

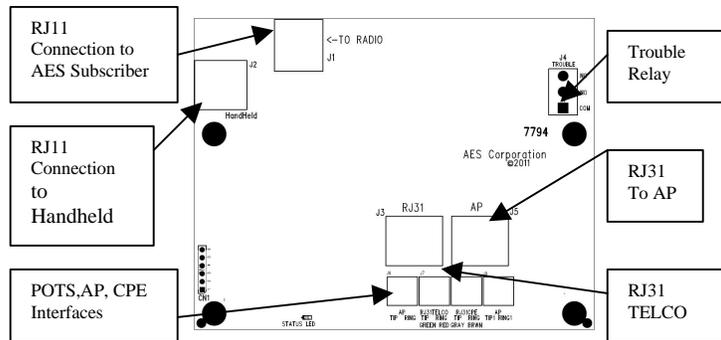
**Out of the box**

- 1. IntelliPro Fire Module (1) AES Part# 72-7794
- 2. RJ11 Cable (1) AES Part# 13-0395
- 3. Stand-offs (4) AES Part# 09-2015

**IMPORTANT NOTE: An AES Hand Held Programmer (p/n: 7041E) is required to install, program, and service this module**

**Overview:** The 7794 full data module is a supplemental alarm reporting interface for an AES Subscriber Unit. It is UL approved for use on Commercial Fire Installations with or without a phone line (UL 864, Edition 9). The 7794 is UL listed for security applications (UL 365, Edition 4 and UL 1610, Edition 3). This document describes installation procedure with an AES subscriber and the interface to an Alarm Panel (AP) via the dialer interface. When in operation, 7794 decodes a CID, PULSE, Modem II, or a Modem III message received on its AP phone interface and sends the message via the AES subscriber radio. It also provides a full replacement to a POTS line as well as POTS monitoring when POTS is present.

**User interface:** The 7794 is programmed using the AES handheld programmer which connects to the RJ11 connector J2. DO NOT CONNECT IT TO RJ11 J1 which is used for connecting the 7794 to the subscriber unit. The handheld is also used for diagnostics and monitoring of the 7794 while in operation. In addition to the handheld port, the 7794 has one LED to indicate operation and heartbeat.



**Installing the 7794 in the Subscriber Unit:**

1. Remove the four (4) lower nuts holding the main board inside box. Save the nuts.
2. Install 4 standoffs (provided with 7794) in place of nuts, re-securing the subscriber unit circuit board and providing a mount for the 7794. Do not over-tighten.
3. Mount the 7794 board on standoffs. Secure the 7794 with the 4 nuts removed earlier.
4. Earth ground should be connected to the right center mounting screw identified with a green hex nut.
5. Install a 6 wire modular cord (provided) between 7794 J1 and subscriber main board. At this point if the subscriber is powered the 7794 will also be powered.
6. The J4 trouble relay must be wired to a zone on the subscriber unit programmed to report a trouble. The J4 trouble relay is rated 30vdc at 1 amp

**How to find which firmware revision is on 7794:** When you power up the 7794 with the handheld connected, the LCD of the handheld will display the version number on the 7794 in the format vx.xxx. The version number is the set of numbers after the letter "v".

**Configuring the 7794**

The 7794 can be configured via the Handheld (or

PC terminal) and/or via the 7201 IntelliLoader (For more details, refer to the 7201 IntelliLoader documentation). Once configured, the configuration information is stored on the 7794 non-volatile memory (i.e. it will remain configured even when power cycled).

To enter configuration mode, from the main screen, press F1. This will place the 7794 in the configuration mode. The 7794 will still process AP events even while in configuration mode, and because some of the operations display information on the LCD, you may see AP data while changing the configuration. It is a good practice to configure it w/o the panel connected to it.

Use F3 to change a particular value, F4 and F5 to browse on the list of configurable features. To exit the configuration mode press ESC.

