



## FastComm

### What is it?

FastComm is a comprehensive global hardware and software solution for data, monitoring, control (M&C/M2M) and voice communications. Incorporating both Iridium satellite and GSM cellular communications technology, FastComm offers the following key features:

- Iridium Satellite (True global coverage from and to anywhere) Communications:
  - Voice (with optional Blue Tooth or wired headset)
  - Circuit Switch Data (CSD)
  - Short burst data (SBD)
  - Short message service (SMS)
  
- GSM Cellular Communications:
  - Voice (with optional Blue Tooth or wired headset)
  - Circuit Switch Data (CSD)
  - Data via GPRS
  - Short message service (SMS)

Note: Automatic least cost routing between satellite and cellular communications is also available as an option.

- Input / Output
  - 5 digital inputs 0 to 32Volt DC range
  - 5 digital outputs, switching up to 32Volt DC, 300mAmp
  - 4 analogue inputs 0 to 32Volt DC range
  - RS-232 port for user configuration

Global Positioning System (GPS): - Tracking applications can also be optioned as an integrated feature.

- Bluetooth
  - Permits wireless connectivity to a range of devices including (but not limited to) monitoring and control peripherals such as PDA's and Touch Screen Devices. The use of such peripherals would provide both data display and messaging functionality.

FastComm is designed for use with an external antenna and power supply (mains, solar and battery) as well as autonomous operation with a range of antennas and re-chargeable (on board) battery packs.

## Why do you need it?

FastComm provides simple, cost effective, easily configurable, low maintenance two-way voice and data connectivity from anywhere in the world. Built around an integrated communications and purpose designed micro-processing hub, FastComm can be configured for fixed, mobile or wearable applications.

FastComm enables autonomous two way monitoring and control of equipment, sensors and process control systems using the Iridium Satellite SBD (Short Burst Data), SMS or GSM based communications mediums. Data is transmitted to Fastwave secure servers, allowing Web based viewing or data re-direction to client (SCADA) systems. FastComm will also operate in a dial-up data mode, enabling real-time data streaming. The integrated microprocessor provides data acquisition, buffering, power management and communication control.

Designed to integrate with third party devices such as PLC's (Programmable Logic Controllers) and RTU's (Remote Telemetry Units), the unit also has an on-board data-logging capability. It has configurable input and output options to enable operation as a stand-alone field monitoring and control device for sensors and equipment with serial (RS232), 4-20mA and 0-32 Volt connectivity.

FastComm's five control outputs (switch relays, contactors, lights etc), five inputs (monitor contacts, level sensors, thermostats etc.) and its 4 x 10 bit analogue inputs (measure battery voltages directly, temperatures, levels etc.) enables stand-alone operation as an RTU.

The unit can also be enabled for Iridium SMS or GSM based SMS messaging. This feature can provide priority notification of events directly to maintenance, management or security staff with cellular phones.

## Applications

FastComm's rugged design, global communication capability and compatibility with a range of peripherals and sensors enable its use for 2-way monitoring, control and tracking in a wide variety of environments and industry sectors.

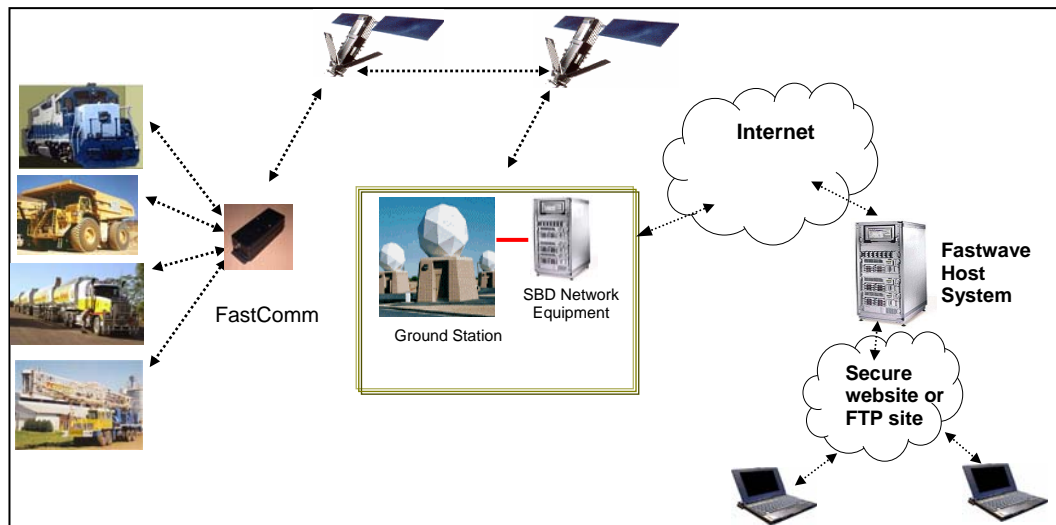
Typical applications include:

- Mining, oil and gas field equipment and infrastructure such as wellheads, pumps and valves.
- Environmental, meteorological, oceanographic, hydrographic and seismic sensor systems
- Mobile and static heavy equipment diagnostic systems such as earthmoving equipment and remote generators
- Agricultural, irrigation and aquaculture field management systems
- Remote unattended surveillance systems
- Remote water and power utility infrastructure such as tanks, valves and transformers
- Remote road and rail infrastructure such as flood or fire hazard warning signs
- Occupational Health and Safety Personnel
- Emergency first responders
- Offshore maritime equipment and personnel

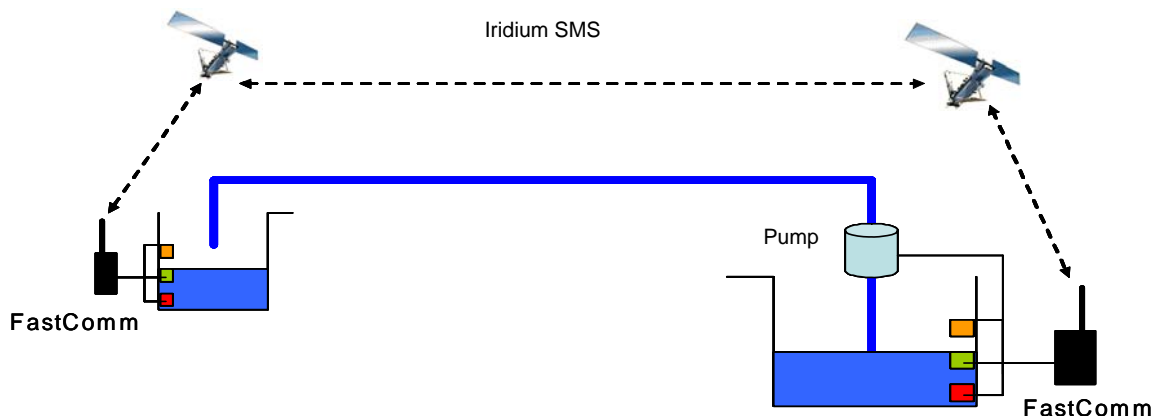
## FastComm Iridium Satellite Communication Options

Communication System	Coverage	2-way	Data, voice, Text	Latency	Data Rate/Payload	Client Data Interface	Typical Applications
Iridium Short Burst Data (SBD)	global	yes	Data	5 - 40 seconds on satellite system	Up to 1960 bytes per packet for mobile originated, 1890 bytes for mobile terminated	Data sent/received as email attachment to secure web server or corporate network	Cost efficient remote monitoring and control of fixed and mobile equipment where high bandwidth is not critical
Iridium Circuit Switch Data (CSD)	global	yes	Dial up Data and Voice	Real-time	2400 bps	Data sent/received via secure web browser/corporate network	Real-time data streaming of logged data, interrogation and re-programming from remote unit.
Iridium SMS	global	yes	Text	Near real time	160 alphanumeric characters	Cross-platform delivery to GSM mobile numbers	Simultaneous alarm notification to multiple GSM numbers

### Iridium System Configuration – Short Burst Data



### Example of Fastcomm M2M Configuration



## FastComm Features

- Onboard satellite transceiver
- Integrated GSM/GPRS communications with least-cost routing (optional)
- Uses Iridium satellite network – the most robust and only truly global satellite system available today
- Industry standard platform enabling integration with a range of peripherals
- Automated, user-defined reporting from remote site and remote polling
- Optimisation for alarm delivery and least cost routing
- Remotely programmable
- Mains, battery and solar powered
- Battery back-up (optional)
- Intelligent power management, using less than a few milliamps in sleep mode
- Integrated GPS receiver (optional)
- BlueTooth (optional)

## Configuration and Customisation

There are a number of possible configurations and customisation options available to suit various applications. Standard versions are shown below, but we encourage customers to talk to us if they require a non-standard configuration or customisation.

As Fastwave designs, manufactures and codes the FastComm product, customer specific requirements and questions can easily be assessed and answered.




### Standard Versions

Version	Configured for	Typical Applications	Power Source	GPS	Data logging
FastComm <i>Universal</i>	Static applications	Fixed equipment SCADA, monitoring and control	External with back-up battery	optional	optional
FastComm <i>Mobile</i>	Mobile equipment applications	Monitoring, control and tracking of mobile plant, equipment, vehicles and vessels etc.	External with back-up battery	Yes	optional
FastComm <i>Autonomous</i>	Un-powered applications, fixed or mobile	Monitoring and control of remote installations with limited or no external power supply, eg covert tracking, surveillance sensors, environmental sensors etc	External solar or re-chargeable battery pack, depending on application	optional	optional
FastComm <i>Portable</i>	Personnel applications	Real time automated and polled tracking of personnel, with duress alarms	Internal, re-chargeable battery pack	Yes	optional
FastComm <i>SubSea</i>	Relay for wireless underwater networks	Monitoring and control of underwater sensors and systems, eg current meters, acoustic surveillance systems etc	External mains, solar or re-chargeable battery pack, depending on installation	optional	optional

Full details can be found in the individual product specifications or [www.fastwave.com.au](http://www.fastwave.com.au)

## FastComm Optional Peripherals

Fastwave has established partnerships with other leading equipment manufacturers to further extend FastComm's capabilities. The following equipment can communicate via FastComm over the Iridium satellite system or via GSM using our proprietary protocols, offering unique global mobile data communication capability.

