Radio Over IP Gateway
ROIP-300
(Version 2.2)

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

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APPLICATIONS/ CONFIGURATIONS

## 1. SINGLE POINT-TO-POINT CONFIGURATION

In Single Point-to-Point Connectivity, two different radio wireless networks at different locations can be connected with each other 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. The schematic diagram of Single Point-to-Point Configuration is shown below:
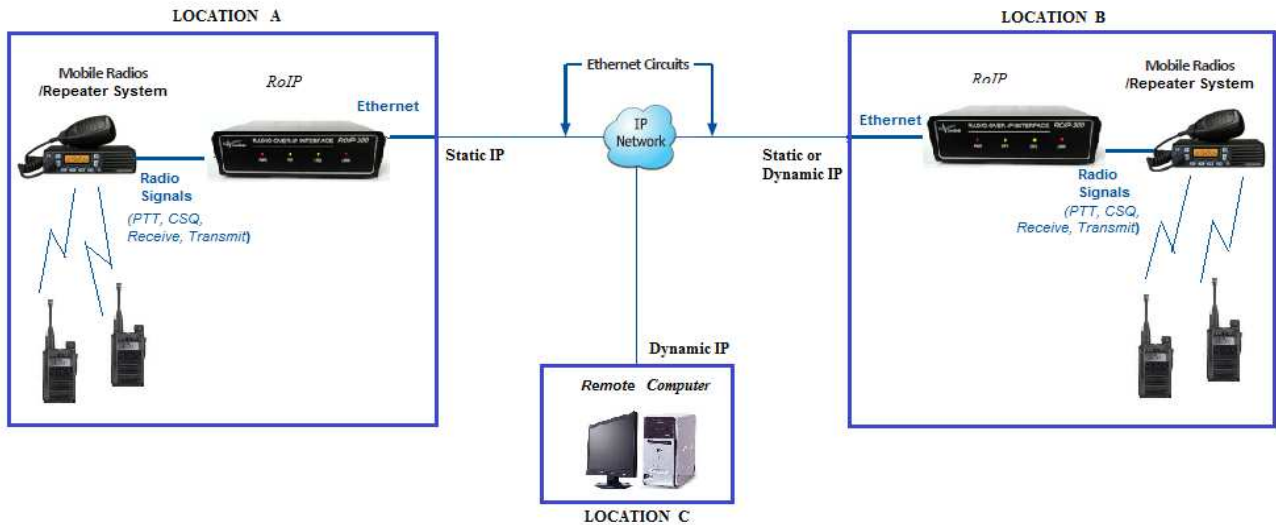
SINGLE POINT TO POINT CONFIGURATION

