

TL260(R)

ETHERNET/INTERNET ALARM COMMUNICATOR

Ethernet Communicator - North America



Installation Manual
v3.0

Warning: This manual contains information on limitations regarding product use and function and information on the limitations as to liability of the manufacturer.

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WARNING: INSTALLER PLEASE READ CAREFULLY**Note to Installers**

The Warnings on this page contain vital information. As the only individual in contact with system users, it is the installer's responsibility to bring each item in this Warning to the attention of all users of this system.

System Failures

This system has been carefully designed to be as effective as possible. There are circumstances, however, involving fire, burglary, or other types of emergencies where it may not provide protection. Any alarm system of any type may be compromised deliberately or may fail to operate as expected for a variety of reasons. Some, but not all, of the reasons may be:

Access by Intruders

Intruders may enter through an unprotected access point, circumvent a sensing device, evade detection by moving through an area of insufficient coverage, disconnect a warning device, or interfere with or prevent the proper operation of the system.

Component Failure

Although every effort has been made to make this system as reliable as possible, the system may fail to function as intended due to the failure of a component.

Compromise of Radio Frequency (Wireless) Devices

Signals may not reach the receiver under all circumstances which could include metal objects placed on or near the radio path or deliberate jamming or other inadvertent radio signal interference.

Criminal Knowledge

This system contains security features which were known to be effective at the time of manufacture. It is possible for persons with criminal intent to develop techniques which reduce the effectiveness of these features. It is important that your security system be reviewed periodically to ensure that its features remain effective and that it is updated or replaced if it is found that it does not provide the protection expected.

Failure of Replaceable Batteries

This system's wireless transmitters have been designed to provide several years of battery life under normal conditions. The expected battery life is a function of the device environment, usage, and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. While each transmitting device has a low battery monitor which identifies when the batteries need to be replaced, this monitor may fail to operate as expected. Regular testing and maintenance will keep the system in good operating condition.

Inadequate Installation

A security system must be installed properly in order to provide adequate protection. Every installation should be evaluated by a security professional to ensure that all access points and areas are covered. Locks and latches on windows and doors must be secure and operate as intended. Windows, doors, walls, ceilings and other building materials must be of sufficient strength and construction to provide the level of protection expected. A reevaluation must be done during and after any construction activity. An evaluation by the fire and/or police department is highly recommended if this service is available.

Inadequate Testing

Most problems that would prevent an alarm system from operating as intended can be found by regular testing and maintenance. The complete system should be tested weekly and immediately after a break-in, an attempted break-in, a fire, a storm, an earthquake, an accident, or any kind of construction activity inside or outside the premises. The testing should include all sensing devices, keypads, consoles, alarm indicating devices, and any other operational devices that are part of the system.

Insufficient Time

There may be circumstances when the system will operate as intended, yet the occupants will not be protected from an emergency due to their inability to respond to the warnings in a timely manner. If the system is remotely monitored, the response may not occur in time to protect the occupants or their belongings.

Motion Detectors

Motion detectors can only detect motion within the designated areas as shown in their respective installation instructions. They cannot discriminate between intruders and intended occupants. Motion detectors do not provide volumetric area protection. They have multiple beams of detection and motion can only be detected in unobstructed areas covered by these beams. They cannot detect motion which occurs behind walls, ceilings, floor, closed doors, glass partitions, glass doors or windows. Any type of tampering whether intentional or unintentional such as masking, painting, or spraying of any material on the lenses, mirrors, windows or any other part of the detection system will impair its proper operation.

Passive infrared motion detectors operate by sensing changes in temperature. However their effectiveness can be reduced when the ambient temperature rises near or above body temperature or if there are intentional or unintentional sources of heat in or near the detection area. Some of these heat sources could be heaters, radiators, stoves, barbecues, fireplaces, sunlight, steam vents, lighting and so on.

Power Failure

Control units, intrusion detectors, smoke detectors and many other security devices require an adequate power supply for proper operation. If a device operates from batteries, it is possible for the batteries to fail. Even if the batteries have not failed, they must be charged, in good condition and installed correctly. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage electronic equipment such as a security system. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.

Security and Insurance

Regardless of its capabilities, an alarm system is not a substitute for property or life insurance. An alarm system also is not a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation.

Smoke Detectors

Smoke detectors that are a part of this system may not properly alert occupants of a fire for a number of reasons, some of which follow. The smoke detectors may have been improperly installed or positioned. Smoke may not be able to reach the smoke detectors, such as when the fire is in a chimney, walls or roofs, or on the other side of closed doors. Smoke detectors may not detect smoke from fires on another level of the residence or building.

Every fire is different in the amount of smoke produced and the rate of burning. Smoke detectors cannot sense all types of fires equally well. Smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches, or arson.

Even if the smoke detector operates as intended, there may be circumstances when there is insufficient warning to allow all occupants to escape in time to avoid injury or death.

Telephone Lines

If telephone lines are used to transmit alarms, they may be out of service or busy for certain periods of time. Also an intruder may cut the telephone line or defeat its operation by more sophisticated means which may be difficult to detect.

Warning Devices

Warning devices such as sirens, bells, horns, or strobes may not warn people or waken someone sleeping if there is an intervening wall or door. If warning devices are located on a different level of the residence or premise, then it is less likely that the occupants will be alerted or awakened. Audible warning devices may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners, other appliances, or passing traffic. Audible warning devices, however loud, may not be heard by a hearing-impaired person

GENERAL

IMPORTANT

This installation manual shall be used in conjunction with the Power Series Alarm Controller Power Panel manual. All the safety instructions specified within that manual shall be observed. (or equivalent). The Alarm Controller Power Panel is referenced as the "panel" throughout this document.

The Ethernet Communicator is a fixed, wall-mounted unit, located inside the panel, and shall be installed in the location specified in these instructions. The equipment enclosure must be fully assembled and closed, with all the necessary screws/tabs, and secured to a wall before operation. Internal wiring must be routed in a manner that prevents:

- Excessive strain on wire and on terminal connections,
- Interference between power limited and non power limited wiring,
- Loosening of terminal connections, or
- Damage of conductor insulation.

WARNING: Never install this equipment during a lightning storm!

Safety Information

The Installer must instruct the System user on each of the following:

- Do not attempt to service this product. Opening or removing covers may expose the user to dangerous voltages or other risks.
- Any servicing shall be referred to service persons only.
- Use authorized accessories only with this equipment.
- Do not stay close to the equipment during device operation.
- Do not touch the external antenna.

Model Information

TL260R: Is an Ethernet only alarm Communicator that sends alarm communication to Sur-Gard System I, II, III and IV central station receivers through a wired Ethernet/Internet connection.

The Communicator can be used as either a backup or primary Communicator. The Communicator supports Internet Protocol (IP) transmission of panel and Communicator events over Ethernet/Internet.

NOTE: Prior to installation of the TL260(R) Communicator, confirm with your local service provider that the Internet is available and active in the area where the Communicator will be installed.

Panel Mounting

The following Communicators are compatible with PC1616/PC1832/PC1864 panels:

- **TL260R, TL260**(Ethernet/Internet only)

NOTE: This manual covers Communicator models with and without 'R' throughout entire manual unless specifically stated otherwise.

Features

- 128-bit AES encryption via Ethernet/Internet (NIST Validation Certificate No. 2032).
- Back up or primary alarm communication.
- Ethernet LAN/WAN 10/100 BaseT.
- Full event reporting to central station (UL/ULC listed) and C24 Interactive, via RS-422 to the C24-HUB.
(This supplementary feature is in addition to what is required for a UL/ULC Listed system configuration and it does not affect the required UL/ULC Listed signaling).
- Individual Ethernet Periodic test transmission.
- Interactive Support via Gateway.
- Integrated call routing.
- Remote Firmware upgrade capability of the Communicator and Panel Firmware via Ethernet.
- Panel remote uploading/downloading support via Ethernet/Internet.
- PC-LINK connection.
- Programmable Labels.
- RS-422 balanced line for supplementary communication to the external C24-HUB up to 1,000 ft. (305 m) for C24 Interactive. (This supplementary feature is in addition to what is required for a UL/ULC Listed system configuration and it does not affect the required UL/ULC Listed signaling). Only models with "R".
- SIA and Contact ID (CID) formats supported.
- Trouble display LEDs.
- Supervision heartbeats sent via Ethernet/Internet.
- Supervision heartbeats via Ethernet/Internet.

Technical Specifications

The input voltage to the Communicator can be drawn from the Underwriters Laboratories/Underwriters Laboratories Canada (UL/ULC) Listed Control Panel or provided by an external UL/ULC Listed power supply rated for the application (external power-limited source).

NOTE: The power supply must be Class II, Power Limited.

