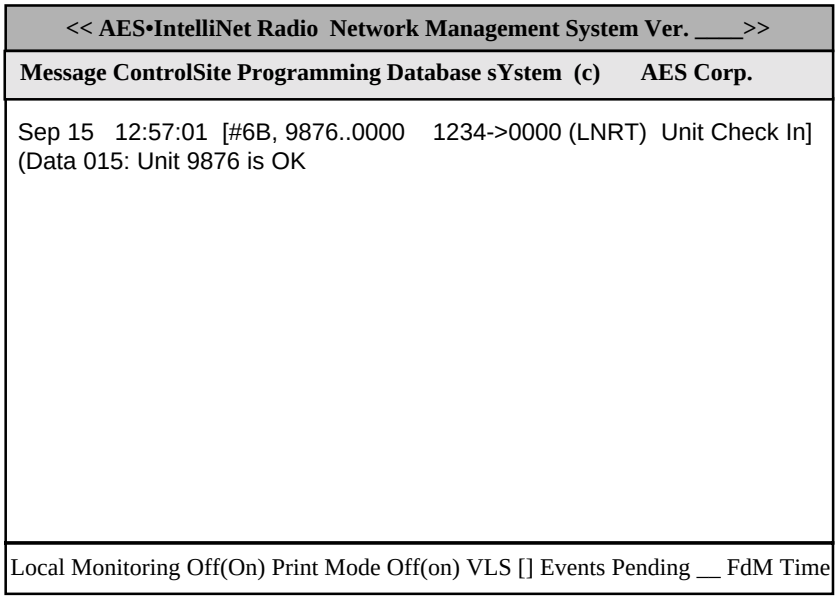
AES • Net77

Wireless Network Management Software

INSTALLATION & OPERATION MANUAL
Including Net7K & Net99 Version 3.2
Net77 Version 1.48.4



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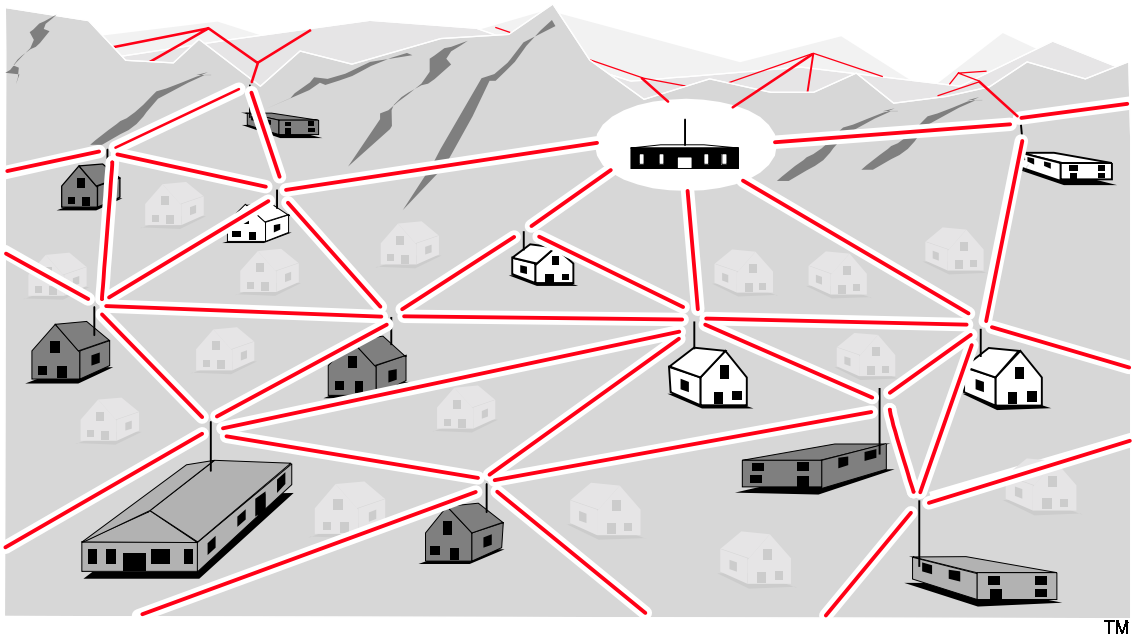
System Overview



