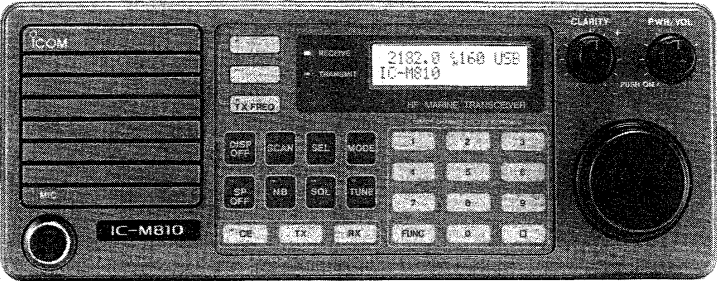


Count on us!



INSTRUCTION MANUAL

HF MARINE TRANSCEIVER  
**IC-M810**



SX-611

FOREWORD

Thank you for choosing the IC-M810 HF MARINE TRANS-CEIVER. Icom uses the most advanced, state-of-the-art engineering concepts and the latest technology.

To fully appreciate the capabilities of your new IC-M810, please read this instruction manual thoroughly. For further information, please feel free to contact your nearest Icom Dealer or Service Center.

IMPORTANT SAFETY PRECAUTIONS

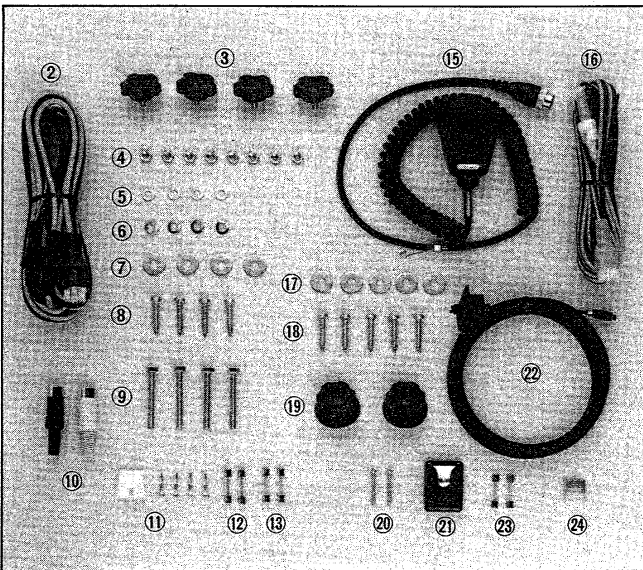
READ THIS INSTRUCTION MANUAL carefully and completely before attempting operation.

SAVE THIS INSTRUCTION MANUAL - This instruction manual contains important safety and operating instructions for the IC-M810.

WARNING - Mount the transceiver securely with bolts and nuts. If the transceiver is mounted without bolts and nuts, personal injury or transceiver damage could occur due to wave shock, vibrations, etc.

NEVER connect the transceiver to an AC outlet or more than a 16 V DC power source.

UNPACKING



\* Mounting brackets for the transceiver and remote controller and the cable clamp are not shown in the picture above.

EXPLICIT DEFINITIONS

The following explicit definitions apply to this instruction manual.

WORD	DEFINITION
WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No personal injury, risk of fire or electric shock.

AVOID using the transceiver in temperatures below -30 °C (-22 °F) or over +60 °C (+140 °F). The transceiver may not function properly in extreme temperatures.

AVOID using the transceiver in excessively dusty environments.

AVOID placing the transceiver in direct sunlight.

BE CAREFUL! The heatsink may become hot when operating the transceiver continuously for long periods.

During maritime mobile operations, DO NOT operate the transceiver without running the boat's engine.

Accessories for the transceiver	Qty.
① Mounting bracket*	1
② DC power cable (OPC-077)	1
③ Mounting knobs	4
④ Nuts	8
⑤ Flat washers (for mounting knobs)	4
⑥ Spring washers (use together with nuts)	4
⑦ Flat washers	4
⑧ Self tapping screws	4
⑨ Bolts	4
⑩ DIN plugs	2
⑪ 4-pin connector (use when connecting a tuner)	1 set
⑫ Spare fuses (30 A for DC power cable)	2
⑬ Spare fuses (5 A for the internal circuitry)	2

