AES 7794A IntelliPro Fire

Installation Manual
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1. Summary

This document describes the installation procedure for the AES 7794A IntelliPro Fire module used with the AES 7707 Subscriber in commercial Fire Alarm Control Panel (FACP) installations.

Installed between the FACP and AES 7707 Subscriber, the 7794A intercepts alarm panel messages and sends them to the monitoring station via the AES 7707 Fire Subscriber Unit.

**Important!** The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.

1.1 Basic Functions

The 7794A is a dialer capture module with monitoring capabilities, as well as full emulation of the POTS telephone line for incoming data sent from the FACP. The 7794A can intercept the FACP phone line connection if the intercept number matches the number being dialed.

1.2 User Interface

The 7794A does not use configuration jumper settings and is programmed using a web browser interface through the AES Model 7707 Fire Subscriber. Refer to the 7707 Installation Manual, AES P/N 40-7707.

1.3 System Knowledge Requirements

This document assumes that the user knows how to set the AES subscriber unit account number, cipher, and other configuration settings as well as how to operate the AES MultiNet software environment including IPCtrl and automation.

**Fire Alarm Control Panel Telco Interface Requirements**

**Note:** The 7794A is not compatible with Fire Alarm Control Panels that test both digital communicator telephone lines *at the same time.*

With the 7794A IntelliPro used as the sole path communicator, only one telephone line connection to the FACP is required. *Parallel connect both telephone lines together, if line 2 cannot be disabled.*

**Note:** The 7794A can provide voltage to both telephone line connections if they are connected together in parallel with TIP to TIP and RING to RING as shown in Figure 2 on page 11 and Figure 4 on page 12.
1.4 Safety Considerations

As part of the 7794A installation, the following safety considerations should be kept in mind:

- Install all equipment in accordance with the National Electric Code, National Fire Protection Association NFPA 70, NFPA 72, and local building codes.
- Test this system periodically for proper operation. AES assumes no responsibility for this equipment's failure to operate. AES's sole responsibility is to repair or replace any AES device found to be defective during the warranty period.
- Avoid dropping or other physical impact which could damage the card or card components.

1.5 Technical Specifications

SIZE: 4 7/8 in. x 5 in. (12.3 cm x 12.7 cm)
WEIGHT: 0.4 pound (0.18 kilogram)
POWER INPUT: Power supplied from AES Model 7707
VOLTAGE: 12 VDC nominal
CURRENT: 350 mA nominal; 160 mA standby
FUSE: Onboard self-resetting. Not user serviceable
OPERATING TEMPERATURE RANGE: 0° to 49° C (32° to 120°F)
STORAGE TEMPERATURE RANGE: −10° to 60° C (14° to 140°F)
RELATIVE HUMIDITY RANGE: 0 to 93% RH, non-condensing

| Important! | The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit. |

Notes:

- The 7794A must be installed in accordance with National Electrical Codes and UL-864.
- Canadian installations must be done in accordance with Canadian Electrical Codes, CAN/ULC-S524 and CAN/ULC-S561.
2. **Installation of 7794A**

2.1 **Equipment List**

The 7794A IntelliPro includes the following items:

- 7794A IntelliPro
- AES RJ11 cable 1 each AES P/N 13-0395
- Hex standoffs hardware
- Hex nuts w/lock washer 4 each
- Insulating washers 2 each

2.2 **Installation**

1. Place hex standoffs on mainboard in four places shown in the photo below. Use the longer hex standoffs (B) on the mainboard, and use the shorter hex standoffs (A) on top of the zone input card. Do not overtighten the standoffs.

2. Place the 7794A on top of the installed standoffs.

3. Install insulating washers (P/N 09-7X94) over mounting holes H1 and H3.
4. Place hex nuts over the washer on the standoffs to secure the board in the four places as shown below. Do not overtighten hex nuts.

For information on connecting the fire alarm control panel PSTN wiring, refer to either the Primary Communication Interface section on page 9 or the Supplemental Communication Interface section on page 13, depending on your application.

