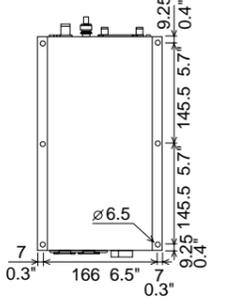
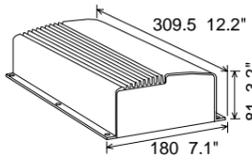
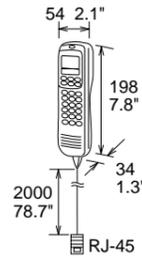


**FELCOM 30**

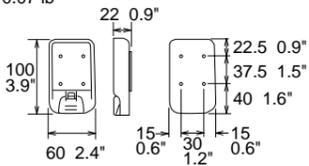
Communication Unit  
**SF-230**  
 3 kg 6.6 lb



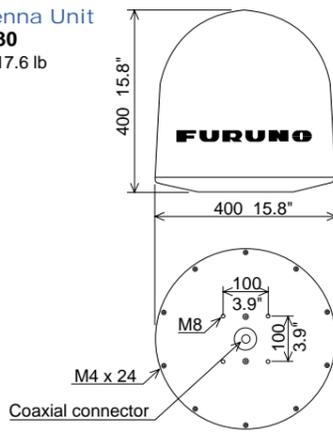
Handset  
**SF-870**  
 0.4 kg 0.8 lb



Handset Cradle  
 0.03 kg 0.07 lb

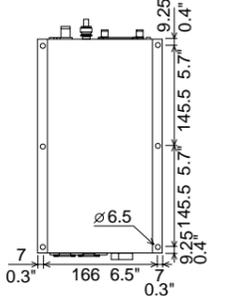
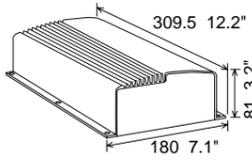


Antenna Unit  
**SF-130**  
 8 kg 17.6 lb

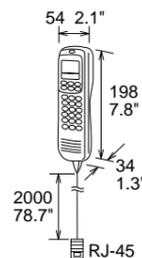


**FELCOM 50**

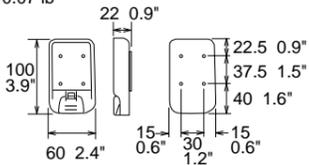
Communication Unit  
**SF-250**  
 3 kg 6.6 lb



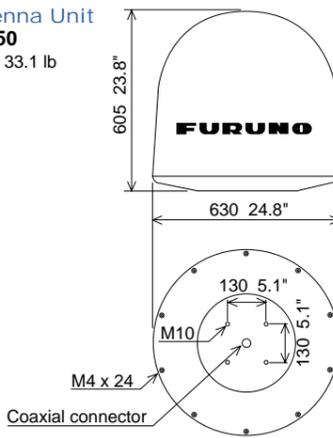
Handset  
**SF-870**  
 0.3 kg 0.7 lb



Handset Cradle  
 0.03 kg 0.07 lb

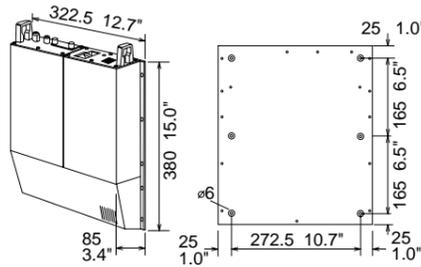


Antenna Unit  
**SF-150**  
 15 kg 33.1 lb

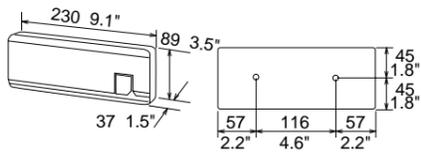


**FELCOM 70**

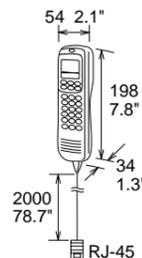
Communication Unit  
**SF-270**  
 7.4 kg 16.3 lb