About AES•IntelliNet

AES•IntelliNet is a two-way data radio network for the monitoring of alarms. It is faster and more reliable than telephone and cellular systems which are subject to both tampering and general failure. Phone lines may still be used for backup.

What makes the patented AES system unique are its "smart" radio communicators, called subscriber units. Each subscriber unit is connected to an alarm panel. Alarm information is transmitted by radio to the central receiver. If a subscriber unit is too far away to reach the central station directly, its message is relayed by another subscriber unit closer to the central station. This unique, built-in "repeater" capability creates a highly rugged, adaptive security network. The system adjusts itself to forward messages by the shortest and best available route. The "smart routing" capability is completely automated, with no special programming needed. Also, by eliminating the need for dedicated repeaters and towers, the AES system dramatically reduces the cost of setting up and operating a wireless monitoring system.

"Net" Program Software

The "Net" program is the network management software that serves as the hub of the central reporting network. This manual covers 3 versions of this software:

- Net7K, used with 7000 series and 7703 receivers;
- Net77 used with 7701 receivers;
- Net99 used with 7099/System99 receivers.

The software includes powerful tools for programming of subscriber units and maintaining databases for network operations. It also serves as a "window" for observing data traffic on the network.

continued >

"Net" Program Functions

- Query/Retrieve data from remote subscriber units:
    - updates "Net" program database with all parameters
    - tests subscriber unit
    - records message routing
- Query and Poll remote subscriber units for status and routing tables
- Remote programming of
    - check-in time / test timer intervals
    - zone configuration
- Send and receive text messages to and from subscriber units equipped with data terminals or printers
- Remote reset, deactivation and reactivation of subscriber units
- Remote control of relay-switched functions (7050)
- Output to automation software in Radionics 6500 or Contact ID/Ademco 685 formats
  (used on all Net77 installations, optional on Net7K and Net99)

NOTE: It is assumed that a Central Receiver and the Computer(Controller) are up and running. The receiver and computer/controller must be linked by an RS-232 cable, connecting the chosen controller/computer COM port (usually COM 2) to the "Network" output of an "active" Central Receiver. See manual sections on setting up central station hardware.

Loading the Program

To load the software, follow the instructions provided with the diskette. An installation program automatically loads the software onto the hard drive.

• **AES Net77** software operates **only** with the AES 7700 controller/computer, and can **only** be linked to a 7700 Series Central Receiver. Net77 does not work with other AES receivers.

• **AES Net7K** software operates on the AES 7100 controller/computer, linked to a 7003, 7000/2 or 7000/1 receiver. In some cases Net7K software can be loaded on 486+ PC computer operating under MS DOS 6.22.

• **AES Net99** software operates on a user supplied 486+ PC computer operating under MS DOS 6.22, linked to a 7099 receiver (System99).

If you are loading a newer version of Net software to replace an earlier version, the install program stores your old software and database files under a separate directory. Should you need to reactivate the old version, a "revert" program is included with the software disk.

