ICOM

IC-F3600D Series
IC-F4600D Series

VHF AND UHF DIGITAL TRANSCEIVERS

Future-proof Your Professional Communication System

IC-F4600DT

IC-F3600DS

- **Advanced IDAS™ Digital/Analog Transceiver with Multiple Operating Modes**
- **Rugged Design and Easy Operation Even with Gloves**
- **1.8" Color Display Provides Clear Visibility in Any Condition**
- **Multilingual Display Support for Global Deployment**
- **IP68 Waterproof and MIL-STD-810G for Reliable Performance in Harsh Environments**
- **Up to 45% Faster Charging with USB Type-C™***
  * Compared to standard charging. Requires 30 W or higher USB PD charger and cable.
- **Optional High-Capacity Li-ion Battery Pack (4810 mAh typ.) for Extended Operation**
- **Bluetooth® Classic & LE Capabilities for Hands-Free Communication and Indoor Positioning**
- **AES/DES Encryption* for Secure Communications**
  * AES encryption requires an optional activation key.
- **Voice Recording (microSD Card Required)**

iDAS™ ICOM DIGITAL ADVANCED SYSTEM

NXDN™

FEATURES

General Features

- 136 – 174, 350 – 400, 400 – 520 MHz versions
- RF output power: 7 W (150 – 162 MHz, USA version), 5 W (all other frequencies and versions)
- 1024 Channels / 128 Zones
- High-resolution transreflective color LCD
- Day and night mode display settings
- Display language available in English, French, German, Spanish, Russian, Turkish, Chinese (Simplified and Traditional), and Arabic

- Large buttons and knobs provide confident use even when wearing gloves
- Continuous rotary knob and ON/OFF volume knob
- Quick lever switch on the top panel programmable for various functions such as lock, scrambler/encryption, etc.
- MIL-STD-810 G shock, vibration, temperature and more
- IP68 waterproof (1 m depth water for 1 hour) and dust-tight protection
- Optional BP-316 high-capacity Lithium-Ion battery
- Battery information display

Glove-friendly Operation

IP68 Waterproof and Dust-tight

Operating Mode

- NXDN™ conventional and multi-site connectivity over IP network
- NXDN™ Type-D single/multi-site trunking*
  * License key (ISL-UGMTR) required.
- Very narrow (6.25 kHz) and narrow (12.5 kHz) NXDN™ digital modes
- Analog mode
- Analog/digital mixed operation (conventional mode)

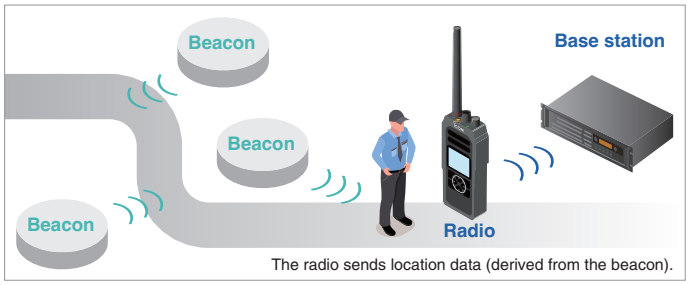
IDAS™ Digital Functions (Voice and Data)

- Over-the-Air Programming (OTAP) function allows remote configuration updates*
  * Optional OTAP manager (CS-OTPM1) required.
- Over-the-Air Alias (OAA) sends user name with calls for automatic contact updates
- Over-the-Air Update (OTAU) automatically updates repeater settings without manual reprogramming(NXDN™ Type-D trunking)
- Individual, group and all call
- Late entry for group call
- Status call and polling
- Call alert
- Short data messages (up to 100 characters)
- GNSS/Beacon data can be transmitted with voice call or status call

Advanced Connectivity Features

- Bluetooth® capabilities for wireless audio and data
- Works with 3M™ Peltor™ WS™ 5 series Bluetooth® headsets (PTT operation checked by Icom)
- Bluetooth® LE (Low Energy) functionality provides beacon reception for indoor positioning in areas without GNSS signals*

* Indoor Mapping App is planned for a future release.
The PC control commands may be disclosed upon request, subject to approval.



The radio sends location data (derived from the beacon).

