



# **AES 7794**

## **IntelliPro Fire**

# **Installation Manual**

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## 1 Summary

This document describes the installation procedure for the AES 7794 IntelliPro Fire module used with AES Fire Subscriber units to transmit alarm zone data.

The 7794 IntelliPro is a dialer interface intended for use with commercial Fire Alarm Control Panel (FACP) installations. The 7794 is a UL Listed primary communicator when used with the AES 7762 Hardware Supervisor.

Installed between the FACP and AES subscriber, the 7794 intercepts alarm panel messages and sends them to the monitoring station via the AES fire subscriber unit.

**NOTE:** The 7794 IntelliPro and subscriber must be connected to the FACP within the same room and in no more than 20 ft. of conduit.

### 1.1 Basic Functions

The 7794 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 7794 can intercept the FACP phone line connection at different states of the call if the intercept number matches the number being dialed.

### 1.2 User Interface

The 7794 does not use configuration jumper settings and is programmed using the AES Hand Held Programmer (P/N 7041E). The Hand Held Programmer connects to the J2 RJ11 connector labeled “HandHeld”. See Figure 1. - 7794 Connector and LED Locations. The Hand Held is also used for diagnostics and monitoring of the 7794 while in operation. An LED is used to indicate operating status. See Section 6 Status LED Blink Patterns for details.

**IMPORTANT:** Do not connect the Hand Held programmer to the J1 connector. J1 is for connecting the 7794 to the subscriber unit.

### 1.3 System Requirements

This document assumes 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 Multi Net software environment including IPCtrl and automation.

#### 1.3.1 Fire Alarm Control Panel Telco Interface Requirements

**NOTE:**

- **The 7794 is NOT compatible with Fire Alarm Control Panels that test both digital communicator telephone lines at the same time.**

With the 7794 IntelliPro used as the sole path communicator, only one telephone line connection to the FACP is required. Use the following method below.

- **Parallel connect both telephone lines together.**

**The 7794 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 Section 3, Figure 5 and Section 4, Figure 6D.**

## 1.4 Safety Considerations

- All equipment must be installed in accordance with National Electric Code, NFPA 70, National Fire Code 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' 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

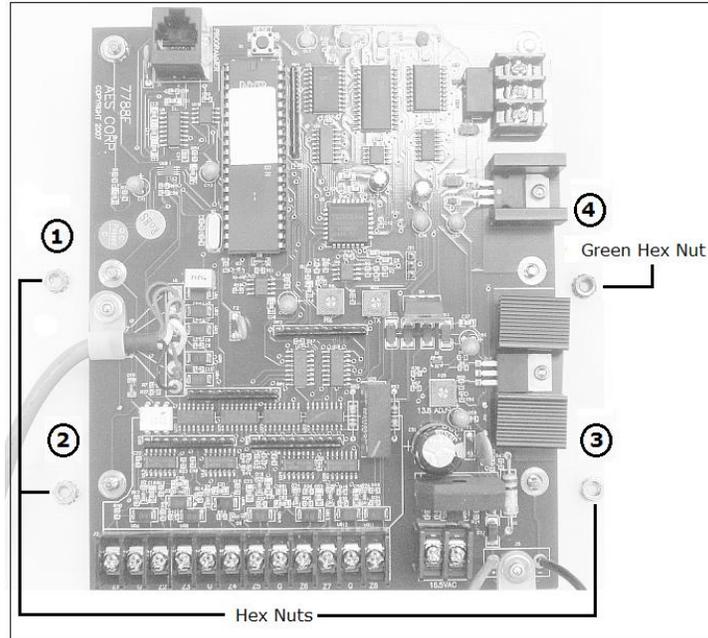
- **SIZE:** 4 7/8 in. x 5 in. (12.3 cm x 12.7 cm )
- **WEIGHT:** 0.4 pounds (0.18 kilograms)
- **POWER INPUT:** Power supplied from AES 7744F/7788F/7788F-C
- **VOLTAGE:** 12VDC nominal
- **CURRENT:** 350 mA nominal
- **FUSE:** Onboard current limiter. Not serviceable
- **OPERATING TEMPERATURE RANGE:** 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

### NOTE:

- **The AES 7794 IntelliPro must be used with the 7762 Hardware Supervisor for compliance with UL listing as primary communicator. See the 7762 Hardware Supervisor Installation and Operation Manual for details.**
- **The 7794 must be installed in accordance with National Electrical Codes and UL-864.**
- **Canadian installations must be done in accordance with Canadian Electrical Codes and ULC-527.**

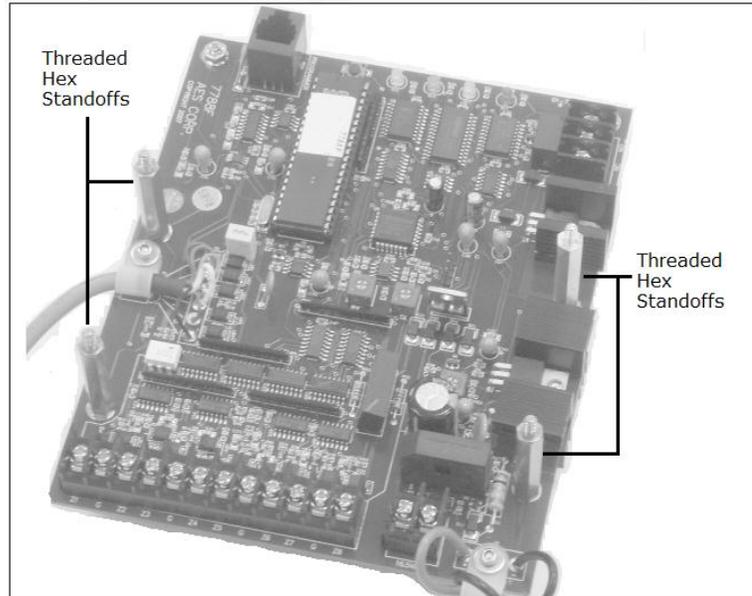
## 2 Installation of 7794 in subscriber unit

- Remove four (4) of the hex nuts shown in Figure 2 that hold the subscriber unit board in the subscriber enclosure. Save the hex nuts.



**Figure 2.**

- Install the 4 hex standoffs (P/N 09-2015). Place the standoffs on the threads exposed after removing the hex nuts. Do not over tighten the standoffs while installing. See Figure 3



**Figure 3.**

- Mount the 7794 PC board on four newly installed standoffs. Install insulating washer (P/N 09-7X94) over mounting hold H3. Temporarily secure the board using the 4 hex nuts removed earlier **Important:** Place the Earth Ground hex nut (green) on the right side center hex standoff as shown in Figure 2 above.

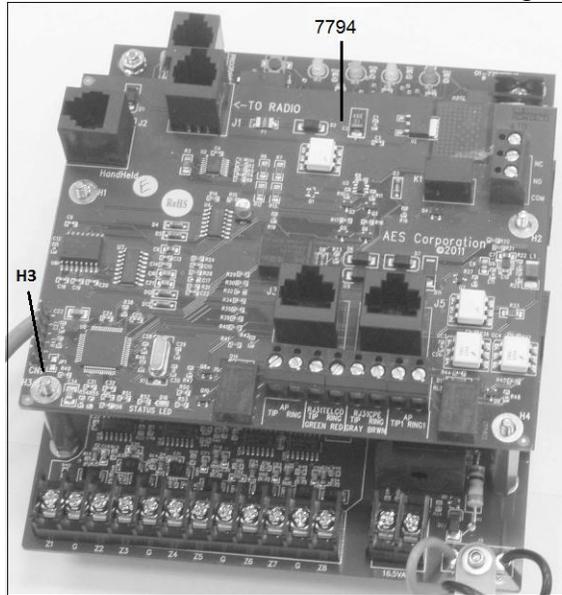


Figure 4.