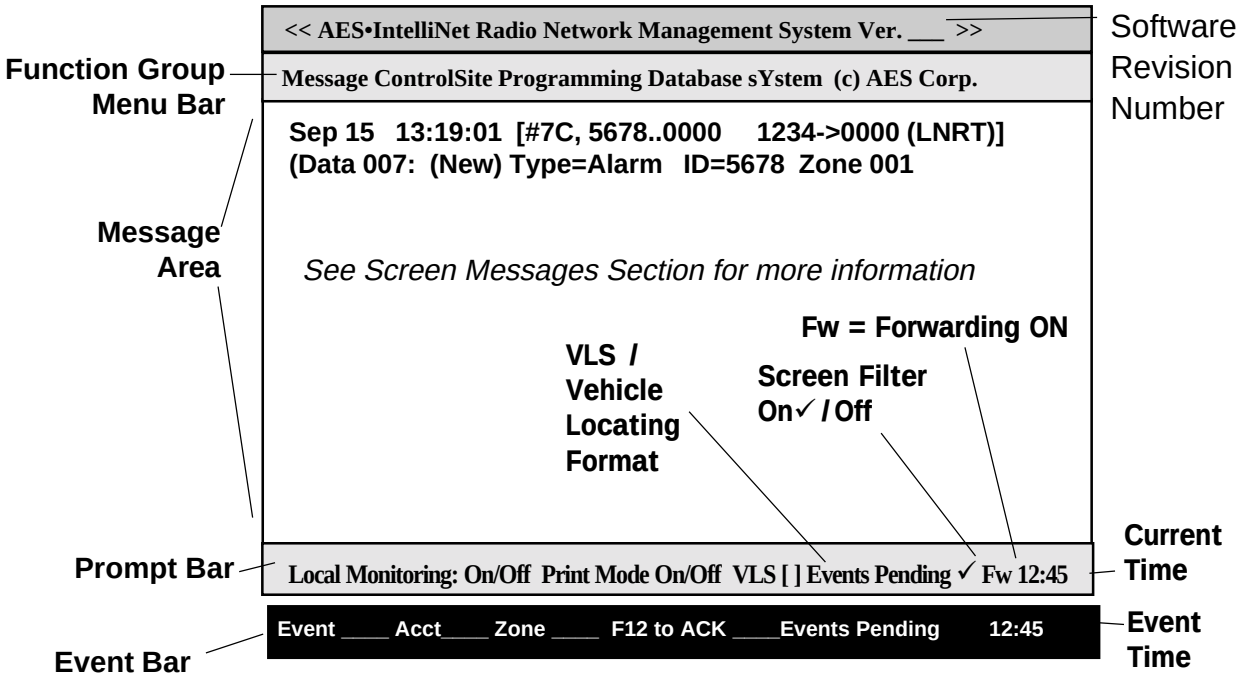
Starting the Program

To start the program, type N E T 7 0 0 0 from the C: prompt. This runs a batch file that starts the program.

Typing "NET7000" in any directory starts the program. Note that the "Net" program will start automatically after a system re-boot, assuming that the autoexec.bat and config.sys files included with the system are in place.

Operations Overview

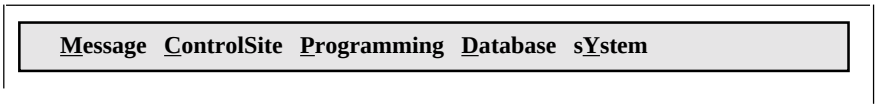
Monitoring Screen



Flashes data; scroll-able display of data when automation is offline;
applies only to Net77, or Net7K/Net99 with automation output enabled

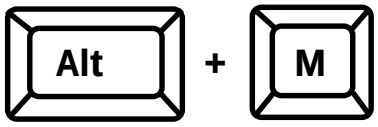
The basic AES•IntelliNet monitoring screen is illustrated above. Most of the screen displays network activity. Network information scrolls up the screen. In normal communication monitoring mode, all radio data "traffic" in range of the central station is displayed. This is a valuable tool for monitoring network activity. This data can be logged on the printer on LPT1 (or the DOS device PRN), which is toggled on or off by the <F9> key. **Use this feature for troubleshooting or documenting specific activity - Do not use this function for "full time" print logging.**

Function Groups



There are five function groups, including "**M**essage," "**C**ontrolSite," "**P**rogramming," "**D**atabase" and "s**Y**stem." They are accessed from the menu bar in the upper part of the screen. Each of the menu bar function groups has a highlighted (red) letter. Menu function groups are selected by holding down the <ALT> key and pressing the function group's highlighted letter on your keyboard. Pressing F1 accesses the menu group bar and highlights the Message group. Use the << >> arrow keys to select a group.

