



TAIT
Radio Communications

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General Specifications

GENERAL

Max. No. Transmitters
222

Max. No. Networks (Channels)
8

Max. No. of Transmitters per Network
32

Typical Training Time
20s per Transmitter

EQUALISATION PERFORMANCE:
Equalisation Band
67-2550 Hz
300 Hz - 3.2 kHz 2400 baud FFSK data

Typical Amplitude Error
< 0.5 dB

Typical Phase Error
< 5°

Typical Bulk Delay Error
< 2 µs

Required Signal to Noise Ratio of TSGM-
Tx-Rx-LEM Loop
> 30 dB

Max. Bulk Delay Range Between
Training Pairs
< 5 ms
(Delay cards available)

Typical Performance Figures

Specifications are subject to change without notice and shall not form part of any contract. They are issued for guidance purposes only. For further information, please contact your nearest Tait office or authorised dealer.

Technical Compliance

For details of technical compliance, contact your nearest Tait office or authorised dealer.

Tait is your complete supplier of radio communications equipment, with mobile, portable and infrastructure solutions. Our experience spans over 30 years, covering off-the-shelf and customised products, single-site systems and complete turnkey solutions.



TAIT Authorised Dealer



Quasi-Synchronous Communication Systems

When mobile staff are spread over a wide area and need 'all-informed' communications, Tait Quasi-Sync is the ideal solution.

A low maintenance form of simulcast, Quasi-Sync provides dependable mobile communications coverage, even in the most challenging terrain.

Quasi-Sync is ideal for utility and public safety organisations as all staff are instantly available on the same channel.



Some Tait Quasi-Sync Customers

Durban Metro, South Africa
More than 1000 of the council's Fire and Emergency Services and Metro Electricity Division staff use Tait Quasi-Sync for dependable mobile communications. "The system has proved to be very reliable and relatively easy to maintain," says Les Thorpe, of Durban Metro. "It is highly cost-effective which means that Greater Durban ratepayers are ultimately benefiting."

BC Rail, Canada
A Tait Quasi-Sync system provides communications along the scenic 600km length of track from Vancouver to Prince George. "Staff don't have to worry about channel selection," says Tom Needes of BC Rail. "And we have excellent coverage even in the mountainous sections of track where many of the 18 sites are located."

Sonoma County, USA
About 400 staff from three law enforcement agencies use a five-channel Tait Quasi-Sync system. "The audio quality is distinctly better than our previous system," says Joe Perez of Sonoma County.

Swiss Bank, Zurich, Switzerland
One of Switzerland's largest banks uses a Tait Quasi-Sync system for security communications in and between its three buildings in central Zurich. "The system works very well," says Mark Weidmann of system integrator, K.L.Voegelin AG.

Tait Quasi-Sync Features

Reliable Performance

Tait Quasi-Sync uses Digital Signal Processing (DSP) technology to simplify and improve on the traditional form of simulcast - the transmission of the same frequency from multiple transmitters. DSP gives highly stable equalisation characteristics which do not drift over time.

DSP techniques and computer control combine to make an advanced system that greatly reduces the expensive and regular maintenance normally required to ensure clear audio in areas where transmitter coverage overlaps.

Superior coverage, enhanced reception

Wide area coverage is achieved using only a single frequency eliminating the need for multiple channel licences and releasing precious frequency spectrum. Quasi-Sync can saturate a local area providing coverage in traditional 'dead spots' like shopping malls and parking basements.

Easy to use all-informed network

The open channel provides instant contact between all users for the fast, efficient sharing of information.

The single button press-to-talk system is simple for users and reduces the workload for despatchers.

Modular system

Tait Quasi-Sync is designed and configured to a customer's precise needs and can be easily expanded in the future.

Compatible with existing equipment

The cost of upgrading can be reduced by using Quasi-Sync control equipment with existing base station infrastructure and mobile and portable radios.

Transmitter Power Regulations

Where regulatory authorities limit transmitter power, Tait Quasi-Sync can operate multiple low power transmitters on the same frequency.

How Tait Quasi-Sync Works

Quasi-Sync works by broadcasting simultaneously from several transmitters on the same frequency. The transmitters then operate as a single transmitter giving superior coverage.

A Tait T801 Frequency Reference Module accurately maintains the frequency of the transmitters at each site.

Where required, the T801 allows small frequency offsets to prevent the occurrence of static nulls in the overlap area.