### 3 Primary Communication Interface

#### 3.1 Connector and LED Locations

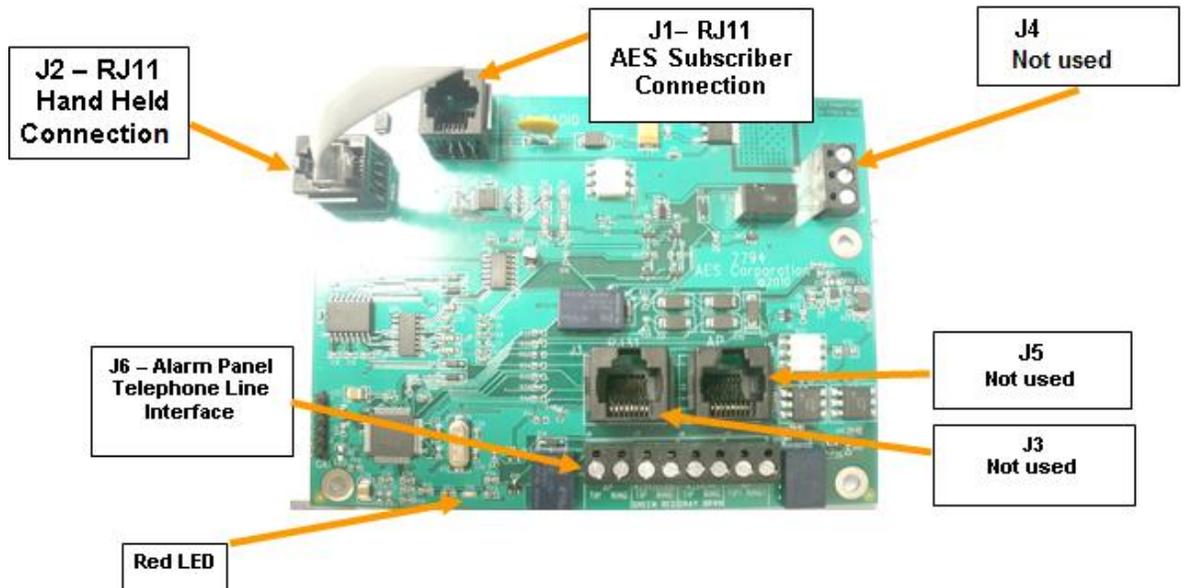


Figure 1. 7794 Connector and LED Locations

### 3.2 Connecting 7794 to Alarm Panel – Primary Communication Interface

When mounted in a subscriber enclosure and connected to the Fire Alarm Control Panel dialer, the 7794 delivers alarm messages to the central monitoring station as shown in Figure 5 and Figure 5A below. The 7794 is supervised by the 7762 using a ‘heartbeat’. See the 7762 Install Manual AES P/N 40-7762 for detail. **NOTE: The 7794 IntelliPro and subscriber must be connected to the FACP within the same room and in no more than 20 ft. of conduit.**

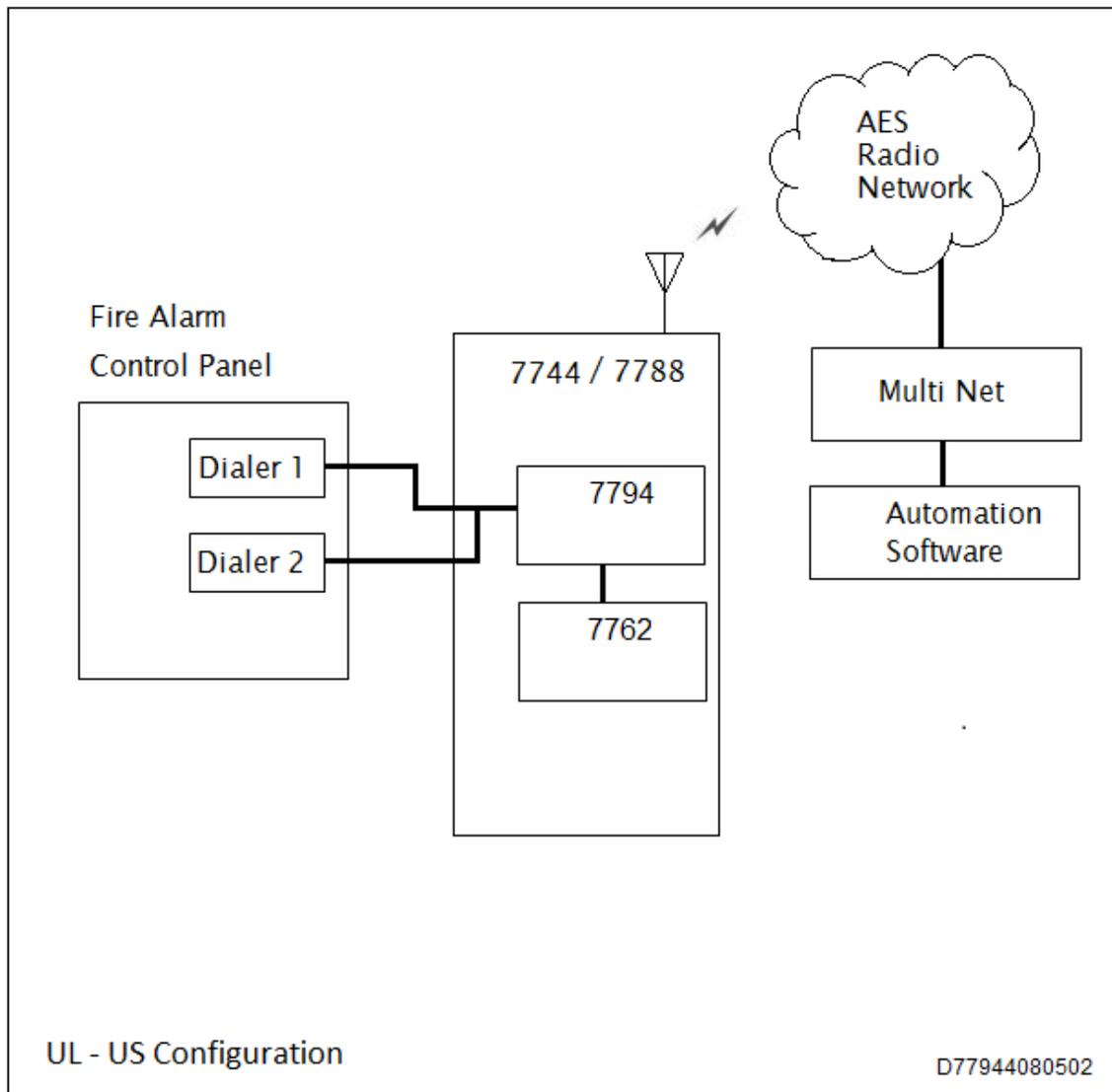


Figure 5.

