Company Profile

Icom Inc. is a wireless communications equipment manufacturer located in Osaka, Japan. Since Icom’s establishment in 1954, the company has had a long record as a trusted manufacturer of land mobile radios, amateur radios, marine radios, navigation products, aviation radios and communication receivers.

Icom quality and reliability

Over 50 years of engineering and production excellence is a part of every Icom product. Using the latest manufacturing technology, Icom radios are tested to pass rigorous in-house tests as well as environmental tests to the US Military standard 810 specifications. Icom’s products also comply with the European RoHS directive and intrinsic safety standards.

Icom, a global brand name

Icom is recognized as a leading 2-way radio global brand name around the world. Our land mobile radios are used by many professional organizations all over the world, including public safety, security and humanitarian organizations.

Made in Japan

Icom is a rare example of a Japanese equipment manufacturer that has not shifted production abroad, but has kept its production base in Japan. The Wakayama Icom plants have advanced production systems to produce small or large volume/multi-model wireless communication products.

Icom’s worldwide network

Icom products are sold across the globe. Icom has an international sales and service network, including sales subsidiaries in the U.S., Canada, Australia, Germany and Spain. Icom is there to support and service your communication needs.

INDEX
IDAS is Icom’s digital land mobile radio system using the NXDN™ or dPMR™ common air interface. IDAS offers a complete system of handheld radios, mobile radios, repeaters, network interface/trunking controllers, remote communicator, system manager software and various accessories. IDAS is a proven total digital solution that system owners or operators can grow into as their time and budgets allow.

<table>
<thead>
<tr>
<th>Multiple-site Configurations</th>
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<tr>
<td>IDAS systems can cover various digital radio communication needs from simple peer to peer operation between two radios, up to multi-site wide area networks. Further coverage is enhanced with IP interconnection.</td>
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<tr>
<th>Digital Clarity</th>
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<tr>
<td>By adopting the industry standard AMBE+2™ Vocoder and advanced FEC (Forward Error Correction) coding, improved communication quality, clarity and reliability are a hallmark of IDAS systems.</td>
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<th>Effective System Management</th>
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<tr>
<td>Simple and efficient management is critical for systems of any size. IDAS provides effective system management with such features as OTAP and administration applications.</td>
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</table>

**Multi-site Conventional**

- NXDN™/dPMR™ protocol choice. Both protocols are open digital radio standards using FDMA narrowband technology
- 6.25 kHz digital migration at your own pace and needs, while running your existing analogue system
- Up to 16 IDAS repeater sites connection over an IP network
- RC-FS10, remote communicator

**NXDN™ Type-D Multi-site Trunking**

- Distributed channel system which does not use a dedicated control channel
- Up to 30 channels per site and up to 48 sites connection over an IP network
- Up to 60,000 individual IDs and 60,000 group IDs with fleet management
- Automatic site roaming
- ESN authentication
- RS-MGR1, system manager
- RC-FS10, remote communicator
- Telephone interconnection

**dPMR™ Mode 3 Trunking (See Page 10 for details)**
Digital Handheld Radios

**VHF DIGITAL TRANSCEIVERS**

**IC-F3400DT/DS/D** (5 W)

**IC-F4400DT/DS/D** (5 W)

**IDAS™ Takes You to a New Level of “Smart”**

- Individual and group call
- PTT ID and ANI
- Status and message
- Remote Kill, Stun and Revive
- Remote monitor/Ambience listening
- Emergency
- OAA (Over-the-Air-Alias)
- Digital voice scrambler
- OTAR (Over-The-Air-Rekeying) (* Optional CS-OTAR1 software required.)
- Voting scan
- Transparent data
- Digital/analogue mixed mode operation
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- DTMF autodial and decoder
- MDC 1200 compatible* (* Depending on the version)
- BIIS 1200 functions* (* Depending on the version)
- Basic LTR™ trunking* (* Depending on the version)
- Inversion voice scrambler (analogue)
- 136–174, and 400–470 MHz, 5 W
- 512 memory channels with 128 zones
- 800 mW (typ.) loud audio
- Audio compander for analogue

**FEATURES**

- **MAN DOWN, LONE WORKER INTEGRATED GPS**
- **VOICE RECORDING**
- **VIBRATION ALERT**
- **VOICE ANNOUNCEMENT**
- **MOTION/STATIONARY SENSOR**
- **VOICE RECORDING**
- **BLUETOOTH® ENCRYPTION**

**Supply Accessories**

- BP-283, Battery pack
- MB-133, Belt clip

**UHF DIGITAL TRANSCEIVERS**

**IC-F3262DT/DS** (5 W)

**IC-F4262DT/DS** (5 W)

**Advanced Digital Radio with Built-in GPS Receiver**

- Individual and group call
- PTT ID and ANI
- Status and short data message (SDM)
- Kill, Stun and Revive
- Remote monitor/Ambience listening
- Emergency
- Digital voice scrambler
- Voting scan
- Transparent data
- Digital/analogue mixed mode operation
- DTMF autodial and decoder
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- MDC 1200 compatible* (* Depending on the version)
- BLIS 1200 functions* (* Depending on the version)
- Inversion voice scrambler (analogue)
- 136–174, and 400–470 MHz, 5 W
- 512 memory channels with 128 zones
- 800 mW (typ.) loud audio
- Audio compander for analogue

**FEATURES**

- **MAN DOWN**
- **LOW POWER**
- **INTEGRATED GPS**

**Supply Accessories**

- BP-237WP, Battery pack
- MB-94R, Belt clip
- Antenna

*1 Functions may not be installed, depending on the transceiver version.

*2 Optional UT-134 required for 64-key DES. Optional UT-134 and a ISL-AKAES licence key is required for AES.
FEATURES

• Individual and group call
• PTT ID and ANI
• Status and message
• Remote Kill, Stun and Revive (RX)
• Remote monitor/Ambience listening
• Emergency
• OAA (Over-the-Air-Alias)
• Digital voice scrambler
• Voting scan
• Digital/analogue mixed mode operation
• DTMF autodial and decoder
• BIIS 1200 functions
• MDC 1200 compatible* (* Depending on the version)
• Basic LTR™ trunking" (* Depending on the version)
• Built-in 5-Tone, 2-Tone, CTCSS and DTCS
• Optional HM-233GP GPS speaker-microphone
• Inversion voice scrambler (analogue)
• Audio equalizer
• Active noise canceller
• Voice recording and playback (Up to 8 minutes)
• Programmable functions and menu items in a language other than English
• Optional BC-225 intelligent charger and RS-BC225 reader software
• 136–174 and 400–470 MHz, 5 W versions
• 512 memory channels with 128 zones
• 1000 mW audio output (internal speaker)

Supplied Accessories
• BP-290, Battery pack
• MB-3, Belt clip

FEATURES

• Individual and group call
• PTT ID and ANI
• Status and message
• Radio Kill, Stun and Revive (RX)
• Remote monitor/Ambience listening (RX)
• Emergency
• OAA (Over-the-Air-Alias)*
• Digital voice scrambler
• Voting scan
• Digital/analogue mixed mode operation
• DTMF autodial
• MDC 1200 (limited functions)* (* Depending on the version)
• BIIS 1200 (limited functions)* (* Depending on the version)
• GPS position data with optional HM-171GPW
• 1.5 W loud audio output power (internal speaker)
• Improved audio clarity
• AquaQuake™ function

Supplied Accessories
• BP-280, Battery pack
• MB-133, Belt clip
• Antenna
• BC-213*, Desktop charger
• BC-123SE*, AC adapter

* May differ or not supplied, depending on the transceiver version.
Intrinsically Safe Radios / Analogue Radios

