ICOM

iDAS™

ICOM DIGITAL ADVANCED SYSTEM

CH01 IDAS

CH02 MULTI-

CH03 TRUNK

IDAS

ch-01
IDAS DIGITAL

001 ch-01
ICOM INC
SET ZONE LOCK H/L

Icom Inc

GPS SP/MIC

► **Digital/Analog Migration**

► **IDAS™ Multi-site Trunking**

► **IDAS™ Single-site Trunking**

► **IDAS™ Multi-site Conventional**

IDAS™

ICOM DIGITAL ADVANCED SYSTEM

DIGITAL

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

IDAS™ SYSTEM FEATURES

Spectrum efficiency

The IDAS system utilizes 6.25kHz narrowband FDMA technology. This system is not only spectrum efficient, but meets the FCC 2013 deadline for narrow band compliance.

IDAS™ Trunking

IDAS trunking conforms with the NXDN™ type-D trunking protocol. IDAS trunking is a distributed system which does not use a dedicated control channel, and is an affordable digital trunking solution for high volume users.

Audio quality and coverage

When compared to an analog FM signal, digital easily outperforms analog in audio clarity at the fringes of the communication range, thus providing more reliable audio over a greater total area, even if the coverage footprint is the same as analog FM.

Flexible IP Network

IDAS repeater sites* can be interlinked over an IP Network, and can extend your communication coverage. When used with a VE-PG3, VoIP Gateway, the IDAS radios* can be integrated into the SIP and analog phone system and interconnects telephone calls.
* IDAS multi-site trunking and IDAS multi-site conventional mode.
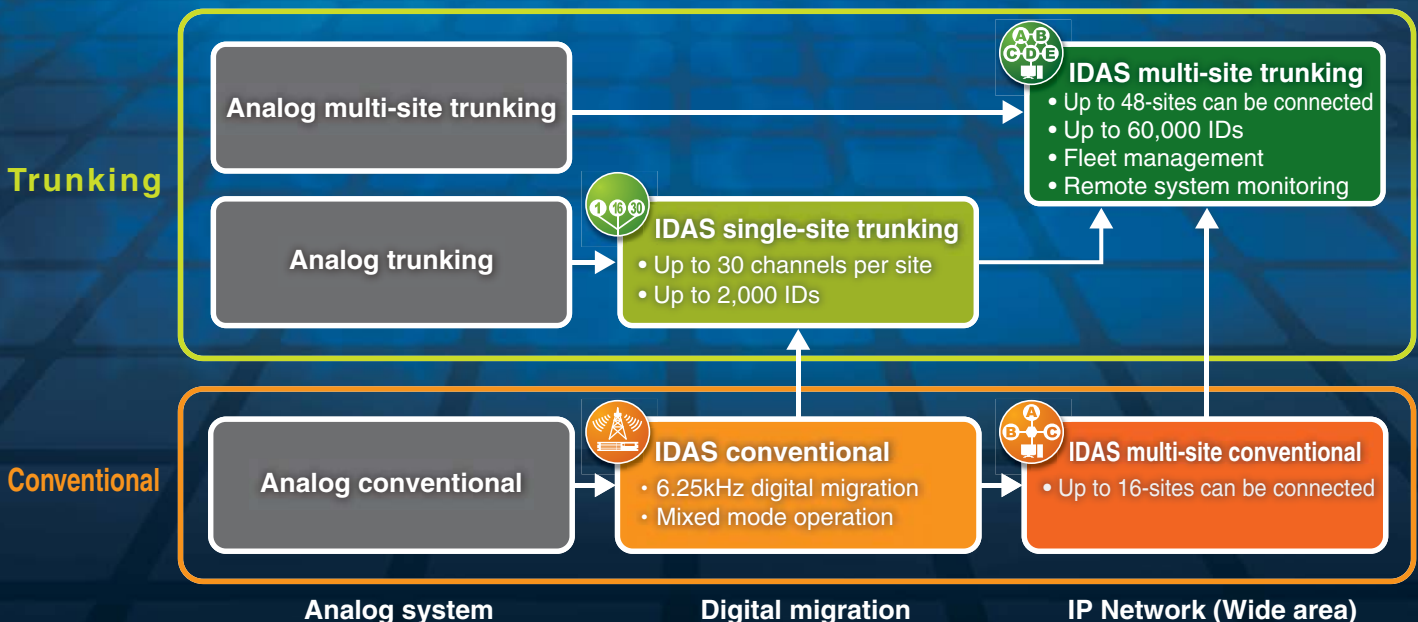
Secure conversation

The digital modulation/demodulation makes it difficult to decode the IDAS digital signal using current scanner receivers. The digital voice scrambler adds security on your conversation.

Flexible migration path

The IDAS system allows you to scale migration to narrow band digital at your own pace and needs, while running your existing analog system. As your future communication needs change, the IDAS system can grow to a trunking system and/or wide area (multi-site) system.

IDAS™ MIGRATION PATH

Trunking

- Analog multi-site trunking

IDAS multi-site trunking
- Up to 48-sites can be connected
- Up to 60,000 IDs
- Fleet management
- Remote system monitoring

- Analog trunking

IDAS single-site trunking
- Up to 30 channels per site
- Up to 2,000 IDs

Conventional

- Analog conventional

IDAS conventional
- 6.25kHz digital migration
- Mixed mode operation

IDAS multi-site conventional
- Up to 16-sites can be connected

| Analog system | Digital migration | IP Network (Wide area) |

IDAS™ calling features

IDAS supports the following calling features in the digital mode.

Digital/analog mixed mode

The digital/analog mixed mode function[1] allows you to receive both analog mode and IDAS conventional mode signals on a single channel, and automatically selects the received mode to reply to a received call. It's a smart way to grow into digital radio – at your own pace, as your budget and comfort allow.

Individual/group call

The IDAS radio allows you to call individual or group users. The radio automatically sends its own ID number when the PTT button is held down. The alias name or individual/group ID is displayed on the LCD[2] while receiving a message, allowing the radio user to identify who is calling.

Emergency call functions

When the emergency button is pushed, an emergency signal will be automatically sent to the dispatcher or another radio(s). Other emergency features are a man down feature[3] and a lone worker function, available for automated emergency calls (in digital and analog modes). A remote radio monitor function allows the dispatcher to turn on the PTT button from a remote location and transmit anything the microphone hears for a preprogrammed time period.

