



## VHF AND UHF TRANSCEIVERS

### IC-F3161DT

(IDAS digital VHF transceiver with 10-keypad)

### IC-F3161T

(VHF transceiver with 10-keypad)

### IC-F3161DS

(IDAS digital VHF transceiver without 10-keypad)

### IC-F3161S

(VHF transceiver without 10-keypad)

### IC-F4161DT

(IDAS digital UHF transceiver with 10-keypad)

### IC-F4161T

(UHF transceiver with 10-keypad)

### IC-F4161DS

(IDAS digital UHF transceiver without 10-keypad)

### IC-F4161S

(UHF transceiver without 10-keypad)



# INTRINSICALLY SAFE VERSION



# Conventional/IDAS™ Digital/IDAS™ Trunking Multi-Mode Land Mobile!



▲ IC-F3161DT/T

▲ IC-F4161DS/S

## IP55 dust-protection and water jet resistance

The IC-F3161/D series meets IP55 requirements for dust-protection and water jet resistance. Its durable construction is backed up by the aluminum die-cast chassis and polycarbonate casing, allowing reliable operation under harsh weather and environmental conditions.

## Lithium-Ion battery pack

The supplied 2000mAh (typ.) Li-Ion battery pack, BP-232FM, provides 14 hours\* of operating time.

\* Typical operation Tx:Rx:Stand-by=5:5:90, power save on

## Most popular signalings built-in

The 2-Tone, 5-Tone, CTCSS, DTCS and MDC signaling capabilities are built-in for group communication or selective calling. The radio can decode ten 2-Tone codes or eight 5-Tone codes on a channel. When a matched tone is received, the following actions are programmable for each code.

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

## Basic LTR™ /conventional mode operation

Both LTR™ trunking and conventional channels are programmable on a radio. Group, selective (DTMF), and phone call are available in LTR™ mode.

## MDC 1200 Compatible

The following selective calling and ANI features are available with the built-in MDC signaling.

- PTT ID
- Radio check
- Radio stun/revive
- 500 Aliases
- Status message/request
- Call alert
- Emergency, emergency mic monitoring

## Voting mode scanning

The voting mode scanning detects the signal strength level of repeater stations and automatically selects the strongest station, useful for roaming between 2 or more repeater sites. Once you program the voting mode to a memory zone, you can easily start voting mode operation by changing the zone setting.

## VHF TRANSCEIVERS

### IC-F3161DT/T

IDAS digital/analog FM with 10-keypad

### IC-F3161DS/S

IDAS digital/analog FM without 10-keypad

## UHF TRANSCEIVERS

### IC-F4161DT/T

IDAS digital/analog FM with 10-keypad

### IC-F4161DS/S

IDAS digital/analog FM without 10-keypad

\* IC-F3161/F4161 "D" versions only.

## Full dot-matrix LCD

Using a large full dot-matrix LCD (32 × 18 mm), the IC-F3161/D series shows upper and lower case characters clearly. The display setting is selectable from 1 line, 12 characters or 2 lines 24 characters via programming. The bottom row shows assigned functions to the [P0] to [P3] buttons.



## Enhanced audio

The IC-F3161/D series employs a BTL amplifier that increases the audio output and the built-in audio compander provides clear, low noise communications.

## Lone worker function

When the radio is not operated for a preset period, a beep sounds and a button push is required. If no button is pushed within that preset time, an emergency signal automatically transmits and alerts your co-worker or dispatcher to any potential trouble.

## Intrinsically safe

The Intrinsically safe version is approved by the FM Approvals. It is suitable for use in hazardous areas where flammable gasses or liquids are used.

See specification page for applied classes.

## Other features

- 512 memory channel with 128 zones
- 8 DTMF autodial memories
- Built-in inversion type voice scrambler
- 2 step reduced power setting
- Busy, repeater lockout functions
- Escalating alarm
- Mode dependent scan
- Surveillance function temporarily turns off the LED backlight and beep sound
- Powerful 5W output both in VHF and UHF
- Flash CPU for future upgrade and more...