### VHF DIGITAL TRANSCEIVER
- **IC-F3202DEX (1 W)**
- **IC-F4202DEX (1 W)**

### UHF DIGITAL TRANSCEIVER
- **IC-F51 ATEX (1 W)**
- **IC-F61 ATEX (1 W)**

### IECEx/ATEX Intrinsically Safe Digital Radio
- **IC-F1000T/S (5 W)**
- **IC-F2000T/S (4 W)**

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#### FEATURES
- **ATEX Certifications**
  - Mining: I M2 Ex ib I Mb
  - Gas: II 2G Ex ib IIC T4 Gb
  - Dust: II 2D Ex ib IIIC T110°C Db
- **IEC Certifications**
  - Mining: I M2 Ex ib I Mb
  - Gas: II 2G Ex ib IIC T4 Gb
  - Dust: II 2D Ex ib IIIC T110°C Db
- **Slim, Compact Dimensions**
  - 5 W
  - 4 W
- **Waterproof & Dust-Tight**
  - IP67
  - MIL-STD810
- **Channel Announcement**
  - 163–174 and 400–470 MHz, 1 W
- **16 memory channels**
- Supplied Accessories
  - BP-277EX, Battery pack
  - MB-98, Belt clip
  - Antenna

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#### ATEX Intrinsically Safe Radio
- **ATEX Certifications**
  - Gas: II 2G Ex ib IIA T3 Gb (Tamb=–40°C to +55°C)
  - Dust: II 2D Ex ib IIIC T110°C Db (Tamb=–20°C to +55°C)
- **Features**
  - Lone Worker function
  - Built-in 2-Tone, 5-Tone, CTCSS and DTCS
  - DTMF autodial
  - MDC 1200 compatibility
  - Eight DTMF autodial memories
  - Mode dependent scan
- **Slim, Compact Dimensions**
  - 1 W
- **16 memory channels**
- Supplied Accessories
  - BP-227AXD, Battery pack
  - MB-98, Belt clip
  - Antenna

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#### Supplied Accessories
- **BP-277EX, Battery pack**
- **BP-212EX, Desktop charger**
- **BC-123SE/SUK*, AC adapter**
- **MB-98, Belt clip**
- **Antenna**

* May differ depending on the transceiver version.

DO NOT use the transceiver with any other equipment not specified in the option list (Pages 14–17).

Please ask your dealer to ensure the ATEX and IECEx ratings are acceptable for the intended place of use.
**dPMR™ 446 Digital Radios / PMR 446 Radios**

**Professional Digital Licence-Free Radio**

**IC-F29DR**
- Digital: improved resistance to interference
- No licence is required to use this radio
- IC-F29DR2: Digital 32 channels, Analogue 16 channels
- Outstanding audio quality
- 16-position rotary channel knob with voice announcement function
- Call ring tone function
- Operating channels are programmable in the field
- PC programmable
- Digital common ID, CTCSS and DTCS codes for group call
- Power on scan

**IC-F29DR2**
- Wide open space. Communication range will vary, depending on terrain and conditions.

**Supplied Accessories**
- BP-279, Battery pack
- BC-213, Desktop charger
- BC-123SE/SUK*, AC adapter
- MB-133, Belt clip

* May differ or not supplied, depending on the transceiver version.

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**Slim, Waterproof PMR 446 Licence-Free Radio**

**IC-F29SR**
- Licence-free analogue PMR 446
- No licence is required to use this radio
- Compact and slim body (24.5 mm depth)
- IC-F29SR2: Analogue 16 channels
- Easy to use and easy to hear
- 16-position rotary channel knob programmable operating channel and group code
- Call ring tone function
- Answer back call function
- PC programmable
- Built-in voice scrambler for private conversation
- CTCSS and DTCS codes for group call

**IC-F29SR2**
- Wide open space. Communication range will vary, depending on terrain and conditions.

**Supplied Accessories**
- BP-279, Battery pack
- BC-213, Desktop charger
- BC-123SE/SUK*, AC adapter
- MB-133, Belt clip

* May differ or not supplied, depending on the transceiver version.

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**Simple, Basic Model with IP67 Waterproofing**

**IC-F1000**
- Compact and slim body (24.5 mm depth)
- Easy to hear in noisy environments
- DTMF autodial
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- MDC 1200 PTT ID, Emergency and other limited functions
- BIIS PTT ID and emergency call
- 16 codes inversion voice scrambler
- Surveillance function
- Escalating alarm
- “Shift key” function
- 136–174 MHz, 5 W
- 400–470 MHz, 4 W
- 16 memory channels
- 15 W loud audio output power (internal speaker) with improved audio clarity

**IC-F2000**
- Compact and slim body (24.5 mm depth)
- Easy to hear in noisy environments
- DTMF autodial
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- MDC 1200 PTT ID, Emergency and other limited functions
- BIIS PTT ID and emergency call
- 16 codes inversion voice scrambler
- Surveillance function
- Escalating alarm
- “Shift key” function
- 136–174 MHz, 5 W
- 400–470 MHz, 4 W
- 16 memory channels
- 15 W loud audio output power (internal speaker) with improved audio clarity

**Supplied Accessories**
- BP-279, Battery pack
- BC-213, Desktop charger
- BC-123SE/SUK*, AC adapter
- MB-133, Belt clip
- Antenna

* May differ or not supplied, depending on the transceiver version.
Superb Performance and a Comprehensive Range of Features

**VHF DIGITAL TRANSCEIVER**

**IC-F5400D**
(25 W, Colour LCD)

**IC-F6400D**
(25 W, Colour LCD)

**UHF DIGITAL TRANSCEIVER**

**IC-F5400DS**
(25 W, Segment LCD)

**IC-F6400DS**
(25 W, Segment LCD)

*Multiple Controller Configurations*

With a combination with optional separation kits, COMMANDMIC™ and separation cables, three types of controller configurations are available to suit almost any application or installation that may be required.

* Multiple controller configurations are for only the IC-F5400D/DP/IC-F6400D/DP.

**FEATURES**

- Individual and group call
- PTT ID and ANI
- Status and message
- Remote Kill, Stun and Revive
- Remote monitor/Ambience listening
- Emergency
- Power OFF emergency
- OAA (Over-the-Air-Alias)
- Digital voice scrambler
- OTAP (Over-The-Air-Rekeying)* *(Optional CS-OTA1 software required.)
- Voting scan
- DTMF autodial and decoder
- Built-in 5-Tone, 2-Tone, CTcss and DTCS
- Transparent data
- MDC 1200 compatible* *(Depending on the version)
- BIIS 1200 functions
- Basic LTR™ trunking* *(Depending on the version)
- Digital voice recording to a microSD card
- USB port for PC connection
- Ignition line
- D-SUB 25-pin ACC connector
- 20 W audio amplifier
- Audio Equalizer
- Active Noise Canceller
- Menu and function item localization
- Internal clock
- Public address and RX speaker functions
- Built-in GPS receiver
- UX-241 GPS antenna required separately
- Optional detachable controller, dual head or COMMANDMIC™ configurations
- 136–174 and 400–470 MHz, 25 W version
- 1024 memory channels with 128 zones (IC-F5400DS/F6400DS: 99 memory channels selectable)
- 4000 memory channels with optional ISL-CHEX licence key.

* IC-F5400DP/DPS, IC-F6400DP/DPS for dPMR protocol.

