

# Innovative Industrial Solutions



I.I.S.

## Tempest 900 MHz /2.4GHz Wireless Intercom System



900MHz or 2.4 GHz Frequency Band: License-free Operations in U.S. and Canada, Tempest ensures robust performance with less data packet loss and better coverage in environments where there are more structural obstacles, including dense walls (made from concrete or brick).

Innovative Industrial Solutions, Inc.

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## Tempest 900 MHz /2.4GHz Wireless Intercom System



### The Tempest BaseStation 900/2400

BaseStations operate in the 900MHz or 2.4 GHZ frequency bands. 922/944 (900) 222/244 (2.4 GHZ) BaseStations are compatible with existing 4-wire matrix or 2-wire Clear-Com, RTS or AudioCom partyline intercom systems. The LCD display makes setup easy and efficient while providing real time status of corresponding BeltStations. BaseStations\* can operate in one of three modes: normal, Shared or Split in normal Mode, the Tempest 900/2400 wireless system can have up to 5 wireless BeltStations per BaseStation in full duplex, simultaneous operation. A total of 5 Tempest 900 BaseStations and 25 Tempest full duplex wireless BeltStations can operate in close proximity while maintaining excellent system performance. Tempest900/2400 BaseStations come fully featured with Stage Announce, Stage Relay, Auxiliary in/Out and Relay connections, Remote Mic Kill, Minimum and Maximum volume levels per BeltStation, and Wireless BeltStation Call capabilities. Battery monitoring is available at the BaseStation and through the T-desk application. In addition, all BaseStations are provided with an Omni-directional Whip antenna and a Remote Transceiver is available as optional accessory.

#### 2.4GHz model

**2400 – 2480 MHz Frequency Range**

**5 beltpacks per base in full duplex mode**

**10 base stations in one area  
up to 50 Belt Stations**

**4 pin XLR Male headset connector  
(same as Telex models)**

#### 900MHz model

**902-928 MHz Frequency Range**

**5 beltpacks per base in full duplex mode**

**5 base stations in one area  
up to 25 Belt stations**

**4 pin XLR Male headset connector  
(same as Telex models)**

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### The Tempest 900 BeltStations,

CP-922 (for use with the CM-922 2-channel or CM-944 4-channel BaseStation) and CP-942 (for use with the CM-944 4-channel BaseStation) provide users with full-duplex communications.

CP-222 (for use with the CM-222 2-channel or CM-244-channel BaseStation) and CP-242 (for use with the CM-244 4-channel BaseStation) provide users with full-duplex communications.

The Tempest900/2400 BeltStations are designed with a comfortable and rugged casing for long-term durability, can operate in either normal or Shared Mode, and with flexible battery options.



### CP-942/CP-242 BeltStation

(4-channel audio) is capable of true dual talk/listen functionality, allowing each user to simultaneously monitor and/or talk on two of the four channels (A or B and C or d).



### CP-922/CP-222BeltStation

(2-channel audio) is capable of true dual talk/listen functionality, allowing each user to simultaneously monitor and/or talk on both (A or B).

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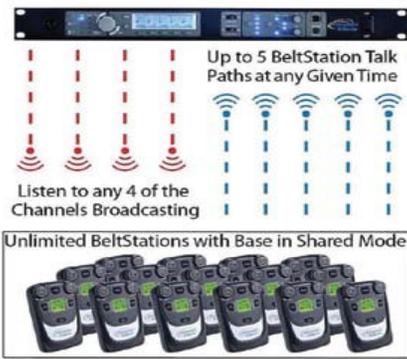
## Tempest 900 MHz /2.4GHz Wireless Intercom System

Unique to Tempest Systems, all BaseStations offer 3 modes of operation: normal, Shared and Split Mode.



In **Normal Mode**, users can have up to 5 BeltStations per BaseStation. All BeltStations in this mode are in the standard operating mode giving the user control of the channels on which they operate and dual listen/talk functionality at any given time.

- Each BeltStation has full duplex capability at all times
- BeltStation talk buttons may be operated in either momentary or latching mode Sidetone and microphone gain can be set individually for each BeltStation
- Full BeltStation telemetry is available in real-time at the BaseStation and T-desk; settings can be adjusted from the BaseStation and/or T-desk



The **Shared Mode** utilizes only BeltStations set as Shared, allowing an unlimited number of BeltStations per BaseStation. Only 5 Shared BeltStations may talk at any given time; however, they have all four channels available with dual talk and dual listen capability.

- All Shared BeltStations:
- Are inherently full duplex (talk/listen at the same time)
- Can easily be set into Shared Mode instead of normal Mode from BeltStation menu Operate in PTT (Push-to-Talk) only
- Feature Stage Announce, Wireless iSO and Relays
- No Telemetry or remote control from BaseStations and T-Desk



In **Split Mode**, users are operating in a combination of the other two modes: normal and Shared Modes. This mode offers the use of 4 BeltStations (per BaseStation) that utilize the full duplex capability and allows an unlimited number of Shared BeltStations to operate on the final slot.

