Radio Gateway — Link LMR Radios, LTE Radios, IP Radios, IP Phone Systems and More

ICOM VE-PG4

RoIP GATEWAY

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Ensures Cooperative Information Sharing Across Systems and Devices

The VE-PG4 is a versatile RoIP (Radio over IP network) gateway unit, which seamlessly interconnects LMR radios, LTE radios, IP communication terminals, IP phone systems and external devices. In addition to the IP Network (LAN/WAN), the built-in LTE module* provides virtually nationwide communication coverage.

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

Communication Links

IP Advanced Radio System

RoIP GATEWAY VE-PG4

IP Phone System

IP Network

LTE (4G) and 3G Network

RoIP (Radio over IP)

External Equipments

Remote Communicator RC-FS10

IDAS™ Conventional, or Type-D multi-site trunking

Analog Transceiver

LTE Transceiver IP501H/IP501M

IP Communication Terminal IP100H

Wireless Access Point AP-95M

Remote Communicator IP100FS

IP Phone System

USB Storage Device

Microphone

External Equipments

RoIP GATEWAY VE-PG4

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**Features**

**All in One Package**
The VE-PG4 includes built-in RoIP, SIP gateway, IP router, IP PBX and IP communication terminal controller functions, in one box. In comparison with a similar system combining several devices, installation and administration of the integrated VE-PG4 can be simpler, with less conflux of settings.

**Call Recording to a USB Drive**
Incoming/Outgoing calls can be recorded to an external USB device connected to the VE-PG4. Up to four recording settings are programmable. The recording call type is selectable from All, Group, and Individual calls. In addition, the Monitor function transfers the received audio data to an intended device.

**Microphone Connection for Base Operation**
Connect HM-241, optional speaker-microphone to the microphone connector on the VE-PG4’s front panel to enable simple base operation. Echo canceller and noise canceller functions are built-in for full-duplex communication with IP advanced radio system, like the IP100H, IP501H or IP501M.

**Position and Status Information**
GPS position and status information from the IP501H/IP501M LTE transceivers can be received and transferred to a PC to track the location of the radio users or a user in a vehicle.

*GPS mapping software is required for GPS data.*

**Remote Communicator Software, RC-FS10**
The optional RC-FS10 remote communicator creates an IP-based virtual radio on a PC, and can communicate with land mobile radios, LTE radios, and IP communication terminals through the VE-PG4.

**Serial Pass-through Function**
The Serial Pass-through function enables you to connect a serial device to the VE-PG4 to extend the communication range between the connected device and a controller PC. The virtual serial port software for Windows® PC is supplied with the VE-PG4.

**SIP Server and IP-PBX Functions**
The built-in simple SIP server enables you to assign IP phone numbers with extension groups. The VE-PG4 can be connected to external SIP server as a client. The following IP-PBX settings are programmable.

- Voice Phonebook
- DID (Direct Inward Dialing)
- Used with Panasonic KX-UT and KX-HDV series IP phones
- Call log
- Extension presence
- Phone number routing
- Outside line regulations
- Caller prioritization
- External call limiting
- SIP conferencing

**Router Functions with VPN Tunnel**
The VE-PG4 supports LAN, DHCP client, Static IP or PPPoE connections. The VPN function creates a secure IP tunnel connection over the Internet.

**Half-width 1U Form Design**
The VE-PG4 occupies only half the width of a 19-inch rack. It can be functionally installed with repeaters, switching hubs and other equipment. LTE (4G)/3G antenna bases with 1.5 m (4.9 ft) of cable are supplied in case antennas need to be relocated for better reception.

**Online Firmware Update**
The VE-PG4 supports automatic and online firmware update functions, for remote maintenance. Settings can be saved to a backup file, and easily restored.

**Management Features**
- SYSLOG and SNMP
- Telnet and SSH
- Ping Test and Traceroute Test
- Abnormal condition monitoring, such as LAN port link-down and SIP server registration error
- Administrator password
- SNTP server
- Security slot

**Rear Panel View**
Antenna connectors
External equipment or radio connectors x 4
USB port x 2
WAN/LAN
Ground terminal
DC power jack

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The VE-PG4 has a built-in IP100H IP communication terminal controller function that is capable of controlling up to 50 IP100H IP Communication Terminals, and IP100FS Remote Communicators. The IP100H can send and receive voice and preprogrammed text messages to the other units through the wireless LAN access points. The IP communication terminals are suitable for intra-building communication, which will communicate anywhere your network has Wireless LAN access.

**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. No license fee is required, and there are no call charges.

**Hands-free, Full-duplex Communication**
With an optional earphone-microphone or headset*, the IP100H user can simultaneously talk and receive like a phone call. Hands-free operation allows your staff to carry out other tasks at the same time.

* For full-duplex operation, use either an HM-153LS, HM-166LS or HS-102 with the OPC-2359, for full-duplex operation.

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

**Easy System to Set Up and Use**
The VE-PG4 programs almost all terminal configurations over the air. Individual PC programming through a cable connection is not required. (Except initial setup).

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**IP Communication Terminal**
**IP100H**
- License-free wireless LAN communication terminal using IEEE 802.11 a/b/g/n standards (2.4 GHz and 5 GHz)
- WPA-PSK or WPA2-PSK encryption
- IPX7 waterproof (1 m depth of water for 30 minutes)
- MIL-STD 810 G rugged construction
- Compact 58 x 95 x 26.4 mm body and a light 205 g (approximate) weight
- Vibration alert function notifies incoming calls
- Emergency call with higher priority

**Remote Communicator**
**IP100FS**
(Supplied with USB flash drive for use as a USB hardware key)
- The IP100FS can communicate with IP100H IP communication terminals from a PC
- The IP100FS can obtain location information of each IP100H based on the access point being used
- Can be installed on a Windows® based tablet PC, as well as a laptop PC

**Wireless LAN Access Point**
**AP-95M**
- IEEE 802.11ac (Wave 2) standard, high-speed communication
- Beam forming function, MU-MIMO function
- Optional RS-AP3, access point management software
The VE-PG4 interconnects with two or more radio systems, even when the systems are using different bands and different categories. All received audio is bridged to opposing radio system, so a radio user can talk to all connected radio users. The built-in digital voice converter converts analog audio to IDAS™ compatible digital audio.