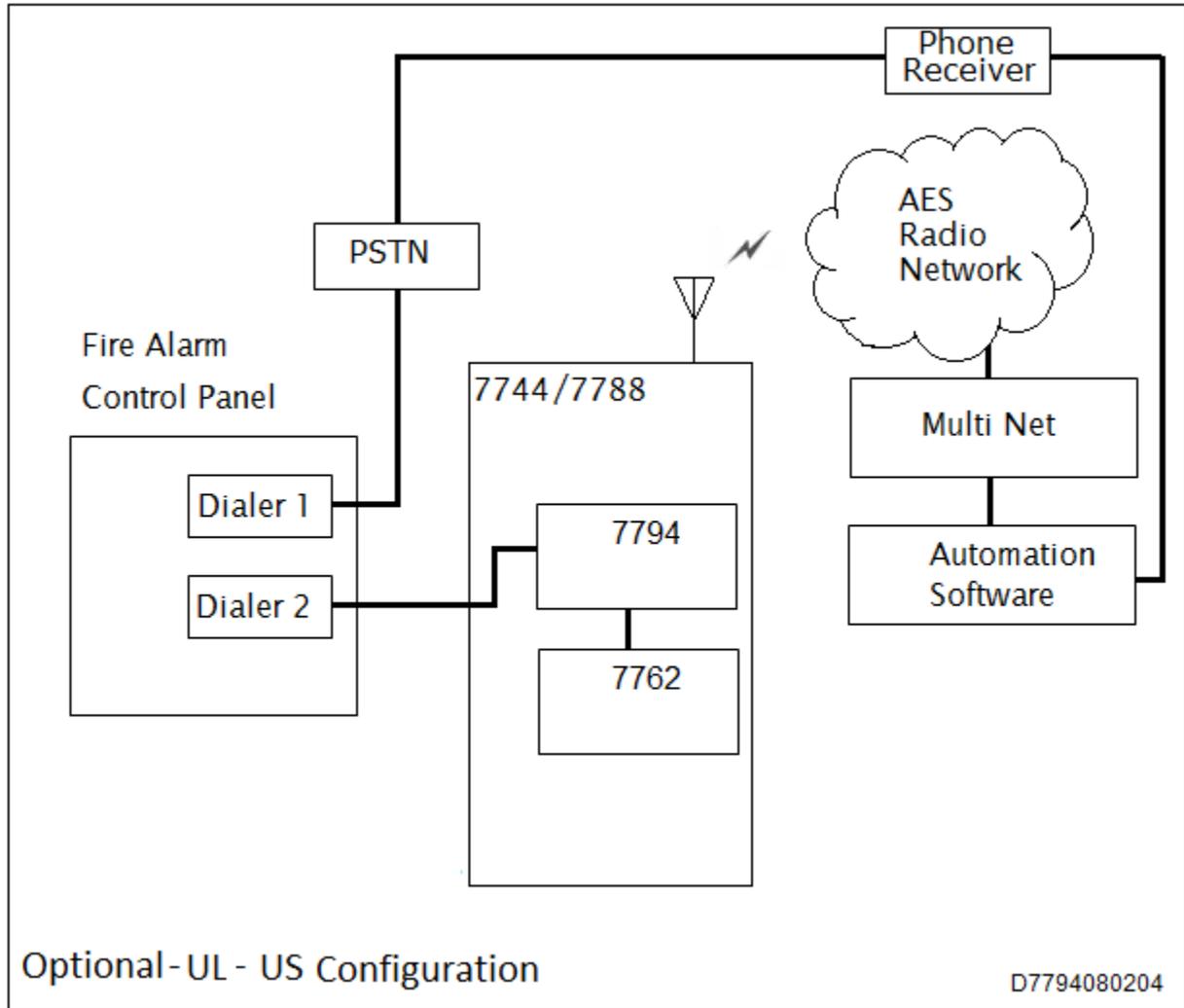


Figure 5A.

### 3.3 Connection Details – Primary Communication Interface

When mounted in a subscriber enclosure and connected to the Fire Alarm Control Panel dialer, the 7794 delivers alarm messages to the central monitoring station as shown in Figure 5 and Figure 5A above. **NOTE: The 7794 IntelliPro and subscriber must be connected to the FACP within the same room and in no more than 20 ft. of conduit.**

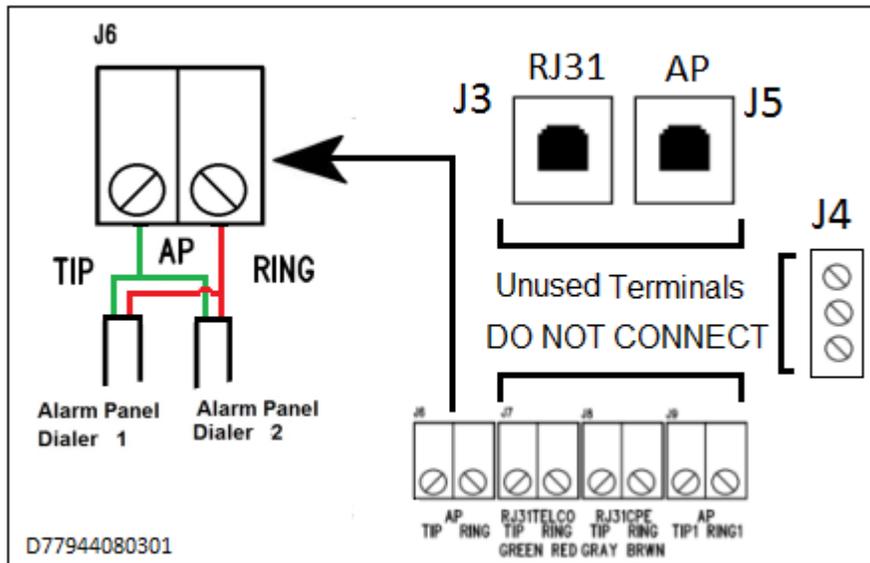
To connect the 7794 to the FACP:

- a) Extend FACP Dialer 1 and Dialer 2 TIP and RING to the 7794.

See Figure 6 below for the following steps:

- b) Connect FACP Dialer 1 and Dialer 2 TIP wire to J6 terminal block labeled AP TIP.
- c) Connect FACP Dialer 1 and Dialer 2 RING wire to the J6 terminal block labeled AP RING.

**NOTE: Terminal blocks J3, J5, J7, J8 and J9 are not used. Do not connect to these terminals.**



**Figure 6.**

**Note:** Disabling Second FACP Telco Connection - Most fire panels can be configured to disable the second Telco connection. With the second Telco connection disabled, the panel will no longer supervise the connection. This method can be used to eliminate supervision alarms at the panel due to disconnecting the second Telco connection.

