



FURUNO®

Inmarsat Fleet F77 MOBILE EARTH STATION Model FELCOM 70



Courtesy Mitsui O.S.K. Lines



The future today with FURUNO's electronics technology.

FURUNO ELECTRIC CO., LTD.

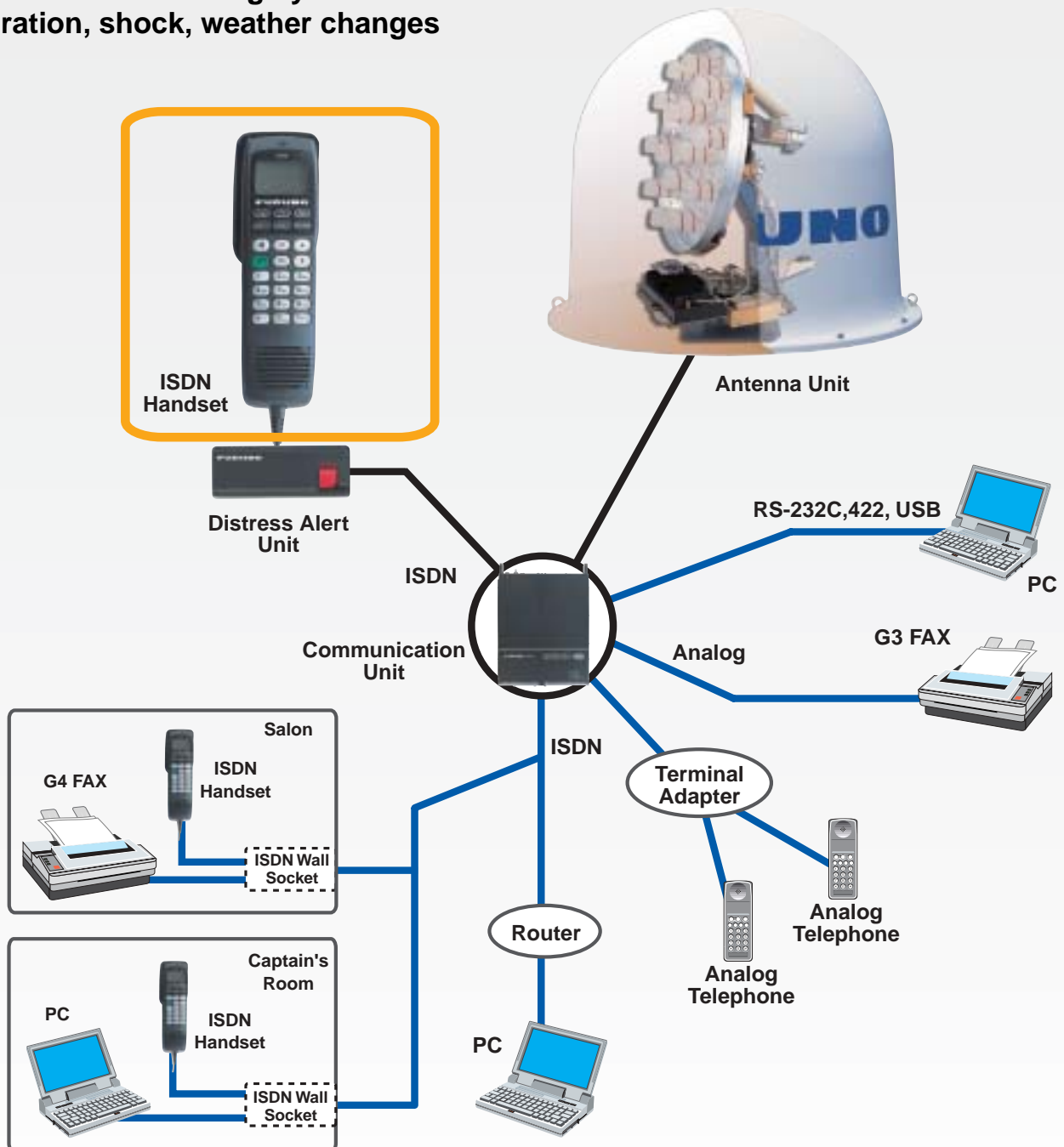
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Catalogue No. W-3249

TRADE MARK REGISTERED
MARCA REGISTRADA

High quality voice/fax, high speed ISDN IP-based Mobile Packet Data Service enable mobile office at sea

- Quality communications from ship on any ocean to other ships and land offices
- Inexpensive communication charges
- High speed data, fax, telephone, web browsing, e-mailing over internet
- Compatible with GMDSS
- Antenna structure highly durable to vibration, shock, weather changes
- User friendly operation with a palm fitting handset with a large LCD
- Distress alert unit for instant distress call in case of casualty
- EMC tested to 2 GHz - no interference between the FELCOM 70 and GPS navigator that work in the same frequency band



and

The FELCOM 70 is a new Furuno inmarsat satellite communications system designed for FLEET F77 MOBILE EARTH STATION. The FELCOM 70 offers quality communications for a variety of commercial vessels and luxury yachts. It provides 64 kbps high speed data communications by ISDN or MPDS (Mobile Packet Data Service) as well as quality voice communications at 64/4.8 kbps.