UL/ULC Installation Requirements

NOTE: For equipment used at the protected premises and intended to facilitate IP communications (hubs, routers, NIDs, Digital Subscriber Line (DSL), Cable modems), 24 hour back-up power is required. Where such cannot be facilitated, a secondary (back-up) communication channel is required.

Ⓢ Domain Name Service (DNS) programming is not permitted in UL/ULC listed systems.

Notes for using Private, Corporate, and High Speed Data Networks:

Network access and domain access policies shall be set to restrict unauthorized network access, and spoofing or Denial of Service (DoS) attacks. Select an Internet Service Provider (ISP) that has redundant servers/systems, back-up power, routers with firewalls enabled, and methods to identify and protect against DoS attacks (e.g., via spoofing).

Notes for using Public Switched and Cellular Data Networks:

Communication channels shall be facilitated such that the Communicator will restrict unauthorized access, which could otherwise compromise security. The Communicator shall be located in a secured area.

- The Communicator can also be used as an Active communication system with the Security Levels A1-A4 (each channel Ethernet independent or together in a back-up/redundant configuration). For Active Line Security systems AES128 bit encryption shall be enabled (at the monitoring station receiver) and the supervision heartbeat rate shall be set as 90 seconds (Panel Section [851][004] = 005A/90). The supervision window at the Signal Receiver Center (SRC)'s receiver shall be programmed as maximum of 180 (00B4/180) seconds.
- The supervision heartbeat shall be enabled (Panel Section [851][005] Toggle Option [1] (Ethernet) and/or Toggle Option [2] shall be ON). Toggle Option [3] (Supervision Type) shall be ON and the supervision heartbeat rate shall be selected as 135 (0087/135) seconds. Option [004] = 0087. The supervision window at the supervising station shall be maximum 200 (00C8/200) seconds. For Encrypted Line Security systems the encryption AES128 bit shall be enabled at the monitoring station receiver.

Ratings Compatibility

Table 1: Communicator Ratings

Model	TL260R Ethernet only
POWER SUPPLY RATINGS	
• Input Voltage	Nominal 12 VDC: The panel Bell output shall be derated: 700mA - (Communicator mA) = (derated Bell output).
CURRENT CONSUMPTION	
• Current	100mA @ 13.65V
ENVIRONMENTAL SPECIFICATIONS	
• Operating Temperature	32°F - 120°F (0°C - 49°C)
• Humidity	5% - 93% relative humidity, non-condensing
MECHANICAL SPECIFICATIONS	
• Board Dimensions (mm)	100 x 150 x 18
• Weight (grams) with bracket	290

Table 2: Compatible Receivers, and Panels

Communicator	Receiver/ Panel	Description
TL260R	Receiver	<ul style="list-style-type: none"> • Sur-Gard System I Receiver, version 1.13+ • Sur-Gard System II Receiver, version 2.10+ • Sur-Gard SC-DRL-3-IP version 2.30+ (for Sur-Gard System III Receiver) • Sur-Gard SC-DRL-4-IP version 1.20+ (for Sur-Gard System IV Receiver)

NOTE: Enter [] [8] [Installer Code] [900] at keypad to view the Panel Version number.

Products or components of products, which perform communications functions only shall comply with the requirements applicable to communications equipment as specified in UL60950 or CAN CSA C22.2, No. 60950-1, Information Technology Equipment - Safety - Part 1: General Requirements. Where network interfaces are internal to the control unit or receiver, compliance to CAN CSA C22.2, No. 60950-1 is adequate. Such components include, but are not limited to: hubs; routers; NIDS; third-party communications service providers; DSL modems; and Cable modems.

C24 Interactive

NOTE: This application has not been investigated by UL/ULC and is not to be used on UL/ULC certified installations.

The Communicator provides C24 Interactive monitoring and control via an RS-422 interface to an external C24-HUB. The default Keypad link speed is 115.2 KB and this option is programmable by the installer. All life-style events are transmitted by the RS-422 link to the C24-HUB and then remotely to the C24 Interactive Servers.

NOTE: The C24-HUB is an interface device which connects to security panels, IP cameras, sensors, Z-wave based home automation devices, etc. to deliver a host of advanced functionality.

NOTE: Life-style events are "non alarm" events. Life-safety events are "alarm" events.

The following features are available with the RS-422 C24 Interactive:

- Communicator faults can be transmitted.
- Panel communication errors are reported to the C24-HUB.
- Real time reporting of Zone status information to the C24 Interactive Server.
- Remote update of the Communicator (flash upgrade).
- WEB login to request an incoming session with the Communicator.
- Zone Label Programming.

NOTE: Communicator buffers 1000 date/time stamped Life-Style events to the C24-HUB as First In First Out (FIFO).

NOTE: When Interactive is enabled, upon exiting installer programming, communicator will synchronize programming with control panel. This process takes approx. 5 seconds. During this time the keypad will be "Function Not Available".

PRE INSTALLATION CONFIGURATION

Encryption

The Communicator uses 128 Bit AES Encryption. Encryption can only be enabled from the monitoring station receiver. Each receiver (Ethernet 1 and 2) can independently have encryption enabled or disabled. When encryption is enabled, the central station will configure the device to encrypt communications the next time the Communicator module performs a communication to that receiver.

NOTE: Packets will start being encrypted only after the next event is sent to that receiver, or if the unit is restarted.

Before leaving the installation site, the Communicator TL260R Ethernet line shall be connected via an APPROVED (acceptable to the local authorities) Network Interface Device (NID) (e.g., for UL Installations, UL60950 listed NID). All wiring shall be performed according to the local electrical codes.

COMMUNICATOR INSTALLATION CONFIGURATION

This Ethernet Communicator shall be installed by Service Persons only. (Service Person is defined as a person having the appropriate technical training and experience necessary to be aware of hazards to which that person may be exposed in performing a task and can also take measures to minimize the risks to that person or other persons). The Communicator shall be installed and used within an environment that provides the pollution degree max 2, overvoltages category II, in non-hazardous, indoor locations only. This manual shall be used with the Installer Manual of the panel which is connected to the Ethernet Communicator. All instructions specified within the panel manual must be observed.

All the local rules imposed by local electrical codes shall be observed and respected during installation.

Installing the Ethernet Cable

A Category 5 (CAT 5) ethernet cable must be run from a source with Ethernet/Internet connectivity to the Communicator module, inside the Panel. The Communicator end of the cable must be terminated with an RJ45 plug, which will connect to the Communicator's RJ45 jack after the Communicator is installed. All requirements for installation of CAT5 ethernet cable must be observed for correct operation of the Communicator, including, but not limited to, the following:

- Do NOT strip off cable sheathing more than required for proper termination.
- Do NOT kink/knot cable.
- Do NOT crush cable with cable ties.
- Do NOT untwist CAT5 pairs more than 1/8 in. (1.2cm).
- Do NOT splice cable.
- Do NOT bend cable at right angles or make any other sharp bends.

NOTE: CAT5 specification requires that any cable bend must have a minimum 2 in. (5 cm) bend radius. Maximum length of CAT 5 cable is 328 ft. (100 m).

Running the RS-422 Cable

An RS-422 cable must be connected to the C24-HUB and cable run to the Communicator module inside the panel.

NOTE: Maximum cable length for RS-422 cable is 1,000 ft. (305 m).

At the **C24-HUB**, make connections as follows:

1. Securely fasten the **TX+** wire on the terminal block.
2. Securely fasten the **TX-** wire on the terminal block.
3. Install a **120 Ω 1/4 W** resistor between the **RX+** and **RX-** terminals at the C24-HUB.
4. Securely fasten the **RX+** wire on the terminal block.
5. Securely fasten the **RX-** wire on the terminal block.
6. (Optional) Securely fasten the **GND** wire on the terminal block.

NOTE: The GND connection is optional. DSC recommends connecting the GND wire at both ends.

7. Run the RS-422 Cable from the C24-HUB to the inside of the Panel.

Hardware Reset

The Communicator can be hardware reset by installing a jumper between Pins 4 and 5 on the AUDIO/DEFAULT connector and restarting the Communicator. Installing jumper during normal operation has no effect.

INSTALLING THE ETHERNET COMMUNICATOR IN PANEL

Installing Communicator with PC1616/1832/1864 Panel

NOTE: Before installing Communicator ensure that system power is OFF and telephone line is disconnected.

1. To assemble supplied mounting bracket, perform the following: (See Figure 1).

- a. Remove the 4 white plastic standoffs from the bag provided with the Communicator kit.
- b. Insert the 4 standoffs through the back of the mounting bracket, into the holes at each corner. (The antenna mounting tab should be facing away from you).
- c. Place the bracket on a flat, solid surface. Hold the Communicator component side up and orient the 4 holes on the Communicator with the 4 standoffs protruding from the bracket. Push the Communicator firmly and evenly onto the standoffs until it is securely attached to the mounting bracket.
- d. Remove the panel front cover.
- e. Remove and discard the circular knockout located in the top-right section of the panel. (See Figure 3).