Status message and short data message

Up to 100 status conditions can be set and sent with a voice call. Also, the status polling call requests the intended radio to send its status. When a status polling call is received, the IDAS radio automatically transmits its current status. A short data message of up to 100 characters can be sent and received.[2]

Position data transmission capability

When a GPS receiver[4] is used, the IDAS radio can automatically transmit accurate position data at programmed intervals. The position data can be transmitted with a voice call, GPS request status, status call, SDM, call alert, or emergency calls, according to the programming. The position data may be used with vehicle management applications.

Radio kill, stun and revive

The radio kill function disables a lost or stolen radio over the air, eliminating security threats from undesired listeners. When the radio stun command is received, all functions will be temporary locked out until a revive command is received, or the user password is entered.

Digital voice scrambler

When secure communication is required, the IDAS system provides a digital voice scrambler using a 15-bit key (about 32,000 codes) as standard. This is added security to the digital modulation/demodulation.

Other features

- A radio check function allows you to verify if another radio is within communication range
- The call log displays the received call history[2]
- The call alert function notifies the receiving party that a call is coming with a beep sound and a blinking icon
- A RAN (Radio Access Number) code for digital code squelch
- Block decode enables the radio to monitor talkgroups that the radio doesn't belong to
- Late entry: IDAS radios can decode the received ID and show the group ID, unit ID or alias name on the display, even when turned ON during a conversation[2]

[1] IC-F3261D, F3161D, F3101D, F5061D and F5121D series transceivers only.
[2] Except the IC-F3210D and F3101D series (No-LCD) transceivers.
[3] IC-F3261D and F3161D series transceivers only. Optional UT-124R required for the IC-F3161D series transceivers. Man down function may be built-in, depending on version for the IC-F3261D series transceivers.
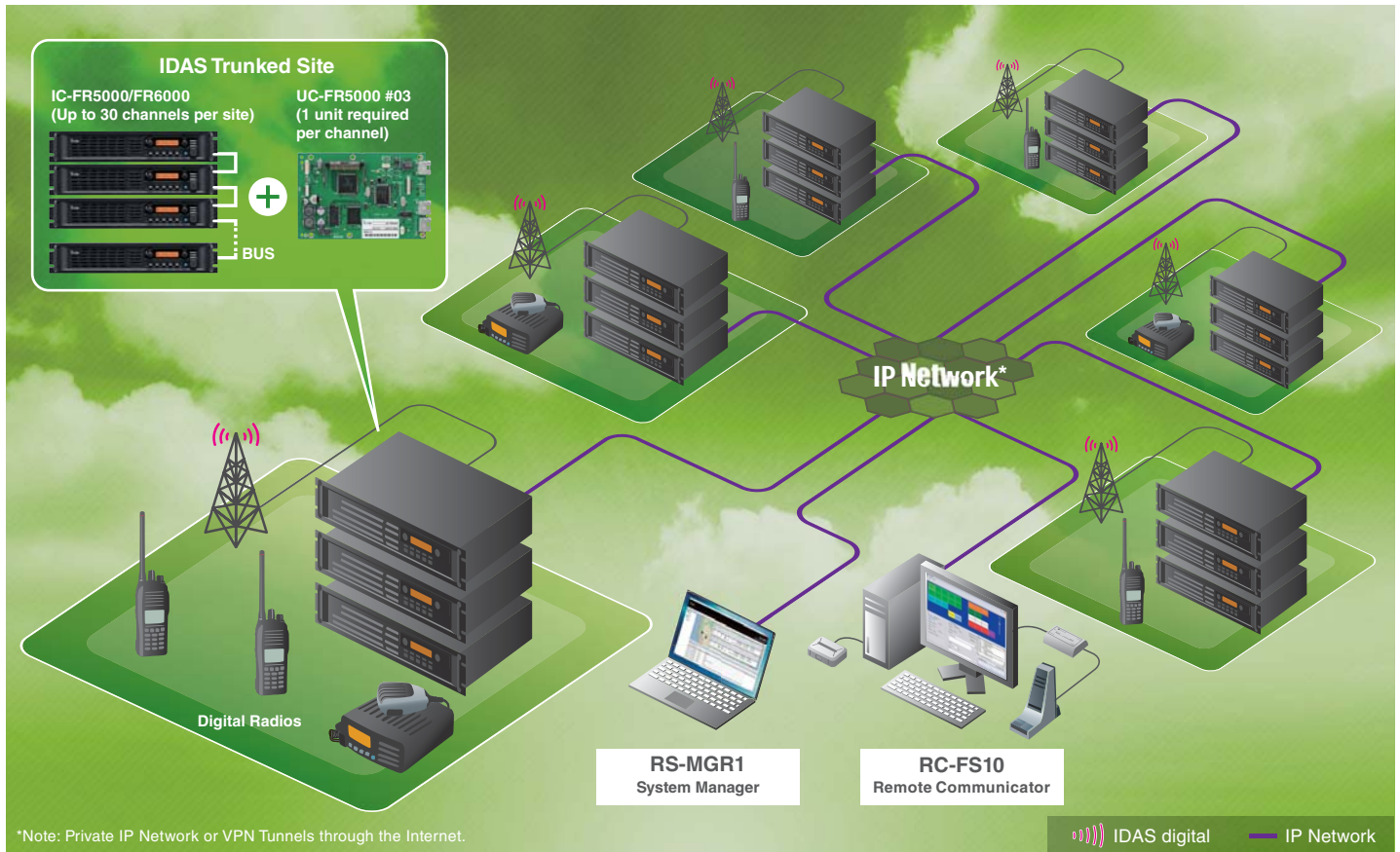[4] Optional GPS microphone is required for the IC-F3161D, F3210D and F3101D series transceivers. GPS receiver is built-in, depending on version of the IC-F3261D series transceivers. An external GPS receiver is required for mobile transceivers.

2

IDAS™ multi-site trunking features
IDAS™ multi-site trunking for high volume, wide area communication

Shares up to 48–sites × 30 channels for managing large fleets

IDAS Trunked Site

IC-FR5000/FR6000
(Up to 30 channels per site)

UC-FR5000 #03
(1 unit required
per channel)

+ BUS

IP Network*

Digital Radios

RS-MGR1
System Manager

RC-FS10
Remote Communicator

*Note: Private IP Network or VPN Tunnels through the Internet.

))))) IDAS digital   ——— IP Network

Distributed control channel

The IDAS trunking system uses a distributed logic system that does not use a dedicated control channel. All trunked channels can be used for voice traffic channels to be shared more effectively with a large number of users.

Up to 48 IDAS™ trunked sites connected over an IP network

IDAS multi-site trunking can have up to 30 repeaters (RF units) per site and up to 48 trunked sites can be interlinked over the IP network. An IDAS terminal radio user can communicate with other IDAS terminal radio users working under the interlinked trunked sites.[*]

[*] Up to 16 preprogrammed sites can be down-linked simultaneously for a group call.

