



# PROFESSIONAL COMMUNICATIONS

## EUROPE EDITION



ROIP/VPN



IP Advanced  
Radio System



IDAS™ dPMR™



Intrinsically safe



Analogue/  
Licence Free



HARD WORKING RADIOS

# COMPANY PROFILE

## ICOM, THE WIRELESS COMMUNICATIONS EXPERTS

Icom Inc. is a wireless communications manufacturing company located in Osaka, Japan. Since Icom's establishment in 1954, we've had a long record as a trusted manufacturer of land mobile radio, amateur radio, marine radio, navigation products, aviation radio and communications receivers.



## QUALITY & RELIABILITY

### ICOM QUALITY AND ICOM RELIABILITY

Over 50 years of engineering and production excellence is a part of every Icom's product. Using the latest equipment, 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 are also compliant with the European RoHS directive.



Dust Protection



Air Leak Test



## PRODUCTION

### MADE IN JAPAN QUALITY

Icom is a rare example of an electronics manufacturer that has not shifted production to lower cost countries, but kept its production base in Japan. The Wakayama Icom plant has an advanced production system to produce small volume/multi-model wireless communication products.

## ICOM BRAND

### ICOM, WORLD BRAND NAME

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



## NETWORK

### ICOM'S WORLDWIDE NETWORK

Icom products are sold in over 80 countries around the world. Icom has an international sales and service network, including sales subsidiaries in the U.S., Australia, Germany, Spain and China. Icom is here to support and service our products and your communication needs.



## VHF HANDHELD TRANSCEIVERS

**IC-F3262DT** (5W)  
**IC-F3262DS** (5W)

## UHF HANDHELD TRANSCEIVERS

**IC-F4262DT** (5W)  
**IC-F4262DS** (5W)

### » IDAS™ Features

- dPMR Mode 1, 2 and 3 compatible
- Individual and group selective call
- Broadcast call • Ambience listening
- Status call and data call (Short Data Message)
- Transparent data call
- Emergency call and alert
- Remote kill, stun and revive
- Digital voice scrambler

### » General and analogue Features

- 136–174MHz, 5W • 400–470MHz, 5W
- 512 memory channels with 128 zones
- Dot-matrix, multi-function display
- IP67 dust-tight and waterproof
- MIL-STD rugged construction
- Large capacity Lithium-Ion battery pack
- 800mW loud audio with BTL amplifier

- 14-pin accessory connector with BTL amplifier output
- Mode dependent scan • Priority scan
- 8 DTMF autodial memories
- Lone worker function • Power on password
- Integrated GPS receiver and man down function\* (\* Depending on version)
- Busy channel lockout, repeater lockout and time-out-timer
- Surveillance function • Escalating alarm
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- Built-in audio compander
- Wide/middle/narrow channel spacing

#### Supplied Accessories (May differ according to version)

- Battery pack, BP-232WP • Antenna
- Belt clip, MB-94R



IP67, Dust-tight & waterproof protection



Built-in GPS receiver\* (\* Depending on version)

VHF & UHF HANDHELD TRANSCEIVERS  
**IC-F3162DT/DS**  
**IC-F4162DT/DS**



IC-F3262DT

IC-F4262DS

## VERSATILE, MULTI-FUNCTION PROFESSIONAL

### VHF MOBILE TRANSCEIVER

**IC-F5062D** (25W)

### UHF MOBILE TRANSCEIVER

**IC-F6062D** (25W)

### » General and analogue Features

- 136–174MHz, 25W • 400–470MHz, 25W
- 512 memory channels with 128 zones
- Backlit dot-matrix display • Power on password
- IP54 dust-protection and splash resistance (Controller only)
- Detachable front panel (Optional RMK-3 and separation cable required)
- MIL-STD rugged construction • DTMF autodial
- Front mounted speaker • Lone worker function
- D-SUB 25-pin accessory connector • Escalating alarm
- Ignition sensing line • Surveillance function
- Mode dependent scan • Priority scan
- Busy channel lockout, repeater lockout and time-out-timer
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- Built-in audio compander • Radio kill, stun and revive function
- Wide/middle/narrow channel spacing
- Optional voice scrambler UT-109R/UT-110R and built-in inversion voice scrambler

#### Supplied Accessories (May differ according to version)

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



The above photo includes optional separation kit, RMK-3, and separation cable, OPC-609.

### » IDAS™ Features

- dPMR Mode 1, 2 and 3 compatible
- Individual and group selective call
- Broadcast call • Ambience listening
- Status call and data call (Short Data Message)
- Transparent data call • Emergency call and alert
- Remote kill, stun and revive • Digital voice scrambler

# SIMPLE, AFFORDABLE DIGITAL RADIO

VHF HANDHELD TRANSCEIVER UHF HANDHELD TRANSCEIVER  
**IC-F3102D** (5W) **IC-F4102D** (4W)



## » IDAS™ Features

- dPMR Mode 1 and 2 compatible
- PTT ID (TX) • Individual/Group call
- Remote kill, stun and revive (RX)
- Ambient listening (RX) • SDM/Status RX beep
- Emergency • Digital voice scrambler

## » General and analogue Features

- 136–174MHz, 5W • 400–470MHz, 4W
- 16 memory channels • 3-colour LED
- Channel announcement function
- 800mW (typ.) loud speaker audio
- Internal VOX capability for hands-free operation
- IP54, dust-protection and water resistance

- MIL-STD rugged construction
  - Lone worker function • DTMF autodial
  - Surveillance function
  - Busy channel lockout, repeater lockout and time-out-timer
  - Optional GPS microphone, HM-171GP
  - 58(W)×111.5(H)×36.5(D) mm compact body
  - Simple operation for instant communication
  - Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
  - BIIS 1200 PTT ID
  - Radio kill, stun and revive function (RX only)
  - Wide/middle/narrow channel spacing
- Supplied accessories differ according to version.



IC-F3102D

IC-F4102D



# DIGITAL STANDARD MOBILE RADIO

VHF MOBILE TRANSCEIVER UHF MOBILE TRANSCEIVER  
**IC-F5122D** (25W) **IC-F6122D** (25W)

## » General and analogue Features

- 136–174MHz, 25W • 400–470MHz, 25W
- 128 memory channels with 8 zones
- 8-character alphanumeric display • 4W (typ.) front mounted speaker
- MIL-STD rugged construction
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- BIIS PTT ID transmission • Wide/middle/narrow channel spacing
- 8 DTMF autodial memories • Surveillance function
- D-Sub 25-pin accessory connector with optional OPC-2078

Supplied Accessories (May differ according to version)

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



## » IDAS™ Features

- dPMR Mode 1 and 2 compatible • PTT ID • Individual/Group call
- Status call and data call (Short Data Message)
- Transparent data call (Xon/Xoff) • Remote kill, stun and revive (RX)
- Emergency • Ambient listening (RX) • Digital voice scrambler

# IECEX/ATEX INTRINSICALLY SAFE RADIO

VHF HANDHELD TRANSCEIVER UHF HANDHELD TRANSCEIVER  
**IC-F3202DEX** (1W) **IC-F4202DEX** (1W)



## » IEC Certifications

Mining : Ex ib I Mb  
 Gas : Ex ib IIC T4 Gb  
 Dust : Ex ib IIIC IP6x T110°C Db  
 -20°C ≤ Ta ≤ +55°C

## » ATEX Certifications

Mining : I M2 Ex ib I Mb  
 Gas : II 2G Ex ib IIC T4 Gb  
 Dust : II 2D Ex ib IIIC IP6x T110°C Db  
 -20°C ≤ Ta ≤ +55°C

Certification pending at time of printing. Subject to change.

Supplied Accessories (May differ according to version)

- Battery pack, BP-277EX • Antenna • Belt clip, MB-94EX
- Battery charger, BC-212EX • AC adapter, BC-123S

## » Features

- 136–174MHz, 1W • 400–470MHz, 1W
- dPMR Mode 1 and 2 compatible • 16 memory channels
- Lone worker and man down functions
- Low electrical resistivity body; Carrying case is not required
- IP67 dust-tight and waterproof
- Operating time: 21.5/19 hours\* (VHF/UHF, approx. with BP-277EX battery pack) \* Tx: Rx: Standby=5:5:90. Power save on.
- 2-Tone, 5-Tone, CTCSS and DTCS capability
- BIIS 1200 PTT ID transmission
- Option speaker-microphone • Channel announcement function

DO NOT use the transceiver with any other equipment not specified in the option list (Pages 10-12).