- Four full-duplex BeltStations operating in normal Mode
- Unlimited number of shared BeltStations may be used on a single channel
- BeltStations are inherently full duplex (talk/listen at the same time)
- Shared BeltStations operate in Push-to-Talk (PTT)
- One user of the common channel can speak at a time. normal Mode users can be latched.
- Telemetry and remote control available from BaseStation or T-desk for Normal Mode

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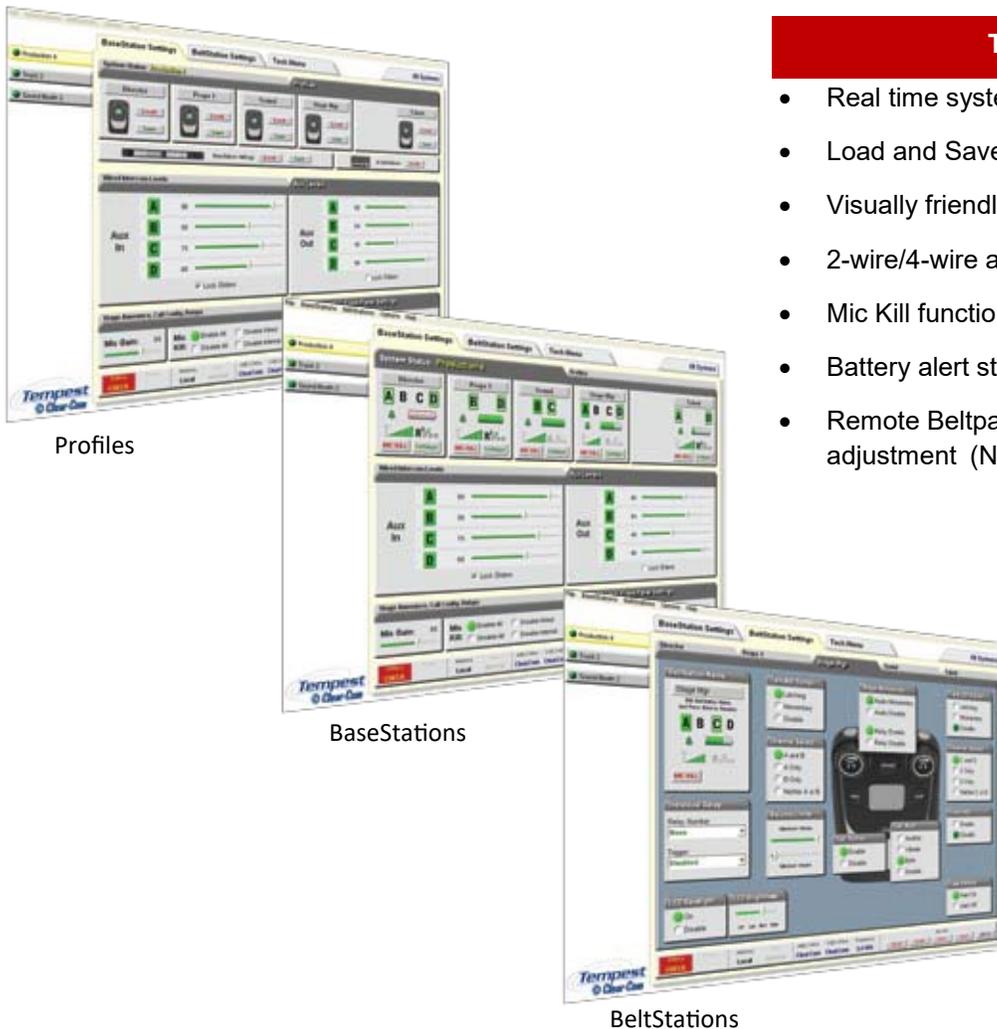


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## Tempest 900 MHz /2.4GHz Wireless Intercom System

### T-Desk Software (included with all Tempest systems)

All Tempest Wireless intercom Systems are supplied with T-desk, a PC-based desktop application for monitoring and managing the devices in a wireless network. Not only does T-desk simplify the configuration and management process, it provides ultimate flexibility by allowing these functions to be performed from a remote location via a LAN (Local Area Network) connection. T-Desk provides an intuitive, self-evident method of optimizing multiple Tempest BaseStations and their associated BeltStations.



### T-DESK BENEFITS

- Real time system monitoring and management
- Load and Save BeltStation and BaseStation profile
- Visually friendly and easy to use interface
- 2-wire/4-wire and Auxiliary level control
- Mic Kill functionality
- Battery alert status
- Remote Beltpack sidetone and microphone adjustment (Normal Mode BeltStations only)

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## Tempest 900 MHz /2.4GHz Wireless Intercom System

### ACCESSORIES



#### T-BC5A: 5-Bay Battery Charger

Tempest 5-bay battery charger for charging lithium- Polymer batteries outside of the BeltStation.

