



**IC-F5020** Series  
**IC-F6020** Series

**VHF AND UHF TRANSCEIVERS**

## An Ideal Balance of Features, Performance and Value

The IC-F5020/F6020 series is ideal for small-to-mid sized systems for public service, large industry to light commercial users. The IC-F5020 series offers multiple signaling, advanced scanning, improved external channel control capability and wide frequency coverage packed in a compact body. This rugged mobile will easily exceed your expectations with its reliable performance and communication quality.

- | 128 channel capacity with 8 zones
- | MIL-STD-810 F rugged construction
- | Built-in 2-Tone, 5-Tone, CTCSS and DTCS (analog mode)
- | 50 W (VHF), 45 W (UHF) (USA/EXP versions), 25 W (EUR/EXP versions) RF output power
- | MDC 1200 compatible
- | Lone worker function
- | Loud and clear 4 watts (typical) front mounted speaker
- | External memory channel control with optional ACC cable



IC-F5020 series



### 128 memory channels

128 channels (Max.) separated into 8 memory zones. Memory channels can be identified with the 8-character channel name and selected easily with the up/down buttons.



### Front mounted speaker

4 watts (typ.) front mounted speaker delivers clear and loud audio. With the speaker facing the operator, audio can be clearly heard without impediment during operation.

### 6 programmable buttons

A pair of up/down and P0–P3 function assignable buttons allow you to customize functions to meet specific needs. An independent volume knob offers simple, convenient operation.

### MIL grade rugged construction

The tough aluminum die-cast chassis and polycarbonate front panel have been tested to the MIL standard 810-F. With this heavy-duty construction, the IC-F5020 series provides reliable operation over the long term in all manners of rugged environments.

### Most popular signalings built-in

Use the built-in 2-Tone, 5-Tone, CTCSS and DTCS capabilities as standard to set up your own talk groups, PTT ID and quiet stand-by when others are talking. The IC-F5020 series also has CTCSS/ DTCS high speed decode and 2-Tone decode accuracy.

### MDC 1200 compatible

The following MDC features are available with the built-in MDC signaling.

- PTT ID (TX/RX)
- Radio check (RX)
- Radio stun (RX)
- Radio revive (RX)
- Emergency TX/RX (No ACK)
- 5 alias table (Max.)

### Multiple 2-Tone, Multiple 5-Tone

Up to ten 2-Tone and eight 5-Tone codes can be decoded on a channel. When a matched tone is received, the following items are programmable for each code.

- Beep sound
- Answer back
- Scan
- Bell icon
- Radio stun/kill/revive

### Radio kill, stun and revive

The radio kill/stun functions disable a lost or stolen radio over the air, eliminating security threats from undesired listeners. When the stun command is received, all functions will be temporarily locked out until the revive command is received or the unlock password is entered.

### Lone worker function

When the radio is not operated for a preset period, the radio sounds a beep and requires you to push any button. If the radio is still not operated for a specified wait period, an emergency signal automatically transmits and informs co-workers that something may have happened to the individual worker.

### Mode dependent scan

In the mode dependent setting, the scanning setting is dependent on the operating channel. When you change the operating channel, the scanning list automatically changes to the list set for that channel. It is convenient when you move to a different operating area that may require a different operating channel. No need to change the scanning setting.

### TX channel setting and Talk back function

The TX channel setting allows you to program a transmission channel while scanning. Start channel, last detected channel, priority and pre-programmed channel are selectable. Prior to the TX channel setting, the talk back function allows you to talk on the last detected channel, while scanning resumes after a preset time. The user can easily make a quick response with this function.

### Wide frequency coverage

The IC-F5020 series covers a wide frequency range in one version (VHF 136–174 MHz, UHF 400–470, 450–520 or 450–512 MHz).

### External memory channel control with optional ACC cable

With the optional OPC-1939 D-SUB 15-pin ACC cable, the IC-F5020 series can be programmed to control an operating channel from an external device (up to 16 pre-programmed channels). The ACC connector also provides an ignition sensing function, external PTT, PC command, horn honk, audio output and modulated signal input depending on programming.



Photo includes optional OPC-1939

### Other features

- Embedded ESN
- ±2.5 ppm frequency stability
- Microphone hanger action programmable
- Optional DTMF microphone (HM-152T)
- 8 DTMF autodial memories
- BIIS 1200 PTT ID transmission
- Power-on password function
- Nuisance delete function
- Time-out-timer and Lock-out penalty timer