IC-F3202DEX

IC-F4202DEX

\* Approval pending

## VHF REPEATERS

**IC-FR5100** (25W)  
**IC-FR5100H** (50W)

## UHF REPEATERS

**IC-FR6100** (25W)  
**IC-FR6100H** (50W)



### » IDAS™ Features

- IDAS dPMR Mode 2 repeater
- IDAS dPMR Mode 3 repeater (Fylde MultiLingo controller required)
- Individual and group selective call
- Talk back function and call mode selection • Digital voice scrambler
- Status call and data call (Short Data Message)
- Radio kill, stun and revive (TX only) • Call alert and radio check
- Ambience listening (TX only)
- IF output connector for connection to MultiLingo controller (Mode 3 version only)

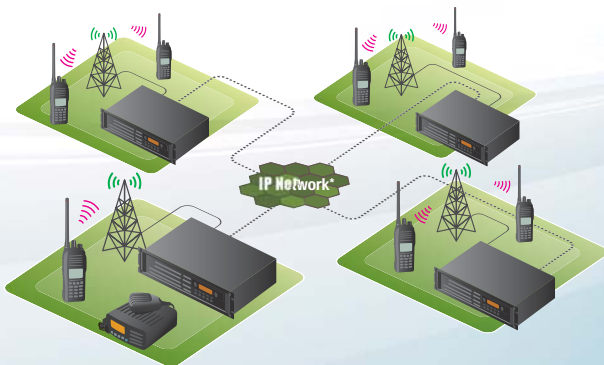
### » General and analogue Features

- 136–174MHz, 400–470MHz coverage
- IC-FR5100H/FR6100H: 50W output at 100% duty cycle\*
- IC-FR5100/FR6100: 25W output at 100% duty cycle\*
- (\* 25°C ambient temperature)

- 32 channel capacity and 12-digit dot-matrix display
- 19-inch rack mount design, 2U height low profile design
- “2 channel in 1 box” configuration (Optional UR-FR5100/UR-FR6100 required)
- Base station operation • D-SUB 25-pin accessory connector
- CW-ID transmitter • Priority scan
- DTMF encode and decode • ±0.5ppm high stability oscillator
- D-Sub 25-pin accessory connector • Built-in audio compander
- Built-in 5-Tone, CTCSS and DTCS capability
- Wide/middle/narrow channel spacing
- Optional voice scrambler UT-109R/UT-110R and built-in inversion voice scrambler

#### Supplied Accessories (May differ according to version)

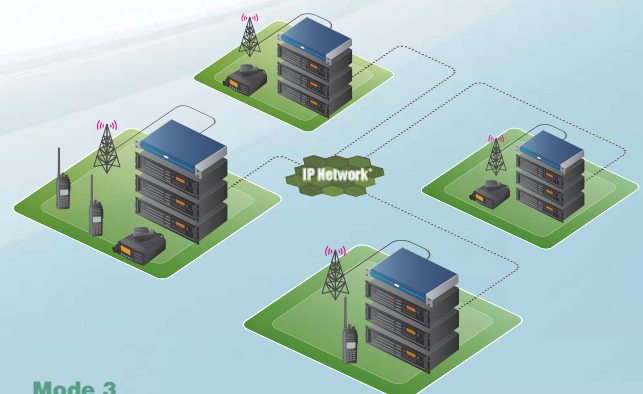
- DC power cable • Key assign stickers



#### Mode 2 Conventional Repeater mode (Optional UC-FR5000 #12 required)

Up to 16 repeater sites can be connected over an IP network.

\*Note: Private IP Network or VPN Tunnels through the Internet with Static endpoints.



#### Mode 3

Digital Trunking Mode

(Example of sites with three repeaters controlled by two MultiLingo cards)

## FYLDE MICRO MultiLingo™

Multi-Lingo can be used to build systems ranging in size from 2 channels on a single site, to national systems of over 1000 sites. Each Multi-Lingo tray supports 4 channels of dPMR or 4 channels of MPT1327. Trays can provide a mix of protocols up to 32 channels per site.

- No other Fylde components required to make a system\*
- Each 1u/44mm height chassis supports 4 channels
- Up to 32 channels per site • Up to 1000 sites networks across multiple regions
- Network supports over 1 million subscriber terminals
- SIP digital telephone interconnect as well as 2 wire POTS

- Native IP connectivity • Cross protocol calling – dPMR Mode3/ MPT 1327
- SYSCON-Suite for network administration/troubleshooting done via web session

\* For larger networks over 5 sites it is recommended to use a separate (RCS) Regional Control Server. The separate RCS further optimises IP radio networks traffic by arbitrating subscriber registration data.



# ATEX INTRINSICALLY SAFE RADIO

VHF HANDHELD TRANSCEIVER  
**IC-F51ATEX** (1W)

UHF HANDHELD TRANSCEIVER  
**IC-F61ATEX** (1W)



**IP67**



## » ATEX Certifications

Gas : II2G Ex ib IIA T3 Gb  
Dust : II2D Ex tb IIIC T160°C Db IP67  
(Tamb=-20°C to +55°C)

## » Features

- 136-174MHz, 1W • 400-470MHz, 1W
- 128 memory channels with 8 zones
- IP67 dust-tight and waterproof
- Lone worker function
- 2-Tone, 5-Tone, CTCSS, DTCS and

- BIIS 1200 capability
- 8 DTMF autodial memories
- Operating time: 16.5 hours\*  
(approx. with BP-227AXD battery pack)
- \* Tx: Rx: standby=5:5:90. Power save on.

### Supplied Accessories (May differ according to version)

- Battery pack, BP-227AXD • Antenna • Belt clip, MB-98

DO NOT use the transceiver with any other equipment not specified in the option list (Pages 10-12).



IC-F51 ATEX

IC-F61 ATEX

# RADIO & PAGER, ALL-IN-ONE

VHF HANDHELD TRANSCEIVER  
**IC-F51V** (5W)

UHF HANDHELD TRANSCEIVER  
**IC-F61V** (4W)



**IP67**



IC-F51V

IC-F61V

## » Features

- 136-174MHz, 5W • 400-470MHz, 4W
- Vibration alert function\* (\* Depending on version)
- 8 minutes' recording function\* (\* Depending on version)
- 700mW (typ.) loud audio output with internal speaker
- Lone worker function
- 128 memory channels with 8 zones
- IP67, dust-tight and waterproof protection
- MIL-STD rugged construction
- 56(W)×97(H)×35.2(D) mm compact body
- Built-in 5-Tone, 2-Tone, CTCSS, DTCS and BIIS 1200 capability
- MDC 1200 compatible (Limited functions)

- Wide/middle/narrow channel spacing
- Built-in inversion voice scrambler
- Operating time: 9-10 hours\* (approx. with BP-274 battery pack)
- \* Tx: Rx: standby=5:5:90. Power save on.

- Mode dependent scan
- 8 DTMF autodial memories
- Nuisance delete function
- Audio compander

### Supplied Accessories (May differ according to version)

- Battery pack, BP-274 • Antenna • Belt clip, MB-98

# SIMPLE, HIGH PERFORMANCE RADIO

VHF HANDHELD TRANSCEIVER  
**IC-F3002** (5W)

UHF HANDHELD TRANSCEIVER  
**IC-F4002** (4W)



**IP54**



## » Features

- 136-174MHz, 5W • 400-470MHz, 4W
- 16 memory channels • 3-colour LED
- Simple operation for instant communication
- Operating time: 20 hours\* (approx. with BP-265 battery pack)
- \* Tx: Rx: standby=5:5:90. Power save on.
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- BIIS 1200 PTT ID transmission
- MDC 1200 PTT ID and emergency
- Wide/middle/narrow channel spacing

- 800mW (typ.) loud speaker audio
- IP54, dust-protection and water resistance
- MIL-STD rugged construction
- 58(W)×111(H)×35.5(D) mm compact body
- Internal VOX capability for hands-free operation
- DTMF autodial memories
- Lone worker function
- Surveillance function
- Low battery alert

Supplied accessories differ according to version.



