IntelliCom Advanced Gateway

Installation, Operations & Programming Manual

POTTER
The Symbol of Protection

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Models:
IntelliCom-5GA (AT&T service)
IntelliCom-5GV (Verizon service)
IntelliCom-5GMC (AT&T, T-Mobile, Verizon Service)

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General Description and Operation

The Potter IntelliCom Advanced Gateway is an alarm transmission device that facilitates the use of the cellular network or an internet-connected LAN (Ethernet) for the delivery of signals for commercial alarm panels, providing the following three modes of operation:

Dual Path – Cellular primary, LAN backup
Dual Path – LAN primary, Cellular backup
Cellular Only (used for Sole Path)

In Dual Path mode, IntelliCom can use either the cellular or LAN path to transmit an event from the panel and fail over to the other path when the primary becomes unavailable. In Cellular Only mode, IntelliCom will not monitor for a LAN connection and strictly use cellular as the means of communication. This mode also offers the ability to supervise the connection to meet specific fire system requirements. IntelliCom can also be used as either a Primary or Secondary Path device when an alternate communications path is connected to another Panel-Telco interface or DACT. In such cases, panel settings determine the alarm reporting path.

When transmitting an alarm signal, the IntelliCom can obtain its data from the alarm panel by way of a telephone interface, sometimes referred to as dialer-capture or via an Ethernet cable from a supported Potter panel. The IntelliCom will obtain all alarm signal information including monitoring station phone number, account number and all zones for every alarm transmission. IntelliCom handshakes with the alarm panel and causes it to transmit the alarm data. The IntelliCom encodes the alarm data and securely transmits it to the Potter Communication Center (PCC) over the chosen path: cellular radio or connected LAN. The PCC performs a function similar to a central station receiver and issues the transmission acknowledgment when the last message in the transmission is received. After decoding and reformatting, the alarm signal is routed to the desired alarm company monitoring station for action. An End-to-End Acknowledgement feature can be enabled to cause a Radio Failure Condition when an acknowledgment cannot be relayed from the central station to IntelliCom.

IntelliCom Advanced Gateway offers the ability to establish an override of the central station telephone and account numbers stored in the panel by providing alternate central station values in the dealer portal: www.potterintelliCom.com. This can be useful in situations where the installer codes are not known or the panel cannot otherwise be reprogrammed. When the IntelliCom is configured with override values, all signals, whether alarm, trouble, or supervisory, will be sent to the override central station. To be able to send different types of signals to different locations, the central station data for each type of signal will need to be programmed into the panel and the override values left blank in the dealer portal. This will cause IntelliCom to use the central station values as transmitted by the panel.

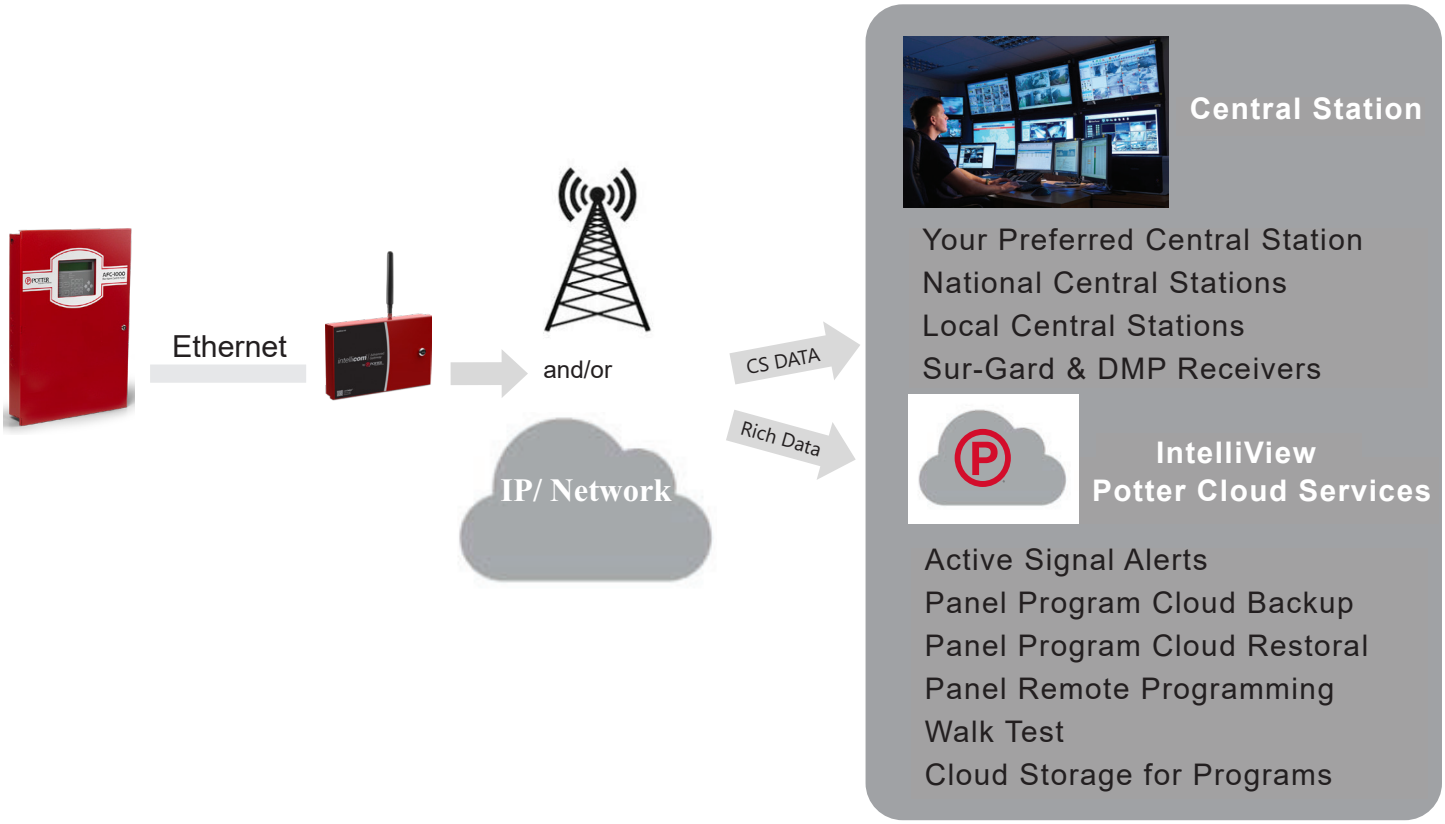
In a typical alarm installation, IntelliCom is installed in the same area as the host alarm system. For supported Potter panels with an Ethernet port, a cable connects that port to either a switch (required for IntelliView Service) or directly to IntelliCom Ethernet jack (silver RJ-45). For other panels, a telephone cable connects the panel DACT to the IntelliCom telephone jack (black RJ-45). IntelliCom connects to the Potter Communication Center (PCC) via a built-in cellular radio, or when used as a dual path device, via an Internet-enabled premises LAN. Two programmable System Trouble Condition (STC) relays are available for connection to the host alarm panel's trip zone input terminals in order to provide IntelliCom trouble signals to the alarm panel. Additionally, automatic self-test and Check Status signals are transmitted exclusively to the PCC. IntelliCom supports two power supply options. The IntelliCom can be plugged into a standard AC outlet (120 volts/60Hz) and will keep a dealer-supplied battery charged. Or, IntelliCom can operate on 12VDC or 24VDC regulated power supplied by the connected alarm panel.

The UL Listed equipment at the PCC plays a key role in IntelliCom operation due to the panel alarm signal format encoding and decoding requirements used in packet-data transmissions. The PCC also manages the real-time databases for IntelliCom accounts and a complete history of every unit's operating conditions. These conditions include programming setup information, alarm transmission information, supervisory trouble information, Check Status information, and automatic self-test information.

IntelliCom-5G Advanced Gateway comes as IntelliCom-5GA with AT&T as the cellular carrier, IntelliCom-5GV with Verizon as the cellular carrier, or IntelliCom-5GMC with AT&T, T-Mobile, and Verizon as the cellular carriers. These models have been certified as complying with the standards of UL 864.

IntelliCom-5GMC is preconfigured for operation on the cellular networks of AT&T, T-Mobile, and Verizon. When IntelliCom-5GMC is first connected to a power source, the Carrier Selection Process (CSP) determines the signal strength of each carrier for that location. IntelliCom-5GMC is set to the carrier with the strongest signal. The CSP ranking is used to determine the carrier network to switch to should an outage be detected with the selected carrier. This behavior occurs automatically and no action by the installer is necessary.

IntelliCom integrates with the IntelliView Service. Consult the IntelliView documentation for more information and for instructions for connection settings.



Information Related to Software Settings - Fire Systems

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, OTHER INVOLVED PARTIES
FIRE SYSTEM INSTALLATIONS IN THE UNITED STATES: This product incorporates field-programmable software. In order to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.

Program feature or option	Permitted in UL 864? (Y/N)	Available settings	Settings permitted in UL 864
Link Supervision when used as a Sole Path	Y	Disabled, 200 seconds, 5 minutes, 60 minutes	200 seconds, 5 minutes, 60 minutes
Automatic Self-Tests when used with an alternate communication path	Y	Disabled, 6 hours, Daily, Weekly, Monthly	6 hours *
AC Failure Condition (ACFC)/Low Power Failure (LPF)	Y	Disabled, any number of hours up to 24	1 hour, 2 hours, 3 hours
No Service Condition (NSC) delay	Y	30 seconds, 60 seconds, 3-, 5- 10-, 20-, 30-, 45-, 60-, 1440- minutes	30 seconds, 60 seconds, 3 minutes
End-to-End Acknowledgement	Y	Disabled, Enabled	Enabled

* *6 hours is specified in 2013 and later editions of NFPA 72; the 2010 edition specified 24 hours (daily).*

UL Compliance Note: IntelliCom must be used with a panel which has also been UL Listed for commercial fire systems.

Features

This section summarizes the key features of IntelliCom-5G Advanced Gateway.

Operating Mode

The IntelliCom Advanced Gateway is comprised of transmission devices that are installed at protected premises to provide signal transmission over cellular and Internet-enabled LAN connections for alarm systems. IntelliCom transmits alarm signals over the nationwide digital cellular network if the premises Internet connection has been disrupted or compromised, when there is no LAN connection available, or when set for primary or sole path use of the cellular pathway. When set in LAN primary mode, the IntelliCom will first attempt to transmit alarm signals over the LAN pathway.