- USB Type-C™ for ultra-fast charging performance equivalent to USB PD, reducing charging time by up to 45%*
  Charging Time (approx.): BP-303N: 2.5 hours, BP-316: 3.5 hours (with USB PD charger)

* Compared to standard charging. Third party 30 W or higher USB PD charger and cable are required. BP-303 (without the "N") is not compatible with USB charging.

- Integrated GNSS receiver compatible with GPS, GLONASS, Galileo, BDS, and QZSS
- microSD card slot

Note: Compatibility with all third-party Bluetooth® devices is not guaranteed.

Security and Safety

- 4-key DES encryption: standard
- 64-key DES encryption: requires CS-KLD2 key loader software
- AES encryption: requires CS-KLD2 key loader software and ISL-AKAES license key
- Digital voice scrambler (low level encryption)
- Analog voice scrambler (inversion)
- Power ON password
- Tactical group temporarily reconfigures user talkgroups
- Remote Kill, Stun and Revive
- Remote monitor
- Emergency key for emergency call
- Emergency detection functions: Man down, Lone worker and Motion/stationary detection functions

Voice and Audio Functions

- 1300 mW high-power audio from Icom custom speaker
- Active Noise Canceling function
- Voice Recording function captures incoming and outgoing calls for later review, storing up to 500 hours with a 32 GB microSD card*. Embedded data includes user IDs, GNSS/Beacon, frequency, AF volume, RSSI in the WAV file, depending on settings.
  * A microSD card is required separately.
- TX/RX audio equalizer (Flat, high/mid/low boost, low cut)
- Audio compander (Analog mode)
- Voice announcement (channel number and zone), customizable with user-defined audio files stored on SD card
- VOX function for hands-free operation
- Vibration alert and ringer beep programmable