**Supplied Accessories**

- HM-221, Hand microphone
- DC power cable
- Mounting bracket kit
- Microphone hanger

**VHF DIGITAL TRANSCEIVER**

**IC-F5062D**
(25 W)

**IC-F6062D**
(25 W)

**UHF DIGITAL TRANSCEIVER**

**IC-F54062D**
(25 W, Colour LCD)

**IC-F64062D**
(25 W, Colour LCD)

**FEATURES**

- Individual and group call
- PTT ID and ANI
- Status and short data message (SDM)
- Remote Kill, Stun and Revive
- Remote monitor/Ambience listening
- Emergency
- Digital/analogue mixed mode operation
- DTMF autodial and decoder
- Built-in 5-Tone, 2-Tone, CTcss and DTCS
- Transparent data
- MDC 1200 compatible* *(Depending on the version)
- BIIS 1200 functions* *(Depending on the version)
- Basic LTR™ trunking* *(Depending on the version)
- Digital voice scrambler
- Voting scan
- Transparent data* *(Depending on the version)
- D-SUB 25-pin ACC connector
- Optional HM-211 active noise canceling microphone
- Optional detachable controller
- 136–174 and 400–470 MHz, 25 W versions
- 512 memory channels with 128 zones

**Supplied Accessories**

- HM-152, Hand microphone
- DC power cable
- Microphone hanger
- Mounting bracket kit
**Digital Radios / Analogue Radios**

**VHF DIGITAL TRANSCEIVER**
IC-F5122D (25 W)

**UHF DIGITAL TRANSCEIVER**
IC-F6122D (25 W)

**Digital Standard Mobile Radio**

**FEATURES**
- Individual and group call
- PTT ID and ANI
- Status and short data message (SDM)
- Radio Kill, Stun and Revive (RX)
- Remote monitor/Ambient listening (RX)
- Emergency
- Digital voice scrambler
- Voting scan
- Transparent data call (Xon/Xoff)*
  (* Depending on the version)
- Digital/analogue mixed mode operation
- DTMF autodial
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- BIS 1200 functions* (* Depending on the version)
- GPS receiver connection with optional ACC cable
- 8-character alphanumeric display
- 4 W (typical) front mounted speaker
- Optional HM-211 active noise canceling microphone
- 136–174 MHz and 400–470 MHz, 25 W versions
- 128 memory channels with 8 zones
- Surveillance function

**Supplied Accessories**
- HM-152, Hand microphone
- DC power cable
- Mounting bracket kit
- Microphone hanger

**VHF MOBILE TRANSCEIVER**
IC-F5022
(25 W, 128 Ch with LCD)

**UHF MOBILE TRANSCEIVER**
IC-F6022
(25 W, 128 Ch with LCD)

**Hardworking Mobile Radios**

**FEATURES**
- DTMF autodial
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS
- BIS 1200 functions (limited functions)* (* Depending on the version)
- MDC 1200 compatible (limited functions)* (* Depending on the version)
- External memory channel control, external device connection with optional ACC cable
- 8-character alphanumeric display (IC-F5022/F6022 only)
- 4 W (typical) front mounted speaker
- 136–174 and 400–470 MHz, 25 W versions
- 128 memory channels with 8 zones (IC-F5022/F6022 only)
- 8 memory channels and LED lighting (IC-F5012 only)

**Supplied Accessories**
- HM-152, Hand microphone
- DC power cable
- Mounting bracket kit
- Microphone hanger

**VHF MOBILE TRANSCEIVER**
IC-F5012
(25 W, 8 Ch without LCD)

**Data Radios**

**VHF DATA TRANSCEIVER**
IC-F5122DD

**UHF DATA TRANSCEIVER**
IC-F6122DD

**General Purpose**
**Transparent Data Modem**

**FEATURES**
- 9600 bps (at 12.5 kHz) and 4800 bps (at 6.25 kHz) data mode
- 25 W, 10 W and 6 W three-step RF output power
- TCP/IP protocol (IPv4) support for Ethernet
- Meets EN 300 113/EN 300 279 standards
- Fast data transfer using 4-level FSK modulation

**Supplied Accessories**
- DC power cable
- Mounting bracket kit
Digital Repeaters / System Manager / OTAP Manager

VHF REPEATER
IC-FR5100 (25 W, 100% duty)

Value, Performance and Flexibility

- Two RF modules in one unit* (* Optional UR-FR5100 or UR-FR6100 required.)
- 25 W at 100% duty operation (Ambient temperature: 25˚C)
- Optional UR-PA5000 or UR-PA6000 power amplifier provides 50 W at 100% duty operation* (Ambient temperature: 25˚C)
- Base station operation for Analogue and IDAS conventional mode operation
- DMPS® Mode 3 repeater for use with IC-FD5000E controller * (* UC-FR5000SE required.)
- PC programmable via IP network* (* UC-FR5000 required.)
- D-SUB 25-pin accessory connector
- CW-ID transmission
- Built-in 5-tone, CTCSS and DTCS
- DTMF encode and decode
- 32 memory channels capacity
- 2U height rack mount design
- Digital voice scrambler
- Inversion voice scrambler for analogue
- IDAS conventional/FM mixed mode operation
- Built-in audio Compander for analogue
- 136–174 and 400–470 MHz, 25 W
- IC-FR5100H/FR6100H: high power, UR-PA5000 or UR-PA6000 installed version
- IC-FR5200H/FR6200H: high power, full duty repeater with heatsink chassis version (Export version)

Supplied Accessories
- DC power cable
- Key assign stickers

UHF REPEATER
IC-FR6100 (25 W, 100% duty)

SYSTEM MANAGER (For NXDN™ Type-D Multi-Site Trunking)
RS-MGR1

Enhance System Management for NXDN™ Type-D Trunking Systems

FEATURES

- Provides real-time monitoring, system alerts and log search functions
- Repeater properties show condition summary, system information, interface (traffic statistics), repeater condition details and ping status of each repeater
- Registration log, communication log, traffic log and search log can be searched and downloaded with extensive filter settings
- Repeater site icons laid out on an image file such as a map or network diagram
- E-mail alert notification can be sent to the administrator, if an alarm or disconnect occurs or clears
- The “Mesh ping status” shows the connectivity by sending ping commands in all combinations of repeater sites
- The “Version list” shows the repeaters firmware revision list

Supplied Accessories
- USB flash drive (Software and hardware key protection)

OTAP MANAGER
CS-OTPM1

Easily Reconfigure Radios with Over-The-Air Programming

FEATURES

- Remotely reconfigure radios while in the field
- Radios can be reconfigured in a short period of time by transmitting only the updates
- Single programming data can transmit to a whole fleet with only one click
- Up to 10,000 sessions are logged for review and rescheduling
- Both original and new data can be kept in the radios until the OTAP process is completed
- System operator can change language setting of CS-OTPM1
- Manages up to 100,000 radios

Supplied Accessories
- USB dongle supplied with the software

Compatible models
- IC-F3400D series
- IC-F4400D series
- IC-F5400D series
- IC-F6400D series
- IC-F52D
- IC-F62D

*1 Optional UC-FR5000 and CF-FR5000MC required for NXDN™ multi-site conventional.
*2 Optional UC-FR5000 required for single-site trunking.
Optional UC-FR5000 and CF-FR5000MT required for multi-site trunking.
dPMR™ Mode 3 Trunking

In a dPMR Mode 3 digital trunking system, when a user requests a call through a dedicated control channel, the trunking controller automatically allocates one of the traffic channels and sets up the call. The system can accommodate a large number of users on a limited number of repeater channels with high efficiency. The System Control Software can interconnect multiple trunking controllers over an IP network, so the system can be expanded from a single site system to multiple sites and increased coverage.

- Up to 32 channels per site
- Up to 32 site multi-site trunking with CS-FC5000SCS System Control Software
  - Up to 256 site multi-region connection (8 region × 32 sites for example)
- Channel licence system. Four channel activation key is supplied with the IC-FC5000E
  For additional channels/sites, an activation key is required.
- CS-FC5000 web based management software allows you to connect multiple clients
- Individual and group calls, including broadcast
- Status call • Short data message
- Call Queuing
- Emergency Call with Pre-emption

**dPMR™ Mode 3 Trunking Controller**

**IC–FC5000E**

**dPMR™ Mode 3 External Controller**

- Spectrum efficient centralized control channel trunking
- Up to 32 channels per site (One control channel, up to 31 traffic channels)
- Up to 32 site multi-site trunking with CS-FC5000SCS system control software
- Up to 256 site multi-region connection
- Call queuing and emergency call with pre-emption
- CS-FC5000 web based management software
- Firmware update over an IP network
- Remote reboot of the trunking controller over an IP network
- Repeater anomaly detection and alert
- A traffic channel can be configured as a secondary control channel
- 1U (44mm) rack mount

**Provided Accessories**

- DC power cable

**Supplied Accessories**

- DC power cable
- Cat 5e Ethernet cables
- Transceivers
- Network Switch (required for more than 5 channel site)
- Ethernet Board: UC-FR5000SE
- Control Server
- Network Switch (required for more than 5 channel site)
- Ethernet Board: UC-FR5000SE
- Control Server
- Ethernet Board: UC-FR5000SE
- Control Server
- Ethernet Board: UC-FR5000SE
- Control Server

**dPMR™ Mode 3 System Manager**

**RS–MGR2**

**Enhance System Management for dPMR™ Mode 3 Systems**

**FEATURES**

- Provides real-time monitoring, system alerts and log search functions for a dPMR™ Mode 3 system
- Real-time monitoring includes repeater view, repeater status, repeater condition, active screen and system connection
- Registration log, communication log, traffic log and search log can be searched and downloaded with extensive filter settings
- Repeater site icons laid out on an image file such as a map or network diagram
- Up to 20 user accounts with three types of access rights and e-mail alert setting
Push-to-Talk Communication over an LTE (4G) and 3G Network*

The IP501H uses a dedicated hardware in a closed network to provide stable and secure connections. The IP501H does not require its own repeaters or IP network, which reduces the cost of building and maintaining a wide area radio network.

