


ICOM

HF TRANSCEIVER

IC-F8100



A New Dimension for HF Land Mobile Radio

Rugged
MIL-STD 810

IP54

- Three versions for versatile configuration
- 125W of output power with high duty cycle operation
- Fanless, enclosed structure and compact body
- ALE and selcall capabilities
- Tested to IP54 and MIL-STD-810 G



Rock Solid Basics:

ALE (Automatic Link Establishment)

ALE is a system which automatically selects the most suitable channel and establishes a communication link. The ALE provides interoperability with other manufactures compliant with the FED-STD-1045A ALE. ALE individual call, net call, sounding and AMD (Automatic message display) are available.

Selcall (Selective calling)

The IC-F8100 offers CCIR493 based 4 and 6 digit open selcall which is commonly used in HF network and 4 and 6 digit Icom F7000 compatible selcall system. Selcall allows you to make selective calling, phone call, message call, position call, status call, emergency call and channel test call.

Fanless, enclosed structure and compact body

The IC-F8100 has a fanless, enclosed structure securely sealed from intrusion by all potential elements and visibly more compact than the previous models. The IC-F8100, CFU-F8100 and AD-119 have been tested to MIL-STD-810-G and IP54 ratings. Also, most of connection cables and connectors employ IP54 water resistant sealing.

125W of powerful RF output

A full 125W output power at full duty cycle voice mode operation is possible with the fanless design. 25% duty cycle operation is possible at data mode operation (Max. 5 minutes of continuous transmission). However, when used with an optional external cooling fan unit, CFU-F8100, the IC-F8100 ensures full duty cycle data and voice mode operations to absolutely reliability during long continuous transmit cycles or for operation in hot climates.



A Benchmark for Ease and Convenience:

User friendly operation

Despite the multitude of features, the IC-F8100 is designed for simple, straight forward operation. According to the operating status, the function (P1-P3) buttons change the assigned functions and show the assigned functions at the bottom line of the display.



Function button menus change as operated

Clear talk function

The clear talk function automatically reduces the noise and eliminates the need to be an expert operator at the touch of a button.

Mute functions

The IC-F8100 has 3 types of mute functions, call squelch, S-meter squelch and voice squelch. The call squelch function opens the squelch on when received a selcall or ALE call intended to the station and provides quiet standby.

Digital signal processor (DSP)

The DSP allows flexible filter width setting from wide, middle and narrow without an optional filter.

Three versions of controller configurations

Three versions of controller configurations are selectable to suit almost any way of use/installation that may be required.



Controller attached version (#01)

Ideal for standard desktop use or quick set-up in a field station



Detached controller version (#02)*

Stow the RF unit in a place of convenience during in-vehicle installation or where space is at a premium.



Command microphone version (#03)*

Increases the user's ability to operate more features of the radio safely, especially during mobile operation.

* For detached controller version and Command microphone version, optional separation cable is required separately.

Various Accessories:

The IC-F8100 allows you to connect with various accessories such as PC, HF data modem, GPS* and antenna tuner* via the AD-119 Junction Box.

* Antenna tuner/GPS cable (RF unit to AT-140 and a GPS receiver), USB cable (RF unit to PC) will be available soon.

GPS receiver connection

When connected an external GPS receiver, the IC-F8100 can send current position data to other station and shows position information, time, altitude and heading of movement on the display.

Data communications

When used with the optional Junction Box, AD-119, the AD-119 has an installation space to fit a high speed HF data modem.* It allows HF e-mail operation using a PC connected via RS-232C cable (9-pin).

* HF data modem is now under evaluation. Planned to be a recommended partner option.

So Many Features:

- Multiple operating modes (SSB, AM, and CW) are supported
- 500kHz to 29.999MHz general coverage receiver (Transmit: 1.6MHz to 29.999MHz)
- 500 memory channels
- AT230 automatic tuning antenna available
- ± 0.3 ppm frequency stability (-30°C to $+60^{\circ}\text{C}$)
- TX Power protection (PA unit high temperature, high SWR, low battery)



Optional CFU-F8100 fitted to the rear panel.

