

FCC requirements § 2.1033 (b)(3)

INSTALLATION INSTRUCTIONS

Installation Instructions furnished to the user of the radio transmitting device follow this page and contain 6 pages.



INSTALLATION INSTRUCTIONS FOR NOVA REPEATER

Introduction

The NOVA repeater increases the range between NOVA transmitters and receivers by acting as a relay station. The repeater receives alarm messages from transmitters that were registered to it and resends these messages to a receiver. Repeaters may be chained to more than double the range. Chaining means that one repeater may transmit to another repeater, which may transmit to still another repeater, or to a receiver.

Repeaters should be located centrally between the transmitters and the following receiver or repeater. Do not mount them near large metal objects or close to radiating electronic devices such as computers and monitors, which may reduce their sensitivity.

The repeater is powered by a 10 to 16 volt a-c or d-c source. Rechargeable back up batteries, not supplied, will maintain operation during mains failure.

Installation

Open the cover by twisting a screwdriver in the slots on the bottom or top of the case. Remove the circuit board. Punch out holes for the mounting screws and for the entry of the power wires. Mount the receiver on the wall and replace the circuit board.

Mount the antenna in the left screw terminal at the top of the circuit board. Set all 8 dipswitch positions to their "0" position (down).

Connect a power source of 10 to 16 volts a-c or d-c to the two outer terminals on the terminal strip on the bottom right side of the board. The polarity is not important. **Do not make any connection to the center ground terminal.**

After power is applied, plug in three rechargeable size AA nickel cadmium or nickel metal hydride batteries, observing indicated polarity.

Transmitter Registration and Setup for 1 Repeater

- 1) Mount the NOVA receiver in the vicinity of the control panel and wire it to the panel as directed in the receiver installation instructions.

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- 2) Program all NOVA transmitters to the receiver according to their installation instructions.

On the repeater:

- 3) Press WRITE push button for 3 seconds and release. Both LED's light.
- 4) Press momentarily on the push button. The upper LED blinks once.
- 5) Send a WRITE transmission from a NOVA transmitter. The upper LED blinks once to confirm successful programming.
- 6) Repeat 4) and 5) until up to 8 transmitters have been programmed. The upper LED will blink 2, 3, and 4 times for up to four transmitters, then the lower LED will blink 1, 2, 3, and 4 times for the fifth, sixth, seventh and eighth transmitters.

You may exit the WRITE mode at any time by pressing and holding the push button for around three seconds. Also, the next momentary pressing of the push button after going through eight programming locations will return the repeater to normal mode, and the LED's will extinguish.

If you are using only one repeater, skip the next section and go to **Testing the System**. You cannot chain repeaters if you are using the RWR10 receiver.

Chaining Repeaters

Additional repeaters can be placed between the first repeater and the receiver to increase range. This is called **chaining**. You do not register the transmitters to these intermediate repeaters. You only need to set the two sets of dipswitches in head-to-tail fashion as described below.

On the first repeater, set position 1 of dipswitch SW2 to ON. On the second repeater set position 1 of dipswitch SW1 to ON. If you're using only two repeaters, set all four positions of SW2 to ON.

If you have an additional repeater or repeaters after the second one, set SW2 of the second repeater to position 1 OFF, position 2 ON.



Continue incrementing the dip switches so the S1 of an intermediate repeater is set to the same positions as S2 of the previous repeater. S2 of the last repeater, which transmits directly to the receiver, is always set to all positions ON.

Figures 2 and 3 give examples of dipswitch settings for systems with two repeaters and 3 repeaters. Up to 15 repeaters may be placed in a chain.

Table 1 shows dipswitch positions corresponding to the numbers 0 through 15.

Figure 1. Dipswitch settings for 2 repeaters

Figure 2. Dipswitch settings for 3 repeaters

Table 1. Dipswitch positions

NUMBER	SWITCH POSITIONS			
	1	2	3	4
0	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
4	OFF	OFF	ON	OFF
5	ON	OFF	ON	OFF
6	OFF	ON	ON	OFF
7	ON	ON	ON	OFF
8	OFF	OFF	OFF	ON
9	ON	OFF	OFF	ON
10	OFF	ON	OFF	ON
11	ON	ON	OFF	ON
12	OFF	OFF	ON	ON
13	ON	OFF	ON	ON
14	OFF	ON	ON	ON
15	ON	ON	ON	ON

Testing the System



A repeater that has transmitter codes registered in it can send signals to the following receiver or intermediate repeater without having to use the transmitters. The following steps apply when there is one repeater in the system.