* Service availability depends on the country. Network coverage provided by a custom SIM card.

Full-Duplex Communication

The IP501H enables use of full-duplex communication, which provides smooth telephone style conversations. The IP501H users can talk and receive at the same time.

Multiple User Communication

Multiple users in the call groups can initiate calls instantaneously, eliminating the need to wait for available channels to communicate. If two or more users talk at the same time, their voices are mixed and delivered to the call group.

Priority Interrupt Calling

The IP501H supports group calls with three or more people. In case of an emergency, you can break into an on-going call to transmit an important message.

Interconnect between IDAS™ and IP100H Systems

With the VE-PG4, RoIP gateway, the IP501H system provides interoperability with IP phones, analogue transceivers, IDAS™ digital transceivers and an IP100H wireless LAN IP Advanced Radio System. In addition, the VE-PG4 can obtain GPS position data from the IP501H transceiver.

FEATURES

- Short-delay, high quality audio with wideband, near lossless G.726 vocoder
- IP67 waterproof and dust-tight (1 m depth water for 30 minutes)
- Lone Worker and Man Down functions
- Compact 59 x 95 x 32 mm and lightweight 240 g (approximate) body
- Vibration Alert function notifies of incoming calls
- Built-in Bluetooth® and GPS®

Supplied Accessories

- BP-272, Battery pack
- MB-135, Belt clip
- Antenna
- Hand strap

LTE TRANSCEIVER

IP501H

11
Full-Duplex Communication that Works Over a Wireless IP Network

Wireless Communication System
By deploying access points along the existing IP network, the IP advanced radio system can communicate from anywhere in the facility. The IP100H can access the nearest access point, and can roam between access points.

Individual, Group, All or Area Communication
Staff spread across multiple rooms can communicate seamlessly. The IP communication terminal can receive Short Data Messages with a vibration alert from a PC installed with IP100FS.

Interconnect between IDAS™ and IP Phone Systems
With the VE-PG4 RoIP gateway, the IP advanced radio system can interconnect with IP phone systems, analogue transceivers and IDAS™ conventional and NXDN™ Type-D trunking transceivers.

Wireless LAN Access Point
AP-90M
- IEEE 802.11 a/b/g/n/ac compliant (2.4 GHz and 5 GHz*)
- PoE (Power over Ethernet) capability
- Optional RS-AP3, Access point management software
* Authorized frequency range and channels may differ depending on the country.

Remote Communicator
IP100FS
- The IP100FS can communicate with IP communication terminals from a PC
- The IP100FS can obtain location information of each IP100H based on using access points, when used with the AP-90M
- Can be installed on a Windows®-based tablet PC as well as laptop PC
- Supplied with a USB flash drive for use as a USB hardware key

Controller
IP1000C
- The IP1000C controls all terminal configurations over the air
- Capable of controlling up to 100 terminals (including IP100FS)

Hands-free, Full-duplex Communication
With an optional earphone-microphone or headset*, the IP100H user can simultaneously talk and receive like a phone call. Hands-free operation allows your staff to carry out other tasks at the same time.
* For full-duplex operation, please use either HM-153LS, HM-166LS, HS-102 with OPC-2369 or HS-85 with OPC-2144 for full-duplex operation.

Features
- Licence-free wireless LAN communication terminal using IEEE 802.11 a/b/g/n standards (2.4 GHz and 5 GHz*)
- WPA-PSK/WPA2-PSK (TKIP/AES) authentication
- IPX7 waterproof (1m depth water for 30 minutes)
- MIL-STD 810 G rugged construction
- Compact 58 x 95 x 26.4 mm and lightweight 205 g (approximate) body
- Vibration alert function announces incoming calls
  * Authorized frequency range and channels may differ, depending on the country.
- Text message reception and pre-programmed message transmission
- Status messages
- Emergency call function
- Full dot-matrix display

Supplied Accessories
- BP-271, Battery pack
- MB-127, Belt clip
- Antenna
- Hand strap
**RoIP Gateway / Remote Communicator**

**RoIP GATEWAY VE-PG4**

**Versatile Radio Over IP Gateway Linking Various Radio Systems and Protocols with LTE and IP Networks**

- **VE-PG4 multiple-site connection through LAN or LTE (4G) and 3G network** (*Service availability depends on the country. Network coverage provided by a custom SIM card.)*
- Wireless LAN transceiver controller (Equivalent to IP1000C function) built-in, capable of controlling up to 50 IP communication terminals
- IP phone system connection with SIP server function • IDAS™ Conventional and NXDN™ Type-D multi-site trunking connection
- Analogue radio system connection • Base station operation with optional microphone • External equipment, sensor connection
- Voice recording function to a USB drive* (*A USB drive required separately.) • Half-width 1U form design

**Supplied Accessories**
- BC-236, AC adapter • Spare quick connectors • Antennas • Antenna bases with 1.5 m coaxial cable • Magnets and cushion sheets

---

**REMOTE COMMUNICATOR RC-FS10**

**Virtual Radio/PC Dispatch**

- **PC remote communicator for IDAS™ conventional, NXDN™ Type-D multi-site trunking and analogue radio systems**
  VE-PG4 is required for analogue radio systems.
- Up to eight different IDAS and analogue radio systems can be programmed • Up to 40 programmable buttons. Short data message, status and DTMF can be sent • Caller ID, called ID, name and call type information are displayed • Communication log is displayed and can be stored • Optional HM-154 or SM-26 microphone* can be used with the RC-FS10 (*Optional CT-23 PTT microphone adapter is required.) • The CT-24 digital voice converter is supplied with RC-FS10 which converts microphone audio to the AMBE+2™ codec for the IDAS radio system.

**Supplied Accessories**
- Installation CD • USB cable • CT-24, Digital converter
### OPTIONS FOR HANDHELD TRANSCEIVERS

#### BATTERY PACKS

| MODEL NAME | DESCRIPTION | CHARGERS SUPPORTED | IC-F3400DT/DS/D | IC-F4400DT/DS/D | IC-F320DT/DS/D | IC-F420DT/DS/D | IC-F110DT/DS/D | IC-F210DT/DS/D | IC-F327 | IC-F427 | IC-F51 ATEX | IC-F61 ATEX | IC-F220 | IC-F221 | IC-F222 | IC-F223 | IC-F224 | IC-F225 | IC-F390 | IC-F391 | IC-F392 | IC-F492 | IC-F592 | IC-F692 |
|------------|-------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|---------|---------|------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| BP-277EX  | [Li-ion] For intrinsically safe radios 7.4 V/1800 mAh (min.) 9900 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-227AXD | [Li-ion] For intrinsically safe radios 7.4 V/1850 mAh (min.) 1950 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-284    | [Li-ion] 7.2 V 191 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-283    | [Li-ion] 7.2 V 1910 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-232WP  | [Li-ion] 7.2 V 200 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BC-197    | [Li-ion] 7.2 V 2000 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-290    | [Li-ion] 7.2 V 1910 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-280    | [Li-ion] 7.2 V 2000 mAh (min.) 3210 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |
| BP-279    | [Li-ion] 7.2 V 1800 mAh (min.) 1570 mAh (typ.) | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ | ✔ ✔ |