## OPTIONS

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

**BATTERY PACK**



**BP-232FM**

Battery pack	Voltage	Capacity	Battery life*
BP-232FM	7.4V (Li-Ion)	1900mAh (min.) 2000mAh (typ.)	14 hours

\*1 Operating time is approximate time (at 20°C). 5:5:90 duty cycle with power save on.

**Do not charge** the BP-232FM in an explosive atmosphere.

**REGULAR CHARGER**



**BC-147SA BC-171**

**BC-171 DESKTOP CHARGER + BC-147SA AC ADAPTER**  
Charging time: 10 hours (approx.).

**RAPID CHARGER**



**BC-145SA BC-160**

**BC-160 DESKTOP CHARGER + BC-145SA AC ADAPTER**  
Charging time: 3 hours (approx.).

**RAPID CHARGER**



**AD-106 BC-145SA BC-119N**

**BC-119N DESKTOP CHARGER + AD-106 CHARGER ADAPTER + BC-145SA AC ADAPTER**  
Charging time: 3 hours (approx.).

**MULTI-CHARGER**



**BC-121N+AD-106 (6 pcs.)**

**BC-121N MULTI-CHARGER + AD-106 CHARGER ADAPTER + BC-157S AC ADAPTER**  
Rapidly charges up to 6 battery packs (Six AD-106s are required). Charging time: 3 hours (approx.).

**DC POWER CABLE**



**BC-157S**

**DC POWER CABLE**



**OPC-656**

**OPC-656:** For use with the BC-121N. (12–20V DC required).


**SPEAKER-MICROPHONE**



**IPX7 HM-169IS**

**HM-169IS:** Speaker-microphone. Equivalent to IP57.


**HEADSETS AND PTT/VOX CASE**



**HS-94 HS-95 HS-97 VS-1SC**

**HS-94:** Earhook headset with flexible boom microphone.  
**HS-95:** Behind-the-head headset with flexible boom microphone.  
**HS-97:** Throat microphone fits around your neck and picks up speech vibration.  
**VS-1SC:** PTT/VOX case. Required when using these headsets.

**BELT CLIPS**



**MB-93 MB-94**

**MB-93:** Swivel type. Prevents accidental dropping from your belt.  
**MB-94:** Alligator type. Same as supplied.

**LEATHER BELT HANGERS**



**MB-96N MB-96F**

**MB-96N:** Swivel type belt hanger.  
**MB-96F:** Fixed type belt hanger. For use with MB-94.

**ANTENNAS**

- **FA-SC25V** : 136–150MHz
- **FA-SC55V** : 150–174MHz
- **FA-SC25U** : 400–430MHz
- **FA-SC57U** : 430–470MHz
- **FA-SC72U** : 470–520MHz

**CUT ANTENNAS**

- **FA-SC61VC** : 136–174MHz
- **FA-SC61UC** : 380–520MHz

Cut the antenna element to tune to a specific center frequency.

## IDAS™ digital mode ready\*



The IDAS (Icom Digital Advanced System) is Icom's digital conventional and trunking system based on the NXDN™ common air interface. It has useful calling features including selective calling, status message, radio stun/kill/revive, etc.

\* The IC-F3161DT/DS, F4161DT/DS "D" versions only. See the IDAS brochure for details.

