



# 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.



## 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 and Spain. Icom is here to support and service our products and your communication needs.

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### Professional Licence-Free

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## 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
- Menu-driven user interface
- 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
- Inversion voice scrambler
- Built-in audio compander
- Wide/middle/narrow channel spacing



IP67, Dust-tight & waterproof protection



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



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

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



IC-F3262DT

IC-F4262DS

## VERSATILE, MULTI-FUNCTION PROFESSIONAL



**IP54**

Controller and  
RMK-3 only.



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

## 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
- Menu-driven user interface
- 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

# SIMPLE, AFFORDABLE DIGITAL RADIO

VHF HANDHELD TRANSCEIVER UHF HANDHELD TRANSCEIVER

**IC-F3102D** (5W) **IC-F4102D** (4W)

**IDAS™**  
ICOM DIGITAL ADVANCED SYSTEM

## » 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

**IDAS™**  
ICOM DIGITAL ADVANCED SYSTEM

# DIGITAL STANDARD MOBILE RADIO

VHF MOBILE TRANSCEIVER

**IC-F5122D** (25W)

UHF MOBILE TRANSCEIVER

**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

**IC-F320DEX** (1W)

UHF HANDHELD TRANSCEIVER

**IC-F420DEX** (1W)

**IDAS™**  
ICOM DIGITAL ADVANCED SYSTEM

## » IEC Certifications

Mining : Ex ib I Mb  
Gas : Ex ib IIC T4 Gb  
Dust : Ex ib IIIC 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 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-F320DEX

IC-F420DEX

\* 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 Micro Multi-Lingo 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)

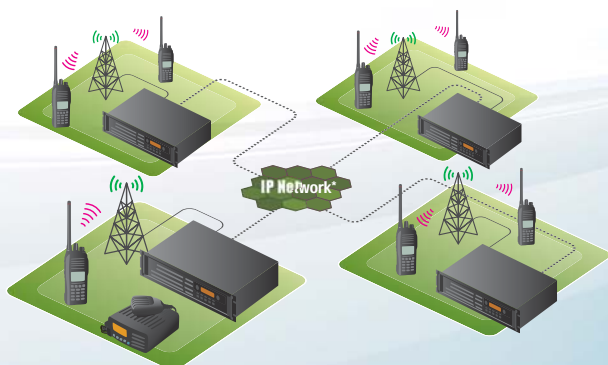
### » General and analogue Features

- 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 for IC-FR5100/FR6100 (Optional UR-FR5100/UR-FR6100 required)
- Base station operation (Analogue and dPMR Mode 2 only)
- 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)

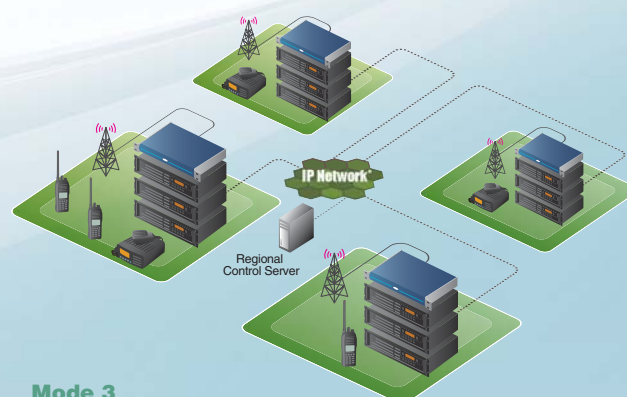
- DC power cable • Key assign stickers



#### 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 Multi-Lingo™

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

\* Separate Regional Control Server (RCS) is required.



# 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
- 2-Tone, 5-Tone, CTCSS, DTCS and BIIS 1200 capability

- Lone worker function
- 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



## » 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



IC-F51V

IC-F61V

## SLIM, COMPACT DIMENSIONS WITH IP67 WATERPROOFING

VHF HANDHELD TRANSCEIVERS  
**IC-F1000/T/S** (5W)

UHF HANDHELD TRANSCEIVERS  
**IC-F2000/T/S** (4W)



IP67



(PTT ID and Emergency call)

## » Features

- 136-174MHz, 5W • 400-470MHz, 4W
- 128 memory channels for IC-F1000S/T series (with LCD)
- 16 memory channels for IC-F1000 series (without LCD)
- Operating time: 14 hours\* (approx. with BP-279 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 and Emergency call
- MDC 1200 PTT ID, Emergency and other limited functions
- Wide/middle/narrow channel spacing
- 800mW (typ.) loud companded audio

- IP67, dust-tight and waterproof protection
- 16 codes inversion voice scrambler
- Enhanced emergency with built-in motion sensor
- Man down, lone worker and stationary detection functions
- Channel announcement
- 24.5mm slim dimensions
- 8 DTMF autodial memories
- Surveillance function

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

- Battery pack, BP-279 • Desktop charger, BC-213 • AC adapter, BC-123S • Belt clip, MB-133 • Antenna



