



Enhanced Multipath Rejection GPS Antenna GA41



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GA41 is designed to give the best possible local GPS signal reception in connection with the new generation RS41 radiosonde measuring GPS based pressure. GA41 antenna design has an excellent multipath rejection and a highly stable phase center, improving the accuracy of calculated height and atmospheric pressure profiles. Multipath occurs when GPS signal arrives at the GPS antenna from more than one propagation route i.e. multiple propagation paths.

Vaisala Sounding System gets orbital and other navigational data directly from the GPS satellites through GA41 antenna. The local reception is also used to calculate differential corrections for positioning.

sheet metal roofs, water bodies in vicinity or with prominent reflective structures near the antenna require a high performance GA41 antenna to obtain the specified GPS-based pressure accuracy. The best reception is achieved with a location that has a clear view of the sky down to the horizon in every direction.

GA41 is equipped with a 29 dB pre-amplifier. A band-pass filter renders the antenna immune e.g. to Inmarsat or radar interference. GA41 is sealed with epoxy for protection against ambient conditions. It is shipped with a 1.5-meter aluminium pole with a cast-aluminium flange and pole mounting clips and 33 meters of cable.

Features

- Multipath rejection
- Stable phase center
- Navigational data directly from GPS satellites
- 29 dB pre-amplifier
- Band-pass filter provides immunity to interference
- Protective epoxy coating

Installation

GPS signal reception requires an unobstructed line-of-sight to the GPS satellites as far as possible from reflective surfaces. Installation sites on

GA41 Technical Data

Operating Environment

Operating temperature	-40 ... +85 °C
Storage temperature	-55 ... +85 °C
Operating humidity	0 ... 100 %RH
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Operating precipitation	Unlimited
Maximum wind speed	65 m/s

Inputs and Outputs

Primary power	+5 VDC (± 10 %)
Power consumption	35 mA (nominal)
Output impedance	50 Ω
Operating frequency	L1 (1575 MHz)
Polarization	Right-hand circular polarization (RHCP)

Mechanical Specifications

Weight (without cables)	2.9 kg
Height	1.6 m
Mounting	Pedestal flange or pole clamps
Standard cable length	33 m

General

VSWR	2:1
Axial ratio	< 1.5 dB (typically) above 10° elevation
Gain	29 dB (nominal)
Noise figure	2.0 dB (nominal)
3 dB pass-band width	23 MHz (nominal)
Cable attenuation	< 21 dB at 1.5 GHz
Azimuth coverage	360° (omni-directional)
Elevation coverage	0 ... 90° (hemispherical)