Complete Supervision of Communication Path

The IntelliCom Advanced Gateway continuously supervises the connection to the alarm panel and the cellular and LAN (when not set in cellular-only mode) pathways. If any of these pathways becomes inoperative, IntelliCom can generate a relay trip output that can be connected to a zone input of the host alarm panel. These System Trouble Conditions (STCs) are described below.

LAN Failure Condition (LANFC)

IntelliCom monitors the LAN connection by verifying that messages can be sent to the Potter Communications Center (PCC) and an acknowledgment returned. If an initiated message cannot reach the PCC, a LAN Failure Condition (LANFC) is declared and the LEDs indicate the type of trouble condition. The System Trouble Condition LED (STC LED 2) will flash 3 times, and the STC relay will trip after a programmable period of time. LED 6 (LAN STC LED) will also flash in a specific pattern to indicate the possible cause of the LANFC issue:

- Single flash: LAN connection not detected. Check the wiring connection between the IntelliCom's silver RJ-45 and premises LAN port (typically a router or switch).
- Two flashes: Unable to obtain IP Address from LAN. Check with the System Administrator for the premises. A static IP address may be needed.
- Three flashes: Unable to reach Internet. Check with the System Administrator for the premises. The Gateway Address may be incorrect.
- Four flashes: Expected PCC acknowledgement not received. Call Potter Technical Support as additional troubleshooting will be required.

NOTE: When the IntelliCom is configured to use a sole communications path (cellular), the LAN Failure Condition (LANFC) is not applicable and LED 6 will remain off.

No Service Condition (NSC)

A no service condition (NSC) occurs when the IntelliCom is unable to register with the cellular network.

NSC can be configured to trip the supervisory relay output (STC relay) after a programmable period of time. The STC LED will flash 4 times immediately after losing cellular service and dial-tone will cease to be provided, independent of the STC assertion and programmed assertion delay. NSC restoral occurs immediately after cellular service has been acquired.

Radio Communications Failure Condition (RFC)

Radio communications failure condition (RFC) occurs when the IntelliCom is unable to receive a response from the PCC. When RFC is declared, the STC LED will flash 5 times, dial-tone will cease, and the STC relay will trip as programmed. Restoral of this condition occurs after 10 minutes or when a message is received from the PCC.

NOTE: When End-to-End acknowledgement feature is enabled, a message that fails to deliver to the Central Station will trigger an RFC condition.

Panel Presence Failure (PPF)

Panel presence failure condition (PPF) occurs when the IntelliCom is unable to detect the presence of the alarm panel. PPF is indicated by the STC LED flashing 7 times. A supervisory report is generated and sent to the PCC for Central Station delivery upon detection of PPF. Restoral of this condition occurs when the alarm panel is detected as present for the selected delay time.

NOTE: The factory default for PPF is Disabled and needs to be Enabled for its use. For the PPF feature to work, Tip, Ring, and the return connections for Tip and Ring must be connected between the panel and the IntelliCom.

UL Compliance Note: All connections from the alarm panel and IntelliCom must be mechanically protected and no greater than 20 feet in distance. PPF is not required for fire systems.

Link Supervision

In order to satisfy UL requirements when IntelliCom is set to Cellular Only, link supervision at preset intervals must be enabled. Once IntelliCom is provisioned with the Link Supervision option, the PCC constantly monitors all the enabled IntelliCom pathways and sends a specific message to the Central Station if a path is broken or a compromise attempt is made. After the initial account activation has completed, the installer must verify the Link Supervision by turning off the device and making sure an alarm with the specific code is delivered.

Complete Power Supervision

The IntelliCom can supervise and report status of the backup battery and AC power source when powered from the AC adapter. It has an integrated control and power component which keeps IntelliCom's battery charged and is also supervised. Furthermore, the IntelliCom can report on low voltage events when powered from a DC source at the alarm panel.

Low/Missing Battery Condition (LBC)

When using AC as the main power source, IntelliCom checks the backup battery voltage on initial power-up and every 60 seconds thereafter. If the battery voltage is less than 11.6 volts, it changes from 'good' to 'bad' state and an LBC occurs whereby the STC LED blinks twice, and the STC relay trips. When the battery voltage increases to 12.1 volts, the STC LED and STC relay restore. The IntelliCom also indicates Low/Missing Battery Condition (LBC) when the battery charger fails, or the battery fails the periodic load test.

AC Failure Condition (ACFC)

AC failure condition (ACFC) is detected immediately when the AC power-driven input from the plug-in adapter drops below 8 VAC. When this condition is detected, the STC LED blinks once, the Power LED turns off, and the STC trip output is activated after a preset time (default 2 hours). When AC power returns to normal (at least 10 VAC), the Power LED turns on immediately and the STC relay restores after 60 seconds. When ACFC occurs, you may want to verify both the power at the outlet and that coming from the adapter.

Low Power Failure (LPF)

If IntelliCom is being powered through the DC connection, a Low Power Failure condition (LPF) is detected immediately when the DC power drops below 7.5VDC. When this condition is detected, the STC LED blinks once, the Power LED turns off, and the STC trip output is activated after a preset time (2 hours). When DC power returns to normal (≥8VDC), the Power LED turns on immediately and the STC trip output restores after 60 seconds.

Dial Tone Failure (DTF)

IntelliCom provides a telephone interface similar to that of a Telco central office. IntelliCom continuously monitors the circuit that provides dial tone to the alarm panel. IntelliCom supplies 30VDC by default but can be configured to supply 40VDC, as needed. A Dial Tone Failure (DTF) occurs when the IntelliCom is unable to provide proper telephone signaling to the panel (voltage supplied unexpectedly drops). The STC LED will flash 6 times and the STC relay will trip.

Catastrophic Failure (CF)

Catastrophic Failure (CF) is any condition that causes IntelliCom to stop functioning at all levels. The most common CF is a power failure event with insufficient battery backup. The STC1 and STC2 trip outputs are activated, and the visible indication is loss of all LED activity.

Automatic Self-test Report

The automatic self-test signal schedule is programmable as prescribed when the IntelliCom is registered. The Central Station receives the automatic self-test report in the same format that the alarm panel normally uses. The self-test code and testing frequency are set during registration and can accommodate any code the Central Station expects. Self-tests include separate reporting for both the cellular and LAN pathways (unless in cellular-only mode).

The PCC captures all current and historical data pertaining to the operation of the IntelliCom when it processes the automatic self-test signal. This data contains current operational status (C.O.S.) of the IntelliCom such as “All OK”, “AC fail condition”, “Low/missing battery condition”, LAN failure condition, or any combination of identified trouble conditions, as well as the current cellular signal strength. In addition, the data also contains historical data for supervisory events that occurred since the last self-test or Check Status report signal was transmitted. This data includes the number of occurrences of AC fail conditions, low battery conditions, LAN failure conditions, and no cellular service conditions. This additional information is available by visiting www.potterintellicom.com (dealer log-in credentials required).

Check Status Capability

Although IntelliCom has the capability for an automatic periodic self-test, a separate feature is provided for determining the current operational status of every IntelliCom Advanced Gateway. This feature is called Check Status and is used to provide real-time operational status for the IntelliCom on-demand. It is useful in resolving STC events that are reported by the alarm panel to the Central Station. Check Status is available via www.potterintellicom.com (dealer log-in required).

Check Status causes the IntelliCom to upload current operational status and historical data, just as the automatic self-test described above, except that the resulting status is held in the PCC database for review and is not forwarded to the Central Station.

Programmable Supervisory Trip Output (STC) Relays

The IntelliCom has two supervisory relay trip outputs available (STC1—normally open and STC2—normally closed) and both are energized in a powered-up state when no system troubles exist. This enables a supervisory trouble code to be transmitted to the Central Station when connected to an alarm panel's 24-hour instant input zone. The trouble conditions that trigger the STC relays are programmable via www.potterintelliCom.com (dealer log-in required) to meet virtually any installation requirement.

Note: If using a supervised zone to monitor for the STC relay, please make sure that you follow resistance requirements of the alarm panel for supervision. Refer to the manual supplied with the panel for further guidance.

The following supervisory features or combination of features are programmable to trip the STC relays in order to meet a variety of installation requirements:

- AC Failure Condition (ACFC) or Low Power Failure Condition (LPF)
- Low or missing Battery Condition (LBC)
- No Service Condition (NSC)
- Radio Failure Condition (RFC)
- LAN Failure Condition (LANFC)

The following system trouble features are embedded in the IntelliCom for tripping the STC relays and cannot be changed:

- Dial Tone Failure (DTF): Insufficient voltage on connection to panel DACT
- IntelliCom not activated at PCC: IntelliCom requires activation for use
- Catastrophic Failure (CF): All power is lost
- Transmit Disable command received from PCC: Used when a runaway dialer situation is detected or by Customer Service, for example

UL Compliance Notes: In Fire installations, STC2 (normally closed) cannot be used for communicating with the alarm panel; only STC1 (normally open) can be used.

Post-Installation Remote Programming

To continue to meet compliance requirements, once a unit is installed it cannot be remotely reprogrammed or receive updated firmware from Technical Support without manual on-site intervention. To change the device settings or accept updated firmware, follow these steps:

- Locate and press the RSSI button on the IntelliCom, holding it for at least 5-7 seconds.
- LED 5 will flash, indicating that a message has been sent to initiate a Maintenance Window.
- The maintenance window will last for 10 minutes after receipt of the device message.
- Log into www.potterintelliCom.com dealer portal and make the necessary configuration changes to the device, within the observed maintenance window (10 minutes).
- No device configuration changes can be made outside of the maintenance window.

NOTE: All alarm functions and transmissions will continue to operate during the Maintenance Window. The alarm system should be placed in test mode with the central station.

Diagnostic and Status LEDs

Eight active LEDs are provided as a useful aid during installation and give installers an immediate visual indication of system status. The LEDs serve as indicators for activation, system trouble conditions, power, and communication indicators. They can also provide a signal strength indication, similar to the signal strength bars on a cellular phone. See Appendix 2 or the installation section for more details.

Optional DC Operation (12VDC or 24VDC)

The IntelliCom Advanced Gateway can be operated solely by DC power provided by an alarm panel. This eliminates the need for a separate AC outlet at the protected premises. To use, connect 12VDC or 24VDC regulated power from the panel's Auxiliary Output to DC Input and Ground on the IntelliCom. LED 8 will illuminate to indicate IntelliCom has a valid power source. The provided AC adapter should NOT be used when powering the IntelliCom from the alarm panel.

