Product Specification Sheet
WNC-110R-B7
Remote Network Receiver



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The WNC-110R-B7 is a high-performance, network-managed wireless receiver designed to capture and route critical life-safety alarms from patient pendants, pull-stations, and asset trackers to the central nurse call master console. Operating on a highly secure, supervised radio frequency band, the WNC-110R-B7 acts as an intelligent network node that constantly monitors the operational health, battery status, and signal strength of all field devices within its perimeter. Its industrial-grade transceiver architecture provides robust signal penetration through dense clinical barrier walls, eliminating dead zones in hospitals, assisted living communities, and multi-wing skilled nursing facilities.

Architects' and Engineers' Specifications

1. GENERAL
A. The contractor shall supply and integrate network-managed wireless remote receivers to capture and process emergency transmission data packets from all distributed wireless call devices.

B. Remote network receivers shall bear the model designation WNC-110R-B7.

1.2 SYSTEM ARCHITECTURE & FUNCTIONAL REQUIREMENTS
A. The receiver shall utilize a supervised, 900 MHz spread-spectrum RF transceiver array to process multi-channel alarms simultaneously without packet collision.

B. A backplane transport shall be established via a standard RJ-45 Ethernet connection, receiving power directly from an IEEE 802.3af PoE network switch or equivalent.

C. The receiver must maintain internal non-volatile memory capable of caching alarm events during localized network infrastructure dropouts, restoring packet delivery immediately upon connection restoration.

D. Devices must continuously execute self-diagnostic protocols, reporting status anomalies including "Receiver Offline," "RF Jamming Detected," and "Antenna Fault" to the central master software configuration console within 60 seconds of occurrence.

Specifications

- **Operating Frequency:** 900 MHz band (902–928 MHz) / 7-Channel FHSS Pattern
- **Data Throughput / Interface:** 10/100 Base-T RJ45 Ethernet Port
- Power Requirements: PoE (IEEE 802.3af, Class 1) or Local 12V DC @ 500mA
- **Enclosure Materials:** Flame-retardant ABS, structural matte white finish
- **Dimensions:** 6.5" H x 4.25" W x 1.25" D (excluding external antenna)
- **Mounting Options:** Surface-mount wall plate, ceiling grid clip, or standard 2-gang box mounting
- **Operating Temperature:** 32°F to 122°F (0°C to 50°C)
- **Humidity Range:** 0% to 95% non-condensing relative humidity

Equipment Options

The WNC-110R-B7 network receiver can be configured or augmented with the following options to match specific structural footprints:

- **WNC-ANT-HELI:** High-gain, omnidirectional helical antenna for standard ceiling or corridor installations.
- **WNC-ANT-YAGI:** Directional Yagi antenna array for focused, long-range courtyard or multi-building coverage expansion.
- **WNC-110R-ENC:** NEMA 4X weather-proof, high-impact polycarbonate enclosure for outdoor courtyards, loading docks, or high-moisture clinical wash bays.
- **WNC-110R-PS:** Optional 12V DC localized backup power supply unit for network legs lacking PoE capability.

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Features

- **Fully Supervised Telemetry:** Continuously polls and monitors field devices for low battery, missing links, or tampering, reporting faults in real-time to the main system server.
- **Frequency-Hopping Spread Spectrum (FHSS):** Utilizes dynamic RF hand-hopping to mitigate signal collision, multi-path interference, and intentional or accidental jamming.
- **Power over Ethernet (PoE):** Supports IEEE 802.3af PoE for single-cable deployment, streamlining installation by consolidating power and data pathways.
- **Local Buffer Memory:** Features non-volatile internal data logging to store critical alarm events locally in the event of a temporary network disconnection from the central console.
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- **Dynamic Signal Strength Indicator (RSSI):** Delivers precise signal-strength metrics for every received transmission, simplifying field calibration, network mapping, and system commissioning.
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- **Advanced Error Correction:** Incorporates proprietary algorithmic error tracking to validate incoming data packets, preventing false alarms or dropped emergency signals.

Compliance and Certification

To ensure complete compliance with life-safety network operations and low-voltage signaling laws within medical environments, the WNC-110R-B7 satisfies the following certifications:

- **FCC Status:** Certified under FCC Part 15 Class B (FCC ID registered for intentional radiators operating within the public 900 MHz ISM band). Operation is subject to the conditions that it causes no harmful interference to neighboring systems.
- **UL Certification:** Listed under UL 1069 (Standard for Hospital Signaling and Nurse Call Equipment) and UL 2560 (Emergency Call Systems for Assisted Living and Independent Living Facilities) when implemented as part of a validated network deployment.
- **RoHS Status:** 100% RoHS Compliant. Formulated completely free of lead, polybrominated biphenyls, and restricted environmental hazards.

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