Accessories for the remote controller	Qty.
⑭ Mounting bracket*	1
⑮ Microphone (EM-48)	1
⑯ DC power cable (OPC-089A)	1
⑰ Flat washers	4
⑱ Self-tapping screws	4
⑲ Mounting knobs (assembled rubber washer)	2
⑳ Self tapping screws (for microphone hanger)	2
㉑ Microphone hanger	1
㉒ Interface cable (OPC-172A)	1
㉓ Spare fuses (3 A for DC power cable)	2
㉔ Cable stopper (for interface cable)	1
㉕ Cable clamp* (for DC power cable)	1

TABLE OF CONTENTS

FOREWORD .....	i
EXPLICIT DEFINITIONS .....	i
IMPORTANT SAFETY PRECAUTIONS .....	i
UNPACKING .....	i
TABLE OF CONTENTS .....	ii
1. FEATURES .....	1
2. OPERATING RULES AND GUIDELINES .....	2
3. PANEL DESCRIPTION .....	3
- Remote controller front panel	
- Remote controller rear panel	
- Transceiver front panel	
- Transceiver rear panel	
- Function display	
4. INSTALLATION .....	7~10
- Mounting the remote controller	
- Mounting the transceiver	
- Remote controller connections	
- Transceiver connections	
- Typical installation	
- Ground connections	
- Antenna connections	
- Power source	
5. EXTERNAL EQUIPMENT CONNECTIONS .....	11
- Optional HF automatic antenna tuners	
- Optional antenna matchers	
- AFSK terminal unit	
- CW key	
- ACC socket information	
6. SELECTING A CHANNEL .....	13
- Selecting 2182 kHz	
- Selecting a user-programmable memory channel	
- Selecting an ITU channel	
7. SETTING A FREQUENCY .....	14
- Setting a frequency	
- Changing the frequency in 100 Hz steps	
8. RECEIVING .....	15
- Receiving	
9. TRANSMITTING .....	16
- Transmitting	
10. WRITING A FREQUENCY .....	17
- Writing a frequency	
- Clearing memory information	
- Writing a comment	
11. OPERATING THE SCAN .....	18
- Scanning	
- Scanning with external equipment	
- Selecting a scan speed	
12. ALARM SIGNAL .....	19
- Transmitting an alarm signal	
- Testing an alarm signal	
- Distress call procedures	
13. SETTING THE DISPLAY CONTRAST .....	20
- Changing the display contrast	
- Turning the display backlight ON/OFF	
14. MULTI-CONTROLLER OPERATION (OPTIONAL) .....	21
- Connecting remote controllers	
- Priority of the clarity control	
- Operation note	
15. INTERCOM OPERATION (OPTIONAL) .....	22
- Operating the intercom function	
16. INTERNAL PRE-SETTINGS .....	23
17. MAINTENANCE .....	24
- Replacing a fuse	
- Installing an optional FL-32A filter	
- Resetting the microprocessor	
- Cleaning	
18. TROUBLESHOOTING .....	25
19. CHANNEL LIST .....	26~34
- Memory channel list .....	26
- ITU SSB duplex channel list .....	28
- ITU FSK duplex channel list .....	30
- ITU SSB simplex channel list .....	33
- ITU FSK simplex channel list .....	34
20. SPECIFICATIONS .....	35
21. OPTIONS .....	36

### INDIVIDUAL, SPLASH-RESISTANT REMOTE CONTROLLER

The separate controller is completely splash resistant and is only 286(W) × 112(H) × 62(D) mm,\* meaning it can be mounted practically anywhere. Up to 4 controllers (optional) can be connected to the IC-M810, controlling the transceiver anywhere. In addition, 4 controllers can also act as an intercom system.

\* 11.3(W) × 4.4(H) × 2.4(D) in

### STATE-OF-THE-ART OPTICAL FIBER CABLE

Optical fiber technology is another feature that makes the IC-M810 special. The optical fiber cable is approx. only 5 mm in diameter and can be easily installed beneath carpets or out of sight beneath window ledges. Tough, flexible and reliable, the cable will not corrode or pick up noise from other electrical systems on your vessel.

### 160 CONVENIENT MEMORY CHANNELS

Up to 160 user-programmable memory channels are available for your operating convenience. Each memory channel can store transmit and receive frequencies, operating mode and 7-digit alphabetical descriptions for your note.

### 848 ITU CHANNELS

The IC-M810 is designed with 704 pre-programmed ITU duplex channels (242 channels for SSB and 462 channels for FSK). The ITU duplex channels can be used as reverse frequencies between transmit and receive for coastal station operation. In addition, 144 ITU simplex channels (72 channels for SSB and 72 channels for FSK) are equipped with the transceiver.