REAR PANEL VIEW



SPECIFICATIONS

GENERAL	
• Frequency coverage	0.5–29.9999MHz
Receive	1.6–29.9999MHz
Transmit	
• Type of emission	J3E, A3E, A1A, F1B
• Number of channels	500 channels
• Operating temperature	–30°C to +60°C; –22°F to +140°F
• Frequency stability	±0.3ppm (at –30°C to +60°C)
• Power supply requirement	13.8V DC (11.73–15.87V) (Negative ground)
• Antenna impedance	50Ω (SO-239)
• Current drain	
Receive (Max. audio)	Less than 3A
Transmit (Max. output)	Less than 28A
• Dimensions (W×H×D) (Projections not included)	174×62×259 mm; 6.85×2.44×10.2 in (IC-F8100 #01)
• Weight (approx.)	3.8kg; 8.38lb (IC-F8100 #01)
TRANSMITTER	
• Output power	J3E/A1A 125, 50, 10W PEP (typical)
A3E	30, 12.5, 3W (typical)
F1B	75, 50, 10W PEP (typical)
• Spurious emissions	64dB typ. below PEP
• Carrier suppression	50dB below PEP
• Unwanted sideband	400Hz 55dB below PEP
1kHz 65dB below PEP	
• 3rd IMD	25dB below PEP
• Duty cycle	
Normal conversation	100% (at –30°C to +60°C)
Data mode	25%* (at –30°C to +30°C)
All modes with CFU-F8100	100% (at –30°C to +45°C)
	* Max. 5 minutes continuous transmission.
RECEIVER	
• Sensitivity (at 10dB S/N)	0.5–1.5999MHz 1.6–29.9999MHz
J3E (Pre-amp. ON)	14dBμV –14dBμV
A3E	22dBμV 6dBμV
• Squelch sensitivity	Threshold
J3E (at 13.5MHz)	Less than +20dBμV
A3E (at 1.000MHz)	Less than +30dBμV
• Selectivity	
J3E	2.4kHz/–6dB 3.8kHz/–60dB
A3E	6kHz/–6dB 15kHz/–60dB
• Spurious responses	More than 70dB
• Audio output power (at 13.8V DC)	4.0W at 10% distortion with a 4Ω load
• Clarifire	±200Hz

All stated specifications are subject to change without notice or obligation.

Applicable U.S. Military Specifications & IP Rating

Tested to IC-F8100 (#01–03), AD-119, CFU-F8100 and MB-126.

Standard	MIL 810 G	
	Method	Procedure
Low Pressure	500.5	I, II
High Temperature	501.5	I, II
Low Temperature	502.5	I, II
Temperature Shock	503.5	I-B
Solar Radiation	505.5	I
Rain	506.5	I, III
Humidity	507.5	II
Salt Fog	509.5	–
Dust	510.5	I
Vibration	514.6	I
Shock	516.6	I, IV

Also meets equivalent MIL-STD-810-C, -D, -E and -F.

Tested to IC-F8100 (#01–03), AD-119 and CFU-F8100.

Ingress Protection Standard	
Dust & Water	IP54 (Dust-protection and water resistant)

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OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.

COMMAND MICROPHONE



HM-192*1

SEPARATION KIT



RMK-6*2

SEPARATION CABLES*3



OPC-609: 1.9m; 6.2ft
OPC-607: 3m; 9.8ft
OPC-726: 5m; 16.4ft
OPC-608: 8m; 26.2ft

HAND MICROPHONE



HM-193*4

MOUNTING BRACKET




MB-126

COOLING FAN UNIT




CFU-F8100

AUTOMATIC ANTENNA TUNER




AT-140

SHIELDED CONTROL CABLES



OPC-2142
10m (32.8ft) tuner cable
between AT-140 and AD-119

OPC-2143
5m (16.4ft) tuner cable
between AT230 and AD-119



Recommended option
AUTOMATIC TUNING ANTENNA
(Moonraker Australia Pty. Limited)
AT230*6

EXTERNAL SPEAKERS



SP-30 SP-25*5 SP-10

Antenna tuner/GPS cable: RF unit to AT-140 and a GPS will be available soon. (Details TBA)

USB cloning cable: RF unit to PC will be available soon. (Details TBA)

HF data modem is now under evaluation. Planned to be a recommended partner option. Can be installed in the AD-119.

JUNCTION BOX



AD-119

*1 Same as supplied with IC-F8100 #03. *2 Same as supplied with IC-F8100 #02.
*3 One of these cables are required for use with IC-F8100 #02 or #03. RMK-6 or HM-192.
*4 Same as supplied with IC-F8100 #01 and #02. *5 Same as supplied with IC-F8100 #01–#03.
*6 Continuous CW transmission at high power is not guaranteed with AT230.

IC-F8100 contents	
#01	• RF unit with controller head • Microphone, HM-193 • Mic. hanger kit
#02	• RF unit • Remote controller head • Separation kit, RMK-6 • Microphone, HM-193 • Mic. hanger kit
#03	• RF unit • Command microphone, HM-192 • Mic. hanger kit for HM-192 • Extension Mic. connector
•	External speaker, SP-25 • DC power cable • Spare fuses are supplied to all versions.