GALAXY®

JVC KENWOOD

JVCKENWOOD Canada Inc. & Galaxy Broadband Communications combine technologies to introduce a unique Remote Area Trunking Solution

JVCKENWOOD Company Introduction:

"JVCKENWOOD Corporation operates three business sectors; Automotive, Public Services and Media Services. With a focus on its superior technologies in imaging, sound, and radio technologies, JVCKENWOOD strives to create excitement and peace of mind. The Public Service sector consists of the Communications Systems Business covering Professional Wireless Systems, amateur radio sets, and the Professional Systems Business. Operated by JVCKENWOOD Public & Industrial Systems Corporation, it covers solutions that range from security camera systems and professional audio systems, to the Healthcare Business, which primarily provides medical display monitor solutions."

Galaxy Broadband Communications Introdution:

For over 25 years, Galaxy has been providing reliable, affordable and innovative enterprise communications to companies with remote locations where no fibre or cell coverage exists. Galaxy provides companies with enterprise satellite broadband or terrestrial wireless connectivity anywhere. Galaxy is a single source for remote communications, High Speed Internet, VoIP and networking solutions, including large remote camp and emergency office solutions, all controlled through our Managed Services Group with 24/7 technical support. Galaxy excels in providing our VSAT QoS network solutions to Oil and Gas, Mining, Government, Utilities, Retail, Emergency Response, Construction and Commercial markets.

JVCKENWOOD Canada Inc. are pleased to announce working with Galaxy Broadband to offer a new and exciting trunked radio communication system solution for remote area locations and backup IP solution to mission critical systems. Using our world renowned NXDN technology paired with Galaxy Broadband's 'best in class' satellite technology, it is our intention to offer a communication system that is both reliable and dependable for remote workers.

25 YEARS
AND BEYOND

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Introduction

NEXEDGE is Kenwood's new cutting edge digital conventional and trunked radio system, designed to meet high demands in today's competitive commercial and professional radio system environment. Digital efficiency, compatibility to legacy systems to facilitate a simple and cost effective and smooth migration from the analog transceiver world to the digital transceiver world are just a few advantages Kenwood NEXEDGE can deliver. Kenwood's experience in radio design, audio quality and high quality control has made NEXEDGE possibly the best digital conventional and trunked system solution available today.

Trunked Mode Operation (Single Site)

NEXEDGE trunking mode provides larger capacity, enhanced call capabilities, improved security and faster communications with simpler user operation than conventional systems. The system automatically assigns channels for faster efficient use of spectrum, allowing users to concentrate on the job at hand. The 3,000 of each Unit ID and Group ID per site capacity provides ample unit and fleet organization capabilities. Group and Individual calls enjoy complete privacy as other users in the system cannot monitor the calls. The Priority Monitor feature will monitor for up to 4 high priority talk groups and switch users to those calls in progress so important calls aren't missed. During peak usage hours, system Call Queuing stacks call requests and processes calls when a channel becomes available. System operators can assign important individuals higher queue priority and even pre-empt lower priority users for more important dispatch and emergency calls. Well known features, such as Late Entry, Broadcast Call, Remote Group Add, ESN validation, remote Stun/ Kill/ Revive are all included and supported as standard.

Trunked Mode Operation (Multi Site)