Up to 60,000 individual ID and 60,000 group ID numbers

In IDAS multi-site trunking, the combination of prefix ID and individual ID (or group ID) codes is used as a unique identifier. IDAS multi-site trunking can have up to 30 prefix ID codes per system and up to 2,000 individual ID codes and 2,000 group ID codes per prefix ID. In total, up to 60,000 individual IDs and 60,000 group ID numbers can be used in a system.

Automatic site roaming

When a user turns on a radio, or moves from one site to

another site, the radio automatically starts a hunt scan and registers their own ID information to the repeater site. No user interaction is required.

Fleet management

The fleet management function allows the system manager to control a user group in a fleet. Users can be divided in up to 5,000 fleets and the system manager can enable or disable the use of the system for any fleet.

Fleet management examples

Fleet (1–5000)	Alias name	Prefix ID (1–30)	Individual ID (1–2000)	Group ID (1–2000)	Status
1	Security A	1	1–10,31–400	1–20	Enable
2	Taxi B	1	11–30	21–25	Enable
3	Bus C	2	1–30	1–30	Disable
4	Truck D	2	1001–1005	51–53	Enable

The system manager can enable or disable the use of the system for any fleet. (On the example above, Fleet 3 is disabled.)

Integrated system for clean and simple installation

IDAS multi-site trunking requires only the UC-FR5000 (#03) trunking controller, which can be installed into the IC-FR5000 series repeater – no external server and no extra rack space is required.

ESN authentication

IDAS multi-site trunking can reject to register an unauthorized terminal radio to the repeater site by using the electronic serial number (ESN) or individual ID of the radio.

Over the air update

IDAS repeater sites can update terminal radios programmed content with new system information like added channels and new sites over the air without interrupting use of the radio.

Call priorities

Terminal radios can listen to a call of higher priority even in the middle of lower priority on-going calls in the order below.
(1) Emergency Call   (2) Individual Call   (3) Group Call

RS-MGR1 System Manager

When used with the RS-MGR1 system manager software, air time information, network connectivity/statistics and hardware status of the IDAS multi-site trunking repeater sites can be obtained using Syslog messages.

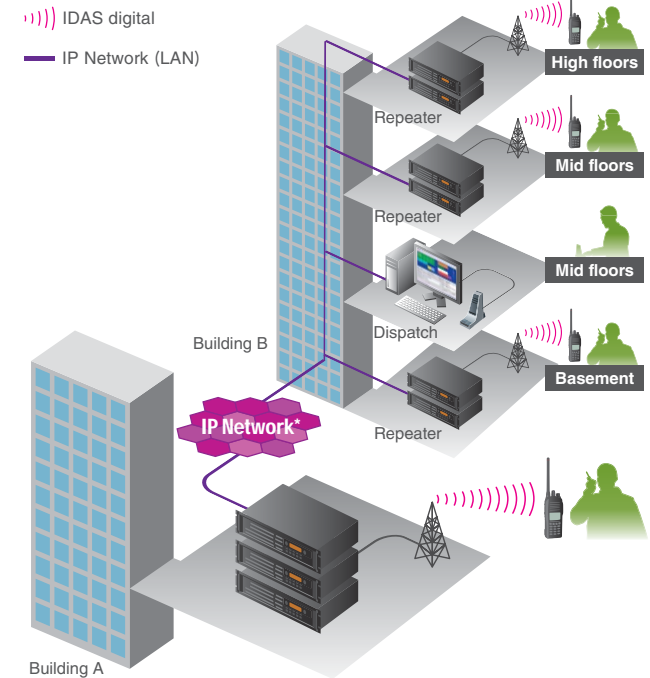## RC-FS10 Remote Communicator for multi-site trunking

The remote communicator creates an IP-based virtual radio on a PC and works as a simple dispatch. IDAS communication features can be used with the remote communicator software.

Other features

- Load-leveling for trunk-out channels
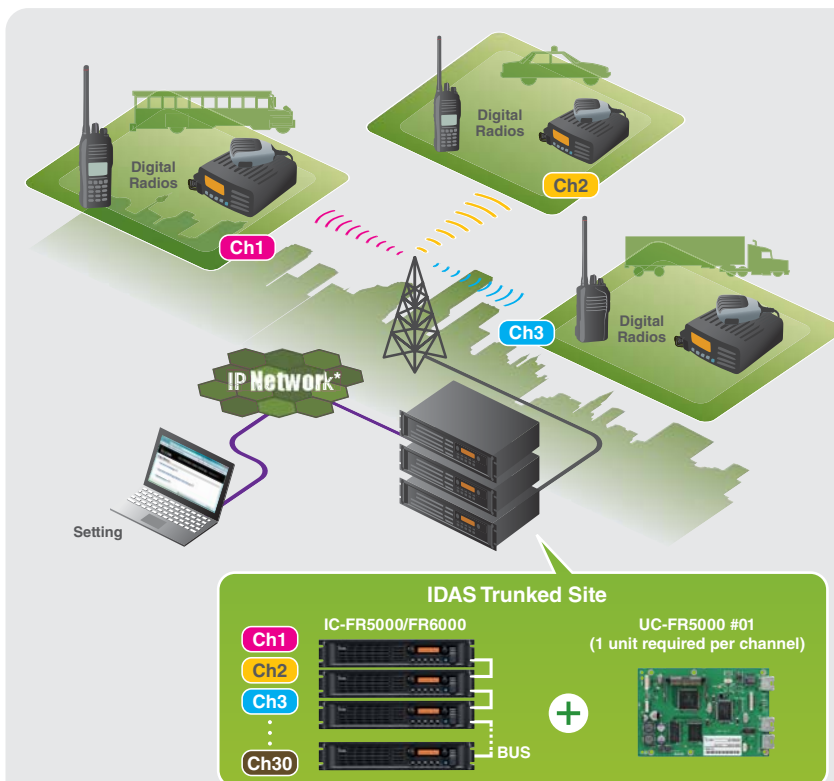- Restriction control can limit use (TX) from the terminal radios in case there is too much traffic.

Application example — Intra-building and inter-building solution

With an IDAS multi-site trunking, it is possible to have radio communications all the way from the basement to the top floor, all in stable digital audio. Already deployed LAN cables can be used in an in-building solution.

