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Tempest2400 2-Channel BaseStation

TECHNICAL DATA SHEET

Model TMB22524INCC

ABOUT

The Tempest2400 BaseStation is a 2-channel digital wireless intercom system operating in the 2.4GHz band. Using patented Frequency Hopping Spread Spectrum (FHSS), TDMA technology, and proprietary ZSync Technology™, up to 11 Tempest2400 BaseStations and 55 full duplex wireless BeltStations can be operated in close proximity to each other in a single band while maintaining excellent system performance. When ordering, reference Part Number **TMP-B224** (or **TMP-B224-EU** for European sales).

FEATURES & BENEFITS

- 2.4GHz worldwide, license free operation
- Patented Frequency Hopping Spread Spectrum technology
- 2xTX redundant data transmission
- Three Modes of Operation: Normal, Shared, and Split
- Supports up to 5 full duplex BeltStations
- Unlimited shared BeltStations
- 2 communication channels (conversations)
- Mixed 2-wire and 4-wire operation
- Compatible with Clear-Com®, RTS®, AudioCom®

- Hardwired Mic Kill and Call compatible
- Individually assignable Auxiliary IN and OUT
- Stage Announce output with relay closure
- 5 individually assignable relay closures
- LAN interface for remote monitoring and control
- Remote Transceiver port for distant antennas
- Either AC and/or DC (battery) operation
- BaseStations provide seamless roaming zones
- RoHS compliant

PERFORMANCE

The BaseStation comes standard with a single whip antenna (RP-TNC RF connector) and an RJ-45 connector for the (optional) Remote Transceiver.

Redundant data transmission (2xTX) provides time and frequency diversity yielding outstanding RF performance. The CAT 5/6 cable also supplies power to the remote transceiver. An additional RJ-45 enables remote monitoring and control of the entire wireless system over a Local Area Network (LAN) with the aid of the Tempest T-Desk software.

VERSATILITY

The Tempest2400 BaseStation offers a Stage Announce (SA) output with a relay closure. This is ideal for use with Public Address Systems (PA), city-wide IFB transmitters, or virtually any application that can be triggered with a General Purpose Input/Output (GPIO).

MODES

Three modes of operation are available within each Tempest BaseStation: Normal, Shared, and Split. This feature allows from five users to hundreds of users depending on configuration.

EXPANDABILITY

Utilizing the Tempest system's TDMA technology and proprietary ZSync™ technology, up to 11 BaseStations and 55 full-duplex wireless BeltStations (in Normal Mode) can be operated in close proximity to each other within the 2.4GHz

band while maintaining excellent system performance. By switching to Shared Mode, an unlimited number of BeltStations can be connected to one BaseStation.
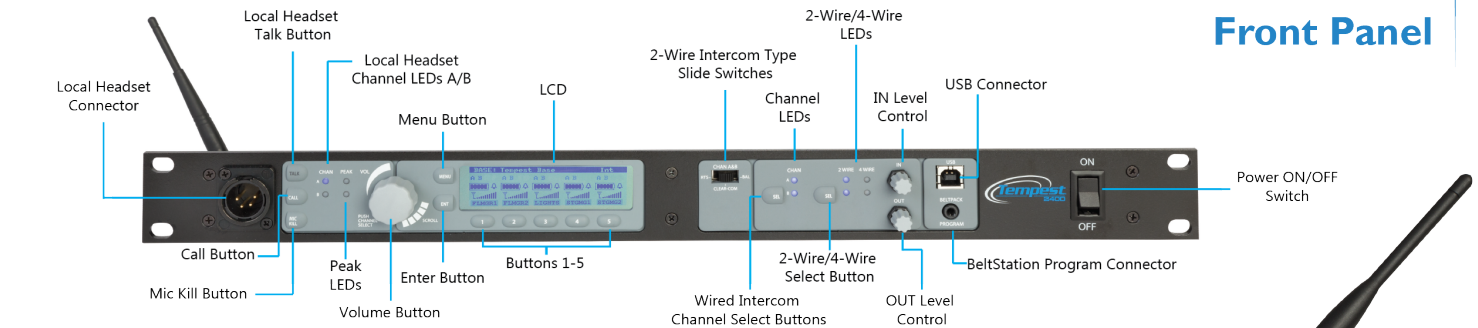
ZSYNC™ TECHNOLOGY