## SPECIFICATIONS

## GENERAL

- Frequency range :
  - IC-F3161T/S, DT/DS 136–174MHz
  - IC-F4161T/S, DT/DS 400–470MHz, 450–512MHz
- Number of channels : 512 channels/128 zones
- Channel spacing : 12.5kHz/25kHz, 15kHz/30kHz, 6.25kHz (“D” version only)
- Type of emission Wide : 16K0F3E, Narrow : 11K0F3E, 11K0F7E, 11K0F7D, 8K50F3E, 8K10F1E, 8K10F1D
  - Digital (“D” version only) 4K00F1E, 4K00F1D
- Antenna impedance : 50Ω
- Usable temperature range : –20°C to +40°C; –4°F to +104°F
- Power supply requirement : 7.2V DC
- Current drain (at 7.2V DC; approx.):
  - Transmit VHF/UHF 1.5A/1.8A (at 5W/5W)
  - Receive stand-by 100mA
  - (“D” version ) 150mA/140mA (VHF/UHF)
  - rated output 600mA
- Dimensions (with BP-232FM): 53 (W) ×136 (H) ×38.5 (D) mm; (projections are not included) 2<sup>3</sup>/<sub>32</sub> (W) ×5<sup>11</sup>/<sub>32</sub> (H) ×1<sup>17</sup>/<sub>32</sub> (D) in
- Weight (approx.) : 340g; 12.0oz (with BP-232FM)

## TRANSMITTER

- Output power VHF/UHF : 5W/2W/1W (Hi/L2/L1)
- Max. frequency deviation : ±5kHz (Wide), ±2.5kHz (Narrow)
- Frequency stability : ±1.0ppm
- Spurious emissions : 75dB typ.
- FM Hum and Noise : 46dB typ. (Wide), 40dB typ. (Narrow)
- Audio harmonic distortion : 3% typ. (AF 1kHz, 40% deviation)
- Modulation limiting : 60–100% of max. deviation
- Ext. microphone connector : 9-pin multi connector/ 2.2kΩ

## Supplied accessories:

- Battery pack, BP-232FM
- Belt clip, MB-94
- Antenna (differs depending on version)

Measurements made in accordance with EIA-152C/204D, TIA-603 for analog.  
All stated specifications are subject to change without notice or obligation.

## RECEIVER

- Sensitivity FM (W, N) : 0.25μV typ. (at 12dB SINAD)
- Digital : 0.20μV typ. (at 5% BER, “D” version only)
- Adjacent channel selectivity : 75dB typ. (Wide), 68dB typ. (Narrow)
- Spurious response : 70dB min.
- Intermodulation : 74dB typ.
- Hum and noise ratio : 46dB typ. (Wide), 40dB typ. (Narrow)
- Audio output power : 500mW typ. (at 5% distortion with an 8Ω load)
- External speaker connector : 9-pin multi connector/ 8Ω

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

Icom makes rugged products that have been tested to and passed the following MIL-STD requirements and Ingress Protection standards.

Standard	MIL 810F	
	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
Rain Blowing/Drip	506.4	I, III
Humidity	507.4	–
Salt Fog	509.4	–
Dust Blowing	510.4	I
Vibration	514.5	I
Shock	516.5	I, IV

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

## Ingress Protection Standard

Dust & Water	IP55 (Dust-protection and water jet resistance)
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## INTRINSICALLY SAFE



## IC-F3161T/S, IC-F4161T/S

IS : Class I, II, III/ Div 1/ Groups CDEFG/ T3C Ta = 40°C

NI : Class I/ Div 2/ Groups ABCD/ T3C Ta = 40°C

## IC-F3161DT/DS, IC-F4161DT/DS (“D” version)

(UT-126FM IDAS digital unit hardware installed)

IS : Class I, II, III/ Div 1/ Groups DEFG/ T3C Ta = 40°C

NI : Class I/ Div 2/ Groups ABCD/ T3C Ta = 40°C

## Special condition for use

Must be used with the BP-232FM battery.

The HM-169IS, VS-1SC, HS-94, HS-95 and HS-97 are approved as intrinsically safe options. Any other options, except the antenna, belt clip and belt hanger, cannot be used in explosive atmosphere areas.

Never charge the BP-232FM (with/without the transceiver) in an explosive atmosphere. The optional battery chargers are not approved as intrinsically safe.

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