2. Install the Communicator into the panel:

- a. Attach one end of the PC-LINK cable to the panel PC-LINK header on the panel (red wire goes on Pin 1 of the panel PC-LINK header).
- b. Insert the assembled Communicator into the panel.

NOTE: Ensure that the threaded antenna connection point is visible through the knockout hole at the top right of the panel.

- c. Place the nylon washer with bushing (thick flat washer) onto the threaded section of the antenna cable. Insert the threaded section through the antenna mounting knockout hole at top right of panel.
- d. Place the second nylon washer (flat), followed by the brass washer and the brass nut, onto the threaded section of the cable, **outside** the panel. Tighten the assembly by hand only. (Finger tight only- Do not overtighten the antenna assembly).
- e. Locate the screw hole on the right side wall of the panel. See Figure 2 (screw). Line up the assembled Communicator with the right side wall of the panel and, using the screw provided, secure the mounting bracket to the panel.
- f. Attach the other end of the PC-LINK cable to the Communicator (black wire goes on Pin 1 of the Communicator).
- g. Using light pressure (finger tight only), attach the supplied white quad band whip antenna to the threaded antenna connection point at top of the panel.

WARNING!

TL260(R) MODULES ARE POWER LIMITED. DO NOT ROUTE ANY WIRING OVER THE CIRCUIT BOARD. MAINTAIN AT LEAST 1IN. (25.4MM) SEPARATION BETWEEN CIRCUIT BOARD AND WIRING. A MINIMUM OF 1/4 IN. (7MM) SEPARATION MUST BE MAINTAINED AT ALL POINTS BETWEEN NON-POWER LIMITED WIRING AND POWER LIMITED WIRING.

3. To electrically connect the Communicator to the panel, perform the following steps (See Figure 3).

- a. Disconnect both AC power and battery connections from the panel, and disconnect telephone line.

Module Power Connection

- b. Attach a wire from the Communicator's left **PWR** terminal to the panel's **BELL+** terminal.

NOTE: For ULc Commercial Fire Monitoring applications, do NOT connect any devices on the Bell + terminal other than the Communicator.

- c. Attach a wire from the Communicator's **GND** terminal (beside PWR) to the panel's **AUX** - terminal.
- d. Attach a wire from the Communicator's **SHLD** terminal to the panel's **EGND** terminal.

(Protective earth ground).

(Optional) External Bell/Siren Connection

- e. Attach a wire from the Communicator's right **PWR** terminal to the positive (+) terminal on the Bell/Siren.

- f. Attach the panel's **BELL -** terminal to the negative (-) terminal on the Bell/Siren.

NOTE: If an external Bell/Siren is not used, install the 1K Ω 1/2W 5% resistor (Brown, Black, Red, Gold) (supplied with the panel) between the panel's Bell + and Bell - terminals, then only wire the BELL + to the PWR terminal on the Communicator.

- g. Confirm that the SIM card is inserted in the holder and locked.

Figure 1 Communicator Mounting Bracket

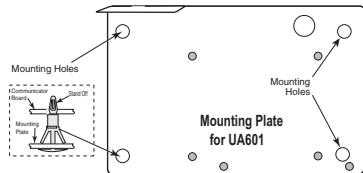


Figure 2 PC1616/1832/1864 Control Panel

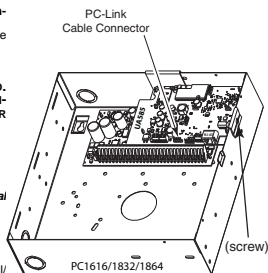
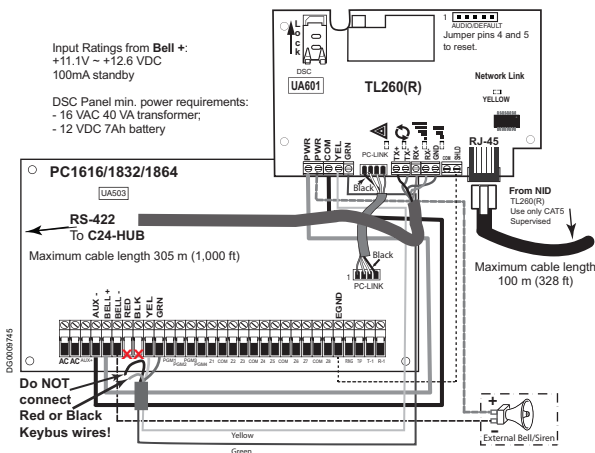


Figure 3 Communicator Wiring Diagram

**Keypus Connection for C24 Interactive**

4. Install the Keypus cable between Communicator and Panel as follows:

WARNING: DO NOT CONNECT KEYBUS RED OR BLK WIRES TO THE PANEL OR THE COMMUNICATOR TERMINAL BLOCKS.

- a. Attach a wire from the Communicator YEL terminal to the panel YEL terminal.
- b. Attach a wire from the Communicator GRN terminal to the panel GRN terminal.

RS-422 Connection for C24 Interactive

1. At the Communicator inside the Panel, connect the previously run RS-422 cable as follows:

2. Securely fasten the TX+ wire to RX+ on the terminal block.
3. Securely fasten the RX+ wire to TX+ on the terminal block.
4. Securely fasten the RX- wire to TX- on the terminal block.
5. (Optional) Securely fasten the GND wire on the terminal block.

NOTE: The GND connection is optional. DSC recommends connecting GND wire at both ends.

Install Network Cable

6. Route the CAT 5 Ethernet cable through back of the panel and plug it into the Communicator's RJ45 jack.

Before leaving the premises the Ethernet communication lines must first be connected to an approved (acceptable to local authorities) type NID, (UL installations, UL 6990 listed NID, for ULC installations CAN/CSA C22.2. No. 6990-1 Certified NID). All wiring shall be performed according to the local electrical codes.

7. Perform the following steps for initial power on of the panel with Communicator installed:

- a. Reconnect the AC power, telephone line, and battery + connector to the panel.

(The Communicator and Panel will power up together).

- b. Observe that the Communicator's red and yellow LEDs are flashing together while it initializes. The red and yellow LEDs will continue to flash until the Communicator has successfully communicated to all programmed receivers.

NOTE: Initialization may take several minutes to complete. Red and yellow LEDs will flash together during initialization. Do not continue to next step until the red and yellow LEDs have stopped flashing. (If only the yellow LED is flashing, there is a Communicator trouble and the Green LEDs are not valid for Communicator Test). Correct trouble indicated by flashes on yellow LED before continuing. (See Table 4 for troubleshooting assistance).

INITIAL PANEL PROGRAMMING

- ① **Domain Name Service (DNS) programming is not permitted in UL/ULC listed systems.**

Keypad Data Display

- **Section-Toggle Options:** The number is displayed when Toggle is ON, the number is not displayed when Toggle is OFF. (e.g., Toggle Options displays: [-3-6-1]. Options 3 and 6 are ON, all others are OFF). Pressing keys 1 through 8 will alternately turn the Toggle ON and OFF.
- **HEX/Decimal Data:** Values that are provided with two defaults, separated by a "F" character, use the format: hexadecimal followed by decimal equivalent (e.g., Default [0BF5/3061]). Hexadecimal numbers are shown, with all leading zeroes, to the full field length defined for the number.

Entering HEX values at keypad

To enter HEX values at the keypad, you must press the * key before entering the HEX value. (e.g., to enter "C" at the keypad, press [*][3].

Entering ASCII Characters at keypad

1. Press [↑] and use scroll buttons [←] [→] to display "ASCII Entry" on the LCD screen.
2. Press [↑] to select ASCII entry mode.
3. Use the [←] [→] scroll keys to display the character you want and press [↑] to save and exit ASCII.
4. Repeat the steps above to enter another ASCII character.

PC1616/1832/1864 Initial Programming

Perform the following steps to ensure that the Communicator and the Panel work together as intended.

These Sections must be programmed at the panel keypad. Enter [*][8][Installer Code][Section Number]. Record any values that are modified from their default, in the appropriate Worksheets for the Panel or Communicator.

1. In Panel Section [167] program 060 (seconds).
2. In Panel Section [382] set Option [5] ON

NOTE: If this option is OFF, the yellow status LED on the Communicator will indicate 'Panel Supervision Trouble' (2 flashes) and the unit can not be programmed via the PC-LINK cable.

- In Panel Section [383] set Option [7] ON.
- In Panel Section [383] set Option [8] ON for CID, or OFF for SIA.
- A valid Account Number must be entered in Communicator Section [851][021]. See Programming Section.

NOTE: DSC recommends using the same Account Number for Panel and Communicator.