**Important!** The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.
3. **Primary Communication Interface**

Figure 1 shows connector and diagnostic LED location on the 7794A.

![Diagram of 7794A Connector and LED Locations]

---

*Figure 1. 7794A Connector and LED Locations*
### 3.1 Connecting 7794A to Alarm Panel

When mounted in a subscriber enclosure and connected to the Fire Alarm Control Panel dialer, the 7794A delivers alarm messages to the central monitoring station as shown in Figure 2. The 7794A is supervised by the 7707 Subscriber, which continuously monitors a “heartbeat” signal from the 7794A. In this configuration no Zone inputs are connected from the FACP to the 7794A.

![Diagram](image)

**Figure 2. Primary Communications Interface Using FACP Dialers**

### 3.2 Connection Details

When mounted in a subscriber enclosure and connected to the Fire Alarm Control Panel dialer, the 7794A delivers alarm messages to the central monitoring station as shown in Figure 2 and Figure 3.

Figure 3 shows a Primary Interface using a FACP Dialer and a Secondary interface using a second FACP dialer and a Diverse Technology connection such as POTS, GSM or TCP/IP.

| **Important!** | The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit. |

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To connect the 7794A to the FACP:

1. Extend FACP Dialer 1 and Dialer 2 TIP and RING to the 7794A.
2. Connect FACP Dialer 1 and Dialer 2 TIP wire to J6 terminal block labeled AP TIP (see Figure 4).
3. Connect FACP Dialer 1 and Dialer 2 RING wire to the J6 terminal block labeled AP RING (see Figure 4).

**Important!** Disabling Second FACP Telco Connection - most fire panels can be configured to disable the second Telco connection, which disables panel supervision for the second (disabled) Telco connection. Supervision alarms at the FACP can be prevented by disabling the second Telco connection.

With the Primary Communication Interface wiring completed, proceed to the Configuring the 7794A.
4. Supplemental Communication Interface

Figure 5 shows connector and diagnostic LED location on the 7794A.

Figure 5. Connector and LED Locations

4.1 Connecting the 7794A to Alarm Panel (U. S. Installation)

The diagram below displays the Fire Alarm Control Panel (FACP) with both dialers connected to the 7794A (AP TIP and AP RING). Note that the output zones form the FACP must be connected to the 7707 in this configuration.

Figure 6. 7794A to Alarm Panel (U.S. Installation)
Two connection methods are used from FACP to the subscriber. The first is FACP Dialer 1 and Dialer 2 to the 7794A. The second is FACP zone outputs to 7707 zone inputs.

- Method 1: Dialer 1/ Dialer 2 to 7794A
- Method 2: FACP relays into 7707 Subscriber Zone Inputs

Method 1 – FAILS
FACP detects Dialer 1 and Dialer 2 both in trouble
FACP trips relay "T" to 7707
7707 reports to MultiNet (DIALER FAILURE)

Method 2 – FAILS (antenna cut, etc.)
7707 subscriber engages J4 Trouble Relay
J4 relay trip causes local annunciation (see 7707 Installation and Operation Manual – AES P/N 40-7707 for details)

4.2 Connection Details – 7794A to Alarm Panel (U.S Installation)
Connection from the FACP to the 7794A is provided in the instructions below:
1. Connect the FACP Dialer 1 and Dialer 2 TIP and RING to the 7794A terminal block labeled AP TIP RING as shown in the figure below.

![Alarm Panel Connections](image-url)
2. Wire the zones of the FACP to the 7707 as shown above in 6.

**Important!** Disabling Second FACP Telco Connection — Most fire panels can be configured to disable the second Telco connection which disables panel supervision for the disabled connection. Supervision alarms at the FACP can be prevented by disabling the second Telco connection.

### 4.3 Connecting the 7794A to Alarm Panel (Canadian Installation)

Connection from the FACP to the 7794A is provided in the instructions below.

