

DGPS MAX

- **DGPS MAX** includes everything you need: GPS, WAAS, OmniSTAR, beacon, RTK, and more
- **DGPS MAX** delivers sub-meter 95% horizontal accuracy to meet demanding positioning requirements
- **DGPS MAX** supports position update rates up to 5 Hz for high performance applications
- *New* Real-Time Kinematic positioning achieves superior accuracy to standard C/A code processing
- *New* raw measurement data output provides all information required for post-processing
- *New* COAST™ technology allows DGPS MAX to operate using correction data up to thirty minutes old
- *New* Setup Wizard configures DGPS MAX in as few as three steps
- *New* user-defined profiles save receiver configurations for later use



Quality System Registration

▶ Too much technology?

There's no such thing. DGPS MAX ensures that you have the features you need when you need them. Everything comes standard.

DGPS MAX delivers accurate differential GPS positioning using corrections from WAAS, OmniSTAR, DGPS beacon stations, or directly from an external RTCM SC-104 source. For high-accuracy applications, use the built-in Real-Time Kinematic engine or output raw measurement data for post-processing. Reconfigure the receiver smoothly and efficiently or load previously saved configurations at any stage of operation using the new Setup Wizard.

▶ WAAS?

The American Federal Aviation Administration is currently testing its Wide Area Augmentation System (WAAS) in preparation for Initial Operational Capability. WAAS-compatible Space-Based Augmentation Systems are also under development throughout the world, including the European Geostationary Navigation Overlay System (EGNOS) and the Japanese MTSAT Satellite-based Augmentation System (MSAS). DGPS MAX is compatible with each of these *free* correction services.

▶ OmniSTAR?

DGPS MAX is also capable of applying high-quality correction data from the OmniSTAR Worldwide DGPS Service. Drawing on information from its global network of reference stations, OmniSTAR uses Virtual Base Station algorithms to ensure that positioning accuracy is independent of distance from a base station. OmniSTAR offers competitive service rates to their subscription-based service.

▶ Beacon?

Navigation authorities around the world have installed DGPS radiobeacon networks that broadcast *free* GPS correction information. DGPS MAX applies these differential corrections to deliver accurate, reliable positioning.

▶ RTK?

CSI Wireless is proud to introduce our new Real-Time Kinematic positioning engine with the DGPS MAX. This robust L1 RTK solution achieves more consistent, accurate positioning than receivers processing only C/A-code position information. After a short initialization, DGPS MAX can deliver 5-cm horizontal accuracy (95% confidence) in real-time.

▶ What is COAST™?

Using our new COAST™ technology, DGPS MAX can apply correction data up to thirty minutes old without seriously affecting positioning accuracy. COAST™ ensures that DGPS MAX is less vulnerable to differential signal outages due to blockages, transmission difficulties, or interference. No other product offers this flexibility. None.

▶ What's the warranty?

CSI Wireless is committed to our customers and products, and offers a limited one-year warranty on parts and labor.

Contact CSI Wireless today to discover how DGPS MAX will meet your positioning needs.



DGPS MAX

www.csi-wireless.com

GPS Sensor Specifications

Receiver Type:	L1, C/A code, with carrier phase smoothing
Channels:	12-channel, parallel tracking (10-channel when tracking WAAS)
WAAS Tracking:	2-channel, parallel tracking
Update Rate:	1 Hz default, 5 Hz max
Horizontal Accuracy:	1 m 95% confidence (DGPS*) 5 m 95% confidence** (autonomous, no SA)
Cold Start:	1 min typical
Antenna Input Impedance:	50 Ω

L-band Sensor Specifications

Frequency Range:	1525 to 1559 MHz
Sensitivity:	-120 dBm for $<10^{-3}$ BER
Tuning Mode:	Manual or automatic
Adjacent Channel Rejection:	50 kHz spacing >25 dB, 1 MHz spacing >60 dB

Beacon Sensor Specifications

Channels:	2-channel, parallel tracking
Frequency Range:	283.5 to 325 kHz
Channel Spacing:	500 Hz
MSK Bit Rates:	50, 100, and 200 bps
Operating Modes:	Manual, automatic, semi-automatic
Cold Start Time:	< 1 minute typical
Reacquisition Time:	< 2 seconds typical
Demodulation:	Minimum shift keying (MSK)
Sensitivity:	1.5 μV/m for 6 dB SNR @ 200 bps
Dynamic Range:	100 dB
Frequency Offset:	± 10 Hz (~ 30 ppm)
Adjacent Channel Rejection:	65 dB ± 1 dB @ f_0 ± 400 Hz

Communications

Serial ports:	1 full duplex, 1 RTCM input
Interface Level:	RS-232C
Baud Rates:	4800, 9600, 19200
CAN Bus:	CAN 2.0B
Correction Input / Output Protocol:	RTCM SC-104
Data Input / Output Protocol:	NMEA 0183
Raw Measurement Data:	Proprietary binary (RINEX utility available)
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Event Marker Input:	HCMOS, active low, falling edge sync, 10 kΩ, 10 pF load

Environmental

Operating Temperature:	-32°C to +74°C
Storage Temperature:	-40°C to +85°C
Humidity:	95% non-condensing
EMC:	FCC Part 15, Subpart B, Class B CISPR 22

Power

Input Voltage Range:	9.2 to 48VDC
Reverse Polarity Protection:	Yes
Power Consumption:	< 6.5 W
Current Consumption:	< 550 mA @ 12VDC
Load Dump Protection:	Up to 86VDC
Antenna Voltage Output:	5VDC
Antenna Short Circuit Protection:	Yes

Mechanical

Enclosure:	Powder-coated aluminum
Dimensions:	203 mm L x 125 mm W x 51 mm H (8.0" L x 4.9" W x 2.0" H)
Weight:	0.80 kg (1.76 lb)
Display:	2-line x 16-character LCD
Keypad:	3-button
Power Switch:	Push-button
Power Connector:	2-pin miniature
Data Connector:	DB9-socket
Antenna Connector:	TNC-socket

Pin-out

Main Port	
Pin 2	Transmit data (TXD)
Pin 3	Receive data (RXD)
Pin 5	Signal ground

RTCM Input Port

Pin 2	Transmit data (TXD)
Pin 3	Receive data (RXD)
Pin 5	Signal ground
Pin 6	Event marker input
Pin 9	1 PPS

CDA-2 Antenna

GPS Freq. Range:	L1 (1575 MHz ± 10 MHz)
GPS LNA Gain:	28 dB
L-band Freq. Range:	1525 to 1560 MHz
L-band LNA Gain:	28 dB
Beacon Freq. Range:	283.5 to 325 kHz
Beacon LNA Gain:	34 dB

Dimensions:	129 mm dia x 98 mm H (5.08" dia 3.85" H)
Weight:	0.456 kg (1.0 lb)
Antenna Connector:	TNC-socket
Enclosure:	Powder-coated aluminum base, polycarbonate dome
Mounting Thread:	1-14-UNS-2B
Input Voltage:	4.85 to 15.0VDC
Input Current:	50 to 60 mA
Operating Temp.:	-40°C to +85°C
Storage Temp.:	-40°C to +85°C
Relative Humidity:	100% condensing

* SVs > 5, HDOP < 2, RTCM SC-104 correction data from a dual frequency reference station, short baseline, and low multipath environment.

** Dependent upon ionospheric activity and multipath

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CSI Wireless Dealer



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