- In Panel Sections [301], [302], and [303], program the central station telephone number that will be used for the Ethernet Communicator. Valid entries are:
 - A valid telephone number; signals will be routed to the central station using the PSTN.
 - DCAA (Receiver 0); signals will be routed to
 - Ethernet Receivers 1 - 4 depending on programming Toggle Options in Communicator Section [851][006].
 - Panel Section [301] sets the Primary communication path, and may be configured as either PSTN or Communicator routing. Panel Section [302] is redundant, and Panel Section [303] is the backup telephone number for Panel Section [301]. Refer to the Panel manual for additional information.

NOTE: The leading digit '0' (dial tone detection) in the telephone number is pre-programmed.

- In Panel Section [350], program the communication format as: CID (03) or SIA FSK (04).
- NOTE:** If any of the Panel telephone numbers have been set to DCAA, section [350] must be set to (04).
- In Panel Sections [351] - [376], program the Communicator call direction options. Refer to the Panel Installation Manual for details on setting these options.
- In Panel Section [401] set Toggle Option [2] 'User Enable DLS' to ON in order to perform panel DLS session through Ethernet.

NOTE: Before leaving the premises, the installer should verify all programmed communications paths. See Programming Options Section [851][001] to send immediate test transmissions.

Communicator Troubles displayed on a PC1616/1832/1864

The General System trouble is the only trouble that will appear on the keypad Liquid Crystal Display (LCD) when encountered by a Communicator installed in a PC1616/1832/1864. For more information about the trouble on the Communicator module refer to the panel event buffer. Log entry will show Fault Restore for each of the following events:

- T-LINK Network Fault/Restore:** This log will occur for the following trouble conditions: Ethernet Trouble.
- T-LINK Receiver Trouble/Restore:** This log will occur for the following trouble conditions: Receiver Not Available Trouble, Receiver Supervision Trouble, or Failure to Communicate (FTC) Trouble.
- T-LINK Comm. Fault/Restore:** This log will occur when the panel loses communications with the Communicator and will clear when communications is restored.

COMMUNICATOR STATUS LEDS

The Communicator has 4 onboard LED indicators. These include 1 yellow trouble LED, 1 red Network Connection Status LED. The LED meaning is described in this Section.

▲ Yellow Trouble LED

This yellow LED will flash to indicate a trouble on the unit. The number of flashes indicates the type of trouble. See the table below for the coded flashes and the conditions which will activate the Trouble Status LED.

Table 3: Yellow Trouble Status LED

# of Flashes	Trouble	# of Flashes	Trouble
2	Panel Supervision Trouble	8	Receiver Supervision Trouble
4	Not used	9	FTC Trouble
5	Not used	10	Not used
6	Ethernet Trouble	11	Not used
7	Receiver Not Available Trouble	12	Module Configuration Trouble

NOTE: Only the highest priority trouble (2 Flashes is the highest priority trouble) is indicated. When this trouble is restored, the next highest trouble will indicate, if present. This will continue until all troubles have been cleared. (yellow LED is not flashing).

The following paragraphs describe the conditions associated with the trouble indicated:

Panel Supervision Trouble (2 Flashes)

This trouble will be indicated when communication between the Communicator module and the Panel fails. If the module can not communicate with the Panel (e.g. loss of power to the panel) the Communicator will send the 'Panel Absent Trouble Event' message to the central station receiver. When communication returns, a 'Panel Absent Restore Event' is sent by the Communicator to the central station receiver. The reporting codes are ET0001 for Trouble and ER0001 for Restore. The panel absent event always uses the primary receiver account code when communicating to the central station.

NOTE: The Panel Supervision Trouble/Restore are internally generated events by the Communicator. They are the only internal events; all other events are generated by the panel. Trouble is generated if the Communicator misses 6 Polls. Trouble is restored on receipt of first Poll from the Panel.

Ethernet Trouble (6 Flashes)

This trouble is indicated when Ethernet link between the transmitter and the local switch or router is absent. This trouble will also be indicated if the unit fails to get Dynamic Host Control Protocol (DHCP) settings from the DHCP server. (Not active if Ethernet Receivers are not programmed).

Receiver Not Available (7 Flashes)

This trouble is indicated if the unit is not able to successfully initialize with any of the programmed receivers. Unprogrammed receivers are excluded.

Receiver Supervision Trouble (8 Flashes)

This trouble is indicated when receiver supervision is enabled and communication between the Communicator module and the receiver fails. Trouble is indicated if Ethernet 1 is supervised and does not receive a heartbeat from the receiver or if the unit does not receive an acknowledgment to 4 heartbeats sent to the receiver.

FTC Trouble (9 Flashes)

This trouble is indicated when the unit fails to communicate module events to the central station. Trouble is displayed after the unit has exhausted all communications attempts to all programmed receivers for events generated by the Communicator.

Module Configuration Trouble (12 Flashes)

This trouble is indicated when the System Account Code or the Receiver Account have not been programmed. Disabled receivers are excluded.

▲ Red Network Connection Status LED

BLINKING: Indicates communications in progress.

- Once quickly for outgoing Ethernet transmission.
- Twice quickly to indicate incoming Ethernet ACK/NAK.

OFF: This is the normal state of the Red Network Connection Status LED. There are no network connection issues present.

ON: There is a problem with the Ethernet connection. LED will be ON if any of the following occur:

- Ethernet cable is not connected.
- DHCP configuration times out, or
- Unit fails to get an IP address from the Internet.

▲ Yellow Ethernet Network Link LED

Network Link LED (Yellow)

See Figure 3 for location of LED.

The TL260R uses an additional Link LED on the board. LED is lit to indicate an active Ethernet connection.

COMMUNICATOR RESET / UPDATE

Factory Defaults Reset

You can reset the programming options for the Communicator to the factory settings by installing the hardware jumper. Perform the following steps to reset the Communicator:

NOTE: A jumper is required on AUDIO/DEFAULT pins 4 and 5 to reset the hardware values.

1. Remove Panel front cover.
2. Locate the AUDIO/DEFAULT 5 pin connector on the Communicator board. (See Figure 3).
3. Apply a jumper to short the hardware default pins 4 and 5.
4. Remove AC and DC power from the panel and then reapply power to the Panel. Wait until the two green LEDs on the Communicator begin flashing rapidly.
5. Remove the jumper from the hardware default pins 4 and 5. (Green LEDs will stop flashing).
6. Replace the Panel cover.

NOTE: Your Communicator has now been reset to the factory default values.

Firmware Update

The firmware of the device can be updated remotely over the Ethernet or locally over PC Link updating:

- When the firmware update begins, all 4 LEDs are ON.
- During the firmware update process, the LEDs will be cycled individually in a chaser pattern.
- After a successful update, the unit will automatically restart.
- Should the update fail, all 4 LEDs will flash ON, then OFF together at 1 second intervals.

NOTE: If the firmware update fails, restart the Communicator by cycling Power. For persistent update failures, contact your dealer. For UL/ULC listed installations, only local firmware updates are allowed.

APPENDIX A: COMMUNICATOR TROUBLESHOOTING

Table 4: Trouble LED indications

Trouble indication	Possible Causes	Trouble Possible Solution
No Indication	No Power	<ul style="list-style-type: none"> Check the power connections between the Panel and the Communicator. Confirm PC-LINK cable is properly installed between communicator and panel.
Trouble LED – 2 Flashes	Panel Supervision Trouble	<ul style="list-style-type: none"> Check Section 382(Toggle Option(5) is ON,(Ethernet Module Enabled) Ensure the PC-LINK cable between the Panel and Communicator is connected properly (not reversed) and is securely in place.
Yellow LED – 6 Flashes	Ethernet Trouble	<ul style="list-style-type: none"> Check with your ISP to confirm Internet service is active in your area. Ensure your Ethernet cable is securely inserted into the RJ45 jack of the Communicator and the Hub/Router/ Switch. Check the link light on the Hub/Router/ Switch is ON . If link light is OFF, try restarting the Hub/Router/ Switch. If DHCP is used, ensure that the unit has an assigned IP address from the server. In Section [851] [992] verify a valid IP address is programmed. If not, contact the Network administrator. If problem persists, replace the Ethernet cable and RJ45 connector.
Yellow LED – 7 Flashes	Receiver Not Available	<ul style="list-style-type: none"> Ensure that the Ethernet path has internet connectivity. If you are using a static IP address make sure the gateway and subnet mask are entered correctly. If the network has a firewall, ensure the network has the programmed outgoing ports open (Default UDP Port 3060 and Port 3065). Ensure that all the receivers are programmed for DHCP or have the proper IP address and port number.
Yellow LED – 8 Flashes	Receiver Supervision Trouble	<ul style="list-style-type: none"> This trouble is indicated when supervision is enabled and the unit is not able to successfully communicate with the receiver. If this trouble persists, contact your central station.
Yellow LED - 9 Flashes	FTC Trouble	<ul style="list-style-type: none"> The unit has exhausted all communications attempts to all programmed receiver for events generated by the Communicator. Restart the system, if trouble persists, contact your dealer.
Yellow LED – 11 Flashes	Remote Programming	<ul style="list-style-type: none"> The LEDs will flash when a remote firmware upgrade is in progress over Ethernet. The LEDs will extinguish when update is complete. The LEDs will flash to indicate a remote programming session is active over Ethernet. The LEDs will extinguish when the session terminates.
Yellow LED – 12 Flashes	Module Configuration Trouble	<ul style="list-style-type: none"> This indication appears when Section [021] System Account Code or Section [101]; [111]; [201]; and [211] Receiver Account Code have not been programmed. Ensure that a valid account code has been entered in these Sections.
All LEDs flashing together	Boot Loader Failed	<ul style="list-style-type: none"> Disconnect power, then reconnect power to the Communicator module.
Red and Yellow LEDs flashing together	Initialization Sequence	<ul style="list-style-type: none"> The unit is still initializing. Please wait while the unit gets its programming and establishes a connection to all programmed receivers. Note: This process may take several minutes to complete.
Only Green LEDs flashing	Hardware Default Jumper	<ul style="list-style-type: none"> The hardware default jumper is installed and must be removed. See Figure 3.