The FELCOM 70 has a high-speed modem and allows fast data communication at 64 kbps. The voice communications is selectable from 64 and 4.8 kbps.

Data communications are available on two channels: high speed ISDN same as INMARSAT B and 64 kbps MPDS. The ISDN channel provides seamless connection to the standard ISDN terminal such as terminal adapters and ISDN routers. MPDS works on the shared channels. The user only pays for the amount of data sent over the network, while charges for the ISDN data communications depend on the time connected. Thus MPDS is suitable for small and medium volume e-mailing and Internet. Transmission channels may be selected depending on volume of data.

Comparison of major characteristics

	Inmarsat-A	Inmarsat-B	Inmarsat-F
FURUNO Products	FELCOM 5B	FELCOM 82	FELCOM 70
Beam	Global	Global/Spot	Global/Spot
Antenna Weight	110 kg	90 kg	65 kg
Telephone	Available	Available	Available
HSD	4.8 kbps	64 kbps	64 kbps
MPDS	-	-	64 kbps
Charges			
Voice	US\$5.84/min	US\$3.69/min	US\$3.29/min
Data	US\$5.84/min	US\$3.69/min	US\$1.79/min
HSD	-	US\$10.35/min	US\$9.20/min
MPDS	-	-	¥4.60/mbits

The FELCOM 70 standard set consists of an Antenna Unit, Communication Unit, Handset and Distress Alert Unit. The stylish Handset allows controls of communication unit and antenna as well as dialing.

Antenna stabilization and tracking

This radome contains a helix array radiator with a 740 mm dish reflector. Antenna stabilization is achieved by using the three-axis active method that detects the ship's motion with three rate sensors and a inclinometer. This mechanism allows the antenna to keep pointing to an appropriate satellite during ship's movement and course changes. Connection between the electronic circuits on the turning section with the parabola and those on the fixed pedestal in the radome is made by an improved rotary joint. This arrangement eliminates antenna rewind, thereby ensuring uninterrupted communications during a course change of the vessel.

The GPS receiver is integral in the radome and provides accurate position information to allow the MES to determine whether it is within coverage of a spot-beam and to orient the dish to the satellite to be used.

The communication unit

The communication unit accommodates four ports for analog telephone, eight ports for ISDN telephone, two RS-232 ports and a USB port. It is a blackbox unit and may be installed at any place in the bridge.

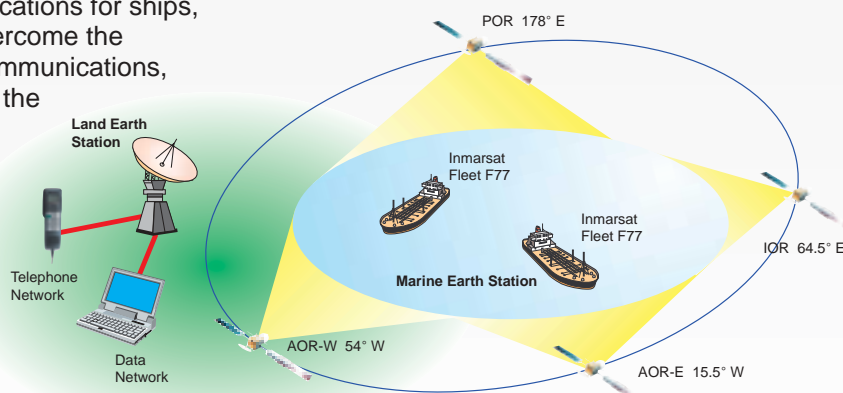
Distress Alert Unit

In case of distress, pressing the alert button will initiate a distress call transmission to the other parties. Messages concerning alert transmission and reception are displayed on the standard handset.

INMARSAT System

With the purpose of providing global communications for ships, land mobile and aircraft, using satellites to overcome the problems that exist with conventional radio communications, the Inmarsat operates a network consisting of the space segment, ground segment and mobile earth stations.

The Inmarsat space segment consists of 4 satellites orbiting above the equator at the same speed as the earth rotates. The satellites remain fixed above the same location on the earth. Each satellite orbits at an altitude of 35,700 km, allowing it to monitor 1/3 of the earth's surface. The satellites work as repeater stations between the coast earth stations (CESSs) and mobile earth stations (MESs) on different channels for different services, Inmarsat-A, B, C, M, F, etc.