		IC-F5021 (USA) IC-F5023H (EXP)	IC-F5022 (EUR) IC-F5023 (EXP)	IC-F6021 (USA) IC-F6023H (EXP)	IC-F6022 (EUR) IC-F6023 (EXP)
<b>GENERAL</b>					
Frequency coverage* (* Depending on version)		136–174 MHz		400–470 MHz (ALL), 450–512 MHz (USA), 450–520 MHz (EXP)	
Number of channels		Max. 128 channels /8 zones			
Type of emission* (* Depending on version)		16K0F3E**1, 11K0F3E (USA, EXP) 16K0F3E, 14K0F3E, 8K50F3E (EUR)			
Power supply requirement		13.6 V DC nominal (USA, EXP) 13.2 V DC nominal (EUR)			
Current drain (approximate)	TX	10 A (at 50 W)	5 A (at 25 W)	11 A (at 45 W)	5 A (at 25 W)
	RX	700 mA /250 mA (Max. audio/Standby)			
Antenna impedance		50 Ω (SO-239) (USA, EXP), 50 Ω (BNC) (EUR)			
Operating temperature range		–30 °C to +60 °C; –22 °F to +140 °F (USA, EXP) –25 °C to +55 °C; –13 °F to +131 °F (EUR)			
Dimensions (W × H × D; Projections not included)	50/45 W version	150 × 40 × 167.5 mm; 5.9 × 1.6 × 6.6 in			
	25 W version	150 × 40 × 117.5 mm; 5.9 × 1.6 × 4.6 in			
Weight (approximate)	50/45 W version	1.1 kg; 2.4 lb			
	25 W version	0.8 kg; 1.8 lb			
<b>TRANSMITTER</b>					
Output power (Hi, L2, L1)		50 W, 25 W, 5 W	25 W, 10 W, 6 W (EUR) 25 W, 10 W, 2.5 W (EXP)	45 W, 25 W, 4.5 W	25 W, 10 W, 6 W (EUR) 25 W, 10 W, 2.5 W (EXP)
Maximum frequency deviation		±5.0 kHz (@25 kHz), ±4.0 kHz (@20 kHz), ±2.5 kHz (@12.5 kHz)			
Frequency stability		±2.5 ppm (USA, EXP) ±1.5 kHz (EUR)			
Spurious emissions		70 dB typ. (USA, EXP) 0.25 μW (≤ 1GHz), 1.0 μW (> 1GHz) (EUR)			
FM hum and noise		46 dB typ. (@25 kHz), 40 dB typ. (@12.5 kHz) (USA, EXP)			
Residual modulation		55 dB typ. (@25 kHz), 53 dB typ. (@20 kHz), 50 dB typ. (@12.5 kHz) (EUR)			
Audio harmonic distortion		3% typ. (AF 1kHz 40% deviation)			
Modulation limiting		70–100% of Maximum deviation			
External microphone impedance		600 Ω (8-pin modular)			
<b>RECEIVER</b>					
Sensitivity	(at 12 dB SINAD)	0.25 μV typ. (USA, EXP)			
	(at 20 dB SINAD)	–4 dBμV emf. typ. (EUR)			
Adjacent channel selectivity		75 dB typ. (@25/20 kHz), 65 dB typ. (@12.5 kHz)			
Spurious response rejection		80 dB typ.			
Intermodulation rejection		75 dB typ. (USA, EXP) 67 dB typ. (EUR)			
Hum and noise		45 dB typ. (@25 kHz), 40 dB typ. (@12.5 kHz) (USA, EXP) 55 dB typ. (@25 kHz), 53dB typ. (@20 kHz), 50 dB typ. (@12.5 kHz) (EUR)			
Audio output power		4.0 W typ. (at 5% distortion with 4 Ω load)			
External speaker connector		2-conductor 3.5 (d) mm (1/8")/4 Ω			

Measurements made in accordance with TIA-603 or EN 300 086.

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

\*\* 25 kHz bandwidth is no longer available for FCC Part 90 licensees for USA versions.

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

Standard	MIL 810 F		
	Method		Procedure
Low Pressure	500.4		I, II
High Temperature	501.4		I, II
Low Temperature	502.4		I, II
Temperature Shock	503.4		I
Solar Radiation	505.4		I
Humidity	507.4		–
Settling Dust	510.4		III
Vibration	514.5		I
Shock	516.5		I, IV

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

#### Supplied Accessories

- Hand microphone (HM-152)
- DC power cable
- Microphone hanger
- Mounting bracket kit
- Key assign stickers

■ HAND MICROPHONES AND DESKTOP MICROPHONE

- HM-148G: Heavy duty microphone. IP54 protection.
- HM-148T: Heavy duty microphone with DTMF keypad. IP54 protection.
- HM-152: Hand microphone with emergency button.
- HM-152T: Hand microphone with DTMF keypad.
- SM-26: Desktop microphone with monitor and monitor lock buttons.



■ EXTERNAL SPEAKERS

- SP-35/L: Compact external speaker.
- SP-35 cable length: 2 m; 6.6 ft.
- SP-35L cable length: 6 m; 19.7 ft.



SP-35/SP-35L

■ ACC CABLES

- OPC-1939: ACC cable enables you to connect an external terminal. D-SUB 15-pin type.
- OPC-2078: ACC cable enables you to connect an external terminal. D-SUB 25-pin type.



OPC-1939  
15-pin type



OPC-2078  
25-pin type

■ PROGRAMMING SOFTWARE AND CABLE

- CS-F5020: Programming software.
- OPC-1122U: Programming cable. (USB type)

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

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