Model 600/620

SPEC SHEET

The Zetron High Speed Simulcast Paging System uses timing information from the Global Positioning System (GPS) to synchronize the transmission of digital paging signals to very tight tolerances. This provides the microsecond timing accuracy necessary for high-speed simulcast paging with protocols such as POCSAG and FLEX®.

The system consists of the Model 600 Wireless Data Manager (Source Unit) and multiple (up to 1000) Model 620 Wireless Data Encoders (Destination Units). Operator Interface

FEATURES

- Allows interface over ethernet links
- Accepts page input from any TNPP source
- Supports up to 1000 destinations with TNPP routing and zoning capabilities
- Encodes POCSAG (512, 1200 and 2400 baud) and basic FLEX (1600)
- GPS synchronized simulcast with microsecond accuracy
- Trimble Standard Interface Protocol compatible
- Traditional two-level digital transmitter interface
- Multiple user-definable input/output ports
- Enhanced four-level FLEX (3200 and 6400 baud) for I20 transmitter interface available as an option

Model 600 Wireless Data Manager

The Model 600 accepts TNPP input from up to three TNPP links, efficiently batches the pages with timing information from an attached GPS, and delivers the pages across a link to multiple Model 620 Wireless Data Encoders.

Model 620 Wireless Data Encoder

The Model 620 receives batches of paging data from the Model 600, and encodes the data for POCSAG or FLEX. At the precise time indicated by an attached GPS, the encoded message batch is sent to the transmitter, resulting in synchronous broadcast with other Model 620 controlled transmitters.

The link between the Source and Destination units may be any type (or combination) of link that can reliably transport data. Designed for non-proprietary transmitters, the system is ideal for cost effective build-out of new transmitter sites for public or private paging system operators.

Standard features include encoding for POCSAG (512, 1200 and 2400 baud) and basic FLEX (1600), support for up to 1000 destinations with TNPP routing and zoning capabilities, multi-frequency transmitter control, traditional two-level digital transmitter interface, and multiple user-definable input/output ports.

GPS AND SIMULCAST

Critical to simulcast paging is the requirement to synchronize the transmission of paging to very tight tolerances. Every transmitter that can be received by a particular pager must have its transmission exactly in phase with each other. Timing accuracy of within a few microseconds is necessary to assure reliable transmission of the FLEX protocol. The controller at the transmitter must compensate for delays introduced by different equipment, path distances, modems and other sources of delay. The High Speed Simulcast System does this by using the Global Positioning System (GPS).

GPS is well-known system used to provide accurate location information to users worldwide. Less well-known is its capability to provide extremely accurate timing information as well. By using GPS timing signals, the Destination Unit is able to synchronize the paging data with microsecond accuracy.

The Source Unit (SU) accepts page input from up to three TNPP links. TNPP is an established open protocol supported by major paging terminal manufacturers.

A TNPP interface means the Zetron Simulcast System can be used with virtually any existing paging system for maximum retention of investment. The PC programming software allows configuration of the radio interface and definition of text aliases for system and group combinations. Each remote can be individually configured to disable any of the privacy, mute, or intercom keys.

The SU analyzes the pages in the TNPP stream and efficiently batches the pages with timing information so the Destination Units (DU) can encode and transmit the pages synchronized to their GPS inputs.

The DU knows exactly when to start and end each batch. Any TNPP capable data link can transmit the combined paging and timing information from the SU to the DU.

The timing information lets the DU know exactly when each batch of pages should be sent. The DU buffers the data as necessary until the time stamp exactly matches the GPS time. This synchronizes the paging data because the variance of GPS time from each site is on the order of one microsecond.