SPECIFICATIONS

		IC-F3600DT/DS	IC-F4600DT/DS	
GENERAL				
Frequency coverage (Depending on the verson)		136 – 174 MHz	400 – 520 MHz	350 – 400 MHz
Number of channels		1024 channels /128 zones		
Type of emission (Depending on the version)	Analog	16K0F3E*, 14K0F3E (EUR), 11K0F3E (USA), 8K50F3E (Except USA)		16K0F3E, 8K50F3E
	Digital	8K30F1E/D (DN), 4K00F1E/D (DVN)		
Power supply requirement		7.5 V DC nominal		
Current drain (approx.)	Tx	1.5 A (5 W) 1.9 A (7 W, 150 – 162 MHz)	1.7 A (5 W)	
	Rx	620 mA/160 mA (Max. audio (internal SP)/Standby)		
Antenna impedance		50 Ω		
Operating temperature range		–30 °C to +60 °C; –22 °F to +140 °F (Radio specifications)		
Dimensions (W × H × D; Projections not included)		55.4 × 138.0 × 38.1 mm; 2.2 × 5.4 × 1.5 in (with BP-303N)		
Weight (approx.)		219 g; 7.7 oz (main unit)		
		350 g; 12.3 oz (with BP-303N, MB-133 and FA-S81VS)	350 g; 12.3 oz (with BP-303N, MB-133 and FA-S81US)	
TRANSMITTER				
Output power (Hi, L2, L1)	EUR/AUS Versions	5 W, 2 W, 1 W	5 W, 2 W, 1 W	
	USA Version	7 W, 2 W, 1 W (150 – 162 MHz) 5 W, 2 W, 1 W (136 – 149.999, 162.001 – 174 MHz)		
Frequency stability		±1.0 ppm		
Maximum permissible deviation		±5.0 kHz (W), ±4.0 kHz (M), ±2.5 kHz (N)		
Spurious emissions		84 dB typ. (USA)	80 dB typ. (USA)	82 dB typ.
		0.02 µW typ. (≤ 1 GHz), 0.004 µW typ. (> 1 GHz) (EUR/AUS)	0.03 µW typ. (≤ 1 GHz), 0.006 µW typ. (> 1 GHz) (EUR/AUS)	
Adjacent channel power	Digital	64/67 dB typ. (DN/DVN)	64/66 dB typ. (DN/DVN)	
	Analog	86/83 dB typ. (W/N, USA), 86/84/70 dB typ. (W/M/N, EUR/AUS)	77/63 dB typ. (W/N, USA), 77/77/69 dB typ. (W/M/N, EUR/AUS)	79/62 dB typ. (W/N)
FM Hum and noise (without CCITT filter)		63/63 dB typ. (W/N, USA), 65/64/64 dB typ. (W/M/N, EUR/AUS)	68/63 dB typ. (W/N, USA), 65/65/70 dB typ. (W/M/N, EUR/AUS)	64/66 dB typ. (W/N)
Audio harmonic distortion		0.4% typ. (AF 1 kHz 40% deviation)		
FSK error		1% typ. (DVN/DN)		
RECEIVER				
Sensitivity	Digital (1% BER)	–5.7 dBµV emf typ. (DVN), –117 dBm typ. (DN)		–6.8 dBV emf typ. (DVN), –118 dBm typ. (DN)
	Analog (12 dB SINAD)	–121 dBm typ. (W/N, USA)		–121/–122 dBm typ. (W/N)
	Analog (20 dB SINAD)	–5.8/–5.7/–5.7 dBµV emf typ. (W/M/N, EUR/AUS)	–5.8/–5.7/–2.9 dBµV emf typ. (W/M/N, EUR/AUS)	
Adjacent channel selectivity	Digital	72 dB typ. (DVN), –34 dBm typ. (DN)	65 dB typ. (DVN), –41 dBm typ. (DN)	68 dB typ. (DVN), –38 dBm typ. (DN)
	Analog	80/58 dB typ. (W/N, USA), 80/79/78 dB typ. (W/M/N, EUR/AUS)	74/58 dB typ. (W/N, USA), 74/73/72 dB typ. (W/M/N, EUR/AUS)	76/59 dB typ. (W/N)
Spurious response rejection		82 dB typ. (USA), 82 dB typ. (EUR/AUS)	86 dB typ. (USA), 88 dB typ. (EUR/AUS)	80 dB typ.
Hum and noise	Without CCITT filter	55/49 dB typ. (W/N, USA)		
	With CCITT filter	56/55/54 dB typ. (W/M/N, EUR/AUS)	57/55/49 dB typ. (W/M/N, EUR/AUS)	
Intermodulation	Digital	74 dBµV emf. typ. (DVN), –40 dBm typ. (DN)	74 dBµV emf. typ. (DVN), –39 dBm typ. (DN)	
	Analog	78 dB typ. (USA), 72 dB typ. (EUR/AUS)	78 dB typ. (USA), 71 dB typ. (EUR/AUS)	76 dB typ.
Audio output power	Internal SP	1300 mW typical (at 5% distortion, 8 Ω load)		
	External SP	1300 mW typical (with HM-222H at 5% distortion) 1000 mW typical (at 5% distortion, 8 Ω load)		

All stated specifications are subject to change without notice or obligation. Measurements made in accordance with TIA-603, EN300 086, EN301 166, EN300 113.
* 25 kHz bandwidth is no longer available for FCC Part 90 licensees for USA versions. * DVN: Digital Very Narrow (6.25 kHz), DN: Digital Narrow (12.5 kHz).

Applicable U.S. Military Specifications

Standard	MIL 810G	
	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 Blowing/Drip	506.5	I, III
Humidity	507.5	II
Salt Fog	509.5	–
Dust Blowing	510.5	I
Immersion	512.5	I
Vibration	514.6	I
Shock	516.6	I, IV

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

Ingress Protection Standard	
Dust & Water	IP68 (Dust-tight andwaterproof protection)

Battery Life

Battery pack	Type	Capacity	Operating time*		
			VHF (7 W)	VHF (5 W)	UHF (5 W)
BP-303N	Li-ion 7.2 V	3120 mAh (typ.), 3070 mAh (min.)	13 hours (Approx.)	13 hours (Approx.)	13 hours (Approx.)
BP-303	Li-ion 7.2 V	3350 mAh (typ.), 3200 mAh (min.)	13 hours (Approx.)	13 hours (Approx.)	13 hours (Approx.)
BP-316	Li-ion 7.2 V	4810 mAh (typ.), 4690 mAh (min.)	19 hours (Approx.)	20 hours (Approx.)	20 hours (Approx.)

