

Placer GPS 450/455 PRODUCT BRIEF

KEY FEATURES

Two Configurable Serial Ports

Multiple Interface Protocols

Compatible With Select CAD And In-Vehicle Mapping Applications

Direct Connection to Mobile Computer

Direct Connection to Select RF Data Radio

Reporting Based On Time, Time & Distance, Or Polling

Optional Dead Reckoning Sensor

TRIMBLE MOBILE SOLUTIONS

PROVEN, RELIABLE, ROBUST, VERSATILE GPS MOBILE UNIT IDEAL FOR PUBLIC SAFETY FIRST-RESPONDERS AND COMMERCIAL FLEET APPLICATIONS

The Placer GPS 450/455 mobile unit provides a versatile and economical platform for mobile positioning applications. The Placer will reliably provide vehicle location, heading, speed, and time in any weather condition, anywhere in the world.

Placer Has The Features You Need

With two independent configurable serial ports (both may be used with a USB adapter), multiple interface protocols (TAIP, NMEA, TSIP), and a digital I/O port, the Placer may be configured to work with most computer aided dispatch (CAD) systems and in-vehicle mapping software used by public safety departments and utility companies. For communication with a CAD system the Placer can be connected directly to an in-vehicle laptop with wireless connectivity or directly to select RF data radio models. Automatic location reports from the Placer can be scheduled based on time, or time and distance.

The Placer can also be polled on demand and the reporting schedule changed to an "on the fly" setting by the CAD system using Trimble ASCII Interface Protocol (TAIP) commands.

Optional Dead Reckoning

In addition to all the features of the Placer 450, the Placer 455 has an additional port that will accept input from an optional Dead Reckoning (DR) sensor for use in urban canyon environments or any areas of operation where there will likely be frequent intermittent loss of satellite signal due to obstructions (tall buildings, tunnels, canyons, etc). By blending GPS and DR continuously, the Placer 455 DR unit minimizes the effects of GPS outages, resulting in improved position accuracy.

Low Cost Of Ownership

Trimble Mobile Solutions Placer GPS 450/455 units have been installed in tens of thousands public safety first-responders and commercial fleets worldwide. You can rely on The Placer's proven track record of exceptional performance and life expectancy -- typically working reliably through multiple replacement cycles of mobile laptops and RF data radios. What's more, superior reliability reduces maintenance costs and back-up spare units represent a minimal investment, which further contribute to a low cost of ownership.





managing your mobile resources

STANDARD COMPONENTS

(Part Numbers 30838-XX and 30376-XX; XX=10, 20, 30, 90)

- In-vehicle Mobile Unit (with integrated mounting bracket)
- Power cable with 1A fuse (reverse polarity protection)

GENERAL SPECIFICATIONS

Power (typical):

Source	10-32 VDC, capable of 500mA
Operation	.250mA @ 13V; 3.25W (Max)
Standby	10mA @ 13V; 1.3W
Backup	Lithium battery, 3.6VDC; 5-year shelf life

Serial ports

Radio (450/455)	(1) RS-232 DTE
MDT (450)	(1) RS-232 DCE
MDT/RTCM (455)	(2) RS-232 DCE

Serial port speed, bps . . . 300, 600, 1200, 2400, 4800, 9600(def), 19200, 38400

Message formats TAIP, TSIP, NMEA-0183 Version 2.1, RTCM SC-104

Comm protocols TCP/IP (CDPD), MAP27, RDI, Transparent TAIP

Digital I/O port Inputs: (2) switch closures

Outputs (2) 300mA low-side drivers; ignition; GPS, power, 1 pps

FIRMWARE SPECIFICATIONS

Event triggers Time/Distance Reporting (TDR); Inputs (2)

Event actions Report to base (1 destination); Report to serial port

Messaging Accommodates a variety of mobile data terminals, laptops, and Windows CE platforms