ETHERNET PROGRAMMING OPTIONS

The Programming Sections described in this document can be viewed at the LCD. To start programming enter: [*]**18**[installer code]**851**###, Where ### is the 3 digit Section number referenced in this section. The Programming Worksheets at the end of this document can be used to record the new values when programming changes have been made from the default values.

Installers may set programming Options at the panel.

SYSTEM OPTIONS

[001] Ethernet IP Address

Default (000.000.000.000)

Enter the IP address of the Communicator. Ensure that the IP address is unique to your Communicator on the local network. Format is 4 fields, each field is a 3 digit decimal number. Valid range: 000-255. If an IP address is programmed in this Section, the unit will operate with Static IP (DHCP disabled). Sections [002] and [003] must also be programmed when using Static IP addresses.

NOTE: Default for this Section is Dynamic Host Configuration Protocol (DHCP) enabled. When enabled, the DHCP Server will set values for: IP Address [001], Subnet Mask [002], and Gateway [003]. Programming an IP address in this Section will disable DHCP (Static IP).

[002] Ethernet IP Subnet Mask

Default (255.255.255.000)

Enter the Ethernet IP Subnet Mask of the Communicator. Format is 4 fields, each field is 3 digits. Valid range: 000-255.

NOTE: If DHCP is enabled, the DHCP Server will assign the subnet mask for this Section and the programmed value will be ignored.

[003] Ethernet Gateway IP Address

Default (000.000.000.000)

Enter the Ethernet Gateway IP address of the Communicator. The gateway IP address is required when a router is used on the local network to reach the destination IP address specified in Section [001]. Format is 4 fields, each field is a 3 digit decimal number. Valid range: 000-255.

NOTE: If DHCP is enabled, the DHCP Server will assign the Gateway IP address for this Section and the programmed value will be ignored.

[004] Receiver Supervision Interval

Default (0087/135)

When receiver supervision is enabled (ON) in Section [005] Toggle Option [3], the unit sends heartbeats to Ethernet Receiver 1 to test the communications path. Use this Section to set the interval time (in seconds) when heartbeats will be sent to the receivers. Valid range 000A-FFFF seconds. If the programmed value is less than (000A/10) seconds, supervision is disabled.

- **Receiver Window:** This is the supervision timeout that must be configured at the central station receiver.
- **Recommended Values:** This is the recommended heartbeat interval that should be programmed into the Communicator.
- For ULC installations, the Daily test transmission must be enabled over each available communication channel Sections [125]. When programming the recommended intervals will be programmed automatically when the required window is selected.

Table 5: Supervision Intervals for UL/ULC

Jurisdiction	Receiver Window (Timeout)	Recommended Supervision Interval
UL Commercial Burglary	200 seconds	(0087/135) seconds
UL Residential Fire	30 days	Panel Test Transmission
UL Residential Burglary	30 days	Panel Test Transmission
UL Commercial Burglary Active	180 seconds	(005A/90) seconds
UL Commercial Burglary Passive	24 hours	Panel Test Transmission
UL Commercial Burglary Fire Active	180 seconds	(0073/115) seconds
UL Commercial Burglary Fire Passive	24 hours	Panel Test Transmission

[005] System Toggle Options

[1] Ethernet Receiver 1 Supervised

Default (OFF)

ON: Ethernet Receiver 1 will be supervised and heartbeats will be sent to Ethernet Receiver 1 based on the supervision interval programmed in Section [004].

OFF: Ethernet Receiver 1 will not be supervised. When disabled, heartbeat 1 is sent to the Ethernet receiver once every hour, regardless of supervision type (heartbeat 1 or 2). The heartbeat is resent every 5 seconds until ACK. If no event or heartbeat ACK is received after (Receiver Supervision Interval + 75 seconds), Supervisory trouble is indicated.

NOTE: Ethernet Receiver 2 cannot be supervised.

[3] Supervision Type

Default (OFF)

ON: Heartbeat 1 (Commercial Supervision). This supervision type is suitable for applications where swap detection is required on the supervisory packet.**OFF:** Heartbeat 2 (Residential Supervision). This supervision type is suitable for applications where supervision of the communication path to the receiver is required. (no swap detection).**NOTE:** Commercial supervision is more data intensive than residential supervision and should only be used when required to meet the approval for the installation.**[4] Primary Path**

Default (OFF)

OFF: Ethernet channel is the primary path in TL260(R).**[5] Not Used****[6] Remote Firmware Upgrade**

Default (ON)

ON: The Communicator module firmware can be remotely upgraded using the Ethernet path.**OFF:** The Communicator module firmware cannot be remotely upgraded. Local firmware upgrade is still possible.**[7] Alternate Test Transmissions**

Default (OFF).

ON: When the periodic test transmission interval occurs, the test transmission will alternate between being sent to the primary and secondary receivers with each test transmission interval.**OFF:** When the periodic test transmission interval occurs, the test transmission will be sent to the programmed receivers, based on the settings of the periodic test transmission reporting codes.**[8] Not Used.****[006] System Toggle Options 2****[1] Ethernet 1 Receiver Enabled.**

Default (ON).

ON: Ethernet Receiver 1 is enabled.**OFF:** Ethernet Receiver 1 is disabled.**[2] Ethernet 2 Receiver Enabled.**

Default (ON).

ON: Ethernet Receiver 2 is enabled.**OFF:** Ethernet Receiver 2 is disabled.**[3] Reserved. ().****[4] Not Used.****[5] Not Used.****[6] Reserved ().****[7] Not Used.****[8] Reserved ().****[007] DNS Server IP 1**

Default (000.000.000.000)

⚠ Programming this Section is *not* permitted on a UL/ULC listed system.

Enter the IP address for DNS Server 1. Format is 4 fields, each field is a 3 digit decimal. Valid range: 000-255.

NOTE: If no value is programmed and DHCP is used, the DHCP Server will configure the address. If an address is programmed and DHCP is used, the address that you program will be used instead of the DHCP address.**[008] DNS Server IP 2****⚠ Programming this Section is *not* permitted on a UL/ULC listed system.**

Default (000.000.000.000)

Enter the IP address for DNS Server 2. Format is 4 fields, each field is a 3 digit decimal. Valid range: 000-255.

NOTE: If no value is programmed and DHCP is used, the DHCP Server will assign this value. If an address is programmed and DHCP is used, the address that you program will be used instead of the DHCP address.**PROGRAMMING OPTIONS****[011] Installer Code**

Default (CAFE)

Program your installer code for this Communicator module. The installer code will be required when programming the Communicator module. Valid range: 0000 - FFFF.

[012] DLS Incoming Port

Default (0BF6/3062)

The DLS Incoming Local Port (listening port) is the port DLS IV will use when connecting to the Communicator. If a router or gateway is used, it must be programmed with a Transmission Control Protocol (TCP) port forward for this port to the Communicator module IP address. Valid range: 0000 - FFFF.

[013] DLS Outgoing Port

Default (OBFA/3066)

The DLS Outgoing Port is used for outgoing session to DLS IV after an SMS request has been sent to the Communicator. Use this Section to set the value of the local outgoing port. The value must be changed if the Communicator is located behind a firewall and must be assigned a particular port number, as determined by your network administrator. In most cases, changing the default value or configuring your firewall with this port is not required.

Valid range: 0000-FFFF.

NOTE: If Section [006] Toggle Option [7] is ON, DLS will use the Primary path for session. If Section [006] Toggle Option [7] is OFF DLS will use the Ethernet path, if available.