SPECIFICATIONS OF FELCOM 70

Communication Services

Voice	4.8 kbps (ISDN/Analog), 64 kbps (ISDN)
Data	56/64 kbps (ISDN/HSD)
Fax	9.6 kbps (G3 Fax), 64 kbps (G4 Fax)
Frequency	TX: 1626.5 - 1660.5 MHz RX: 1525.0 - 1559.0 MHz
Channel Spacing	1.25 kHz (Min) 5 kHz (Voice communication) 40 kHz (ISDN/MPDS)

Interface

Terminal (for wire screw connection)

2 x 2 pair ISDN:	4 ports
2-wire analog telephone:	4 ports
RS-422:	1 port
IEC 61162:	1 port

Connectors (contacts)

RJ-45 for ISDN:	4 ports
RJ-45 for analog:	2 ports
USB:	1 port
9-pin D-SUB for RS-232:	2 ports

Antenna Unit

Element	Helical array
Reflector:	740 mm dish
Stabilization	Three-axis active stabilization
Tracking	Azimuth: 0 - 360°, elevation: 5 - 90°
Ship's Motion	Roll: ±30°/8 s, Pitch: ±10°/6 s, Yaw: +8°/50 s, Rate of turn: 6°/s
Rewind:	No-rewind

ENVIRONMENT (IEC 60945 test method)

Temperature	
BDU (Below Deck Unit):	-15°C to +55°C
ADU (Above Deck Unit):	-25°C to +70°C
Waterproofing	
ADU (Above Deck Unit):	IPX6 (IEC 60529)
EMC	IEC 60945 edition 4 (up to 2 GHz)
Vibration	IEC 60945

POWER SUPPLY

115 VAC: 140 VA (TX),
24 VDC with DC-AC Inverter: 110 W (Duty TX/RX: 1/1)

EQUIPMENT LIST

Standard

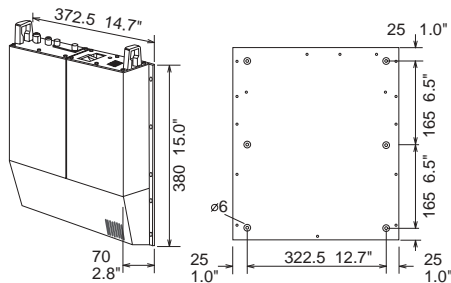
1. Antenna Unit SF-170	1 unit
2. Communication Unit SF-270	1 unit
3. ISDN Handset SF-870 with Handset Cradle	1 unit
4. Distress Alert Unit SF-370	1 unit
5. Installation Materials and Spare Parts	1 set

Option

1. Analog Telephone FC755D1/DBAR104001/888
2. Analog Telephone/Fax Wall Socket MJ-2S
3. Terminal Adapter QDGY911914
4. ISDN Wall Socket 102176
5. Junction Box QUFC911918

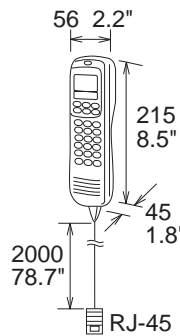
Communication Unit SF-270

4 kg 8.8 lb



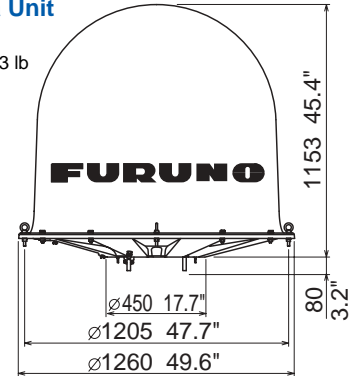
Handset SF-870

0.3 kg 0.7 lb



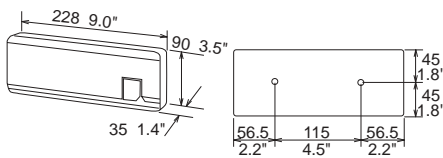
Antenna Unit SF-170

65 kg 143.3 lb



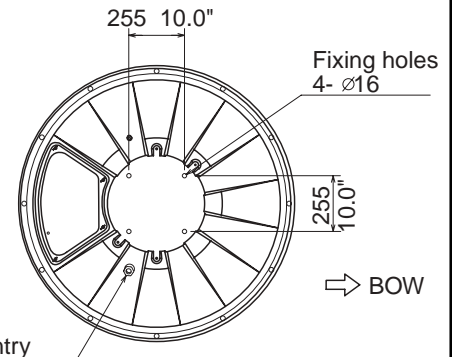
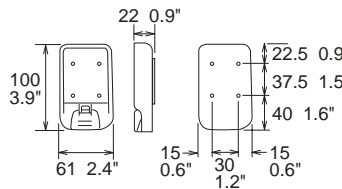
Distress Alert Unit SF-370

0.3 kg 0.7 lb



Handset Cradle

0.03 kg 0.07 lb



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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