Proceed to **Section 5 - Configure 7794.**

## 4 Supplemental Communication Interface

### 4.1 Connector and LED Locations

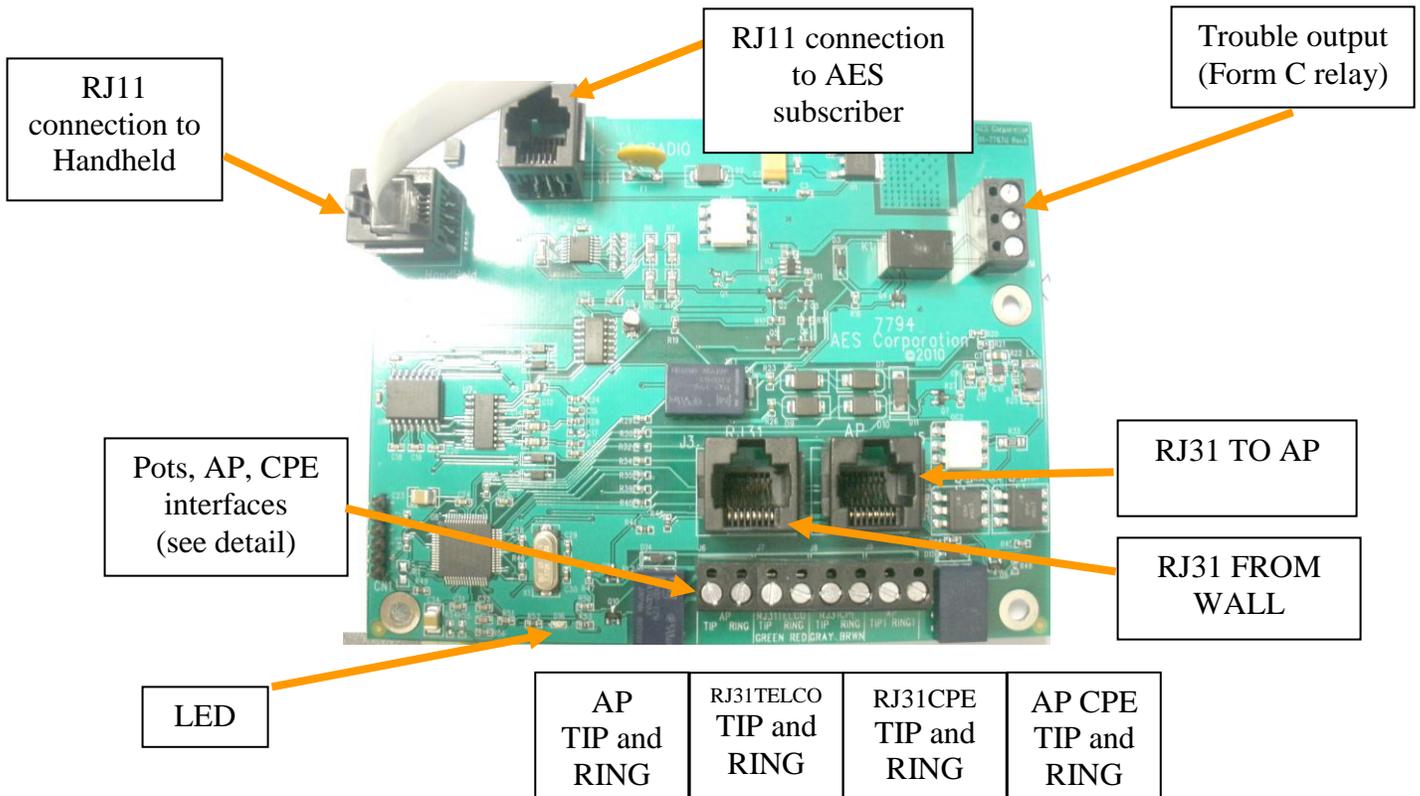


Figure 6A.

## 4.2 7794 to Alarm Panel - US Installation - Supplemental Communication Interface

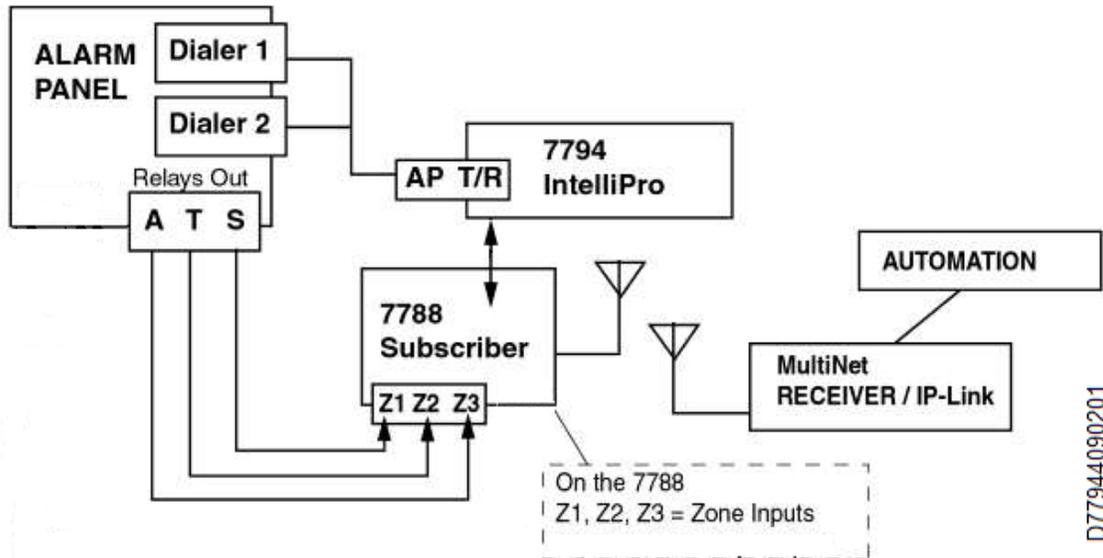


Figure 6B.

FACP (Fire Alarm Control Panel) with both dialers connected to the 7794 (AP TIP and AP RING) as shown in Figure 6B.

Method 1: Dialer 1/ Dialer 2 to 7794

Method 2: FACP relays into 7788 Zone Inputs

Normal case: Alarm = Dialer #1 / #2 to MultiNet Receiver via 7794

Method 1- FAILS:

FACP detects Dialer 1 and Dialer 2 both in trouble

FACP trips relay "T" to 7788

7788 reports to MultiNet (DIALER FAILURE)

Method 2 - FAILS: (antenna cut, etc.)

7744F/7788F/7788F-C engages J4 Trouble Relay

J4 relay trip causes local annunciation – see

7744F RF Subscriber Unit Installation and Operation Manual P/N 40-7744

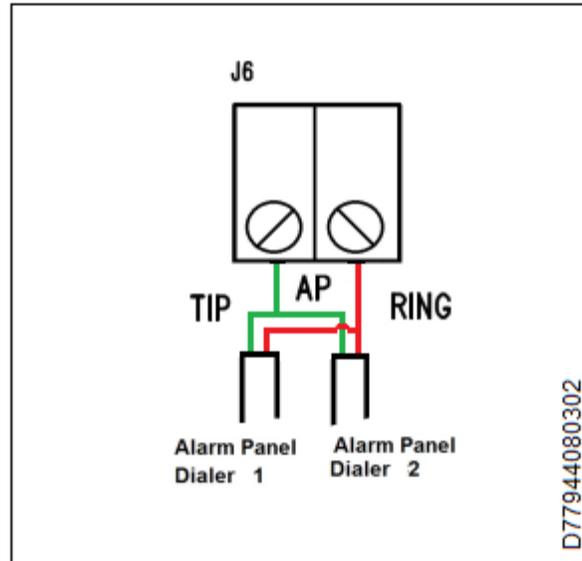
7788F RF Subscriber Unit Installation and Operation Manual P/N 40-7788

7788F-C RF Subscriber Unit Installation and Operation Manual P/N 40-7788FC

for details.

#### 4.2.1 Connection Details –7794 to Alarm Panel - US Installation

- 1) Connect the FACP Dialer 1 and Dialer 2 TIP and RING to the 7794 terminal block labeled AP TIP RING as shown in Figure 6C below.



**Figure 6C.**

- 2) Wire the Zones of the FACP into the 7788 as depicted above in Figure 6B.

**Note:** Disabling Second FACP Telco Connection - Most fire panels can be configured to disable the second Telco connection. With the second Telco connection disabled, the panel will no longer supervise the connection. This method can be used to eliminate supervision alarms at the panel due to disconnecting the second Telco connection.