IC-F3002

IC-F4002

# SUPERIOR WATERPROOF PROTECTION

VHF HANDHELD TRANSCEIVERS

UHF HANDHELD TRANSCEIVERS

**IC-F3032T/S** (5W)

**IC-F4032T/S** (4W)



**IP67**



(PTT ID transmission)

## » Features

- 136–174MHz, 5W • 400–470MHz, 4W
- 128 memory channels with 8 zones
- 8 character alphanumeric display
- IP67, dust-tight and waterproof protection
- Operating time: 17.5 hours\* (approx. with BP-232WP battery pack)
- \* Tx: Rx: standby=5:5:90. Power save on.
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- BIIS 1200 PTT ID transmission
- MDC 1200 compatible (Limited functions)
- MIL-STD rugged construction
- 53(W)×120(H)×37(D) mm compact body
- Small and lightweight body (310g)
- Wide/middle/narrow channel spacing
- Lone worker function
- Mode dependent scan

- Nuisance delete function
- Surveillance function
- 8 DTMF autodial memories
- Optional voice scrambler, UT-109R/UT-110R
- Optional man down unit, UT-124R

Supplied Accessories (May differ according to version)

- Battery pack, BP-232WP • Antenna • Belt clip, MB-94

**IP54** (PTT ID transmission)

**5W (VHF)** **4W (UHF)**

VHF & UHF HANDHELD TRANSCEIVERS  
**IC-F3022T/S**  
**IC-F4022T/S**



IC-F3032S

IC-F4032T

# PROFESSIONAL DIGITAL LICENCE FREE RADIO



**LICENCE FREE**

DIGITAL PMR 446 TRANSCEIVER

**IC-F4029SDR** (500mW)



## » Features

- dPMR 446 Compatible
- Digital PMR 446 (16ch) plus analogue PMR 446 (8ch) available
- No licence\* is required to use the radio
- 500mW output power (ERP)
- 32-status messages

- Common ID code for group communication
- 8-character alphanumeric display
- Smart ring and tone find function in analogue PMR 446 mode
- Compact and lightweight body (320g)

\* Simple licence or application may be required in some countries.



Status message examples

Supplied Accessories (May differ according to version)

- Battery pack, BP-232H • Belt clip, MB-94
- Battery charger, BC-160 • AC adapter, BC-123S

# PROFESSIONAL LICENCE FREE RADIO

PMR 446 TRANSCEIVER

**IC-F27SR** (500mW)



**IP54**

## » Features

- Analogue PMR 446 (8ch)
- No licence\* is required to use the radio
- Just three main controls for simple operation
- MIL-STD rugged construction
- 800mW outstanding audio quality
- Operating time: 35.5 hours\* (approx. with BP-265 battery pack)

\* Tx: Rx: standby=5:5:90. Power save on.

- Internal VOX capability for hands-free operation
- \* Simple licence or application may be required in some countries.

- Power save function
- Low battery alert
- Monitor function
- 58(W)×186(H)×36.5(D) mm compact body (with BP-265)
- 285g lightweight body (with BP-265)
- Built-in CTCSS/DTCS
- 500mW output power (ERP)

\* Simple licence or application may be required in some countries.

Supplied accessories differ according to version.



**LICENCE FREE**

# HARDWORKING MOBILE RADIO

VHF MOBILE TRANSCEIVER

**IC-F5022** (25W)

UHF MOBILE TRANSCEIVER

**IC-F6022** (25W)

Rugged  
MIL-STD 810

BIIS 1200  
Compatible

(PTT ID transmission)



## » Features

- 136–174MHz, 25W • 400–470MHz, 25W
- 128 memory channels with 8 zones
- 8-character alphanumeric display
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- BIIS PTT ID transmission
- MDC 1200 compatible (Limited functions)
- Wide/middle/narrow channel spacing
- 8 DTMF autodial memories
- External memory channel control with optional ACC cable

- Tx channel setting and talk back function
- 4W (typ.) front mounted speaker
- MIL-STD rugged construction
- Optional DTMF decoder, UT-108R
- Optional voice scrambler, UT-109R and UT-110R

### Supplied Accessories (May differ according to version)

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

# TOUGH LITTLE WORKER

VHF MOBILE TRANSCEIVER

**IC-F5012** (25W)

UHF MOBILE TRANSCEIVER

**IC-F6012** (25W)

Rugged  
MIL-STD 810

BIIS 1200  
Compatible

(PTT ID transmission)



## » Features

- 136–174MHz, 25W • 400–470MHz, 25W
- 8 memory channels
- 4 programmable buttons and LED lighting
- Built-in 5-Tone, 2-Tone, CTCSS and DTCS capability
- BIIS PTT ID transmission
- MDC 1200 compatible (Limited functions)
- Wide/middle/narrow channel spacing
- External memory channel control with optional ACC cable
- DTMF autodial memories

- Tx channel setting and talk back function
- 4W (typ.) front mounted speaker
- MIL-STD rugged construction
- Optional DTMF decoder, UT-108R
- Optional voice scrambler, UT-109R and UT-110R

### Supplied Accessories (May differ according to version)

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

VHF REPEATERS

**IC-FR5100** (25W)

UHF REPEATERS

**IC-FR6100** (25W)

**IC-FR5100H** (50W)

**IC-FR6100H** (50W)

The IC-FR5100/H series can be used as an analogue mode repeater. Please see Page 4 for analogue function details.





# VERSATILE RADIO OVER IP GATEWAY

## RoIP GATEWAY VE-PG3



### » Converter mode

- Interconnects analogue radio to IP phone/analogue phone system
- RoIP and SIP gateway functions
- Telephone interconnection with IP phone and PSTN lines
- Direct dialing from radio user is possible\*  
(\* Limited to radios with DTMF capability)

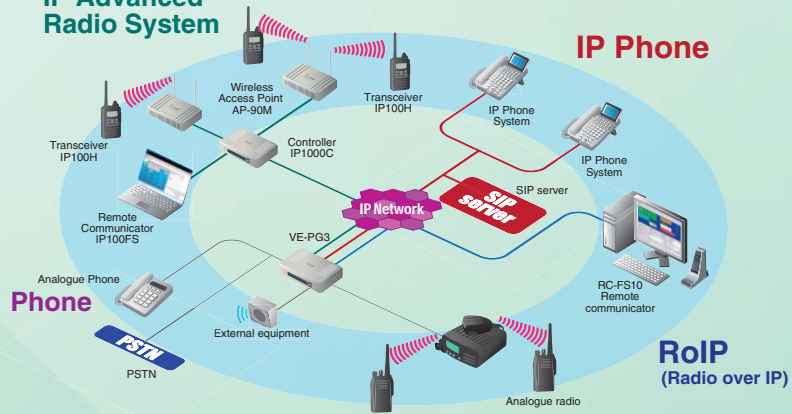
### » Bridge mode

- Interconnects between analogue radio sites over the IP network
- Site-to-multisite radio communication
- Mixing audio function

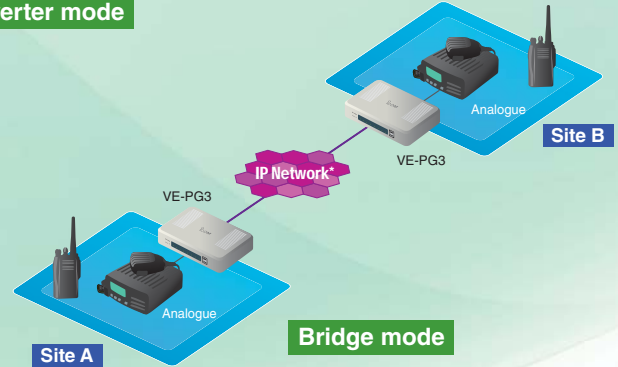
### » Common features

- Cross band, cross category connection
- IP advanced system and analogue radio system cross band connection
- Option RC-FS10 software for virtual PC dispatch station
- Public address system, siren, warning light and external equipment can be connected to the VE-PG3
- The virtual serial port function for remote control connected radios or equipment from a PC over the IP network

## IP Advanced Radio System



### Converter mode



- IP router function: PPPoE/IPv6 bridge, NAT, dynamic DNS, VPN pass through, IP filter, SNMP and SYSLOG
- USB flash drive connection for firmware updates and data backup

#### Supplied Accessories (May differ according to version)

- AC adapter, BC-207S
- Ferrite core
- Quick connectors (Spare)
- Virtual serial port software CD

# SIMPLE VPN ROUTER FOR RADIO OVER IP

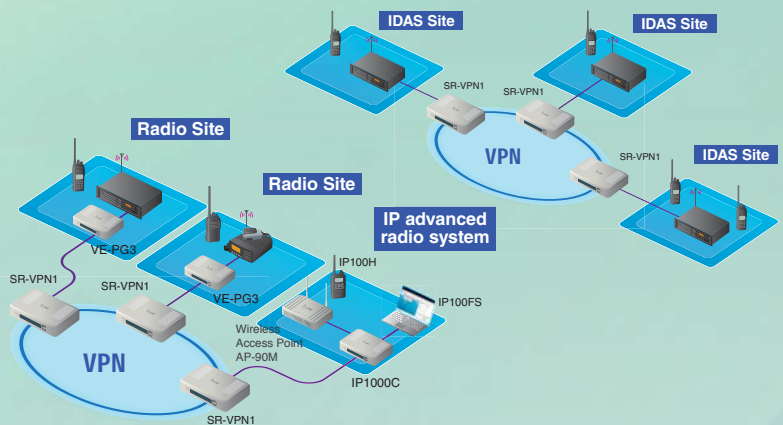
## VPN ROUTER SR-VPN1



SR-VPN1

### » Features

- Up to 32 IPsec VPN tunnels (3DES, AES-128, AES-192 or AES-256)
- IPsec wizard focuses on the basic setting items for a VPN connection, and provides simple step-by-step instructions
- IPv4 multicast routing for VE-PG3
- High-speed 1000BASE-T gigabit Ethernet connection
- 4 gigabit LAN ports with switch function
- Dual WAN ports (main/sub) for automatic failover
- USB flash drive connection for firmware updates and data



- backup and restore
  - Firmware updates also can be made via Internet connection
  - Supports SNMP and Syslog messages for network monitoring
- \* A xDSL or FTTH modem is separately required for Internet connection.