- 1) Enter WRITE mode by pressing the push button for three seconds. Note that both LED's light.
- 2) Press momentarily on the push button. The repeater will transmit an alarm message having the same address code as the first transmitter programmed. Pressing the push button again will send the address code of the next transmitter that was programmed and so on until up to eight messages are transmitted.
- 3) Note that the receiver responds to the repeater transmissions. It is recommended that the receiver be placed in COMMUNICATION mode for this test.
- 4) If the repeater transmissions are not reliably received, move the repeater or receiver and repeat the test.
- 5) Return the repeater to its normal mode. Operate all transmitters which were programmed to the repeater and observe that the receiver responds. Reception by the repeater can be confirmed by blinking of the upper LED. Interference on the channel will be indicated by blinking of the lower LED. If necessary, relocate the transmitters or repeater until proper receiver response is attained.
- 6) The receiver may receive both from the repeater and directly from a transmitter. In this case there may be two responses by the receiver, since the repeater transmission is delayed to prevent interference to its signal by the transmitter.

When there are intermediate repeaters in the system, the above procedure is used on the first repeater, which transmits to the second repeater, and so on along the chain. Observe the signal LED's on the intermediate repeaters to confirm reception.

When the transmitters, repeaters, and receiver have been placed in their final locations, test the complete system by activating the transmitters and observing the results on the control panel.



Specifications

Voltage	10 to 16 volt a-c or d-c
Current	250 mA peak during charging 25 mA when batteries fully charged
Number of transmitters	Up to 8
Frequency Options:	
318 MHz	FCC Part 15
418 MHz	MPT 1340
433.92 MHz	I-ETS 300 220
Temperature	0 to 50 degrees Celsius (32 to 122 F)

CAUTION NOTICE

This device complies with U.S. FCC PART 15 and with RSS-210 of Industry Canada.

Operation is subject to the following two conditions:

- 1) This device may cause Interference, and*
- 2) This device must accept any Interference, including Interference that may cause undesired operations of the device.*

Changes or modifications not expressly approved by ROKONET may void the user's authority to operate this equipment.

The communication quality of this unit may be affected by its surrounding environment. Nearby electrical equipment may interfere with its normal operation. The operation of this unit must, therefore, be tested at each installation since its transmission quality may vary as a result of operational conditions.

Simultaneous transmissions from two different units may cause message interference resulting in loss of information.

NOTE: 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 the 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.