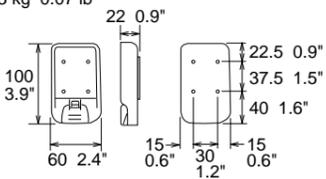
Distress Alert Unit **SF-370**  
 0.2 kg 0.5 lb



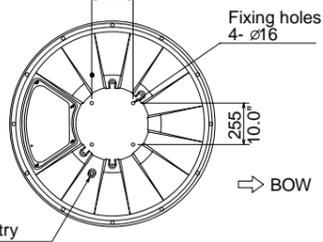
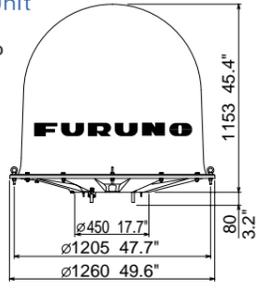
Handset  
**SF-870**  
 0.3 kg 0.7 lb



Handset Cradle  
 0.03 kg 0.07 lb



Antenna Unit  
**SF-170**  
 65 kg 143.3 lb



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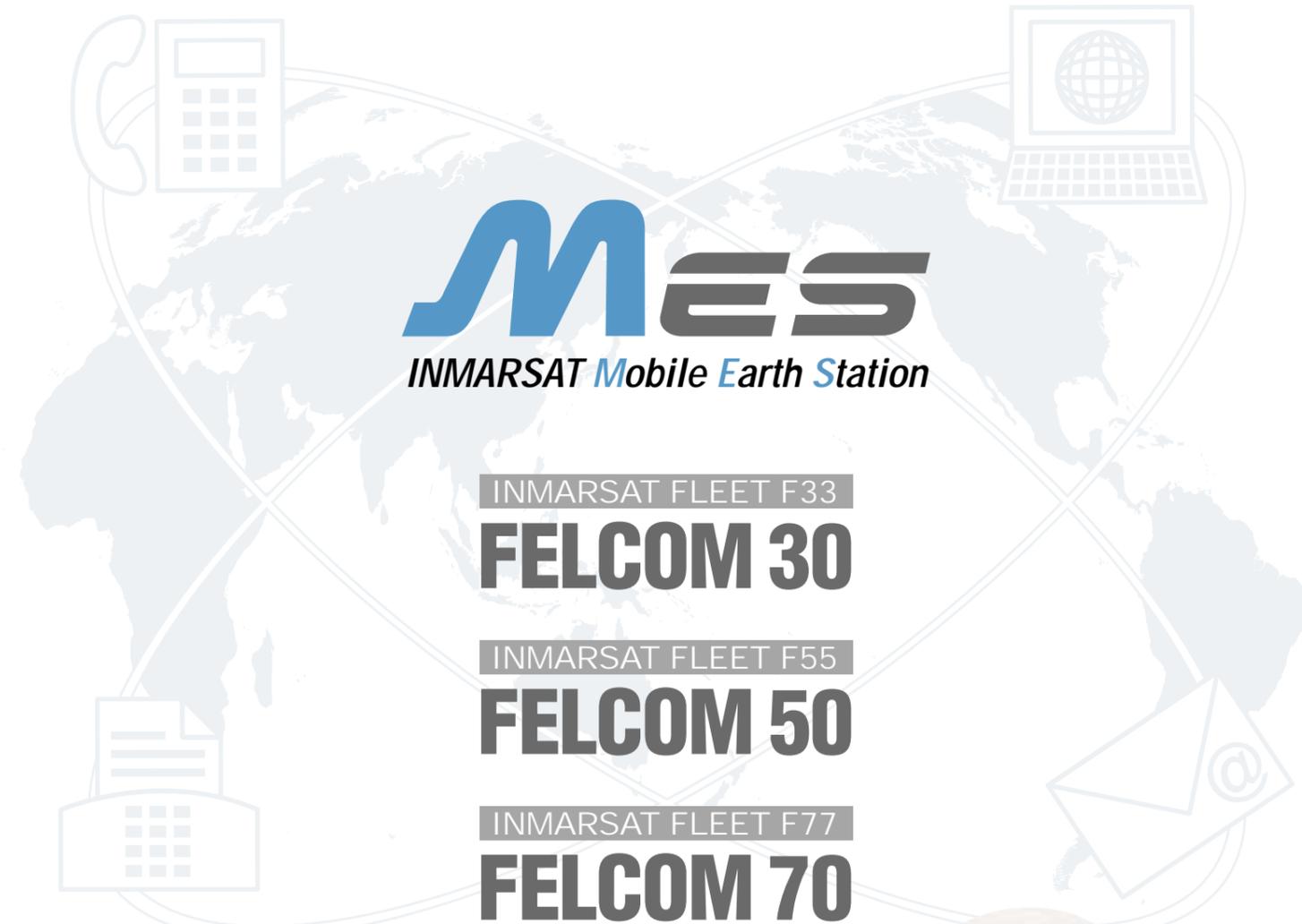
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**FURUNO®**