NOTE: When using DC power from an alarm panel, the IntelliCom should not be connected to an AC power source or to a battery. The panel's backup battery powers the IntelliCom when the panel loses AC power. Be sure to account for this load when determining how to supply power to the IntelliCom.

Complete Factory Reset Option

A special function within the IntelliCom allows you to perform a complete Factory Reset on the unit. This reset will change all unit settings back to a factory default configuration.

NOTE: Never attempt to do a Complete Factory Reset on an active account because the unit will need to be re-activated.

To begin the factory reset, follow these steps:

- Power cycle the device. For the first three seconds after power up, all LEDs will be lit solid.
- While the unit shows this pattern, press and hold the RSSI button. After 15 seconds of button press, the LEDs will begin to sequentially turn on and off in a cascading pattern, indicating the factory reset is taking place.
- Release the RSSI button. After the factory reset concludes, the LEDs will go back to normal status.

Getting Ready

The IntelliCom can only be activated when all necessary accounting information has been added to the customer database located at the PCC (i.e., the unit has been registered). The database includes information about the customer account, unit location, and system test plan information.

Dealer Account Establishment

A Dealer Account must be established prior to registering an IntelliCom Advanced Gateway. This can be accomplished by visiting www.potterintellicom.com and completing the necessary information under "Dealer Signup". This is a one-time event and an acknowledgment from Potter Customer Service will include a Dealer Account Number that will be used for all Potter IntelliCom registrations. IntelliCom units can be registered and activated once the Dealer Account has been established.

Pre-Installation Checklist

Before attempting to connect the IntelliCom to the alarm panel, please make sure you have all the proper parts prior to going to the job site.

The following items are shipped with each IntelliCom Advanced Gateway:

- IntelliCom Advanced Gateway
- Cellular Antenna
- Antenna Cable and Mounting Bracket (Antenna cable and mounting bracket not included with IntelliCom-5GMC)
- AC Power Adapter
- Battery Connection Cable
- Pluggable screw terminal blocks (2-, 2-, 3-, & 6- position)
- Enclosure Key – NOTE: Key on IntelliCom is different than the one used on Potter fire panels

The following items may be needed and are not included with the IntelliCom:

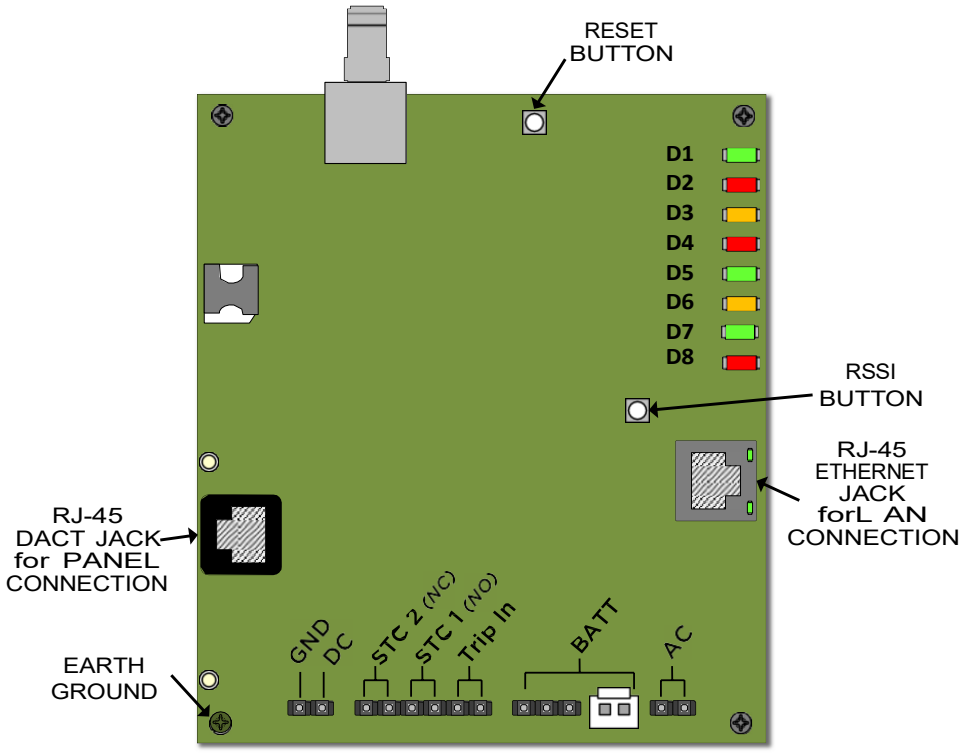
- Screws or nails for mounting the IntelliCom enclosure and antenna to the wall
- Solid or stranded electrical wire for connecting the STC relay outputs, trip input, or tamper to the alarm panel. The terminal strips can accommodate solid or stranded wire from 16 to 22 gauge in size.
- Telephone cable for panel DACT to IntelliCom RJ-45 phone jack connection
- CAT-5 or higher cable for premises LAN to IntelliCom RJ-45 Ethernet jack connection
- Conduit and connectors for protecting wiring
- Lead acid backup battery (minimum 4Ah) when installation will use the AC power adapter

Finally, certain installation and testing tools may be needed or helpful:

- Screwdrivers for mounting and making connections
- Standard telephone or lineman's butt-set for verifying DACT communication between the panel and the IntelliCom
- Device that you can use to verify a working LAN port

NOTE: The IntelliCom registration must be completed in advance to avoid installation delays

PCB Layout



Installation

Summary

The following are steps necessary to install the IntelliCom properly.

NOTE: IF YOU DO NOT PROCEED IN THE ORDER AND MANNER PRESCRIBED, YOU MAY NOT COMPLETE THE INSTALLATION IN THE TIME DESIRED.

These steps are summarized below and explained in detail in the remainder of this section.

1. Register for IntelliCom service at www.potterintellicom.com. An IntelliView account may be required to use some of the features of IntelliCom Advanced Gateway.
2. Provide Potter with the central station you wish to use, so it can be approved and added to your account. Submission form available at www.potterintellicom.com/forms/central-station-setup
3. Physically install the IntelliCom
   - Mount the IntelliCom in desired location
   - Connect antenna
   - Complete all power-related wiring connections
4. Determine antenna placement for best performance
   - Measure Received Signal Strength (RSSI)
   - Consider other antenna options
5. Make communications connections and activate
6. Connect supervisory trip outputs
7. Connect Trip Input if applicable

This installation approach provides the alarm installer with the easiest and fastest method of properly installing the IntelliCom. Please follow the instructions carefully.

NOTE: Dealer Account Creation and Potter Registration must be complete prior to Installation.

Step 1: Register the IntelliCom Advanced Gateway

The registration form may be completed in the 24/7 dealer portal: www.potterintellicom.com. Complete the registration prior to going to the job site.

The desired features and programmable options for any installation are selected during the registration process. This includes Mode of Operation, STC strategy, and Trip-Input enabling.

IMPORTANT NOTE: IntelliCom should be registered prior to applying power. If power is applied prior to configuration, then it will be necessary to cycle power after registering.

Select the Mode of Operation

The IntelliCom Advanced Gateway offers three modes of operation:

- Dual Path – Cellular primary, LAN backup
- Dual Path – LAN primary, Cellular backup
- Sole Path – Cellular only

Selecting Cellular Only mode may require enabling other features to remain in UL compliance.

NOTE: For panel connections to a DACT, there can be an alternate communications pathway connected to another panel DACT interface (usually a Telco connection). In such cases, IntelliCom can be used as either a Primary or Secondary Path. Panel settings determine whether the DACT connected to IntelliCom or the DACT connected to the alternate pathway will be used.

LAN (Ethernet) Configuration

The IntelliCom is set to automatically configure a LAN connection using DHCP. If a static IP address is required for the premises where the alarm is located, it can be configured from the Potter portal at www.potterintellicom.com. If the system administrator of the premises requires MAC address information, it can be found on a label on the IntelliCom or in the portal.

UL Commercial Fire Sole Path (Cellular Only Mode) Features

- Link Supervision: If registering IntelliCom to use cellular as the sole path of communications for commercial fire applications, use the link supervision option in accordance with local requirements (5-minute or 60-minute supervision).
- End-to-End Acknowledgment feature (required with Cellular Only): An RFC condition will occur when the captured signal is not delivered to the Central Station as expected.

Decide on a STC Trip Output Strategy

The IntelliCom provides the host alarm panel with two supervisory trip outputs for reporting an IntelliCom system trouble code to the Central Station. The supervisory trip outputs are programmable to suit various installation requirements. The programming options for these supervisory trip outputs can be any combination of the following:

- Always Off: Disables all relay supervisory functions.
- ACFC/LPF: Trips 2 hours (must be set between 1-3 hours per UL 864) after low power failure is detected. Restores 60 seconds after power is restored.
- LBC: Trips within 60 seconds on low battery condition. Restores when battery voltage ≥ 12.1 VDC.
- LANFC: Trips after a 60-second delay (delay is programmable) on a failure of the LAN connection. Restores automatically after LAN connection is reestablished.
- NSC: Trips after a 60-second delay (delay is programmable) on no service condition due to loss of RF signal strength. Restores after RF signal strength is available.
- RFC: Trips on radio failure to communicate with the PCC. Restores after 10 minutes.

UL Compliance Note: ACFC/LPF trigger must be set in the range of 1 to 3 hours and NSC delay must be 45 minutes or less.

Optional Trip Input

When the input is tripped, a supervisory message is sent to the Central Station. This allows an external relay, separate from the alarm panel, to be connected to the IntelliCom in order to provide independent sensor input for other functions, such as tamper detection.

The message that is sent from the PCC to the Central Station is configurable. The IntelliCom will automatically be configured with a unit template that allows configuration of the trip input feature, including the message that is sent to the Central Station. If IntelliCom is configured to report restorals, the contact closure will also be reported.

Swinger Function

The swinger function is designed to reduce the incidence of excessive messaging and alarms due to faulty equipment or installation. If enabled, the swinger function will discontinue sending trip input messages to the PCC once 10 trip events are detected within a 10-minute period. The IntelliCom will resume sending trip input messages to the PCC after a 10-minute period without trip events.