**Figure 8. Canada/Dual Dialer Installation**

**FACP with PSTN and RF**

Method 1: PSTN via Dialer 2

Method 2: RF (7707) via Relays

Method 3: Supplemental: RF (7794A to 7707) via Dialer 1, Reverse Polarity, Other Technologies, Relays, or other means provided by ULC S559 Listed FACP

Normal case: Alarm = Dialer 2 dials into Phone Receiver or via Dialer 1 into MultiNet receiver

Method 1 FAILS: PSTN fails (line cut, failure to connect, etc.)

Reports with two messages:

AP detects (AP monitoring PSTN), and trip relay "T" connected to the 7707.

7707 subscriber sends ZONE alarm (DIALER FAILURE).
AP reports via Method 3. If used, 7794A-7707 reports into MultiNet (DIALER FAILURE).

Method 2 FAILS: antenna cut, etc.
7707 engages J4 Trouble Relay
J4 relay trip causes local annunciation
AP reports via Dialer into Phone Receiver (RF COMMUNICATOR FAILURE)

4.4 Connection Details – 7794A to Alarm Panel (Canadian Installation)
Connections from the FACP are provided in the following instructions:
1. Connect the FACP Dialer 2 TIP and RING to the PSTN (Public Switching Telephone Network).
2. Connect the FACP Dialer 1 TIP and RING to the 7794A terminal block labeled AP TIP RING.
3. Wire the Zones of the FACP (Alarm, Trouble, Supervision) into the 7707 as shown above in Figure 8.
4. Connect the FACP.

![Diagram](image_url)

**Figure 9. Connecting to the Alarm Panel Using a Shared PSTN Line**

**FACP with PSTN and RF**
- Method 1: PSTN via Dialer 2
- Method 2: RF (7707) via Relays
- Method 3: Supplemental: RF (7794A to 7707 ) via Dialer 1, Reverse Polarity, Other Technologies, Relays or other means provided by ULC S559 Listed FACP

Normal case: Alarm = Dialer 2 dials into Phone Receiver or via Dialer 1 into MultiNet receiver

Method 1 FAILS: PSTN fails (line cut, failure to connect, etc.)

Reports with two messages:
AP detects (AP monitoring PSTN, and trips Trouble relay connected to the 7707.
7707 subscriber sends ZONE alarm (DIALER FAILURE).
AP reports via Method 3. If used, 7794A-7707 reports into MultiNet (DIALER FAILURE).

Method 2 FAILS: antenna cut, etc.
7707 engages J4 Trouble Relay
J4 relay trip causes local annunciation
AP reports via Dialer into Phone Receiver (RF COMMUNICATOR FAILURE)
5. Configuring the 7794A

Configuring the 7794A IntelliPro installed in the 7707 subscriber requires a smartphone or another computer device with a web browser. The 7707 subscriber must be configured and powered on.

5.1 Configuration Interface

The 7794A is configured through a web browser interface provided by the 7707 subscriber. Refer to the 7707 Installation Manual, AES P/N 40-7707 for details on accessing the configuration interface through the subscriber.

Reset to Defaults

The 7794A can be set to factory default configuration using the following steps:

1. Click on System tab:

2. Under Reset to Default, set IntelliPro Config to Yes. Click the Reset Configuration button.

Next, the login page and the message that settings have been reset appears:

3. Login with the assigned username and password to continue with the 7794A configuration.
6. Programming

6.1 Programming Options – UL NOTICE TO USERS

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES

This product incorporates field-programmable software. In order for the product 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 in Table 1. These apply when the 7794A is use as a Primary Communication Interface.

<table>
<thead>
<tr>
<th>Feature or Option</th>
<th>Permitted in UL (Y/N)</th>
<th>Possible Settings</th>
<th>Setting(s) Permitted in UL864?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Cut Report</td>
<td>Y</td>
<td>Y/N</td>
<td>Y</td>
<td>Select based on use</td>
</tr>
<tr>
<td>POTS Cut Report Delay</td>
<td>Y</td>
<td>Any value between 0-9999(seconds)</td>
<td>0-60 sec max.</td>
<td>Select based on use</td>
</tr>
<tr>
<td>POTS Restoral Delay</td>
<td>Y</td>
<td>Any value between 0-99999(seconds)</td>
<td>0-60 sec max.</td>
<td>Select based on use</td>
</tr>
<tr>
<td>Line Cut Sensing</td>
<td>Y</td>
<td>Y/N</td>
<td>Y</td>
<td>Select based on use</td>
</tr>
<tr>
<td>M3 EC TEXT to CID Enabled</td>
<td>N</td>
<td>Y/N</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
6.2  Phone Line
This option is set depending on whether a POTS (telephone company provided) line is connected.