The network option leverages the power of IP to link up to, currently, 48 digital trunking sites together for wide area roaming and calling capabilities. Scalable networks can be created over existing IT assets, private microwave, spread spectrum links, carrier services, and satellite using standard 10/100 Base-T Ethernet switches and routers. IPSec VPN tunnelling provides an encrypted secure communications link within any IP network. Subscriber units use advanced control channel hunting algorithms, RF signal strength and digital signal quality to automatically determine the best sites to register on while moving throughout the network. The 48,000 Group IDs and Unit IDs network capacity provides ample scope for large organizations and multi-user system sharing.
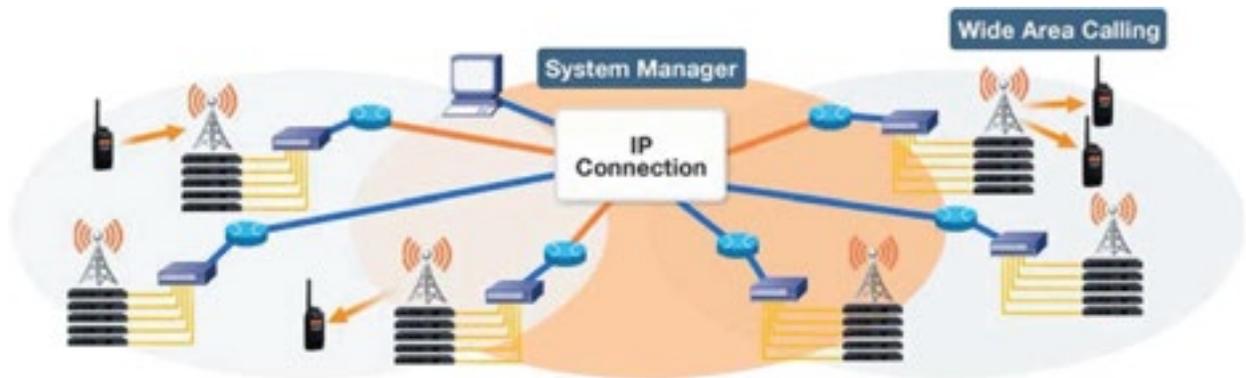
Trunking - What is it?

Trunking means that a radio system infrastructure controls and handles call request and data transmissions of transceivers in its radio coverage over a number of transceiver channels. The trunking infrastructure consists of at least 2 or more RF channels and logic controllers. A bundle of frequencies is used to allocate calls, thus making more efficient use of the frequencies. Frequencies are combined into a trunk of resources, rather than separate, single channels. Hence the phrase: Trunked radio system. Most trunked radio systems follow the same concept, whereby a Control Channel (CC) receives and organizes call requests and data transmissions and a Traffic Channel (TC) handles the actual voice communication path. See below for a typical channel allocation sequence in a trunked radio system.
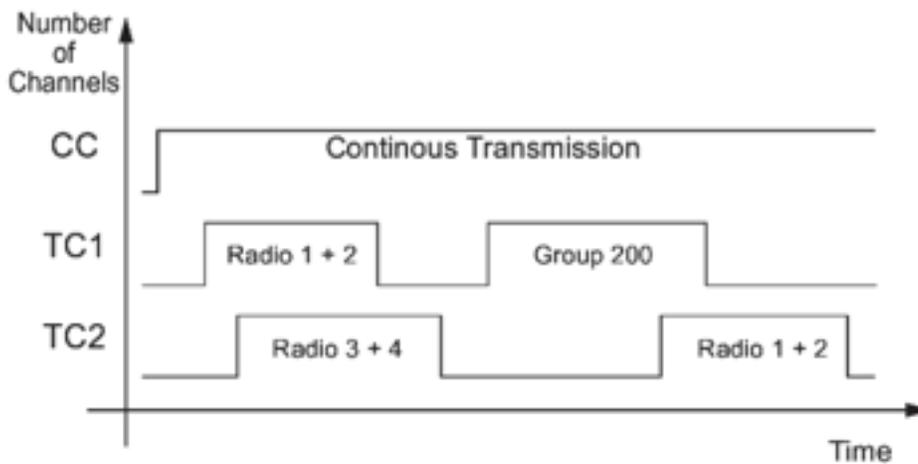
Connection NXDN Sites Via IP

NXDN leverages the power of the Internet Protocol to connect link single repeater sites together. It can connect sites either using a unicast scheme where a packet is delivered only to a specific sing host or multicast where a host sends only one copy of a packet into the network (i.e. Multicast router), and the network will make copies of the packet and deliver one copy to each interested host.