Step 2: Physically Install IntelliCom in Desired Location

Identify Location for Placing IntelliCom and Mount

Do not install IntelliCom in an area where the general public could reasonably be within 8 inches/20cm of the antenna or the router, switch, or port used for the premises LAN connection.

NOTE 1: Optimum RF performance can usually be found at the highest point within a building with the fewest number of walls between the IntelliCom's antenna and the outside of the premises.

NOTE 2: To avoid interference with other electronic devices operating in the area, avoid mounting the IntelliCom's antenna near other electronic devices.

NOTE 3: The IntelliCom's dipole antenna is designed for indoor installations only.

NOTE 4: To minimize risk of LAN communications being compromised, it is recommended that the router, switch, or port be in the same room and in no case more than 300 feet from the alarm panel and IntelliCom.

Care should be taken to ensure that a large metal object such as a refrigerator or a metal cabinet is not located on the opposite side of the wall. If moving the IntelliCom to a different location is not practical, you may need to use the provided extension cable to remote the antenna in order to receive adequate radio signal strength. Choose a high, visually secure spot using the guidelines below.

Tips for Improved Radio Signal Reception

- The higher the antenna the better. Start in the drop ceiling above the unit and proceed from there, up to the roof if necessary.
- Remember, the antenna should be as inconspicuous as possible for greatest visual security.
- Try to keep the antenna away from sources of RF interference, including pumps, compressors, ovens, etc., or where metal objects can shield it or otherwise block the cellular radio RF signal.
- Place the antenna perpendicular to the ground, pointing either straight up or down. Do not mount the antenna horizontally.

Mount the IntelliCom Advanced Gateway to the wall or other surface near the alarm panel. Care should be taken to avoid equipment that may make receiving a clear cellular signal difficult.

- Attach earth ground to the grounding screw located on lower left-hand corner of the printed circuit board assembly and permanently mount the enclosure.
- Install mounting screws (not supplied) in upper enclosure mounting holes.
- Slide the enclosure onto the screws and tighten screws.
- Verify unit is secured by placing additional screws in lower mounting holes.

Connect Antenna

The IntelliCom is supplied with an antenna. In most cases the antenna can be mounted directly to the unit. If necessary, the antenna may be moved to a better signal location using an extension cable and bracket (supplied). The performance of the antenna may be affected by the wall or materials contained within the wall chosen for mounting. These effects may not be clearly identified by RSSI monitoring alone. The wall materials may have a more pronounced effect on the antenna transmit band performance.

Complete All Power-Related Wiring Connections

The IntelliCom can be powered by AC (from a plug-in adapter) or DC (from the alarm panel) power. All wires connecting with the IntelliCom should be in conduit or otherwise protected, but no segregation of circuits is necessary. Follow the instructions for the chosen power option.

Option 1: AC Power Adapter and Backup Battery

To apply power to the IntelliCom, attach a battery (not included) to the battery connector jack using the supplied battery cable. If the need for a different size cable arises, the IntelliCom has an alternate screw-in terminal connection for the battery. Backup battery must be sized appropriately to meet installation requirements. A 12-volt minimum 4Ah (7Ah preferred) lead acid battery should be used.

NOTE: It is important to follow battery manufacturer's instructions for maintaining the battery, including replacing the battery when it can no longer operate at the specified voltage level.

Connect the supplied AC power adapter to AC terminals using stranded copper insulated wire following wire gauge and length recommendations below:

Recommended Wire Size	Length Not to Exceed
18 ga	20 ft
16 ga	40 ft
14 ga	60 ft

Check with the AHJ to determine whether the adapter needs to be secured to the outlet or otherwise protected.

Option 2: DC Power from Panel

When using this option, no other power connections (battery or AC) should be used.

Power to the IntelliCom may be sourced from the host alarm panel's regulated 12VDC or 24VDC power limited auxiliary output. Connect the power and ground connections into the respective DC and GND connections on the IntelliCom using a supplied 2-position terminal block.

UL Compliance Note: All wiring shall be in accordance with NFPA 72 and/or NFPA 70.

Allow the Carrier Selection Process to Run – IntelliCom-5GMC Only

IntelliCom-5GMC completes a brief initialization and then begins the Carrier Selection Process (CSP). The CSP evaluates the three carriers to determine the best signal by connecting to each carrier and measuring characteristics of that connection. The initialization and CSP generally take 4-6 minutes (it may take longer in areas with limited service). It is important that the antenna remains in the same location throughout the CSP. During CSP, LED 5 (representing Cellular Radio Activity) and LED 4 (representing Waiting for Response) will alternately illuminate. Following the evaluation, the IntelliCom-5GMC is set to the carrier with the strongest signal and only LED 8 (Power) will remain on.

While the strongest carrier signal should be known, checking the RSSI at various points will ensure that the strongest place to mount the unit since the antenna cable is not included with IntelliCom-5GMC and there is room to adjust. An option is available to run the CSP again by cycling power to the unit. Since this will take another 5 minutes, and the selected carrier most likely will not change, another CSP is not automatic. Sending the first signal activates the unit on the selected carrier.

Step 3: Determine Antenna Placement for Best Performance

Measure Received Signal Strength (RSSI)

Measure the received signal strength by pressing and releasing the RSSI button. This switches the LEDs to signal strength mode. If you do not obtain the recommended minimum signal strength with the antenna mounted directly to the unit (see LED Indicator Guide - RSSI Mode), you will need to use an extension cable to locate the antenna in an area with better reception. Generally, the higher the antenna, the better.

If necessary, attach an extension cable to the unit on one end and the antenna on the other, then slowly move the antenna to achieve maximum signal strength by pausing at each location for 6 seconds to allow enough time for the IntelliCom to present an updated signal strength. Pick a spot where the most LEDs (up to four) are illuminated.

Consider Other Antenna Options

Antenna issues are unlikely unless the premises are located in a fringe network coverage area, in a building below ground level, or in a metal structure. Potter offers a variety of high-quality low-loss antenna cables as well as high-gain antennas listed in the appendix.

Step 4: Make Communications Connections and Activate

Select Panel Connection Option

Option 1: Connecting to Potter Panel via Ethernet

Using the Potter fire panel configuration tool, set up IntelliCom Advanced Gateway:

Users

- Add a User Code – This will be required when configuring IntelliCom
- Select PC Connect Unsupervised Multi User

LAN Settings

- A fixed IP address is recommended on the fire panel. Work with IT to determine the best strategy for your installation. This IP address will be entered in www.potterintelliCom.com

IP Reporting

- Select Add IntelliCom
- Choose reporting options
  Alarms/Troubles/Supervisory/Test Events
  Report by Panel/Zone/Point
  Account ID
  Configuration Backup Password – Optional. Used to password protect automatically backed up panel databases stored in IntelliView.

Dialer – Do not configure the panel for a dialer when using IntelliCom.

Connect a supported Potter fire alarm panel to IntelliCom by connecting an Ethernet cable from the RJ-45 jack on the panel to an Ethernet port on a UL 864 switch – such as the Potter NCE-1000. Run another Ethernet cable from the silver RJ-45 jack of IntelliCom to the switch.

Note: The Potter fire alarm control panel is designed to support one IntelliCom communicator.

Option 2: Connecting to a Fire Panel via DACT (Replacing a Telephone Line)

Connect the alarm panel to the IntelliCom by connecting a cable from the modular telephone jack (DACT) of the alarm panel into the black RJ-45 jack of the IntelliCom. Connect a cable from a router or other premises LAN port to the silver RJ-45 jack of the IntelliCom.

Activate IntelliCom

UL Compliance NOTE: *For Fire System installations, all connections from the alarm panel and IntelliCom must be mechanically protected and no greater than 20 feet in distance.*

After making the LAN connection, the LEDs on the jack should illuminate or flash to indicate the LAN port is active. Consult the PCB Layout section above for jack guidance. All wires connecting with the IntelliCom should be in conduit or otherwise protected, but no segregation of circuits is necessary. The IntelliCom is now ready for activation.

Trip a zone on the alarm panel and confirm that the IntelliCom enables the alarm panel to transmit alarm events. The IntelliCom will transmit the initial activation signal over the cellular network and confirm activation with the PCC (if registration was completed prior to installation).

During processing of the first alarm signal over the cellular network, the IntelliCom will transmit to the PCC all programming parameters along with the information (Central Station number and account code) from the alarm panel. Once this information is received, the PCC transmits a message back indicating that the unit is activated. When this message is received the LEDs on the IntelliCom will begin operating in normal mode and Activation LED 1 will remain on. The LAN connection between the IntelliCom and the PCC will automatically be validated after the IntelliCom is activated and configured (if IntelliCom is in dual path mode). When that pathway has been validated, LAN LED 6 will remain on.

*NOTE: The initial alarm is to confirm registration and activate the IntelliCom. This alarm will NOT be transmitted to the Central Station.*System Status LEDs Table:

Special LED Indications During Activation

If the IntelliCom fails the activation process, it will be displayed on the LEDs.

- If LED 1 and LED 4 are flashing, the IntelliCom has failed activation. The serial number is not in the database at the PCC. Clear the fault (see note below) and call Potter Technical Support to verify proper registration before resending an alarm signal.
- If LEDs 1-5 are flashing, there is an activation error. The activation message was NOT received at the PCC.Clear the fault (see note below) and retry transmitting an alarm signal. If the IntelliCom fails a second time to activate, check signal strength. If signal strength is OK, then call Potter Technical Support for further assistance.

NOTE: In order to clear the faults listed above, the RSSI button must be pressed twice. After the issue has been resolved and the unit cleared, STEP 4 MUST BE REPEATED TO ACHIEVE SUCCESSFUL ACTIVATION OR THE INTELLICOM WILL NOT TRANSMIT ANY SIGNALS.

System Status LED Table:

System Status LEDs	Activation Indications
LED 1-5 FLASHING	Failed Activation - Signal Too Weak
LED 1 & LED 4 FLASHING	Activation Error - Call Potter Technical Support
LED 1 ON	Activation Successful
LED 6 ON	LAN Connection Validated

Special LED Indications During Activation

Before beginning this step, make sure that the LAN cable connection from the IntelliCom's silver RJ-45 jack that goes to the host router or switch is disconnected.

Trip several alarms on the alarm panel and verify that the Central Station received them by calling the Central Station operator. Use a lineman's butt-set in MONITOR MODE connected to IntelliCom "T" and "R" test pins to "listen" to communications between the alarm panel and the IntelliCom.