#### Supplied Accessories (May differ according to version)

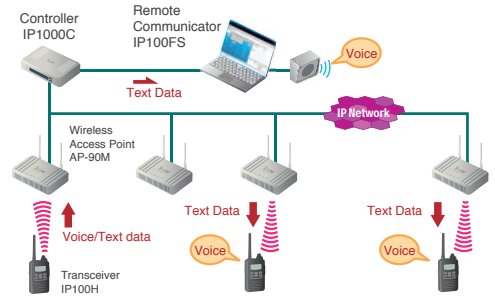
- AC adapter, BC-207S

# IP ADVANCED RADIO SYSTEM



## Basic Functions

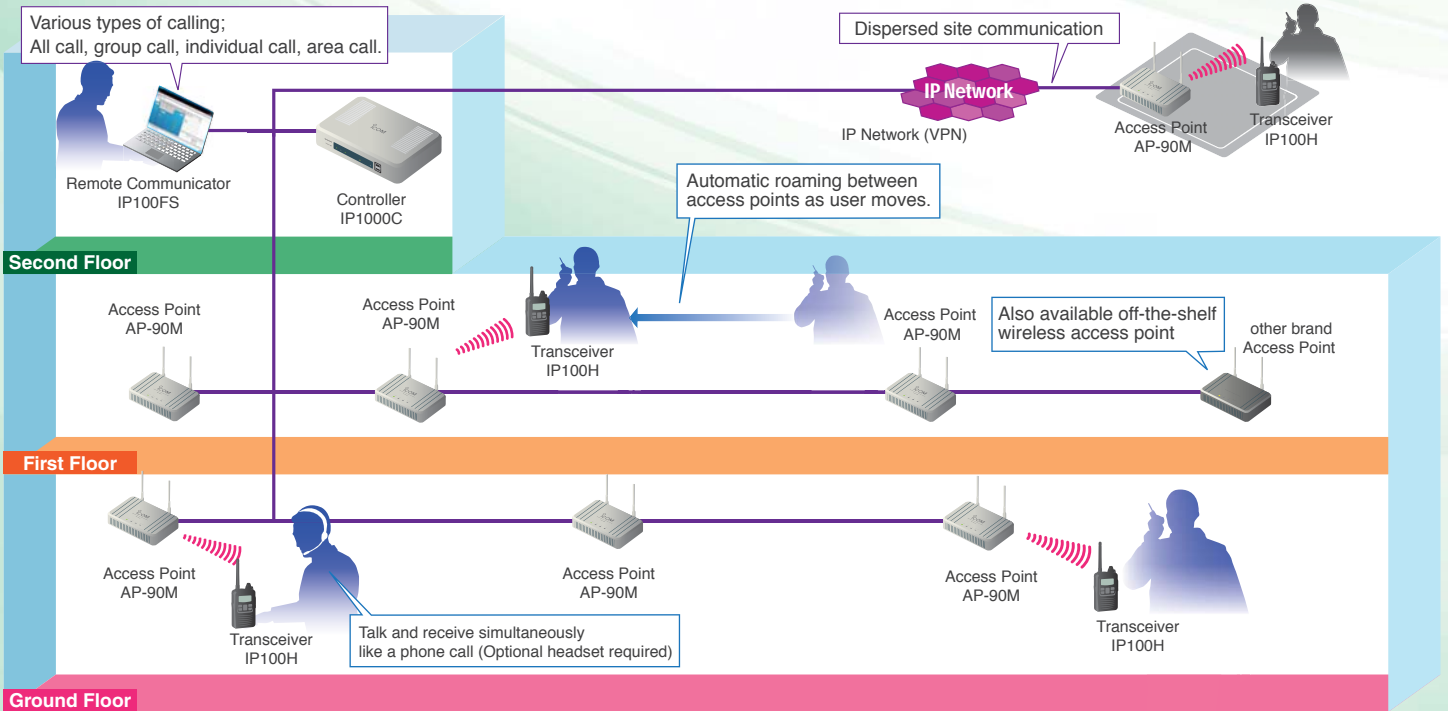
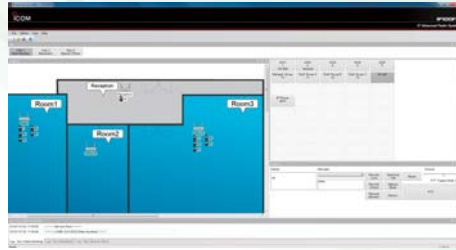
The IP100H transceiver transmits voice and preprogrammed text messages to the IP1000C controller through the wireless LAN access points deployed in the IP network. The controller redirects traffic to the specified units. The IP100FS remote communicator can create a virtual radio and simple dispatch station on a Windows® based PC. The IP100FS can obtain position information (based on using access points) and status information of each transceiver.



**TRANSCIVER  
IP100H**

**REMOTE COMMUNICATOR  
IP100FS**

**CONTROLLER  
IP1000C**




















The figures leave out some equipment, such as a network switch, to simplify the information.




## » Features

- License-free wireless LAN transceiver using IEEE 802.11 (a/b/g/n) standards
- Off-the-shelf wireless LAN access point can be used in the communication system and can communicate at the same time
- Users can roam among deployed access points
- Dispersed sites can be connected over an IP network (VPN)
- Up to 100 users can be loaded on a system and all users can communicate at the same time
- WPA-PSK or WPA2-PSK encryption protects your conversation security
- The IP100FS remote communicator shows user position information based on access point information
- Individual, Group conference call, All call, Area call, Priority call
- Full-duplex communication: Talk and receive simultaneously like a phone call (Optional headset required for IP100H)
- Mixing function: Receives multiple users voice with mixed audio
- Press to talk operation like a conventional transceiver
- Unique Area call function can call any user who is accessing the specified access point
- Remote stun, kill, revive and monitor function (Transmit from IP100FS only)
- Status call and short data message with vibration alert
- Auto provisioning function helps easy transceiver configuration
- IP Phone and analogue transceiver interconnection with VE-PG3
- IPX7 waterproof construction (IP100H only)

# OPTIONS FOR HANDHELD TRANSCEIVERS

MODEL NAME	BATTERY PACKS								BATTERY CASES
	BP-227AXD (Li-Ion) 7.4V/1850mAh (min.) 1950mAh (typ.)  For Intrinsic Safety	BP-277EX (Li-Ion) 7.4V/1800mAh (min.) 1900mAh (typ.)  For Intrinsic Safety	BP-232H (Li-Ion) 7.4V/2250mAh (min.) 2300mAh (typ.) BP-230N (Li-Ion) 7.4V/950mAh (min.) 980mAh (typ.) 	BP-232WP (Li-Ion) 7.4V/2250mAh (min.) 2300mAh (typ.) 	BP-264 (Ni-MH) 7.2V/1400mAh 	BP-265 (Li-Ion) 7.4V/1900mAh (min.) 2000mAh (typ.) 	BP-271 (Li-Ion) 7.4V/1150mAh (min.) 1200mAh (typ.) BP-272 (Li-Ion) 7.4V/1890mAh (min.) 2000mAh (typ.) 	BP-274 (Li-Ion) 7.4V/1800mAh (min.) 1900mAh (typ.) 	
IC-F3262DT/DS, IC-F4262DT/DS				✓					
IC-F3162DT/DS, IC-F4162DT/DS			✓						
IC-F3102D, IC-F4102D					✓	✓			
IC-F3202DEX, IC-F4202DEX		✓							
IC-F51, IC-F61 ATEX	✓								
IC-F51V, IC-F61V							✓	✓	
IC-F3032T/S, IC-F4032T/S				✓					
IC-F3022T/S, IC-F4022T/S			✓						
IC-F3002, IC-F4002					✓	✓			
IC-F4029SDR			✓						
IC-F27SR					✓	✓			
IP100H						✓			