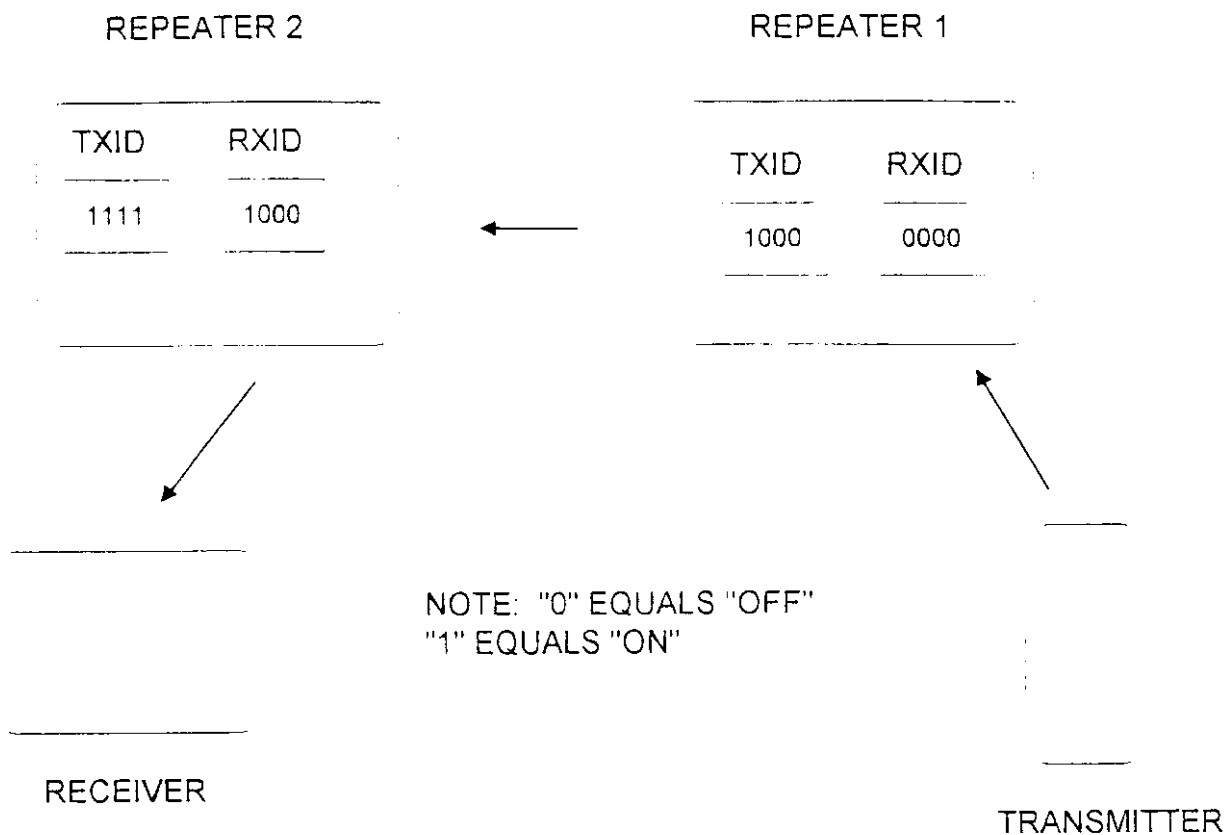


Figure 1 Dipswitch Settings for Two Repeaters

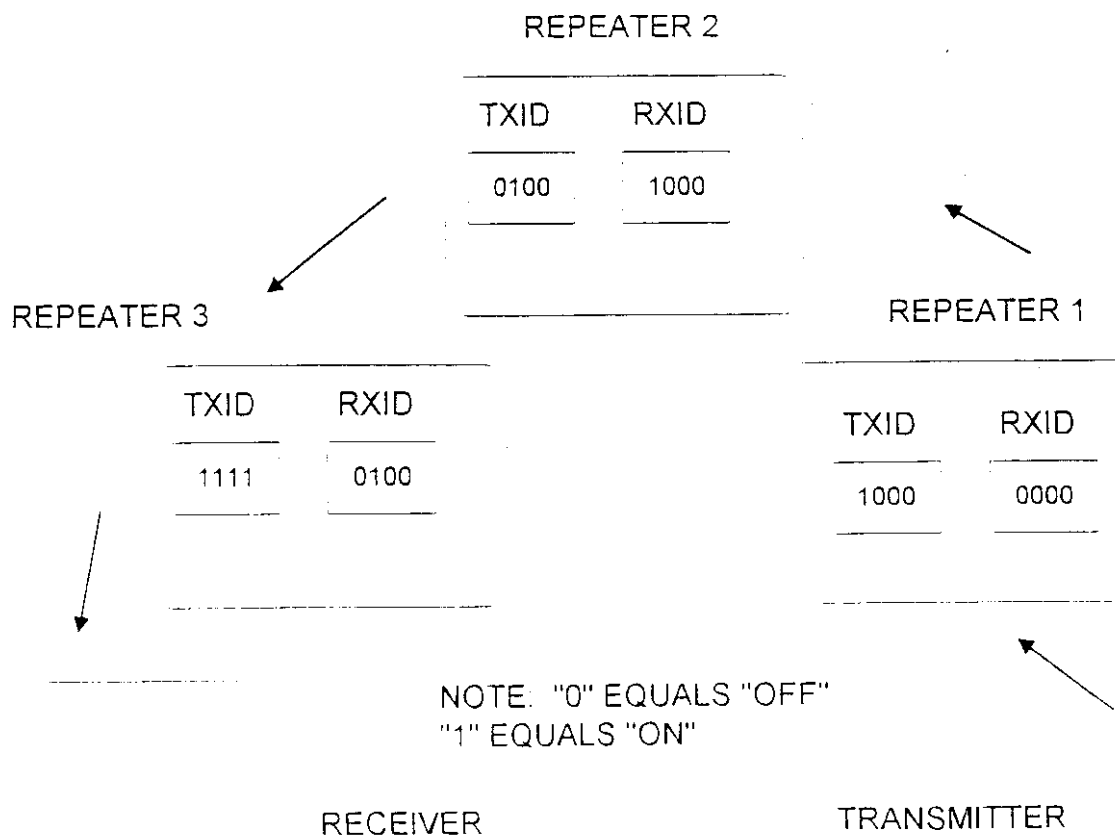


Figure 2 Dipswitch Settings for Three Repeaters