Option settings: Yes or No

- Yes = Phone line is present
- No = Phone line is not present (default)

Important! When Phone Line is set to Yes and Line Cut is set to No, then if Phone Line is changed from Yes to No, then back to Yes, the Line Cut Report automatically changes from No back to Yes.

6.3  Intercept Number
This option sets the number programmed in the Fire Alarm Control Panel for the 7794A to intercept when the panel dials. A minimum of three numbers must be entered. Default number is 5555.

6.4  Alarm Panel Report Format
This option sets the format that the 7794A will interpret when data is sent by the FACP over the dialer interface. The 7794A interprets the data and transfers it to the subscriber where it is sent to the MultiNet.

The 7794A currently supports the following formats:

- Contact ID (Ademco CID)
- Pulse formats at 10 and 20 pulses per second, with combinations of handshake, kiss-off, and center pulse frequencies, plus variable durations that cover most pulse formats
- Modem formats from Bosch, ranging from Modem II to Modem IIIa.

The options for the alarm panel report are CID, MODEM or PULSE:
**CID Alarm Format**

This option sets the Alarm Panel Report Format to Contact ID format.

`AP Report Format`  
- CID
- MODEM
- PULSE

**Modem Alarm Format**

This option sets the Alarm Panel Report Format to **MODEM**.

`AP Report Format`  
- CID
- MODEM
- PULSE

When **MODEM** is selected, the Alarm Panel Modem Format menu selection appears:

`AP Modem Format`  
- MODEM3
- MODEM2

For details on selection, see “Bosch/Radionics Modem II and Modem III,” on page 29.
**Pulse Alarm format**

This option sets the durations and frequencies for the Pulse Alarm format.

The following configuration options may be set when the format is **PULSE**:  
- Handshake Duration  
- Handshake/Kissoff Frequency  
- Center Frequency  
- Inter-Digit Time  
- Inter-Round Time

![Available Settings](image)

**6.5 AP Input Gain**

This option increases/decreases sensitivity of the 7794A to allow decoding of data from the alarm panel. Some alarm panels will adjust to this setting.

The options are:  
- **10 dB**  
- **20 dB** (default)
6.6 Intercept on Blind Dial

This option is used when the alarm panel does not wait for a dial tone after going off-hook to dial out. When set to Yes, the 7794A will expect to receive digits as soon as the AP goes off hook. The initial dial tone for off-hook will not occur.

Options are:

- **Yes**: Intercept on AP blind dial enabled
- **No**: Intercept on AP blind dial disabled (default)

6.7 Line Cut Report

To view, **Phone Line** must be set to **Yes**.

By default, **Line Cut Report** is set to **Yes**.

**Note**: The following combination of **Phone Line** = Yes and **Line Cut Report** = No will change when **Phone Line** (POTS) is set to **No**, then changed again to **Phone Line** (POTS) = Yes. The **Line Cut Report** will be overwritten and return to **Yes**.

6.8 POTS Cut Report Delay

**POTS Cut Report Delay** requires that **Phone Line** be set to **Yes**:

The default setting is 45 seconds.

**Note**: If the POTS line condition returns to a no fault condition before the POTS Cut Report Delay count reaches the time setting, then no signal will be sent.
6.9 POTS Restoral Delay

POTS Restoral Delay requires that the Phone Line setting be set to **Yes**:

![Phone Line](Yes)

POTS Restoral Delay specifies the delay time before a message is sent, indicating that the POTS phone line has changed from fault state to functional state. The restoral message transmission is delayed by the number of seconds set to ensure the phone line is stable.

![POTS Restoral Delay](0-60) 50 Sec.

