SkyWave

DATASHEET

GLOBALWAVE® MT3000

Designed for applications that require sophisticated remote monitoring and control, the MT3000 includes an applications processor or "on-board computer" for developing custom programs and eliminating the need for an external controller.

The MT3000 is a satellite communication terminal designed for applications that require powerful and sophisticated remote monitoring and control capabilities. It uses a network of geostationary satellites and a two-way satellite communications protocol to send pre-scheduled status polls or reports; inform the user of events; receive "over-the-air" commands; and receive poll requests for instantaneous GPS location and information reporting.

The dedicated applications processor or "on-board computer" offers the capability to develop built-in software that is not found in other products. The applications processor also offers the benefit of eliminating costly hardware and software required to develop customized solutions. Uses of the processor include:

- Programming decisions and actions based on local input
- Controlling relays with high-current outputs
- Using custom encryption or data compression algorithms

The input and output ports of the MT3000 allow for temperature, door open/close, pressure and other sensor monitoring capabilities. An integrated serial port allows for integration with PLCs via Modbus.

The MT3000 can also monitor truck engines to provide valuable performance information on speed, RPM, and fuel consumption. Customers can monitor engine fault codes and set thresholds on alarm notification. Odometer readings can also be sent at state/provincial

FEATURES & BENEFITS

- **On-board customer application processor** for creating user-specific customized solutions.
- **Two-way communication** for messaging to and from the asset for near real-time control.
- **Fully acknowledged satellite service** ensures messages to and from the terminal are received.
- **Low message latency** enables applications that require immediate communication. No delays.
- **Over-the-air configuration** for easy and agile application adaption once the asset is deployed.
- **Accurate and fast GPS function** for precise location information reporting.
- **Low-profile and inconspicuous appearance** to avoid detection and tampering.
- **Ultra low power consumption** for applications in remote regions that require long battery life.
- **Data flash storage** for storing detailed and less-critical information for retrieval at a later time.
- **Support for text messaging, temperature sensors** and more, for advanced tracking and monitoring applications.
- **UL 1604, C1D2 classification** enables use in hazardous environments.

crossings to automate fuel tax reporting. Driver display units can be added to offer in-cab communications with text and form messaging.

For asset owners, use of the MT3000 terminal can help eliminate inefficiencies in the utilization of assets, allow remote monitoring of equipment, improve security, prevent and reduce theft, recover misplaced or stolen equipment, and reduce operating and fuel consumption costs.

GLOBALWAVE® MT3000

PHYSICAL

Size	• 17.6 cm x 10.8 cm x 4.0 cm
Mass	• < 500 grams

ENVIRONMENTAL

Operating Temperature	• -40°C to +85°C
Storage Temperature	• -55°C to +85°C
Humidity	• Meets SAE J1455
Dust & Water Ingress	• Meets SAE J1455
Vibration	• Meets SAE J1455
Shock (survival)	• Meets SAE J1455

ELECTRICAL

Power	• Direct vehicle connection (load dump protected) • External lithium battery pack options: • Over 5-year life @ 2 reports/day • Other battery packs available
Input Voltage Range	• 8V to 32V (vehicle input) • 4.5V to 32V (battery input)
Power Consumption (Typical @ 7.2VDC)	• Idle mode: <439 µW • Transmit mode: < 14 W • Receive mode: <626 mW • GPS power consumption: <756 mW

SATELLITE COMMUNICATIONS

Frequency	• 1626.6 – 1660.5 MHz (From-Terminal) • 1525 – 1559 MHz (To-Terminal)
Elevation Angle	• 20° to 90° for communications link • 10° to 90° for GPS

SATELLITE MESSAGING

From-Terminal	• 11 bytes, 350 bps
To-Terminal	• Up to 38 bytes, 1200 bps

GPS

Acquisition	• Cold: <40 seconds; Warm: <16 seconds
Accuracy	• 11 meters, 95% of the time

CERTIFICATIONS / COMPLIANCE

Satellite	• Inmarsat Type Approval
Regulatory	• UL 1604, Class 1, Division 2 Groups A, B, C, D; T6 (6100097 only)

APPLICATIONS RESOURCES

Processor	• Atmel ATMega2560
Program Flash	• 144 kB
Internal EEPROM	• 2 kB
External SRAM	• 16 kB direct plus 13 switchable banks of 16 kB
External Data Flash	• 2 MB
Other	• Proprietary pre-emptive and priority based OS • Simple embedded file system • Custom API

EXTERNAL INTERFACES

Serial	• 2 ports compatible with RS-232 and RS-562 • 1 port RS-485, J1708
Digital	• 4 network inputs/outputs • 5 application inputs • 3 application input/outputs • 2 high current digital output: 0.5A combined
Analog	• 2 network analog inputs: 0-3 Volts • 2 application extended analog inputs: 0-3 Volts or 0-33 Volts.

PROGRAMMING CAPABILITIES

Reporting	• Polls for GPS location • Optional pre-scheduled, configurable over-the-air, reports every 10 minutes to 24 hours • Events-based upon exceeding user-defined parameters • User defined data reports

ADDITIONAL FEATURES

Sensor	• Integrated start/stop sensor

ORDERING CODES

6100104-XX	• MT3000 sensor-enabled terminal with on-board application processor
6100105-XX	• C1D2 classified MT3000 sensor-enabled terminal with on-board application processor
See Sales Representative	• Development Kit with development environment, API with library, Applications processor development board, MT3000 motherboard with core modem simulator, MT3000 development board, Network simulator software, documentation and code examples. Compatible with IAR Embedded Workbench.

About SkyWave Mobile Communications

SkyWave Mobile Communications designs and manufactures integrated satellite terminals, dual-mode satellite/GPRS terminals and provides Inmarsat-based network services to enable dependable, low-cost, remote management, security and logistics solutions. SkyWave's products are designed for a broad range of industries including land mobile, marine, oil & gas, SCADA, government and defence.

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