

## Dual Mode Simulcast Digital P25 and Analog Two-Way Radio System

**Dual mode P25 / Analog SIMULCAST system** – Simulcast feature enables multiple transmitters to transmit at the same time, providing optimal talk-out coverage.

Dual (aka. mixed) mode means that the system will work in both analog and P25 digital modes, whatever transmission it receives; if analog transmission is received, it will rebroadcast analog and if it receives digital it will rebroadcast digital. This allows gradual migration to P25 as well ensures that the investment in the current analog technology is not going to go to waste with the advent of the P25 digital.

**Dual mode** allows the end-user to enjoy the benefits and features of both analog and digital modes of operation.

**No single points of failure** – the system can be designed with full redundancy with both microwave network and radio infrastructure.

**No phone lines, no leased circuits** – the system back-haul can be designed with 4.9GHz microwave links combined with town-owned fiber where available. Links are designed with full backup redundancy - Each site has at least two links to the rest of the system and failure of any one (or more) links will not degrade the system performance.

**Intelligent, self-healing design** – the system may be designed to auto-detect any problems, take a corrective action and report the problem to the service provider via email and other means. A problem can now be immediately and automatically diagnosed and reported to service provider.

**Remote service diagnostics** – allows the service provider to remotely log into the system and troubleshoot each device on the system as well as to monitor system operation, view call statistics, listen to real-time audio, listen to recordings of all transmissions, view site environmental and alarms, monitor site power supply, etc. A technician can be remotely checking the system within minutes of problem being reported resulting in almost immediate Service Response – what used to take hours and days can be done in minutes.

**Distributed receiver voting** means improved portable talk-in coverage with no voter as a single point of failure; voting is done in software within each repeater.

**Extended battery backup** – each site normally designed for 48-hour battery operation with 70/30 TX/RX duty cycle.

**Power efficiency** - base stations and power supplies are highly power efficient and use less than 50% of power when compared to other systems. Even longer battery backup time can be achieved easily and economically.

**Dual mode dispatch console interface** ensures that dispatcher can also receive both analog and digital transmissions and can choose to transmit in either mode, with or without P25 encryption.

**Two separate dispatch console gateway interfaces** (console tie-in points) provided for backup and redundancy.

The System is based on **Tait TB9100**; tried and tested, very reliable and the most advanced P25 base station on the market today. Non-proprietary hardware and software is used throughout the system.

The System is **carefully engineered** using computer-simulated radio propagation studies for optimal coverage. Antenna systems are optimized accordingly.