Option No. on CONFIG Menu	Parameter	Default value
1	Phone line	No
2	Intercept Number	555
3	AP Report Format	CID
4	AP input gain	10
5	Intercept on blind dial	No
6	Line Cut Report	Yes
7	POTS Cut Report Delay	45 sec
8	POTS Restoral Delay	60 sec
9	AP ACCT Override	No
10	POTS Input Gain	20
11	Advanced Options Display	No
12	AP Output gain	3
13	Reset to defaults	-
14	Line-cut sensing Enabled	Yes
15	CID 4xx Letter	U
16	M3 EC TEXT to CID	Yes
18	Voltage Pump Enabled	Yes

**Note 1: Options 12-15 and 18 will only be displayed if you set Option 11 to YES**  
**Note 2: Option 16 will be displayed only if you set Option 11 to Yes AND AP report format=MODEM3**

**Configuration Options**

- 1. Phone line:** Options are either "Y" or "N" to indicate POTS presence
- 2. Intercept Number:** Press F3 to enter a phone number, for instance, 555, and press enter to save the number.
- 3. AP report format:** Available options are: CID, MODEM and PULSE.
  - To select CID as the AP format type "C".
  - To select MODEM as the AP format type "M" from the "AP report format" screen. Press F3 to change the modem format, type either "A" or "B" to set MODEM format to MODEM3 or MODEM2. If you select the format as MODEM 3, option 16 on the menu will be available. The table below shows the different alarm panels tested & the MODEM format 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 (Ile = III)	Modem III
D4412	1.12	Modem III
D9412G	6.6	Modem III

**Modem 2 format-Unknown family type assignment:**

Because there are multiple variations on the panel type for the Modem 2 format, the 7794 implements a way to associate a never seen panel type with one of the Bosch panel families that had Modem II, such as 6112, 7112, 8112. This type of configuration is only needed 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 with the proper panel family.

From the CONFIG menu, press F5 to go down until you see the sub menu for the MODEM2: FAMILY SETUP

**NOTE:** This sub menu is only available if the report format is MODEM, AND its format is MODEM2, AND an "unknown panel type has been detected. Select the appropriate family type by pressing either "A=6112", "B=7112" or "C=8112". 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.

- To select PULSE as the AP format type P from the "AP report format" screen. If you press F5 now, you should be able to see the following configurable parameters for the PULSE format.

Parameter	Default value	Options
D=HSD (Handshaking duration)	0.8 sec	A=0.8, B=0.4
F=HSF (Handshaking frequency)	1.4Khz	A=1.4, B=2.3
C=CF (Center frequency)	1.8Khz	A=1.8 B=1.9
I=IDT (Inter digit time)	0.7 sec	A=0.7,B=0.9,C=1.7
R=IRT (Inter round time)	3.0 sec	A=3.0,B=5.0

Press the letter corresponding to a particular parameter, for instance press "F" for HSF and then type either "A" or "B" or "C" to set the desired value.

The table below shows the common pulse formats used by alarm panels and the corresponding values of the different parameters for each of these formats.

Pulse Format	HSD sec	HSF kHz	CF KHz	IDT sec	IRT 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
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

**4. AP input gain:** Options are either "A" or "B" to set input gain to either 10 or 20.

**5. Intercept on Blind dial:** Options are either "Y" or "N" to enable or disable intercept on blind dial.

**6. Line cut Report:** Options are either "Y" or "N" to enable or disable line cut report. NOTE: This setting is only effective when POTS=YES.

**7. POTS cut report delay:** The default value is 45 sec and the maximum is 9999.

**8. POTS restoral delay:** The default value is 60 sec and the maximum is 9999.

**9. AP ACCT Override:** Options are either "Y" or "N" to enable or disable AP ACCT override.

**10. POTS Input gain:** Options are either "A", "B" or "C" to set POTS Input gain either to 0,10 or 20.

**11. Advanced Options Display:** Options are either "Y" or "N" to enable or disable the advanced options display respectively.

**12. AP Output gain:** Options are either "A", "B" or "C" to set AP Output gain either to 0,3 or 6.

**13. Reset to defaults:** To reset all configuration options, press F3 and then type 7794 and press ENTER, confirm Reset by pressing "Y".

