Wireless Nurse Call System

Model: FBXWNCS10-LCD

Technical Product Specification Document

FORBIX SEMICON® presents a complete 10-Bed Wireless Nurse Call System. This advanced healthcare communication system provides instant, reliable wireless alerts between patients and the nurse station, ensuring prompt response and enhanced patient safety.

- **Complete 10-Bed Setup**: Everything required for ten patient beds in a single package.
- **Smart & Customizable**: Features an LCD display, programmable room names (e.g., "Room 101", "ICU-A"), and wireless configuration via WiFi.
- **Plug-and-Play Installation**: Fully wireless operation between beds and the central station means no complex wiring.
- **Professional & Reliable**: Built with the latest RF technology, backed by one year of warranty and free technical support.

Components included in the set

The model **FBXWNCS10-LCD** system includes the following core components:

- **10 × Wireless Patient Remote Controllers** (each with an A23 battery)
- **1 × Central Receiver Unit** (with a VGA female connector for monitor connection)
- **1 × Power Adapter** (110-240V AC to 12V DC)

Technical Data

Index (Table of Contents)

Wireless Nurse Call System.....	Page 2
Patient Call Button Remote Controller.....	Page 3
Nurse Station Receiver Console with VGA.....	Page 4
Regulated AC Power Supply Adapter.....	Page 5
Remote Control Battery.....	Page 6
Application Images of Wireless Nurse Call System.....	Page 7
Nurse Station Console Parallel Monitor Screen.....	Page 8
Receiver Console Web Interface Settings.....	Page 11
Revision History.....	Page 12
Company.....	Page 13

Wireless Nurse Call System, FBXWNCS10-LCD **: Technical Product Document**

Product designed and manufactured by FORBIX SEMICON®

Patient Call Button Remote Controller

Model: FBX521

Features:
3 buttons
RED light indicator, glows when any button is pressed
Top button (ON) => send ON/CALL signal to the receiver
Bottom button (OFF) => send OFF/CANCEL signal
Center button (optional), function of which can be altered as per application requirement

Technical details:
Transmitter PA +10dbm
Operating frequency: 315 – 480 MHz
System operates works on signal hop mechanism. Signal transmission happens at more than 12-15 predefined frequencies
Modulation type: GFSK
Radio IC: CC1100 (Chipcon/TI) sub-GHz frequency
Data packet error correction mechanism: FEC

Precautions and mounting locations:
Remotes can be hand operated or mounted on the a door / wall / bed / table or any flat surface
Easy mounting of remote jacket with 2 screws
For indoor purpose use only
Keep away from metallic enclosures
Do not connect the battery in opposite direction

Range of communication:
30-40 meters indoors (depending on environmental condition)
100-150 meters outdoors (in open line of sight)
Pressing the button for at least 2-3 seconds improves the range of communication

Mechanical:
Enclosure type: ABS plastic (color white)
Remote controller size:120 x 40 x 20 mm
Remote controller weight: 45 gms

Environmental Requirement:
Operating Temperature: 0°C to 40°C
Storage Temperature: 5°C to 25°C
Relative Humidity: 5% (0°C) ~ 95% (40°C) RH

Battery and operating voltage:
12 Volt (DC battery)
Battery model: 23A
Battery type: Alkaline (dry)
Battery replaceable: Yes
Battery rechargeable: No
Battery mounting: Back cover
Battery life: 3-4years, depending on the usage

RF antenna:
PCB trace antenna / wire coil antenna / metal antenna (depends on environment necessity

Mounting provisions:
Remote controller can be carried in hand or mounted on the wall using a jacket provided along with the package

Application and features:
Nurse call system for hospitals: remote with patients
Steam bath sauna rooms / spas / restaurants etc.
OPD token system for dispensaries: remote with doctors
Office peon calling system: remote with clerk / manager
Guest house attendant call unit: remote with customers in room

Nurse Station Receiver Console with VGA

Model: FBXLV01

Technical Product Specification

Precautions and mounting locations:
Device kept on the a table or can be mounted on the top of door of hospital wards / office / patient rooms / guest house rooms / hotel suites etc.
For indoor purpose use only
Keep away from metallic enclosures

Range of audible beeping sound:
Around 10-12 meters (85 decibels buzzing sound on alert)

Mechanical:
Enclosure type: ABS plastic (color white)
Receiver unit size: 200 x 150 x 70 mm
Receiver unit weight: 220 gms

Environmental Requirement:
Operating Temperature: 0°C to 40°C
Storage Temperature: 5°C to 25°C
Relative Humidity: 5% (0°C) ~ 95% (40°C) RH