[021] Account Code

Default (FFFFFF)

The account code is included when transmitting any events generated by the Communicator. (e.g., Panel Absent Trouble). It is recommended that the account code be the same as the control panel account number. Valid range: 000001-FFFFFFE. If 4 digit account codes are needed the 2 lowest digits shall be programmed as FF. (e.g., Account 1234 is programmed as:1234FF).

NOTE: Programming this Section with all 0 or F will cause a Module Configuration Trouble.

[022] Communications Format

Default (04)

Program 03 for Contact ID (CID). Program 04 for SIA. The module can be configured to send Events in SIA or CID format. The SIA communication format follows the level 2 specifications of the *SIA Digital Communication Standard - October 1997*. This format will send the account code along with its data transmission. The transmission will look similar to the following at the receiver. Example: **Nr10 ET001**

Where: N = New Event; r10 = Partition/Area identifier; ET = Panel Absent Trouble; 001 = Zone 001.

COMMUNICATIONS REPORTING CODES**Table 6: Communications Reporting Codes**

Event	SIA Identifier	SIA Reporting Code	CID Qualifier	CID Event Code	CID Reporting Code	CID User/Zone
[023] Panel Absent Trouble	ET	001	1	3	55	001
[024] Panel Absent Trouble Restore	ER	001	3	3	55	001
[026] Ethernet 1 Test Transmission	RP	001	1	6	A3	951
[027] Ethernet 2 Test Transmission	RP	002	1	6	A3	952
[030] FTC Restore	YK	001	3	3	54	001

[023] Panel Absent Trouble

Default (FF)

Program 00 to disable this event or FF to enable. This event will occur when communications with the panel have been lost for more than 60 seconds.

[024] Panel Absent Trouble Restore

Default (FF)

Program 00 to disable this event or FF to enable. This event will occur when communications with the control panel have resumed.

SYSTEM TEST OPTIONS [026 - 029]**Test Transmissions to Primary Receiver, with Backup to Secondary Receiver:**

Set Ethernet Section [026] to (FF); [027] to (00).

- If the test transmission fails to the primary receiver it will backup to the secondary receiver.
- If the test transmission fails to the secondary receiver an FTC trouble will be generated.

Test Transmission Unique to Primary and Secondary Receivers:

Set Ethernet Section [026] to (FF); [027] to (FF).

- The module will send periodic test transmissions to each receiver independently, with no backups.
- If the test transmission fails to any of the programmed receivers, an FTC trouble will be generated.

Alternate Test Transmission:

Alternate Test Transmission can be enabled or disabled in Section [005] Toggle Option [7].

[026] Ethernet 1 Transmission

Default (FF)

Program 00 to disable this event transmission or FF to enable. See System Test Options (above) for details on settings.

[027] Ethernet 2 Transmission

Default (00)

Program 00 to disable this event transmission or FF to enable. See System Test Options (above) for details on settings.

NOTE: The time interval (in minutes) between periodic tests is programmed in Section [125].

[030] FTC Restore

Default (FF)

Program 00 to disable this event transmission or FF to enable. This event will occur when an FTC Trouble on the system restores.

[033] Communicator Firmware Update Begin

Default (FF);

Program 00 to disable this event transmission or FF to enable. This event will occur when the communicator firmware update begins.

[034] Communicator Firmware Update Successful

Default (FF);

Program 00 to disable this event transmission or FF to enable. This event will occur when the communicator firmware update successfully completed.

[035] Panel Firmware Update Begin

Default (FF);

Program 00 to disable this event transmission or FF to enable. This event will occur when the panel firmware update begins.

[036] Panel Firmware Update Successful

Default (FF);

Program 00 to disable this event transmission or FF to enable. This event will occur when the panel firmware is updated successfully.

[037] Panel Firmware Update Fail

Default (FF);

Program 00 to disable this event transmission or FF to enable. This event will occur when the panel firmware updated has failed.

Table 7: Firmware Update Reporting Codes

Event	SIA Identifier	SIA Reporting Code	Contact ID Qualifier	Contact ID Event Code	Contact ID Reporting Code	Contact ID User/Zone
[033]Comm. FW Update Begin	LB	00	1	9	03	002
[034]Comm. FW Update Successful	LS	00	3	9	03	002
[035]Panel FW Update Begin	LB	00	1	9	03	003
[036]Panel FW Update Successful	LS	00	3	9	03	003
[037]Panel FW Update Fail	LU	00	1	9	04	003

ETHERNET RECEIVER 1 OPTIONS**[101] Ethernet Receiver 1 Account Code**

Default (0000000000)

The account code is used by the central station to distinguish between transmitters. This account code is used when transmitting heartbeat signals to the central station receiver. Signals received from the Panel will use the control panel account number. Valid range: 0000000001-FFFFFFFFFE. Programming all 0 or all F will cause a Module Configuration Trouble.

[102] Ethernet Receiver 1 DNIS

Default (000000)

The Dialed Number Information Service (DNIS) is used in addition to the Account Code to identify the Communicator module at the central station. Valid range: 000000 - 099999. Value is entered as a leading 0 followed by the 5 digit DNIS. Format is Binary Coded Decimal (BCD).

NOTE: Each Ethernet receiver must be programmed with a unique DNIS.

[103] Ethernet Receiver 1 Address

Default (127.000.000.001)

The default address enables the Communicator to operate in **Unattended Mode**.

Unattended Mode is used when a receiver is not available and the unit is required to perform DLS sessions. Typically used where the customer programs the control panel daily due to access control and still wants to receive alarms without buying extra hardware (receiver) or software.

NOTE: When a valid IP address has been programmed, Ethernet Receiver 1 is enabled and will communicate events over the Ethernet channel.

[104] Ethernet Receiver 1 Remote Port

Default (0BF5/3061)

This Section determines the remote port of Ethernet receiver 1. Valid range: 0000 - FFFF.

[105] Ethernet Receiver 1 Local Port

Default (0BF4/3060)

Use this Section to set the value of the local outgoing port. Set the value of this port when your installation is located behind a firewall and must be assigned a particular port number as determined by your central station system administrator. Valid range: 0000 - FFFF.

[106] Ethernet Receiver 1 Domain Name

Default ()

Enter the Domain Name as 32 ASCII characters.

ⓘ Programming this Section is *not* permitted on a UL/ULC listed system.**ETHERNET RECEIVER 2 OPTIONS****[111] Ethernet Receiver 2 Account Code**

Default (000000000)

The account code is used by the central station to distinguish between transmitters. The account code is used when transmitting heart-beat signals to the central station receiver. Signals received from the control panel will use the control panel account number. Valid range: 0000000001- FFFFFFFF0E. Programming all **0** or all **F** will cause a Module Configuration Trouble (yellow LED=12 flashes).

[112] Ethernet Receiver 2 DNIS

Default (000000)

The DNIS is used in addition to the account code to identify the Communicator module at the central station. Valid range: 000000 - 099999. Value is entered as leading **0** followed by the 5-digit DNIS. Format is BCD.

NOTE: Each Ethernet receiver must be programmed with a unique DNIS.**[113] Ethernet Receiver 2 Address**

Default (000.000.000.000)

Programming the Ethernet receiver 2 IP address with 000.000.000.000 will disable Ethernet.

Enter the Ethernet receiver 2 IP address. This address will be provided by your central station system administrator. Format is 4 fields, each field is a 3-digit decimal. Valid range: 000-255.

NOTE: When a valid IP address has been programmed, Ethernet Receiver 2 is enabled and will communicate events over the Ethernet channel.**NOTE:** Do not program Ethernet Receiver 1 and Ethernet Receiver 2 to communicate to same receiver.**[114] Ethernet Receiver 2 Remote Port**

Default (0BF5/3061)

This Section is used to program the port number used by Ethernet Receiver 2. Set the value of this port when your installation is located behind a firewall, and must be assigned a particular port number as determined by your central station system administrator. Valid range: 0000 - FFFF.

NOTE: Do not program Ethernet Receiver 1 and Ethernet Receiver 2 Port with the same value.**[115] Ethernet Receiver 2 Local Port**

Default (0BF9/3065)

Use this Section to program the value of the local outgoing port. You can set the value of this port when your installation is located behind a firewall and must be assigned a particular port number as determined by your network administrator. Valid range: 0000 - FFFF.

NOTE: Do not program Ethernet Receiver 1 and Ethernet Receiver 2 Port with the same value.**[116] Ethernet Receiver 2 Domain Name**

Default ()

ⓘ Programming this Section is *not* permitted on a UL/ULC listed system.

Enter the Domain Name as 32 Character ASCII.

ETHERNET OPTIONS**[124] Ethernet Test Transmission Time**

Default (9999)

Enter a 4 digit number (0000-2359) using the 24-hour clock format (HHMM) to set the test transmission time of day.

