# ICOM

# IC-F8101

# Powerful Professional HF in a Compact Package

**Digital Vocoder & AES Encryption**
**Compatible***

IC-F8101
2013 Jan 30 10:20:30
Address | Call In | Call Out

*Depending on the transceiver version. RapidM TC4-LP Data Modem Module and software are necessary.

# Rock Solid Basics:

## ALE (Automatic Link Establishment)

The built-in ALE system automatically selects the best channel and establishes a communication link. ALE provides interoperability with other 2G ALE radios using MIL-STD-188-141B and FED-STD-1045A ALE standards. ALE individual call, net call, sounding, AMD (Automatic Message Display) and LQA (Link Quality Analysis) polling are available.

## Selcall (Selective Calling)

The IC-F8101 provides CCIR493-4 based 4-digit and 6-digit open standards Selcall, widely used in HF networks and HF calling systems. Supported Selcall functions include: selective calling, phone call, message call, position call, status call, emergency call and channel test call. For security, the owner password-enabled stun feature can remotely disable the radio operation and the radio can be GPS tracked.

## Compact and Durable

The IC-F8101 has a durable, enclosed structure securely sealed from the elements, in a stealthy black compact package. The IC-F8101

IC-F8101 with optional MB-126.

and the CFU-F8100 cooling fan unit has been tested to MIL-STD-810-G and IP54 ratings. Also, connection cables and connectors are IP54 water resistant.

## 125 W* of Powerful RF Output

With the fanless design, you get 125W* output with full duty cycle operation in voice mode or in data mode a maximum 5 minutes of continuous transmission (25% duty cycle). When used with the CFU-F8100 optional external cooling fan unit, the IC-F8101 provides full duty cycle data and voice mode operations for absolute reliability during long continuous transmit cycles, or for operation in hot climates.

* 100W for Australia versions.

Optional CFU-F8100 fitted to the rear panel.

Optional CFU-F8100.

## BITE (Built-in Test Equipment) Function

You can check the transceiver's internal condition by using the BITE capability. Auto, logic, receiver, and transmitter are checked.

### Actual Size

HF TRANSCEIVER **IC-F8101**

# A Benchmark for Ease and Convenience:

## User Friendly Operation

The IC-F8101 is designed for simple, straightforward operation. The Administrator/User feature can limit the functions that are accessed by the User. The Administrator can enter the operating frequency and assign memory channels from the front panel or the remote control microphone.

The following functions can be assigned to the [I], [II], and [III] soft key buttons: Main menu, Manager menu, Set mode, Selcall address list, RX history, and TX history.

Function button menus are shown at the bottom of the display

## Clear Talk Noise Reduction

The clear talk feature separates signals from noise using the DSP and gives you clearer audio at the touch of a button.

## Mute Functions

The IC-F8101 has 3 types of mute functions: call squelch, S-meter squelch and syllabic voice squelch. Call squelch opens the squelch only when receiving a Selcall or ALE call sent intentionally to this station and provides quiet standby.

## Digital Signal Processor (DSP)

The latest DSP technology improves both the transmitter and receiver performance. The digital IF filter provides flexible filter settings for narrowband signals.

# Various Accessories:

## GPS Receiver Connection

When connected to the UX-248 optional GPS unit, the IC-F8101 can send current position data to other stations and can be used with a AVL (Automatic Vehicle Location) system.
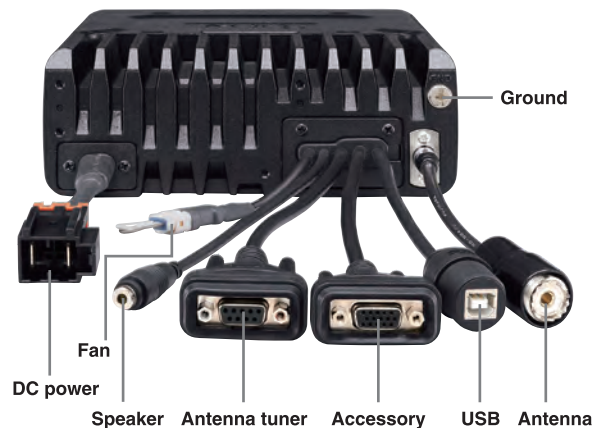
Optional UX-248

## Data Communications

The IC-F8101 has an internal expansion slot for an optional RapidM TC4 or TC4-LP Data Modem Module*[1]. This provides HF Email capability connecting to a PC with Email software from RapidM. In addition, the TC4-LP has optional functions including 2400 bps MELPe/TWELP Vocoder and 256-bit AES encryption*[2].

