that experience to reduce design cost and lead times.



- OMP designs and builds to customer's specifications
- We support products through their entire product lifecycle
- An extensive library of designs is used to create custom products
- OMP uses state-of-the-art circuit and 3D electromagnetic simulations tools
- OMP uses rapid prototyping for fast turnaround
- We will work with our customers on the integration of products designed
- We work with selected partners for agency approval.

## Our Contact Info

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