Valid range: 00 - 23 hours (HH) and 00 - 59 minutes (MM). Programming a value of 9999 will disable the test transmission time.

NOTE: The internal date and time will automatically be programmed when the unit communicates with the primary receiver.**[125] Ethernet Test Transmission Cycle**

Default (000000)

This value represents the interval between test transmissions, in minutes. Valid range: 000000 - 999999 minutes. Once the unit has sent the initial periodic test transmission, all future test transmissions will be offset by the programmed number of minutes. See Sections [026] - [029].

Table 8: Ethernet Test Transmission Interval

Test Transmission Interval	Daily	Weekly	Monthly
Programmed Minutes	001440	010080	043200

NOTE: Minimum value is 000005 minutes. Programming an interval that is less than 5 minutes will disable test transmission.

RECEIVER DIAGNOSTIC TESTING

[901] Diagnostic Test Transmission

[1] Ethernet 1 (OFF).

[2] Ethernet 2 (OFF).

[3],[4],[5],[6],[7],[8] Reserved (OFF).

This Section may be used by the installer to force the Communicator to send an immediate test transmission to specific receivers, to verify that the communications paths are available. Diagnostic Test Transmission failure will indicate as FTC trouble (Yellow LED = 9 flashes). If an FTC error occurs when testing all receivers, select only one receiver and repeat test to isolate the receiver that is not communicating.

SYSTEM INFORMATION (READ ONLY)

NOTE: Sections [987] - [998] are provided for information (Read Only). Values in these Sections can not be modified by the Installer.

[987] Language Version

This Section will display the current Language version of the Communicator.

[988] DNS 1 IP Address

This Section will display the IP address of DNS Server 1. This is useful when the unit is configured for DHCP and you need to see the IP address was assigned to the device by the DHCP Server. This value is programmed in Section [007] or assigned by DHCP.

[989] DNS 2 IP Address

This Section will display the IP address of DNS Server 2. This is useful when the unit is configured for DHCP and you need to see the IP address that was assigned to the device by the DHCP Server. This value is programmed in Section [008] or assigned by DHCP.

[990] Boot Loader Version

This Section will display the current Boot Loader version of the Communicator.

[991] Firmware Version

This Section will display the current firmware version of the device. Update worksheets with new version after a flash update is completed.

[992] Ethernet IP Address

This Section will display the IP address of the Ethernet connection. This value is programmed in Section [001] or assigned by DHCP.

[993] Ethernet Gateway Address

This Section will display the IP address of the Ethernet Gateway. This value is programmed in Section [003] or assigned by DHCP.

[998] MAC Address

This Section will display the unique 12-digit, hexadecimal number assigned as the Media Access Control (MAC) address of the device.

SYSTEM RESET DEFAULTS

[999] Software Default

Default (99):

The Software default allows the installer to refresh the unit after changes and also return the Communicator to the default state.

00: Default Module. All programming Sections in module revert to factory settings. This will erase all existing programming of the unit.

55: Reset. The Communicator is reset. This option is equivalent to power cycling the Communicator.

COMMUNICATOR STATUS, INITIALIZATION, DIAGNOSTICS AND TROUBLESHOOTING

[984] Communicator Status

The communicator status sections provide the installer with real-time status of the communicator's functionality and operational readiness. They also provide status of failures and potential malfunctions that may affect the operation of the communicator and its primary function of sending signals to the central status in case the monitored event occurs.

The communicator status is displayed in the form of a 6-digit CODE (6 hexadecimal numbers) as in the following pattern: 00000F. The range of the code is from: 00000F – 2220CF. Not all numbers in this range are assigned a status code (Some numbers are skipped, i.e. not assigned the code).

Each digit represents a status or trouble indicator (or assigned function when no trouble is present) as described below:

1. Digit 1 - Not Used.
 2. Digit 2 - Not Used.
 3. Digit 3 - Network Indicator, displays the presence (operational status) of network.
 4. Digit 4 & 5 - TROUBLE INDICATOR displays the type of problem/malfunction on communicator or modules associated with and connected to communicator.
 5. Digit 6 – Reserved for future use.
- For example, status code 11002F – when interpreted means: “Signal Indicator 1 OK, Signal indicator 2 OK, there is no network trouble, and there is trouble in the communicator, Panel supervision trouble.” For details see the table below:

Table 9: Communicator Status and Trouble Coding in Hexadecimal Numbers

Digit 1		Digit 2		Digit 3		Digit 4 & 5		Digit 6
Signal indicator 1		Signal indicator 2		Network indicator		TROUBLE INDICATOR		Future use
0	Not used	0	Not used	0	Off	00	Off (No trouble)	F
1	Not used	1	Not used	1	On	01	Future use	F
2	Not used	2	Not used	2	Flashing	02	Panel supervision trouble	F
						03	Future use	F
						04	Not used	F
						05	Not used	F
						06	Ethernet Trouble	F
						07	Receiver Not Available	F
						08	Receiver Supervision trouble	F
						09	FTC Trouble	F
						0A	Not used	F
						0B	Future use	F
						0C	Module configuration Trouble	F

The communicator status codes will indicate the signal levels with digit 1 and 2, a network status with digit 3, and the trouble status with digit 4 and 5 as indicated in table above. For example status code 11000F would display following status:

1 – Not used

1 – Not used

0 – OFF = Network indicator, network is working

00 – TROUBLE INDICATOR = there is no trouble on the communicator.

F – Future code not assigned yet. It is sixth hexadecimal digit. It could be also ' - ' (dash) instead of letter F (11000-).

In this example the network indicator is OFF showing that we do not have any network problems and trouble indicators are both OFF indicating that we don't have any trouble on the communicator.

Table 10: Trouble Code Indications

Trouble Indicator Digit	Possible Causes	Trouble Possible Solutions
00	No Trouble	N/A
02	Panel Supervision Trouble	Check Section [382]Toggle Option[5] is ON (Ethernet Module Enabled). Ensure the PC-LINK cable between the Panel and Communicator is connected properly (not reversed) and is securely in place.
06	Ethernet Trouble	Check with your ISP to confirm Internet service is active in your area. Ensure your Ethernet cable is securely inserted into the RJ45 jack of the Communicator and the Hub/Router/ Switch. Check that the link light on the Hub/Router/ Switch is ON. If link light is OFF, try restarting the Hub/Router/ Switch. If DHCP is used, ensure that the unit has an assigned IP address from the server. In Section [851] [992] verify a valid IP address is programmed. If not, contact the Network administrator. If problem persists, replace the Ethernet cable and RJ45 connector.
07	Receiver Not Available	Ensure that the Ethernet path has internet connectivity. If you are using a static IP address make sure the gateway and subnet mask are entered correctly. If the network has a firewall, ensure the network has the programmed outgoing ports open (Default UDP Port 3060 and Port 3065). Ensure that all the receivers are programmed for DHCP or have the proper IP address and port number.
08	Receiver Supervision Trouble	This trouble is indicated when supervision is enabled and the unit is not able to successfully communicate with the receiver. If this trouble persists, contact your central station.
09	FTC Trouble	The unit has exhausted all communications attempts to all programmed receivers for events generated by the Communicator. Restart the system. If trouble persists, contact your dealer.
0C	Module Configuration Trouble	This indication appears when Section [021] System Account Code, Section [101], [111], [201], and [211] Receiver Account Code have not been programmed. Ensure that a valid account code has been entered in these Sections.

Communicator Troubleshooting

The status code for the radio signal strength, its typical troubles, possible causes and troubleshooting instructions is displayed in the table below.

The table below displays the Network indicator codes and meaning of each code.

Table 11: Network indicator - Digit 3

Network indicator Value	Means
OFF	No Network Trouble
ON	Ethernet Cable disconnected Ethernet DHCP failed
Flashing	Incoming transmission Outgoing transmission

Firmware Update Diagnostics Section

The firmware updates can be made from the communicator. The communicator can update firmware of the panel and also of the communicator itself.