MODEL NAME	BATTERY CASES				DESKTOP CHARGERS				
	BP-240 LR03 (AAA) x6 cells 	BP-261 LR6 (AA) x6 cells 	BP-263 LR6 (AA) x6 cells 	BP-273 LR6 (AA) x3 cells 	BC-212EX Rapid charger  For Intrinsic Safety	BC-119N Rapid charger 	BC-152N Regular charger 	BC-160 Rapid charger 	BC-171 Regular charger 
IC-F3262DT/DS, IC-F4262DT/DS	✓	✓				✓ (AD-106 is required)		✓	✓
IC-F3162DT/DS, IC-F4162DT/DS	✓					✓ (AD-106 is required)		✓	✓
IC-F3102D, IC-F4102D			✓						
IC-F3202DEX, IC-F4202DEX					✓				
IC-F51, IC-F61 ATEX						✓ (AD-100 is required)	✓		
IC-F51V, IC-F61V						✓ (AD-100 is required)	✓		
IC-F3032T/S, IC-F4032T/S	✓	✓				✓ (AD-106 is required)		✓	✓
IC-F3022T/S, IC-F4022T/S	✓					✓ (AD-106 is required)		✓	✓
IC-F3002, IC-F4002			✓						
IC-F4029SDR	✓					✓ (AD-106 is required)		✓	✓
IC-F27SR			✓						
IP100H				✓					

MODEL NAME	DESKTOP CHARGERS					MULTI-CHARGERS		
	BC-190 Rapid charger 	BC-191 Rapid charger (For BP-264) 	BC-192 Regular charger (For BP-264) 	BC-193 Rapid charger (For BP-265) 	BC-202 Rapid charger 	BC-121N Rapid multi-charger 	BC-197*1 Rapid multi-charger 	BC-211 Rapid multi-charger 
IC-F3262DT/DS, IC-F4262DT/DS						✓ (AD-106 is required)	✓ (Use with AD-122)	
IC-F3162DT/DS, IC-F4162DT/DS						✓ (AD-106 is required)	✓ (Use with AD-122)	
IC-F3102D, IC-F4102D		✓	✓	✓			✓ (Use with AD-120 or AD-121)	
IC-F3202DEX, IC-F4202DEX								
IC-F51, IC-F61 ATEX						✓ (AD-100 is required)		
IC-F51V, IC-F61V	✓					✓ (AD-100 is required)		
IC-F3032T/S, IC-F4032T/S						✓ (AD-106 is required)	✓ (Use with AD-122)	
IC-F3022T/S, IC-F4022T/S						✓ (AD-106 is required)	✓ (Use with AD-122)	
IC-F3002, IC-F4002		✓	✓	✓			✓ (Use with AD-120 or AD-121)	
IC-F4029SDR						✓ (AD-106 is required)	✓ (Use with AD-122)	
IC-F27SR		✓	✓	✓			✓ (Use with AD-120 or AD-121)	
IP100H					✓			✓

\*1 Either AD-120, AD-121 or 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.

✓ : Applicable    □ : Not applicable

# OPTIONS FOR HANDHELD TRANSCEIVERS










MODEL NAME	CHARGER ADAPTERS				AC ADAPTERS				
	AD-100 For BP-227AXD or BP-274	AD-106 For BP-230N, BP-232H or BP-232WP	AD-120 For BP-264 AD-121 For BP-265	AD-122 For BP-230N, 232H or 232WP	BC-123S*2 12V/1A	BC-145S*2 16V/0.93A	BC-147S*2 12V/0.25A	BC-157S 12V/6.6A	BC-206SE*2 15V/0.4A
IC-F3262DT/DS, IC-F4262DT/DS		✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)	✓ (Use with BC-160)	✓ (Use with BC-119N)	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)	
IC-F3162DT/DS, IC-F4162DT/DS		✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)	✓ (Use with BC-160)	✓ (Use with BC-119N)	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)	
IC-F3102D, IC-F4102D			✓ (Use with BC-197)		✓ (Use with BC-191 or BC-193)			✓ (Use with BC-197)	✓ (Use with BC-192)
IC-F3202DEX, IC-F4202DEX					✓ (Use with BC-212EX)				
IC-F51, IC-F61 ATEX	✓ (Use with BC-119N or BC-121N)					✓ (Use with BC-119N)	✓ (Use with BC-152N)	✓ (Use with BC-121N)	
IC-F51V, IC-F61V	✓ (Use with BC-119N or BC-121N)				✓ (Use with BC-190)	✓ (Use with BC-119N)	✓ (Use with BC-152N)	✓ (Use with BC-121N)	
IC-F3032T/S, IC-F4032T/S		✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)	✓ (Use with BC-160)	✓ (Use with BC-119N)	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)	
IC-F3022T/S, IC-F4022T/S		✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)	✓ (Use with BC-160)	✓ (Use with BC-119N)	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)	
IC-F3002, IC-F4002			✓ (Use with BC-197)		✓ (Use with BC-191 or BC-193)			✓ (Use with BC-197)	✓ (Use with BC-192)
IC-F4029SDR		✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)	✓ (Use with BC-160)	✓ (Use with BC-119N)	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)	
IC-F27SR			✓ (Use with BC-197)		✓ (Use with BC-191 or BC-193)			✓ (Use with BC-197)	✓ (Use with BC-192)
IP100H					✓ (Use with BC-202)			✓ (Use with BC-211)	










\*2 BC-123S/BC-145S/BC-147SA for 120V AC. SE for 230V AC. SV for 240V AC. BC-206SE for 230V AC.







MODEL NAME	SPEAKER-MICROPHONES								
	HM-203EX IP67	HM-131SC	HM-138 IPX7	HM-158LA	HM-159LA/SC	HM-168/LWP IPX7	HM-169 IP67	HM-170GP IP57 GPS	HM-171GP IP54 GPS
IC-F3262DT/DS, IC-F4262DT/DS									
IC-F3162DT/DS, IC-F4162DT/DS		✓			✓ (Use HM-159SC)	✓ (Use HM-168)	✓	✓	
IC-F3102D, IC-F4102D				✓	✓ (Use HM-159LA)				✓
IC-F3202DEX, IC-F4202DEX	✓								
IC-F51, IC-F61 ATEX			✓						
IC-F51V, IC-F61V			✓			✓ (Use HM-168)	✓	✓	
IC-F3032T/S, IC-F4032T/S				✓	✓ (Use HM-159LA)	✓ (Use HM-168LWP)			
IC-F3022T/S, IC-F4022T/S				✓	✓ (Use HM-159LA)				
IC-F3002, IC-F4002				✓	✓ (Use HM-159LA)				
IC-F4029SDR				✓	✓ (Use HM-159LA)				
IC-F27SR				✓	✓ (Use HM-159LA)				
IP100H									

MODEL NAME	SPEAKER-MICROPHONES		EARPHONE-MICROPHONES		HEADSETS			
	HM-184 IP67	HM-186LS	HM-153LA/LS	HM-166LA/LS	HS-85 Over-the-head type with PTT switch	HS-94 Earhook type with boom microphone	HS-95 Behind-the-head type	HS-97 Throat microphone type
IC-F3262DT/DS, IC-F4262DT/DS	✓		✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-4MC)	✓ (Use with VS-4MC)	✓ (Use with VS-4MC)
IC-F3162DT/DS, IC-F4162DT/DS						✓ (Use with VS-1SC or VS-4SC)	✓ (Use with VS-1SC or VS-4SC)	✓ (Use with VS-1SC or VS-4SC)
IC-F3102D, IC-F4102D						✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)
IC-F3202DEX, IC-F4202DEX								
IC-F51, IC-F61 ATEX								
IC-F51V, IC-F61V						✓ (Use with VS-1SC or VS-4SC)	✓ (Use with VS-1SC or VS-4SC)	✓ (Use with VS-1SC or VS-4SC)
IC-F3032T/S, IC-F4032T/S			✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)
IC-F3022T/S, IC-F4022T/S			✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)
IC-F3002, IC-F4002						✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)
IC-F4029SDR			✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)	✓ (Use with VS-1L or VS-4LA)
IC-F27SR						✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)
IP100H		✓	✓ (Use HM-153LS)	✓ (Use HM-166LS)	✓ (Use with OPC-2144)	✓ (Use with OPC-200LS or OPC-2228)	✓ (Use with OPC-200LS or OPC-2228)	✓ (Use with OPC-200LS or OPC-2228)