### CONTINUOUS COVERAGE RECEIVER

The IC-M810 continuously covers all short wave frequencies from 0.5 to 30 MHz in 100 Hz steps including all marine frequencies. You can listen to international shortwave broadcasts, weather channels and news broadcasts.

### CHANNEL ACCESS VERSATILITY

Memory channel selection is quick and convenient via the main dial or 10-keyboard. The main dial and 10-keyboard can also be used for frequency changing.

### MEMORY SCAN

Memory scan is available for signal searching. Scan a specified channel with a variable scanning time of 1~10 sec. per channel.

### FSK CAPABILITY

The IC-M810 is designed for FSK operation such as RTTY or SITOR with the following features:

- Rapid Transmit/Receive switching time with Icom's DDS (Direct Digital Synthesizer) System.
- Optional 500 Hz/−6 dB filter installation capability for better selectivity in CW and FSK modes.
- An ACC socket for connecting an external terminal unit.

### ACC SOCKETS

The IC-M810 has 2 ACC sockets on the rear panel. They are input/output terminals and are used for connecting external equipment such as a linear amplifier, SITOR terminal unit, etc. The socket also has a scan control terminal for externally controlling IC-M810 scanning.

### S/RF INDICATOR

The indicator shows relative signal strength while receiving and relative output power while transmitting. This is useful for checking transmit modulation.

### 5 W AUDIO OUTPUT POWER

The IC-M810 emits 5 W powerful audio output power. You'll have no problem being heard when one remote controller (optional) is installed on the deck as a function of the intercom.

### EXCELLENT FREQUENCY STABILITY

All oscillator circuits in the IC-M810 are controlled with only one high-stability crystal unit. A total frequency stability of ±15 Hz is therefore obtained.

### OPTIONAL HF AUTOMATIC ANTENNA TUNERS

An optional AT-120 or AT-130 HF AUTOMATIC ANTENNA TUNER offers following features:

- Even where antenna element length is restricted due to space, allows you to operate the IC-M810.
- The AT-120 and AT-130 match a 7 m; 23 foot long-wire antenna across 2~22 MHz and 2~25 MHz marine bands, respectively.
- Just push the [TUNE] switch on the IC-M810, immediately provide matched condition.
- You can install the antenna tuner both on the deck or in the cabin.
- Preset tuning function provides super fast tuning on your most-used frequency.
- The AT-120 and AT-130 have 8 and 45 memories, respectively. To decrease the tune-up time, automatically store the matching conditions.
- Super capacitor in the AT-130 backs up 45 memory contents for approx. 1 week.

## Operating rules and guidelines

Before transmitting, monitor the channel you wish to use to avoid interrupting transmissions already in progress.

### (1) Call proceduress

Calls must be properly identified and time limits must be respected.

- 1) Give your call sign each time you call another vessel or a coastal station. If you have no call sign, identify the station by giving the vessel name and the name of the licensee.
- 2) Give your call sign at the end of each transmission that lasts more than 3 minutes.
- 3) You must break and give your call sign at least once every 15 minutes during long ship-to-shore calls.
- 4) Keep your unanswered calls short (less than 30 seconds) and do not repeat a call for 2 minutes.
- 5) Unnecessary transmissions are not allowed.

### (2) Priorities

- 1) Read all the rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.
- 2) False or fraudulent distress signals are prohibited and punishable by law.

### (3) Privacy

- 1) Information overheard but not intended for you cannot lawfully be used in any way.
- 2) Indecent or profane language is prohibited.

### (4) Logs

- 1) All distress, emergency and safety calls must be recorded in complete detail. Log data activity is usually recorded in 24 hour time. Universal Time (formerly UTC) is frequently used.
- 2) Adjustments, repairs, channel frequency changes and authorized modifications affecting electrical operation of the equipment must be kept in the maintenance log and entries signed by the authorized licensed technician performing or supervising the work.

### (5) Radio licenses

#### 1) Ship Station License

When your craft is equipped with an HF marine transceiver such as the IC-M810 you must have a current radio station license before using the equipment. It is unlawful to operate a ship station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship Radiotelephone License application. Your government-issued license states the call sign which is your craft's identification for radio purposes.