- The Firmware Update Diagnostic is located in section [984]

The Firmware Update Diagnostic section shall be a Read Only 2 Digit, Hexadecimal Section

- From Factory Default, the value of this Location shall be 0xFE which indicates No Errors. When a default is made, the Diagnostic Section shall default to 0xFE

- The communicator could reject Firmware Download for many reasons, this will only be represented as 1 Reason Code 0xFF Described as Firmware Receive Failure. Firmware Receive Failure may be rejected for the following conditions:

- DLS Session in Progress
- Remote Firmware Upgrade is Disabled
- TFTP Firmware Update Download is in Progress
- iControl/iHub Firmware Update in Progress
- Panel Update in Progress
- Once file download has begin, Section [984] shall be updated with 0xFD
- If the download was dropped/cancelled for any reason, section [984] shall update it with 0xFF
- Upon Download successful, the communicator will either be updating itself, or the panel

- In the case of Communicator Firmware Upgrade, the communicator shall enter a 4.5 minute window before it performs the update because it is communicating to Central Station and interactive services. Section [984] shall use reason code 0x0A indicating communication in progress at this point

- In the case of Panel Firmware Update, if panel firmware pushes through, User will be able to observe it because the keypad enters keypad fault. If panel rejects firmware for any reason, the communicator shall update section [984] with the cancellation reason code provided by the panel

- In the Case of Communicator Firmware Update successful, the communicator shall update diagnostic section to 0xFB after it is updated successfully

- During Panel Firmware Update Sequence, the Panel could Cancel the Firmware Update due to the Following Reasons Codes:

- Panel does not Send any Reason Code Upon Success of Panel Firmware Upgrade, section [984] shall be updated with 0xFC to indicate Panel Firmware Update Complete.

Reason codes and corresponding firmware images are displayed in the table below.

Table 12: Reason Codes Description and Corresponding Firmware Images

Reason Code	Description of Reason Code	Firmware Image is
00	Version Check Failed	Image Erased
01	Image Type Mismatch	Image Erased
02	Panel Type Mismatch	Image Erased
03	Hardware Type Mismatch	Image Erased
04	Firmware header Wrong Length	Image Erased
05	Panel is Armed	Firmware Update Pending Status Clearance
06	AC Trouble	Firmware Update Pending Status Clearance
07	Low Battery	Firmware Update Pending Status Clearance
08	Unviewed Alarm	Firmware Update Pending Status Clearance
09	FTC Trouble	Firmware Update Pending Status Clearance
0A	Communication in Progress	Firmware Update Pending Status Clearance
0B	Software Variant Mismatch	Image Erased
FA	(Future Use)	(Future Use)
FB	Communicator Firmware Update Complete	n/a
FC	Panel Firmware Update Complete	n/a
FD	File Download in Progress	n/a
FE	Firmware File Empty	Software Default Value (Factory Default)
FF	File Receive Failure	File Was Not Received
F1	Communicator Update Fail	Firmware Update did Not Occur
F2	Panel Update Fail	Panel is not responding

The table below displays the Network indicator codes and meaning of each code.

The firmware updates can be made from the communicator. The communicator can update firmware of the panel and also of communicator itself.

- This section does not provide specific details such as if the Image is still stored or erased due to the cancellation code. Specific details shall be captured in User/Installation Manuals and provided to Technical Advice Bulletin

- For the Purpose of Documentation:
- Communicator shall erase panel image file on Reason Code 0x00 ~ 0x04 and 0x0B
- Communicator shall try to upgrade panel image file forever on Reason Code 0x05 ~ 0x0A.

ETHERNET PROGRAMMING WORKSHEETS

SYSTEM OPTIONS

[001] Ethernet IP Address

Default (000.000.000.000)

[002] Ethernet IP Subnet Mask

Default (255.255.255.000)

[003] Ethernet Gateway IP Address

Default (000.000.000.000)

[004] Receiver Supervision Interval

Default (0087/135) Valid range: 0000 - FFFF.

[005] System Toggle Options

[1] Ethernet Receiver 1 Supervised Default (OFF).

[2] Not Used Default (OFF).

[3] Supervision Type Default (OFF).

[4] Primary Communications Path.

Default [OFF].

[5] Not Used

Default (OFF).

[6] Remote Firmware Upgrade Default (ON).

[7] Alternate Test Transmission Default (OFF).

[8] Not Used Default (OFF).

[006] System Toggle Options 2

[1] Ethernet Receiver 1 Enabled Default (ON).

[2] Ethernet Receiver 2 Enabled Default (ON).

[4] Not Used Default (OFF).

[5] Not Used Default (OFF).

[7] Not Used Default (ON).

[8] Not Used Default (ON).

[007] DNS Server IP 1

Ø Programming not permitted on UL/ULC listed system.

Default (000.000.000.000)

[008] DNS Server IP 2

Ø Programming not permitted on UL/ULC listed system.

Default (000.000.000.000)

PROGRAMMING OPTIONS

[011] Installer Code

Default (CAFE) Valid range: 0000 - FFFF.

[012] DLS Incoming Port

Default (0BF6/3062) Valid range: 0000 - FFFF.

[013] DLS Outgoing Port

Default (0BFA/3066) Valid range: 0000 - FFFF.

[022] Communications Format

Default (04) Program 03 (CID), 04 (SIA).

[023] Panel Absent Trouble

Default (FF); Program 00 disable or FF enable.

[024] Panel Absent Trouble Restore

Default (FF) Program 00 disable or FF enable.

SYSTEM TEST OPTIONS [026 - 029]

[026] Ethernet 1 Transmission

Default (FF) Program 00 disable or FF enable.

[027] Ethernet 2 Transmission

Default (00) Program 00 disable or FF enable.

[030] FTC Restore

Default (FF) Program 00 disable or FF enable.

[033] Communicator Firmware Update Begin

Default (FF) Program 00 disable or FF enable.

[034] Communicator Firmware Update Successful

Default (FF) Program 00 disable or FF enable.

[035] Panel Firmware Update Begin

Default (FF) Program 00 disable or FF enable.

[036] Panel Firmware Update Successful

Default (FF) Program 00 disable or FF enable.

[037] Panel Firmware Update Fail

Default (FF) Program 00 disable or FF enable.

ETHERNET RECEIVER 1 OPTIONS**[101] Ethernet Receiver 1 Account Code**

Default (0000000000)
Valid range: 0000000001 - FFFFFFFFEE.

[102] Ethernet Receiver 1 DNIS

Default (000000) Valid range: 000000 - FFFFFFFF.

[103] Ethernet Receiver 1 Address

Default (127.000.000.001)

[104] Ethernet Receiver 1 Remote Port

Default (0BF5/3061) Valid range: 0000 - FFFF.

[105] Ethernet Receiver 1 Local Port

Default (0BF4/3060) Valid range: 0000 - FFFF.

[106] Ethernet Receiver 1 Domain Name

Default () 32 ASCII characters.

Ø Programming not permitted on UL/ULC listed system.

ETHERNET RECEIVER 2 OPTIONS**[111] Ethernet Receiver 2 Account Code**

Default (0000000000)
Valid range: 0000000001 - FFFFFFFFEE.

[112] Ethernet Receiver 2 DNIS

Default (000000) Valid range: 000000 - 0FFFFFFF.

[113] Ethernet Receiver 2 Address

Default (000.000.000.000)

[114] Ethernet Receiver 2 Remote Port

Default (0BF5/3061) Valid range: 0000 - FFFF.

[115] Ethernet Receiver 2 Local Port

Default (0BF9/3065) Valid range: 0000 - FFFF.

[116] Ethernet Receiver 2 Domain Name

Default ()

Ø Programming not permitted on UL/ULC listed system.

ETHERNET OPTIONS**[124] Ethernet Test Transmission Time**

Default (9999) Valid: 00-23(HH); 00-59(MM)

[125] Ethernet Test Transmission Cycle

Default (000000)

Valid range: 000000 - 999999 minutes.

[901] Diagnostic Test Transmission

[1] Ethernet 1 Default (OFF).

[2] Ethernet 2 Default (OFF).

SYSTEM INFORMATION (READ ONLY)**[988] DNS 1 IP Address**

[989] DNS 2 IP Address

[991] Firmware Version

[992] Ethernet IP Address

[993] Ethernet Gateway Address

[998] MAC Address

SYSTEM RESET DEFAULTS**[999] Software Default**

Default (99); Valid entries are 00 or 55

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- damage due to causes beyond the control of Digital Security Controls such as excessive voltage, mechanical shock or water damage;
- damage caused by unauthorized attachment, alterations, modifications, or foreign objects;
- damage caused by peripherals (unless such peripherals were supplied by Digital Security Controls);
- defects caused by failure to provide a suitable installation environment for the products;
- damage caused by use of the products for purposes other than those for which it was designed;
- damage from improper maintenance; or
- damage arising out of any other abuse, mishandling or improper application of the products.

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In addition to the items which void the Warranty, the following items shall not be covered by Warranty:

freight cost to the repair centre;
products which are not identified with DSC's product label and lot number or serial number; or

products disassembled or repaired in such a manner as to adversely affect performance or prevent adequate inspection or testing to verify any warranty claim.

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FCC Compliance Statement

CAUTION: Changes or modifications not expressly approved by the Digital Security Controls could void your authority to use this equipment.

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:

- Re-orient 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/television technician for help.

The user may find the following booklet prepared by the FCC useful: 'How to Identify and Resolve Radio/Television Interference Problems'. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock # 004-000-00345-4.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



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