<p><b>Recon ruggedised PDA</b></p> 	<p>The TDS Recon is a ruggedised handheld computer that delivers maximum performance and reliability in a lightweight, waterproof and robust design that's easy to carry. The TDS Recon weighs under 500gms, meets military specifications for impact, vibration and strict environmental requirements. Running on the Windows Mobile 2003 platform for Pocket PC, it is compatible with both off-the-shelf and customised developer-built software applications.</p>  <p>For more information, go to: <a href="http://www.fastwave.com.au/recon">www.fastwave.com.au/recon</a></p>
<p><b>Dilupe Touch Screen</b></p> 	<p>The DILUPE MOBILE TERMINAL 1500 is a high performance industrial touch screen. Providing the user with both free form and pre-canned messaging</p>  <p>For more information, go to: <a href="http://www.fastwave.com.au/dilupe">www.fastwave.com.au/dilupe</a></p>
<p><b>DSPComm Aquacomm</b></p> 	<p>The DSPComm Aquacomm is an underwater acoustic modem that provides high reliability communications links in a variety of underwater environments. This capability is achieved at a fraction of the cost of other underwater modems available.</p>   <p>For more information, go to: <a href="http://www.fastwave.com.au/Aquacomm">www.fastwave.com.au/Aquacomm</a></p>
<p><b>Panic alarm</b></p>	<p>Key fob style alarm provides wireless communication to FastComm Portable for activation of panic or duress alarm</p>

## FastComm Specification

<b>Communication modes</b>	<b>Iridium Satellite CSD</b>	CSD (Circuit switch data) 2.4k bps real time connectivity modem to modem
	<b>Iridium Satellite SBD</b>	SBD (short burst data) Simple – 150 character messaging SBD Binary – 1900/1860 byte SBD messages to and from email addresses
	<b>Iridium Satellite VOICE</b>	Connectivity to worldwide public telephone and cellular networks
	<b>GSM/GPRS</b>	Dual band GSM/GPRS (EGSM 900/1800MHz designed for voice, data and SMS. Note: SIM card will be required, but unit is NOT locked to a provider) Optional on board GSM modem with least cost routing capability
	<b>SMS – Iridium and GSM</b>	SMS (short messaging service) for GSM (both originated and terminated SMS) and to and from Iridium Satellite phone
	<b>GPS</b>	16 Channel, Optional active antenna, 43 second cold start to lock. 10.5 metre horizontal accuracy.
<b>Physical</b>	<b>Dimensions</b>	217mm (H) x 83mm (W)x 70mm (D) Height includes 20mm allowance for antennae fitting. Depth is shown for basic model; configuration, for example to include internal battery, will increase depth.
	<b>Weight</b>	Approx 500gm without batteries (depending on specification)
	<b>Connections</b>	Iridium Antenna TNC GSM Antenna xxx GPS Antenna SMA I/O Standard 25-Pin DB25 connector
	<b>Environmental conditions</b>	Operating Temperature Range -10 to +70c
<b>Power</b>	<b>Power Requirements</b>	Main Input Voltage Range: +10VDC to +30VDC Main Input Voltage Nominal: +12V to 24V DC Main Input Voltage Ripple: 40mV peak-to-peak Power-up Current: ~2.2A @ 12VDC (With Iridium fitted) Transmitting/Receiving Current: ~1.1A@ 12VDC average (With Iridium fitted) Standby current: ~ 120mA@ 12VDC average (With Iridium fitted)
	<b>Battery</b>	Optional Removable/rechargeable lithium-ion Operates for up to 72 hours depending on options and settings
	<b>Solar Power</b>	Optional
<b>Input/Output</b>	<b>Inputs Digital</b>	5 digital inputs 0 to 32Volt DC range
	<b>Inputs Analogue</b>	4x10bit resolution analogue inputs. 0 to 32Volt DC
	<b>Outputs Digital</b>	5 digital outputs
<b>Connectivity</b>	<b>Blue Tooth</b>	Optional Blue tooth connectivity to approved voice and data peripherals
<b>Data Delivery</b>	<b>Fastwave web based delivery</b>	Optional using HTTP or FTP to your server. Can be configured to suit your applications
	<b>Email notification / control</b>	Standard when using SBD / GPRS mode
	<b>SMS notification / control</b>	Standard when using SMS mode