IC-F1000

IC-F2000T

IC-F1000S



# SUPERIOR WATERPROOF PROTECTION

VHF HANDHELD TRANSCEIVERS

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

UHF HANDHELD TRANSCEIVERS

**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



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-F29SR** (500mW)



**IP67**

## » Features

- Analogue PMR 446 (8ch)
- No licence\* is required to use the radio
- IP67, dust-tight and waterproof protection
- 800mW (typ.) loud companded audio
- Operating time: 21 hours\* (approx. with BP-279 battery pack)
- \* Tx: Rx: standby=5:5:90. Power save on.
- Call-Ring function
- Smart-Ring, answer back function
- 16 codes inversion voice scrambler
- Channel announcement

- Power on scan function
- Monitor function
- 52.2(W)×186.1(H)×24.5(D) mm compact, slim body (with BP-279)
- 240g lightweight body (with BP-279)
- Built-in CTCSS and DTCS codes
- 500mW output power (ERP)

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

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

- Battery pack, BP-279 • Desktop charger, BC-213
- AC adapter, BC-123S • Belt clip, MB-133



**LICENCE FREE**

# GENERAL PURPOSE TRANSPARENT DATA MODEM

## VHF DATA TRANSCEIVER

**IC-F5122DD**



RS-232C + Ethernet version

## UHF DATA TRANSCEIVER

**IC-F6122DD**



RS-232C version



**DIGITAL**

### » Features

- 136–174MHz and 400–470MHz
- 25W, 10W and 2.5W three-step RF output power
- 9600bps (at 12.5kHz) and 4800bps (at 6.25kHz) data mode
- RS-232C and RS-232C + Ethernet versions
- Meets EN 300 113/EN 300 279 standards
- Efficient new data transfer protocol
- BNC antenna connector

Supplied Accessories (May differ according to version)

- DC power cable • Mounting bracket kit

### » Application Examples

- Farm vehicle management
- Utilities (water works/electricity meters)
- Airport ground vehicle management
- Various gate control applications
- Oil (pipe lines/well drilling management)
- Road/highway construction traffic management
- Weather/environment monitoring
- Traffic monitoring systems

## HARDWORKING MOBILE RADIOS

### VHF MOBILE TRANSCEIVER

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

### UHF MOBILE TRANSCEIVER

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



IC-F5022/F6022

### VHF MOBILE TRANSCEIVER

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

### UHF MOBILE TRANSCEIVER

**IC-F6012** (25W, 8 Ch without LCD)



IC-F5012/F6012

### » Features

- 136–174MHz, 25W • 400–470MHz, 25W
- 128 memory channels with 8 zones (IC-F5022/F6022 only)
- 8-character alphanumeric display (IC-F5022/F6022 only)
- 8 memory channels and LED lighting (IC-F5012/F6012 only)
- 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

### VHF REPEATERS

**IC-FR5100** (25W)

**IC-FR5100H** (50W)

### UHF REPEATERS

**IC-FR6100** (25W)

**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)

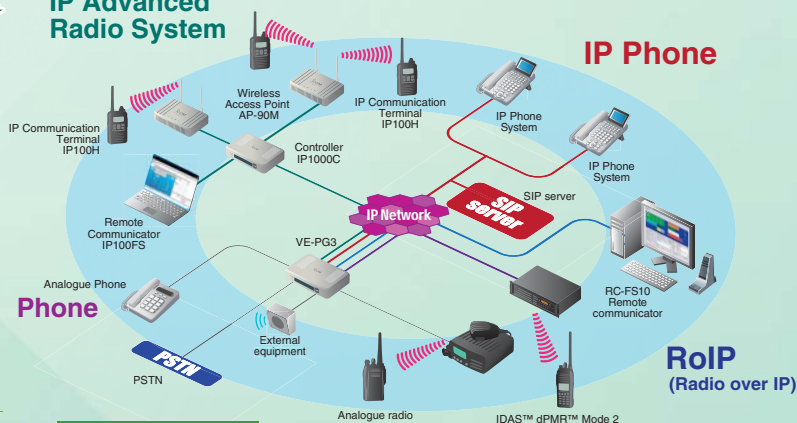
### » Bridge mode

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

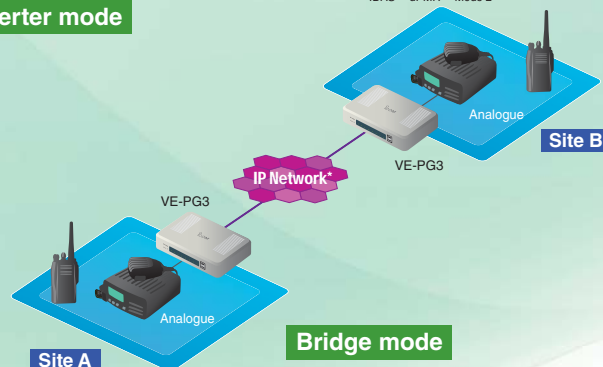
### » Common features

- Interconnect between IDAS™ dPMR™ Mode 2, analogue radio system and IP Advanced Radio System
- Cross band, cross category 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

