



# Wireless for the Real World



Tempest2400

Available from:



800.264.6021 | [comtronicsnow.com](http://comtronicsnow.com)

## Tempest Wireless — Reliable, intuitive wireless intercom systems that effectively meet your critical production needs.

As professional broadcast and production environments become increasingly complex, the communication link between expanding numbers of personnel becomes more critical to effective production. Both reliability and the ability to move freely around larger areas are now paramount, and because of a crowded and ever-changing RF landscape, a real world wireless intercom solution is needed.

- Robust Frequency-Hopping Spread Spectrum (FHSS) technology for reliable wireless transmission and increased user density
- License-free operation in both the 2.4GHz (Worldwide) and 900MHz (North America) frequency bands
- Fully compatible with all major 2-Wire and Matrix Intercom systems
- Tempest2400 Seamless Roaming enables users to be mobile across large productions without interrupting communications
- Scalable system options and flexibility for those needing a large number of users



Tempest is a full-featured digital wireless intercom system ready to meet the challenges of a wide range of professional applications. Advanced RF technologies operating in both the 2.4GHz and 900MHz license-free bands\* combine with unique operational modes to ensure a robust wireless link and higher user density. Even in harsh radio conditions, Tempest Wireless allows small or large groups of users to communicate in single or multiple locations with ease. In addition, seamless roaming capabilities permit coverage of large, complex areas without any user interaction. Tempest Wireless is flexible and scalable, and the system is easy to set up, monitor, and control—making any job easier and more productive.

# FREQUENCY OPTIONS

## Tempest2400 and Tempest900

**Tempest2400** operates in 2400-2480 MHz (80MHz) of the spectrum often referred to as the 2.4GHz ISM band. Advanced digital wireless transmission technologies allow users the ability to operate up to 11 BaseStations and 55 full-duplex BeltStations in the same RF space at the same time with no license requirements and no frequency coordination. Tempest's wireless system, while advanced and sophisticated, has been designed to be very easy to set up and use virtually anywhere worldwide.

### Advantages of the Tempest2400 System:

- License-free operation using FHSS (Frequency-Hopping Spread Spectrum) technology worldwide
- Seamless Roaming capabilities
- 2xTx Dual Transmission Scheme
- Co-exists with Wi-Fi devices for interference-free operation

**Tempest900\*** operates in 902-928 MHz (26MHz) of the spectrum often referred to as the 900MHz ISM band and allows a maximum of 5 BaseStations and 25 full duplex BeltStations operating license-free using FHSS (Frequency-Hopping Spread Spectrum) technology. Tempest900 offers improved coverage in areas where more structural penetration is required and in large enclosed areas where multipath interference can be a factor. The longer wavelengths of the 900MHz frequency band allow Tempest900 signals to break through dense walls and other structural objects more readily, increasing the range for users.

### Advantages of the Tempest900 System:

- License-free operation using FHSS (Frequency-Hopping Spread Spectrum) technology in North America
- Increased range and performance through structures, walls or crowds of people
- Reduced interference due to multi-path signals

# 2400



*Tempest2400 with SBP-151T Headset*

# 900



*Tempest900 with SBP-151T Headset*

# TEMPEST SYSTEMS

## BaseStation & BeltStation



TMP-B424 (4CH BaseStation)

### BaseStation

- Full featured 2- and 4-channel models available in both the 2.4GHz and 900MHz bands
- Compatible with all major 2-Wire and 4-Wire systems
- User friendly and easy-to-use interface
- Back-lit LCD display for easily readable real-time status of all active BeltStations operating in Normal Mode
- Remote Transceiver option allows antenna to be remotely positioned up to 1500 ft. from BaseStation with no signal loss
- Firmware Updates available through a simple USB interface
- Common broadcast and production features such as Stage Announce, Mic Kill, Call, as well as GPO Relays, and Program audio options