### 4.3 Connect 7794 to Alarm Panel – Canada/Dual Dialer Installation - Supplemental Communication Interface

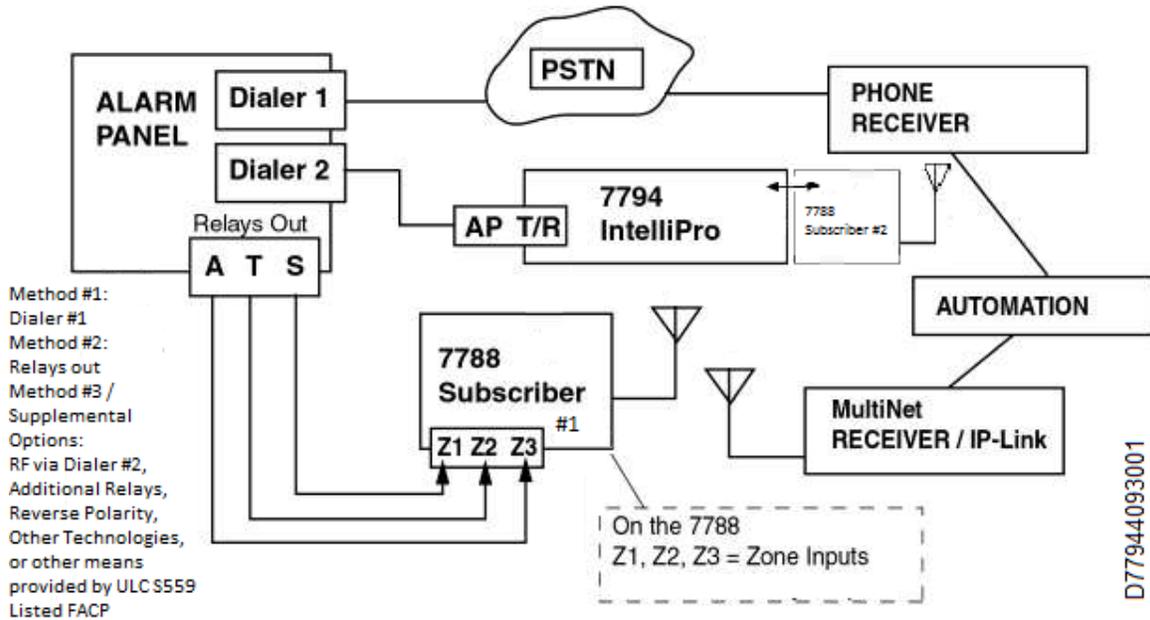


Figure 6D.

FACP with PSTN and RF

Method 1: PSTN via Dialer 1

Method 2: RF (7788F-C #1) via Relays

Method 3: Supplemental: RF (7794-7788F-C #2) via Dialer 2, Reverse Polarity, Other Technologies, Relays or other means provided by ULC S559 Listed FACP

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

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

Reports with 2 messages:

AP detects (AP monitoring PSTN), and trip relay "T" connected to the 7788F-C

7788F-C sends ZONE alarm (DIALER FAILURE).

AP reports via Method 3. If used, 7794-7788F-C #2 reports into MultiNet (DIALER FAILURE).

Method 2 FAILS: antenna cut, etc.

7788F-C engages J4 Trouble Relay

J4 relay trip causes local annunciation

AP sends message via Dialer 1 indicating that 7788F-C is in trouble.  
 AP reports via Dialer into Phone Receiver (RF COMMUNICATOR FAILURE)

### 4.3.1 Connection Details – 7794 to Alarm Panel – Canada Installation

- 1) Connect the FACP Dialer 1 TIP and RING to the PSTN (Public Switching Telephone Network).
- 2) Connect the FACP Dialer 2 TIP and RING to the 7794 terminal block labeled AP TIP RING. 7794 into 7788F-C #2.
- 3) Wire the Zones of the FACP into the 7788F-C #1 as depicted above in Figure 6D.
- 4) Connect the FACP

**Note:** Disabling Second FACP Telco Connection - Most fire panels can be configured to disable the second Telco connection. With the second Telco connection disabled, the panel will no longer supervise the connection. This method can be used to eliminate supervision alarms at the panel due to disconnecting the second Telco connection.

## 5 Configure 7794

The 7794 is configured using the AES Hand Held programmer (P/N 7041E) and programmer cable (P/N 13-0395). Perform the following:

### 5.1 Connecting the Handheld Programmer

The 7794 must be installed and connected by the interconnect cable to the subscriber unit as described in Section 3. Attach the Hand Held to J2 connector labeled 'HandHeld' on the 7794. See Figure 7 below. The Hand Held programmer powers up automatically when the programmer cable is plugged into the J2 connector.

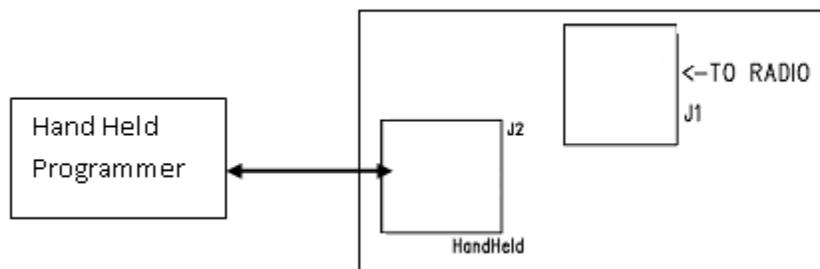


Figure 7.

**IMPORTANT: Do NOT use J1 labeled 'TO RADIO' to connect the Hand Held programmer.**

### 5.2 Determine Firmware Version

The Hand Held LCD displays status information including firmware version. The firmware version is visible after the Hand Held powers up when plugged into J2. The example in Figure 6 shows the firmware version number after the letter 'v'.

```
7794vX.XXX F1=config
POTS:NO, 7794=POTS
```

**Figure 8.**

**(NOTE: If there is different data in the display, press F1, then press ‘E’ to update the display. Some Hand Held programmers have a slow response time.)**

### 5.3 Configuration Interface

The 7794 can be configured using the Hand Held programmer, a PC configured as a terminal, or using the AES IntelliLoader (**Note:** Check the IntelliLoader version for features that can be programmed.)

### 5.4 Entering Configuration Mode

It is a good practice to configure the 7794 with the FACP disconnected. Press F1 to enter Configuration Mode. 'CONFIG' will appear in the display.

If the Alarm Panel is powered, incoming AP events may be displayed on the LCD. To exit configuration mode press the ESC or the E key.

### 5.5 Changing option settings

Press F3 to change the value.

Press F4 and F5 to browse the list of configurable features.

When you press F3, select the new value or press ESC to exit without changing it.

After selecting the new value, you return to the CONFIG screen at the same position before selecting the value.

### 5.6 For Configuration Options – Primary Communication

Configuration options	Available settings	Required settings
Phone line	Y/N	N
Intercept Number	Any number with minimum of 3 digits and maximum of 20 digits.	No required setting.
AP report format	CID/MODEM/PULSE MODEM options: MODEM2/MODEM3 PULSE options HSD =08/04 sec HSF=1.4/2.3 kHz CF=1.4/1.9 kHz IDT=0.7/0.9/1.7 sec IRT=3.0/5.0 sec	Select based on FACP communication format
AP Input gain	10/20	Select based on use.
Intercept blind dial	Y/N	Y

Configuration options	Available settings	Required settings
Line cut Report	Not Used.	Not Used.
POTS cut report delay	Not Used.	Not Used.
POTS restoral delay	Not Used.	Not Used.
AP ACCT override	Y/N	Select based on account ID requirement.
POTS Input gain	Not Used.	Not Used.
Advanced Options Display	Y/N	No required setting.
AP Output Gain	0/3/6	Select based on use.
Reset to defaults	Not applicable.	Not applicable.
Line cut sensing	Not Used.	Not Used.
CID 4XX Letter	U/C	Select based on use.
M3 EX TEXT TO CID	Y/N	Select based on use.
Voltage Pump	Y/N	Y
Clock FShift	Not Used.	Not Used.

