

A220/A221 Smart Antenna Portable, Dual-Frequency GPS RTK Solution



The A220™/A221™ Smart Antennas offer versatile, portable solutions with centimeter-level accuracy powered by Hemisphere GPS Eclipse™ dual-frequency GPS receiver technology.

The durable enclosures house the receivers, antennas and optional radio modems, all in one package. They can be powered through various sources, making A220/A221 Smart Antennas ideal for a variety of applications. Dual-serial, CAN, and pulse output options make these RTK and OmniSTAR® HP/XP receivers compatible with almost any interface.

The A220 Smart Antenna is designed to be mounted on a variety of roving machines and vehicles for kinematic positioning and navigation applications. The A221 Smart Antenna, on the other hand, can be used as a portable base station mounted on a tripod or riser. Additionally, the A221 Smart Antenna has a full graphic display with menu selection keys, and can log data to a standard USB flash drive.



A220

A221

Key A220/A221 Smart Antenna Advantages

- Centimeter-level accuracy using Eclipse technology in a rugged, all-in-one enclosure
- High-precision positioning in RTK, OmniSTAR HP/XP and SBAS/DGPS modes
- Supports NMEA 2000, NMEA 0183, binary, and USB for communication with external devices
- Compatible with RTK reference networks through RTCM v3 or CMR/CMR+ corrections
- SBAS satellite ranging technology increases the number of satellites in view for greater speed and reliability
- Internal radio bay supports Satel and Microhard radios

A220/A221 Smart Antenna

GPS Receiver

Receiver Type: Eclipse L1 & L2 RTK with carrier phase, patented COAST™ technology

Channels: 12 L1CA GPS
12 L1P GPS
12 L2P GPS
3 SBAS or 3 add'l L1CA GPS

Positioning Modes: Autonomous, SBAS, DGPS, RTK, OmniSTAR HP/XP

DGPS Formats: External RTCM v2.x

RTK Formats: CMR, CMR+¹, RTCM v3.x, Proprietary

OmniSTAR Formats: HP, XP

Update Rate: 10 Hz standard, 20 Hz available

Horizontal Accuracy:	RMS (67%)	2DRMS (95%)
RTK: ^{2,3}	10 mm+1 ppm	20 mm+2 ppm
OmniSTAR HP: ^{2,4}	0.1 m	0.2 m
SBAS (WAAS): ²	0.3 m	0.6 m
Autonomous, no SA: ²	1.2 m	2.5m

Environmental

Operating Temperature: -30°C to +65°C (-22°F to + 149°F)

Storage Temperature: -40°C to +85°C (-40°F to +185°F)

Enclosure: IP67, EP455

Compliance: FCC, CE

Power

Input Voltage: 9 – 36 VDC

Power Consumption: < 5 W @ 12 VDC (typical; without radio)

Current Consumption: < 400 mA @ 12 VDC (typical; without radio)

Mechanical

Dimensions: 150 mm (5.9") H x 244 mm (9.6") D

Material: Magnesium alloy/plastic

Mount: Screw/magnetic mount or 5/8" tripod mount

Enclosure: Waterproof, dust proof

Weight: 1.8 kg (4.0 lbs)

Communication

	A220	A221
CAN:	1x	--
USB:	--	1x USB-A 1x USB-B
Serial:	2x	2x (Bluetooth Adapter Support)
PPS:	1x	1x
Protocol:	NMEA 0183, binary, NMEA 2000	NMEA 0183, binary

¹ Receive only, does not transmit this format

² Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity

³ Depends also on baseline length

⁴ Requires an OmniSTAR subscription



* A221 shown above

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