### BeltStation

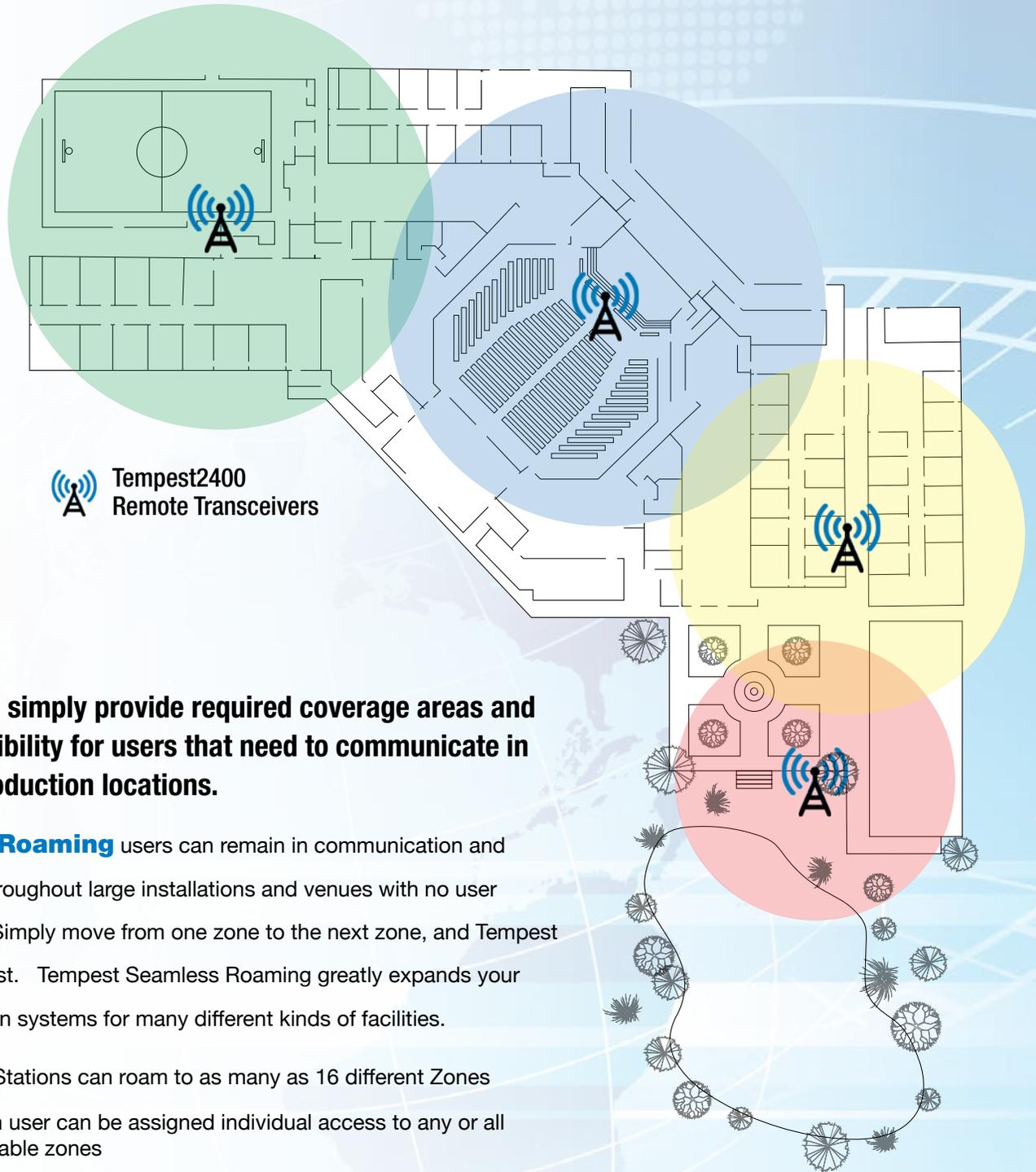
- Full featured 2- and 4-channel models available in both the 2.4GHz and 900MHz bands
- Dual Listen and Talk Capabilities with Latch or Momentary Push-to-Talk options
- Back-lit LCD display for quick and easy access to the user friendly menu set and easy-to-see real-time status
- Polyurethane overmold creates a durable, weather-resistant design
- Supplied removable and rechargeable Lithium-Polymer battery or optional standard AA battery (x3) operation



TMP-R424 BeltStation with  
SBP-151T Headset

# SEAMLESS ROAMING

Increased Coverage & Flexibility



 Tempest2400  
Remote Transceivers

**Quickly and simply provide required coverage areas and system flexibility for users that need to communicate in multiple production locations.**

**Seamless Roaming** users can remain in communication and move freely throughout large installations and venues with no user intervention. Simply move from one zone to the next zone, and Tempest handles the rest. Tempest Seamless Roaming greatly expands your ability to design systems for many different kinds of facilities.

