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The FX 500 FleetBroadband is the latest-generation maritime communication systems operating on the Inmarsat FleetBroadband Satellite System. It is compactly designed and easy to install. The FX 500 is Inmarsat approved for use with XpressLink.

Using Inmarsat's most advanced commercial communication satellites, the FX 500 FleetBroadband provides simultaneous access to clear digital voice or fax, high-speed Standard IP and Streaming IP data (for email, FTP, real-time streaming video etc.) and SMS. It makes it easier for the Captain to download the latest weather and navigational charts while the crew members can call, talk, send and receive text messages and email around the world. Embedded multi-voice feature (with built in SIP Server and RTP Server) enables the crew to make multiple voice calls (up to 9 calls) simultaneously using VoIP Phones. Moreover there will be no noticeable degradation of data bandwidth when the terminal is at the edge of satellite coverage unlike other classes of FleetBroadband terminals.

The FX 500 FleetBroadband offers the data speeds of up to 432kbps with many value-added features:

- Firewall
- Fleet Tracking Capability with Geo-fencing - up to 10 polygon geo-fence areas can be configured
- Wi-Fi (802.11b/g)
- Push To Talk (PTT)
- Forced Dialing – SAC Configuration Control
- Restricted Dialing (for crew calling)
- Handset Call Priority (allows the Captain to pre-empt the active CS call)
- Remote Access (for configuration and diagnostics)
- Radio Silence (radio transmission on/off) Control
- External Ringer Control
- Framed-Routing Network Management (includes supporting Inmarsat XpressLink)
- Remote Management (using SMS/AT commands)
- Backup / Restore of Configuration Settings
- SIM Lock based on IMSI/APN
- Multilingual WebConsole (English, Spanish, Dutch, Japanese, Korean, Simplified Chinese and Traditional Chinese)
- Multi-User WebConsole access with configurable access rights
- Time/Volume limited data sessions (to avoid bill shock)
- PPPoE
- MAC Filtering (with whitelist/blacklist)
- NAT and NAPT (Port Forwarding)
- Inmarsat Global Xpress Compliance with CISCO Network Service Device (NSD)
- Inmarsat Multi-voice (up to 9 simultaneous) calls with built-in SIP Server
- NMEA 0183 Continuous GPS Output
- SMS with option to append GPS position

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FX 500 is a high performance satellite communication terminal with the salient features:

- 3-Axis Stabilised Antenna including ATC-Resilience, Extended L-Band and IP56 Protection capability.
- No Fuses – Uses Intelligent Circuit Breaker protection
- Primary Handset with IP66 Environmental Protection (for voice, SMS & terminal configuration)

The FX 500 includes a primary handset with a large colour LCD display and mobile phone type keys for making/receiving phone calls, making selective terminal configuration changes, sending and receiving SMS messages, including larger SMS content of greater than 160 characters as multipart or segmented messages. This feature is popular for the Captain and the crew members who are used to texting from their mobile phones while on shore.

The FX 500 can act as a WAN connection to any onboard computer network (LAN) by simply connecting the FX 500 to the onboard LAN and making all the devices attached to the LAN accessible to the Internet. The MAC Filtering feature shall provide strong security by providing access rights only to selective devices based on their MAC addresses. Firewall will complement the security by not only blocking unauthorized remote access but will also block unwanted data traffic and thus save air-time.

The Network Management feature supporting Direct Mode (one-to-one), Shared Mode (multi-user) and DMZ mode makes it powerful enough to configure the FX 500 with the attached devices in many different combinations of network configurations.

The FleetBroadband terminal has a continuous GPS output feature which allows GPS data to be sent out via the RS232 port in standard NMEA 0183 format. With the built-in GPS module, the FX 500 is able to provide accurate position information to onboard systems such as plotters and depth sounders, with configurable baud-rate setting.