#### BATTERY CASES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
<th>CHARGERS SUPPORTED</th>
<th>BC-212EX</th>
<th>BC-219N</th>
<th>BC-225</th>
<th>BC-226</th>
<th>BC-227</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP-278</td>
<td>[Li-ion] 7.2 V 1100 mAh (min.) 1190 mAh (typ.)</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BP-240</td>
<td>LR03 (AAA) ×6 cells</td>
<td>✔ ✔ ✔ ✔</td>
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<td>✔</td>
<td>✔</td>
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<tr>
<td>BP-261</td>
<td>LR6 (AA) ×6 cells</td>
<td>✔ ✔ ✔ ✔</td>
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<td>BP-291</td>
<td>LR6 (AA) ×5 cells</td>
<td>✔ ✔ ✔ ✔</td>
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<tr>
<td>BC-212EX</td>
<td>Rapid charger for intrinsically safe radios</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-219N</td>
<td>Rapid charger</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-225</td>
<td>Intelligent charger</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>BC-226</td>
<td>Connectable type. Connects up to six BC-226 units.</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-227</td>
<td>Compact rapid charger</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
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#### DESKTOP CHARGERS

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<tbody>
<tr>
<td>BC-160</td>
<td>Rapid charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-171</td>
<td>Regular charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>BC-213</td>
<td>Rapid charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-119N</td>
<td>Rapid charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-152N</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-214</td>
<td>Rapid multi- charger</td>
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<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-197</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-121N</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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#### MULTI-CHARGERS

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<tbody>
<tr>
<td>BC-160</td>
<td>Rapid charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>BC-171</td>
<td>Regular charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
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<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-213</td>
<td>Rapid charger</td>
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<tr>
<td>BC-119N</td>
<td>Rapid charger</td>
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<td>✔</td>
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</tr>
<tr>
<td>BC-152N</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-214</td>
<td>Rapid multi- charger</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>BC-197</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
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<td>✔</td>
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<tr>
<td>BC-121N</td>
<td>Rapid multi- charger</td>
<td>✔ ✔ ✔ ✔ ✔</td>
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* The battery charger, BC-212EX must not be used in an explosive atmosphere.

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** Either AD-130 or AD-132N is supplied with the BC-214, depending on version. * AD-122 is supplied with the BC-197, depending on version. The IC-F3202DEX/F4202DEX and IC-F51/F61 ATEX intrinsically models should only be used with the specified intrinsically safe approved options.
## OPTIONS FOR HANDHELD TRANSCEIVERS

### CHARGER ADAPTERS

<table>
<thead>
<tr>
<th>Model Name</th>
<th>CHARGER BRACKET</th>
<th>CIGARETTE LIGHTER CABLE</th>
<th>DC POWER CABLES</th>
<th>READER SOFTWARE</th>
<th>SPEAKER-MICROPHONES</th>
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<tbody>
<tr>
<td>AD-132N</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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<tr>
<td>AD-122</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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<tr>
<td>AD-130</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
</tr>
<tr>
<td>AD-100</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
</tr>
<tr>
<td>BC-123S</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
</tr>
<tr>
<td>BC-145S</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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<tr>
<td>BC-147S</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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<tr>
<td>BC-157S</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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<tr>
<td>BC-228</td>
<td>MB-130</td>
<td>CP-23L</td>
<td>OPC-656</td>
<td>RS-BC225</td>
<td>Bluetooth® headset</td>
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</table>

### AC ADAPTERS


<table>
<thead>
<tr>
<th>Model Name</th>
<th>CHARGER BRACKET</th>
<th>CIGARETTE LIGHTER CABLE</th>
<th>DC POWER CABLES</th>
<th>READER SOFTWARE</th>
<th>SPEAKER-MICROPHONES</th>
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</thead>
<tbody>
<tr>
<td>IC-F300DT/DSD/IC-F400DT/DSD</td>
<td>✔ (Use with BC-214)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-214)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-214)</td>
</tr>
<tr>
<td>IC-F320DT/DSD/IC-F420DT/DSD</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-197)</td>
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<tr>
<td>IC-F32D</td>
<td>✔ (Use with BC-214)</td>
<td>✔ (Use with BC-197)</td>
<td>✔ (Use with BC-197)</td>
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<tr>
<td>IC-F32D</td>
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<td>✔ (Use with BC-197)</td>
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<tr>
<td>BC-123SA/BC-145SA/BC-147SA</td>
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### SPEAKER-MICROPHONES

<table>
<thead>
<tr>
<th>Model Name</th>
<th>TIE-CLIP MICROPHONE</th>
<th>EARPHONE-MICROPHONES</th>
<th>HEADSETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-F300DT/DSD/IC-F400DT/DSD</td>
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<td>✔ ✔ ✔ ✔</td>
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## OPTIONS FOR HANDHELD TRANSCEIVERS

### HEADSETS

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>HS-94</td>
<td>Earhook type with boom microphone</td>
</tr>
<tr>
<td>HS-94LWP</td>
<td>Earhook type with waterproof connector</td>
</tr>
<tr>
<td>HS-95</td>
<td>Behind-the-head type</td>
</tr>
<tr>
<td>HS-95LWP</td>
<td>Behind-the-head type with waterproof connector</td>
</tr>
<tr>
<td>HS-97</td>
<td>Throat microphone type</td>
</tr>
<tr>
<td>EH-15B</td>
<td>Tube earphone</td>
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</table>

### EARPHONES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>HS-94LWP</td>
<td>Earhook type with waterproof connector</td>
</tr>
<tr>
<td>HS-95LWP</td>
<td>Behind-the-head type with waterproof connector</td>
</tr>
<tr>
<td>HS-97</td>
<td>Throat microphone type</td>
</tr>
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### BELT CLIPS

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>MB-94EX</td>
<td>For intrinsically safe radios</td>
</tr>
<tr>
<td>MB-133</td>
<td>Alligator type</td>
</tr>
<tr>
<td>MB-96N</td>
<td>Manual PTT/VOX operation</td>
</tr>
<tr>
<td>MB-96F</td>
<td>Manual PTT operation</td>
</tr>
<tr>
<td>MB-96FL</td>
<td>Manual PTT operation</td>
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### BELT HANGERS

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<tr>
<td>MB-136</td>
<td>Tube earphone adapter</td>
</tr>
<tr>
<td>MB-86</td>
<td>Behind-the-head type</td>
</tr>
<tr>
<td>MB-97</td>
<td>Throat microphone type</td>
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### CARRYING CASES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
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<tr>
<td>MB-98</td>
<td>Manual PTT/VOX operation</td>
</tr>
<tr>
<td>MB-99</td>
<td>Manual PTT operation</td>
</tr>
<tr>
<td>MB-100</td>
<td>Manual PTT operation</td>
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### PLUG ADAPTER CABLES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>OPC-2004LA</td>
<td>Allows you to use 6-pin Hirose plug accessories</td>
</tr>
<tr>
<td>VS-4MC</td>
<td>Manual PTT operation</td>
</tr>
<tr>
<td>VS-5MC</td>
<td>Manual PTT/VOX operation</td>
</tr>
<tr>
<td>VS-4LA</td>
<td>Manual PTT operation</td>
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### PTT SWITCH CABLES

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<th>DESCRIPTION</th>
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<tr>
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<td>Manual PTT operation</td>
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<tr>
<td>VS-5MC</td>
<td>Manual PTT/VOX operation</td>
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<tr>
<td>VS-4LA</td>
<td>Manual PTT operation</td>
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### ACC ADAPTERS

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<tr>
<td>AD-118</td>
<td>Allows you to use 6-pin Hirose plug accessories</td>
</tr>
<tr>
<td>AD-135</td>
<td>Manual PTT operation</td>
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*Charging is possible while the case is attached.