# OPTIONS FOR HANDHELD TRANSCEIVERS

MODEL NAME	EARPHONES		EARPHONE ADAPTER	ACC ADAPTER	PLUG ADAPTER CABLES			PTT SWITCH CABLES	
	SP-13	SP-27 Tube earphone	AD-52	AD-118 Allows you to use 6-pin Hirose plug accessories	OPC-2004	OPC-2006LS	OPC-2144	OPC-2328	VS-4LA/SC/MC
IC-F3262DT/DS, IC-F4262DT/DS									 <small>(Photo shows VS-4LA)</small>
IC-F3162DT/DS, IC-F4162DT/DS	✓ (Use with AD-52)	✓ (Use with AD-52)	✓	✓					✓ (Use VS-4MC) ✓ (Use VS-4SC)
IC-F3102D, IC-F4102D		✓			✓				✓ (Use VS-4LA)
IC-F3202DEX, IC-F4202DEX									
IC-F51, IC-F61 ATEX									
IC-F51V, IC-F61V									✓ (Use VS-4SC)
IC-F3032T/S, IC-F4032T/S	✓	✓							✓ (Use VS-4LA)
IC-F3022T/S, IC-F4022T/S	✓	✓							✓ (Use VS-4LA)
IC-F3002, IC-F4002		✓			✓				✓ (Use VS-4LA)
IC-F4029SDR	✓	✓							✓ (Use VS-4LA)
IC-F27SR		✓			✓				✓ (Use VS-4LA)
IP100H	✓ (Use with OPC-2144)					✓	✓	✓	

MODEL NAME	VOX/PTT CASE	BELT CLIPS			LEATHER BELT HANGERS			CHARGER BRACKET	CIGARETTE LIGHTER CABLE
	VS-1L/SC	MB-94EX	MB-86 MB-93 Swivel type	MB-94/94R MB-98 MB-124 MB-127 Alligator type	MB-96N	MB-96F	MB-96FL	MB-130	CP-23L
IC-F3262DT/DS, IC-F4262DT/DS									
IC-F3162DT/DS, IC-F4162DT/DS	✓ (Use VS-1SC)		✓ (Use MB-93)	✓ (Use MB-94/R)	✓	✓	✓	✓ (Use with BC-160)	✓ (Use with BC-119N)
IC-F3102D, IC-F4102D				✓ (Use MB-124)				✓ (Use with BC-191, BC-192 or BC-193)	✓ (Use with BC-191 or BC-193)
IC-F3202DEX, IC-F4202DEX		✓							
IC-F51, IC-F61 ATEX			✓ (Use MB-86)	✓ (Use MB-98)		✓			
IC-F51V, IC-F61V	✓ (Use VS-1SC)		✓ (Use MB-86)	✓ (Use MB-98)	✓	✓	✓	✓ (Use with BC-190)	✓ (Use with BC-119N)
IC-F3032T/S, IC-F4032T/S	✓ (Use VS-1L)		✓ (Use MB-93)	✓ (Use MB-94/R)	✓	✓	✓	✓ (Use with BC-160)	✓ (Use with BC-119N)
IC-F3022T/S, IC-F4022T/S	✓ (Use VS-1L)		✓ (Use MB-93)	✓ (Use MB-94/R)	✓	✓	✓	✓ (Use with BC-160)	✓ (Use with BC-119N)
IC-F3002, IC-F4002				✓ (Use MB-124)				✓ (Use with BC-191, BC-192 or BC-193)	✓ (Use with BC-191 or BC-193)
IC-F4029SDR	✓ (Use VS-1L)		✓ (Use MB-93)	✓ (Use MB-94/R)	✓	✓	✓	✓ (Use with BC-160)	✓ (Use with BC-119N)
IC-F27SR				✓ (Use MB-124)				✓ (Use with BC-191, BC-192 or BC-193)	✓ (Use with BC-191 or BC-193)
IP100H				✓ (Use MB-127)					

MODEL NAME	DC POWER CABLES		ANTENNAS		CUT ANTENNAS	HIGH GAIN ANTENNAS	STUBBY ANTENNAS	
	OPC-656	OPC-515L	FA-SC25V 136-150MHz FA-SC55V 150-174MHz FA-SC25U 400-430MHz FA-SC57U 430-470MHz	FA-S24V 136-150MHz FA-S59V 150-174MHz FA-S27U 400-470MHz FA-S56U 450-520MHz	FA-SC61VC 136-174MHz FA-SC61UC 380-520MHz	FA-SC62V 150-160MHz FA-SC63V 155-165MHz	FA-SC56VS 150-162MHz FA-SC57VS 160-174MHz FA-SC73US 450-490MHz	FA-S62VS 150-162MHz FA-S63VS 160-174MHz FA-S57US 450-490MHz
IC-F3262DT/DS, IC-F4262DT/DS								
IC-F3162DT/DS, IC-F4162DT/DS	✓ (Use with BC-121N or BC-197)	✓ (Use with BC-119N)	✓		✓	✓	✓	
IC-F3102D, IC-F4102D	✓ (Use with BC-197)	✓ (Use with BC-191, BC-192 or BC-193)	✓		✓	✓	✓	
IC-F3202DEX, IC-F4202DEX			✓					
IC-F51, IC-F61 ATEX				✓				✓
IC-F51V, IC-F61V	✓ (Use with BC-121N)	✓ (Use with BC-119N)		✓				✓
IC-F3032T/S, IC-F4032T/S	✓ (Use with BC-121N or BC-197)	✓ (Use with BC-119N)	✓		✓	✓	✓	
IC-F3022T/S, IC-F4022T/S	✓ (Use with BC-121N or BC-197)	✓ (Use with BC-119N)	✓		✓	✓	✓	
IC-F3002, IC-F4002	✓ (Use with BC-197)	✓ (Use with BC-191, BC-192 or BC-193)	✓		✓	✓	✓	
IC-F4029SDR	✓ (Use with BC-121N or BC-197)	✓ (Use with BC-119N)						
IC-F27SR	✓ (Use with BC-197)	✓ (Use with BC-191, BC-192 or BC-193)						
IP100H								