With the standard built-in Wi-Fi feature, the web-based user interface can be accessed via any web browser including Wi-Fi-enabled Smartphones such as BlackBerrys, iPhones, Android Phones, iPads, and PDAs via the FX 500's secure Wi-Fi (WLAN). The Wi-Fi connection also offers wireless Push-to-Talk (PTT) service to Smartphone users using free PTT applications such as Zello, without having to add any additional hardware to the terminal, unlike other PTT solutions that require expensive add-on hardware.

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Technical Specifications

Inmarsat FleetBroadband Type Approval
Inmarsat XpressLink Certified
Compatible with Cisco NSD for Inmarsat GX ComplianceCompliant to R&TTE, IEC60945:2002, RoHS
Certification Mark : FCC, CE, Industry Canada
Wi-Fi Compliant IEEE802.11b/g
Green Passport

Frequency Band
Transmit: 1626.5 ~ 1660.5 and 1668.0 ~ 1675.0 MHz
Receive: 1518.0 ~ 1559.0 MHz

Recommended Antenna Cable
Cable loss: 10dB at 1.6GHz and 1 ohm DC loop resistance

BDU Interfaces
Power On/Off Switch
DC Power Input Socket
Antenna Connector (N-Type)
Status Indicator LEDs (3)
SIM Card Slot
GPS Output (NMEA 0183)
Primary Handset Connector
4 RJ45 Ethernet Connectors (including 2 x Power over Ethernet (PoE) ports)
2 RJ11 Connectors for Analog Phone and G3 Fax
Built-in WLAN 802.11b/g
Resettable Circuit Breaker
Safe Mode Switch
I/O Connector for Radio Silence, External Ringer, etc
Grounding Stud

Communication Services

Standard Voice	: 4 kbps circuit switched (AMBE+2 codec)
Multi-Voice	: 1 x Standard CS voice + up to 8 additional VoIP calls.
Standard IP	: Up to 432 kbps
Streaming IP	: 8k, 16k, 32k, 64k, 128k, 176k and 256 kbps
Fax	: G3 FAX (using 3.1kHz audio channel)
Short Messaging Service: (SMS)	Up to 160 characters (3G standard)
Larger SMS content (> 160 characters)	: supported as multipart or segmented SMS

Network Management Functions
Shared Mode: NAT/NAPT enabled, Multi-User access with DHCP
DMZ Mode: NAT enabled for end-to-end dedicated TE access
Direct Mode: NAT disabled for end-to-end dedicated TE access

Environmental Conditions

Operating Temperature	: -25 to +55°C
Storage Temperature	: -40 to +80°C
Operating Humidity	: 95% non-condensing at +40°C
ADU Ingress Rating	: IP56
BDU Ingress Rating	: IP31

Ship Motion

Roll	: ±30° / 4s period, max 0.7g tan.
Pitch	: ±15° / 3s period, max 0.6g tan.
Yaw	: ±10°/ 5s period, max 0.3g tan.
Turning Rate	: ± 36°/s, acc. max 12°/s²
Surge	: ±0.5g
Sway	: ±0.5g
Heave	: ±0.7g
Headway speed	: 42 knots
Wind	: 100 knots

Power Supply and Consumption

DC input (isolated)	: +10.8VDC to +31.2VDC
Power (max)	: 150W including antenna

Physical Data

Dimension	: BDU	: 360 x 250 x 67 mm
	: ADU	: 653 (Dia) x 652 mm
Weight	: BDU	: 3.9 Kg
	: ADU	: 18.5 Kg

Primary Handset

Display	: 2 in, 220 x 176 pixel TFT, 65K Color LCD
Dimension	: 142 x 56 x 22 mm
Weight	: 390g / 0.8 lbs
Ingress Rating	: IP66
Operating Temperature	: -20 to +55°C
Storage Temperature	: -30 to +70°C

Feature highlights of Primary Handset
- Configuration settings
- Basic circuit-switched telephone functions
- Phone book retrieval from SIM card
- Call log for most recent 5 missed, received and dialed calls with date and time stamps
- Short message service (SMS)
- User-friendly menu driven graphical user interface
- Hands free headset
- No SIP registration with BDU is required

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