For example:



Accesses the **M**essage Functions Menu

Quick Reference Menu Chart

<< AES•IntelliNet Radio Network Management System Ver >>

Message ControlSite Programming Database sYstem (c) AES Corp.

1. Send Text Msg ..... Alt+A
2. Request Status ..... Alt+R
3. Poll (Test) ..... Alt+T
4. Get Subscriber Routing Table Alt+G
5. Get All Subscriber Data ..... Alt+L
6. |__ Subscriber Timing Data ..... Alt+I
7. |__ Subscriber Zones Data ..... Alt+Z
8. |__ Subscriber Model + Rev ..... Alt+E
9. |__ Subscriber Mode Data ..... Alt+O
A. Get Packet Life Settings ..... Alt+N

1. Turn On Tx
2. Turn Off Tx
3. Remote Reset
4. IntelliTap Messages
5. Subscriber Repeat Function
6. Telephone Line Cut Function

1. Routing & Status Records
2. Print All Database ID's
3. Delete from Databases
4. Backup Databases
5. Restore Databases
6. Print Routes/Routed Thru
7. Password Control . . . >>
8. Edit Forward Table*
9. Monitoring Station Info**

1. Subscriber Timing Parameters
2. Radio Packet Life Parameters
3. Control Relay Outputs
4. Zone Programming
5. Automatic Test Supervision
6. Set Time and Date
7. Link Test Setup**

1. Silence Warning Tone F3
2. Printer Log On/Off F9
3. Abort Sent Packet F10
4. Alarm Reporting Info
5. Configuration Parameters ..... >>
6. Restore Automation ..... F8 ***
7. Print Error Log
8. Filter Chkins&Acks F7
9. Forwarding Toggle ..... Alt+K

Function Keys - Shortcuts

F1 - Message Pull Down Menu (also Alt+M)
F2 - Block Mode for Outbound Messages
F3 - Silence Warning/Error Tone
F6 - Toggle Local / Remote Automation (Concentrator)
F7 - Screen Filter Check-Ins and Ack's
F8 - Restore Automation
F9 - Printer Log - On/Off
F10 - Abort Sent Packet / Flush Packet
F12 - Acknowledge Key

*** Net7K only**
**** Concentrator only**
***** Except Concentrator ("Toggle" Automation)**

Short Cut Keys

ALT+A Send Text Message
ALT+B Screen Saver (toggle) (not on Net77)
ALT+C ControlSite Menu Pulldown
ALT+D Database Menu Pulldown
ALT+E Get Subscriber Model and Rev
ALT+F Print Filter, Check-Ins, On/Off (not on Net77)
ALT+G Get Subscriber Routing Table
ALT+H Memory Check / Debug
ALT+I Get Subscriber Timing Data
ALT+K Toggle Global Forwarding, Flag (not on Net77)
ALT+L Get All Subscriber Data
ALT+M Message Menu Pulldown
ALT+N Get Subscriber Packet Life Settings
ALT+O Get Subscriber Mode Data
ALT+P Programming Menu Pulldown
ALT+Q Overrides Auto Selection on Zone Programming
ALT+R Request Status of Subscriber Unit
ALT+S Saves/Sends Data Entered/Completes Function
ALT+T Poll Test
ALT+U Configure 7003 Automation Output Format
ALT+X Exits Program
ALT+Y System Menu Pulldown
ALT+Z Get Subscriber Zone Data
CTR+ALT+F10 Change Screen Color
CTR+D Set Security Cipher (Dealer) Code

