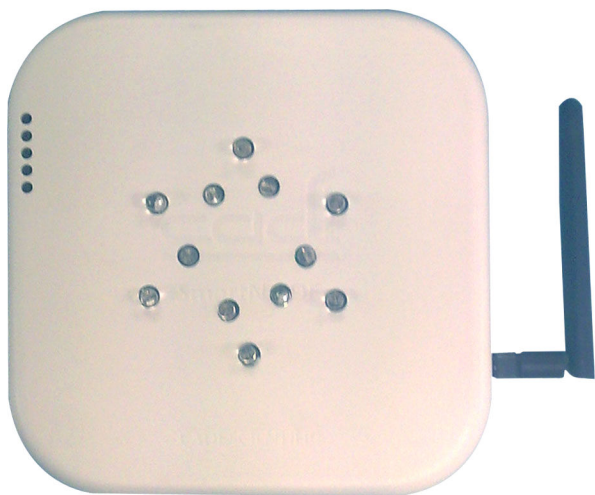


SMN-890 SmartNODE™

RFID Receiver and IR Location Beacon

User Guide



Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- 1) this device may not cause interference and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device.

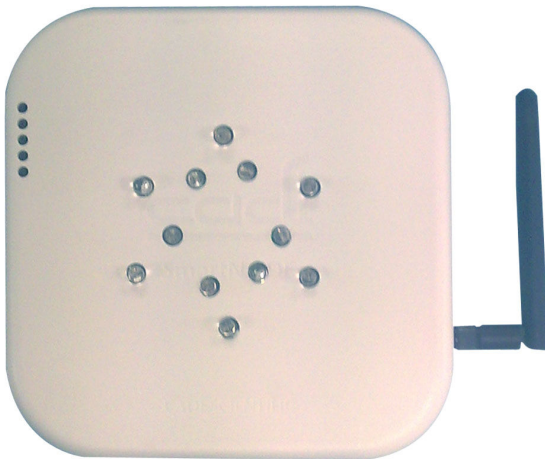
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Introduction

The SMN-890 SmartNODE™ RFID Receiver is an integral component of the SmartSense Wireless Vital Signs and Location Tracking System. The system is designed for wireless and automated measurement and recording of patient vital signs and for location tracking of patients and high-value assets.



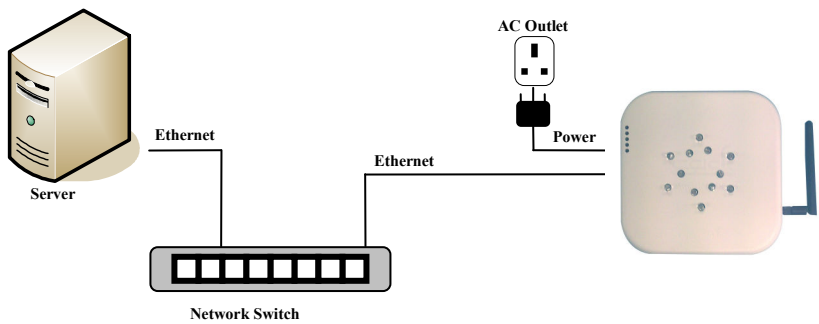
The SMN-890 will periodically transmit IR and LF beacon signal. This beacon signal consists of unique location ID. This location will be received by tag which are in range. IR and LF signal are very localized which give better location tracking determination.

The SMN-890 SmartNODE™ RFID Receiver is a LAN-enabled receiver for receiving data transmitted by the SmartSense™ series of wireless sensors and monitors. The receiver uploads data received from the sensors to the SmartSense™ database via its built in Ethernet LAN interface.

In a typical installation, the receivers are to be installed at strategic locations in the hospital in a manner to meet the specific coverage requirement of the application. The receivers being Ethernet LAN capable lend themselves well to deployment using standard Ethernet LAN equipment and infrastructure.

Typical System Setup

The following diagram shows how SMN-800/900 is deployed in a typical SmartSense System configuration.



SmartNODE Configuration

Below is SmartNode Serial Configuration .