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

✓ : Applicable    □ : Not applicable

# SPECIFICATIONS FOR HANDHELD TRANSCEIVERS

	IC-F3262DT/DS IC-F4262DT/DS	IC-F3162DT/DS IC-F4162DT/DS	IC-F3102D IC-F4102D	IC-F3202DEX IC-F4202DEX	IC-F51 ATEX IC-F61 ATEX	IC-F51V IC-F61V	IC-F3032T/S IC-F4032T/S	IC-F3022T/S IC-F4022T/S	IC-F3002 IC-F4002	IC-F4029SDR	IC-F27SR	
Frequency coverage	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	Analogue; 446.00625– 446.09375MHz Digital; 446.103125– 46.196875MHz*	Analogue; 446.00625– 446.09375MHz	
	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	Analogue; 8ch Digital; 16ch	Analogue; 8ch	
Number of channels	512 channels 128 zones	512 channels 128 zones	16 channels	16 channels	128 channels 8 zones	128 channels 8 zones	128 channels 8 zones	128 channels 8 zones	16 channels	Analogue; 8ch Digital; 16ch	Analogue; 8ch	
Channel spacing	6.25, 12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz	12.5, 20, 25kHz	12.5, 20, 25kHz	12.5, 20, 25kHz	12.5, 20, 25kHz	12.5, 20, 25kHz	6.25, 12.5kHz	12.5kHz	
Dimensions (W×H×D; Projections are not included)	53.5×142.7×39.5mm (with BP-232WP)	53×136×38.5mm (with BP-232H)	58×111.5×36.5mm (with BP-265)	63×144×50mm (with BP-277EX)	56×97×36.4mm (with BP-227AXD)	56×97×35.2mm (with BP-274)	53×120×37mm (with BP-232WP)	53×120×37mm (with BP-232H)	58×111×35.5mm (with BP-265)	53×195×37mm (with BP-232H)	58×186×36.5mm (with BP-265)	
Weight (approx.)	410g (VHF)400g (UHF) (with BP-232WP, belt clip & ant.)	340g (with BP-232H)	320g (VHF) 310g (UHF) (with BP-265)	466g (with BP-277EX, belt clip & ant.)	295g (with BP-227AXD)	274g (VHF) 278g (UHF) (with BP-274)	310g (with BP-232WP)	300g (with BP-232H)	270g (with BP-265)	320g (With BP-232H)	285g (With BP-265)	
RF output power (High)	5W (VHF/UHF)	5W (VHF/UHF)	5W (VHF) 4W (UHF)	1W (VHF/UHF)	1W (VHF/UHF)	5W (VHF) 4W (UHF)	5W (VHF) 4W (UHF)	5W (VHF) 4W (UHF)	5W (VHF) 4W (UHF)	500mW ERP	500mW ERP	
Frequency stability	±1.0ppm	±1.0ppm	±1.0ppm	±1.0ppm	±2.5ppm (VHF) ±2.0ppm (UHF)	±2.5ppm	±2.5ppm	±2.5ppm	±2.5ppm	±0.5kHz	±2.5ppm	
Sensitivity (20dB SINAD, emf) (5% BER)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	-4dBμV (typ.)	26.5dBμV/m	26.5dBμV/m	
	-8dBμV (typ.)	-8dBμV (typ.)	-8dBμV (typ.)	-8dBμV (typ.)	-	-	-	-	-	-	-	
Selectivity (VHF) (UHF)	78/78/68dB (typ.)	75/75/68dB (typ.)	75/73/69dB (typ.)	78/75/70dB (typ.) 74/72/68dB (typ.)	75/75/65dB (typ.)	75/75/65dB (typ.)	75/75/65dB (typ.) 75/73/65dB (typ.)	75/75/65dB (typ.) 75/73/65dB (typ.)	78/78/70dB (typ.) 73/73/65dB (typ.)	-	-	
Intermodulation rejection	67dB (typ.)	67dB (typ.)	65dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	-	-	
Spurious response rejection	76dB (typ.)	70dB	91/80dB (typ.)	VHF 85dB (typ.) UHF 80dB (typ.)	80dB (typ.)	70dB	70dB	70dB	80dB (typ.)	-	-	
AF output power	Internal SP	800mW (typ.)	-	800mW (typ.)	400mW (typ. 32Q)	-	700mW (typ.)	-	-	800mW (typ.)	-	800mW (typ.)
	External SP	1000mW (typ.)	500mW (typ.)	400mW (typ.)	400mW (typ. 32Q)	500mW (typ.)	500mW (typ.)	500mW (typ.)	500mW (typ.)	400mW (typ.)	500mW (typ.)	400mW (typ.)

\* As of October 2013, some countries have yet to allocate the 446.1–446.2MHz digital PMR 446 frequency range. We suggest you confirm the allocation status in your country before you use.

	IC-F3262DT/DS IC-F4262DT/DS	IC-F3162DT/DS IC-F4162DT/DS	IC-F3102D IC-F4102D	IC-F3202DEX IC-F4202DEX	IC-F51 ATEX IC-F61 ATEX	IC-F51V IC-F61V	IC-F3032T/S IC-F4032T/S	IC-F3022T/S IC-F4022T/S	IC-F3002 IC-F4002	IC-F4029SDR	IC-F27SR
Number of option slots	-	1	-	-	-	-	1	1	-	-	-
CTCSS/ DTCS	encoder	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	decoder	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-Tone 5-Tone	encoder	✓	✓	✓	✓	✓	✓	✓	✓	-	-
	decoder	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DTMF autodial	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
DTMF decoder	✓ <sup>*3</sup>	✓ <sup>*3</sup>	-	-	-	-	UT-108R	UT-108R	-	-	-
Voice Scrambler (Analogue) <sup>*1</sup>	Inversion	✓	✓	-	-	✓	-	-	-	-	-
	Non-rolling	-	UT-109R	-	-	✓	UT-109R	UT-109R	-	-	-
	Rolling	-	UT-110R	-	-	✓	UT-110R	UT-110R	-	-	-
Voice Scrambler (Digital)	✓	✓	✓	✓	-	-	-	-	-	-	
dPMR™	Mode 1/ Mode 2	✓	✓	✓	✓	-	-	-	-	-	-
	Mode 2 Multi-site	✓	✓	✓	✓	-	-	-	-	-	-
	Mode 3 Trunking	✓	✓	-	-	-	-	-	-	-	-
BIIS 1200	✓	✓	✓ <sup>*5</sup>	✓ <sup>*5</sup>	✓	✓	✓ <sup>*5</sup>	✓ <sup>*5</sup>	✓ <sup>*5</sup>	-	-
MDC 1200	-	-	-	-	-	✓	✓	✓	✓ <sup>*6</sup>	-	-
Man down function	✓ <sup>*4</sup>	UT-124R	-	✓	-	-	UT-124R	UT-124R	-	-	-
Intrinsically safe	-	-	-	✓	✓	-	-	-	-	-	-
Vibration alert	-	-	-	-	-	✓ <sup>*4</sup>	-	-	-	-	-
Voice recorder	-	-	-	-	-	✓ <sup>*4</sup>	-	-	-	-	-
GPS receiver	✓ <sup>*4</sup>	HM-170GP	HM-171GP	-	-	HM-170GP	-	-	-	-	-
Operating time <sup>*2</sup>	12/10.5 hours <sup>*7</sup> with BP-232WP	14 hours with BP-232H	17.5 hours with BP-265	19–21.5 hours with BP-277EX	16.5 hours with BP-227AXD	9–10 hours with BP-274	17.5 hours with BP-232WP	18 hours with BP-232H	20 hours with BP-265	26.5 hours with BP-232H	35.5 hours with BP-265
IP rating	IP67	IP55	IP54	IP67	IP67	IP67	IP67	IP54	IP54	-	IP54
MIL-STD requirements	MIL-810 G	MIL-810 F	MIL-810 F	MIL-810 G	MIL-810 F	MIL-810 F	MIL-810 G	MIL-810 F	MIL-810 F	MIL-810 F	MIL-810 F

<sup>\*1</sup> Inversion type voice scrambler is not compatible with UT-109/UT-110 voice scrambler. <sup>\*2</sup> 5:5:90 duty cycle, power save ON.

<sup>\*3</sup> Possible as a kind of 5-Tone format. <sup>\*4</sup> Depending on version. <sup>\*5</sup> PTT ID only. <sup>\*6</sup> PTT ID and Emergency call only.

<sup>\*7</sup> Non GPS/GPS type.

# OPTIONS FOR MOBILE TRANSCEIVERS AND REPEATERS

MODEL NAME	SEPARATION KIT AND CABLE		ACC CABLES				HAND MICROPHONES		
	RMK-3	OPC-609 (1.9m)	OPC-1939 (15-pin)	OPC-2078 (25-pin)	OPC-2202 UR-PA5000/PA6000 connection cable	OPC-2203 UR-PA5000/PA6000 connection cable (For dPMR Mode 3)	OPC-2311 MultiLingo connection cable (For dPMR Mode 3)	HM-152	HM-152T with DTMF keypad
IC-F5062D, IC-F6062D	✓ (OPC-609 is required.)	✓						✓	✓
IC-F5122D, IC-F6122D			✓*	✓*				✓	✓
IC-F5022, IC-F6022			✓	✓				✓	✓
IC-F5012, IC-F6012			✓	✓				✓	✓
IC-FR5100, IC-FR6100					✓	✓	✓	✓	
IC-FR5100H, IC-FR6100H					✓	✓	✓	✓	

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

MODEL NAME	HAND MICROPHONES		DESKTOP MICROPHONE	EXTERNAL SPEAKERS		CHANNEL MODULES	POWER AMPLIFIERS	NETWORK CONTROLLER
	HM-148G Heavy-duty type	HM-148T Heavy duty type with DTMF keypad	SM-26	SP-30	SP-35 2m cable SP-35L 6m cable	UR-FR5100 136-174MHz, 25W UR-FR6100 400-470MHz, 25W	UR-PA5000 136-174MHz, 50W 100% duty UR-PA6000 400-470MHz, 50W 100% duty	UC-FR5000
IC-F5062D, IC-F6062D	✓	✓	✓	✓	✓			
IC-F5122D, IC-F6122D	✓	✓	✓	✓	✓			
IC-F5022, IC-F6022	✓	✓	✓	✓	✓			
IC-F5012, IC-F6012	✓	✓	✓	✓	✓			
IC-FR5100, IC-FR6100			✓		✓	✓	✓	✓ (dPMR Mode 2 only)
IC-FR5100H, IC-FR6100H			✓		✓		Built-in	