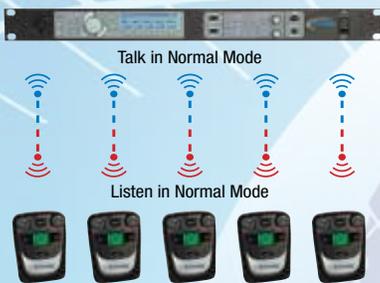
- BeltStations can roam to as many as 16 different Zones
- Each user can be assigned individual access to any or all available zones
- Exclusive to the Tempest2400 System

# MODES OF OPERATION



**All Tempest Wireless BaseStations** offer 3 modes of operation: Normal, Shared, and Split

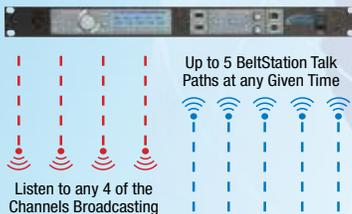
## Normal BaseStation Mode



**Normal Mode** users can use up to 5 BeltStations per BaseStation.

- All BeltStations in Normal Mode are fully featured, giving each user full access to all Tempest features at all times with no restrictions
- Each BeltStation is full duplex with dual-talk, dual-listen, call signaling, stage announce, and more
- Talk buttons may be operated in either momentary or latching mode
- Full BeltStation telemetry and remote control of key functions are available real-time at BeltStations, BaseStations, and the included T-Desk software

## Shared BaseStation Mode



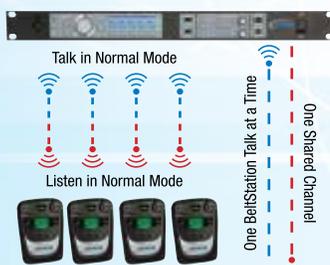
**Shared Mode** allows an unlimited number of BeltStations on a single BaseStation, where up to five BeltStations can talk at any given time.

- All BeltStations share the same capabilities
- All BeltStations have dual-listen and dual-talk capability and full local channel selection
- Operates with Momentary Talk only
- Features include Stage Announce, Wireless ISO, Relays, and more

## Unlimited BeltStations in Shared Mode



## Split BaseStation Mode



**Split Mode** allows for up to four BeltStations in Normal Mode operation and an unlimited number of BeltStations on one shared channel.

- BaseStation provides a combination of Normal and Shared Modes
- Up to 4 BeltStations operate with the same features and capabilities as Normal Mode with no restrictions
- Unlimited shared BeltStations all share the same single channel for all users
- One of the Shared BeltStations may talk at a time; operates with Momentary Talk only
- Stage Announce, Wireless ISO, and Relay functions are available for one BeltStation at a time

## Unlimited BeltStations in Split Mode



# TEMPEST MASTERBELT

**Tempest MasterBelt®** offers reliable full duplex communications for many applications where freedom of movement or ease-of-use is essential.

The Tempest MasterBelt is ideal for mobile productions where users need to move together within the same workspace.

- A completely portable Wireless Intercom Solution
- BaseStation functionality in a BeltStation
- No installation required
- No rack-mount needed
- Normal, Shared, and Split Modes available
- Available in 2-channel Tempest2400 only
- Compatible with Tempest2400 BeltStations
- Over 8 hours of battery life



# T-DESK SOFTWARE

Tempest2400 and Tempest900 systems include Tempest Desktop software (T-Desk) to simplify the process of optimizing, monitoring, and managing your Tempest systems. T-Desk is a PC-based program that provides an intuitive method of accessing multiple Tempest Wireless BaseStations and their associated BeltStations, allowing a user to adjust critical settings from a remote computer in real-time. Multiple, easily accessible software screens display relevant, real-time system information in a manner that is easy to see and adjust.



Profiles View



BaseStation View



BeltStation View

## T-Desk Highlights

- Visually friendly and easy-to-use optimization tools
- Battery alert status dashboard
- Mic Kill functionality
- View and control 2-Wire/4-Wire I/O and Aux out levels
- BeltStation sidetone and mic adjustment
- Save and load device profiles for quick configuration

# Tempest

## Accessories



TMP-RT24

TMP-RT09

### Remote Transceiver

- Enables a user to remotely locate the BaseStation antenna up to 1500 ft. (450 m) using a standard CAT-5 cable
- Digital connection to the Remote Transceiver means no RF signal loss
- Available for both Tempest2400 and Tempest900 Systems



TMA-RTEXT-01

### RT Line Extender

- Used in applications that require a remote transceiver location over 1500 ft (450 m) from a BaseStation
- Increases your CAT-5 cable length by an additional 3000 ft. (914 m) for a total length of 4500 ft. (1372 m)
- Using as many as 3 Line Extenders with the Remote Transceiver allows cable runs up to 7500 ft. (2286 m) in total length



TMA-BCHRG-05A

### 5-Bay Battery Charger

- Total charge time of less than 3 hours
- Charges up to 5 batteries at one time
- Supplied Universal Power Supply



T-LP1

### Lithium-Polymer Battery

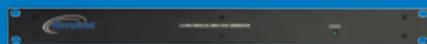
- One battery supplied standard with each BeltStation
- Battery life up to 9 hours