Features:
Centralized station receiver with LCD monitor
WiFi control to configure settings
Directly connected to a VGA monitor (without computer)
3 themes: Preloaded / Appearing / Only Numbers
Displays 20 numbers at a time (in 5×4 matrix)
Configurable alpha-numeric room/bed numbers
Inbuilt RTC (Real-Time Clock)

Runs on 220AC/12VDC adapter power supply
VGA output for external monitor connection
Shows real-time call alerts and patient locations for efficient response tracking

WiFi 802.11 b/g/n support
Capable to extend display on another computer via WiFi Connection (over Hotspot Access Point or existing WiFi network)

Technical details:
Receiver indicator sensitivity: -112dbm
Operating frequency: 380 – 480 MHz
System operates works on signal hop mechanism. Signal transmission happens at more than 12-15 predefined frequencies
Modulation type: GFSK
Radio IC: CC1100 (Chipcon/TI) sub-GHz frequency
Data packet error correction mechanism: FEC

Operating voltage:
110-220VAC/50-60Hz to 12VDC converter adapter (supplied)
Users can also plug to any 12V external battery. Active working hours depends on the battery power

RF antenna:
PCB trace antenna / wire coil antenna / metal antenna (depends on environment necessity)

Note:
The LCD monitor is not a part of the package

Regulated AC Power Supply Adapter

Model: FBXADP12V2A

Important Note:
This product (Model: FBXADP12V2A 12V 2A Power Supply Adapter) is sourced from a qualified vendor. FORBIX SEMICON® performs quality verification at the batch level to ensure baseline specifications are met prior to distribution. However, as a non-manufactured part, this adapter is expressly excluded from the standard FORBIX SEMICON® product warranty.

Environmental Requirement:
Operating Temperature: 0°C to 40°C
Storage Temperature: 5°C to 25°C
Relative Humidity: 5% (0°C) ~ 95% (40°C) RH

Mechanical:
Enclosure: 80mm (L) × 50mm (W) × 30mm (H) Input Connector : 2 Pin Input plug
Out Cord: UL1185 18AWG VW-1 80° 300V, FT1 Line with word on the cord Length: 0.6m - 1.2m
DC Plug : 5.5mm × 2.1mm × 12mm

Input Characteristics:
Rated Voltage: 100 – 240V AC Variation
Range: 90 – 264V AC
Rated Frequency: 50/60Hz
Variation Frequency: 47 – 63Hz
Input Current: 0.6A Max. @ Any input AC voltage & output full load
Inrush Current: 35A Max. Cold start @ 240V AC input, rated output load & 25°C ambient
AC Leakage Current: 0.25mA Max. @ 240V AC input

Output Characteristics:
Voltage: 12V
Min. Load: 0.01A
Rated Load: 2A
Output Power: 24W

Combined Load / Line Regulation:
Voltage: 12V
Min. Load: 0.01A
Rated Load: 2A
Line Regulation: ± 1%
Load Regulation: ± 3%

Ripple and Noise :
Under normal voltage & nominal load, the ripple & noise are as follows when measure with Max. Bandwidth of 20MHz & parallel 10μF electrolysis capacitor & 0.1μF ceramic capacitor crossed connect at testing point.
Ripple & Noise (Max.): 120mVp-p

Turn on Delay Time: 2S Max. @ 115V AC input and output Max. Load
Rise Time: 40ms Max. @ 115V AC input and output Max. Load
Hold Up Time: 5msec Min. @ 115V AC input and output Max.
Load Efficiency: Average efficiency 87.4% minimum @ 25%, 50%, 75% & 100% of full-loading and 230V AC input (After warm up 30 minutes).

Remote Controller Battery

Model: A23

Battery type: Alkaline
Composition: Manganese Dioxide (mercury free) Battery model: A23
Chemical System: Zn / KOH-H2O / MnO2 Conditions

Nominal voltage: 12 V
Open circuit voltage: 12.3...12.9 V
New battery 12.2...12.9 V
Voltage drop 10.8…10.5 V after 1 year storage at 20°C all measurements at 22 ± 2°C ambient

Capacity rated: 50 mAh discharge under 10kΩ load 24hours/day

End Voltage (EV): 6.0V minimum: 47 mAh discharge under 10kΩ load; 24hours/day

End Voltage (EV): 6.0V Standard discharge time nominal: 55 h at 10kΩ load new battery

EV: 6.0V MAD: (minimum average 50 h at 10kΩ load after 12 months storage at 20°C duration)

EV: 6.0V 52 h at 10kΩ load for IQC measurement EV: 6.0V (tested within 30 days after delivery)