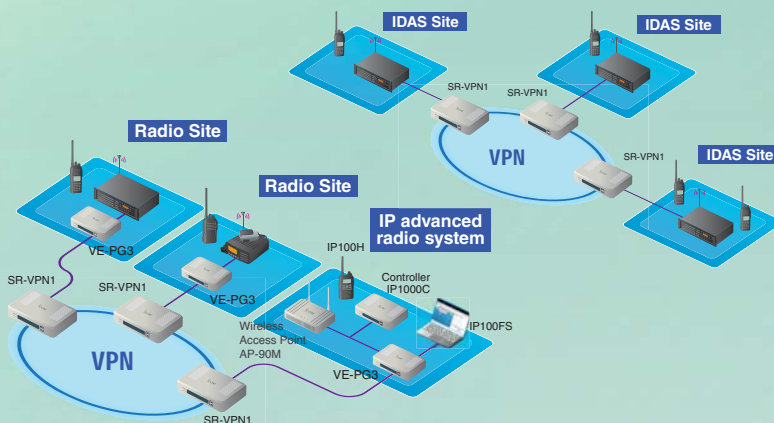
# SIMPLE VPN ROUTER FOR RADIO OVER IP

## VPN ROUTER SR-VPN1



### » 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

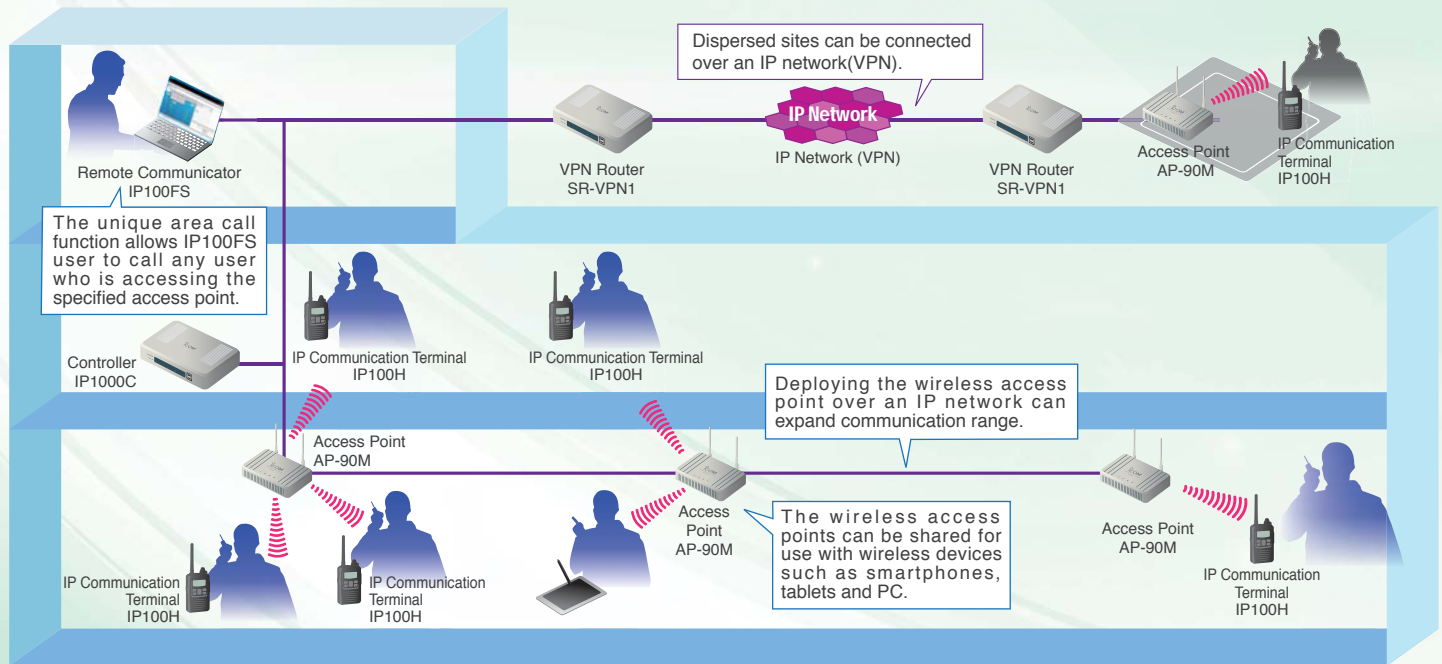


- backup and restore
  - Firmware updates also can be made via Internet connection
  - Supports SNMP and Syslog messages for network monitoring
- \* A xDSL or FTTH modem is separately required for Internet connection.

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

- AC adapter, BC-207S

## IP ADVANCED RADIO SYSTEM



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

### » System Features

#### 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 or Area Communication

Staff spread across multiple rooms and cabins can communicate seamlessly. The IP communication terminal can receive Short Data Messages with a vibration alert from a PC installed IP100FS.