### 5.6.1 Phone Line

Option settings: YES or NO.

YES = Phone line is present

NO = Phone line is not present (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.6.2 Intercept number

Set the intercept number to the number programmed in the Fire Alarm Control Panel with a minimum of 3 numbers entered. Default number is ‘555’.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

**Note: If Phone Line (POTS) is not present, or if the line is cut, the 7794 will emulate the Central Office and will respond to any number dialed, regardless of the setting for the Intercept Number.**

### 5.6.3 Alarm Panel report format

This setting allows you to modify the way the 7794 interprets the data sent by the FACP over the dialer interface. The 7794 interprets the data and transfers it to the subscriber where it is sent to the Multi Net.

The 7794 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 with:

C=CID, M=MODEM, P=PULSE

Press F3 to change the value.

Use:

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.6.3.1 CID Alarm Format

To select CID report format, press “C” (after pressing F3).

### 5.6.3.2 Modem Alarm format

To select Modem report format, press “M” (after pressing F3). The next configuration option (reached by pressing F5) will allow you to select Modem II or Modem IIIa. This next configuration option is only available when the format is MODEM.

A=MODEM3 (default)

B=MODEM2

Press F3 to change the value.

For details see Section 8 – Format: Bosch/Radionics Modem 2 and Modem 3 on page 31.

#### 5.6.3.2.1 Modem 2 format – unknown panel type family assignment

When using the Modem II format there is a chance that you will find a panel type (a field in the Modem II message that the 7794 translates) that does not exist in the 7794 pre-defined panel types. When this occurs, even though the 7794 knows that it is Modem II, it cannot decide what the panel family is. For these cases there is a setting that is active when the unknown panel type is detected. This occurs at the configuration time and you **MUST** set the proper family. **NOTE: THIS FEATURE IS NEEDED AND AVAILABLE FOR THE MODEM2 AP FORMAT ONLY.**

For details, Section 8.2 – Modem 2 format – unknown panel type family assignment on page 31

### 5.6.3.3 Pulse Alarm format

Press “P” (after pressing F3) to select the Pulse report as Pulse (also referred as 4+2, 4+1, or 3+1). The next configuration option (reached by pressing F5) will allow you to select durations and frequencies for the pulse format.

The following configuration option is only available when the format is PULSE:

D=HSD (Handshaking duration) (default 0.8 sec)

Options are A=0.8,B=0.4

F=HSF (Handshaking frequency) (default 1.4 KHz)

Options are A=1.4,B=2.3  
C=CF (Center frequency) (default 1.8 KHz)  
Options are A=1.8,B=1.9  
I=IDT (Inter digit time) (default 0.7 sec)  
Options are A=0.7,B=0.9,C=1.7  
R=IRT (Inter round time) (default 0.8 sec)  
Options are A=3.0,B=5.0

#### **5.6.4 AP Input gain**

The AP input gain increases the 7794 sensitivity when listening to the FCAP. Some panels will adjust to this setting.

The options are:

A=10 (DEFAULT)

B=20

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

If the 7794 cannot decode the dialing digits, then the AP Gain can be changed to 20. This setting will increase sensitivity and make the 7794 capable of decoding the data from the AP.

#### **5.6.5 Intercept on blind dial**

Intercept on AP blind dial should be used when the panel does not wait for a dial tone. This occurs when the AP goes off hook and starts dialing immediately. If the option is set to YES, the 7794 will expect the digits as soon as the AP goes off hook and will skip the initial dial tone.

Options are: YES or NO.

YES: Intercept on AP blind dial enabled

NO: Intercept on AP blind dial disabled (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

#### **5.6.6 Line Cut Report**

By default, the Line Cut Report is YES. Note: The following combination: Phone Line (POTS) = YES and Line Cut Report = NO will change when Phone Line (POTS) is set to NO, the changed again to Phone Line (POTS) = YES. The Lin Cut Report will be overwritten and return to YES.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.7 POTS cut report delay**

The default setting is 45 seconds. The maximum setting is 9999 seconds. (Any value between 0-9999 sec) Note: If the line condition is restored (no fault) before the set report time elapsed, then no signal will be sent.

This option is not used.

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.8 POTS restoral delay**

This option is to set a value before issuing a restoral on the telephone line. It will assure the telephone line is stable before restoring. The default value is 60 sec and the maximum value is 9999 sec. (Any value between 0-9999 sec)

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.9 AP ACCT Override**

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 a useful feature for automation software packages that do not allow two distinct account numbers in one customer account.

Options are: YES or NO

YES: AP ACCT Override enabled

No: AP ACCT Override disabled (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.10 POTS Input Gain**

POTS Input Gain increases the 7794 sensitivity when the 7794 is listening to activity on the telephone line (Phone Line (POTS) = YES). The default value is 20 and reducing this value will decrease the 7794 gain.

Options are:

A = 0

B = 10

C = 20 (Default)

### **5.6.11 Advanced Options Display**

This setting allows display and configuration of parameters listed below.

Options are: YES or NO

YES to enable.

NO to disable. (DEFAULT)

This must be set to YES to allow viewing of advanced configuration options.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.12 AP Output Gain**

AP output gain sets the output gain when the 7794 is in POTS mode (POTS=NO). It is used to increase the gain on the dial tone, handshake and KISS-OFF tones sent by the 7794 to the AP. Increasing this value will increase the AP output gain.

Options are:

A=0 (DEFAULT)

B=3

C=6

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.13 Reset to defaults**

Use only to reset all configuration options - press F3. Type 7794 and press ENTER. Confirm Reset by pressing Y. 7794 will reset options to default values.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.6.14 Line-cut sensing Enabled**

Enable or disable line cut sensing. **This option is not used.**

### **5.6.15 CID 4xx Letter**

For reporting open and close reports with “U” or “C”

Options are:

U: report open and close reports with “U” (DEFAULT)

C: report open and close reports with “C”

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.6.16 M3 EC TEXT to CID Enabled

Options are:

YES: enable (DEFAULT)

NO: disable

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.6.17 Voltage Pump Enabled

Options are:

YES: enable the voltage pump (DEFAULT)

NO: disable the voltage pump

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.6.18 Clock FShift Enabled

Options are:

YES: enable

NO: disable (DEFAULT)

Keep set at NO.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

## 5.7 Configuration options – Supplemental Communication

The configuration options for 7794 as Supplemental Communication are shown in the table below

Configuration options	Available settings
Phone line	Y/N
Intercept Number	Any number with minimum of 3 digits and maximum of 20 digits.
AP report format	CID/MODEM/PULSE MODEM options: MODEM2/MODEM3 PULSE options HSD =08/04 sec HSF=1.4/2.3 kHz CF=1.4/1.9 kHz IDT=0.7/0.9/1.7 sec IRT=3.0/5.0 sec

Configuration options	Available settings
AP Input gain	10/20
Intercept blind dial	Y/N
Line cut Report	Y/N
POTS cut report delay	Any value between 0-9999(seconds)
POTS restoral delay	Any value between 0-9999(seconds)
AP ACCT override	Y/N
POTS Input gain	0/10/20
Advanced Options Display	Y/N
AP Output Gain	0/3/6
Reset to defaults	-
Line cut sensing	Y/N
CID 4XX Letter	U/C
M3 EX TEXT TO CID	Y/N
Voltage Pump	Y/N
Clock FShift	Y/N

### 5.7.1 Phone Line

Option settings: YES or NO.