INMARSAT FLEET F33  
**FELCOM 30**  
 INMARSAT FLEET F55  
**FELCOM 50**  
 INMARSAT FLEET F77  
**FELCOM 70**



The future today with FURUNO's electronics technology.  
**FURUNO ELECTRIC CO., LTD.**  
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Catalogue No. W-3252b

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FURUNO's new Fleet products allow you to choose the communication services to suit your specific needs. All kinds of vessels ranging from coastal ships and private yachts to massive deepsea tankers can benefit from this breakthrough in maritime communications.

- ▶ Quality communications amongst ships as well as between ships and onshore offices
- ▶ Economical data communication charges by use of MPDS
- ▶ High speed data, fax and telephone communications, plus web-browsing and e-mailing
- ▶ Solidly built antenna is resistant to vibration, shock and weather changes
- ▶ No antenna rewind and built-in GPS receiver for continuous satellite tracking
- ▶ User friendly operation by a palm fitting handset and a large LCD
- ▶ EMC tested to 2 GHz - no interference between the FELCOM 30/50/70 and GPS navigators that work in the same frequency band
- ▶ L-band output is available for broadcast services such as differential GPS signal, weather and chart updates



▶ Communication Services

		INMARSAT FLEET F33 <b>FELCOM 30</b>	INMARSAT FLEET F55 <b>FELCOM 50</b>	INMARSAT FLEET F77 <b>FELCOM 70</b>
<b>PHONE</b>	voice	4.8 speech (Mini-M voice)	4.8 speech (Mini-M voice) 64 kbps* (high quality)	4.8 speech (mini-M voice) 64 kbps (high quality)
<b>MAIL</b>	data	ISDN: 9.6 kbps data* (Built in compression V42 Bis/V44, up to 40 kbps)	ISDN: 64 kbps data* 56 kbps data*	ISDN: 64 kbps data 56 kbps data 128 kbps data (option)
<b>INTERNET</b>		MPDS: 64 kbps forward 28.8 kbps return* (Shared channel)	MPDS: 64 kbps* (Shared channel)	MPDS: 64 kbps (Shared channel)
<b>FAX</b>	fax	9.6 kbps fax G3*	64 kbps fax G4* 9.6 kbps fax G3*	64 kbps fax G4 9.6 kbps fax G3