The T801 module may be driven from one of a number of frequency references, such as:

- Rubidium frequency standard
- Broadcast frequency standard
- Oven Controlled Crystal Oscillators (OCXOs)
- GPS caesium clock

Adaptive Audio Equalisation

The T805 series of audio processing cards provide the necessary control of amplitude and phase responses. The Line Equaliser Module (LEM) is self adaptive, and is able to analyse the characteristics of its neighbouring transmitter, and adapt its own characteristics to match.

This process is known as training. It completely eliminates the need for manual measurement and adjustment of parameters. Any realignment that is required takes place in less than 20 seconds, per transmitter.

System Control

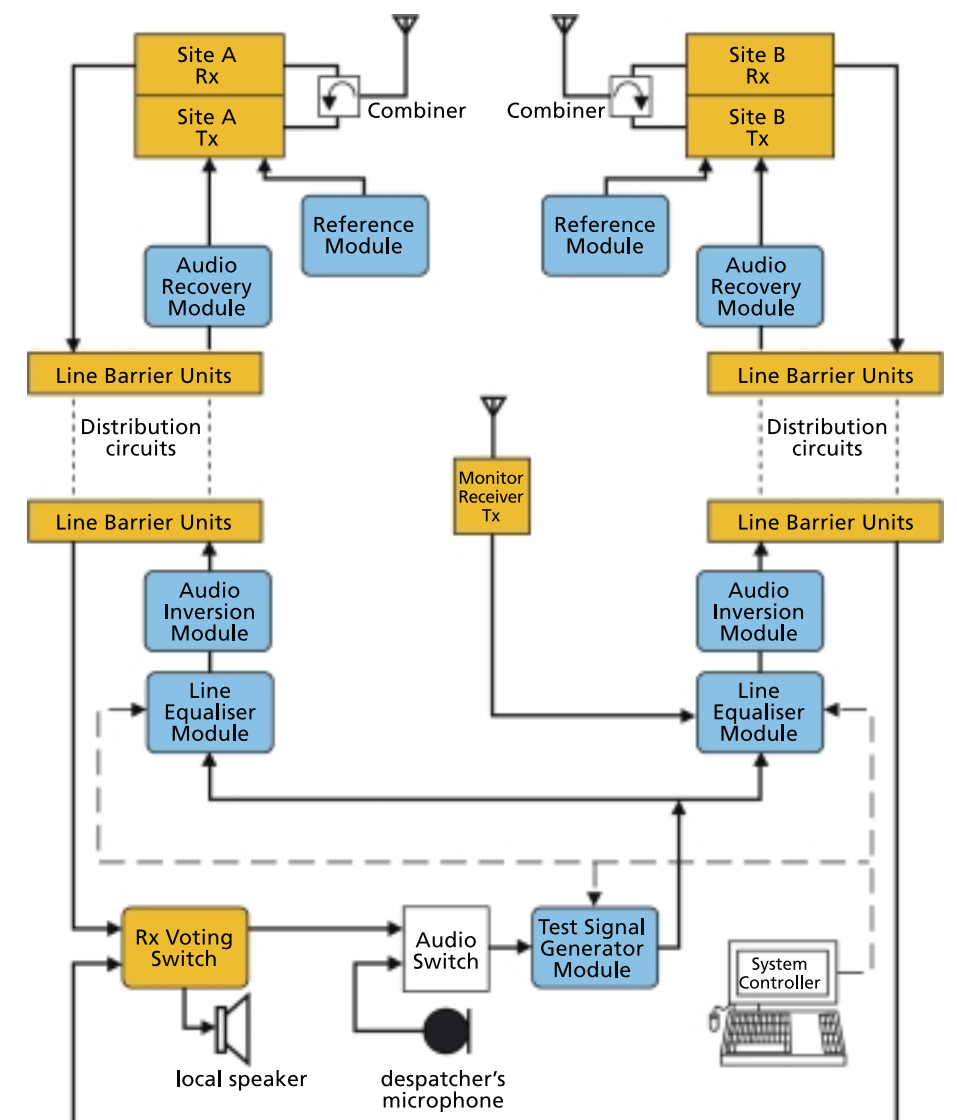
A personal computer System Controller is used to provide automated control and management of the system. It resides at the central control site.

- The system controller -
- initiates equaliser adjustment
 - provides engineering and diagnostic facilities
 - logs all faults and changes in status
 - logs system activity, providing an audit trail.



A BC Rail train passing through British Columbian mountains.

Photo: David E. Harvey



2-site Quasi-Sync system