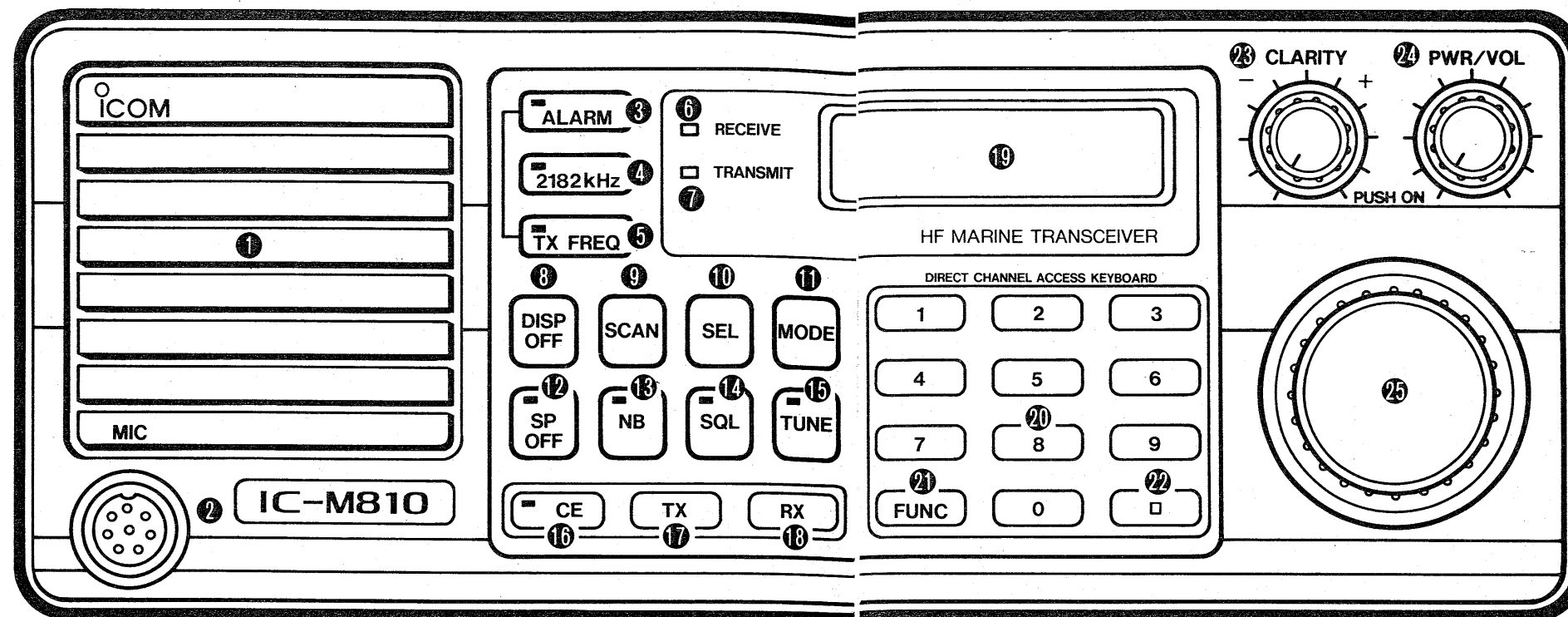
#### 2) Operator's License

A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes. You can usually obtain this permit by mail. The Restricted Radiotelephone Operator Permit must be posted or kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, and ends the call, and makes the necessary log entries.

A current copy of the applicable government rules and regulations is usually required to be kept.

### Remote controller front panel



#### 1 INTERNAL SPEAKER

Operates when the transceiver is receiving or the inter-com is operating.

#### 2 MIC CONNECTOR

Connects the supplied microphone or an optional HS-50 HANDSET here.

#### 3 ALARM SWITCH [ALARM] (p. 19)

- Turns ON and OFF the alarm function.
- Transmits alarm signals when pushing this switch together with [TX FREQ].

#### 4 2182 kHz SWITCH [2182kHz] (p. 19)

Selects the 2182 kHz emergency and distress call frequency.

#### 5 TRANSMIT FREQUENCY CHECK SWITCH [TX FREQ] (p. 16)

Switches the displayed receive frequency to the transmit frequency to check whether the frequency is busy or not.

#### 6 RECEIVE INDICATOR [RECEIVE] (p. 15)

Lights when the transceiver is receiving and the squelch opens.

#### 7 TRANSMIT INDICATOR [TRANSMIT] (p. 17)

Lights when the transceiver is transmitting.

#### 8 DISPLAY LIGHT SWITCH [DISP OFF] (p. 20)

Turns OFF and ON the function display and switch indicator lights.

#### 9 SCAN SWITCH [SCAN] (p. 18)

Starts and stops the scan.

#### 10 SELECT CHANNEL SWITCH [SEL] (p. 18)

Selects the channels you want to scan.