#### Hands-free, Full-duplex Communication

With an optional earphone-microphone, 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.

#### Interconnect between IDAS™ and IP Phone System

With the VE-PG3 RoIP gateway, the IP advanced radio system can interconnect with IP phone system, analogue transceiver and IDAS™ dPMR™ mode 2 digital transceiver.

#### IP Communication Terminal IP100H



\*The IP100H can be used with an internal antenna. (Communication range will decrease to half from/to access points.)



- License-free wireless LAN communication terminal using IEEE 802.11 a/b/g/n standards (2.4GHz 13ch and 5GHz W52, W53, W56)
- WPA-PSK or WPA2-PSK encryption
- IPX7 waterproof (1m depth water for 30 minutes)
- Rugged construction
- Compact 58×95×26.4 mm body and 205g (approximate) lightweight
- Vibration alert function for incoming calls

\* For full-duplex operation, please use either HM-153LS or HM-166LS.

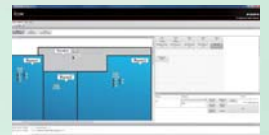
#### WIRELESS LAN ACCESS POINT AP-90M

- IEEE 802.11 a/b/g/n/ac compliant (2.4GHz 13ch and 5GHz W52, W53, W56)
- PoE (Power over Ethernet) capability
- Optional RS-AP3, Access point management software



#### 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
- Can be installed to a Windows® based tablet PC as well as laptop PC



#### CONTROLLER IP1000C










- The IP1000C controls all terminal configurations and voice traffic
- Capable of controlling up to 100 or 20\* terminals (including IP100FS)





















\*Depending on version



# OPTIONS FOR HANDHELD TRANSCEIVERS

MODEL NAME	BATTERY PACKS								
	<b>BP-227AXD</b> (Li-ion) 7.4V/1850mAh (min.) 1950mAh (typ.)  For Intrinsic Safety	<b>BP-277EX</b> (Li-ion) 7.4V/1800mAh (min.) 1900mAh (typ.)  For Intrinsic Safety	<b>BP-232H</b> (Li-ion) 7.4V/2250mAh (min.) 2300mAh (typ.) <b>BP-230N</b> (Li-ion) 7.4V/950mAh (min.) 980mAh (typ.) 	<b>BP-232WP</b> (Li-ion) 7.4V/2250mAh (min.) 2300mAh (typ.) 	<b>BP-264</b> (Ni-MH) 7.2V/1400mAh 	<b>BP-265</b> (Li-ion) 7.4V/1900mAh (min.) 2000mAh (typ.) 	<b>BP-271</b> (Li-ion) 7.4V/1150mAh (min.) 1200mAh (typ.) <b>BP-272</b> (Li-ion) 7.4V/1890mAh (min.) 2000mAh (typ.) 	<b>BP-274</b> (Li-ion) 7.4V/1800mAh (min.) 1900mAh (typ.) 	<b>BP-278</b> (Li-ion) 7.2V/1130mAh <b>BP-279</b> (Li-ion) 7.2V/1485mAh  (Photo shows BP-279)
IC-F3262DT/DS				✓					
IC-F4262DT/DS									
IC-F3102D					✓				
IC-F4102D						✓			
IC-F3202DEX		✓							
IC-F4202DEX									
IC-F51 ATEX	✓								
IC-F61 ATEX									
IC-F51V								✓	
IC-F61V									
IC-F1000T/S									✓
IC-F2000T/S									
IC-F3032T/S				✓					
IC-F4032T/S									
IC-F3002					✓				
IC-F4002						✓			
IC-F4029SDR			✓						
IC-F29SR									✓
IP100H							✓		

MODEL NAME	BATTERY CASES					DESKTOP CHARGERS			
	<b>BP-226</b> LR6 (AA) x5 cells 	<b>BP-240</b> LR03 (AAA) x6 cells 	<b>BP-261</b> LR6 (AA) x6 cells 	<b>BP-263</b> LR6 (AA) x6 cells 	<b>BP-273</b> LR6 (AA) x3 cells 	<b>BC-212EX</b> Rapid charger  For Intrinsic Safety	<b>BC-119N</b> Rapid charger 	<b>BC-152N</b> Regular charger 	<b>BC-160</b> Rapid charger 
IC-F3262DT/DS		✓	✓				✓ (AD-106 is required)		✓
IC-F4262DT/DS				✓					
IC-F3102D									
IC-F4102D						✓			
IC-F3202DEX									
IC-F4202DEX									
IC-F51 ATEX							✓ (AD-100 is required)	✓	
IC-F61 ATEX									
IC-F51V	✓						✓ (AD-100 is required)	✓	
IC-F61V									
IC-F1000T/S									
IC-F2000T/S									
IC-F3032T/S		✓	✓				✓ (AD-106 is required)		✓
IC-F4032T/S				✓					
IC-F3002									
IC-F4002							✓ (AD-106 is required)		✓
IC-F4029SDR		✓							
IC-F29SR									
IP100H					✓				