*[1] Depending on the version. *[2] Please visit www.rapidm.com for details.

## USB Port for PC Connection

The IC-F8101 can be connected to a PC through a USB port for HF Email, CI-V remote control and modulation input.

**Rear Panel View**

Ground

Fan

DC power

Speaker    Antenna tuner    Accessory    USB    Antenna

# Many More Features:

- Multiple operating modes (SSB, AM, CW and Data mode)*
  (* SSB and AM (RX only) for Australia versions)

- 500 kHz to 29.999 MHz general coverage receiver (TX: 1.6 MHz to 29.999 MHz) and VFO mode operation

- 500 Selcall, 500 ALE address memories

- ±0.3 ppm frequency stability (−30˚C to +60˚C)

- PTT tune function automatically starts tuning when the PTT button is pushed.

- RFDS (Royal Flying Doctor Service) emergency calls*
  (* Australia version only)

- TX Power protection (PA unit high temperature, high SWR, low battery)

- Display mode: SWR, voltage, clock, GPS position, direction and elevation

- FCC part 90 compliant (USA version)

# Automatic Tuning Antenna

# AH–740

- Relay-driven compact automatic tuning antenna
- Compact and lightweight (3.5 kg)
- 150 mS typical high speed tuning (while memory tuning)
- Low power consumption (0.4 A typical)

## SPECIFICATIONS

| | AH-740 |
|---|---|
| • Frequency coverage | 2.5–29.9999 MHz |
| • Output power rating | SSB/DATA: 125 W PEP |
| • VSWR | 1.5:1 typical (50 Ω) |
| • Tuning speed  New channel  Memory tune | 2–3 S typical 150 mS typical |
| • Number of memory channels | 45 channels |
| • Operating temperature | –40°C to +70°C; –40°F to +158°F |
| • Power supply requirement | 13.8 V DC (10.8–15.87 V) |
| • Power consumption | 0.4 A typical |
| • Tune power | 5–15 W PEP, Rated 10 W PEP |
| • Dimensions (W × H × D)  (Projections not included)  Height (with whip + spring) | 238 × 145 × 160 mm; 9.37 × 5.71 × 6.3 in (Base unit) 1909 mm; 75.16 in |
| • Weight (approx.) | 3.5 kg; 7.7 lb |
| • Mounting | M16 × 45 mm |
| • Environmental test | MIL-STD-810-G |
| • IP Rating | IP 55 (Dust-protection and water jet resistance) |
| • Supplied accessories | 6 m; 19.7 ft control cable and 6 m; 19.7 ft coaxial cable |







**AH-740**

Silver mounting stand shown in photo not included.

# Three types of controller configurations

Three types of controller configurations are available
to suit almost any application or installation that may be required.



**Controller attached type**

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



**Remote control microphone type***

Phone-style convenience for mobile operation in all types of modern vehicles.



**Detached controller type***

Get the proven ergonomics of a compact head and hand microphone with the separated RF unit.

* For the detached controller and remote control microphone types, an optional separation cable is required. (Purchase separately)

## SPECIFICATIONS

### GENERAL

| | |
|---|---|
| • Frequency coverage | Receive: 0.5–29.9999 MHz, Transmit: 1.6–29.9999 MHz |
| • Type of emission | J3E, A3E (RX only) (Australia versions) J3E, A3E, A1A, F1B, J2B (Export/USA versions) |
| • Number of channels | 500 channels |
| • Number of addresses | Selcall 500 channels, ALE 500 channels |
| • Operating temperature | –30°C to +60°C; –22°F to +140°F |
| • Frequency stability | ±0.3 ppm (at –30°C to +60°C) |
| • Power supply requirement | 13.8 V DC Negative ground 10.8–15.6 V (Australia versions) 11.73–15.87 V (Export/USA versions) |
| • Antenna impedance | 50 Ω (SO-239) |
| • Current drain     Receive                          Transmit | Less than 3 A (Max. audio), 1.0 A (Stand-by) Less than 28 A (Maximum output) |
| • Dimensions (W × H × D) (Projections not included) | 174 × 62 × 259 mm; 6.85 × 2.44 × 10.2 in (Controller attached type) |
| • Weight (approx.) | 3.9 kg; 8.6 lb (Controller attached type) |