#### 11 MODE SWITCH [MODE] (pgs. 15, 16)

Selects the desired operating mode.

#### 12 SPEAKER SWITCH [SP OFF] (p. 15)

Turns OFF and ON receive sounds from the internal speaker

#### 13 NOISE BLANKER SWITCH [NB] (p. 15)

Turns ON and OFF the noise blanker function.

#### 14 SQUELCH SWITCH [SQL] (p. 15)

Closes and opens the squelch function.

#### 15 ANTENNA TUNER SWITCH [TUNE] (p. 16)

Starts the tuning of an optional AT-120 or AT-130 HF AUTOMATIC ANTENNA TUNER.

#### 16 CLEAR ENTRY SWITCH [CE] (p. 14)

- Clears an entry and retrieves the previous key input.
- Sets the transceiver to change the display frequency at 100 Hz steps with the main dial when the switch lights.

#### 17 TRANSMIT FREQUENCY ENTER SWITCH [TX] (pgs. 13, 14)

- Recalls a memory channel with the keyboard.
- Used when the desired transmit frequency is stored into a memory channel.

#### 18 RECEIVE FREQUENCY SWITCH [RX] (p. 13)

- Recalls a memory channel with the keyboard.
- Used when the desired receive frequency is stored into a memory channel.

#### 19 FUNCTION DISPLAY (p. 6)

Indicates current operating frequency, channel, mode and additional information.

#### 20 10-KEYBOARD (pgs. 13, 14)

Used to input a frequency or memory channel number.

#### 21 FUNCTION SWITCH [FUNC]

Activates secondary functions.

#### 22 CLARITY PRIORITY SWITCH [□] (p. 21)

Sets the controller priority for controlling [CLARITY].

#### 23 CLARITY CONTROL [CLARITY] (p. 15)

Shifts only the receive frequency by  $\pm 150$  Hz.

#### 24 POWER SWITCH AND VOLUME CONTROL [PWR/VOL]

- Turns ON and OFF the transceiver power.
- Varies the audio output level from the internal speaker.

#### 25 MAIN DIAL (p. 13)

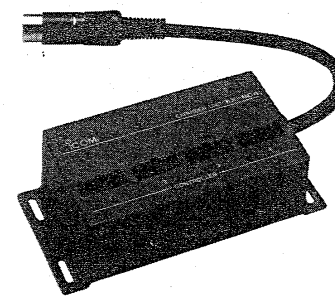
- Changes the display frequency in 100 Hz steps when the CE indicator lights.
- Changes the memory channel when the CE indicator does not light.



ITEM		DESCRIPTION
■ General		
Frequency coverage	Receive	0.5~30.0 MHz continuously
	Transmit	2.0000~2.9999 MHz 4.0000~4.9999 MHz 6.0000~6.9999 MHz 8.0000~8.9999 MHz 12.0000~13.9999 MHz 16.0000~16.9999 MHz 18.0000~19.9999 MHz 22.0000~22.9999 MHz 25.0000~26.4999 MHz
Mode	J3E (USB, LSB), H3E, R3E, A3E (receive only), A1A, J2B	
Antenna impedance	50 Ω (unbalanced)	
Power supply requirement	13.6 V ±15 % DC (negative ground)	
Current drain	Receive	2 A at max. audio output
	Transmit	30 A at max. RF output power
Usable temperature range	- 30 °C~+60 °C (- 22 °F~+ 140 °F)*	
Frequency stability	± 15 Hz for 0.1~23 MHz (- 30°C~+ 60°C; - 22 °F~+ 140 °F)	
Dimensions	Transceiver	287 (W) × 112 (H) × 325 (D) mm 11.3 (W) × 4.4 (H) × 12.8 (D) in
	Remote controller	287 (W) × 112 (H) × 62 (D) mm 11.3 (W) × 4.4 (H) × 2.4 (D) in (Projections not included)
Weight	Transceiver	6.5 kg (14.3 lb)
	Remote controller	1.0 kg (2.2 lb)
■ Transmitter		
Output power	150 W (60 W: 25.0000~26.4999 MHz)	
Spurious emissions	65 dB below peak output power	
Carrier suppression (SSB)	50 dB below peak output power	
Unwanted sideband suppression	55 dB below peak output power (with 1000 Hz AF input)	
Microphone impedance	600 Ω	
■ Receiver		
Sensitivity (for 12 dB SINAD)	SSB, CW, FSK	0.5~1.8 MHz 6.3 μV 1.8~30.0 MHz 0.5 μV
	AM	0.5~1.8 MHz 30 μV 1.8~30.0 MHz 3.16 μV
Spurious response rejection	- 70 dB	
Audio output power	5.0 W with a 4 Ω load	
Audio output impedance	4~8 Ω	
Clarity variable range	± 150 Hz in 10 Hz steps	