YES = Phone line is present

NO = Phone line is not present (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.7.2 Intercept number

Set the intercept number to the number programmed in the Fire Alarm Control Panel with a minimum of 3 numbers entered. Default number is '555'.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.7.3 Alarm Panel report format

This setting allows you to modify the way the 7794 interprets the data sent by the FACP over the dialer interface. The 7794 interprets the data and transfers it to the subscriber where it is sent to the Multi Net.

The 7794 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 with:

C=CID, M=MODEM, P=PULSE

Press F3 to change the value.

Use:

F4:Go UP to prior screen

F5:Do DOWN to next screen

### 5.7.3.1 CID Alarm Format

To select CID report format, press “C” (after pressing F3).

### 5.7.3.2 Modem Alarm format

To select Modem report format, press “M” (after pressing F3). The next configuration option (reached by pressing F5) will allow you to select Modem II or Modem IIIa. This next configuration option is only available when the format is MODEM.

A=MODEM3 (default)

B=MODEM2

Press F3 to change the value.

For details see Section 8 – Format: Bosch/Radionics Modem 2 and Modem 3 on page 31.

#### 5.7.3.2.1 Modem 2 format – unknown panel type family assignment

When using the Modem II format there is a chance that you will find a panel type (a field in the Modem II message that the 7794 translates) that does not exist in the 7794 pre-defined panel types. When this occurs, even though the 7794 knows that it is Modem II, it cannot decide what the panel family is. For these cases there is a setting that is active when the unknown panel type is detected. This occurs at the configuration time and you MUST set the proper family. **NOTE: THIS FEATURE IS NEEDED AND AVAILABLE FOR THE MODEM2 AP FORMAT ONLY.**

For details, Section 8.2 – Modem 2 format – unknown panel type family assignment on page 31

### 5.7.3.3 Pulse Alarm format

Press “P” (after pressing F3) to select the Pulse report as Pulse (also referred as 4+2, 4+1, or 3+1). The next configuration option (reached by pressing F5) will allow you to select durations and frequencies for the pulse format.

The following configuration option is only available when the format is PULSE:

D=HSD (Handshaking duration) (default 0.8 sec)

Options are A=0.8,B=0.4

F=HSF (Handshaking frequency) (default 1.4 KHz)

Options are A=1.4,B=2.3

C=CF (Center frequency) (default 1.8 KHz)

Options are A=1.8,B=1.9

I=IDT (Inter digit time) (default 0.7 sec)

Options are A=0.7,B=0.9,C=1.7  
R=IRT (Inter round time) (default 0.8 sec)  
Options are A=3.0,B=5.0

#### **5.7.4 AP Input gain**

The AP input gain increases the 7794 sensitivity when listening to the FCAP. Some panels will adjust to this setting.

The options are:

A=10 (DEFAULT)

B=20

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

If the 7794 cannot decode the dialing digits, then the AP Gain can be changed to 20. This setting will increase sensitivity and make the 7794 capable of decoding the data from the AP.

#### **5.7.5 Intercept on blind dial**

Intercept on AP blind dial should be used when the panel does not wait for a dial tone. This occurs when the AP goes off hook and starts dialing immediately. If the option is set to YES, the 7794 will expect the digits as soon as the AP goes off hook and will skip the initial dial tone.

Options are: YES or NO.

YES: Intercept on AP blind dial enabled

NO: Intercept on AP blind dial disabled (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

#### **5.7.6 Line Cut Report**

By default, the Line Cut Report is YES. Note: The following combination: Phone Line (POTS) = YES and Line Cut Report = NO will change when Phone Line (POTS) is set to NO, the changed again to Phone Line (POTS) = YES. The Line Cut Report will be overwritten and return to YES.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.7 POTS cut report delay**

The default setting is 45 seconds. The maximum setting is 9999 seconds. (Any value between 0-9999 sec) Note: If the line condition is restored (no fault) before the set report time elapsed, then no signal will be sent.

This option is not used.

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.8 POTS restoral delay**

This option is to set a value before issuing a restoral on the telephone line. It will assure the telephone line is stable before restoring. The default value is 60 sec and the maximum value is 9999 sec. (Any value between 0-9999 sec)

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.9 AP ACCT Override**

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 a useful feature for automation software packages that do not allow two distinct account numbers in one customer account.

Options are: YES or NO

YES: AP ACCT Override enabled

No: AP ACCT Override disabled (DEFAULT)

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.10 POTS Input Gain**

POTS Input Gain increases the 7794 sensitivity when the 7794 is listening to activity on the telephone line (Phone Line (POTS) = YES). The default value is 20 and reducing this value will decrease the 7794 gain.

Options are:

A = 0

B = 10

C = 20 (Default)

### **5.7.11 Advanced Options Display**

This setting allows display and configuration of parameters listed below.

Options are: YES or NO

YES to enable.

NO to disable. (DEFAULT)

This must be set to YES to allow viewing of advanced configuration options.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.12 AP Output Gain**

AP output gain sets the output gain when the 7794 is in POTS mode (POTS=NO). It is used to increase the gain on the dial tone, handshake and KISS-OFF tones sent by the 7794 to the AP. Increasing this value will increase the AP output gain.

Options are:

A=0 (DEFAULT)

B=3

C=6

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.13 Reset to defaults**

Use only to reset all configuration options - press F3. Type 7794 and press ENTER. Confirm Reset by pressing Y. 7794 will reset options to default values.

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.14 Line-cut sensing Enabled**

Enable or disable line cut sensing.

### **5.7.15 CID 4xx Letter**

For reporting open and close reports with “U” or “C”

Options are:

U: report open and close reports with “U” (DEFAULT)

C: report open and close reports with “C”

Use:

F3:Change setting

F4:Go UP to prior screen

F5:Do DOWN to next screen

### **5.7.16 M3 EC TEXT to CID Enabled**

Options are:

YES: enable (DEFAULT)  
NO: disable  
Use:  
F3:Change setting  
F4:Go UP to prior screen  
F5:Do DOWN to next screen

### **5.7.17 Voltage Pump Enabled**

Options are:  
YES: enable the voltage pump (DEFAULT)  
NO: disable the voltage pump  
Use:  
F3:Change setting  
F4:Go UP to prior screen  
F5:Do DOWN to next screen

### **5.7.18 Clock FShift Enabled**

Options are:  
YES: enable  
NO: disable (DEFAULT)  
Keep set at NO.  
Use:  
F3:Change setting  
F4:Go UP to prior screen  
F5:Do DOWN to next screen

## **6 Status LED Blink Patterns**

See Figure 1 above for LED location on the 7794 circuit card. Operating status is shown by a red LED that blinks.

<b>Pattern</b>	<b>Status</b>
Slow blink 1 pulse per second	Normal operation
Fast blink 2 pulses per second	7794 cannot communicate with the subscriber
No blink, always on	7794 not operating properly and should be returned to AES for repair

## 7 Format: Contact ID

The 7794 is fully compliant with the Contact ID (CID) protocol. Select option “C”. For details on how to configure the 7794 to process CID, see Section 5.6.3.1 – CID Alarm Format on Page 20.

## 8 Format: Bosch/Radionics Modem 2 and Modem 3

Select option “M”. For details on how to configure the 7794 to process Modem formats, see section 5.6.3.2 – Modem Alarm format on page 20

### 8.1 Modem Format and Speed (Baud Rate) Settings for Modem Format

Modem Format	Speed	Family Supported
Modem II	110	D8112G2 D6112
Modem Iie	300	D2212B
Modem III	300	D7412GV2 D7412GV3 D4412 D9412G

**Note: Note: This feature is needed and available for the Modem II AP format only.** For details on the translation between Modem format and Contact ID format please contact AES.