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

#### Carrying Cases

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Carrying Case</th>
<th>Notes</th>
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<tr>
<td>LC-188</td>
<td>LC-188</td>
<td>For use with BP-290</td>
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<tr>
<td>LC-190</td>
<td>LC-190</td>
<td>For use with BP-294</td>
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#### Antennas

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Frequency Range</th>
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<tr>
<td>FA-S81V</td>
<td>136-150 MHz</td>
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<tr>
<td>FA-S82V</td>
<td>136-150 MHz</td>
</tr>
<tr>
<td>FA-S83V</td>
<td>150-162 MHz</td>
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<tr>
<td>FA-S84U</td>
<td>160-174 MHz</td>
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<tr>
<td>FA-S85U</td>
<td>380-430 MHz</td>
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<tr>
<td>FA-S86U</td>
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#### Cut Antennas

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<tr>
<td>FA-S26V</td>
<td>150-162 MHz</td>
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<td>FA-S27V</td>
<td>160-174 MHz</td>
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<td>FA-S28U</td>
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#### High Gain Antennas

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<tr>
<td>FA-S82V</td>
<td>150-162 MHz</td>
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<tr>
<td>FA-S83V</td>
<td>160-174 MHz</td>
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<tr>
<td>FA-S84U</td>
<td>430-470 MHz</td>
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### Stubby Antennas

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<tr>
<td>FA-S82VS</td>
<td>150-162 MHz</td>
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<tr>
<td>FA-S83VS</td>
<td>160-174 MHz</td>
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<tr>
<td>FA-S84US</td>
<td>430-470 MHz</td>
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</table>

### Intelligent Battery Management

The intelligent battery charger software checks the battery health, battery age and battery cycle count whenever a battery is inserted into an intelligent charger. The Eco Mode stops charging at approximately 80–90% to extend the battery’s life. The batteries can be optimally maintained, and an indication of timing for battery replacement is given.

- BC-225 intelligent charger and RS-BC225 reader software for IC-F3400D/F4400D and IC-F52D/F62D series.

### Licence Keys

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>ISL-UGMTR</td>
<td>NXDN™ Type-D trunking upgrade key (for NXDN™ protocol)</td>
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<tr>
<td>ISL-UGMD3</td>
<td>dPMR™ Mode 3 trunking upgrade key (for dPMR™ protocol)</td>
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<tr>
<td>ISL-AKAES</td>
<td>AES encryption activation key</td>
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<tr>
<td>ISL-CHEX</td>
<td>Channel expansion key increases channel number up to 4000</td>
</tr>
<tr>
<td>ISL-AKSTM</td>
<td>Dealer set mode activation key</td>
</tr>
</tbody>
</table>

Some options may not be available in some countries. Please ask your dealer for details.
### SPECIFICATIONS FOR HANDHELD TRANSCEIVERS

| Model Code | Frequency coverage | Channel spacing | Number of channels | Dimensions (approx.) | Weight | RF output power (High) | Sensitivity | Internode | AF output power (Intermediate SP External SP) | Inversion type voice scrambler | Voice Scrambler (Digital) | Encryption | Voice Scrambler (analogue) | OTAP (Over-the-Air Programming) | CTCSS/DCS encoder/decoder | 2-Tone | 5-Tone | DTMF autodial | BIS 1200 | MDC 1200 | Man Down function | Motion detection sensor | Intrinsic safety | Channel announcement | Vibration alert | Voice recorder | Bluetooth® | GPS receiver | Operating time | IP rating | MIL-STD requirements |
|------------|--------------------|-----------------|--------------------|----------------------|--------|------------------------|------------|----------|-----------------------------------------------|-------------------------------|-------------------|------------------|-----------------------------|-----------------------------|----------------|----------------|----------------|----------------|------------------|------------------|----------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|----------------|--------------------------|
| IC-F3400D | 136–174 MHz        | 6.25, 12.5, 20, 25 kHz | 512 channels      | 33.5 x 123.5 x 39.5 mm (with BP-283) | 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F3400D | 380–470 MHz        | 6.25, 12.5, 20, 25 kHz | 512 channels      | 33.5 x 123.5 x 39.5 mm (with BP-283) | 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F3262D | 136–174 MHz        | 6.25, 12.5, 20, 25 kHz | 128 channels      | 33.5 x 142.7 x 39.5 mm (with BP-223WP) | 160 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F2302D | 136–174 MHz        | 6.25, 12.5, 20, 25 kHz | 128 channels      | 33.5 x 142.7 x 39.5 mm (with BP-223WP) | 160 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F1100D | 136–174 MHz        | 6.25, 12.5, 20, 25 kHz | 128 channels      | 37.5 x 136.5 x 34.1 mm (with BP-280) | 145 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F62D   | 355(6)/351(4) MHz | 6.25, 12.5, 20, 25 kHz | 128 channels      | 305 g (VHF)| 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F2100D | 355(6)/351(4) MHz | 6.25, 12.5, 20, 25 kHz | 128 channels      | 305 g (VHF)| 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F1000D | 355(6)/351(4) MHz | 6.25, 12.5, 20, 25 kHz | 128 channels      | 305 g (VHF)| 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F920R | 136–174 MHz        | 6.25, 12.5, 20, 25 kHz | 128 channels      | 305 g (VHF)| 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |
| IC-F925R  | 355(6)/351(4) MHz | 6.25, 12.5, 20, 25 kHz | 128 channels      | 305 g (VHF)| 206 g | 5 W (VHF/UHF) | –8 dBμV typ. | –8 dBμV typ. | Internal SP 1300 mW typ. 1000 mW typ. | Inversion | ✓ | ✓ | ✓ | ✓ |

**Note:**
- *1: Upgrade licence (ISL-UGMTR) required to enable 4000 channel capacity. IC-F3400/DOP/F4400/DOP (Non-LCD type) : To 32 selected channels out of 1024 can be allocated to the channel knob.
- *2: IDAS radios are shipped with either the NXDN or dPMR firmware. Change of digital protocol may be performed by the dealer or distributor.
- *3: Conventional mode. 5:5:90 duty cycle, power save ON.
- *4: Inversion type voice scrambler is not compatible with UT-109R/UT-110R voice scrambler.
- *5: Possible as a kind of 5-Tone format.
### OPTIONS FOR MOBILE TRANSCEIVERS AND Repeaters

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>HAND MICROPHONES</th>
<th>DESKTOP MICROPHONES</th>
<th>EXTERNAL SPEAKERS</th>
<th>SEPARATION KITS</th>
<th>COMMANDMIC™ SEPARATION CABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM-221</td>
<td>IP55</td>
<td>SM-29</td>
<td>SP-30</td>
<td>RMK-5</td>
<td>OPC-218</td>
</tr>
<tr>
<td>HM-211T</td>
<td>IP55</td>
<td>SM-26</td>
<td>SP-35L</td>
<td>RMK-7</td>
<td>OPC-2364 (1.9 m)</td>
</tr>
<tr>
<td>HM-220</td>
<td>IP55</td>
<td></td>
<td>SP-35</td>
<td>RMK-3</td>
<td>OPC-2365 (3 m)</td>
</tr>
<tr>
<td>HM-220T</td>
<td>IP55</td>
<td></td>
<td></td>
<td></td>
<td>OPC-2366 (5 m)</td>
</tr>
<tr>
<td>HM-211</td>
<td>IP55</td>
<td></td>
<td></td>
<td></td>
<td>OPC-2367 (8 m)</td>
</tr>
</tbody>
</table>

*No digital modulation "IN" using accessory cables.*

Some options may not be available in some countries. Please ask your dealer for details.
### SPECIFICATIONS FOR MOBILE TRANSCEIVERS AND REPEATERS

<table>
<thead>
<tr>
<th>Power supply requirements</th>
<th>IC-FCS000E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply requirements</td>
<td>12 V DC</td>
</tr>
<tr>
<td>Dimensions (W x H x D; Projections are not included)</td>
<td>483 x 44 x 219 mm</td>
</tr>
<tr>
<td>Weight (approx.)</td>
<td>2.25 kg</td>
</tr>
<tr>
<td>LAN</td>
<td>RJ-45 connector x 4 (100BASE-TX)</td>
</tr>
<tr>
<td>WAN</td>
<td>RJ-45 connector x 1 (100BASE-TX)</td>
</tr>
<tr>
<td>LED</td>
<td>Power, Error, Status</td>
</tr>
<tr>
<td>Conformity standard</td>
<td>ETSI TS 102 658</td>
</tr>
</tbody>
</table>