Once you have verified the cellular pathway, reconnect the LAN cable.

If you are having problems getting reliable alarm signal transmissions, additional adjustments may be necessary:

Recheck signal strength. You need at least RSSI = 2 *(TWO LEDS ON SOLID)* for adequate signal transmission in dual path mode or 2 ½ *(TWO LEDS ON SOLID AND A THIRD FLASHING)* for Sole Path mode. Also, check antenna connector and make sure it is seated correctly.

Verify Alarm Signal Transmissions Over LAN Path

This step is necessary when IntelliCom is in dual path mode with LAN either primary or secondary. Before beginning this step, make sure that the antenna is disconnected.

Trip several alarms on the alarm panel and verify that the Central Station received them by calling the Central Station operator.
Once you have verified the LAN pathway, reconnect the IntelliCom antenna.

Step 5: Connect Supervisory Trip Outputs

Connect and test the supervisory trip outputs to the alarm panel.

Enabling of a local alarm or strobe light may be desirable when a trip is declared. The STC trip output can be used directly to activate a local signaling device, provided that the trip output is not needed to trip the alarm panel at the same time. If both a local signaling device and an alarm panel are required, then external relays are needed to provide additional uncommitted contacts.

UL: *The IntelliCom Advanced Gateway will at a minimum have the trip output connected to the alarm panel to indicate AC failure (ACFC) and low battery (LBC) conditions when the IntelliCom is using its own Power Supply and not powered by the panel.*

Reprogram Alarm Panel to Send Proper Code

If necessary, reprogram the alarm panel to send the proper alarm code when tripped by the IntelliCom's supervisory output. Program zone restoral as desired.

Check Proper Operation of Supervisory Output

Check for proper operation of each programmed supervisory output by causing it to trip the alarm panel. Make sure the proper LED illuminates and the proper trouble code is reported to the Central Station. Skip the testing of any supervisory functions that have not been enabled. Note that yellow LED 3 starts to flash when the alarm panel goes off-hook to report the alarm signal transmission.

- AC Failure Condition (ACFC): Disconnect the provided power adapter and check to see that the AC POWER LED goes out and the STC LED 2 flashes once, indicating that AC power is missing. Reconnect the AC adapter and check to see that the AC POWER LED goes on and the STC LED 2 goes off, indicating that AC power has been restored. No transmissions will be sent to the Central Station. The AC power must be off, continuously, for 2 hours before the STC relay causes the alarm panel to send a trouble code. When power is provided by a DC source, the Low Power Failure (LPF) condition applies and would present itself in the same manner as this ACFC.

- Low Battery Condition (LBC): Disconnect the battery and check within 60 seconds to see that the STC LED 2 flashes 2 times, indicating that the battery is missing. Check to see that the alarm panel indicates the STC trouble code on the STC LED. Reconnect the battery and check during the next 60 seconds to see that the STC LED 2 goes off, indicating the missing battery condition has been restored. When power is provided by a DC source, LBC does not apply.

- Low Power Failure (LPF): If the IntelliCom is powered through its DC connection, a Low Power Failure (LPF) will occur if the DC power into the IntelliCom drops below 5.1VDC and restore after reaching at least 5.6VDC. LPF will present itself in the same manner as the ACFC.

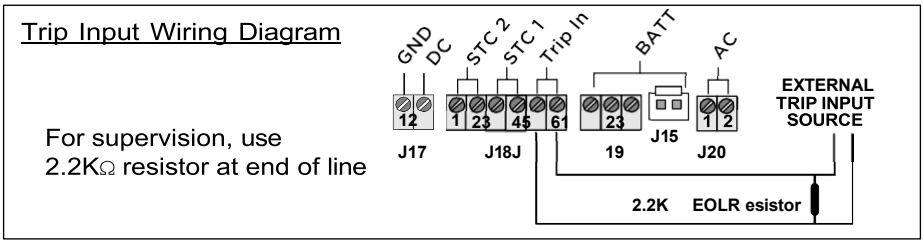
- LAN Failure Condition (LANFC): Disconnect the Ethernet LAN cable from the silver RJ-45 jack. LED 2 flashes 3 times to indicate LAN failure, and LED 6 will flash 1 time to indicate the LAN failure reason being a disconnected cable. If monitored, after a configured period, the panel transmits the STC trouble code (over cellular) to the Central Station, indicating that LAN connection is not available. Reconnect LAN cable and check to see that LAN restoral is indicated by STC LED 2 turning off after the configured period.

- No Service Condition (NSC): Disconnect the antenna and the Ethernet LAN cable from the IntelliCom. Check to see that STC LED 2 flashes 4 times, and if configured, the alarm panel will detect the tripped STC after the selected period of time, indicating loss of RF signal strength. Reconnect the antenna and check to see that the STC LED 2 goes off, with the configured period indicating RF signal strength restored. Reconnect LAN cable following the NSC test.

Step 6: Connect and Test the Trip Input (optional)

The trip input is connected to the external relay by wiring the external relay to the TRIP IN terminal of the terminal block, and the other side to the TRIP GND terminal of the same block (pins 5 & 6 on J18). See Wiring Diagram below.

Note that trip inputs are normally wired such that there is a 2.2kΩ resistor in parallel with the external relay, so that a tamper condition (e.g., a cut wire) can be detected. When the trip input functionality is being used, closing the trip contact will cause the IntelliCom to send a message that the PCC will relay to the Central Station. If the IntelliCom is configured to report restorals, the contact opening will also be reported.



Be sure to use a UL-approved 2200-ohm resistor if the trip input circuit will be supervised (e.g., Bosch P110BL, Bosch EOL-22K, Elk ELR 22). The trip input circuit is not supervised for grounds.

UL Compliance Note: *The trip input feature shall only be used for supplementary signaling. Initiating zones shall not be connected to the trip input.*

Step 7: Connect Tamper Switch (optional or as required by AHJ)

The enclosure of the IntelliCom Advanced Gateway supports an optional tamper switch, which can be used to report unauthorized alarm system access. Connect it to a zone on the panel and designate the zone as Tamper Protection. Some local enforcing authorities may require the tamper feature be used. Note that the tamper switch will not connect to the circuit board of IntelliCom.

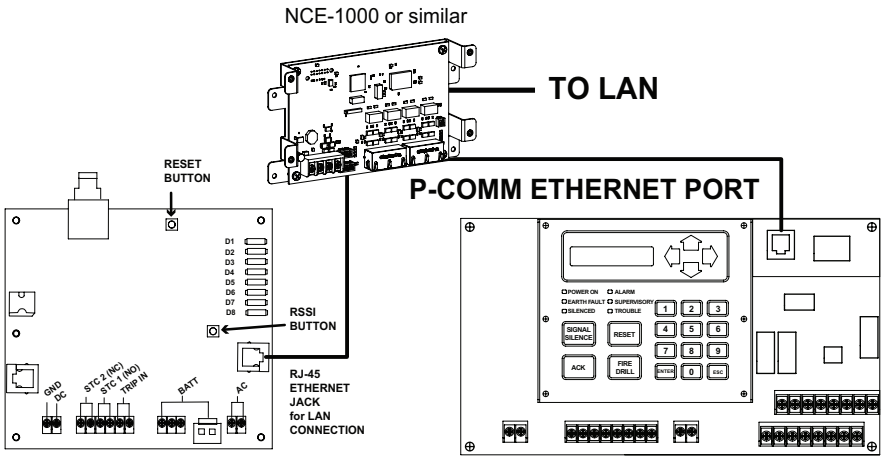
Appendix 1 Connection Guide

Wiring Diagrams

The following wiring diagrams show the configurations in which IntelliCom can be used.

Potter Panel Connected via Ethernet Cable Cellular or LAN Primary Mode with IntelliView Service:

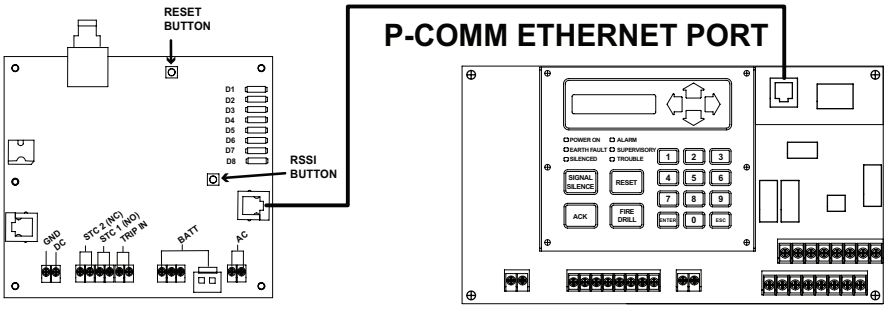
Physical installation is the same for either Dual Path mode of operation. The configuration chosen during registration is what determines which is the primary and which is the secondary path. In this configuration, the LAN connection will be monitored by IntelliCom. A UL 864 Listed switch, such as the Potter NCE-1000 is required. Wiring between devices is limited to 20 feet and must be in conduit.



