

Application Note IPR100

WIDE AREA COVERAGE USING INTERNET

Unique Conferencing Mode Extends Radio Coverage

Customer Profile

- Wide area, multi-repeater site

Application

- Wide area coverage over the Internet using Omnitronics' Conference Mode

Business Benefits

- Cost effective solution
- Straightforward implementation
- Single box solution with 19" 1RU option available
- Reliable
- High Audio Quality

Products Used

- IPR100

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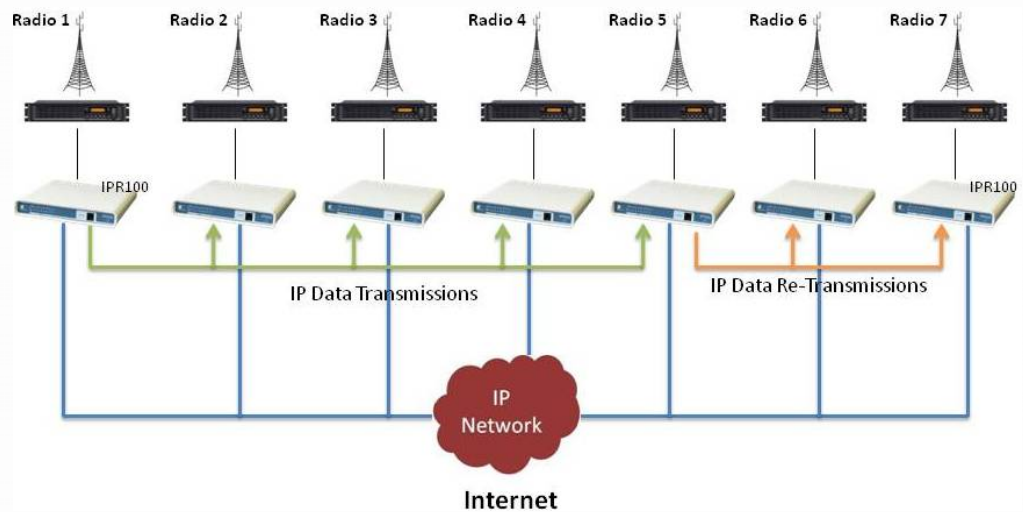
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➤ Overview

Tower Communications, a key dealer in Wyoming USA, approached Omnitronics for a multi-repeater solution that would work across the Internet. Seven Radio repeater sites had to be connected into one wide area network. Audio has to be transmitted to each site quickly so there was no noticeable delay by users. Audio quality, ease of installation and reliability within a tight implementation time frame were essential requirements.



➤ The Challenge

Distributed audio over IP is typically transported using Multicasting protocol but the nominated network was unable to support this due to IT conflicts within the existing IP network. There were concerns that the audio delay would be too great for practical use. Proof of concept and confidence in the product solutions had to be generated before the product could be sold to the end user.

➤ Solution

To overcome the inability to use multicasting, the Omnitronics "Conference Mode" was used. This mode takes audio received from the radio and converts it to IP data. It is then sent sequentially to each interface in the conference mode group. This means that one IPR100 site receives audio and 4 other sites retransmit audio. By setting a fifth IPR100 site as a gateway, the conference mode was extended to all seven sites. IP data received at this site is simply sent to additional sites. Any delay where IP packets were retransmitted was not noticeable by users.

To provide proof of concept and to meet a tight deadline, loan equipment was quickly shipped to Tower Communications for lab testing.

➤ Conclusion

The conference mode operation worked perfectly over the IP network and the unique IP packet recover and processing firmware added a high level of reliability. Installation and level setup was made easy through the purchase of the appropriate 4-wire E&M interface cable. Diagrams were provided for pin interfacing between IPR100, Radio and IP addressing for each site. Audio quality was excellent and did not detract from site to site.

Tower Communications took the time to understand the user's requirements and worked closely with Omnitronics to implement the solution.