6.10 AP Account Override

AP Account Override requires that Phone Line be set to **Yes**:

![Phone Line](Yes)

The purpose of this option is to allow bypassing the alarm panel account. When set to **Yes**, the account number of the AES subscriber is used in place of the account number in the control panel. This is useful for automation software packages without the capability of two distinct account numbers for one customer account.

Options are:

- **Yes**: AP ACCT Override enabled
- **No**: AP ACCT Override disabled (default)

![AP Account Override](No)
6.11 POTS Input Gain

POTS Input Gain requires that Phone Line be set to Yes:

POTS Input Gain increases the 7794A sensitivity when the 7794A is listening to activity on the telephone line. The default value is 20 dB, and reducing this value will decrease the 7794A gain.

Options are:

- 0 dB
- 10 dB
- 20 dB (default)

6.12 Advanced Options Display

Advanced Options allows for display and configuration of the following when set to Yes:

Options are:

- Yes to enable
- No to disable (default)
6.13 AP Output Gain

Advanced Options Display must be set to **Yes**.

**Advanced Options**

**AP Output Gain** sets the output gain when the 7794A is in POTS emulation mode. It is used to increase the gain of the dial tone as well as the handshake and KISS-OFF tones sent by the 7794A to the AP. Increasing this value will increase the AP output gain.

Options are:

- 0 dB (default)
- 3 dB
- 6 dB

6.14 Line Cut Sensing

This setting enables or disables POTS line cut sensing. When set to **Yes**, the line is monitored for cut interruption.

**Line Cut Sensing**

This setting requires that **Phone Line** and **Advanced Options** be set to **Yes**:

**Phone Line**

**Advanced Options**

6.15 CID 4xx Letter

**Advanced Options** must be set to **Yes** to access this setting:

**Advanced Options**

For reporting, open and close reports with either **U** or **C**:

- **U**: Reports open and close reports with “U” (default)
- **C**: Reports open and close reports with “C”
6.16 M3 EC TEXT to CID Enabled

Note: M3 EC TEXT to CID is MODEM III Event Code Text to Contact ID. Refer to Section 6.1 Programming Options — UL NOTICE TO USERS Table 1.

This setting enables the 7794A to scan the Modem III description field for text specific to events that are typically silent at the local site and that the dealer does not want to have sent through as a general alarm message (E140/R140). Setting to Yes allows Modem III alarm messages to be translated not only based on Event Code (EC) from the Modem III packet, but also from contents of the text used to describe the event.

AP Report Format must be set to MODEM, and AP Modem Format must be set to MODEM3 as shown below:

Advanced Options and M3 EC Text to CID must be set to Yes to access this setting.

6.17 Voltage Pump

This setting requires that Advanced Options be set to Yes:

Setting Voltage Pump from Yes to No is required only for alarm panel interfaces that have marginal communication quality working with the 7794A.

Options are:

- Yes: Enables the voltage pump (default)
- No: Disables the voltage pump
6.18  Clock Frequency Shift

Clock Frequency Shift requires that Advanced Options be set to Yes:

Clock Frequency Shift is for advanced diagnostic purposes and is generally not used.

- Yes: Enable
- No: Disable (default)

Keep set at No.

6.19  Status LED Blink Patterns

An LED indicator on the Model 7794A shows system status. The red status LED is located near the bottom left edge of the circuit board (see Figure 5 on Pg. 13 for location). The following table displays the blink patterns that are associated with the operating status of the 7794A IntelliPro:

<table>
<thead>
<tr>
<th>Table 2. Blink Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blink Type</td>
</tr>
<tr>
<td>Short blink</td>
</tr>
<tr>
<td>Long blink</td>
</tr>
<tr>
<td>No blink</td>
</tr>
</tbody>
</table>

7.  Supported Formats/Protocols

7.1  Format: Contact ID

The 7794A is fully compliant with the Contact ID (CID) protocol. To configure the 7794A to process CID, select CID as the AP Report Format type (see Alarm Panel Report Format on page 20 for more details).
7.2 Format: Bosch/Radionics Modem II and Modem III

To configure the 7794A to process modem formats, select **MODEM** as the **AP Report Format** type (see Alarm Panel Report Format on page 20 for more details).