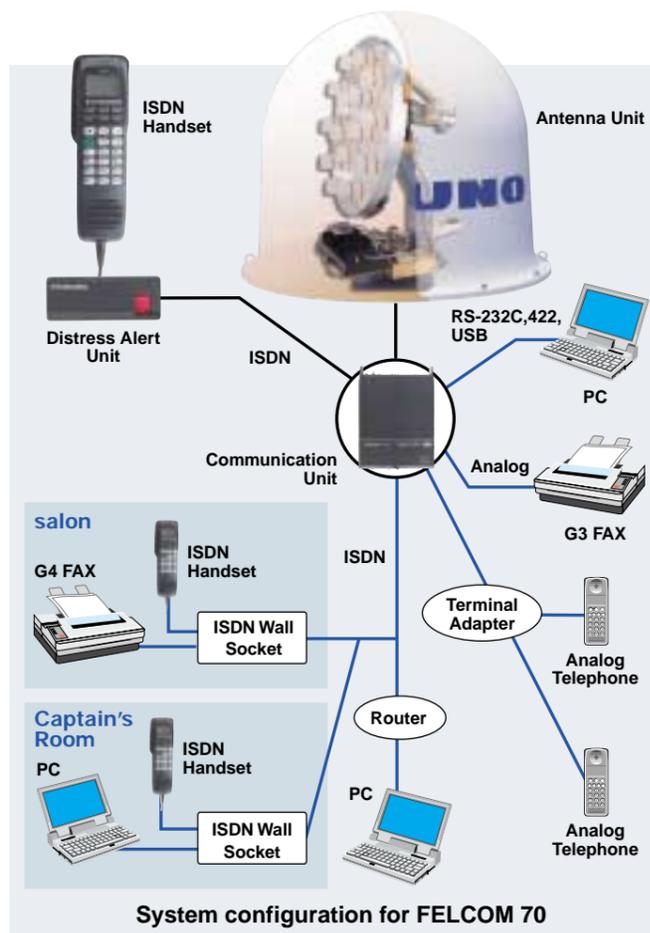
\* Spot beam service only

**What's the FELCOM 30/50/70**

FELCOM 30/50/70 are FURUNO's new Inmarsat FLEET F33/55/77 Mobile Earth Stations. This series provides quality fax and telecommunications, and data communications such as e-mail and Internet accesses in places where the coverage for conventional mobile phones or radio networks is not available. In the data communication service, this series provides high-speed data transfer with low communication fees by using ISDN and the unique MPDS (Mobile Packet Data Service), newly introduced in Fleet MES.

This series basically consists of an antenna, a communication unit and a handset. The palm-sized handset is identical for all three FELCOM models, and it is used to set all the configuration settings as well as dialing for telecommunications. The communication units come with a variety of interface ports to link with PCs as well as communications equipment. They have terminal blocks and RJ-45 connectors for ISDN and connectors for RS-232C, RS-422 and USB. Connected to an IP router, several PCs can share the Internet connection via the MPDS Service.

This series provides SIM card function. This function makes it possible for crew members to make phonecalls in greater privacy. The calls are billed to the owner of the SIM card when it is used. (For details, please consult with the service provider.)



**Data Communications (ISDN/MPDS)**

This series offers quality voice/fax communications and high-speed data communications by using ISDN and the unique MPDS, a whole new generation of advanced maritime communications services. ISDN and MPDS help reduce communication fees by using the services according to the situations.

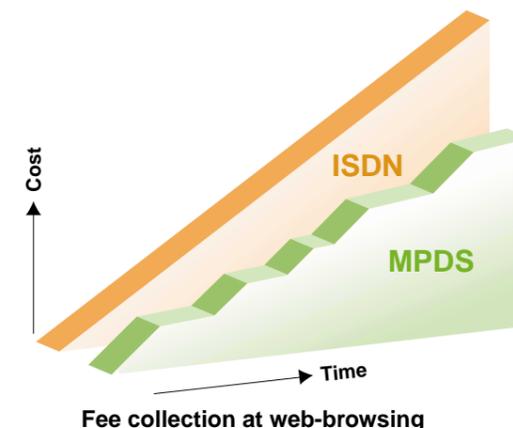
**Mobile ISDN**

Mobile ISDN delivers a constant data communications at 64 kbps maximum\* (FELCOM 50/70) and is best suited for exchanging large files and images, as well as voice/fax communications and videoconferencing. The user is charged for the time duration connected to the services, but not for the amount of the data transmitted.

\*The 128 kbps ISDN is available for FELCOM 70 (software update required).

**The Mobile Packet Data Service (MPDS)**

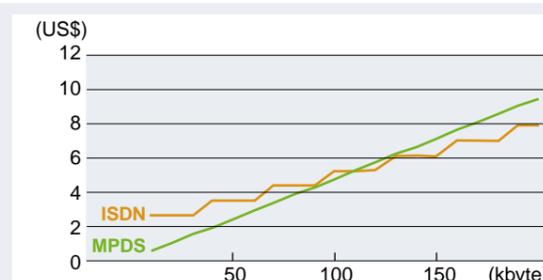
The MPDS is best suited for frequent network transmissions, which are less urgent or involve smaller amounts of data. The user only pays for the amount of data transmitted and received, rather than for the time connected. Thus, MPDS will let you stay online constantly, making it ideal for e-mailing and web-browsing.