CELLULAR W/ LAN CONNECTIONS

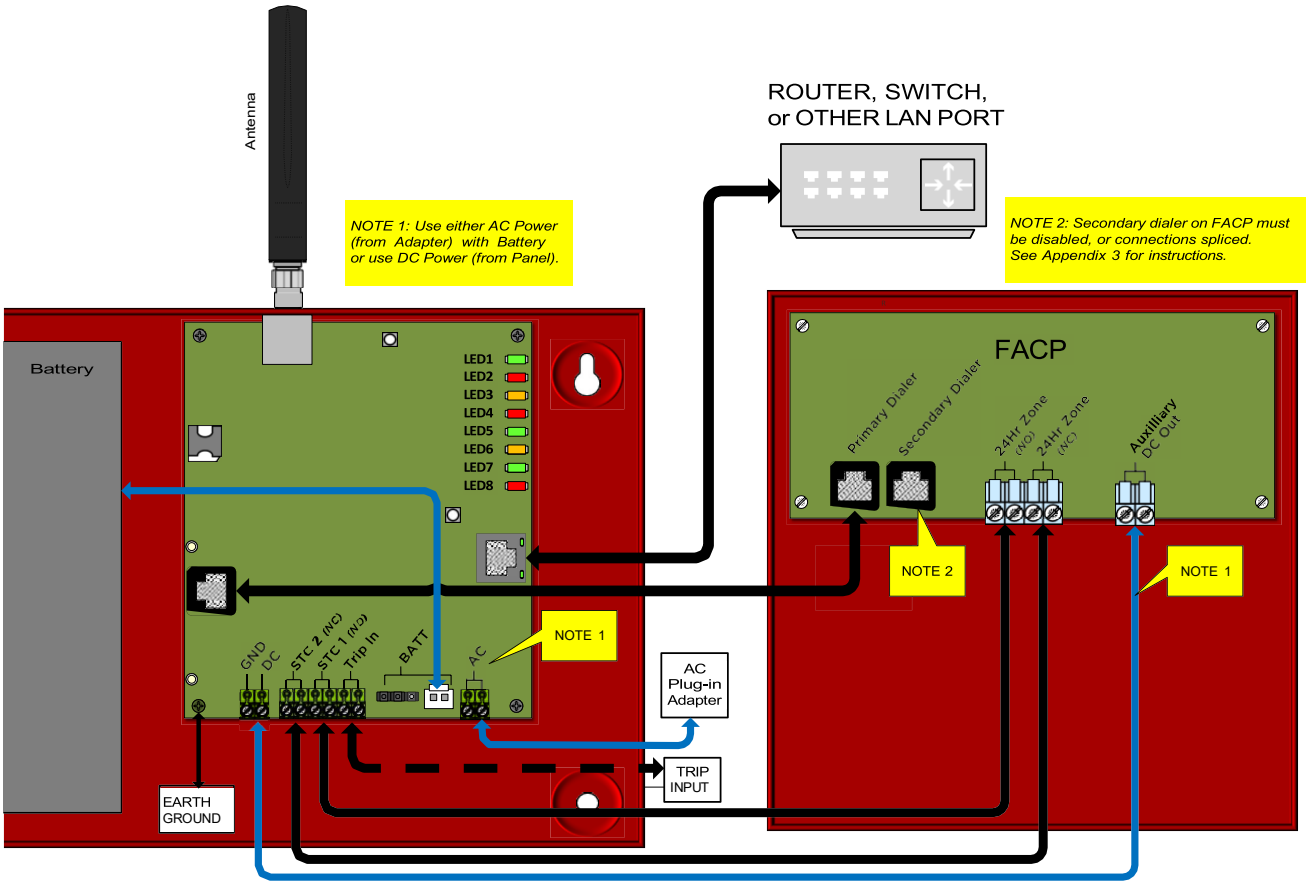
Potter Panel Connected via Ethernet Cable Cellular Only without IntelliView Service:

This configuration is used when IntelliCom is set to cellular only mode and is working in a system that does not involve a Telco connection or a secondary path. In this case, the alarm panel is connected directly to IntelliCom with an Ethernet cable, and there is no other form of communication that is active. A specific level of link supervision may be required (frequencies of 180 seconds, 5 minutes, or 60 minutes).



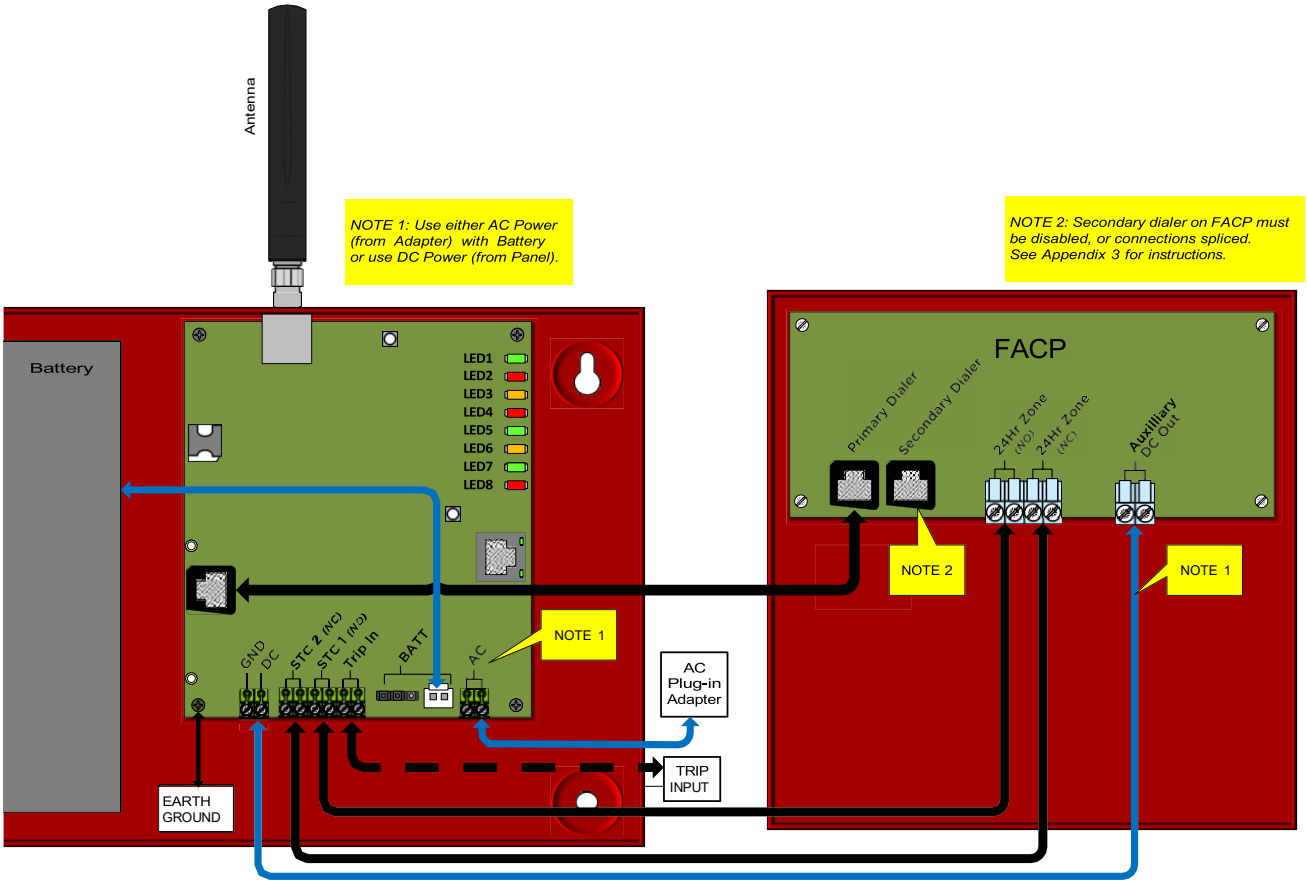
Panel Connected via DACT Cellular or LAN Primary:

Physical installation is the same for either Dual Path mode of operation. The configuration chosen during registration is what determines which is the primary and which is the secondary path. In this configuration, the LAN connection will be monitored by IntelliCom.



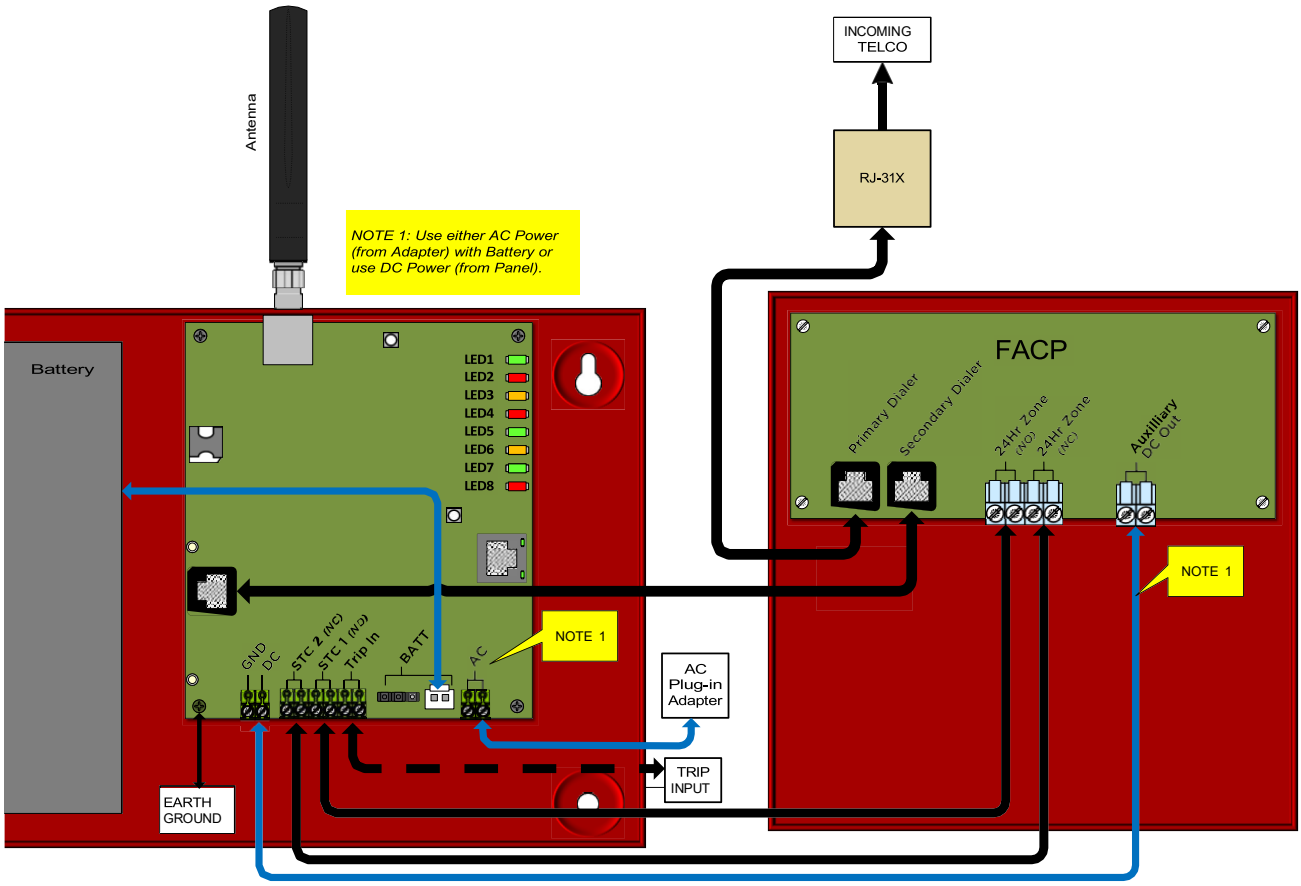
Panel Connected via DACT Cellular-Only Wiring (Single DACT Used):

This configuration is used when IntelliCom is set to cellular only mode and is working in a system that does not involve a Telco connection or a secondary path. In this case, the alarm panel is connected directly to IntelliCom, and there is no other form of communication that is active. A specific level of link supervision may be required (frequencies of 180 seconds, 5 minutes, or 60 minutes).