))) IDAS digital
— IP Network (LAN)

High floors
Repeater
Mid floors
Repeater
Mid floors
Dispatch
Building B
Basement
IP Network*
Repeater
Building A

*Note: Private IP Network or VPN Tunnels through the Internet..

IDAS™ single-site trunking

Ch1
Ch2
Ch3
Digital Radios
Digital Radios
Digital Radios
IP Network*
Setting

IDAS Trunked Site

IC-FR5000/FR6000
Ch1
Ch2
Ch3
Ch30
BUS

UC-FR5000 #01
(1 unit required per channel)

+

*Note: Private IP Network or VPN Tunnels through the Internet.

Distributed control channel

IDAS single-site trunking

The IDAS single-site trunking provides an affordable multi-channel digital radio system. Selective call, group call, status message and short data message can be used over the trunking system.

Up to 30 repeaters in a system

The IDAS single-site trunking can have up to 30 repeaters (RF units) per site. All of the connected repeaters can be configured from a web browser through an IP network.

Up to 2,000 IDs

The system has the ability to handle up to 2,000 individual ID codes and 2,000 group ID codes per home channel.

Other features

- Unit ID authentication
- IC-F3101D, IC-F3210D, IC-F3230D, IC-F3261D, IC-F3161D, IC-F5121D, IC-F5220D and IC-F5061D series can be used as IDAS trunking radios*
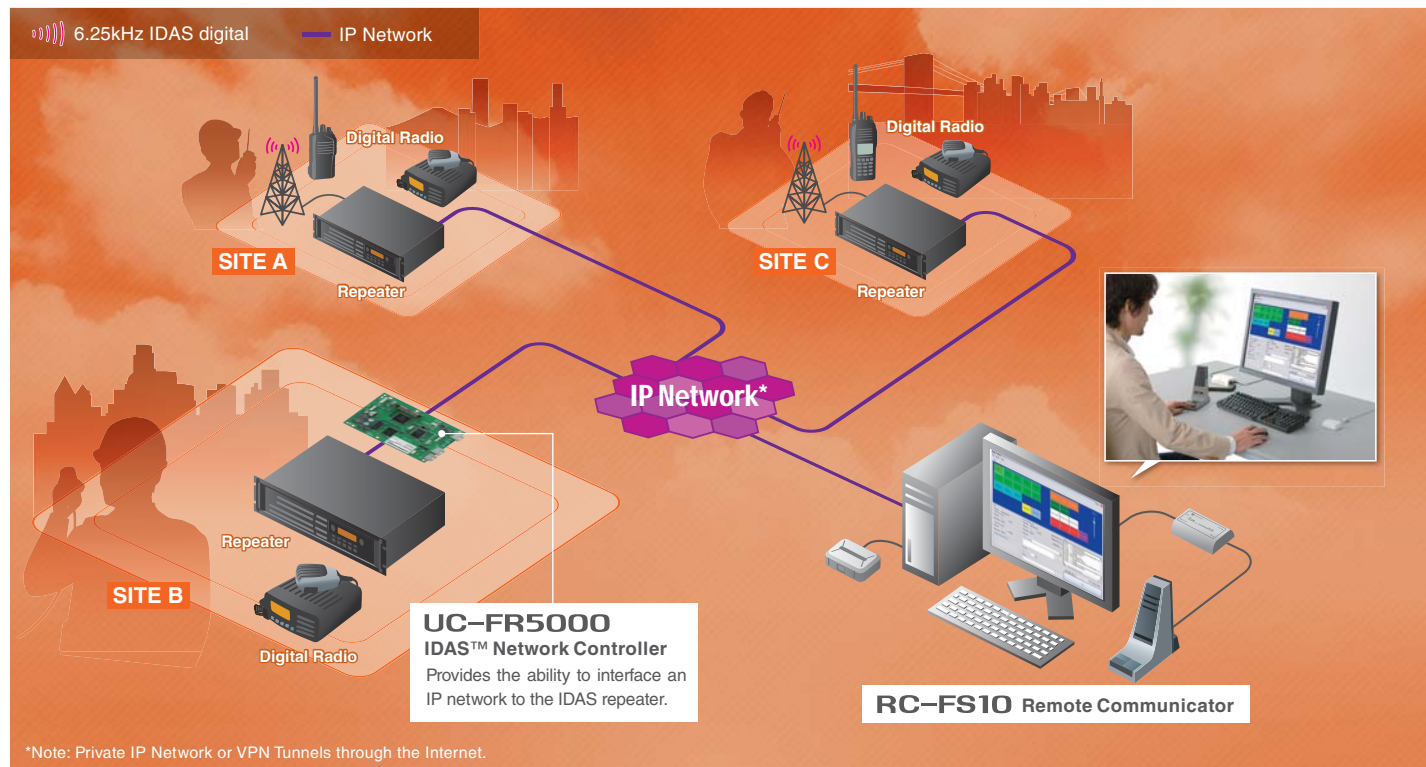 * Single-site trunking only for IC-F3101D and IC-F5121D series transceivers.
- Area bit setting

IDAS™ multi-site conventional
An IDAS™ conventional IP network links up to 16 repeater sites

Communication links for distant locations

| ·))) 6.25kHz IDAS digital | — IP Network |

Digital Radio

SITE A

Repeater

Digital Radio

SITE C

Repeater

IP Network*

Repeater

SITE B

Digital Radio

UC–FR5000
IDAS™ Network Controller
Provides the ability to interface an IP network to the IDAS repeater.

RC–FS10 Remote Communicator

*Note: Private IP Network or VPN Tunnels through the Internet.

Communication link for distant locations

An IDAS conventional IP network can extend your communication coverage. It lets you connect dispersed sites and allows you to communicate like a single site.

Up to 16 IDAS™ repeaters can be connected over an IP network

With the optional UC-FR5000 and CF-FR5000MC, up to 16 IDAS repeaters can be interlinked with each other*. An IDAS terminal radio user can communicate with other IDAS terminal radio users within the reach of each repeater site and/or a virtual dispatch station on the network.