The graph on the right shows the relations between the amount of data and a communication charge. This is calculated according to the following assumption.

	ISDN	MPDS
Communication fee	US\$0.85/6 sec.	US\$0.05/10 kbit
Connection/Disconnection/Certification	2 Units	0.1 kbyte
Throughput	42 kbps	-
Data amount	-	120%

(US\$1=JP¥109 as of August 2004)



Fee collection on larger file transmission (courtesy by KDDI Msat)

INMARSAT FLEET F33

# FELCOM 30



FELCOM 30 is the smallest and lightest within the Fleet family. This product provides voice and fax communications, integrated 9.6 kbps data service for file transfer via e-mail, and MPDS. The data service of Fleet F33 can achieve an effective throughput of up to seven times faster by using integrated compression, which is useful for small size e-mails and web browsing.

The small size and light weight of the FELCOM 30 makes satellite communications available for a wider range of craft, including fishery and coastguard vessels, yachts and other pleasure craft.

- ▶ High-speed data communications at 64/28.8 kbps by MPDS
- ▶ Global Area coverage for voice communications
- ▶ Compact and light-weight antenna unit allows the installation for smaller craft

## Antenna stabilization and tracking

Antenna stabilization is realized by using the three-axis active method that detects ship's motion with three rate sensors and an inclinometer. This mechanism allows the antenna to keep pointing to an appropriate satellite while a ship is in motion. Connection between the electronic circuits on the turning section with a parabola and those on the fixed pedestal in the radome is made by an improved rotary joint. A GPS receiver is incorporated in the radome and provides accurate position information to allow the MES to determine whether it is within coverage of a spot-beam as well as to orient the dish to the satellite to be used. This arrangement eliminates antenna rewind, providing uninterrupted communications during a course change of the vessel without heading signal input from gyrocompass.

INMARSAT FLEET F55

# FELCOM 50



FELCOM 50 offers almost the same services as Fleet F77 within the coverage of spot-beam, and consists of an antenna unit, a communication unit and a handset. FELCOM 50 is an integrated communication center, which facilitates voice and data communications via 64 kbps ISDN or MPDS protocols.

FELCOM 50 has a smaller antenna than FELCOM 70's, which makes it suitable for those navigating coastal areas, such as private yachts, coast guard vessels and fishing vessels, and could be a cost effective solution if the operation area of your fleet is covered by the spot-beam.

- ▶ High-quality voice communications at 64 kbps by ISDN
- ▶ High-speed data communications at 64 kbps by ISDN/MPDS
- ▶ Fast and high-quality 9.6 kbps fax
- ▶ Global Area coverage for voice communications

## The communication unit

The communication unit accommodates a variety of ports, ISDN telephone, RS-232 and USB to make itself compatible with other communications equipment as well as a PC. There is no need to have interface units such as a terminal adapter. It is a BlackBox unit and may be installed at any place in the bridge.

## Distress Alert Unit (FELCOM 70)

In case of emergency, by pressing the alert button, a mayday call transmission to the other parties will be initiated. Messages concerning alert transmission and reception are displayed on the standard handset.

# INMARSAT FLEET F77 FELCOM 70



FELCOM 70 is ground-breaking maritime satellite communication equipment including a modem for fast data communications at 64 kbps\*. The voice communications is selectable from 64 kbps and 4.8 kbps. For data communications, there are two methods to choose from: high speed ISDN (same as INMARSAT B) and 64 kbps MPDS.

The basic package consists of a communication and an antenna unit together with a handset and a distress alert unit. The communication unit is an integrated communication center providing links to telephone and fax communications in addition to onboard computer networks.

\*With software update, 128 kbps data communications is available by ISDN.