Prompt Bar

Local Monitoring: On/Off Print Mode On/Off VLS [ ] Events Pending ✓ Fw 12:45

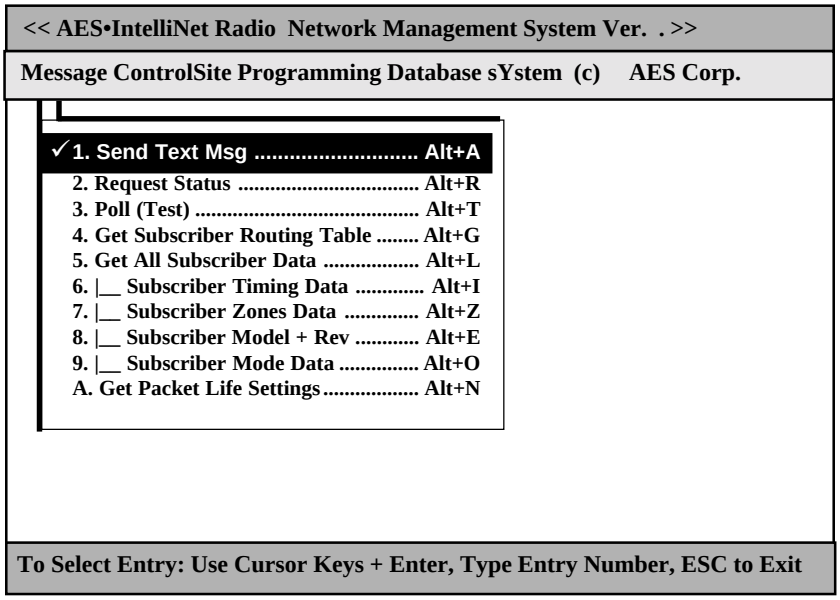
Event Bar

Event ____ Acct____ Zone ____ F12 to ACK ____Events Pending 12:45

Flashes data; displays data when automation is offline.
Applies only to Net77, or to Net7K/Net99 with automation output enabled

Access to Program Functions / Shortcuts

EXAMPLE - Select the "Message" function group: The word "Message" on the menu bar has the first letter "M" highlighted in the color red. This group is selected by pressing the <ALT> key plus the <M> key. The Message Group pulldown menu will now appear under the word "Message" on the menu bar.



The first of the pulldown functions, "Send Text," will be highlighted as shown above. Other functions within the pulldowns are selected using the up/down arrow keys. The highlight bar follows the cursor. The pulldown functions are executed when the user presses <ENTER>. Alternately, pulldown functions can be executed by pressing the line number of the desired function.

Alternate menu bar function pulldowns can be selected by using the left and right arrow keys. Pressing the <ESC> key will close the pulldown menu and return you to normal communication monitoring mode. Pressing the <ESC> key within a function block also will return you to the normal mode.

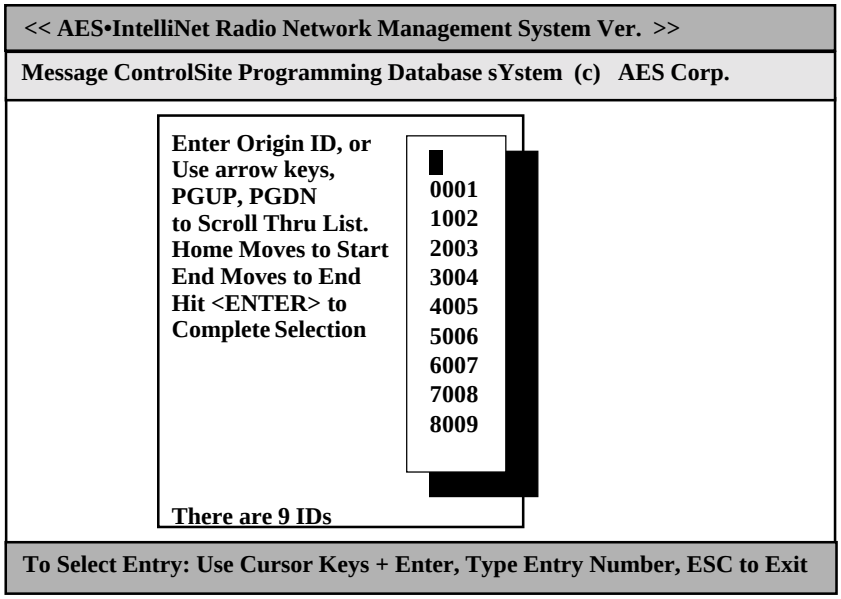
NOTE: When a pulldown, or function block pop-up is displayed, incoming network messages are temporarily stored in a buffer. When the buffer is full, or if an important message must be displayed on the screen, the program automatically returns itself to normal monitoring operation, thereby ensuring that no messages are missed.