■ Unicast Scheme
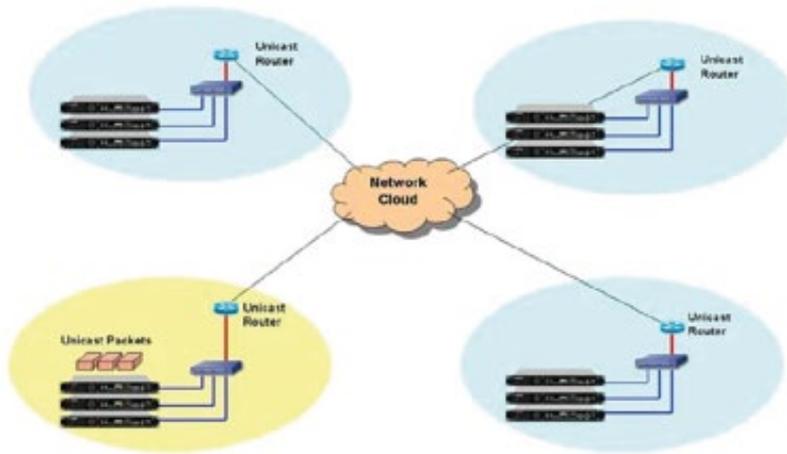
■ Multicast Scheme
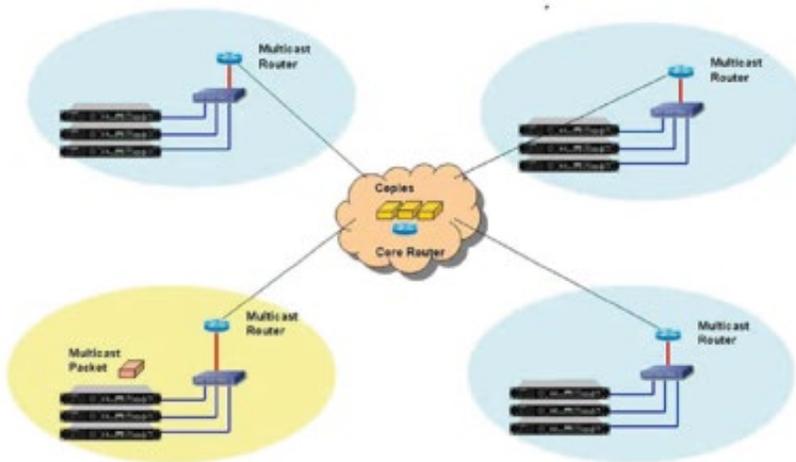
25 YEARS AND BEYOND

IP Links

When connecting a multi-site Kenwood NEXEDGE system via an IP link, the following circumstances should be taken into account. There are many different variations of wireless or wired IP links available. Some of which are more suited to a mission critical radio system application than others. Below a non-exhaustive list of possible IP networks.

Customers internal, own IP network

Commercial ISP (Internet Service Provider)

IP sections within a bigger IP network – so called Virtual Networks

Transceiver IP links

Microwave IP links

Satellite IP links

There are many conditions to consider where choosing an IP Solution. Of the more traditional IP solutions many companies have not considered using the power of Satellite links which are always available all the time.

Satellite IP Links

Satellite connectivity has the benefit of true national coverage without the need to consider if a project will be subject to a cellular or terrestrial connectivity concerns. IP over satellite (VSAT) is a high latency, low loss, low jitter connection. Galaxy Broadband has worked alongside Kenwood in creating a customized profile that is applied to every Galaxy Broadband modem deploying NEXEDGE systems. Galaxy's customized profile optimizes our TDMA bandwidth algorithms by locking a terminal to a specific return channel for the duration of the NEXEDGE session. The end result of integrating the Galaxy modem with Kenwood's NEXEDGE system is a dependable, high quality communication system that can truly be deployed anywhere in North America.

Conclusion

For any business or Government Department who are deploying the Kenwood NEXEDGE radio system, or need to upgrade their current system for a more flexible and cost efficient solution, then an integrated solution with Kenwood and Galaxy provides a ubiquitous coverage network that can satisfy both primary and backup capabilities.

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