

MPT 1327 Single Site Controller**FEATURES****TRUNKING CONTROLLER**

- Economical entry-level solution for single-site only dispatch applications
- Fully MPT 1327/1343 compliant
- Modular “plug and play” structure enables an economical building block approach to site development with expansion capability of up to 24 channels at a single site
- Individual Subscriber Validation plus Electronic Serial Number (ESN) checking
- System configuration software is included and provides easy configuration setup and maintenance from a single local or remote connection
- External sense and internal alarm input monitoring
- Four levels of user defined call priority in addition to the three MPT 1327 standard levels
- Support for an extensive range of MPT 1327 call types

- Emergency calls can be set to demand resources by pre-emptive clearing of existing calls
- Cyclic control channel operation for balanced repeater transmitter duty-cycle loading

TELEPHONE INTERCONNECT USING MODEL 827

- Support PSTN interconnect capability at trunking site by adding a Model 827 fitted with Telco Card interface option

INTRODUCTION

The MPT 1327 trunked mobile radio standard is internationally recognized for public and private radio systems. Zetron's Model 807 Trunking Controller implements this standard in an economical, entry-level controller package designed for single-site dispatch applications. Its modular design approach ensures a cost-effective system with the facility to add telephone interconnect at the site by connecting to a Model 827 controller fitted with the telephone interface option.

BENEFITS

The MPT 1327 open standard provides a highly capable and flexible trunked system. Users can choose from a wide range of equipment for subscriber units and site repeaters, specific to their performance and investment requirements. At the heart of each MPT 1327 system is a dedicated digital control channel, where call requests and channel assignments are rapidly processed to provide fast user access. Group and individual conversations are possible, as well as group announcements. If a called party is busy, a user can request a call back. Many other call types are also supported.

Flexible Repeater Interface

The Model 807 is a compact, one-unit high 19" product for rack mount installation. Repeater interfacing is simplified through the use of a modular rear-panel connector for easy interface cable construction and connection to repeaters from a wide range of manufacturers. DIP switch settings are easily accessible from front panel access plates, and an array of LEDs provide visual confirmation of unit operation.

Modular Design

The modular "building-block" approach to system development is particularly attractive for small or expanding systems. Channels can be added incrementally, thus operators can "build-as-you-go" without having to buy more infrastructure than needed. Also, the design and cost of future system expansion is both predictable and economical. For operators migrating conventional channels to trunked, or other trunked systems to MPT 1327, cross-busy control channel operation allows the Model 807 to share an existing repeater being used for another operation. When used with other conventional or trunked repeater controllers that provide a "busy" output, the Model 807 will not assign these channels for MPT 1327 traffic. This allows the system operator to maintain subscribers of an existing community repeater while phasing in users to the trunking system as needed.

System operators gain extensive control and management of all aspects of their system. Due to the variety of highly configurable system and user parameters, one can optimize their trunking system for ideal performance, efficiency and security. For example, users can be required to log in using their mobile electronic serial number (ESN). Different fleets can be supported on the system. Within a fleet, individuals and groups can be identified and users given priority access. Emergency calls are fully supported and can even preemptively demand resources to ensure call execution. System statistics and billing summary data are also readily available in an exportable data format.

CALL TYPES

The MPT 1327 specification has structured call types with room for user definition. Supported call types include:

- Individual and group speech calls both simple and inter-prefix
 - Non-prescribed data
 - Normal, priority, and emergency calls
 - Status calls
 - Include calls
 - Short data messages
 - Call diversion, self-initiated and third party
 - Call diversion on no answer and busy
 - Call queuing for busy system or busy called party

SYSTEM ARCHITECTURE

The Zetron Model 807 integrates MPT 1327 into one capable unit using powerful 32-bit processing. Other manufacturers typically require several layers of hardware to provide the features and functionality inherent in the Zetron-based distributed architecture.

The Model 807 is attractive where the requirement is for an economical robust single-site solution.

Each Model 807 in the trunked radio system interfaces with a repeater, for up to a total of 24 controllers/channels per single site. All controllers are then linked together through a 64 Kbps PCM audio "highway" and three serial data buses. System control data is passed between the trunking controllers through the buses. One Model 807 becomes the communication bus "master", and manages the other trunking controllers. Most importantly, no central switch or processor is required for single site operation.

A site has the database capacity for up to 5,000 users, with up to 2,000 group identities and 500 fleets. Although the system database is uploaded through one Model 807, it is transferred to all other units at the site over the shared data buses. This provides system resilience, ensuring no single point of failure.

SYSTEM CONFIGURATION AND DATABASE MANAGEMENT

System management is performed using a standard PC running Zetron's Windows™-based management software. This allows changes to operational parameters or the subscriber database to be made off-line, then uploaded to the site when required. The management PC does not need to be permanently connected to the system. When uploads are needed, the PC can connect directly to the Model 807 front panel or, through an external modem. If the telephone interface option is accessible via an installed Model 827 and configured to a PSTN line, the interface's internal modem can be used for remote connection. The power and flexibility of the Model 807 comes from the operator's ability to customize the system using the management software with its user-friendly design and extensive help menus.

