Radio Over IP Gateway

ROIP-400

Features and Specifications

Radio over Internet Protocol uses standard techniques to transfer the analog audio signals used by Land Mobile Radio/Repeater Systems, digitally over the LAN (or Internet). In addition to voice,

RoIP also transfers signals that are specific to LMR applications, such as PTT and COR Control lines. ROIP provides secure wide area connectivity between Radio Systems at different locations connected using Static/ Dynamic IP. It also has additional feature of Automatic Connectivity on power/link reset. Multiple PC consoles can be operated without the high cost of installing fixed consoles.

Radio over IP Gateway was developed to extend the limited range of radio base stations of few kms. It connects different radio networks together over the IP Backbone. With the unlimited range of Ip connectivity, range of radio communication could be increased as desired. All the handsets/ walkie-talkie of radio networks can communicate with each other.

IP BACKBONE:

ROIPs can be connected together over IP Backbone (*Ip Connectivity between the points)*, which can be any of the following:

- Internet Connectivity
- LAN Connectivity
- WIFI Connectivity
- VSAT Connectivity
- IP Radio Connectivity
- OFC Connectivity

APPLICATIONS:

- Communication between different office locations.
- Monitoring and Managing of communication between multiple locations at a central location.
- Remotely Monitoring communication of a particular radio channel by either Laptop/PC or through a fixed RoIP unit.
- Communication between basement, minus 2, ground and top floors in a shopping mall, office, hotel, parking place.
- Communication inside a long tunnel.
- Communication on a long highway
- Interconnectivity gateway between different Radio Networks
- Cross Patch between different Radio Networks of different bands,

APPLICATIONS/ CONFIGURATIONS

1. SINGLE POINT-TO-POINT CONFIGURATION

In Single Point-to-Point Connectivity, upto four radio wireless networks at one location can be connected with upto four radio wireless network at other location using ROIP over the IP Backbone. ROIP will be connected to both Radio Base Station and IP. Whenever, any person speaks from his handset, it will also be transmitted over the IP using ROIP at the other location and vice versa. Thus, all the handsets at both the locations will communicate with each other as if they are in the same radio wireless network. Both the ROIP will be connected to each other directly using Static IP Address without the use of any fixed Server/PC Console. ROIP can also act as a cross patch between the four radio wireless network which are connected to it at the same location. Radio Networks can be patched in multiple groups together as desired.

2. MULTI POINT SERVER CONFIGURATION

For grouping and managing more than two roip link together, we can use Multi Point Server Configuration. In this configuration each ROIP will be connected to a central server console *(having a Static IP Address).* Server Console will enable user/ operator to make multiple groups between ROIP networks, monitor and communicate with each ROIP or in a group/ broadcast mode. Operator can also forward audio of a particular network to other network while call is active, as per user request. Operator can monitor status, connectivity and communication of all ROIP Users on his Console and the same could also be logged on his system. The schematic configuration is as below:

OTHER FEATURES/ APPLICATIONS

- Wide Area Network Connectivity.
- Interconnectivity between multiple radio networks
- Cross Patch between multiple radio networks, band at same location.
- Cross Patch feature can be pre-configured or on user request using dialing
- Auto-Connection on link or power reset.
- User Programmable IP Configuration.
- Flexible Port Address Configurability.
- Secured Communication by using Authentication Packets.
- Connection between Static IP Network and a Static/Dynamic IP Network.
- DHCP Client Feature
- Web based Configuration Settings
- Carrier/ Vox operated Mode *(programmable).*
- Selectable CSQ or PTT priority feature.
- Adjustable PTT Delay depending upon net speed.
- Programmable PTT Time out Timer (TOT).
- Multiple Groups for intra radio communication.
- Broadcast, Group Communication with both local and remote Wireless Network
- Dtmf Decoder for Dialing to local and remote radio network
- Manual/ Auto Call Dialing to remote wireless network.
- Auto Call Time Out Timer for call disconnection in case of no communication

SPECIFICATIONS

Connection Ports

- Four Radio Ports (4 x RJ 45 connector) - *Interconnecting 4 Radios*
- One Ethernet Port (1 x RJ 45 Connector) - *Lan/ IP connectivity*
- One Power Pin Socket - *9V DC Supply Input*

Led Status Indication

- Four Dual Color Radio Status Indication (Rx / Tx)
- Two Dual Color Connectivity Status Indication
- Single Color Power Led

General

- Operation Temperature Range: *-10 to +55 Celsius*
- Power: *9V DC, 500mA*
- Network Connection: *10/100 Base-T Ethernet connection using RJ-45*

Network Requirements

- Device Payload: *1kbps idle, 64kbps active per user*
- Network Loading: *Minimum 128kbps Network Bandwidth*
- Packet Loss: *<1%*
- Packet Delay: *<100ms (Programmable depending upon net speed)*
- Network Type: *Fully switched Ethernet, full duplex.*

Radio Signals Used

- PTT
- Carrier
- Receive Audio
- Transmit Audio
- GND

TECHNICAL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT OBLIGATION OR NOTICE

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PULSE COMMUNICATION SYSTEMS PVT. LTD.
Head Office: F-90/22 OKHLA INDUSTRIAL AREA PHASE 1,
NEW DELHI-110020, INDIA
Tel: +91 11 46595821, Fax: +91 11 46017138
Works: C-2, Industrial Estate, Ram Nagar, Roorkee, Uttarakhand - 247667
Email: *info@pulsecom.co.in* Website: *www.pulsecom.co.in*