

STI REPEATER

Model: STI-34109

Thank you for purchasing this fine product. Your satisfaction is very important to us. Please read this manual carefully to get the most from your new product.

HOW THE PRODUCT WORKS

STI offers wireless products designed to alert you of several different conditions. The STI REPEATER is a 433 MHz radio signal receiver and transmitter that effectively doubles the transmission range of STI sensors to STI receivers. The REPEATER will filter out all radio signals that are not using 433 MHz STI protocol. When any STI protocol signal packet (except STI 8-Channel Receiver) is received, it transmits the same signal packet. There is no limit to the number of STI sensors that may be used with the STI REPEATER.

It should be understood that multiple REPEATERS should NOT be used within reception range of each other because a REPEATER will simply retransmit any STI protocol signal packet (except 8-Channel Receiver). Two REPEATERS within reception range of each other can retransmit signal packets back and forth a few times when sensor packet is received.

If a dual REPEATER system or further extended range applications are needed, please purchase STI 8-Channel Receivers (STI-34108). The receivers will retransmit alert and trouble notifications of the sensor signals, but not the actual signals themselves. Therefore, REPEATER feedback will not occur. The receivers work with up to 8 different STI wireless sensors.

BEFORE YOU START

Refer to this drawing to become familiar with all the parts.



FEATURES

- Extends system range.
- Receives and retransmits distant STI protocol wireless device signals (except for STI 8-Channel Receivers signals) to receivers.
- Sensor reprogramming not required.
- All STI protocol alarm, supervisory and trouble signals are repeated to receivers.
- REPEATERS have their own unique ID for supervisory, tamper alert and low battery signals that can be monitored with receivers.
- Antennas increase range for both reception and transmission of signals.
- Backup battery protects during loss of external power (up to 72 hours).

SPECIFICATIONS

- External Supply: 9-18V AC or DC, 15 mA nominal (recommended 30+ mA rating).
- Three (3) 1.5V AAA Alkaline batteries: external power backup (up to 72 hours).
- Housing Dimensions: 4 x 6 3/8 x 1 1/4 in.
- Antenna length when inserted in housing: 7 3/4 in.

OPERATION

The REPEATER receives distant STI protocol sensor signals and repeats the information to the receiver. Generally, STI sensors send 8 identical signal “packets” of information. The REPEATER rejects any signal that is not an STI protocol packet and retransmits the complete 8 packet set to the receiver.

STI REPEATER’S wireless signals:

- Tamper Signal – tamper switch released when cover is opened or damaged
- Tamper Restore Signal – tamper condition corrected
- Low Battery Signal – battery charge low
- Low Battery Restore Signal – low battery condition corrected
- Supervisory Signal – sent every hour to monitor that REPEATER is within range

REPEATER and sensor enrolling:

- The receiver can monitor the REPEATER’S supervision and trouble signals when they are enrolled (if desired).
 - To manually send a REPEATER signal, press and release the tamper switch. Ensure the red LED blinks.
- To enroll sensors, follow the receiver’s programming instructions.

LEDS:

	ON	BLINKING
GREEN LED	AC/DC power on	Signal Received
RED LED	Low Battery Alert (only with AC/DC power on)	Signal Transmitted

INSTALLATION GUIDE

The REPEATER is intended to be mounted indoors or in a waterproof environment. Review the APPLICATIONS GUIDE for suggested setups.

1. Press the cover latch to remove top cover (do not lose tamper switch spring).
2. Remove the PCB from bottom cover.
Using the keyholes on the bottom cover as a template, mark the top and bottom mounting holes. Locate the hole at least 1 foot away from the closest obstruction above.
3. Drill 3/16" holes.
4. Insert wall anchors, screws and washers (provided) and tighten to 1/8" gap.
5. TURN OFF POWER SUPPLY. Route power supply wires from the side (recommended) or hole from the back.
 - a. Side installation – route wires through right wire guide and then left wire guide. Remove knockout on the top cover.
 - b. Rear installation – run wires through back wire guide and then left wire guide.
6. Place bottom cover keyholes onto screws and orient device vertical.
7. Tighten screws.
8. On the PCB, insert the antennas into the outer antenna terminals marked "ANTENNA." Tighten the antenna terminal screws.
9. Snap PCB into bottom cover so the antennas are on the plastic stands.
10. Remove the battery tab. The red LED blinks when the batteries are installed. If LED does not blink, press and release the tamper switch. If LED still does not blink, replace batteries.
11. Insert 12 Volt AC or DC power supply leads into the terminals marked "AC/DC 12V." The positive and negative terminals have interchangeable polarity. They may be oriented either +/- or -/+.
12. Turn on the power supply. The green LED turns on. If the red LED is on, replace the 3 AAA Alkaline batteries.
13. (If desired) Program the REPEATER and/or the sensors into the receiver (follow the receiver programming instructions). The receiver can monitor the REPEATER'S supervision and trouble signals when enrolled. To manually send a REPEATER signal, press and release the tamper switch. The red LED blinks when transmitting.
14. If the REPEATER or the sensors do not program properly, move the REPEATER mounting location closer to the receiver.
15. Latch the top cover in place. Ensure the power supply wires are routed properly.

IMPORTANT NOTICE:

Information and specifications are subject to change without notice.