TMP-ZSYNC-04

### ZSync™ Dongle

- Enhances the performance of Tempest2400 systems
- Provides a reference signal that synchronizes the hopping patterns of all connected BaseStations
- Required for all roaming configurations
- Recommended for 2.4GHz systems where 3 or more BaseStations are in use



TMP-ZPAR-01

### Parallel ZSync Generator

- Provides sync reference signal for Tempest2400 systems
- Syncs up to 12 BaseStations
- Allows for BaseStation removal without interruption of sync source
- Includes a sync input for additional configuration options



SBP-151T

### SmartBoom® PRO Headset

- Outstanding audio quality with enhanced acoustic isolation
- Sleek, low profile design available in single-ear and dual-ear models
- Dynamic, noise-cancelling cardioid microphone
- Flexible, ambidextrous swiveling mic boom
- Flip-up microphone mute function
- Collapsible design for easy storage
- Detachable cable
- Cable terminated with 4-PIN female XLR connector

# System Specifications\*

Model	Tempest2400	Tempest900
RF Frequency	2400 to 2480 MHz	902 to 928 MHz
RF Scheme	FHSS with TDMA	
Effective Radiated Power	100 mW using 2 dBi antenna	250 mW using 2 dBi antenna
Receiver Sensitivity	-93 dBm for 10-5 BER	-100 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.	FCC Part 15, Canadian RSS-210, license free
Transmission Range	1,000 ft. (304.8m) under ideal conditions. 500 ft. to 900 ft. (152.4m to 274.3m) typical	
Audio Dynamic Range	>94 dB	
Audio Frequency Response	300 Hz–3.8 KHz with proprietary audio voice shaping	
System Latency	Less than 50 ms direct	Less than 60 ms direct
RoHS Compliant	Yes	No

	BELTSTATIONS		BASESTATIONS	
Model	2CH Belt	4CH Belt	2CH Base	4CH Base
Intercom Audio Channels	2	4	2	4
Simultaneous Listen Paths	True Dual Listen			
Headset Connector	4-pin male XLR		4-pin male XLR (front panel)	
Microphone Type	Dynamic or Electret, auto-selected			
LCD Display	102 x 80 pixels		240 x 64 resolution 32 level grayscale	
Antenna	Internal +2 dBi patch (Tempest2400) PIFA (Tempest900)		1 (RP-TNC port)	T2400: 2 (RP-TNC port) T900: 1 (RP-TNC port)
USB BeltStation Power Supply	Input 100–240 V, 0.3 A, 50–60 Hz; Output 5 V, 1.25 A			
Battery Life, Rechargeable	Up to 9 hours			
Battery Charge Time, Lithium-Polymer battery	Battery Charge time under 3 hours			
Optional Power	3 Standard AA alkaline cells			
Battery Life, alkaline batteries	Approximately 4 hours			
Weight	14.3 oz (with Lithium-Polymer battery) (1.17 kg)		10.5 lbs (4.76 kg)	
Operating Environment	-20°C to 50°C (-4°F to 122°F); 10% to 90% humidity			
Dimensions	4.0 in. W x 6.1 in. H x 1.75 in. D (102 mm x 156 mm x 44.5 mm)		1 RU unit, H 1.75 in. x W 19.0 in. x D 12 in. (44.5mm x 482.6mm x 304.8mm)	
Full Duplex BeltStations per BaseStation			5	
Shared BeltStations per Base			Unlimited	
Number of Synchronized BaseStations			T2400: 11	T900: 3-5
Maximum Range of Base Sync Cable			3,000 ft. (914.4 m)	
BaseStation/BeltStation Pairing	Via supplied mini-jack cable		Via supplied mini-jack cable	
Programming Port	USB		USB	
Stage Announce and GPO Closures			Bases: 6 relays via DA-15	
2-Wire Intercom Interface			2 channels via XLR 3F with XLR 3M loop thru	4 channels via XLR 3F with XLR 3M loop thru
2-Wire Intercom Compatibility			Clear-Com, RTS, Balanced compatible	
4-Wire/Matrix Connection			2 ports via RJ-45	4 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	
Power Input, AC			85–264 VAC at 50–60 Hertz, 15 Watts	
Power Input, DC			Battery, 11–32 VDC, 12 Watts	

Tempest "EU" models comply with ETSI standards (ETSI EN 300 328 v1.8.1) Non-EU models are non-compliant with ETSI standards.

\* Please check our website for the latest system specifications and certifications.



Available from:



### ComtronICS

2350 Fortune Drive  
Lexington KY 40509

[www.comtronicsnow.com](http://www.comtronicsnow.com)

Voice: 1.800.264.6021 or +1.859.299.9494

Fax: 1.859.299.9334

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