#### Frequency coverage
- **DN (Digital Narrow):** 12.5 kHz
- **DVN (Digital Very Narrow):** 6.25 kHz

#### Number of channels
- 400/1024 channels*1
  - 128 zones

#### Channel spacing
- 6.25, 12.5, 20, 25 kHz
- 6.25, 12.5, 20, 25 kHz
- 6.25, 12.5 kHz
- 6.25, 12.5, 20, 25 kHz
- 12.5, 20, 25 kHz
- 6.25, 12.5, 20, 25 kHz

#### Power supply requirements
- 13.2 V DC
- 13.2 V DC
- 13.2 V DC
- 13.2 V DC
- 13.2 V DC
- 13.2 V DC

#### Dimensions (W x H x D; Projections are not included)
- 174 x 55 x 150 mm
- 160 x 45 x 150 mm
- 150 x 40 x 117.5 mm
- 150 x 40 x 134.7 mm
- 148 x 88 x 260 mm
- 150 x 40 x 117.5 mm
- 150 x 40 x 117.5 mm
- 150 x 40 x 117.5 mm

#### Weight (approx.)
- 1.5 kg
- 1.3 kg
- 800 g
- 900 g
- 800 g
- 800 g
- 5.6 kg

#### RF output power (High)
- 25 W
- 25 W
- 25 W
- 25 W
- 25 W
- 25 W
- 25 W

#### Sensitivity
- (Analogue)*3
  - –4 dBμV typ (emf, at 1% BER)
  - –4 dBμV typ (emf, at 5% BER)
  - –8 dBμV typ (emf, at 1% BER)
  - –8 dBμV typ (emf, at 5% BER)
  - –4/–5 dBμV typ (DN/DVN)
  - –4/–5 dBμV typ (DN/DVN)
  - –4/–5 dBμV typ (DN/DVN)
  - –4/–5 dBμV typ (DN/DVN)

#### AF output power (Internal SP)
- 4 W typ.
- 4 W typ.
- 4 W typ.
- 4 W typ.
- 4 W typ.
- 4 W typ.
- 3.5 W

#### Dimensions

- **IC-F5400D/IC-F5602D**
  - 128 zones

- **IC-F5122D/IC-F5612DD**
  - 8 zones

- **IC-F5022/IC-F6022**
  - 8 channels

- **IC-F5012**
  - 32 channels

#### Frequency
- **(DN) / (DVN)**
  - 76 dBμV typ (VHF)
  - 74 dBμV typ (UHF)

#### Intermodulation
- **Sensitivity**
  - –8 dBμV typ
  - –4 dBμV typ

#### Frequency Spacing
- **DN / DVN**
  - 6.25, 12.5, 20, 25 kHz
  - 6.25, 12.5 kHz
  - 6.25, 12.5, 20, 25 kHz
  - 12.5, 20, 25 kHz
  - 6.25, 12.5, 20, 25 kHz
  - 12.5, 20, 25 kHz

#### Encryption
- **DES (4-key)**
- **DES (6-key)**
- **AES**

#### Voice Scrambler (Digital)
- **Type-D Trunking**
  - ✔ (Single-site)

#### Encryption
- **DES (4-key)**
- **DES (6-key)**
- **AES**

#### Voice Scrambler (Digital)
- ✔

#### OTAP (Over-the-Air Programming) function
- ✔ (With CS-OTPM1)

#### CTCSS/DTCS
- ✔

#### Two-Tone
- ✔

#### Five-Tone
- ✔

#### DTMF autodial
- ✔

#### Bluetooth
- ✔

#### GPS receiver
- ✔

#### IP rating
- ✔

#### MIL-STD requirements
- ✔

#### Dimensions
- **(High)**
  - 25 W

#### Weight (approx.)
- ✔

#### IP dust and water tests were performed on the controller and RMK-3 only.

#### Inversion type voice scrambler is not compatible with UT-109R/UT-110R voice scrambler.

#### IDAS radios are shipped with either the NXDN or dPMR firmware. Change of digital protocol may be performed by the dealer or distributor.

#### Upgrade licence (ISL-CHEX) required to enable 4000 channel capacity. IC-F5400DS/DPS/F6400DS/DPS (Segment type display): Channel indication is possible for up to 99 selected channels out of 1024.
## OPTIONS FOR IP ADVANCED RADIO SYSTEM

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<tr>
<th>BATTERY PACKS</th>
<th>BATTERY CASE</th>
<th>DESKTOP CHARGERS</th>
<th>MULTI-CHARGER</th>
<th>AC ADAPTERS</th>
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<td>MODEL NAME</td>
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<td></td>
</tr>
<tr>
<td>BP-272</td>
<td>BP-271</td>
<td>BP-273</td>
<td>BC-202</td>
<td>BC-211</td>
</tr>
<tr>
<td>Li-ion</td>
<td>Li-ion</td>
<td>AAA x3 cells</td>
<td>Rapid charger</td>
<td>Rapid multi-</td>
</tr>
<tr>
<td>7.4 V/1880 mAh (min.)</td>
<td>7.4 V/150 mAh (min.)</td>
<td>1200 mAh (typ.)</td>
<td>charger</td>
<td>charger</td>
</tr>
<tr>
<td>2000 mAh (typ.)</td>
<td></td>
<td></td>
<td>Rapid charger</td>
<td>with Bluetooth®</td>
</tr>
<tr>
<td></td>
<td>BP-202IP2</td>
<td>BC-218</td>
<td>BC-213S*1</td>
<td>BC-1235*1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 V/7.5 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 BC-1235A for US plug. SE for Europe plug. SUK for UK plug. SV for Australia plug.

<table>
<thead>
<tr>
<th>AC ADAPTERS</th>
<th>CIGARETTE LIGHTER CABLES</th>
<th>SPEAKER-MICROPHONES</th>
<th>EARPHONE-MICROPHONES</th>
<th>HEADSETS</th>
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<tbody>
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<td>MODEL NAME</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC-207S</td>
<td>CP-22</td>
<td>CP-23L</td>
<td>HM-183LS</td>
<td>VS-3</td>
</tr>
<tr>
<td>12 V/4.2 A</td>
<td>With DC-DC converter</td>
<td></td>
<td></td>
<td>Bluetooth® headset</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*2 Full-duplex operation can be possible with either HS-102 with OPC-2359, HM-153LS or HM-166LS.

<table>
<thead>
<tr>
<th>HEADSETS</th>
<th>PLUG ADAPTER CABLE</th>
<th>PTT SWITCH CABLES</th>
<th>BELT CLIPS</th>
<th>CARRYING CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL NAME</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-94</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earhook type with boom microphone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-95</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behind-the-head type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-97</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throat microphone type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS-102</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earphone type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPC-2006LS</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOX operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPC-2328</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPC-2359</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB-127</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB-135</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VS-3</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bluetooth® headset</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC-183</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For use BP-271</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*3 Full-duplex operation can be possible with either HS-102 with OPC-2359, HM-153LS or HM-166LS.

*3 HS-94, HS-95 and HS-97 headsets are simplex operation only.

