

## VPS – 5 Gyro SNG Antenna System



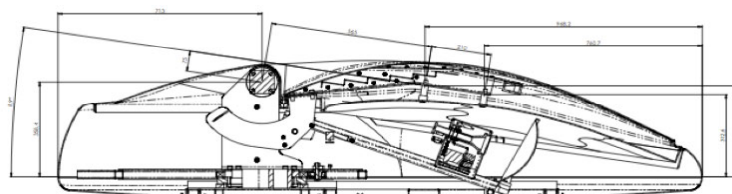
***The first vehicle mounted SNG system that does not have to look for the satellites. It knows where they are !***

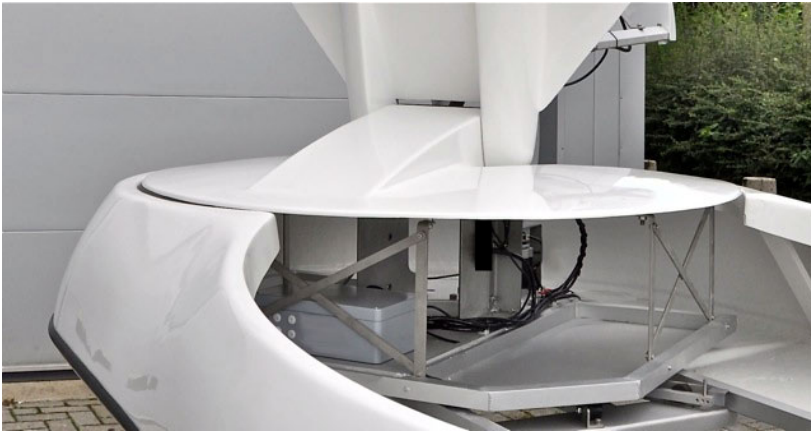


After VPS-II led the satellite industry in to automated acquisition in the mid '90's, using GPS and electronic compass, the VPS-5 represents another major technological breakthrough. It is the first system replacing the electronic compass by a highly accurate GPS supported Gyro system. The VPS-5-Gyro system is able to achieve 0,2 degrees accuracy in azimuth, taking the dish straight to the desired satellite. 30 seconds is all it takes to deploy, point and optimize.

**The Advanced Gyro intelligence is integrated in to the back of the reflector.**

The introduction of step-motors for azimuth, elevation and polarization is another first that increases precision, speed and reliability. Although higher in cost, the step motors greatly reduces the requirement for sensors and calibration, due to the precision and operating principle of the motors. Brakes hold the antenna in position when the power is switched off. When the antenna is not powered and the antenna still needs to be brought in position or stored, the antenna can simply and quickly be moved by releasing the brakes manually. The design, including the use of aircraft aluminium parts, results in the highest wind loading capability in the industry.





Under the cover, there is lots of room for HPA's. Two 400 watt amplifiers fit easily on the turntable. Since they move with the antenna and because of the dual optics design, no rotary joints are required, making the short waveguide run virtually loss-free, making this antenna perform better than most 1.5 meter antennas. As much as 72 dBW may be uplinked with this system. The cover is designed in such a way that cooling of the amplifiers is well preserved. The antenna cover may be ordered with up to eight wide band communications antennas.

Polarisation discrimination is excellent thanks to the Gregorian dual optics design that corrects for phase errors associated with offset antennas. The calibrated step-motor driven polarisation system will move straight to the correct value using a list of initial polarisation offsets available from the various satellites in use. Also maintenance is made simple through easy access to each component.. Operation under the most adverse conditions has been an important design feature.



**VPS-5 Gyro – The fastest and most reliable SNG system available today by far, delivering the power to support HD broadcasting.**

## MSC-05 System Controller

The powerful MSC-05 controller that was developed to interact with the step motors also communicates with the transmission equipment in the SNG acting as a single interface. The MSC-05 also houses a DVB-S2 receiver, which is used to optimize pointing through a detected carrier or noise floor optimization.