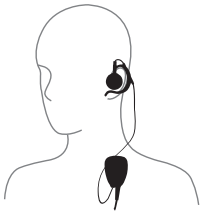
* Tx: Rx: standby = 5:5:90 duty cycle. Power save function ON.

Supplied accessories: (May differ depending on the transceiver version)
• BP-303N battery pack • MB-133 belt clip

OPTIONAL ACCESSORIES

IC-F3600D • IC-F4600D Series

SPEAKER MICROPHONES & EARPHONES



HM-222H
High-power speaker
Water proof

(3.5 mm plug)

or

AD-135
Earphone jack adapter

(3.5 mm plug)

+

SP-27
Tube earphone

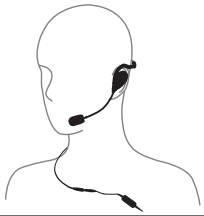
or

SP-29
Earhook earphone

or

SP-40
Earphone

HEADSETS & PTT SWITCH CABLE



HS-94
Earhook type headset

or

HS-95
Neck-arm type headset

or

HS-97
Headset with throat microphone

+

VS-5MC
PTT switch cable for manual PTT, and VOX operation

TIE-CLIP MICROPHONES & EARPHONES

HM-163MC
Tie-clip microphone

(2.5 mm plug)

+

EH-15B
Earphone

or

SP-26
Tube earphone

or

SP-28
Earhook earphone

BATTERY PACK & BATTERY CASE

BP-303N
Li-Ion battery pack
3070 mAh (min.)
3120 mAh (typ.)
(Same as supplied)
Water proof

BP-303
Li-Ion battery pack
3200 mAh (min.)
3350 mAh (typ.)
Water proof

BP-316
Li-Ion battery pack
4690 mAh (min.)
4810 mAh (typ.)
Water proof

BP-305
Battery case
LR6 (AA)× 5 cells

CHARGERS

BC-271
For charging of BP-303N/BP-303 and BP-316.
(AC adapter BC-216 supplied)

MULTI-CHARGER

BC-272
For charging of BP-303N/BP-303 and BP-316.
(AC adapter BC-276 and charger adapter AD-153 supplied)

CHARGERS

BC-226
Multi-connectable rapid charger for BP-303N/BP-303

BC-123S
AC adapter for single unit

(The straight plug type is required)

BC-228
AC adapter
(Required for multiple connections)

(Connectable up to six BC-226)

BC-227
For charging BP-303N/BP-303.
(AC adapter BC-123S supplied)

BC-258 AC adapter
+ OPC-2480
USB Type-C™ cable (2 A)

CIGARETTE CABLE

CP-23L
For use with BC-227

BELT CLIPS & HANGERS

MB-133	Belt clip (Same as supplied)
MB-136	Belt clip (Swivel type)
MB-96N	Belt hanger (Swivel type)
MB-96F	Belt hanger (Fixed type)
MB-96FL	Belt hanger (Long type)

OTHER ACCESSORIES

OPC-1870	Zone copy cable. Handheld to handheld type.
OPC-2362	Zone copy cable. Handheld to mobile type.
AD-118	ACC adapter. For use with Hirose plug accessory.

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

SOFTWARE & ACTIVATION KEYS

CS-OTPM1	OTAP manager software
CS-KLD2	AES/DES key loader software
ISL-UGMTR	NXDN™ Type-D trunking key
ISL-AKAES	AES activation key
ISL-AK25K	25 kHz activation key
ISL-AKSTM	Dealer set mode activation key

ANTENNAS

Standard Antennas
FA-S81V 136 – 150 MHz
FA-S82V 148 – 162 MHz
FA-S83V 160 – 174 MHz
FA-S81U 380 – 430 MHz
FA-S82U 430 – 480 MHz
FA-S83U 470 – 520 MHz
FA-S09U 350 – 400 MHz

Stubby Antennas
FA-S81VS 136 – 150 MHz
FA-S82VS 148 – 162 MHz
FA-S83VS 160 – 174 MHz
FA-S81US 400 – 450 MHz
FA-S82US 450 – 490 MHz

Cut Antennas
FA-S67VC 136 – 174 MHz
FA-S76UC 380 – 520 MHz

Bluetooth® connection has not been tested for all Bluetooth® compatible devices with this product. This does not guarantee that all devices will work with this product.
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