<table>
<thead>
<tr>
<th>CARRYING CASES</th>
<th>MOUNT BASE</th>
<th>BRACKET ADAPTER</th>
</tr>
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<tbody>
<tr>
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<tr>
<td>LC-185</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For use BP-272</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBF-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For use with BC-218</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBA-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For use with BC-218</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| IP501H |      |
|        |      |
|        |      |

| IP100H  |      |
|        |      |
|        |      |
### OPTIONS FOR IP ADVANCED RADIO SYSTEM & RoIP GATEWAY

#### AC ADAPTERS

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>BC-236</th>
<th>BC-2075</th>
<th>BC-1475S*4</th>
<th>OPC-2273</th>
<th>OPC-2275</th>
<th>OPC-2276</th>
<th>OPC-2389</th>
<th>OPC-2390</th>
<th>HP-241</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage/AMP</td>
<td>12 V/8.3 A</td>
<td>12 V/4.2 A</td>
<td>12 V/0.33 A</td>
<td>For VHF marine transceiver</td>
<td>For mobile transceiver</td>
<td>For HM-152 or SM-26</td>
<td>5 m</td>
<td>5 m</td>
<td>5 m</td>
</tr>
</tbody>
</table>

#### AUDIO/DATA CONNECTION CABLES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>OPC-2273</th>
<th>OPC-2275</th>
<th>OPC-2276</th>
<th>OPC-2389</th>
<th>OPC-2390</th>
</tr>
</thead>
<tbody>
<tr>
<td>For mobile transceiver</td>
<td>5 m</td>
<td>5 m</td>
<td>For RS-232 serial connection</td>
<td>5 m</td>
<td>For IC-FR5100 series</td>
</tr>
<tr>
<td>For HM-152 or SM-26</td>
<td>5 m</td>
<td>5 m</td>
<td>For IC-FR100 series</td>
<td>5 m</td>
<td></td>
</tr>
</tbody>
</table>

#### SPEAKER/MICROPHONE

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>BC-2075S</th>
<th>BC-1475S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage/AMP</td>
<td>12 V/4.2 A</td>
<td>12 V/0.33 A</td>
</tr>
</tbody>
</table>

*BC-1475SA for US plug. SE for EURO plug. SV for Australia plug.

#### HAND MICROPHONES

<table>
<thead>
<tr>
<th>MODEL NAME</th>
<th>HM-152</th>
<th>HM-152T</th>
<th>HM-216</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DTMF keypad type</td>
<td>DTMF keypad type</td>
<td>Short cable*5</td>
</tr>
<tr>
<td>Options</td>
<td>VE-PG4</td>
<td>VE-PG4</td>
<td>VE-PG4</td>
</tr>
<tr>
<td>Notes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

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

### SPECIFICATIONS FOR RoIP GATEWAY

<table>
<thead>
<tr>
<th>VE-PG4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power supply</strong></td>
</tr>
<tr>
<td>12 V DC, 4 A maximum (with supplied AC adapter)</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td><strong>Weight (approx.)</strong></td>
</tr>
<tr>
<td><strong>Regulatory compliance</strong></td>
</tr>
<tr>
<td>FCC Part 15 Class B/ICES003, Part22, Part24, Part27, EN301 489-1, EN301 489-19, EN301 489-52, EN301 908-1, EN301 908-13, EN300 413, EN62479, EN62311, EN62368-1</td>
</tr>
<tr>
<td><strong>LAN/WAN</strong></td>
</tr>
<tr>
<td>RJ-45 connector x 1</td>
</tr>
<tr>
<td>10BASE-T/100BASE-TX/1000BASE-T (AUTO MDI/MDI-X)</td>
</tr>
<tr>
<td><strong>LAN</strong></td>
</tr>
<tr>
<td>RJ-45 connector x 1</td>
</tr>
<tr>
<td>10BASE-T/100BASE-TX/1000BASE-T (AUTO MDI/MDI-X)</td>
</tr>
<tr>
<td><strong>EXT 1–4 port</strong></td>
</tr>
<tr>
<td>Audio input</td>
</tr>
<tr>
<td>Audio output</td>
</tr>
<tr>
<td>Control input</td>
</tr>
<tr>
<td>Connectors</td>
</tr>
<tr>
<td><strong>Network</strong></td>
</tr>
<tr>
<td>4G bands:</td>
</tr>
<tr>
<td>LTE B2, B4, B12 (FCC)</td>
</tr>
<tr>
<td>3G bands:</td>
</tr>
<tr>
<td>W-CDMA B2, B5 (FCC)</td>
</tr>
<tr>
<td><strong>USB</strong></td>
</tr>
<tr>
<td>USB 3.0 Standard A receptacles x 3 (host interface)</td>
</tr>
<tr>
<td>USB 2.0 mini B receptacles x 1 (console interface)</td>
</tr>
<tr>
<td><strong>Internet protocol</strong></td>
</tr>
<tr>
<td><strong>Supported protocol</strong></td>
</tr>
<tr>
<td><strong>Codec</strong></td>
</tr>
</tbody>
</table>
**SPECIFICATIONS FOR IP ADVANCED RADIO SYSTEM**

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<tr>
<th>IP1000C</th>
<th>IP100H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network</strong></td>
<td><strong>Wireless standards</strong></td>
</tr>
<tr>
<td>4G bands: LTE 1, 3, 7, 8, 20 (EXP) LTE 2, 4, 5, 17 (USA)</td>
<td>IEEE 802.11 a/b/g/n</td>
</tr>
<tr>
<td>3G bands: W-CDMA 1, 8 (EXP) W-CDMA 2, 5 (USA)</td>
<td><strong>Frequency coverage¹</strong></td>
</tr>
<tr>
<td>Dimensions (W x H x D; projections not included) 59 x 95 x 32 mm (with BP-272)</td>
<td>2.4–2.4835 GHz, 5.15–5.35, 5.47–5.85 GHz</td>
</tr>
<tr>
<td>Weight (approx.) 240 g (with BP-272 and antenna)</td>
<td><strong>Dimensions (W x H x D; projections not included) 58 x 95 x 26.4 mm (with BP-271)</strong></td>
</tr>
<tr>
<td>Voice Codec G.726 (32 kbps)</td>
<td><strong>Weight (approx.) 205 g (with BP-271 and antenna)</strong></td>
</tr>
<tr>
<td>AF output power internal SP 400 mW (16 Ω at 10% distortion)</td>
<td><strong>RF output power Less than 10 mW/MHz</strong></td>
</tr>
<tr>
<td>external SP 200 mW (8 Ω at 10% distortion)</td>
<td><strong>Voice Codec G.711u-law (64 kbps)</strong></td>
</tr>
<tr>
<td>Operating time (5:5:90 duty cycle.) More than 17 hours (with BP-272)</td>
<td><strong>AF output power internal SP 400 mW (typ., 16 Ω at 10% distortion)</strong></td>
</tr>
<tr>
<td>external SP 200 mW (8 Ω at 10% distortion)</td>
<td><strong>Security WEP(64/128-bit), WPA-PSK(TKIP/AES),WPA2-PSK(TKIP/AES)</strong></td>
</tr>
<tr>
<td>Bluetooth® Ver 2.1 eDR</td>
<td><strong>Operating time (1:1:8 duty cycle.) More than 20 hours (with BP-271)</strong></td>
</tr>
<tr>
<td>GPS Built-in</td>
<td><strong>² Authorized frequency range and channels may differ depending on country.</strong></td>
</tr>
</tbody>
</table>

| Power supply | 100–240 V AC (with supplied AC adapter) |
| Dimensions (W x H x D; projections not included) | 232 x 38 x 168 mm |
| Weight (approx.) | 750 g (Main unit only) |
| LAN | RJ-45 connector x 4 1000BASE-T/100BASE-TX/10BASE-T (AUTO MDI/MDI-X) |
| USB | Standard A receptacles x2 |
| Maintenance console | RS-232C (RJ-11) connector |

<table>
<thead>
<tr>
<th>AP-90M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wireless LAN</strong></td>
</tr>
<tr>
<td><strong>Frequency coverage²</strong></td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
</tr>
<tr>
<td><strong>Dimensions (W x H x D; projections not included)</strong></td>
</tr>
<tr>
<td>Weight (approx.)</td>
</tr>
<tr>
<td><strong>Cable LAN</strong></td>
</tr>
<tr>
<td><strong>Data rates (theoretical value)</strong></td>
</tr>
<tr>
<td><strong>Security</strong></td>
</tr>
</tbody>
</table>

**² Authorized frequency range and channels may differ depending on country.**

---

**All stated specifications are subject to change without notice or obligation. Read all instructions enclosed with the transceiver carefully and completely before using the transceiver.**

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**Icom Canada**
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