2. MONITORING CONFIGURATION

If you are far away from your office/ radio wireless range and still want to communicate with that wireless network or want to monitor what is happening in that location, you can use the Monitoring Configuration. Using a single ROIP unit at your radio wireless location connected with any base station and Internet (Static IP Address). All the communication at that radio wireless will work as before. You can connect to that ROIP using a ROIP PC Software from your laptop/PC through an Internet connection (*or IP Connectivity with the ROIP)* on you laptop/PC and headphones/ microphone. The schematic diagram of Monitoring Configuration is shown below:
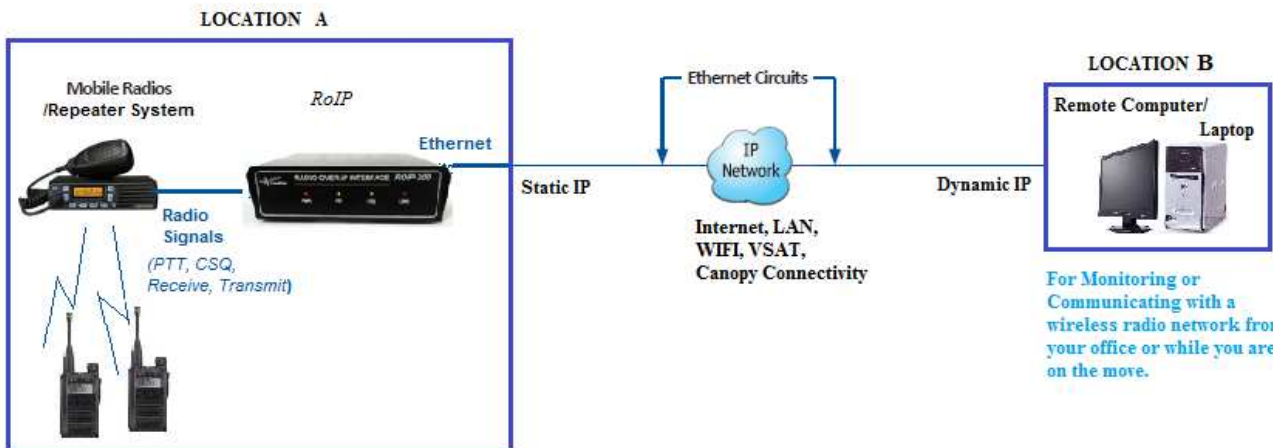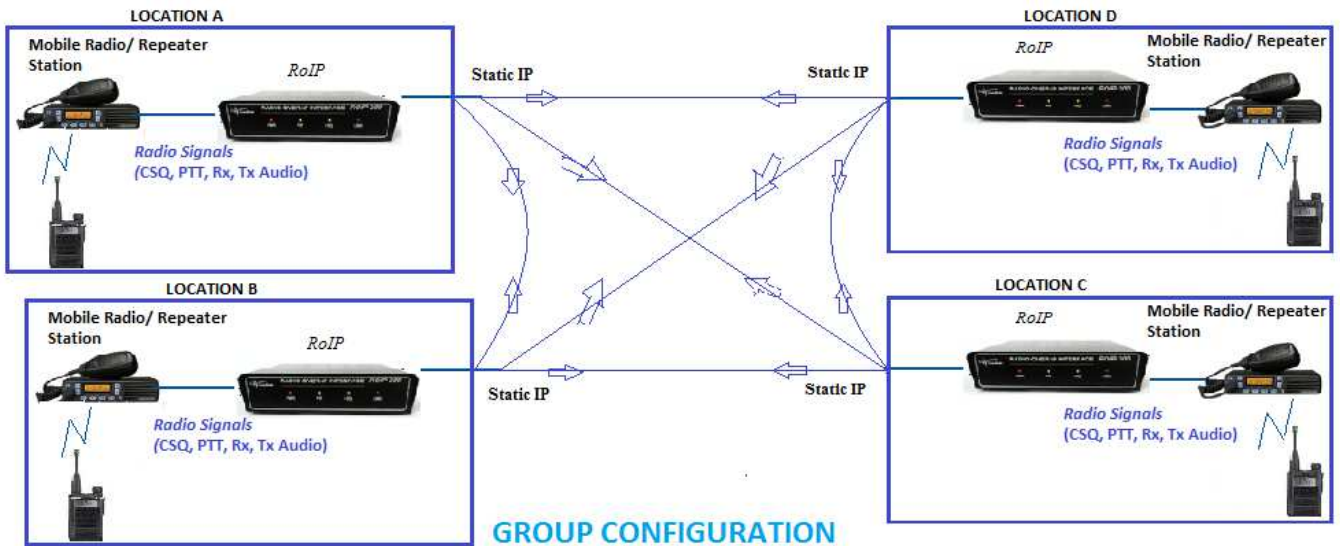

Monitoring Configuration

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3. GROUP CONFIGURATION

For grouping more than two radio wireless networks together, we can use Group Configuration. In this configuration all ROIP will be connected together in a single group without any central console unit required. All communication will be simultaneously transmitted to other ROIP. All locations should have a Static IP connectivity. *(Max Concurrent Users: 7-10)* The schematic configuration is as below:

4. MULTI POINT SERVER CONFIGURATION

For grouping and managing more than two radio wireless networks 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:

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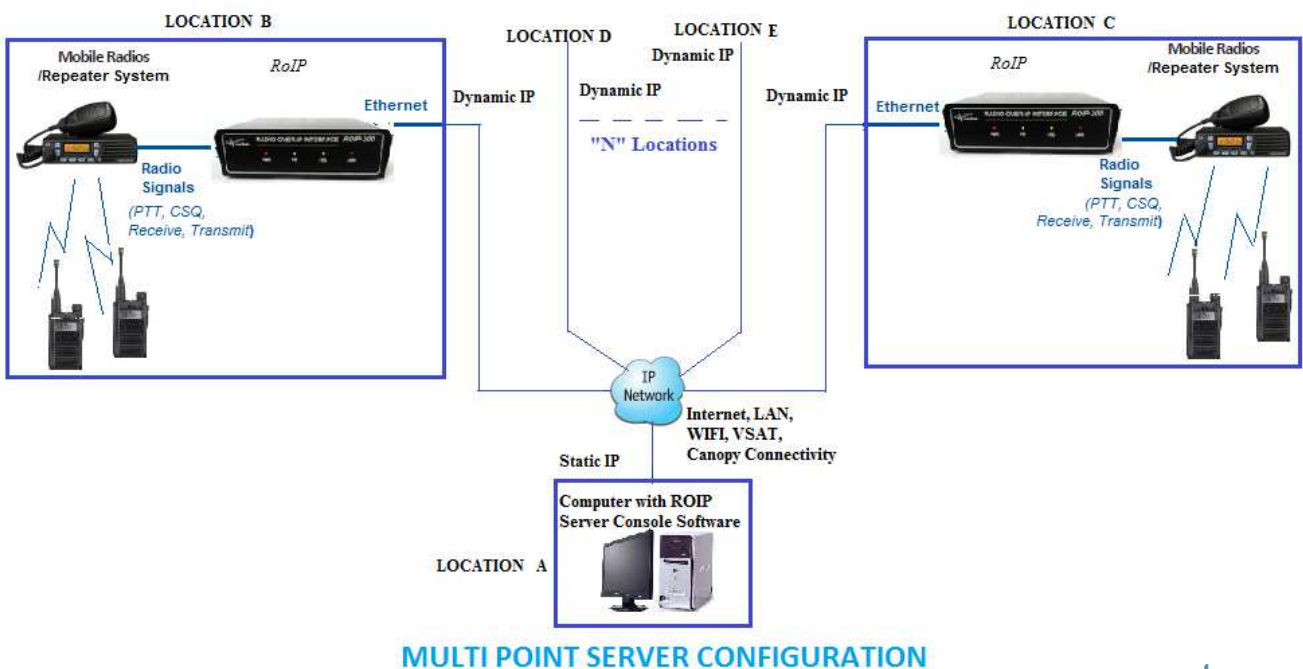
SPECIFICATIONS

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.*

General

- Dimensions: *1.75 x 5.9 x 4.3 inches (H x W x D)*
- Weight: *360g*
- Operation Temperature Range: *-10 to +55 Celsius*
- Power: *9V DC, 500mA*
- Network Connection: *10/100 Base-T Ethernet connection using RJ-45*

Radio Signals Used

- PTT
- Carrier
- Receive Audio
- Transmit Audio

OTHER FEATURES/ APPLICATIONS

- Wide Area Network Connectivity.
- Remote PC connectivity to a known radio channel. *(Optional)*
- 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).*
- Local Repeat Mode Feature *(programmable).*
- Selectable CSQ or PTT priority feature.
- Adjustable PTT Delay depending upon net speed.
- Programmable PTT Time out Timer (TOT).

TECHNICAL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT OBLIGATION OR NOTICE