Specifications

Dimensions (HxWxD)
Rack-mountable
Metric: 44.45 x 482.6 x 171.704 mm
Imperial: 1.75″ x 19″ x 6.76″ inches

Weight
Metric: 1.360 kg
Imperial: 3lbs

Temperature
0 to +60 degrees C
+32 to +140 degrees F

Humidity: 5 to 90% non-condensing

Power Input
10.5 to 16 VDC 5W maximum
optional 100-240VAC adapter

System Size: 1 M600 plus 1 to 1,000 M620s

Standard Formats
POCSAG (512, 1200, 2400) FLEX (2 level 1600)
FLEX (2 level 1600)

Optional Formats: FLEX (4 level 1600 & 3200)

Page Input: TNPP Capcode Pages

Data to M620s: TNPP Command Packets

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TNPP routing: Configurable routing table

Simulcast Adjustmen: +10 seconds to – 10 seconds in 1 microsecond increments

Frequencies: 16 selected with 4 output bits

Coverage Zones: 1 to 1,000

Morse Code ID: Per M620 per frequency

Page Buffer on M600: 12 Megabytes RAM

Data Buffer on M620: 10 minutes maximum

Flash Storage: Configuration data and unit software

User Interface: TTY & YMODEM UI (e.g.HyperTerminal)

Test Pages: Continuous periodic/short term via UI

Service Port

Usage: User Interface and Logging Interface

Electrical: RS-232 and Ethernet

Physical: DE-9S (female) and RJ-45

Baud Rates: 9600 for RS-232, 115200 for Ethernet

TNPP Interfaces

Usage transfer

- Page input to M600 and data to M620s
- Simplex or duplex operation
- TNPP routing

Electrical: RS-232 and RS-422

Physical RS-232: DE-9P (male)

Physical RS-422: DA-15P (male)

Physical Ethernet: RJ-45

Ports on M600: 2 RS-232 and 2 RS-422 and 1 Ethernet

Ports on M620: 2 RS-232 and 1 RS-422 and 1 Ethernet

Baud Rates

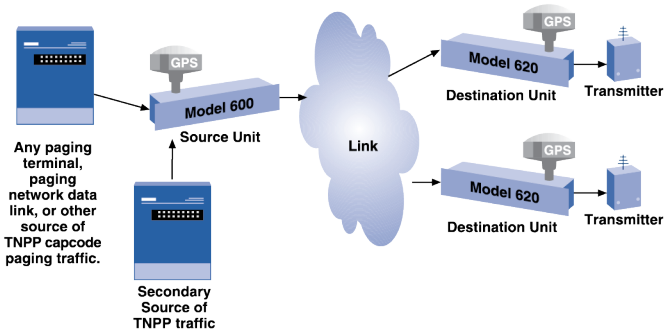
- 300
- 1200
- 2400
- 4800
- 9600
- 19200
- 38400
- 57600
- 115200

GPS INTERFACE (GPS Receiver/Antenna not included)

Usage: GPS precision timing data input

Electrical
RS-422 or RS-232 for time stamp data,
RS-422 or TTL (with external adapter) or 1 PPS

Physical
RS-422 or TTL (with external adapter) or 1 PPS
DA-15S (female)



Daisy Chain: RS-422 of GPS between units

Compatibility: Trimble Standard Interface Protocol

TRANSMITTER INTERFACE (M620 only)

Physical: DB-44S (female)

Standard PTT
Open drain FET output
External pull up to +24VDC ok
TTL

Standard Digital Data
Open drain FET output
TTL
RS-232

I20 Data
RS-422: Dibit (2 bits)
Baud Clock
Tx On

PURC compatibility: If connect M33 to M620 output

ALARM I/O PORT (inputs not currently used)

Physical: DB-25S (female)

Inputs
TTL or contact closure (internal pull up to +5VDC through 47Kohm, or external pull up to 12VDC ok)

Outputs
Active low (0V = alarm on), open drain sink up to 150mA (internal pull up to 12VDC through 47Kohm, or external pull up to +24VDC ok)

ETHERNET PORT

Physical: RJ-45

Speed: 10BASE-T Half-Duplex

Compliance Standards

US
FCC Part 15 Class A

European
EMC Directive 89/336/EEC
Emissions: EN 55022:1998
Immunity: EN 55024:1998

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