* The IDAS conventional IP network cannot relay voice traffic over the IP network if the uplink is analog.
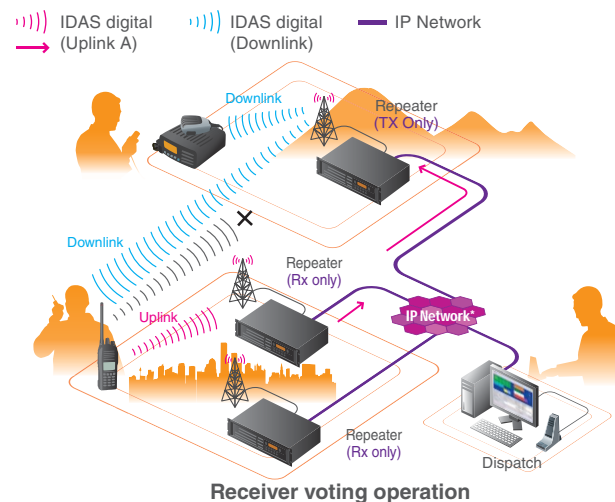
Low bandwidth requirement

By using the AMBE+2™ vocoder compression, an IDAS multi-site conventional system requires only about 13kbps bandwidth per voice path. It means a DSL class line is sufficient for the IDAS multi-site conventional.

RC-FS10 Remote Communicator

The remote communicator creates an IP-based virtual radio on a PC and works as a simple dispatch. IDAS communication features can be used with the remote communicator software.

Application example — Receiver voting operation

IDAS receiver voting improves the talk back capability of IDAS handheld and mobile radios. The IDAS networked receivers (where IDAS repeaters' transmission is inhibited and therefore used only as receivers) are distributed in the communication area. Each receiver receives a signal from a terminal radio and transfers it to the repeater site, and then the repeater relays the best signal or transfers it to the remote dispatch. The UC-FR5000 has a built-in voting function, so an external voter device is not required.

| ·))) IDAS digital (Uplink A) | ·))) IDAS digital (Downlink) | — IP Network |

Downlink

Repeater (TX Only)

Downlink

Repeater (Rx only)

Uplink

IP Network*

Repeater (Rx only)

Dispatch

Receiver voting operation

*Note: Private IP Network or VPN Tunnels through the Internet.

IDAS™ products lineup

VHF DIGITAL/ANALOG REPEATER

IC-FR5000 (50W)

UHF DIGITAL/ANALOG REPEATER

IC-FR6000 (50W)

Rugged
MIL-STD 810

Features

- 136–174MHz, 50W
- 350–400, 400–470, 450–512, 450–520MHz, 50W
- 50W output power at 50% duty, 25W at 100% duty cycle operation* (Ambient temperature: 25˚C)
- Optional UR-PA5000 or UR-PA6000 power amplifier provides 100W output at 50% duty cycle, 50W at 100% duty cycle operation* (Ambient temperature: 25˚C)
  * UR-PA5000/UR-PA6000 is not available in some countries. (Not available in the USA.)
- 32 channel capacity and 5 programmable buttons
- 12-digit dot-matrix display
- 19-inch rack mount design, 2U height low profile design
- Two RF modules in one unit*
  (* UR-FR5000 or UR-FR6000 required.)
- Base station operation
- PC programmable via IP network* (* UC-FR5000 required)
- D-SUB 25-pin accessory connector
- CW-ID transmitter
- Normal and priority scan
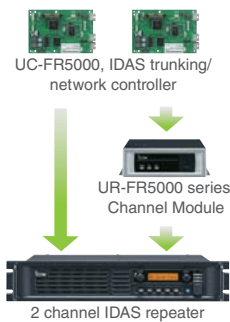- DTMF encode and decode
- ±0.5ppm high stability oscillator

IDAS™ Features

- IDAS multi-site conventional with optional UC-FR5000 and CF-FR5000MC
- IDAS multi-site/single site trunking with optional UC-FR5000
- IDAS conventional/FM mixed mode operation
- Digital RAN (Radio Access Number) code
- Digital voice scrambler
- Individual and group selective call
- Talk back function and call mode selection
- Status message and SDM (Short Data Message)
- Radio kill, stun and revive (Tx only)
- Call alert and radio check
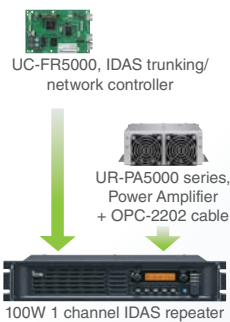- Remote monitor (Tx only)

Analog FM Mode Features

- 5-Tone, CTCSS and DTCS built-in
- Built-in audio compander
- Optional voice scrambler UT-109R/UT-110R and built-in inversion voice scrambler
- Low voltage alert

2 channels in 1 box configuration

UC-FR5000, IDAS trunking/ network controller

UR-FR5000 series, Channel Module

2 channel IDAS repeater

Two RF units can be installed in the unit. (Left side is an option.)

100 Watt, 1 Channel configuration

UC-FR5000, IDAS trunking/ network controller

UR-PA5000 series, Power Amplifier + OPC-2202 cable

100W 1 channel IDAS repeater

100W Power Amplifier can be installed in the unit. (Right side is an option.)

CF-FR5000 Software Comparison

CF-FR5000 software (CF card)	UC-FR5000	UC-FR5000 CF-FR5000MC	UC-FR5000 CF-FR5000MT
IDAS multi-site conventional	—	✔	✔
IDAS multi-site trunking	—	—	✔
IDAS single site trunking	✔	✔	✔
IP Network connection	✔	✔	✔

CF-FR5000MC

CF-FR5000MT

RoIP GATEWAY
VE-PG3

RoIP Gateway for Telephone Interconnection

IDAS (IDAS conventional and multi-site trunking)

RC-FS10 Remote communicator

IP Network*

IP Phone System

PSTN

VE-PG3

Analog Phone

External equipment   CT-24
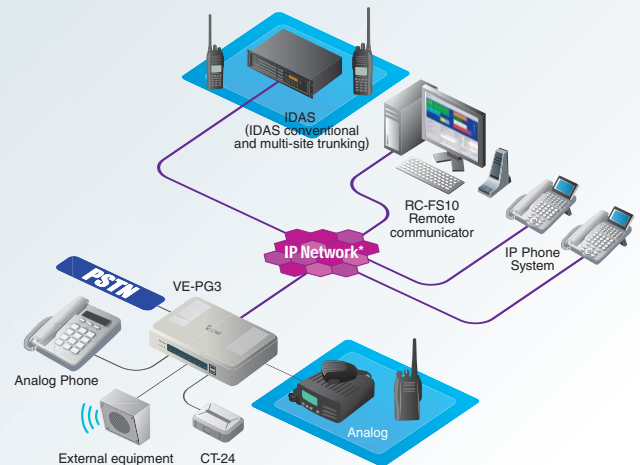
Analog

Features

- RoIP and SIP gateway functions
- Telephone interconnection with IP phone and PSTN lines. Direct dialing from an IDAS radio is possible*
  * Limited to radios with DTMF capability.
- IDAS and analog radio system cross band connection
- Converts analog audio and G.711 μ-law IP phone codec to the AMBE+2™ codec for the IDAS™ radio system*
  * CT-24 digital voice converter required.