The following table displays the modem format and speed (baud rate) settings for the Modem format.

<table>
<thead>
<tr>
<th>Modem Format</th>
<th>Speed</th>
<th>Family Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modem II</td>
<td>110</td>
<td>D8112G2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D6112</td>
</tr>
<tr>
<td>Modem IIe</td>
<td>300</td>
<td>D2212B</td>
</tr>
<tr>
<td>Modem III</td>
<td>300</td>
<td>D7412GV2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D7412GV3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D4412</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D9412G</td>
</tr>
</tbody>
</table>
Table 4 lists the Bosch/Radionics panels that are supported:

<table>
<thead>
<tr>
<th>Panel Model</th>
<th>Revision Number</th>
<th>Format Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>D7412GV2</td>
<td>7.08</td>
<td>Modem III</td>
</tr>
<tr>
<td>D7412GV3</td>
<td>8.03</td>
<td>Modem III</td>
</tr>
<tr>
<td>D8112E1/G1</td>
<td>22</td>
<td>Pulse Only</td>
</tr>
<tr>
<td>D8112G2</td>
<td>31.31</td>
<td>Modem II</td>
</tr>
<tr>
<td>D6112</td>
<td>4.0</td>
<td>Modem II</td>
</tr>
<tr>
<td>D2212B</td>
<td>3.03</td>
<td>Modem IIe</td>
</tr>
<tr>
<td>D4412</td>
<td>1.12</td>
<td>Modem III</td>
</tr>
<tr>
<td>D9412G</td>
<td>6.6</td>
<td>Modem III</td>
</tr>
</tbody>
</table>

**Note:** Even if the panel you are connecting to does not show on the list, it doesn’t mean that it’s not supported.

### 7.3 Format: Pulse

To configure the 7794A to process pulse formats, select **PULSE** as the **AP Report Format** type (see Alarm Panel Report Format on page 20 for more details).

The supported pulse formats include:

- HSD – Handshake Duration
- HSF – Handshake Frequency
- CF – Center Frequency
- IDT – Inter-Digit time
- IRT – Inter-Round time
Table 5 shows the corresponding values for the different parameters associated with each pulse format.

<table>
<thead>
<tr>
<th>Table 5. Supported Pulse Formats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse Format</td>
</tr>
<tr>
<td>Ademco LS (10 pps) (4+2)</td>
</tr>
<tr>
<td>Ademco LS (10 pps) (3+1)</td>
</tr>
<tr>
<td>Ademco LS (10 pps) (4+1)</td>
</tr>
<tr>
<td>Ademco LS Double Round (3+1 Expanded)</td>
</tr>
<tr>
<td>Ademco HS Double Round (3+1 Expanded)</td>
</tr>
<tr>
<td>Ademco Slow Silent Knight Slow, HS 1400 Hz</td>
</tr>
<tr>
<td>Ademco Slow Silent Knight Slow, HS 2300 Hz</td>
</tr>
<tr>
<td>Radionics Fast (20 pps) (4+2)</td>
</tr>
<tr>
<td>Radionics Fast (20 pps) (4+1)</td>
</tr>
<tr>
<td>Radionics Fast (20 pps) (3+1)</td>
</tr>
<tr>
<td>Radionics (20 pps) (4+2)</td>
</tr>
<tr>
<td>Silent Knight LS Double Round (3+1 Expanded)</td>
</tr>
<tr>
<td>Silent Knight HS Double Round (3+1 Expanded)</td>
</tr>
<tr>
<td>Silent Knight Fast</td>
</tr>
<tr>
<td>Silent Knight (4 + 2)</td>
</tr>
<tr>
<td>Universal High Speed, hand shake 1400 Hz</td>
</tr>
<tr>
<td>Universal High Speed, hand shake 2300 Hz</td>
</tr>
</tbody>
</table>

* sec = seconds

7.4 Notes on Pulse Formats

Number of Digits on Pulse Format

Pulse format has no selection for the number of digits, since the number is determined when the 7794A interprets the pulse train.

