



Wireless Lock Access Network

RF Installation and Operating Manual



Computerized
Security Systems

Introduction

The Messenger system is a hybrid solution to networking locks in a hospitality environment. Each door lock has a low power, limited bandwidth, and short-range digital radio system. The lock uses this Messenger radio to communicate use history and operating status to a local wireless Messenger transceiver hub, which is capable of communicating with as many as 64 individual door locks. The transceiver hubs are all connected to a host PC via a wired or wireless Ethernet network. The host PC acts as a server for both the Saflok Windows 6000 operating system and the Saflok Messenger database.

Communication between the Messenger database and the locks is two-way; either the host or lock initiates messages. Messages originating at the lock are transmitted directly to the transceiver hub, which is continuously powered and predominantly in the receive mode. The transceiver hub then acts as a gateway device, decoding the wireless message from the lock and transferring it to the Ethernet infrastructure. Messages originating at the host are sent to the transceiver hub via the Ethernet and stored in a memory buffer. The lock wakes up periodically and checks the transceiver hub for stored messages, and then returns to “sleep,” enabling long life from the primary batteries operating the Saflok.

The radio device is installed in the upper plastic end cap of the inside trim (See Figure 1 and 2.) and connects to the locks PCB with a four-wire harness that provides both power and serial communications. (See Figure 3.) When the lock is produced at the factory, the radio is plugged in, tested, and then turned off to conserve battery power during transit and construction. The radios shall be left in the off position until the door lock and network infrastructure installations are complete.

Figure 1

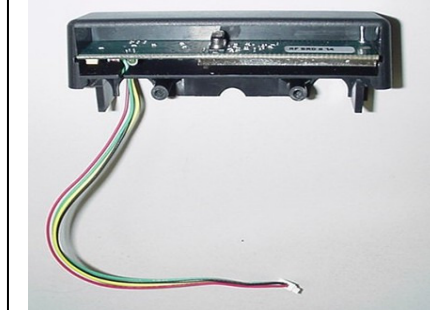
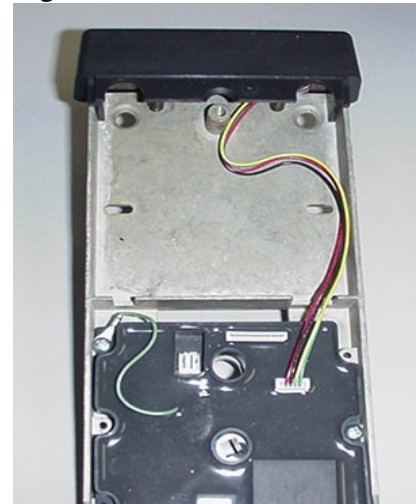


Figure 2



Figure 3



Site Design

Transceiver hub locations are the most critical element of establishing a reliable and cost effective wireless Messenger network. An insufficient quantity of hubs or incorrectly positioned hubs may result in

failed connections, while an overabundance of hubs creates excessive Ethernet drops and installation costs.

The Messenger wireless devices are capable of indoor ranges in excess of a 40 meter radius. However, building architecture and construction materials employed will dramatically influence the locations of the transceiver hubs. Flooring plays an especially significant role; steel decking will result on transceiver hubs being located on every floor while other construction techniques will reduce the number of required transceiver hubs to every second or third floor. Actual on-site range studies shall be performed in determining the actual hub locations. Consult with your local Saflok representative on scheduling a site survey.

System Protocol / FCC Requirements

In the United States, the Messenger system uses a license-free shared-space radio frequency bandwidth between 2.40GHz and . The Saflok Messenger devices employ at least 16 different frequencies and avoid jamming and collisions in this “shared space.” All Saflok Messenger equipped units will have the following label. Do not remove the label from the enclosures that it is attached to.

**Contains Transmitter Module FCC ID: SAPMESSENGER2GHZ
Contains Transmitter Module IC: 7078A-A28780, MODEL NO. A28780**
This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by Computerized Security Systems, Inc. could void the user's authority to operate the equipment.
This product needs to be kept 20cm from the body due to RF exposure.
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The transmitter module in each device shall have the following label. Use only products that bear this label and do not remove the label from the modules that it is attached to. Do not modify modules or attempt to service the module at any time. Part replacements shall only be done through Computerized Security Systems, Inc.

**Transmitter Module FCC ID: SAPMESSENGER2GHZ
IC: 7078A-A28780, MODEL NO. A28780**
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
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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 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.

FCC Caution: Any changes or modifications not expressly approved by Computerized Security Systems could void the user's authority to operate this equipment.

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.

To comply with FCC and IC RF radiation exposure limits for general population/uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

Installation

Attach the Saflok door locks to the doors and test for normal operation with an opening key. (Refer to the *Saflok MT Lock Installation and Programming Guide*.)

Install the Messenger transceiver hubs in the locations identified by the site survey floor plan. Each hub location will have a static IP address. Record the IP address for each hub on the floor plan in the appropriate location representing that hub's location.

Connect the Messenger transceiver hubs to the Ethernet network and then to power, using the power supply provided. (See Figure 4)

Verify that all installed transceiver hubs are properly connected via Ethernet to the host computer by running the utility "Find Hub" from the Messenger host PC. (Refer to the *Saflok Messenger Database Function Manual*.)

Turn on the lock radios by inserting and removing the "Radio On" key into each lock. The door locks will then automatically associate with a close proximity transceiver hub. If more than one hub is within range, the door lock radio will associate with the first transceiver hub that responds, even if it is not the closest hub. Once the lock associates with the transceiver hub, the transceiver hub will use the Ethernet to notify the server that it is the controlling hub for that lock, and all messages initiated by the host will pass through the appropriate transceiver hub to get to the intended lock.

Operate the locks with a master key. The use of the master key will appear on the server's screen within a short period of time, verifying the locks connection to the server.