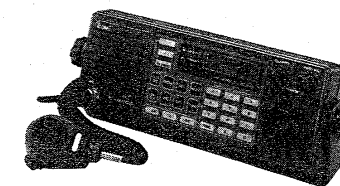
\* The function display on the remote controller may not indicate characters clearly under extremely low temperatures around -30 °C (-22 °F) due to LCD characteristics. However, transmitting and receiving with the IC-M810 function normally around this temperature.  
All stated specifications are subject to change without notice or obligation.

## EX-804 EXPANDER UNIT



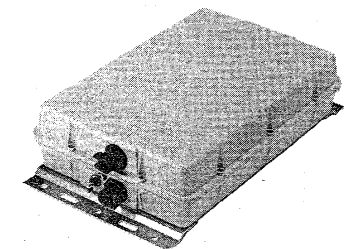
Required when connecting more than 2 controllers to the transceiver for multi-controller operation.

## EX-803 REMOTE CONTROLLER



This is an extra controller for multi-controller operation and comes with a DC power cable, interface cable, mounting bracket and microphone.

## AT-120, AT-130 HF AUTOMATIC ANTENNA TUNERS



Allow operation of the IC-M810 even where antenna element length is restricted.  
- AT-120: 2~22 MHz marine bands  
- AT-130: 2~25 MHz marine bands  
Refer to p. 1 for details.

## MN-100, MN-100L ANTENNA MATCHERS

MN-100 For a dipole or whip antenna

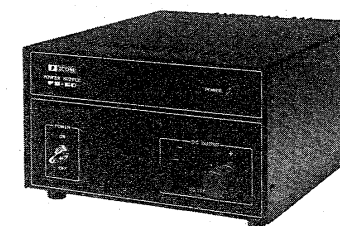


MN-100L For a whip or wire antenna



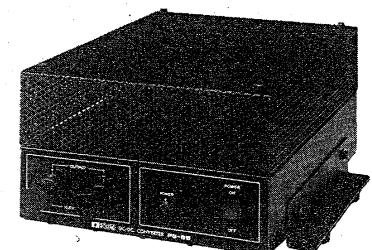
Matches the IC-M810 to a long wire or whip antenna system without applying DC power. An antenna matcher is recommended for emergency situations.

## PS-60 DC POWER SUPPLY



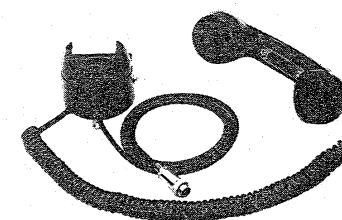
Suitable for a ship equipped with an AC outlet or for a coastal station.  
- Input voltage: 100, 117, 220 or 240 V AC  
- Output voltage: 13.6 V DC  
- Max. current: 30 A

## PS-65, PS-66 DC-DC CONVERTERS



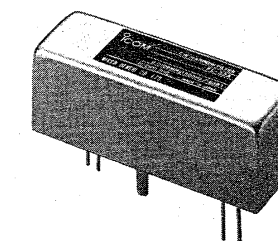
Convert a DC voltage to 13.6 V (30 A) and provide a floating ground system.  
- PS-65: Input voltage 10.5~16 V  
- PS-66: Input voltage 19~32 V

## HS-50 HANDSET



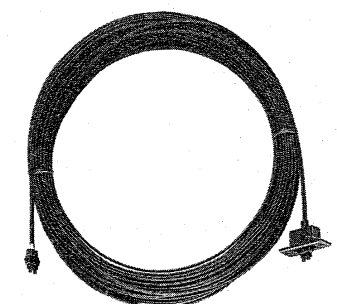
Provides better audio reception and comes in handy for listening privacy onboard. (The connector may differ from that shown in the picture above.)

## FL-32A CW NARROW FILTER



Has good shape factor and provides you with better receiver selectivity in CW and FSK operation.  
- Center frequency: 9.0106 MHz  
- Bandwidth: 500 Hz/ -6 dB

## OPC-248 EXTENSION INTERFACE CABLE



Provides longer-separation remote control operation for the transceiver.  
- Cable length: 20 m (65 ft)