- If six digits are received, it translates into 4+2.
- If five digits are received, it translates in 4+1.
- If four digits are received, it translates in 3+1.
Double Round

Double round sends the same message twice and is automatically detected. This is a method used by some pulse protocols to allow a receiver, the 7794A in this case, to validate the data received.

Translation of 3+1 and 4+1 to 4+2

1234 56 arrives at MultiNet as: 1234 56
1234 5 arrives at MultiNet as: 1234 05
123 5 arrives at MultiNet as : 0123 05

Expanded Format

We do not recommend using expanded format due to how the messages will reach MultiNet.

When the alarm panel is programmed for expanded format (not to be confused with double round), it sends two trains of pulses (four total, because of the double round), and the 7794A sends the two messages received. This has to be handled carefully with the automation software because the two messages will appear as having two “different” accounts. An expanded format configuration will produce a total of four pulse trains.

\[1^{st}: 5879 6 (4+1) \rightarrow 6879 06 (4+2)\]
\[2^{nd}: 6666 3 (4+1) \rightarrow 6666 03 (4+2)\]

For instance, with the expanded format, it would send the following two messages, and each one would produce a message with automation software:

\[1234 6 1234 6 \rightarrow 1234 06 ACCT 1234 RF 5555 RL=14\]
\[6666 8 6666 8 \rightarrow 6666 08 ACCT 6666 RF 5555 RL=14\]

7.5 Settings for Non-Supported Formats

Some high-speed formats will not work since the 7794A supports only 10 pps and 20 pps formats. However, most alarm panels will “gear down” and lower pulse speed after trying and failing to send data to the 7794A.
The settings in Table 6 are recommended for common high-speed formats when the low-speed fallback is implemented. The 7794A will successfully interpret the data sent by the alarm panel over the phone dialer interface when speed is reduced.

**Note:** These settings are only for the “fail safe” speed. These settings are not for the actual 33 or 40 pps, which are not supported by the 7794A.

<table>
<thead>
<tr>
<th>Pulse Format</th>
<th>HSD</th>
<th>HSF</th>
<th>CF</th>
<th>IDT</th>
<th>IRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radionics Fast Double Round (33 pps)</td>
<td>0.8</td>
<td>2.3</td>
<td>1.9</td>
<td>0.7</td>
<td>5</td>
</tr>
<tr>
<td>Radionics Fast (40 pps Double Round)</td>
<td>0.8</td>
<td>1.4</td>
<td>1.8</td>
<td>0.7</td>
<td>5</td>
</tr>
</tbody>
</table>

**8. Testing**

Perform the following tests to confirm that the 7794A is properly installed and is functional.

**8.1 Installation Checks**

Some of the tests to be performed at the installation site require a response from a Central Station person.

- Trigger alarm conditions and confirm that the proper message is received at the Central Station.
- Cause fault conditions and confirm that the proper message is received at the Central Station.

**9. Maintenance, Warranty and Repair**

Once installed and normal operation is confirmed, there is typically little maintenance required.

**9.1 Troubleshooting**

Problems on the circuit board usually require returning the defective unit to AES for service.
9.2 Contact Information

AES Corporation
285 Newbury Street
Peabody, Massachusetts 01960 USA
Website: http://www.aes-corp.com

AES corporate Phone: (800) 237-6387 (800) AES-NETS
USA (978) 535-7310

Fax: USA (978) 535-7313

Email: Check Website for latest email addresses

10. Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7/7/2016</td>
<td>Initial version</td>
</tr>
<tr>
<td>2</td>
<td>4/27/2017</td>
<td>Included feedback from Tech Support</td>
</tr>
<tr>
<td>2a</td>
<td>6/07/2017</td>
<td>Included feedback from Tech Support</td>
</tr>
</tbody>
</table>
11. Warranty

OWNER WARRANTY - AES CORPORATION

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Ship items freight-prepaid to:

    Repair Services, RMA#____________
    AES Corporation,
    285 Newbury Street
    Peabody, MA 01960 USA

(Contact AES for Return Material Authorization number)