- Public address system, siren, warning light and other 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
- Bridge mode connection
- 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

VPN ROUTER
SR-VPN1

Best Match VPN Router for IDAS™ Radio over IP

Site B
Site C
Site D

SR-VPN1

xDSL or FTTH modem

SR-VPN1

xDSL or FTTH modem

Internet

SR-VPN1

VPN Tunnel

SR-VPN1

IDAS (IDAS conventional and multi-site trunking)

RC-FS10 Remote communicator

IP Phone System

VE-PG3

Analog

Site A
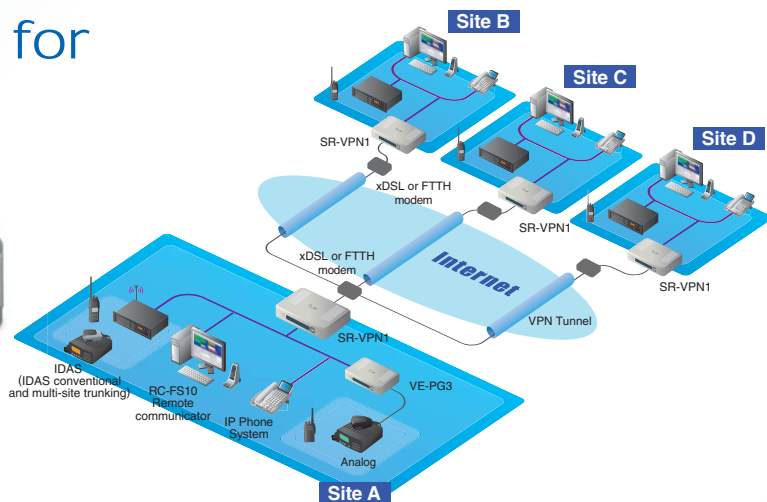
Features

- Up to 32 VPN IPsec VPN tunnels
- IPsec wizard focuses on the basic setting items for a VPN connection, and provides simple step-by-step instructions
- High-speed 1000BASE-T gigabit Ethernet connection
- 4 gigabit LAN ports with switch function
- Automatic MDI/MDI-X function detects the required cable types

- 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
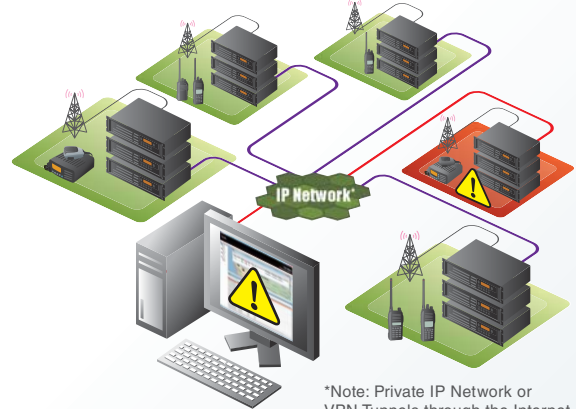- Supports SNMP and Syslog messages for network monitoring

A xDSL or FTTH modem is separately required for Internet connection.
* SR-VPN1 is not available in some countries. (Not available in the USA.)

RS-MGR1

Multi-site trunking

Remote System Manager Software for IDAS™ Multi-Site Trunking Systems
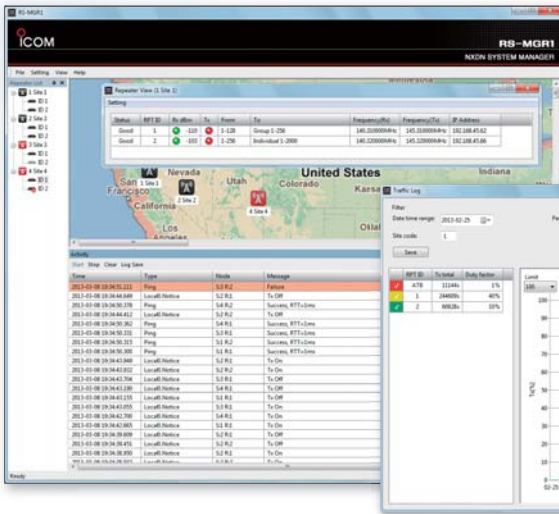
Traffic Log

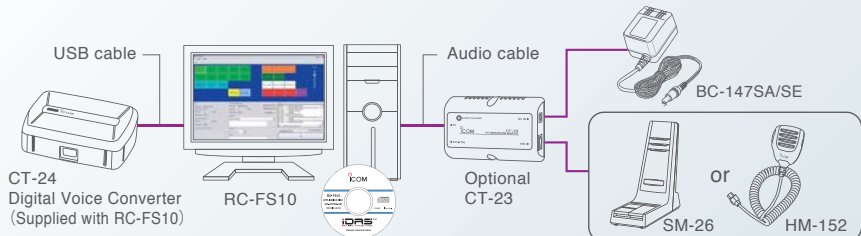*Note: Private IP Network or VPN Tunnels through the Internet.

Features

- Repeater properties show condition summary, system information, interface (traffic statistics), repeater condition details (TX/RX PLL unlock, power supply voltage, internal temperature and fan status) and ping status of each repeater

- Registration log, communication log, traffic log and search log can be filtered by date, user ID, call type and site code* (* Filter items differ from log types)

- E-mail alert notification can be sent to the administrator if an alarm or disconnect occurs or clears

- The "Mesh ping status" shows the connectivity by sending ping commands in all combinations of repeater sites

- The "Version list" shows the repeaters firmware revision list

- The "Map window" shows repeater site icons laid out on an image file such as a map or network diagram

- USB flash drive containing the software and for the hardware key protection

- SR-VPN1 VPN router can be monitored on the RS-MGR1 by Syslog

RC-FS10

Multi-site conventional
Multi-site trunking

Virtual Radio/PC Dispatch

USB cable

Audio cable

BC-147SA/SE

CT-24 Digital Voice Converter (Supplied with RC-FS10)

RC-FS10

Optional CT-23

or

SM-26   HM-152

RC-FS10 Remote Communicator

CT-24 Digital Voice Converter (Supplied with RC-FS10)

CT-23 PTT Microphone Adapter

Features

- The RC-FS10 is a remote communicator software for IDAS conventional, multi-site trunking and VE-PG3. It creates a virtual radio/simple dispatch station on a Windows®-based PC with the CT-24 digital voice converter and a microphone/speaker.