Available exclusively in the Tempest2400 products, ZSync is a synchronization option that requires the use of an external sync generator. ZSync provides a zero sync reference that coordinates the hopping patterns of all connected BaseStations. This has numerous positive effects. In Seamless Roaming configurations, this allows the BeltStations to know exactly what frequency a given BaseStation is operating on at any given time. This allows for very fast detection and switching from one BaseStation to another. ZSync is required for all Seamless Roaming applications.
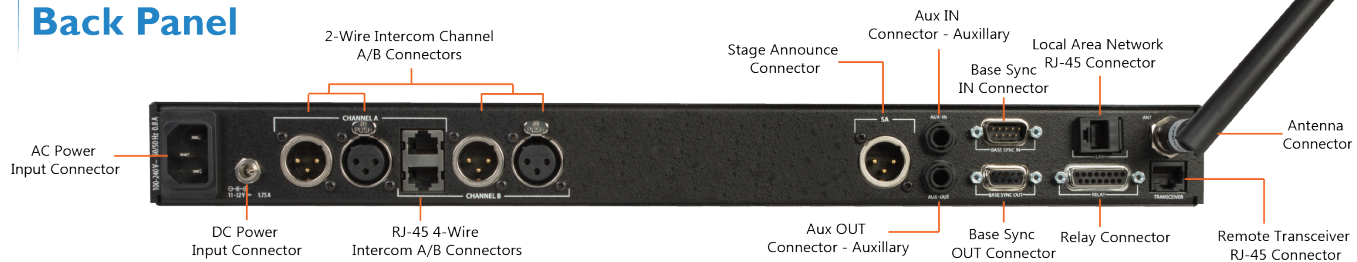
In addition to enabling fast detection and switching in Seamless Roaming systems, ZSync combats turn-on to turn-on variation in non-roaming applications. When BaseStations are turned on, the radios start to transmit on frequencies determined by their hopping patterns. ZSync technology ensures that there is a fixed relationship between all of the BaseStation radios every time the system is powered up, irrespective of random time variation in power-up sequences. Assuming that the Network Numbers for the BaseStations have been set properly, there will be virtually no unit-to-unit interference, even with up to 11 BaseStations in a Tempest2400 system utilizing Frequency Band 1. This is true for Seamless Roaming as well as non-roaming applications.

Front Panel

Local Headset Connector
Local Headset Talk Button
Local Headset Channel LEDs A/B
Menu Button
LCD
2-Wire Intercom Type Slide Switches
2-Wire/4-Wire LEDs
Channel LEDs
IN Level Control
USB Connector
ON

Call Button
Mic Kill Button
Peak LEDs
Enter Button
Volume Button
Buttons 1-5
Wired Intercom Channel Select Buttons
2-Wire/4-Wire Select Button
OUT Level Control
BeltStation Program Connector
Power ON/OFF Switch
OFF

Back Panel

AC Power Input Connector
2-Wire Intercom Channel A/B Connectors
Aux IN Connector - Auxillary
Stage Announce Connector
Base Sync IN Connector
Local Area Network RJ-45 Connector
Antenna Connector

DC Power Input Connector
RJ-45 4-Wire Intercom A/B Connectors
Aux OUT Connector - Auxillary
Base Sync OUT Connector
Relay Connector
Remote Transceiver RJ-45 Connector

SYSTEM SPECIFICATIONS

RF Frequency	2400 to 2480 MHz
RF Scheme	FHSS with TDMA
Effective Radiated Power	100mW using 2dBi antenna
Receiver Sensitivity	-93 dBm for 10^{-5} BER
Radio Certification	FCC Part 15.247, ETS 300 328 v1.8.1 rules (apply to model numbers ending in "EU" only**), Canadian RSS-210, license free.
Transmission Range	1,000 ft. (304.8 m) under ideal conditions. 500 ft. to 900 ft. (152.4 m to 274.3 m) typical
Audio Dynamic Range	>94 dB
Audio Frequency Response	300Hz–3.8KHz with proprietary audio voice shaping
System Latency	Less than 50 ms direct
RoHS Compliant	Yes

BASESTATION SPECIFICATIONS

Intercom Audio Channels	2
Full Duplex BeltStations per BaseStation	5
Shared BeltStations per Base	Unlimited
Number of Antenna Ports per BaseStation	1
Antenna Connector Type	RP-TNC
Number of Synchronized BaseStations	11
Maximum Range of BaseSync Cable	3,000 ft. (914.4 m)
BaseStation/BeltStation Pairing	Via supplied Mini-jack/cable
Programming Port	USB
Stage Announce and GPO Closures	6 relays via DA-15
2-Wire Intercom Interface	2 channels via XLR 3F with XLR 3M loop thru
2-Wire Intercom Compatibility	Clear Com, RTS, and Balanced compatible
4-Wire/Matrix Connection	2 ports via RJ-45
Aux Input	¼" 3 conductor jack accepts -15.5 to +4 dB, balanced, transformer isolated
Aux Output	¼" 3 conductor jack nominal -12 to +8 dB, balanced, transformer isolated
Stage Announce Output	XLR 3M, nominal -12 to +8 dB, balanced,transformer isolated
Headset Connector	4-pin male XLR (front panel)
Microphone Type	Dynamic or Electret, auto-selected
LCD Display	240 × 64 resolution, 32 level gray scale
Dimensions	1 RU unit, H 1.75 in. x W 19.0 in. x D 12 in. (44.5 mm × 482.6 mm × 304.8 mm)
Weight	10.5 lbs (4.76 kg)
Power Input	AC: 85–264 VAC at 50–60 Hertz, 15 Watts DC: Battery 11–32 VDC, 12 Watts
Operating Environment	-20° to 50° C (-4° to 122° F); 10% to 90% Humidity

*Notice About Specifications
While CoachComm makes every attempt to maintain the accuracy of the information contained in this datasheet, this information is subject to change without notice. Please check our website for the latest system specifications and certifications.

**TMB22524INEU models meet the same specifications and comply with ETSI standards (300.328 v1.8.1). Non-EU models are non-compliant with ETSI standards.