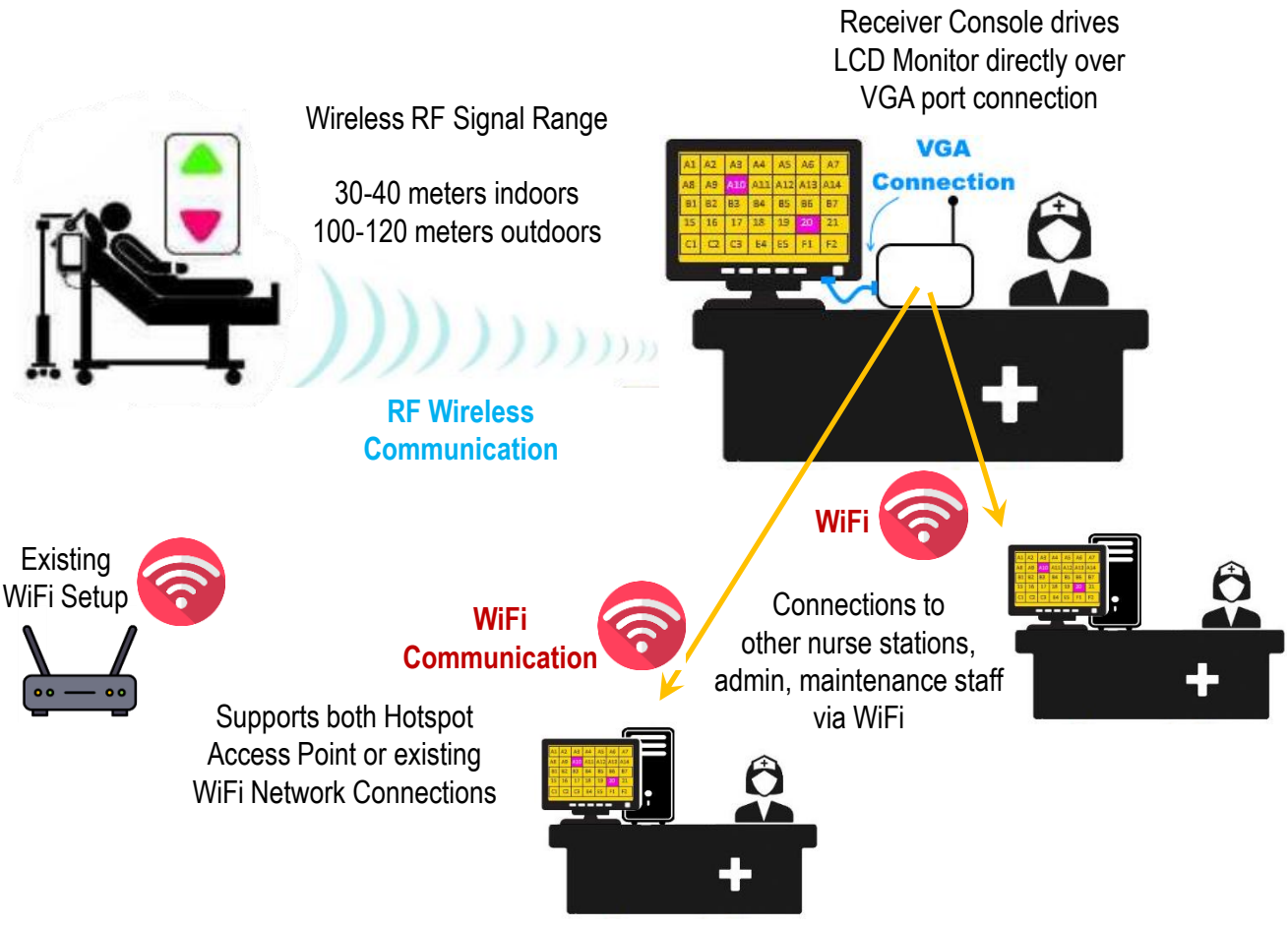
Discharge currents standard: 0.05 mA max. recommended current under continuous discharge: 0.5 mA max. recommended current under pulse discharge: 15 mA

Important Note:
This product (Model: A23 12V Alkaline Balttery) is sourced from a qualified vendor. FORBIX SEMICON® performs quality verification at the batch level to ensure baseline specifications are met prior to distribution. However, as a non-manufactured part, this adapter is expressly excluded from the standard FORBIX SEMICON® product warranty.