- ▶ High-quality voice communications at 64 kbps by ISDN
- ▶ High-speed data communications at 64 kbps by ISDN/MPDS
- ▶ Fast and high-quality 9.6 kbps fax
- ▶ All services are available within the Global Area
- ▶ Distress alert unit for instant distress call in time of emergency

## INMARSAT System

The Inmarsat system provides global communications with ships, motor vehicles and aircraft, free from the conventional problems arising from the use of radio communications. The Inmarsat provides 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 rate as the rotation of the earth. The satellites remain stationary above the certain location of the earth. Each satellite orbits at an altitude of 35,700 km, allowing it to monitor 1/3 of earth's surface. The satellites work as repeater stations between the land earth stations (LESSs) and mobile earth stations (MESs) on different channels for different services, Inmarsat-A, B, C, Mini-M, Fleet, etc.

## SPECIFICATIONS OF FELCOM 30/50/70

Model	FELCOM 30	FELCOM 50	FELCOM 70
<b>Communication Services</b>			
			Global Service Spot Beam Service
Voice	4.8 speech	4.8 speech, 64 kbps	4.8 speech, 64 kbps
Data	9.6 kbps data built-in compression V42 bis/V44, up to 40 kbps	56 kbps data 64 kbps data	54 kbps data 64 kbps data *128 kbps data (option)
Fax	9.6 kbps (G3 Fax)	9.6 kbps (G3 Fax) 64 kbps (G4 Fax)	9.6 kbps (G3 Fax) 64 kbps (G4 Fax)
MPDS	64 kbps forward, 28.8 kbps return Shared channel	64 kbps Shared channel	64 kbps Shared channel

<b>General</b>			
Transmitting Frequency	1626.5 - 1660.5 MHz		
Receiving Frequency	1525.0 - 1559.0 MHz		
Channel Spacing	1.25 kHz (Min), 5 kHz (Voice communication), 40 kHz (ISDN/MPDS)		

<b>Interface</b>			
Terminal (for wire screw connection)	2 x 2 pair ISDN	1 port	4 ports
	2-wire analog telephone	-	4 ports
	RS-422	1 port	1 port
	IEC 61162 input	1 port	1 port
	RJ-45 for ISDN	2 ports	4 ports
Connectors (contacts)	RJ-45 for analog	-	2 ports
	USB	1 port	1 port
	9-pin D-sub for RS-232	2 ports	2 ports

<b>Antenna Unit</b>			
Element	Helical array		
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		

<b>ENVIRONMENT</b> (IEC 60945 test method)			
Temperature	Below Deck Unit	-15°C to +55°C	
	Above Deck Unit	-25°C to +50°C	-25°C to +70°C
Waterproofing	Above Deck Unit	IPX6 (IEC 60529)	
EMC	IEC 60945 edition 4 (up to 2 GHz)		
Vibration	IEC 60945		

<b>POWER SUPPLY</b>			
POWER SUPPLY	11 - 32 VDC 1.3 A (St-by), 3.5 A (TX) at 24 VDC	100 - 220 VAC 24 VDC with DC-AC Inverter:110 W (Duty TX/RX: 1/1)	

	FELCOM 30	FELCOM 50	FELCOM 70
Standard	1. Antenna Unit SF-130 1 unit 2. Communication Unit SF-230 1 unit 3. ISDN Handset SF-870 with Handset Cradle 1 unit 4. Installation Materials and Spare Parts 1 set	1. Antenna Unit SF-150 1 unit 2. Communication Unit SF-250 1 unit 3. ISDN Handset SF-870 with Handset Cradle 1 unit 4. Installation Materials and Spare Parts 1 set	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. Distress Alert Unit SF-370 (for FELCOM 70 only) 2. Analog Telephone FC755D1/DBAR104001/888 3. Analog Telephone/Fax Wall Socket MJ-2S	4. Terminal Adapter QDGY911912 5. ISDN Wall Socket 102176 6. Junction Box QUFC911918	

### Fleet Global beam Coverage\*

Fleet F33 and Fleet F55 voice service areas  
Fleet F77 ISDN, MPDS and 4.8 kbit/s voice service areas

- Pacific Ocean Region
- Atlantic Ocean Region-West
- Atlantic Ocean Region-East
- Indian Ocean Region

### Fleet Spot-beam Coverage\*

Fleet F33 fax and data services  
Fleet F55 fax and data services

\*For individual coverage areas of each ocean region please see reverse