- Up to 8 different IDAS or VE-PG3 systems can be programmed

- Up to 40 function buttons are programmable, including individual call, group call, selective call, all call, status call, status polling, and so on

- Caller ID/alias name, called ID/alias name and call type information are displayed on the ANI area for easy recognition

- SDM (short data message), status message and DTMF code can be sent and received

- Communication log is displayed and can be stored

- The CT-24 digital voice converter is a USB device which converts microphone audio to the AMBE+2™ codec for the IDAS™ radio system. The remote communicator software will not work if the CT-24 is not connected.

- Optional CT-23 connects the HM-152 or SM-26 microphone audio (RJ-45 jack) and PTT/Monitor signals to the 3.5mm stereo jack for connection to a PC

VHF HANDHELD TRANSCEIVERS

IC-F3261DT (5W)
IC-F3261DS (5W)

UHF HANDHELD TRANSCEIVERS

IC-F4261DT (5W)
IC-F4261DS (5W)

Multi-site conventional
Multi-site trunking
Single-site trunking

IP67
GPS
Rugged MIL-STD 810

General Features

- 136–174MHz, 5W
- 350–400, 400–470, 450–512, 450–520MHz, 5W
- 512 memory channels and 128 zones
- Dot-matrix, multi-function display
- IP67, dust-tight and waterproof protection
- Built-in GPS receiver*
- Built-in man down function*
- Large capacity Lithium-Ion battery pack
- 800mW (typical) loud audio
- Priority scan •DTMF autodial
- Lone worker function •Power ON password
- Surveillance function
- 14 pin accessory connector with BTL amplifier output
- Voting Scan

(* Depending on the transceiver version)

IDAS™ Features

- IDAS multi-site/single site trunking
- IDAS conventional/multi-site conventional
- Individual and group selective call
- Digital/Analog mixed mode operation
- Talk back function and call mode selection
- Digital voice scrambler
- Status message and SDM (Short Data Message)
- Radio kill, stun and revive
- Call alert and radio check
- Remote monitor •Call log
- RAN (Radio Access Number) code

Analog FM Mode Features

- 2-Tone, 5-Tone, CTCSS and DTCS built-in
- MDC 1200 compatible •Basic LTR™ trunking
- Built-in audio compander
- Built-in inversion voice scrambler

IC-F3261DT   IC-F4261DS

IP55   Rugged MIL-STD 810
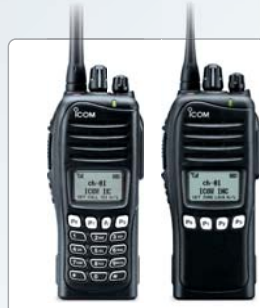
VHF & UHF HANDHELD TRANSCEIVERS

IC-F3161DT/DS IC-F4161DT/DS

- 136–174MHz, 5W •400–470, 450–512MHz, 5W
- FM intrinsically safe

FM APPROVED

IS : Class I, II, III/ Div 1/ Groups DEFG/ T3C Ta = 40°C
NI : Class I/ Div 2/ Groups ABCD/ T3C Ta = 40°C

Multi-site conventional
Multi-site trunking
Single-site trunking

VHF MOBILE TRANSCEIVER

IC-F5061D (50W)

UHF MOBILE TRANSCEIVER

IC-F6061D (45W)

Multi-site conventional
Multi-site trunking
Single-site trunking

General Features

- 136–174MHz, 50W •350–400, 400–470, 450–512, 450–520MHz, 45W
- 512 memory channels and 128 zones
- Backlit dot-matrix display •Power ON password
- Detachable front panel (Optional RMK-3 and separation cable required)
- IP54 dust-protection and splash resistance (Controller only)
- DTMF autodial
- Front mounted speaker •Lone worker function
- D-SUB 25 pin accessory connector •Escalating alarm
- Ignition sensing line •Self-grounding microphone, HM-148G
- Mode dependent scan •Voting scan •Surveillance function

IP54
Controller and RMK-3 only.
Rugged MIL-STD 810

IC-F5061D series
The above photo includes the optional RMK-3 separation kit and OPC-609 separation cable.

General Features

- IDAS multi-site/single site trunking •IDAS conventional/multi-site conventional
- Individual and group selective call •Digital/Analog mixed mode operation
- Talk back function and call mode selection
- Status message and SDM (Short Data Message)
- Digital voice scrambler •Radio kill, stun and revive
- Call alert and radio check •Remote monitor
- Call log •RAN (Radio Access Number) code

General Features

- 2-Tone, 5-Tone, CTCSS and DTCS built-in
- MDC 1200 compatible •Basic LTR™ trunking
- Built-in audio compander
- Optional voice scrambler UT-109R/UT-110R and built-in inversion voice scrambler

VHF HANDHELD TRANSCEIVERS
IC-F3230DT (5W)
IC-F3230DS (5W)

UHF HANDHELD TRANSCEIVERS
IC-F4230DT (4W)
IC-F4230DS (4W)

Multi-site conventional
Multi-site trunking
Single-site trunking

IP67
Rugged MIL-STD 810

General Features

- 136–174MHz, 5W
- 350–400, 400–470, 450–512, 450–520MHz, 4W
- 128 memory channels and 8 zones
- 8 character alphanumeric display
- IP67, dust-tight and waterproof protection
- Operating time: Approximately 20 hours* with the BP-232WP battery pack
  * Tx: Rx: standby=5:5:90. Power save on.
- 53(W) × 120(H) × 37(D) mm compact body
- Lone worker function
- Channel announcement function
- Surveillance function • Voting scan
- CTCSS and DTCS built-in (For analog FM)

IDAS™ Features

- IDAS multi-site/single site trunking
- IDAS conventional/multi-site conventional
- PTT ID and ANI • Block decode
- Up to 500 individual and up to 500 group ID aliases
- Status • SDM (Short Data Message)
- Stun/kill/revive (RX) • Call alert • Radio check (RX)
- Call alert and radio check (RX)
- Remote monitor (RX) • Call log
- RAN (Radio Access Number) • Emergency
- Digital voice scrambler
- ATB (All Trunks Busy) ring back
- Roaming Scan (Multi-site trunking)

* IC-F3230DT/F4230DT is not available in some countries. (Not available in the USA.)