MODEL NAME	DESKTOP CHARGERS							MULTI-CHARGERS	
	<b>BC-171</b> Regular charger 	<b>BC-190</b> Rapid charger 	<b>BC-191</b> Rapid charger (For BP-264) 	<b>BC-192</b> Regular charger (For BP-264) 	<b>BC-193</b> Rapid charger (For BP-265) 	<b>BC-202</b> Rapid charger 	<b>BC-213</b> Rapid charger 	<b>BC-121N</b> Rapid multi-charger 	<b>BC-197*1</b> Rapid multi-charger 
IC-F3262DT/DS	✓							✓ (AD-106 is required)	✓ (Use with AD-122)
IC-F4262DT/DS									✓ (Use with AD-120 or AD-121)
IC-F3102D			✓	✓	✓				
IC-F4102D									
IC-F3202DEX									
IC-F4202DEX									
IC-F51 ATEX								✓ (AD-100 is required)	
IC-F61 ATEX									
IC-F51V		✓						✓ (AD-100 is required)	
IC-F61V									
IC-F1000T/S							✓		
IC-F2000T/S									
IC-F3032T/S	✓							✓ (AD-106 is required)	✓ (Use with AD-122)
IC-F4032T/S									✓ (Use with AD-120 or AD-121)
IC-F3002			✓	✓	✓				
IC-F4002								✓ (AD-106 is required)	✓ (Use with AD-122)
IC-F4029SDR	✓								
IC-F29SR							✓		
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	MULTI-CHARGERS		CHARGER ADAPTERS					AC ADAPTERS	
	BC-211 Rapid multi-charger	BC-214*2 Rapid multi-charger	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 <small>(Photo shows AD-120)</small>	AD-122 For BP-230N, BP-232H or BP-232WP	AD-130*2 For BP-278 or BP-279	BC-123S*3 12V/1A	BC-145S*3 16V/0.93A
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)
IC-F3102D IC-F4102D					✓ (Use with BC-197)			✓ (Use with BC-191 or BC-193)	
IC-F3202DEX IC-F4202DEX								✓ (Use with BC-212EX)	
IC-F51 ATEX IC-F61 ATEX			✓ (Use with BC-119N or BC-121N)						✓ (Use with BC-119N)
IC-F51V IC-F61V			✓ (Use with BC-119N or BC-121N)					✓ (Use with BC-190)	✓ (Use with BC-119N)
IC-F1000/T/S IC-F2000/T/S		✓					✓ (Use with BC-214)	✓ (Use with BC-213)	
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)
IC-F3002 IC-F4002					✓ (Use with BC-197)			✓ (Use with BC-191 or BC-193)	
IC-F4029SDR				✓ (Use with BC-119N or BC-121N)		✓ (Use with BC-197)		✓ (Use with BC-160)	✓ (Use with BC-119N)
IC-F29SR		✓					✓ (Use with BC-214)	✓ (Use with BC-213)	
IP100H	✓							✓ (Use with BC-202)	










\*2 AD-130 is supplied with the BC-214. \*3 BC-123S/BC-145S/BC-147SA for 120V AC. SE for 230V AC. SV for 240V AC. BC-206SE for 230V AC.










MODEL NAME	AC ADAPTERS			SPEAKER-MICROPHONES					
	BC-147S*3 12V/0.25A	BC-157S 12V/6.6A	BC-206SE*3 15V/0.4A	HM-203EX IP67 <small>For Intrinsic Safety</small>	HM-138 IPX7	HM-158LA	HM-159LA	HM-168/LWP IPX7 <small>(Photo shows HM-168)</small>	HM-169 IP67
IC-F3262DT/DS IC-F4262DT/DS	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)							
IC-F3102D IC-F4102D		✓ (Use with BC-197)	✓ (Use with BC-192)			✓	✓		
IC-F3202DEX IC-F4202DEX				✓					
IC-F51 ATEX IC-F61 ATEX	✓ (Use with BC-152N)	✓ (Use with BC-121N)			✓				
IC-F51V IC-F61V	✓ (Use with BC-152N)	✓ (Use with BC-121N)			✓			✓ (Use HM-168)	✓
IC-F1000/T/S IC-F2000/T/S		✓ (Use with BC-214)					✓	✓ (Use HM-168LWP)	
IC-F3032T/S IC-F4032T/S	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)				✓	✓	✓ (Use HM-168LWP)	
IC-F3002 IC-F4002		✓ (Use with BC-197)	✓ (Use with BC-192)			✓	✓		
IC-F4029SDR	✓ (Use with BC-171)	✓ (Use with BC-121N or BC-197)				✓	✓		
IC-F29SR		✓ (Use with BC-214)					✓	✓ (Use HM-168LWP)	
IP100H		✓ (Use with BC-211)							