**14. Line-cut sensing Enabled:** Options are either "Y" or "N" to enable or disable line cut sensing respectively.

**15. CID 4xx Letter:** Options are either "U" or "C" for reporting open and close reports with "U" or "C"

**16. M3 EC TEXT to CID Enabled:** Options are either "Y" or "N" to enable or disable respectively.

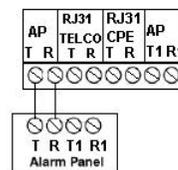
**18. Voltage Pump Enabled:** Options are either "Y" or "N" to enable or disable the voltage pump respectively.

**Interpreting the LED**

The 7794 has one single RED LED that has a slow blinking pattern (1 pulse per second) when all is working properly. If it becomes SOLID, it is a malfunction and the board has to be sent for maintenance. If it blinks at a faster rate (2 pulses per second) it indicates that the 7794 cannot communicate with the subscriber. In this case, the 7794 also trips the trouble output.

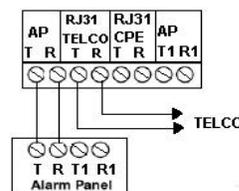
**Usage of 7794 without a phone line**

Program POTS = NO (Option No.1 on the CONFIG menu). The 7794 will generate all the voltages to emulate an actual phone line. Its emulations is 100% compatible, issuing the wet voltage, dial-tone, ring back, and full DTMF digits decoding. Figure shows the typical wiring diagram without a phone line. Connect the Tip and Ring of the AP to the terminal block labeled: AP TIP RING on the 7794.



**Usage of 7794 with a dedicated phone line**

The 7794 is capable of decoding all the DTMF digits present on a typical PSTN phone connection. Connect the Tip and Ring of the AP to the terminal block labeled: AP TIP RING. Connect the Tip and Ring of the POTS to the terminal block labeled: RJ31TELCO TIP RING. Figure shows the typical wiring diagram with a phone line:



**Intercept on specific dial sequence**

Set to POTS = YES, and enter the phone number that the AP dials. This can be the single phone number or you can have dual numbers programmed on the AP, so one of the numbers will engage the 7794. The default intercept number on 7794 is 555. With default intercept number on 7794, you can program the AP with 5555(4 digits) if you want 7794 to intercept. The intercept number on 7794 can be changed via the handheld or via the 7201 IntelliLoader.

NOTE: When a phone line is present, and it is removed (line cut), the 7794 engages the phone line simulation immediately, so the panel does not notice that there is no phone line, and in this case, 7794 will act on any number dialed.

**Intercept on any dial sequence**

Set to POTS = YES, and enter the phone number as \*\*\* (3 asterisks). This will cause the 7794 to engage on any number dialed, with 3 or more.

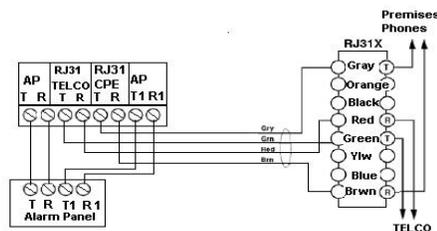
**Usage of 7794 with a shared line**

Connect the Tip and Ring of the AP to the terminal block labeled: AP TIP RING. Connect the Tip and Ring of the POTS to terminal block labeled: RJ31TELCO TIP RING

Connect the Tip1 and Ring1 of the AP to terminal block: AP TIP1 RING1

Connect the Tip and Ring of the RJ31CPE to term. Block: RJ31CPE TIP RING.

Figure shows the typical wiring diagram with a phone line along with CPE (Customer Premises Equipment).



**POTS line monitoring & Reporting**

When POTS=YES, the 7794 also monitors the presence of the phone line. In case the line is cut, the 7794 immediately engages the phone line emulation (7794=POTS is displayed on the LCD). If Line Cut Reporting is enabled the programmable timer (default is 45 seconds, programmable) starts counting. If the line is restored before the timer expires, no alarm is sent. However, if the timer expires, a line cut alarm is sent (E351 C905).