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

# SPECIFICATIONS FOR MOBILE TRANSCEIVERS AND REPEATERS

	IC-F5062D IC-F6062D	IC-F5122D IC-F6122D	IC-F5022 IC-F6022	IC-F5012 IC-F6012	IC-FR5100/H IC-FR6100/H
<b>Frequency coverage</b>	136-174MHz 400-470MHz	136-174MHz 400-470MHz	136-174MHz 400-470MHz	136-174MHz 400-470MHz	136-174MHz 400-470MHz
<b>Number of channels</b>	512 channels 128 zones	128 channels 8 zones	128 channels 8 zones	8 channels	32 channels
<b>Channel spacing</b>	6.25, 12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz	12.5, 20, 25kHz	12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz
<b>Power supply requirements</b>	13.2V DC	13.2V DC	13.2V DC	13.2V DC	13.2V DC
<b>Dimensions (WxHxD; Projections are not included)</b>	160x45x150mm	150x40x117.5mm	150x40x117.5mm	150x40x117.5mm	483x88x260mm
<b>Weight (approx.)</b>	1.3kg	800g	800g	800g	8.1kg (FR5100H/FR6100H) 5.6kg (FR5100/FR6100)
<b>RF output power (High)</b>	25W	25W	25W	25W	50W (FR5100H/FR6100H) 25W (FR5100/FR6100)
<b>Frequency stability</b>	±1.5kHz	±1.5kHz	±1.5kHz	±1.5kHz	±0.2kHz (VHF) ±0.5kHz (UHF)
<b>Sensitivity</b> (20dB SINAD, 5% BER)	-4dBμV (typ.) -8dBμV (typ.)	-4dBμV (typ.) -8dBμV (typ.)	-4dBμV (typ.) -	-4dBμV (typ.) -	0dBμV (min. at 1% BER)
<b>Selectivity (VHF/UHF)</b>	85/83/75dB (typ.)	80/80/70dB (typ.) 75/75/70dB (typ.)	75/75/65dB (typ.)	75/75/65dB (typ.)	86/83/77dB (typ.) 80/78/70dB (typ.)
<b>Intermodulation rejection</b>	70dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	72dB (typ.)
<b>Spurious response rejection</b>	90dB (typ.)	80dB (typ.)	80dB (typ.)	70dB	72dB (typ.)
<b>AF output power</b>	4W (typ.)	4W (typ.)	4W (typ.)	4W (typ.)	3.5W

	IC-F5062D IC-F6062D	IC-F5122D IC-F6122D	IC-F5022 IC-F6022	IC-F5012 IC-F6012	IC-FR5100/H IC-FR6100/H
<b>Number of option slots</b>	1	-	1	1	1
<b>CTCSS/DTCS</b>	encoder decoder	✓ ✓	✓ ✓	✓ ✓	✓ ✓
<b>2-Tone/5-Tone</b>	encoder decoder	✓ ✓	✓ ✓	✓ ✓	✓ <sup>*4</sup> ✓ <sup>*4</sup>
<b>DTMF autodial</b>	✓	✓	✓	✓	✓
<b>DTMF decoder</b>	✓ <sup>*2</sup>	-	UT-108R	UT-108R	✓
<b>Voice Scrambler (Analogue)<sup>*1</sup></b>	Inversion	-	-	-	✓
	Non-rolling	UT-109R	-	UT-109R	UT-109R
	Rolling	UT-110R	-	UT-110R	UT-110R
<b>Voice Scrambler (Digital)</b>	✓	✓	-	-	✓
<b>dPMR<sup>TM</sup></b>	Mode 1/ Mode 2	✓	✓	-	✓
	Mode 2 Multi-site	✓	✓	-	UC-FR5000 <sup>*5</sup> (#12 required)
	Mode 3 Trunking	✓	-	-	✓ <sup>*7</sup>
<b>BIIS 1200</b>	✓	✓ <sup>*3</sup>	✓ <sup>*3</sup>	✓ <sup>*3</sup>	-
<b>MDC 1200</b>	-	-	✓	✓	-
<b>IP rating</b>	IP54 <sup>*5</sup>	-	-	-	-
<b>MIL-STD requirements</b>	MIL-810 F	MIL-810 F	MIL-810 F	MIL-810 F	MIL-810 F

<sup>\*1</sup> Inversion type voice scrambler is not compatible with UT-109/UT-110 voice scrambler.

<sup>\*2</sup> Possible as a kind of 5-Tone format. <sup>\*3</sup> PTT ID only. <sup>\*4</sup> 5-Tone only.

<sup>\*5</sup> IP dust and water tests were performed on the controller and RMK-3 only.








<sup>\*6</sup> IC-FR5100/FR6100 Mode 2 version only. <sup>\*7</sup> Fylde Micro MultiLingo<sup>TM</sup> controller required. The IC-FR5100/H, FR6100/H cannot be used as a base station in dPMR Mode 3.

✓ : Available

UT-108 : Required internal unit (Eg. UT-108)

- : Not available

# SPECIFICATIONS AND OPTIONS FOR RoIP AND VPN ROUTER

	AC ADAPTER	AUDIO CONNECTION CABLES				SERIAL CABLE	REMOTE COMMUNICATOR
MODEL NAME	BC-2075 12V/3.5A	OPC-2273 For VHF marine transceiver 5m; 16.4ft	OPC-2274 For IC-FR5000 series 5m; 16.4ft	OPC-2275 For mobile transceiver 5m; 16.4ft	OPC-2276 For HM-152 or SM-26 5m; 16.4ft	OPC-1402A (For maintenance use)	RC-FS10
							
VE-PG3	✓	✓	✓	✓	✓		✓
SR-VPN1	✓					✓	

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

	VE-PG3
Power supply	100–240V AC 12V DC $\pm 10\%$ (with supplied AC adapter)
Dimensions (WxHxD; projections not included)	232x38x168mm
Weight (approx.)	800g
Regulatory compliance	FCC (Part 15 Class B/Part 68), TIA868-B ICES-003, ICCS-03 CE mark, ETSI ES 203 021 ETSI EG 201 121 (Advisory note)
LAN/WAN	RJ-45 connector x 2 100BASE-TX/10BASE-T (AUTO MDI/MDI-X)
TRX 1/2 port	Analog audio/transmit control 2.54mm (0.1 in) pitch quick connector (4 terminals x3)x2
EXT 1/2 port	General audio/transmit control/Relay circuit 2.54mm pitch quick connector (4 terminals x3)x2
Telephone set port	RJ-11 connector x1
Telephone line port	RJ-11 connectors x2
USB	Standard A receptacles x2
Network protocol	IPv4
Codec	G.711 $\mu$ -law, AMBE+2 (Optional CT-24 required)

	SR-VPN1
Power supply	100–240V AC 12V DC $\pm 10\%$ (with supplied AC adapter)
Dimensions (WxHxD; projections not included)	232x38x168mm
Weight (approx.)	800g
Regulatory compliance	FCC (Part 15 Subpart B), ICES-003, EN55022/EN55024/EN61000-3-2/EN61000-3-3
WAN	RJ-45 connector x 2 1000BASE-T/100BASE-TX/10BASE-T (AUTO MDI/MDI-X)
LAN	RJ-45 connector x 4 with switching function 1000BASE-T/100BASE-TX/10BASE-T (AUTO MDI/MDI-X)
USB	Standard A receptacles x2
Maintenance console	RS-232C (RJ-11) connector
Network protocol	IPv4
IPsec tunnels	Up to 32
Encryption	3DES, AES-128, AES-192, AES-256
Authentication	MD5, SHA-1
IKE keying method	Pre-shared key
NAT traversal	Supported
Multicast protocol	VE-PG3 and VE-PG2 supported

# SPECIFICATIONS FOR IP ADVANCED RADIO SYSTEM

	IP100H
Frequency coverage	2412–2472MHz, 13 channels 5180–5700MHz, 19 channels
Wireless standards	IEEE 802.11 a/b/g/n
Dimensions (WxHxD; projections are not included)	58x95x26.4mm (with BP-271)
Weight (approx.)	205g (with BP-271 and antenna)
RF output power	Less than 10mW/MHz
Voice Codec	G.711 $\mu$ -law (64kbps)
AF output power	Internal SP : 400mW (typ., 16 $\Omega$ at 10% distortion) External SP : 200mW (typ., 8 $\Omega$ at 10% distortion)
Security	WEP(64/128-bit), WPA-PSK(TKIP/AES), WPA2-PSK(TKIP/AES)
Operating time <sup>1</sup>	More than 20 hours (with BP-271)

	IP1000C
Power supply	100–240V AC 12V DC $\pm 10\%$ (with supplied AC adapter)
Dimensions (WxHxD; projections are not included)	232x38x168mm
Weight (approx.)	750g
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

<sup>1</sup> 1:1.8 duty cycle.

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