MODEL NAME	SPEAKER-MICROPHONES				EARPHONE-MICROPHONES		HEADSETS		
	HM-170GP IP57 GPS	HM-171GP IP54 GPS	HM-184/H IP67	HM-186LS	HM-153LA/LS <small>(Photo shows HM-153LA)</small>	HM-166LA/LS <small>(Photo shows HM-166LA)</small>	HS-85 Over-the-head type with PTT switch	HS-94 Earhook type with boom microphone	HS-95 Behind-the-head type
IC-F3262DT/DS IC-F4262DT/DS			✓					✓ (Use with VS-4MC)	✓ (Use with VS-4MC)
IC-F3102D IC-F4102D		✓						✓ (Use with VS-4LA or OPC-2004)	✓ (Use with VS-4LA or OPC-2004)
IC-F3202DEX IC-F4202DEX									
IC-F51 ATEX IC-F61 ATEX									
IC-F51V IC-F61V	✓							✓ (Use with VS-1SC or VS-4SC)	✓ (Use with VS-1SC or VS-4SC)
IC-F1000/T/S IC-F2000/T/S					✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-4LA)	✓ (Use with VS-4LA)
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)
IC-F3002 IC-F4002								✓ (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)
IC-F29SR					✓ (Use HM-153LA)	✓ (Use HM-166LA)		✓ (Use with VS-4LA)	✓ (Use with VS-4LA)
IP100H				✓	✓ (Use HM-153LS)	✓ (Use HM-166LS)	✓ (Use with OPC-2144)	✓ (Use with OPC-2006LS or OPC-2328)	✓ (Use with OPC-2006LS or OPC-2328)



# OPTIONS FOR HANDHELD TRANSCEIVERS

	HEADSETS	EARPHONES		ACC ADAPTER	PLUG ADAPTER CABLES			PTT SWITCH CABLES	
MODEL NAME	<b>HS-97</b> Throat microphone type 	<b>SP-13</b> 	<b>SP-27</b> Tube earphone 	<b>AD-118</b> Allows you to use 6-pin Hirose plug accessories 	<b>OPC-2004</b> 	<b>OPC-2006LS</b> 	<b>OPC-2144</b> 	<b>OPC-2328</b> 	<b>VS-4LA/SC/MC</b>  (Photo shows VS-4LA)
IC-F3262DT/DS IC-F4262DT/DS	✓ (Use with VS-4MC)			✓					✓ (Use VS-4MC)
IC-F3102D IC-F4102D	✓ (Use with VS-4LA or OPC-2004)		✓		✓				✓ (Use VS-4LA)
IC-F3202DEX IC-F4202DEX									
IC-F51 ATEX IC-F61 ATEX									
IC-F51V IC-F61V	✓ (Use with VS-1SC or VS-4SC)								✓ (Use VS-4SC)
IC-F1000T/S IC-F2000T/S	✓ (Use with VS-4LA)								✓ (Use VS-4LA)
IC-F3032T/S IC-F4032T/S	✓ (Use with VS-1L or VS-4LA)	✓	✓						✓ (Use VS-4LA)
IC-F3002 IC-F4002	✓ (Use with VS-4LA or OPC-2004)		✓		✓				✓ (Use VS-4LA)
IC-F4029SDR	✓ (Use with VS-1L or VS-4LA)	✓	✓						✓ (Use VS-4LA)
IC-F29SR	✓ (Use with VS-4LA)								✓ (Use VS-4LA)
IP100H	✓ (Use with OPC-2006LS or OPC-2328)	✓ (Use with OPC-2144)				✓	✓	✓	

	VOX/PTT CASE	BELT CLIPS			LEATHER BELT HANGERS			CHARGER BRACKET	CIGARETTE LIGHTER CABLE
MODEL NAME	<b>VS-1L/SC</b>  (Photo shows VS-1L)	<b>MB-94EX</b>  For Intrinsic Safety	<b>MB-86</b> <b>MB-93</b> Swivel type  (Photo shows MB-93)	<b>MB-94/94R</b> <b>MB-98</b> <b>MB-124</b> <b>MB-127</b> <b>MB-133</b> Alligator type  (Photo shows MB-94R)	<b>MB-96N</b> 	<b>MB-96F</b> 	<b>MB-96FL</b> 	<b>MB-130</b> 	<b>CP-23L</b> 
IC-F3262DT/DS IC-F4262DT/DS			✓ (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 ATEX 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-F1000T/S IC-F2000T/S				✓ (Use MB-133)				✓ (Use with BC-213)	✓ (Use with BC-213)
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-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-F29SR				✓ (Use MB-133)				✓ (Use with BC-213)	✓ (Use with BC-213)
IP100H				✓ (Use MB-127)					