IC-F3230DT   IC-F4230DS

VHF HANDHELD TRANSCEIVER
IC-F3210D (5W)

UHF HANDHELD TRANSCEIVER
IC-F4210D (4W)

Multi-site conventional
Multi-site trunking
Single-site trunking

IP54
Rugged MIL-STD 810

General Features

- 136–174MHz, 5W
- 400–470, 450–512, 450–520MHz, 4W
- 16 memory channels • 3-color LED
- Operating time: Approximately 16–17.5 hours* with BP-265 battery pack * Tx: Rx: standby=5:5:90. Power save on.
- Channel announcement function
- 800mW (typical) loud speaker audio
- Internal VOX capability for hands-free operation
- IP54, dust-protection and water resistance
- Lone worker function • Surveillance function
- Voting scan • Optional GPS microphone, HM-171GP
- 58(W) × 111.5(H) × 36.5(D) mm compact body
- CTCSS and DTCS built-in (For analog FM)

IDAS™ Features

- IDAS multi-site/single site trunking
- IDAS conventional/multi-site conventional
- PTT ID (TX) • Individual/Group call
- Block decode • RAN (Radio Access Number)
- Radio check (RX) • Stun/kill/revive (RX)
- Call alert (RX) • Remote monitor (RX)
- Emergency • Digital voice scrambler
- GPS (TX with HM-171GP) • ATB ring back
- Roaming Scan (Multi-site trunking)

IC-F3210D   IC-F4210D

VHF MOBILE TRANSCEIVER
IC-F5220D (50W)

UHF MOBILE TRANSCEIVER
IC-F6220D (45W)

Multi-site conventional
Multi-site trunking
Single-site trunking

Rugged MIL-STD 810

General Features

- 136–174MHz, 50W
- 350–400, 400–470, 450–512, 450–520MHz, 45W
- 128 memory channels and 8 zones
- 8 character alphanumeric display
- 4W (typical) front mounted speaker
- Lone worker function
- Surveillance function • Voting scan
- GPS receiver connection with optional ACC cable
- Channel announcement function
- Microphone hanger action programmable
- CTCSS and DTCS built-in (For analog FM)

IDAS™ Features

- IDAS multi-site/single site trunking
- IDAS conventional/multi-site conventional
- PTT ID and ANI • Block decode
- Up to 500 individual and up to 500 group ID aliases
- Status • SDM (Short Data Message)
- Call alert • Radio check (RX)
- Stun/kill/revive (RX) • RAN (Radio Access Number)
- Remote monitor (RX) • Emergency
- Digital voice scrambler
- ATB (All Trunks Busy) ring back
- Roaming Scan (Multi-site trunking)

IC-F5220D series

IDAS™ calling features
IDAS™ trunking features
IDAS™ multi-site conventional
IDAS™ products lineup

VHF & UHF HANDHELD TRANSCEIVERS

IC-F3101D (5W)
IC-F4101D (4W)

VHF & UHF MOBILE TRANSCEIVERS

IC-F5121D (50W)
IC-F6121D (45W)

Multi-site conventional
Single-site trunking

IP54

Rugged MIL-STD 810

Rugged MIL-STD 810

IC-F3101D series   IC-F5121D series

General Features

- 136–174, 350–400, 400–470, 450–512MHz coverage
- 128 channels and 8 zones (IC-F5121D series)
  16 channels (IC-F3101D series)
- IDAS single site trunking
- IDAS conventional/multi-site conventional
- Digital/analog mixed mode operation
- Built-in 2-Tone, 5-Tone, CTCSS, DTCS and MDC 1200 signalling (For the analog FM mode)
- Channel announcement (IC-F3101D series)
- Optional GPS microphone, HM-171GP (IC-F3101D series)
- GPS receiver connection with optional ACC cable (IC-F5121D series)

IDAS function chart

	IC-F3261DT/DS IC-F4261DT/DS series	IC-F3161DT/DS IC-F4161DT/DS series	IC-F5061D IC-F6061D series	IC-F3230DT/DS IC-F4230DT/DS series	IC-F3210D IC-F4210D series	IC-F5220D IC-F6220D series	IC-F3101D IC-F4101D series	IC-F5121D IC-F6121D series	RC-FS10
IDAS multi-site conventional	✔	✔(Rev. 2.0 or later)	✔(Rev. 2.0 or later)	✔	✔	✔	✔	✔	✔
IDAS single-site trunking	✔	✔(Rev. 2.4 or later)	✔(Rev. 2.4 or later)	✔	✔	✔	✔	✔	—
IDAS multi-site trunking	✔	✔(Rev. 4.0 or later)	✔(Rev. 4.0 or later)	✔	✔	✔	—	—	✔(Ver. #15 or #25)
Digital/Analog mixed mode	✔	✔	✔	—	—	—	✔	✔	—
PTT ID	✔	✔	✔	✔	TX only	✔	TX only	✔	✔
Individual List	✔(Max. 500 ID)	✔(Max. 500 ID)	✔(Max. 500 ID)	✔(Max. 500 ID)	—	✔(Max. 500 ID)	—	✔(Max. 500 ID)	✔(Max. 500 ID)
Talkgroup List	✔(Max. 500 ID)	✔(Max. 500 ID)	✔(Max. 500 ID)	✔(Max. 500 ID)	—	✔(Max. 500 ID)	—	✔(Max. 500 ID)	✔(Max. 500 ID)
Log for individual	✔	✔	✔	✔	—	✔	—	✔	✔
Block Decode	✔	✔	✔	✔	✔	✔	✔	✔	✔
RAN (Radio Access Number) code	✔	✔	✔	✔	✔	✔	✔	✔	✔
Status	✔	✔	✔	✔	TX only *1	✔	TX only *1	✔	✔
SDM (Short Data Message)	✔	✔	✔	✔	—	✔	—	✔	✔
Call Alert	✔	✔	✔	✔	✔	✔	RX only	✔	✔
Radio Check	✔	✔	✔	RX only	RX only	RX only	RX only	RX only	✔
Stun/Revive/Kill	✔	✔	✔	RX only	RX only	RX only	RX only	RX only	TX only
Emergency	✔	✔	✔	✔	✔	✔	✔(No ACK TX)	✔(No ACK TX)	✔
Remote Monitor	✔	✔	✔	RX only	RX only	RX only	RX only	RX only	TX only
Digital voice scrambler	✔	✔	✔	✔	✔	✔	✔	✔	✔
DTMF autodial	✔	✔	✔	— *3	—	— *4	✔	✔	—
GPS	✔ *2	✔	✔	✔	TX only	✔	TX only	✔	RX only
GPS microphone	—	HM-170GP	—	—	HM-171GP	—	HM-171GP	—	—

*1 Power ON/OFF status only. *2 GPS built-in, depending on the transceiver version. *3 DTMF dialing is possible with IC-F3230DT/F4230DT.
*4 DTMF dialing is possible with optional DTMF microphone. Tx: Transmit, RX: Receive

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