\* Charger and batteries sold separately



#### CCT-RT: remote Transceiver

Tempest Remote Antenna Transceiver is powered by Tempest BaseStation via CAT-5 cable up to 1500 feet (457 meters).

\* includes 15 ft CAT-5 cable and two whip antennas.



#### T-LP1: Lithium-Polymer Battery

Tempest 3.6VdC, 2000mAh rechargeable lithium-Polymer battery. The T-LP1 provides up to 9 hours of active use.

\* Not available in EU countries.

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## Tempest 900 MHz /2.4GHz Wireless Intercom System

### TEMPEST2400 AND TEMPEST900 COMPARISON

Model	Tempest2400	Tempest900
Frequency Range	2400-2480Hz	902-928Hz
Number of Discrete Frequencies	43	37
Number of Hopping Patterns	64	64
Number of Co-locatable Bases	10	5
Dual Antenna Technology	Yes	No
2xTX Technology	Yes	No
Propagation Tendencies	Reflects off hard surfaces	Penetrates hard surfaces
Band Adjustment Capability	Yes	No
RF Cable Loss	Up to 3x more than Tempest900	Up to 1/3 of Tempest2400

### SYSTEMS SPECIFICATIONS

Model	Tempest2400	Tempest900
RF Frequency	2400 to 2480GHz	902-928MHz
Effective Radiated Power	100mW EIRP using 2dBi antenna	250mW EIRP using 2dBi antenna
Radio Certification	FCC Part 15.247 and ETS 300.328 rules, license free	FCC Part 15 Canadian RSS-210, license free
RF Scheme	FHSS with TDMA	
Receiver Sensitivity	-93dBm for 10BER	-100dBm for 10BER
Audio Dynamic Range	>94dB	
Transmission Range	Up to 1,000ft (305m); 500 - 900ft (150 - 275m) typical	
Audio Frequency Response	300Hz - 3.8KHz with proprietary audio voice shaping	

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## Tempest 900 MHz /2.4GHz Wireless Intercom System

BASESTATION SPECIFICATIONS				
Model Number	CM-244	CM-222	CM-944	CM-922
RF Frequency	2400 to 2480GHz	2400 to 2480GHz	902-928MHz	902-928MHz
Intercom Audio Channels	4	2	4	2
No. of Antenna Ports per BaseStation	2	1	1	1
No. of Synchronized BaseStations	10	10	5	5
No. of BeltStations (Normal)	5 per BaseStation/50 max	5 per BaseStation/50 max	5 per BaseStation/25 max	5 per BaseStation/25 max
No. of BeltStations (Shared)	Unlimited	Unlimited	Unlimited	Unlimited
Antenna Connector Type	RP-TNC			
BaseStation/BeltStation Pairing	3.5mm Mini-jack/cable			
Programming Port	USB			
Stage Announce and GPO Closures	6 relays via DB15			
2-Wire Intercom Interface	4 channels	2 channels	4 channels	2 channels
2-Wire Intercom Compatibility	Clear-Com, RTS and Balanced compatible			
4-Wire/Matrix Connection	4 ports via RJ-45	2 ports via RJ-45	4 ports via RJ-45	2 ports via RJ-45
Aux Output	1/4" 3-conductor jack nominal -12 to +8dBV, balanced, transformer isolate			
Front Panel Headset	4-pin male XLR			
Microphone Type	Dynamic or Electret, Auto-Selected			
Weight	10.5 lb (4.75 kg)			
Environmental	-4° – 122°F (-20° – 50°C)			
Dimensions	19in. W x 1.75in. H x 12in. D (483mm x 44mm x 305mm)			
Power	100-240V, 50/60Hz, 11-32V, DC Power			

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## Tempest 900 MHz /2.4GHz Wireless Intercom System

BELTSTATION SPECIFICATIONS				
Model Number	CP-242	CP-222	CP-942	CP-922
RF Frequency	2400 to 2480GHz	2400 to 2480GHz	902-928MHz	902-928MHz
Intercom Audio Channels	4	2	4	2
Headset Connector	4-pin male XLR			
Microphone Type	Dynamic or Electret, Auto-Selected			
Antenna	Internal Patch			
Supplied Battery	Lithium Polymer			
Battery Charging	via mini USB connector using supplied charger			
Battery Life, Rechargeable-Lithium-Polymer	Up to 9+ hours	Up to 9+ hours	Up to 8+ hours	Up to 8+ hours
Battery Life, Alkaline	Up to 4 hours		Up to 3.5 hours	
Charge Time, Rechargeable Lithium Polymer	2 3/4 hours in BeltStation with mini USB charger; 2 1/2 hours in 5 bay charger (from empty)			
Alternative Power	3 Standard AA Alkaline cells			
Weight	14.3 oz (0.41kg)			
Environmental	-4° – 122°F (-20° – 50°C)			
Dimensions	4.0" (W) x 6.1"(H) x 1.75" (D) (102mm x 156mm x 44.5mm)			
Charger Input	100-240V, 0.3A, 50/60Hz			
Charger Output	5V, 1.25A			

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