* Cross band/cross category operation may be prohibited in some countries. Please check the legal requirements in your country before installation.

By installing a custom SIM card to the built-in LTE module, the VE-PG4 can interconnect IP501H/IP501M LTE transceivers with conventional radio systems and IP100H IP communication terminals. GPS position information from the LTE transceivers can be received and transferred to a PC.

The built-in Simplified SIP server can assign extension numbers to IDAS™ radio terminals, IP advanced radio terminals, and groups of analog radio users as well as IP phones. A radio user can initiate phone calls. Phone users can make individual or group calls to connected radio users.

Two or more VE-PG4s can be connected through LAN or LTE (4G) and 3G networks. The communication area can be flexibly expanded, and dispersed radio sites can be connected, regardless of distance or radio system used.

Public address system, siren, warning light and other external devices can be connected to the VE-PG4. When detecting an emergency signal, users can start emergency notification from either a digital transceiver, IP transceiver or public address system.
SPECIFICATIONS

GENERAL

Power supply 12 V DC ±10%, 4 A maximum
Operating temperature range 0 to +40°C, -32 to +104°F
Operating humidity 5–95% (At no condensation)
Dimensions (W×H×D) (Projections are not included) 213 x 26.8 x 270 mm, 8.4 x 1.4 x 10.6 in (Approximate)
Weight 1.8 kg, 4 lb (Main unit, approximate)
Regulatory compliance FCC Part 15 Class B/ICES03, Part22, Part24, Part27, EN301 489-1, EN301 489-19, EN301 489-52, EN301 906-1, EN301 906-2, EN301 908-13, EN303 413, EN62479, EN62311, EN62368-1

INTERFACE

LAN/WAN RJ-45 type x 1 (Auto MDI/MDI-X) 10BASE-T/100BASE-TX/1000BASE-T *WAN/LAN port selectable.
LAN RJ-45 type x 1 (Auto MDI/MDI-X) 10BASE-T/100BASE-TX/1000BASE-T
USB Host interface USB 3.0 Standard A receptacles x3
Console interface USB 2.0 mini B receptacles x1
Network* 4G bands: LTE B1, B3, B7, B8, B20 (EUR) LTE B2, B4, B12 (FCC)

External port Connectors 2.54 mm (0.1 in) pitch quick connector (4 terminals ×3) ×4
Audio input –10 dBm/–40 dBm selectable
Input impedance 10 kΩ unbalance
Audio output 0 dBm/–20 dBm selectable 600 Ω load
unbalance/8 Ω speaker
Control input Low voltage contacts (3.3 V DC/1 mA)/ Voltage input (3–16 V)
Control output No voltage contacts (30 V/ 100 mA)/ Open collector (3–16 V 10 mA)

All stated specifications are subject to change without notice or obligation.

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

OPTIONS

Audio Connection Cables
OPC-2390 5m (16.4ft) cable for the IC-FR5000/FR6000 series repeater. USB 2.0 mini B receptacles ×1
OPC-2275 5m (16.4ft) cable for a mobile transceiver such as IC-F5060D/F6060D series and IC-A120/E. RJ-45 modular plug connector with speaker plug.
OPC-2273 5m (16.4ft) cable for the IC-M805/EURO VHF marine transceiver. Waterproof 8-pin connector.
OPC-2276 5m (16.4ft) cable for external microphone and speaker, instead of the front panel.
OPC-2399 5m (16.4ft) cable for a serial device with RS-232 connector.

Speaker-Microphone
HM-241

Microphones
SM-26
HM-152
HM-152T
HM-216

Audio Connection Cables
OPC-2390 5m (16.4ft) cable for the IC-FR5000/FR6000 series repeater. D-SUB 25-pin connector.
OPC-2273 5m (16.4ft) cable for a mobile transceiver such as IC-F5060D/F6060D series and IC-A120/E. RJ-45 modular plug connector with speaker plug.
OPC-2276 5m (16.4ft) cable for the IC-M805/EURO VHF marine transceiver. Waterproof 8-pin connector.

Remote Communicator
CT-24 (Digital Voice Converter (CT-24 is supplied with RC-FS10))

BC-147SA/SE (Option for RC-FS10)

OPC-2273 cable is required.

COMPARATIVES MODELS

IP Communication Terminal
IP100H

Wireless LAN connection. (Access Point is required.)

LTE Transceivers
IP501H
IP501M

LTE (4G) or 3G Network connection.

Satellite PTT
IC-SAT100

Either UC-FR5000 (LAN) or OPC-2399 is required.

VHF/UHF Repeaters
IC-FL5000, IC-FL6000, IC-FL6100

Either OPC-2273 cable is required.

VHF/UHF Transceivers
IC-F5061D, IC-F5062D, IC-F5063D
IC-F6061D, IC-F6062D, IC-F6063D

Either OPC-2273 cable is required.

VHF Marine Transceivers
IC-M605, IC-M805/EURO

Either OPC-2273 cable is required.

VHF Air Band Transceivers
IC-A120, IC-A120E

OPC-2273 cable is required.