Panel Connected via DACT - Cellular-Only Wiring (Both DACTs Used):

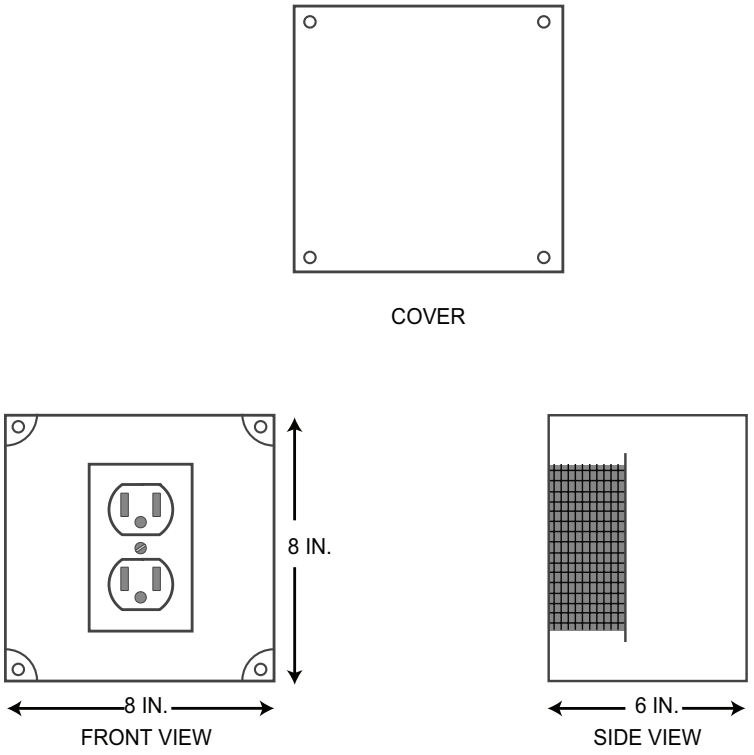
This configuration is used when the IntelliCom is working in a system that also involves a Telco connection or another communication path not connected through IntelliCom. In this case, both IntelliCom and the alternate connections are being monitored by the Alarm Panel. It is the alarm panel that determines which communication connection to use for signal delivery.



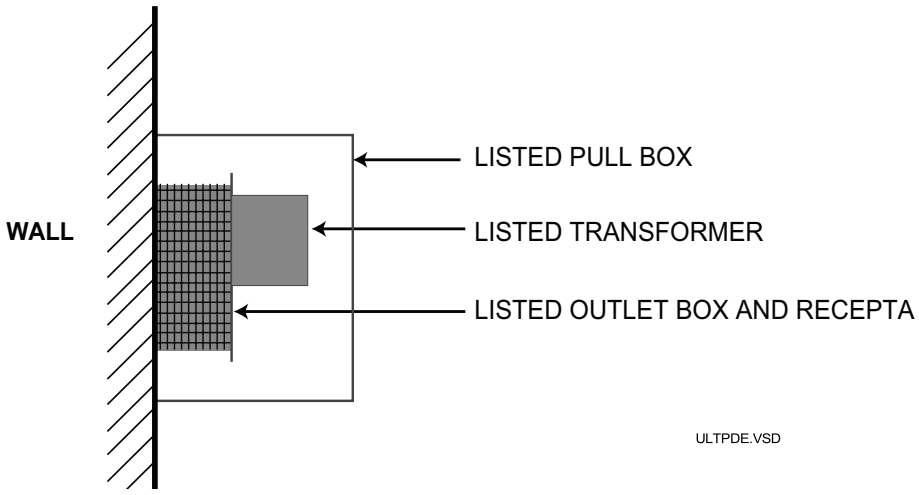
Installation of AC Adapter

The plug-in AC Adapter, when used, must be installed in a protected metal housing. It is important to use only the adapter (sometimes referred to as a transformer) that is supplied with the IntelliCom. Wiring from the adapter to the IntelliCom must run through metal conduit. The adapter itself is plugged into a conventional 120-volt/60 Hz outlet connected to a dedicated circuit for the Fire Alarm System.

The diagram below should be consulted as a reference.



LISTED PULL BOX WITH LISTED OUTLET BOX AND RECEPTACLE



RJ-45 Jack Pin Assignments

Jack	Connects To	Pin Assignment	Function	Status LED Reference
Black	Digital Dialer input/ output of host alarm panel (DACT)	1 = Brown R1 2 = Blue 4 = Green R (RING) 5 = Red T (TIP) 7 = Orange 8 = Gray T1	Connects alarm panel to IntelliCom for transmitting alrm signals to PCC.	If PPF is ENABLED STC LED 2 will flash 7 times when alarm panel is not detected.
Silver	Router, Switch, or other LAN port	Per CAT-5 or higher standard, Crossover cables and PoE not supported	Connects IntelliCom to premises LAN for transmitting alarm signals to PCC via internet.	LED 6 stays illuminated for verified connection. Otherwise STC LED 2 will flash 3 times and flash pattern on LED 6 will indicate reason.

DC Terminal Strip Pin Assignments

Terminal Strip Pin	Definition	Connects To	Function	LED Reference	Note
1 GND 2 DC	Power Input	12- or 24- VDC Regulated Source	Provides power to the unit	Power LED 8 on for valid power	Consumption rates vary based on input voltage used

Main Terminal Strip Pin Assignments

Terminal Strip Pin	Definition	Connects To	Function	Status LED Reference
1 STC2 2 STC2	Supervisory Relay Trip output for programmable trouble conditions. Normally Closed	24-hour trip zone input on alarm panel	Enables transmission of programmed supervisorory trouble code (see diagram or installation section)	STC LED 2
3 STC1 4STC1	Supervisory Relay Trip output for programmable trouble conditions. Normally Open	24-hour trip zone input on alarm panel	Enables transmission of programmed supervisorory trouble code (see diagram or installation section)	STC LED 2
5 GND 6 IN	Trip Ground and Trip Input	External trip relay	Allows an external relay to trigger an alarm signal	LED 7

AC Terminal Strip Pin Assignments

Terminal Strip Pin	Definition	Connects To	Function	Status LED Reference
1 AC 2 AC	AC Power Input	Provided AC adapter (120VAC, 160mA)	Provides primary power to IntelliCom and battery-charging circuit.	Power LED 8 ON when AC is normal, OFF and STC LED 2 flashes 1 time when AC is low.

Alarm Panels Compatible with Intellicom

Connected via Ethernet Cable—IntelliView Service Available (When Switch is Used)

Compatible Potter fire panels with Version 10.1 (or higher):

- IPA-4000
- IPA-4000E
- IPA-4000V
- IPA-100
- IPA-60
- AFC-1000
- AFC-1000E
- AFC-1000V
- AFC-100
- AFC-50
- ARC-100
- PFC-4064

Connected via DACT—IntelliView Service Unavailable

Any UL Listed alarm panel that supports one of the following formats is compatible and may be used with IntelliCom:

- Pulse Formats:
  - 3+1 pulse; 10pps, Double Round, 1400 Hz ack
  - 3+1 pulse; 20pps, Double Round, 2300 Hz ack
  - 3+1 pulse; 40pps, Double Round, 2300 Hz ack
  - 4+2 pulse; 20pps, Double Round, 1400 Hz ack
  - 4+2 pulse; 20pps, Double Round, 2300 Hz ack
  - 4+2 pulse; 40pps, Double Round, 2300 Hz ack
- Contact ID
- Modem IIe/IIIa^2/4
- SIA2 (SIA-DC-03 level 2 release at 300 baud)
- Sonitrol
- DMP

Hexadecimal account numbers can be used with 3+1 or 4+2 formats, as well as Contact ID and Modem (4 or 10 digits for Contact ID, 4 digits for Modem).

UL Compliance Note: *While IntelliCom supports the above formats, some formats may not meet the requirements for fire systems set in UL 864. Contact ID and SIA2 are the only formats identified as complying beginning with UL 864 10th Edition. If in doubt, check with your AHJ.*

The installer should verify compatibility at the time of installation.

Appendix 2 Troubleshooting Guide

This section provides a summary of all LED indications and their meanings, as well as the expected behavior of IntelliCom under various exception conditions.

LED Indicator Guide Normal Operating Mode

LED Symbol	Color	Showing	Indication
LED 1 Activation	Green	Solid On	Unit is activated
		Off	Unit not activated
		Flash*	Activation denied
LED 2 STC (System Trouble Condition)	Red	Off	ALL OK
		1 Flash*	ACPC – AC Power Condition or LPF – Low Power Failure
		2 Flashes*	LBC – Low Battery Condition
		3 Flashes*	LANFC – LAN Failure Condition (see LED 6)
		4 Flashes*	NSC – No Service Condition
		5 Flashes*	RFC – Radio Failure Condition
		6 Flashes*	DTF – Dial Tone Failure
		7 Flashes*	PPF – Panel Presence Failure
LED 3 Panel Pathway	Yellow	Off	Idle/on-hook
		Flash* (1 sec)	In use
		Flash (2x per 6sec)	Supervised
LED 4 Device Status	Red	Solid On	Waiting for comm center response
		Off	Idle
		Flash*	Activation denied
		Flash	CSP Running (Alternates with LED 5)
LED 5 Communications	Green	Off	Idle
		On	Initializing pathways
		Flash (1x per sec)	Sending/receiving activity
		Flash (2x per 6 sec)	Link Supervision enabled
		Flash	CSP Running (Alternates with LED4)
LED 6 LAN Pathway	Yellow	Solid On	LAN active and operational
		1 Flash*	Disconnected from LAN
		2 Flashes*	Network not detected
		3 Flashes*	Comm center not reached
		4 Flashes*	No comm center acknowledgement
		Flash (1x per 4 sec)	LAN initializing
		Off	Not in use
LED 7 Trip Input	Green	Solid On	Trip Input activated
		Off	Trip Input not activated or is restored
LED 8 Power	Red	Solid On	Panel power or AC power connected to unit
		Off (w/other LED activity)	Operating from backup battery