### TRANSMITTER

| | |
|---|---|
| • Output power     J3E                                        J3E/A1A                                        A3E                                        F1B/J2B | 100, 50, 10 W PEP (typical) (Australia versions) 125, 50, 10 W PEP (typical) (EXP/USA versions) 30, 12.5, 3 W (typical) (EXP/USA versions) 75, 50, 10 W PEP (typical) (EXP/USA versions) |
| • Spurious emissions | 64 dB below PEP typical (EXP/Australia versions) 64 dB below PEP (USA versions) |
| • Carrier suppression | 50 dB below PEP |
| • Unwanted            400 Hz   sideband             1 kHz | 55 dB below PEP 65 dB below PEP |
| • 3rd IMD | 25 dB below PEP |
| • Duty cycle           Normal conversation           Data mode           All modes with CFU-F8100 | (at 14.1 MHz, 25°C) 100% (at –30°C to +60°C) 25%* (at –30°C to +30°C) 100% (at –30°C to +45°C) * Maximum 5 minute continuous transmission. |

### RECEIVER

| • Sensitivity (at 10 dB S/N) J3E (Pre-amp. ON) A3E | 0.5–1.5999 MHz 14 dBμV 22 dBμV | 1.6–29.9999 MHz –14 dBμV 6 dBμV |
|---|---|---|
| • Squelch sensitivity J3E (at 13.5 MHz) A3E (at 1.000 MHz) | Threshold Less than +20 dBμV Less than +30 dBμV | Tight Less than +90 dBμV Less than +110 dBμV |
| • Selectivity J3E A3E | 2.4 kHz/–6 dB 6 kHz/–6 dB | 3.8 kHz/–60 dB 15 kHz/–60 dB |
| • Spurious response | More than 70 dB | |
| • Audio output power | 4.0 W at 10% distortion with a 4 Ω load | |
| • Clarifier | ±200 Hz | |

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

### Applicable U.S. Military Specifications & IP Rating

Tested on the IC-F8101, 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-C |
| 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 on the IC-F8101 and CFU-F8100.

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

## OPTIONS

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

**REMOTE CONTROL MICROPHONE**



HM-192*1

**SEPARATION KIT**



RMK-6*2

**SEPARATION CABLES***3



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

**HAND MICROPHONE**



HM-193*4

**EXTERNAL SPEAKERS**



SP-30
SP-35 (2 m cable)
SP-35L*5 (6 m cable)

**COOLING FAN UNIT**



CFU-F8100

**MOUNTING BRACKET**



MB-126

**AUTOMATIC ANTENNA TUNER**



AT-140*6

**TUNER CONTROL CABLE**



OPC-2309 Shielded control cable between IC-F8101 and AT-140. 10 m (32.8 ft)

**GPS UNIT**



UX-248*7

**EXTERNAL GPS/ MODEM ADAPTER CABLE**



OPC-2308

*1 Same as supplied with the remote control Mic type.
*2 Same as supplied with the detached controller type.
*3 One of these cables are required for use with the detached controller and remote control Mic types.
*4 Same as supplied with the controller attached/detached types.
*5 Same as supplied with the IC-F8101.
*6 OPC-2309 is required.
*7 Can be used with Enhanced version.

### IC-F8101 supplied accessories

Controller attached type:
 • RF unit with controller head  • HM-193 Microphone  • Mic hanger kit

Detached controller type:
 • RF unit  • Remote controller head  • RMK-6 Separation kit,  • HM-193 Microphone  • Mic hanger kit

Remote control microphone type:
 • RF unit  • HM-192 remote control microphone  • Mic hanger kit for HM-192  • Extension Mic connector

 • SP-35L External speaker  • DC power cable  • Spare fuses are included with all types.

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