COMMAND	VALUES	DESCRIPTION
01	00	LAN FULL DUPLEX
	01	LAN HALF DUPLEX
09	S1 <IP:PORT>	SERVER 1 IP : PORT #
	S2 <IP:PORT>	SERVER 2 IP : PORT #
	S3 <IP:PORT>	SERVER 3 IP : PORT #
	S4 <IP:PORT>	SERVER 4 IP : PORT #
0B	<IP>	GATEWAY (Need Device Reset For Setting To Take Effect)
0C	<IP>	NETWORK MASK (Need Device Reset For Setting To Take Effect)
0D	<IP>	DEVICE IP (Need Device Reset For Setting To Take Effect)
0E	00	USE DHCP (Need Device Reset For Setting To Take Effect)
	01	USE STATIC IP (Need Device Reset For Setting To Take Effect)
0F	<DATE>	DATE IN DD.MM.YY
10	<TIME>	TIME IN HH:MM:SS
11	01 ~ 65000	Upload Interval In Seconds (Default 5 secs)
14	01	Channel 1
	02	Channel 2
	03	Channel 3
	04	Channel 4
15	01	Tx Power Level 1 (-10dB)
	02	Tx Power Level 2 (-6dB)
	03	Tx Power Level 3 (+2dB)
	04	Tx Power Level 4 (+10dB)
16	00	Normal Rx Strength
	01	Reduce Rx Strength
18	<LAST 4 DIGIT OF MAC ADDRESS>	Set the device MAC Address
1A	00-255	SmartSense Network ID
20	D1 <IP>	DNS Server Address 1
	D2 <IP>	DNS Server Address 2
21	00	Don't Use DNS To Query Server Address
	01	Use DNS To Query Server Address
22	H1 <HOSTNAME >	Hostname of Server 1 use for DNS Query(Not more than 64 Bytes)
	H2 <HOSTNAME >	Hostname of Server 2 use for DNS Query(Not more than 64 Bytes)
	H3 <HOSTNAME >	Hostname of Server 3 use for DNS Query(Not more than 64 Bytes)
	H4 <HOSTNAME >	Hostname of Server 4 use for DNS Query(Not more than 64 Bytes)



23	0 ~ 254	TCP Timeout values in second
28	DEVICE ID	Query Only. Use with Command Byte "FD"
		Usage:
		FD28(CR)
		Will give the Device ID
FB	00	Clear The Data Buffer
FD	AA	Set to Factory Default. This will clear the MAC Address setting also.
FF	<Command Byte>	Query Any Of the Settings. Some command cannot be query.
	99	Reset The device.
	DEBUB	Toggle Device Debug Message
	ECHOID	Toggle Echoing of received Packet by the radio
	ECHOPID	Toggle Echoing of received Guaranteed delivery data type
	FFFORCE CHANGE MAC	Clear the MAC Address of the Device. Must be set with < command 18 >
	FFTEST EEPROM	Perform a read-write test of the EEPROM. This test will destroy all data on the EEPROM!
	SERVER=N	Force Device to connect to Server N (where N is 1 ~ 4)
	SERVER?	Check Which Server the device is currently connected
	VERSION	Get The Version No.

Specifications

TECHNICAL DATA

Interfaces

Ethernet LAN	10 Base-T
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RF

RF Frequency	US (SMN-9xx): 919.8MHz or 925MHz	Europe (SMN-8xx): 868.4MHz
Input connector	US (SMN-9xx): RP-SMA	Europe (SMN-8xx): SMA
Input impedance	50ohm	

IR

Frequency	38kHz
Nature	940 nm peak IR wavelength

LF

Frequency	125Khz
Nature	Magnetic Field Signal

Power

Power source	12VDC
Current consumption	250mA

Environment

Operating temperature range	10 °C – 50°C
Storage & Transport temperature range	-15 °C - 60 °C

Physical

Dimension	140 x 140 x 35mm
Weight	300g

Compliance

Certification	CE, FCC
RF Compliance	ETSI EN 300 220
EMC Compliance	ETSI EN 301 489