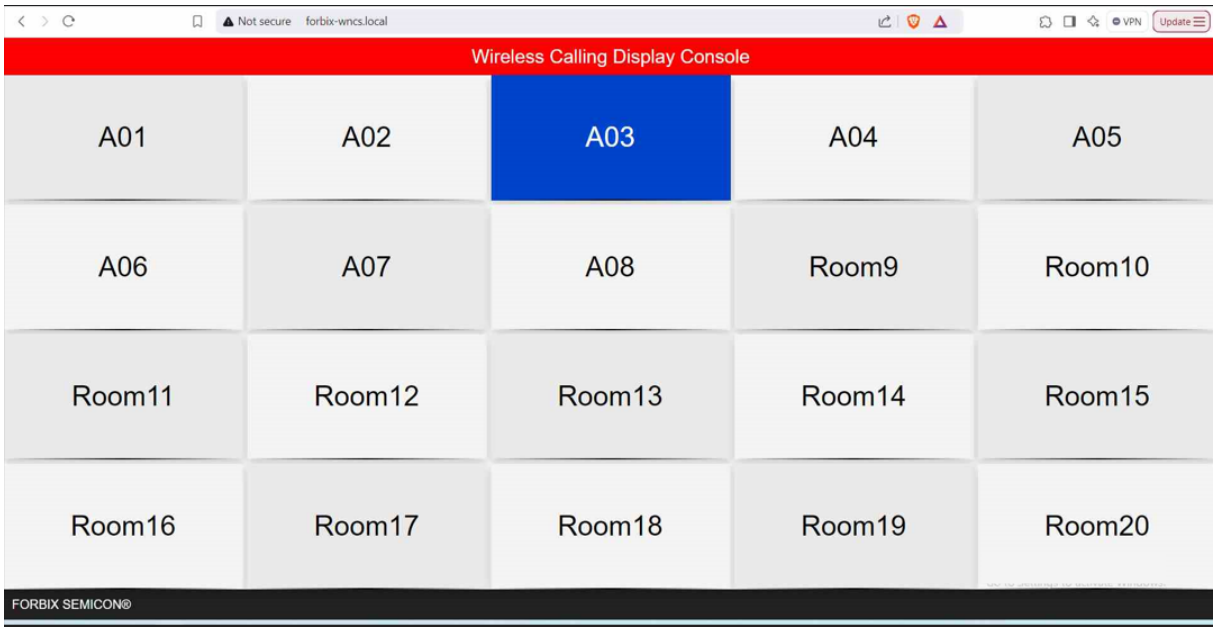
Environmental Requirement:
Operating Temperature: 0°C to 40°C
Storage Temperature : 5°C to 55°C
Relative Humidity : 5% (0°C) ~ 95% (35°C) RH
≥90 % remaining capacity after 12 months storage
Storage should not be more than Max. 3 yrs.

Mechanical:
Unit Weight: 7.9 gms
Height: 27.70 – 28.50 mm
Diameter: 9.90 – 10.6 mm
Positive Terminal Head Diameter: 5.2 – 5.8 mm

Application Images of Wireless Nurse Call System



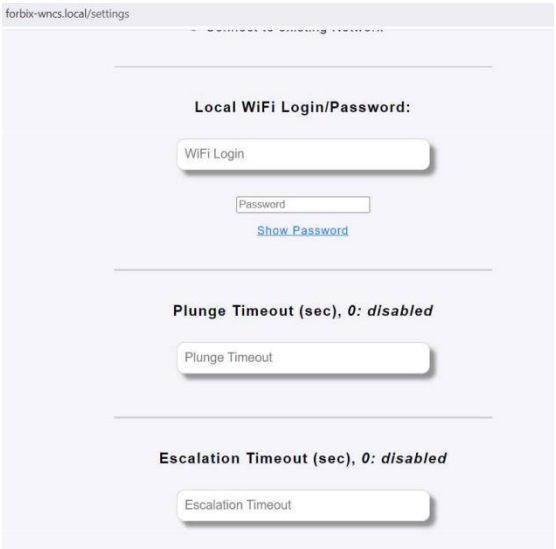
Nurse Station Console Parallel Monitor Screen