Note also that many of the functions can be accessed directly by "hot key" combinations like "<ALT>+<T>, <ALT>+<A>, etc." Hot key notations appear on the same line as the function descriptions. Note the "SHORTCUTS" called out through this manual for the quickest ways of executing commands.

Using the Picklist Pop Up to Select a Subscriber

When a function is chosen from a function group, a "picklist pop-up" appears. You can type in the ID number of the subscriber unit you wish to contact, or use the arrow keys to highlight the appropriate ID number. Press <ENTER> to select it. (New subscriber units are automatically added to the Picklist when a signal is received.)

NOTE: The last ID# selected remains at the top of the list for easy access.



Selecting a Route for Communications with a Subscriber Unit

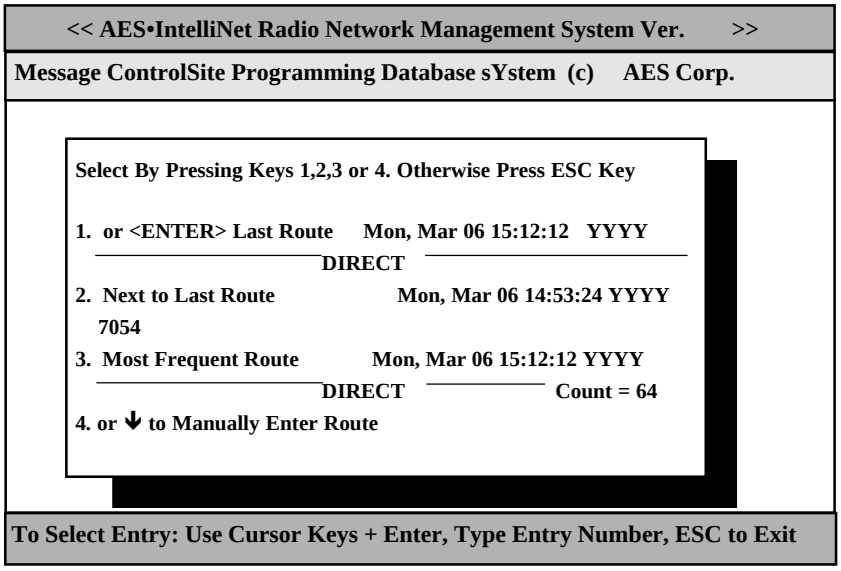
Since each subscriber unit in your AES•IntelliNet system acts as a radio repeater, there are a many routes for messages to travel from its source to the central station. Each time a message is received from a unit, the software extracts the subscriber unit ID number of the origin, and the ID number of repeaters in the message's route. That route information is stored in a database and is used whenever an operator sends data to a subscriber unit from the central station.

continued >

Selecting a Route for Communications, *continued*

Choosing a Route with the Routing Pop Up

Once you have selected the subscriber unit number, the basic routing pop-up appears (shown). You may communicate with the unit through its most recent route, through its next most recent route, through its most frequently-used route, or you may manually enter a route.

