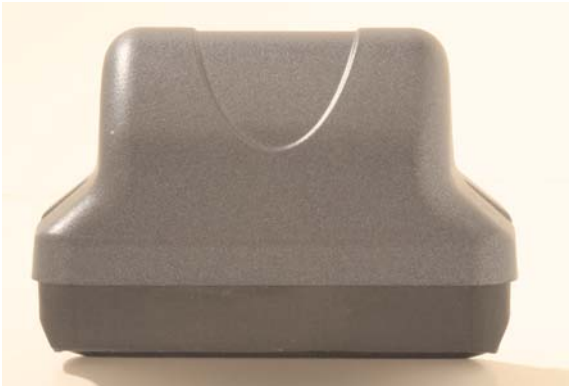
Xplore Technologies

xGPS Module



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The Xplore xGPS module is an external device that attaches to all iX104 tablets. With this module users can access GPS (Global Position System) information from satellites that orbit the earth in order to determine location.

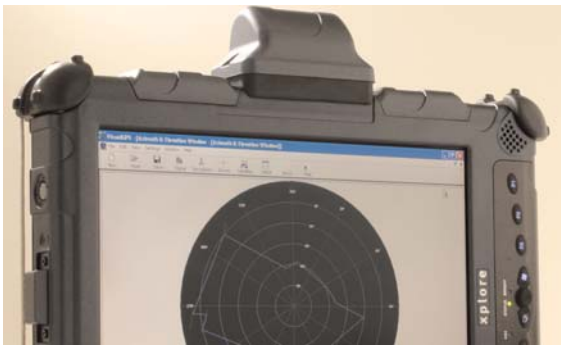
The Xplore solution provides excellent navigational performance under dynamic conditions in areas with limited sky view like urban canyons, high sensitivity for weak signal operation without compromising accuracy, and support of DGPS (Differential Global Positioning System) and multiple SBAS (Satellite-Based Augmentation Systems) systems like WAAS (Wide Area Augmentation System) and EGNOS (Euro Geostationary Navigation Overlay Service). The SBAS provide corrections for the GPS constellation signals that allow a user to achieve highly improved accuracy. This module is also equipped with FixNOW™ and Continuous Tracking Mode functionality.

The FixNOW Mode enables mobile and battery-driven tracking for applications such as untethered trailer tracking units. It includes additional Power Saving Functions and is the best mode for any Mobile Tracking Unit application where low power consumption requirements are primary consideration.

Continuous Tracking Mode functionality is configured for optimal position accuracy. This mode is optimized for power consumption based on the module's Autonomous Power Management (APM) saving energy as parts of the receiver are switched off when they are not required.

GPS Control Panel:

This solution comes with GPS Control Panel software that allows for distribution of GPS data streams into applications and accommodates external Beacon data input. In addition, it provides IT interface for control of GPS signals and routing Standard USB interface.

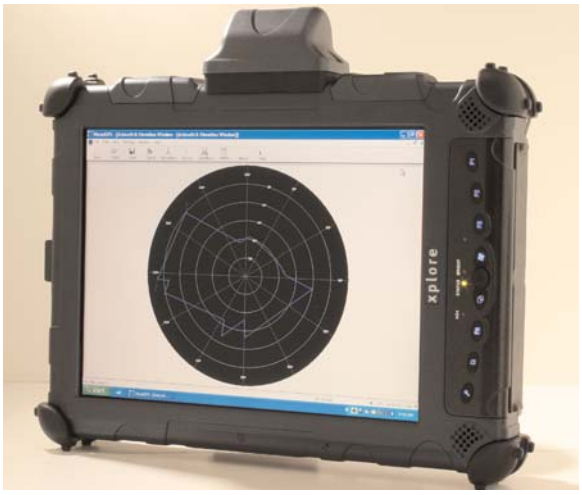


Mechanical Design Elements:

Xplore's unique xGPS module is comprised of a two part solution: 1) GPS module housing and 2) breakaway plate. The durable module housing has an advanced GPS receiver inside and is designed to break away from the tablet during drops. The breakaway plate is designed to absorb the majority of the force in drop situations and in certain situations break so that the module and receiver are not damaged. This design enables the Xplore GPS module to be used in rugged environments along with the iX104 Tablet PC while protecting the GPS receiver.

Benefits:

- All-in-one GPS receiver with patch antenna in small rugged form factor
- High acquisition and tracking sensitivity
- Ultra-low power consumption
- Excellent GPS performance
  - Excellent navigation accuracy even at low signal levels
  - Active multipath detection and removal
  - Fast Time-to-first-fix (TTFF)
- Versatile mounting techniques
  - Screw-mount
  - Allows simple and effortless integration with little time
- Maximum flexibility:
  - Extensively configurable



iX104 Tablet with xGPS Module

Features:

- 16 channel GPS receiver
- 8192 simultaneous time-frequency search bins
- 4 Hz position update rate
- ANTARIS Positioning Engine
  - ATR0600 RF front-end IC
  - ATR0620 Baseband IC with ARM7TDMI inside
  - ATR0610 Low noise amplifier IC
- DGPS and SBAS (WAAS, EGNOS) support
- FixNOW™ power saving mod
- Industrial operating temperature range -40 - 85°C
- Small size
  - 2" (height from front edge) x 1 ¾" (depth) x 3" (width)

Breakaway Plate

Performace Specifications:

Receiver Type	• L1 frequency, C/A Code, • 16-Channels • 8192 search bins
Max Update Rate	• 4 Hz
Accuracy (Selective Availability Off)	• Position: 2.5m CEP[3] 5.0m SEP[4] • Position (DGPS/SBAS[2]):2.0m CEP 3.0mm SEP
Acquisition[5]	• Cold Start: 34s (Fast Acquisition) • Warm Start: 33s • Hot Start: <3.5s
Signal Reacquisition	• <1s
Dynamics	• <4g

2 Depends on accuracy of correction data of DGPS or SBAS service

3 CEP=Circular Error Probability: The radius of a horizontal circle, centered at the antenna's true position, containing 50% of the fixes.

4 SEP=Spherical Error Probability.: The radius of the sphere, centered at the true position, contains 50% of the fixes.

5 Measured with good visibility and -125 dBm signal strength

xplore TECHNOLOGIES

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