### 8.2 Modem 2 format – unknown panel type family assignment

The 7794 implements a way to associate a “never seen before” panel with one of the Bosch panel family types. This type configuration is needed only when an unknown panel supporting Modem II is connected to the 7794. When the “new” panel type code is detected, the 7794 saves it to its non-volatile memory and offers the option to allow the user to associate the panel type with the proper panel family.

#### 8.2.1 How do I know that I have an “unknown” panel type?

If the AP is not in the 7794 internal database and the AP attempts to communicate with the 7794, the following message will be displayed on the Hand Held programmer:

```
ERR: NEW MODEM2 TYPE
F1 FOR FAMILY SETUP
```

#### 8.2.2 How do I associate a family with an unknown type?

Once you enter the CONFIG mode, press F5 until you reach the sub menu:

MODEM2: FAMILY SETUP

**NOTE:**

This sub menu is only available if the report format is MODEM and the format is MODEM2, and an “unknown panel type” has been detected.

The default family type displayed on this sub-menu is NONE.

Press F3 to change the type of MODEM2 family.

The options are:

A=6112

B=7112

C=8112

Select the appropriate family type by pressing either “A”, “B” or “C”. Once the panel family is selected, the 7794 will associate the panel type with the panel family and will be able to process the AP messages for this new panel type code. This association is stored in the 7794 non-volatile memory.

### 8.3 Bosch/Radionics panels supported

Panel Model	Revision Number	Format Tested
D7412GV2	7.08	Modem III
D7412GV3	8.03	Modem III
D8112E1/G1	22	Pulse Only
D8112G2	31.31	Modem II
D6112	4.0	Modem II
D2212B	3.03	Modem II e
D4412	1.12	Modem III
D9412G	6.6	Modem III

**NOTE:**

Even if the panel you are connecting to does not show on the list, it does not mean that it is not supported.

## 9 Format: Pulse

Select Option “P” (for details on how to configure the 7794 to process Pulse formats see section 5.6.3.3 – Pulse Alarm format on page 20)

### 9.1 Pulse format settings

The table below shows the different pulse formats supported and the corresponding values of the different parameters for each of these formats.

	HSD	HSF	CF	IDT	IRT
Pulse Format	sec	KHz	KHz	sec	sec
Ademco LS (10 pps) (4+2)	0.8	1.4	1.9	0.9	3
Ademco LS (10 pps) (3+1)	0.8	1.4	1.9	0.9	5
Ademco LS (10 pps) (4+1)	0.8	1.4	1.9	0.9	5
Ademco LS Double Round (3+1 Expanded)	0.8	2.3	1.9	1.7	5

	<b>HSD</b>	<b>HSF</b>	<b>CF</b>	<b>IDT</b>	<b>IRT</b>
<b>Pulse Format</b>	sec	KHz	KHz	sec	sec
Ademco HS Double Round (3+1 Expanded)	0.8	2.3	1.9	0.9	5
Ademco Slow Silent Knight Slow, HS 1400 Hz	0.8	1.4	1.8	1.7	5
Ademco Slow Silent Knight Slow, HS 2300 Hz	0.8	2.3	1.8	1.7	5
Radionics Fast (20pps) (4+2)	0.4	2.3	1.8	0.7	3
Radionics Fast (20pps) (4+1)	0.8	2.3	1.8	0.7	3
Radionics Fast (20pps) (3+1)	0.8	2.3	1.8	0.7	3
Radionics (20pps) (4+2)	0.8	2.3	1.9	0.7	3
Silent Knight LS Double Round (3+1 Expanded)	0.8	2.3	1.9	1.7	5
Silent Knight HS Double Round (3+1 Expanded)	0.8	2.3	1.9	0.9	5
Silent Knight Fast	0.8	2.3	1.9	0.9	5
Universal High Speed, hand shake 1400Hz	0.8	1.4	1.8	0.7	5
Universal High Speed, hand shake 2300Hz	0.8	2.3	1.8	0.7	5

HSD – Handshake duration	CF – Center frequency	sec = seconds
HSF – Handshake frequency	IRT – Inter Round time	
IDT – Inter digit time		

## 9.2 Settings for non-supported formats

Some high speed formats will not work since the 7794 supports only 10 pps and 20pps formats. However, most alarm panels will “gear down” and lower pulse speed after trying and failing to send data to the 7794.

The settings below in Table 1 are recommended the for common high speed formats when the low speed fallback is implemented. The 7794 will successfully interpret the data sent by the AP 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 that are not supported by the 7794.

<b>Pulse Format / Recommend Fail Safe settings</b>	<b>HSD</b>	<b>HSF</b>	<b>CF</b>	<b>IDT</b>	<b>IRT</b>
	sec	KHz	KHz	sec	sec
Radionics Fast Double Round (33pps)	0.8	2.3	1.9	0.7	5
Radionics Fast (40 pps Double Round)	0.8	1.4	1.8	0.7	5

**Table 1.**

## 9.3 Notes on pulse formats

### 9.3.1 Number of digits on Pulse format

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

- If 6 digits are received, it translates into 4+2
- If 5 digits are received, it translates in 4+1
- If 4 digits are received, it translates in 3+1

### 9.3.2 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 7794 in this case, to validate the data received.

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

1234 56	arrives at Multi Net as:	1234 56
1234 5	arrives at Multi Net as:	1234 05
123 5	arrives at Multi Net as:	0123 05

### 9.3.4 Expanded format

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

When the AP is programmed for Expanded format (not to be confused with double round), it sends 2 trains of pulses (4 total, because of the double round), and the 7794 sends the 2 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 4 pulse trains.

1<sup>st</sup>: 5879 6 (4+1) → 6879 06 (4+2)  
 2<sup>nd</sup>: 6666 3 (4+1) → 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 → 1234 06 ACCT 1234 RF 5555 RL=14  
 6666 8 6666 8 → 6666 08 ACCT 6666 RF 5555 RL=14

## 10 Testing

Perform the following tests listed below to confirm the 7794 is properly installed and functional.

### 10.1 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.

## 11 Maintenance, Warranty and Repair

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

### 11.1 Troubleshooting

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

### 11.2 Parts List

- The 7794 IntelliPro includes the following items:
  - 7794 IntelliPro
  - AES RJ11 cable P/N 13-0395
  - Hex standoffs, (1 1/4 in.) AES P/N 09-2015

### 11.3 Contact Information

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

## 12 Revision History

Revision	Date	Notes
3.3E	_____	
4	Sept. 23, 2014	Instructions for use as primary communicator.

## 13 Warranty and Service Procedure

### OWNER WARRANTY - AES CORPORATION LIMITED PRODUCT WARRANTY AND TECHNOLOGY LICENSE

#### LIMITED PRODUCT WARRANTY:

AES Corporation (“AES”) warrants to the original purchaser that each AES Subscriber Product will be free from defects in material and workmanship for three (3) years from date of purchase and all other products purchased from AES including central station receivers and accessories will be warranted for one (1) year from the date of purchase. At no cost to the original purchaser for parts or labor, AES will repair or replace any AES Product or any, part or parts thereof which are judged defective under the terms of this Warranty.

Defective AES Products must be returned to AES directly, provided they are properly packed, postage prepaid. Or exchange may be made through any authorized direct factory representative for any AES Products that are judged defective under the terms of this Warranty. Improper or incorrectly performed maintenance or repair voids this Warranty. This Warranty does not cover replacement parts that are not approved by AES. This Warranty does not apply to any AES Product or any part thereof that has been altered in any way to affect its stability or reliability, or that has been subjected to abuse, misuse, negligence, accident or act of God, or that has had the serial number effaced or removed.

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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)