TELEPHONE INTERCONNECT UPGRADE

For those systems desiring access to a PABX or PSTN, the Model 807 supports telephone access by installing at least one Model 827 into the trunking controller stack at the site. An installed Model 827 provides an additional port configurable for PABX or PSTN interconnect. Distributed architecture utilizing a built-in PCM switch allows any radio port to be connected to any telephone port.

With the telephone interconnect, many convenient features are available, including: dial click detector, internal modem, and accurate, automatic hybrid balancing. Users are guided by 16 built-in voice prompts and are notified if a party is unavailable or a call cannot be made. Voice prompts are recorded by the system operator. Telephone tone prompts can also be enabled.

Additional telephone operational features include speed dialing, call limit timers programmable by time of day, least call routing, and call barring for restricted numbers.

STATISTICS AND BILLING

Channel statistics are logged once an hour. The information stored includes repeater call loading on traffic channels, slotted control information, and call attempts per type of call. Statistics are in accordance with the MPT 1318 standard. The Model 807 automatically keeps a transaction buffer, with storage for about 4000 calls. If the controller's buffer fills, the Model 807 will attempt to find another controller in the system with space available and use that buffer. The Model 807 can also trigger an alarm based on a full transaction buffer. Transaction data may be downloaded through the management PC to be used with third party or customer created invoicing packages.

ALARM REPORTING AND MONITORING

The Model 807 can monitor three internal alarms and three external sense alarms. The internal alarms are: subscriber bus faults, repeater bus faults, and transaction buffer overflow. Upon alarm detection, the controller can place a status message to a defined radio or place a phone call if there is a telephone interface in the system.

COMPLIMENTARY PRODUCTS

Zetron Integrated Line Dispatcher (ZiMPT)



ZiMPT is a powerful PC-based line dispatcher for Zetron MPT 1327 trunked radio systems. Supporting single or multiple operator positions, it provides command and control of voice and data through an intuitive, menu-based graphical user interface.

Model 427 Peripheral Equipment Interface



The Model 427 supports direct connection of peripheral equipment, such as dispatcher consoles, to Zetron MPT 1327 infrastructure. By using Zetron's extended MAP27 protocol the solution offers powerful status, alarm and control functions. Up to 32 system ports are available allowing multiple 427s to be added to the trunk equipment stack.

Hazardous Duty Worker



The HDW monitors the status of workers in unattended or hazardous job situations. The software provides automated, periodic query by radio of the workers and an automated response to user-defined alarm conditions.

Model 827 MPT 1327 Trunking Controller



Model 827 adds the options of multi-site networking and telephone interconnect within a single package. Voice prompts assist incoming telephone callers. A built-in modem allows easy database management. Multiple 827s may be added to the MPT1327 trunk equipment stack to provide up to 24 channels and 32 sites per system.

Please note that the Model 807 single site controller is not upgradeable to the Model 827 multi site controller and systems which require or may require multisite capability should use the Model 827 controller throughout.

SPECIFICATIONS

PHYSICAL

Power	10.5 to 16 Volts DC, 12 Watts
Temperature	0 to 60 deg. Celsius
Size	48.3 cm W x 4.5 cm H x 26.3 cm D
Weight	3 Kg

RADIO

Conforms to MPT 1327/1343 trunking standard. Supports radios compliant with MPT 1327/1352. Full-duplex or half-duplex operation.

RADIO INTERFACE

PTT	Form-C relay closure 1 amp @ 30 volts max.
COR	External COR/CAS, polarity select, Internal Squelch
Tx Audio	Adjustable -40 to 3 dBm. 1K ohm impedance @ 1000hz
Rx Audio	Adjustable -40 to 3 dB. Single or differential input 50K ohm impedance @ 1000hz
Connector Modulation	12 position detachable screw strip depends on transmitter

SITE CAPACITY

Channels	24 radio channels at a single site
Subscribers	5,000 subscribers expandable to 8,000
Groups	2000 group identities
Fleets	500 fleets

ACCOUNTING

Record Types Capacity	Registration, status, mobile-to-mobile Minimum 3656 to a maximum of 7313 records stored internally. Actual record size depends on call type.
Stored Information	Called/Calling prefix and ID, start date/ time, call duration, channel.
Filtering	Storage of registration and status records can be set to on or off.

ADDITIONAL

Indicators	Repeater, PTT, COR, Alarm, Bus, Status (VOX detect, FFSK Rx, FFSK Tx, poll, sync, not used, not used, not used)
Data Retention	Retains data for over 8,000 hours when power is removed from unit. There is no drain on the battery when the unit is operating.
Real-Time Clock Programming	Typically 10 year shelf-life. Remote programming via PC using M827Base Database Programming Software. Access via internal modem or local RS-232 port
Alarm Monitoring	3 specific system alarms plus 3 nonspecific
Alarm Inputs	0-5volts Active: ground Inactive: open circuit
Alarm Outputs	100mA - 10 Volts Active: grounds control output, Inactive: control output open circuit.

APPROVALS

CE Approved



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See Zetron price list
for option pricing.

Specifications subject to
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