This product has been tested and complies with the specifications 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 according to 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 is found 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 or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

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. Changes or modifications not expressly approved by Safety Technology International, Inc. could void your authority to operate this equipment. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that permitted for successful communication. This product meets the applicable Industry Canada technical specifications. Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

FCC ID: U5X-RE324 IC: 8310A-RE324

WARNINGS

FOR INDOOR USE ONLY. Keep away from water or damp areas.

WARRANTY INFORMATION

Safety Technology International, Inc. warrants to the **original** consumer/purchaser that this product shall be free of defects in material and workmanship under normal use and circumstances for a period of one (1) year from the original date of purchase.

APPLICATIONS GUIDE

Circle = sensor

General Use (Figure 1) – sensors out of range

- For “out of range” sensor(s), position REPEATER between sensor and receiver.
- If some sensors are “in range” of the receiver, mount the REPEATER closer to the out of range sensor. The REPEATER should not receive the “in range” sensor packets.
- If it is not possible for the REPEATER to receive “out of range” sensors without also picking up “in range” sensor packets:
 - Move the receiver location forcing “in range” sensors “out of range.”
 - Purchase an STI 8-Channel Receiver to mirror the “out of range” packets to the original 8-Channel Receiver.
 - Continue to use the receiver as it is, allowing duplicate sensor packets to be received. This should not change the receiver operation.
 - Reconfigure system.

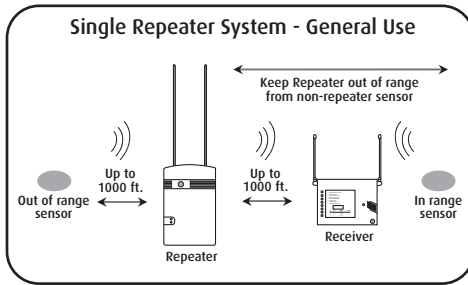


Figure 1

Multiple Sensor/Receiver System (Figure 2)

The REPEATER will receive and transmit any STI protocol signal packets received (except 8-Channel Receiver). Multiple sensors can be arranged to pass packets through the REPEATER to multiple receivers.

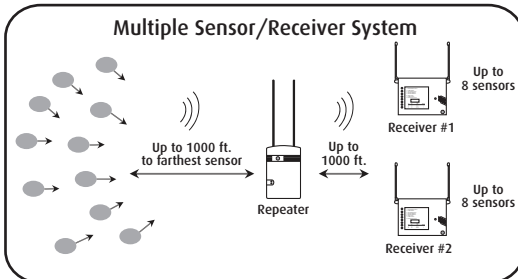


Figure 2

Extended Range System (Figure 3)

The REPEATER may be used to extend the range of sensors to a multiple STI 8-Channel Receiver mirroring system.

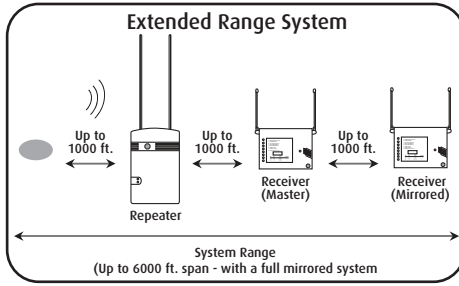


Figure 3

Central Monitoring of Multiple Locations (Figures 4 and 5)

A receiver, or group of receivers, may be monitored in a central location between multiple REPEATERS as long as the REPEATERS are out of range from each other.

- REPEATER Feedback – Because REPEATERS will retransmit any STI protocol packets received (except 8-Channel Receiver), if two REPEATERS are within reception range of each other they will send packets back and forth to each other. When using more than one REPEATER, keep them out of range from each other. An STI 8-Channel Receiver can be substituted for a REPEATER to eliminate this problem.
- Dual REPEATER Reception – If more than one REPEATER receives a signal packet from the same sensor, both REPEATERS will retransmit the packet. This should not be an issue, but the programmed receiver will then respond to both transmissions.

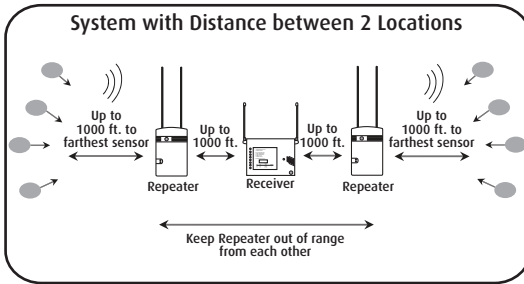


Figure 4

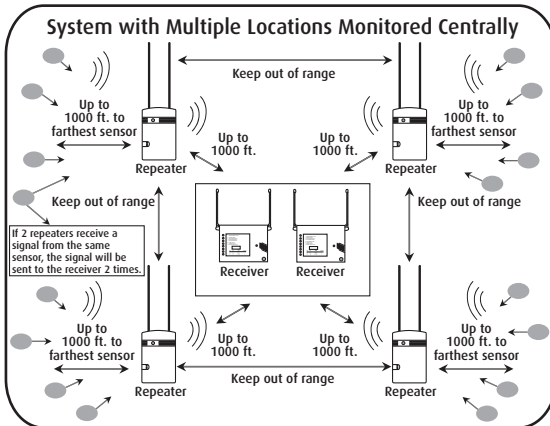


Figure 5



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