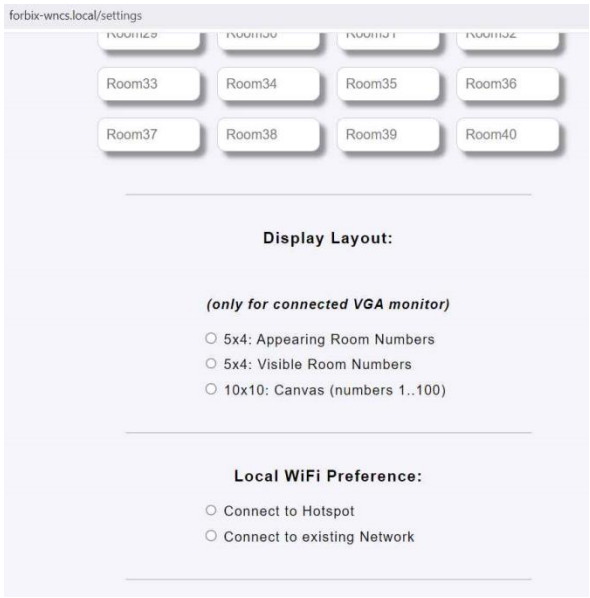


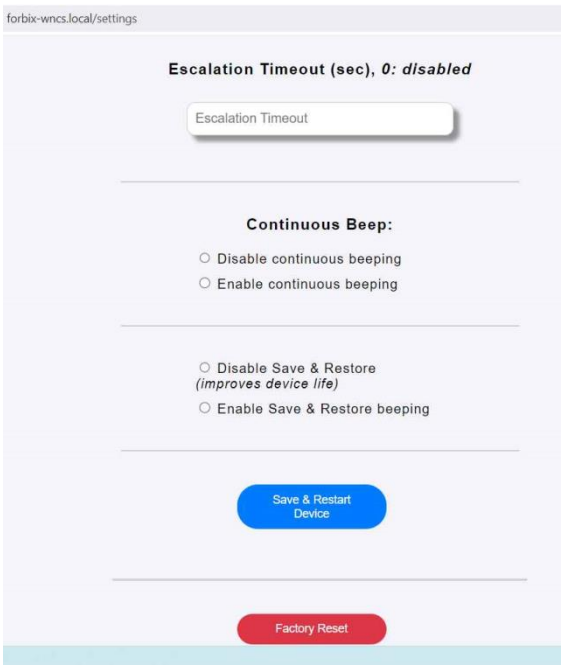
- **Multi-Screen Output:** The called bed number (e.g., A03) is displayed in a blue highlight box on all parallel monitors.
- **Customizable Naming:** Default bed names (Room01-Room20) can be reconfigured in the WiFi settings.
- Default beds are named as Room01..Room20 (this nomenclature can be changed from the WiFi settigns page
- The parallel monitor is a responsive html webpage and can be view on any smart phone, tablet or computer screen
- **Web Server Access:** Access the console interface via:
  192.168.4.1 (when connected to the unit's hotspot).
  http://forbix-wncs.local (when connected to an existing network).

  For hotspot access, connect to the WiFi network: **FORBIX_DISPLAY**

Receiver Console: Web Interface Settings







Receiver Console: Web Interface Settings

Web-Based Management Interface
The console operates as a web server, providing access to its configuration panel through any standard web browser.

Network Access Points:

When connected directly to the unit's Wi-Fi hotspot: http://192.168.4.1/settings
When connected to an existing local Wi-Fi network: http://forbix-wncs.local/

System Configuration & Customization
Access the settings page to configure and personalize the system.

Real-Time Clock (RTC) Sync: Synchronize or reset the system's internal clock to match internet or computer time.

Bed/Station Nomenclature: Program custom identifiers for up to 40 beds or call points.

Default naming: Room01 to Room40.
Format: Alphanumeric, with a maximum of 6 characters per identifier (e.g., Room01, ICU-08, WardA3).

Access Credentials: Set a local administrator username and passcode for secure access to the hotspot mode or for automatic connection to a saved local Wi-Fi network.

Backup & Restore: The system features persistent memory. In case of a power failure, it automatically restores the queue of unattended calls that were active prior to shutdown.

Visual Display Modes (VGA Output):

Mode	Description	Max. Call Points	Visual Feedback
1. 5x4 Pop-up	Only called numbers appear dynamically in a 5x4 grid.	40	Numbers pop up when called.
2. 5x4 Visible	All room numbers (up to 20) are statically visible.	20	Called numbers are highlighted in a blue box.
3. 10x10 Canvas	A full grid of numbers 1-100 is displayed.	100	Called numbers change the color of their corresponding box

Receiver Console: Web Interface Settings

Call Management & Alert Parameters
Fine-tune the system's behavior and alerting logic.

Plunge Timeout: Defines the duration (in seconds) after which a serviced or unattended call is automatically removed from the active display queue.

Escalation Timeout: Introduces a delay (in seconds) before a new call appears on the main display queue. This allows primary staff a brief window to respond before the call is escalated and becomes visible to a wider team (e.g., maintenance).

Audible Alert Control: A master toggle to enable or disable the continuous system beeper. When enabled, the beeper sounds continuously as long as **any** call remains in the active, unattended queue.

Revision History

Version	Changes	Time	Verified	Approved
v1.0	Initial Release Copy	Feb'2026	Yes	-

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