Output data Latitude, longitude, altitude, speed, heading, time, and events

GPS SPECIFICATIONS

Receiver L1 frequency, C/A code (SPS), 8-channel continuous tracking receiver, 16 correlators

Update rate Once per second; up to once per 9,999 seconds

Accuracy, S/A¹

Position, meters (1 sigma)	CrossCheck	DR ²
Non-Differential	58	45
Differential (1 Hz) ³	2	1
Velocity (1 sigma)		1 meter/second
Time		UTC to nearest microsecond

First acquisition

Typical (seconds)	CrossCheck	DR
Cold start	<120	<120
Warm start	<45	<2
Hot back-up	<20	<2
Reacquisition	<2	0

Datum WGS-84

Differential Inverted Differential (non-DR operation), RTCM SC-104, TAIP DC and DD messages via network

HEADING SENSOR SPECIFICATIONS

Gyro Piezoelectric vibrating beam

Port Gyro, Odometer, Backup light

Odometer pulse 100mV to 28V peak to peak signal (user-supplied)

digital frequency proportional to speed. Min. output 2,000 pulses/mile.

Recommended output: >8,000 pulses/mile.
Use signal conditioner for analog.

PHYSICAL SPECIFICATIONS

Integrated Electronics

Assembly

450 Sheet metal, gold anodized

455 Sheet metal, black anodized

Heading sensor Injection molded plastic

Size

45X 229mm W x 95mm D x 33mm H

9" W x 3.75" D x 1.28" H

Heading sensor 102mm W x 64mm D x 92mm H

4" W x 2.5" D x 3.625" H

Weight

450 0.43 kg (0.95 lbs)

455 0.45 kg (1 lbs)

Heading sensor 0.16 kg (0.35 lbs)

Connectors (450/455)

GPS antenna SMB (receptacle)

Radio DB9 (receptacle)

MDT (450) DB9 (receptacle)

MDT/RTCM (455) DB9 (receptacle)

Digital I/O DB9 (receptacle)

Heading sensor (455): DB9 (receptacle)

Power Switchcraft TA3 (plug)

ENVIRONMENTAL SPECIFICATIONS

Temperature

Operating -40°C to +60°C⁴

Non-operating -55°C to +85°C

Humidity 5% to 95% RH, non-condensing at +40°C

Altitude -400 to +5,000 meters

Velocity 446 meters/second (999 miles/hour)

Vibration

0.008g2/Hz5Hz to 20Hz

0.05g2/Hz20Hz to 100Hz

-3dB/Octave100Hz to 900Hz

Shock 40g for 11 milliseconds

Casing Splash-resistant and dust-resistant

ACCESSORIES (ORDERED SEPARATELY)

- GPS antennas/cables: Permanent or magnetic mount
- Heading sensor (455 only) and cable
- FleetVision® and FleetVision External Systems Interface SDK
- Installation and Operations Manual
- Serial and Digital I/O cables

FOR MORE INFORMATION

Visit our website at www.trimblems.com or send an email to sales@trimblems.com.

¹ All GPS receivers are subject to degradation of position and velocity accuracies under Department of Defense imposed Selective Availability (S/A).

² In DR/GPS operation; in DR only operation, an additional 3% to 5% of distance traveled up to 1 km.

³ At least five satellites; PDOP <4.

⁴ Operating temperatures for the Heading sensor are -20°C to +60°C.

Specifications subject to change without notice.

Trimble Mobile Solutions

3650 Concorde Parkway
Suite 150
Chantilly, VA 20151
USA
1-877-883-4367 (Toll Free)
+1-703-502-5600 Phone
+1-703-502-8165 Fax

© 2006, Trimble Navigation Limited. All rights reserved. Trimble and the Globe & Triangle logo are trademarks of Trimble Navigation Limited, registered in the United States Patent and Trademark Office and in other countries. Placer is a trademark of Trimble Navigation Limited. All other trademarks are the property of their respective owners. PN 022506-018 (09/06)