	DC POWER CABLES		ANTENNAS		CUT ANTENNAS	HIGH GAIN ANTENNAS	STUBBY ANTENNAS	
MODEL NAME	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	✓ (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 ATEX IC-F61 ATEX				✓				✓
IC-F51V IC-F61V	✓ (Use with BC-121N)	✓ (Use with BC-119N)		✓				✓
IC-F1000T/S IC-F2000T/S	✓ (Use with BC-214)		✓		✓	✓	✓	
IC-F3032T/S IC-F4032T/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-F29SR	✓ (Use with BC-214)							
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-F3102D IC-F4102D	IC-F3202DEX IC-F4202DEX	IC-F51 ATEX IC-F61 ATEX	IC-F51V IC-F61V	IC-F1000T/S IC-F2000T/S	IC-F3032T/S IC-F4032T/S	IC-F3002 IC-F4002	IC-F4029SDR	IC-F29SR
Frequency coverage	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	136–174MHz	Analogue; 446.00625– 446.09375MHz Digital; 446.103125– 446.196875MHz*	Analogue; 446.00625– 446.09375MHz
	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz	400–470MHz		
Number of channels	512 channels 128 zones	16 channels	16 channels	128 channels 8 zones	128 channels 8 zones	LCD type 128 ch NON-LCD type 16 ch <sup>2</sup>	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	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)	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)	52.2×111.8×24.5mm (with BP-279)	53×120×37mm (with BP-232WP)	58×111×35.5mm (with BP-265)	53×195×37mm (with BP-232H)	52.2×186.1×24.5mm (with BP-279)
Weight (approx.)	410g (VHF)400g (UHF) (with BP-232WP, belt clip & ant.)	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)	240g (with BP-279)	310g (with BP-232WP)	270g (with BP-265)	320g (With BP-232H)	240g (With BP-279)
RF output power (High)	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	±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.)	26.5dBµV/m	26.5dBµV/m
	–8dBµV (typ.)	–8dBµV (typ.)	–8dBµV (typ.)	–	–	–	–	–	–	–
Selectivity (VHF) (UHF)	78/78/68dB (typ.)	75/73/69dB (typ.)	78/75/70dB (typ.) 74/72/68dB (typ.)	75/75/65dB (typ.)	75/75/65dB (typ.)	76/72/53dB (typ.) 73/73/56dB (typ.)	75/75/65dB (typ.) 75/73/65dB (typ.)	78/78/70dB (typ.) 73/73/65dB (typ.)	–	–
Intermodulation rejection	67dB (typ.)	65dB (typ.)	67dB (typ.)	67dB (typ.)	67dB (typ.)	65dB (min.)	67dB (typ.)	67dB (typ.)	–	–
Spurious response rejection	76dB (typ.)	91/80dB (typ.)	VHF 85dB (typ.) UHF 80dB (typ.)	80dB (typ.)	70dB (min.)	70dB (min.)	70dB (min.)	80dB (typ.)	–	–
AF output power	Internal SP	800mW (typ.)	800mW (typ.)	400mW (typ. 32Ω)	–	700mW (typ.)	800mW (typ.)	–	800mW (typ.)	800mW (typ.)
	External SP	1000mW (typ.)	400mW (typ.)	400mW (typ. 32Ω)	500mW (typ.)	500mW (typ.)	400mW (typ.)	500mW (typ.)	500mW (typ.)	400mW (typ.)

\*1 As of October 2014, 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.

\*2 16 channels for IC-F1000, F2000.128 channels for IC-F1000T/S, F2000T/S.

	IC-F3262DT/DS IC-F4262DT/DS	IC-F3102D IC-F4102D	IC-F3202DEX IC-F4202DEX	IC-F51 ATEX IC-F61 ATEX	IC-F51V IC-F61V	IC-F1000T/S IC-F2000T/S	IC-F3032T/S IC-F4032T/S	IC-F3002 IC-F4002	IC-F4029SDR	IC-F29SR
Number of option slots	–	–	–	–	–	–	1	–	–	–
CTCSS/ DTCS	encoder	✓	✓	✓	✓	✓	✓	✓	✓	✓
	decoder	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-Tone 5-Tone	encoder	✓	✓	✓	✓	✓	✓	✓	–	–
	decoder	✓	✓	✓	✓	✓	✓	✓	–	–
DTMF autodial	✓	✓	✓	✓	✓	✓	✓	✓	–	–
DTMF decoder	✓*3	–	–	–	–	–	UT-108R	–	–	–
Voice Scrambler (Analogue)*1	Inversion	✓	–	–	✓	✓	–	–	–	–
	Non-rolling	–	–	–	✓	–	UT-109R	–	–	–
	Rolling	–	–	–	✓	–	UT-110R	–	–	–
Voice Scrambler (Digital)	✓	✓	✓	–	–	–	–	–	–	–
dPMR™	Mode 1/ Mode 2	✓	✓	✓	–	–	–	–	–	–
	Mode 2 Multi-site	✓	✓	✓	–	–	–	–	–	–
	Mode 3 Trunking	✓	–	–	–	–	–	–	–	–
BIIS 1200	✓	✓*5	✓*5	✓	✓	✓*8	✓*5	✓*5	–	–
MDC 1200	–	–	–	–	✓	✓*9	✓*9	✓*6	–	–
Man down function	✓*4	–	✓	–	–	✓	UT-124R	–	–	–
Intrinsically safe	–	–	✓	✓	–	–	–	–	–	–
Vibration alert	–	–	–	–	✓*4	–	–	–	–	–
Voice recorder	–	–	–	–	✓*4	–	–	–	–	–
GPS receiver	✓*4	HM-171GP	–	–	HM-170GP	–	–	–	–	–
Operating time*2	12/10.5 hours*7 with BP-232WP	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	14 hours with BP-279	17.5 hours with BP-232WP	20 hours with BP-265	26.5 hours with BP-232H	21 hours with BP-279
IP rating	IP67	IP54	IP67	IP67	IP67	IP67	IP67	IP54	–	IP67
MIL-STD requirements	MIL-810 G	MIL-810 F	MIL-810 G	MIL-810 F	MIL-810 F	MIL-810 G	MIL-810 G	MIL-810 F	MIL-810 F	MIL-810 G