The MSC-05 controller is the IGP's third controller specifically designed for automated satellite applications. Although a single control cable connects the antenna and the MSC-05 as the motors are driven from an outdoor processor, the use of step motors requires a more sophisticated solution than DC motors.

An 80 characters front panel, fast processor, built-in GPS, built-in DVB-S2 tuner, SNMP as well as a browser interface that can be easily customized make the MSC-05 the interface of choice. In the controller satellites can be stored with their initial polarisation offsets. Also presets with configurations can be made. Besides the browser interface and SNMP, all relevant functions can also be monitored and controlled through the front panel.



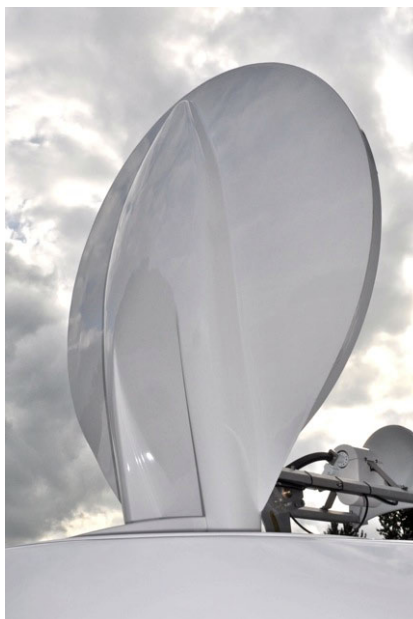
In the unit a power correction table can be stored which will return a calibrated EIRP. This will allow the operator to just enter the EIRP given by the satellite company for a specific channel and location.

In all, setting up a carrier on a specific satellite couldn't be easier: Triggering a single preset is all it takes to set up the dish and establish a carrier on the satellite.

An "Antenna-not-in-stow" indicator output comes standard on the MSC-05. It can be used to avoid the vehicle from driving away with the antenna up.

The GPS receiver built-in to the MSC-05 provides an excellent time base that can be used for automatic execution of events.

The Inclined orbit automation option makes the use of inclined orbit satellites just as easy and automated as non-inclined spacecraft.



## Specifications VPS-5 Gyro with MSC-05 Controller:

### Antenna subsystem:

Type:	Gregorian offset dual optics
Frequency range:	13,75 – 14,5 GHz TX 9,75 – 12,75 GHz RX
Gain:	44,3 dBi TX 42,8 dBi RX
Output Power:	48 – 71 dBW, according to configuraiton
Crosspolar:	-1dB Contour: > 35 dB
VSWR:	< 1,2
Half Power Beamwidth:	1,2°
G/T:	23,1 dB/K
Maximum output power:	16 Watts 56,0 dBW 25 Watts 57,6 dBW 40 Watts 60,2 dBW 80 Watts 63,0 dBW 400 Watts 69,5 dBW 750 Watts 72 dBW
Panic Buttons:	Two
Antenna not-in-stow indication:	from controller
Controller Type:	MSC-05
Interface with antenna controller:	DC Power cable, RS-428 cable
Outdoor System weight:	80 kgs. excluding RF equipment
Outdoor environment:	100% moist, must operate in rain, snow, dust and salt air -40 to + 55° Celsius
Indoor environment:	Humidity 5 to 95%, non-condensing, Temperature -15 - + 45° C.
Maximum Wind-loading:	120 KMH deployed, 200 KMH stowed.
Automatic Positioning:	Multi-GPS supported gyroscope, DVB-S2 tuner and modem interface
Elevation and heading accuracy:	0,2° elevation and azimuth.
Polarization:	Automatic, accuracy 0,2°
Range:	+/- 190° on Azimuth level, 5 – 85° Elevation.
Deployment and pointing:	Approx. 30 seconds.
Secondary satellite option:	points accurately to any satellite within 15 seconds from primary
User interface:	80 characters LED display, browser interface, SNMP
Manual control:	via controller or, on power failure, by hand releasing motor brakes
Power requirement:	110 – 240 Volts – 3A through MSC-05
Indoor System weight:	5 kg.

