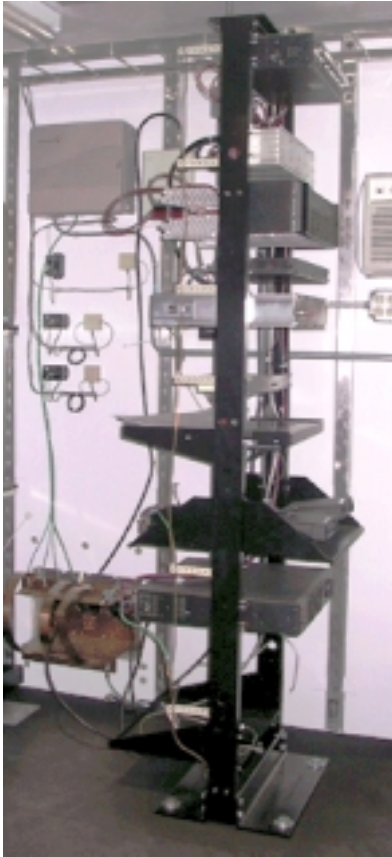


BASE COMMUNICATIONS PACKAGE (BCP II)



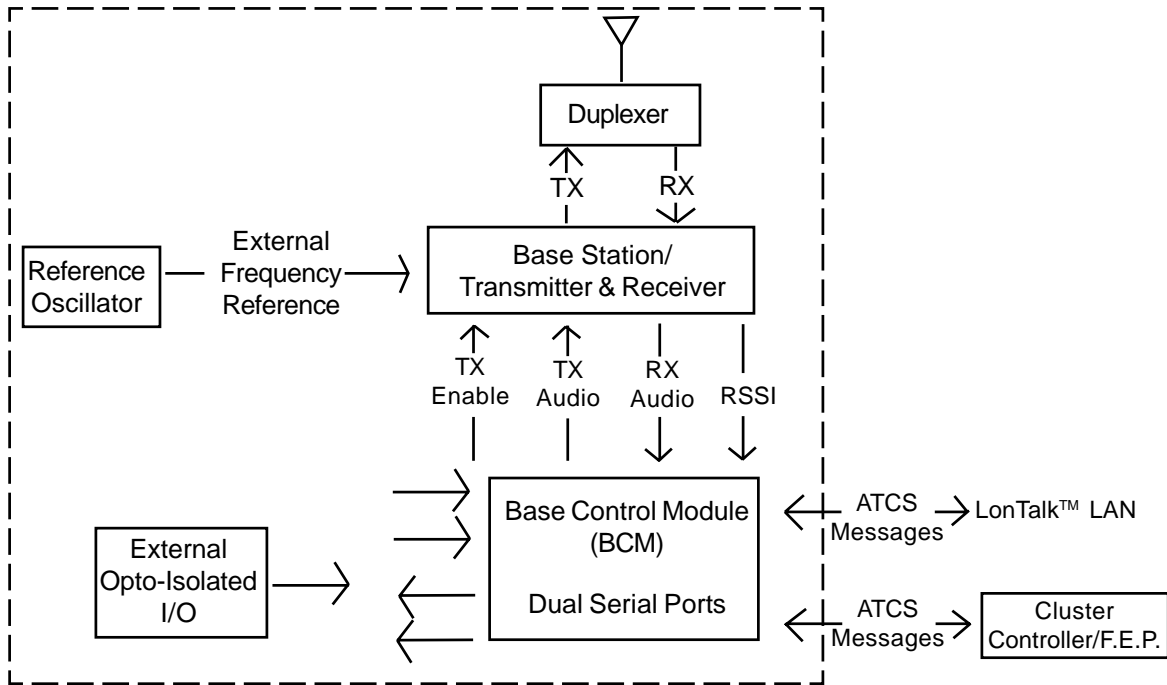
Safetran's Base Communications Package (BCP II) is part of the R/Link™ Radio Control System. It is used in an Advanced Train Control System (ATCS) data network to perform the following general functions:

- Provide the interface between cluster controller/FEP (CC) and field locations
- Deliver ATCS messages to and receive messages from field equipment via an RF link.
- Provide the interface to optional Echelon® LON TALK™ for local I/O or ancillary functions

Complete shelter package includes:

- Battery charger and batteries
- Modems
- Primary and secondary power surge protection
- Antenna surge protection
- External access for telephone company demarcation
- Other communication equipment requested by the customer

Base Communications Package



Base Communications Package Simplified Block Diagram

The BCP II includes the A53444-0811 Base Control Module (BCM), the T5544A Motorola Base Station/Transmitter and Receiver -MTR2000™, the T5829A Motorola External Frequency Reference, and the RF Duplexer. Outstanding features of the BCP II include:

- Separate modules simplify system maintenance issues and provide for more flexible installation options.
- RS232/RS422 connection option on two BCM client ports can support redundant office connections.
- 16-character front-panel BCM display provides clear diagnostic messages
- High-speed (1.2Mb/s) client LAN port allows BCM to directly connect to other Safetran vital and non-vital I/O modules concurrently
- BCM front-panel push-button configuration - no laptop needed during routine maintenance
- Inbound RSSI reading provides additional system information of signal strength at BCM location
- Optional BCM on-board, ladder-logic processing for code system applications
- BCM protocol emulation and conversion of many industry standard code-line protocols
- Full non-volatile BCM event log built in with hardware real-time clock
- Full duplexer operation at 4800 baud using Gaussian Mask Shift Keying (GMSK) direct FM signaling with extensive error detection and correction (software upgradable to 9600 baud)
- Power output adjustable between 35 and 75 watts
- Can support frame relay and TCP/IP
- Optically isolated I/O ports

External Frequency Reference

The internal oscillator of the Base Station is controlled by a high-stability (0.1 ppm), external, 5-MHz reference frequency to provide ATCS specification compliance.

Duplexer

The BCP II Duplexer allows for full duplex rf operation with a single antenna system.

Communication Links

Communication between the BCP II and the CC is via customer-provided data circuit (dedicated four-wire or dial). Communication between the BCP II and the Echelon® LonTalk™ LAN is via twisted pair.

BCM

The BCM has been used successfully on non-ATCS applications for both land lines and data radio networks.