*NOTE: * indicates that the LED will continuously flash.*

Troubleshooting Quick Reference Table

IntelliCom Event		LED Indication	Relay Output	Message Sent	Internal Action
STC* (System Trouble Conditions)	LPF	Power LED 8 is off. STC LED 2 flashes continuously 1 time	Optional	Optional	Verify connection from panel aux power and correct
	LANFC	STC LED 2 flashes continuously 3 times. LED 6 indicates cause.	Optional	Yes	Wait for LAN restoral
	NSC	STC LED 2 flashes continuously 4 times.	Optional	None	Continue to validate signal strength. NSC restores when signal returns
	RFC	STC LED 2 flashes continously 5 times	Optional	None	Wait for RFC restoral
	DTF	STC LED 2 flashes continuously 6 times	Yes	Yes	Internal dial tone voltage supply circuit failure.
	PPF	STC LED 2 flashes continuously 7 times	No	Yes	Wait for PPF restoral
LANFC (LOCAL Area Network Failure Conditions)	LAN not detected	LED 6 flashes continuously 1 times	Optional	Yes	A cable must connect the communicator to an operational LAN port, router, or switch.
	LAN IP Address not set	LED 6 flashes continuously 2 times	Optional	Yes	Consult System Admin for premises Static IP address may be incorrect
	Unable to reach PCC	LED 6 flashes continuously 3 times	Optional	Yes	Consult System Admin for premises Gateway info may be incorrect
	No PCC response	LED 6 flashes continuously 4 times	Optional	Yes	Validation error. Contact Potter Technical Support for assistance..
Carrier Selection Process Running		LED 4 alternates flashing with LED 5	No	Yes	Stops flashing when complete and carrier set
Not Activated		Activation LED 1 off	Yes	None	Unit will not function until the first signal is sent to the PCC to activate
Automatic Self-Test		LED 5 flashes during transmit	None	Yes (Self-Test)	Send Self-Test data to Central Station via PCC, return to ready state.
IntelliCom Check Status		LED 5 flashes during transmit	None	Yes (Status Data)	Send Status data to the PCC for review.
IntelliCom Enable and Configureation Update		LED 5 flashes during transmit	None	Configuration Data	The unit sends setup configuration to the PCC and switches to READY state to begin operation.
Disable TX (Initiated by PCC)		LED 5 flashes during transmit	Yes	Yes (Status Data)	TX capability is disabled until further notice. The unit can still receive radio signals from the PCC.

** If several trouble conditions are present, the STC LED will flash all applicable indications in sequence.*

LED Indicator Guide RSSI Mode

This IntelliCom has a Received Signal Strength Indication (RSSI) Mode that works similarly to the bars on a cellular telephone. LEDs 2 through 5 will illuminate to represent the quality of the cellular connection: the more LEDs illuminated (i.e., the higher the number of bars), the better.

A simple press and release of the RSSI button will place the IntelliCom in RSSI mode and another simple press will exit RSSI mode. Note that while the RSSI button is held in, LEDs 2-5 will blink in unison once per second.

RSSI Value	LED'S illuminated	RF dBm
NO SVC	LED 5 = slow flash, LEDs 4-2 = off	N/A
1	LED 5 = on, LEDs 4-2 = off	≤ - 111
1 ½	LED 5 = on, LED 4 = slow flash, LEDs 3-2 = off	≥ - 110
2	LEDs 5-4 = on, LEDs 3-2= off	≥ - 100 (Minimum recommended for dual path)
2 ½	LEDs 5-4 = on, LED 3 = slow flash, LED 2 = off	≥ - 100 (Minimum recommended for sole path)
3	LEDs 5 -3= on, LED = off	≥ - 80
3 ½	LEDs 5-3 = on, LED 2 = slow flash	≥ - 70
4	LEDs 5-2 = on	≥ - 60

NOTE: When LED 1 is on in RSSI mode, it indicates more than one cellular tower within range.

Appendix 3 Commercial Fire Single DACT Installation

IntelliCom Advanced Gateway is suitable for use as a sole path cellular communicator. IntelliCom can also be utilized as a dual path option that replaces both Telco requirements by the panel. By following the installation guidelines, the installer can provide the best conditions for a stable, sole path or dual path connection. In order to ensure that the cellular path to be used for signaling has the highest reliability possible, it is necessary to confirm two additional conditions, beyond what is outlined above.

IntelliCom Cellular Signal Strength

A cellular signal strength of -90dBm (RSSI LEDs 4 and 5 on, with LED 3 flashing) is sufficient. While this is suitable for "normal" use, an additional level of signal integrity will minimize false alarm supervision failures caused by interference and atmospheric fading. Because of this, it is always recommended that the device should be installed in a location that provides the best signal strength possible.

Configure Fire Alarm Panel with DACTs to Use Single Communication Device

Many fire panels are provided with two Telco connections to provide multiple reporting paths. With the IntelliCom Advanced Gateway having a single RJ-45 jack available for connecting to the panel, one of these DACT connections is not necessary for UL 864 compliance. However, the panel will continue to supervise that unused line unless changes are made at installation time.

There are two methods for removing supervision alarms at the panel caused by disconnecting the second Telco connection. Either method can be used.

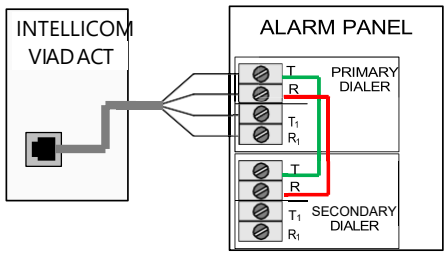
1. Disabling the Second Telco Connection

   Some fire panels have a configuration mechanism to disable the second Telco connection. Once the second Telco connection is disabled, the panel will no longer supervise the connection. This is the preferred method of removing supervision alarms at the panel caused by removal of the second Telco connection.

2. Connecting the Telco Connections Together

   IntelliCom is capable of providing dial tone to both Telco connections, if the Telco connections are connected together, such that "TIP" is connected to "TIP" and "RING" is connected to "RING". The two connections will receive dial tone in much the same way that multiple extensions in a household are connected together. If this method is used, the installer must take care to ensure that dual path reporting is not enabled on the panel, or else simultaneous alarm reports from the two Telco connections may interfere with each other.

   Test the IntelliCom thoroughly when using this method. Verify the panel does not report problems with the second line, especially when the panel is reporting to the central station.



Appendix 4 Commercial Fire 6-hour Supervision

The NFPA 72 2013 Edition updated the requirement to supervise the transmission path in a dual path configuration to at least once every 6 hours, from an earlier version of 24 hours. This requirement is upheld in 2016 and 2019 edition as well. Potter commercial fire products support this feature, and it must be enabled when using more than one path, by selecting 6-hour supervision during registration.

Appendix 5 Compliance with UL Standards

Encolsure Tamper Switch connected to 24-hour circuit	Optional
AC adapter lines in conduit (length limits apply)	Yes
AC adapter plugged into un-switched outlet	Yes
AC adapter plugged into dedicated branch circuit	Yes
Antenna cable in flexible conduit concealed	Yes
Battery Backup requirement if using AC	24-hour
Flexible or Rigid conduit required to protect connections #	Yes

 # All conductors of a fire alarm system shall be installed in metal raceway of the totally enclosed type or incorporated in a cable having a metal armor or sheath; these metal elements must be grounded

Appendix 6 Detailed Specifications

Dialer to Interface Electronics

The integrated interface allows digital dialers to dial into the cellular radio network.

- Line voltage: -30 Vdc (default) or -40Vdc into standard telephone device when on-hook.
- Dial tone: Precision 350 + 440Hz +/- 1%. 10 digits dial out capability.
- Mode: Loop start only. 25mA +/- 10% off-hook.

Power

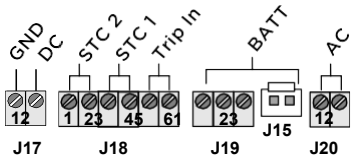
Input Voltage (Source)	Current Draw		
	Idle No Supervision	Idle w/ Link Supervision	Max during Transmission
12VDC regulated (from panel)	125mA	128mA	260mA
24VDC regulated (from panel)	64mA	68mA	140mA
12VAC (from plug-in adapter)	400mA	420mA	490mA

Field Wiring Electrical Ratings

STC 1 relay: 30VDC/120mA Max Load (Resistive)
STC 2 relay: 30VDC/100mA Max Load (Resistive)
Trip Input: 30VDC/100mA Max Load

Power Limited Circuits

DC Input: J17
STC1, STC2, and Trip Input: J18
AC Input: J20



UL Compliance NOTE: *Wiring in power limited circuits shown must be separated from wiring in non-power limited circuits by at least ¼ inch.*

System Faults Impedance

Trip Input: < 750 Ω considered short circuits and > 10 kΩ considered open circuits

Digital Cellular Radio and Other Specifications

The IntelliCom Advanced Gateway radio provides data connectivity on LTE-M networks. The transceiver is FCC compliant, meeting all requirements of Part 15 and 27 testing. It is also certified as compliant to PTCRB requirements.

- Supported Bands on units with AT&T service: 2, 4, 12
- Supported Bands on units with T-Mobile service: 2, 4, 12, 66
- Supported Bands on units with Verizon service: 4, 13
- FCC ID: N7NHL78M
- IC ID: 2417C-HL78M
- Antenna Port: TNC connector (female), 50-ohm
- RF performances are compliant with 3GPP recommendation TS 36.101
- LAN connection Ethernet cables must be straight through Cat-5 or higher
- Physical Size: 11.4 x 7.75 x 3.3 inches (exclusive of antenna)
- Shipping Weight: 7 lbs.
- Operating Environment: 0° C to +49° C; 0 - 93% humidity (non-condensing)

Appendix 7 Accessories

Models	Description	Stock No.
TG-TAMPER	Easy-attach Tamper Switch Assembly compatible with metal enclosures	3994002
ACD-12	12 feet of antenna cable and mounting bracket	3994003
ACD-35	35 feet of low loss high performance antenna cable and mounting bracket	3994004
ACD-50	50 feet of low loss high performance antenna cable and mounting bracket	3994005
ACD-100	100 feet of low loss high performance antenna cable and mounting bracket	3994006
HGDL-0	High Gain Directional Antenna	3994007
EXDL-0	External Omni-Directional Antenna	3994008