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

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

\*7 Non GPS/GPS type. \*8 PTT ID and Emergency call. \*9 Limited functions.



# 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-F5122DD IC-F6122DD	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	136–174MHz 400–470MHz
<b>Number of channels</b>	512 channels 128 zones	128 channels 8 zones	128 channels	128 channels 8 zones	8 channels	32 channels
<b>Channel spacing</b>	6.25, 12.5, 20, 25kHz	6.25, 12.5, 20, 25kHz	6.25, 12.5kHz	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	13.2V DC
<b>Dimensions</b> (W×H×D; Projections are not included)	160×45× 150mm	150×40× 117.5mm	150×40× 134.7mm	150×40× 117.5mm	150×40× 117.5mm	483×88× 260mm
<b>Weight (approx.)</b>	1.3kg	800g	900g	800g	800g	8.1kg (FR5100H/FR6100H) 5.6kg (FR5100/FR6100)
<b>RF output power (High)</b>	25W	25W	25W	25W	25W	50W (FR5100H/FR6100H) 25W (FR5100/FR6100)
<b>Frequency stability</b>	±1.5kHz	±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.)	3/0dBμV (DN/DVN at 1% BER)	−4dBμV (typ.)	−4dBμV (typ.)	0dBμV (min.) 0dBμV (min. at 1% BER)
<b>Selectivity (VHF) (W/M/N) (UHF)</b>	85/83/75dB (typ.)	80/80/70dB (typ.) 75/75/70dB (typ.)	60/54dB min. (DN/DVN)	75/75/65dB (typ.)	75/75/65dB (typ.)	86/83/77dB (typ.) 80/78/70dB (typ.)
<b>Intermodulation rejection</b>	70dB (typ.)	67dB (typ.)	65/62dB min. (DN/DVN)	67dB (typ.)	67dB (typ.)	72dB (typ.)
<b>Spurious response rejection</b>	90dB (typ.)	80dB (typ.)	70/67dB min. (DN/DVN)	80dB (typ.)	70dB	72dB (typ.)
<b>AF output power</b>	4W (typ.)	4W (typ.)	—	4W (typ.)	4W (typ.)	3.5W

DN (Digital Narrow): 9600bps (12.5kHz). DVN (Digital Very Narrow): 4800bps (6.25kHz)

		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	✓	✓	✓	✓	✓ <sup>*4</sup>
	decoder	✓	✓	✓	✓	✓ <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	UT-109R
	Rolling	UT-110R	—	UT-110R	UT-110R	UT-110R
<b>Voice Scrambler (Digital)</b>		✓	✓	—	—	✓
<b>dPMR™</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 Multi-Lingo™ 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, VPN ROUTER & IP ADVANCED RADIO SYSTEM

	AC ADAPTERS		AUDIO CONNECTION CABLES				SERIAL CABLE	REMOTE COMMUNICATOR	ACCESS POINT MANAGER
MODEL NAME	BC-207S 12V/3.5A	BC-216S 12V/2.0A	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	RS-AP3
									
VE-PG3	✓		✓	✓	✓	✓		✓	
SR-VPN1	✓						✓		
AP-90M		✓							✓

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

	IP100H
Wireless standards	IEEE 802.11 a/b/g/n (2.4GHz 13ch and 5GHz W52, W53, W56)
Dimensions (WxHxD)*	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 (1:1:8 duty cycle.)	More than 20 hours (with BP-271)

\* Projections are not included.

	IP1000C
Power supply	100–240V AC (with supplied AC adapter)
Dimensions (WxHxD)*	232x38x168mm
Weight (approx.)	750g (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

\* Projections are not included.

	AP-90M
Power supply	12V DC $\pm 10\%$ or PoE (IEEE802.3af compatible)
Dimensions (WxHxD)*	120x29x103mm
Weight (approx.)	300g (Main unit only)
Wired LAN	RJ-45 connector x 1 1000BASE-T/100BASE-TX/ 10BASE-T (Auto MDI/MDI-X)
Wireless LAN	IEEE 802.11 a/b/g/n/ac (2.4GHz 13ch and 5GHz W52, W53, W56)
USB	Standard A receptacles
Security	WEP (64/128/152-bit), WPA, WPA2, WPA-PSK, WPA2-PSK

\* Projections are not included.

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