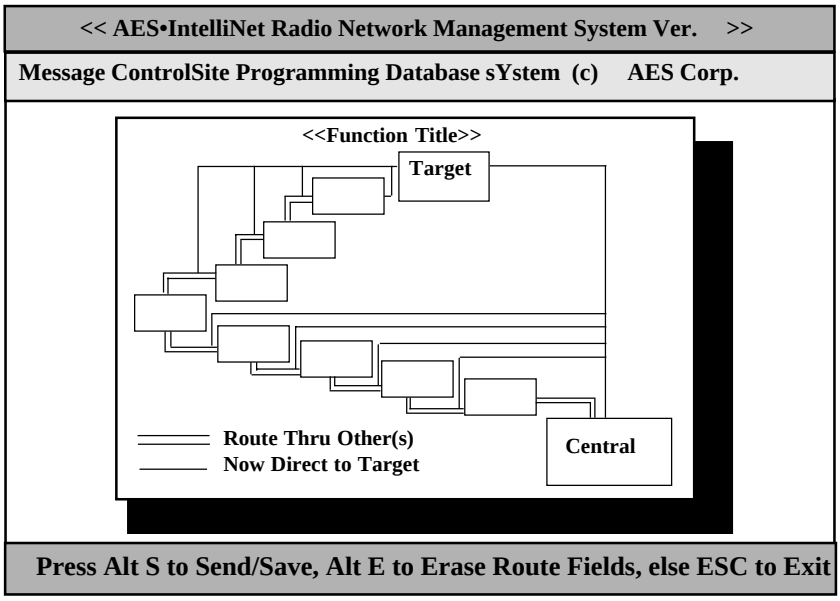


To choose the most recent route of communications, simply press <ENTER> or the number <1>. The "last" route, or most recent route, is the default setting on this pop-up. To select the second most recent route, press the number <2> on your keyboard. To select the most frequently used route of communication, press the number <3> key.

To manually enter a route to the subscriber unit, press the number <4> key (or the down arrow) and fill out the manual routing screen as instructed below.

Manually Choosing a Route

The form shown at right allows you to manually select a route to a subscriber unit. Use the Backspace key to move the cursor into the boxes and to erase any existing characters.
Type the ID number of the station closest to your central station first, then press <ENTER>. Then enter the next closest and hit <ENTER>, etc. You may enter up to eight intermediate subscriber stations to construct your route.



Once you have entered your communications route, hold down <ALT> and press the <S> key to send the message to your subscriber unit using the route you entered.

Automation Output

• **Net77 users: Net77 software provides an output to automation from the controller computer.** It is always enabled - move on to next section, Manual Mode/Automation Offline.

• **For systems using Net7K and Net99 software, the output to automation is typically provided by the receiver (7000/1, /2, 7003 or 7099). If you wish, Net7K or Net 99 can provide an output to automation.** To activate this feature, exit the program (Alt-X). At the prompt type:

```
Net7KP /AON  (or Net7KF /AON)
```

To disable the feature type:

```
Net7KP /AOFF  (or Net7KF /AOFF)
```

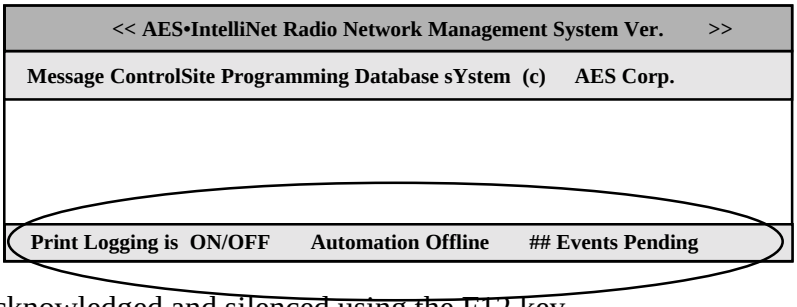
To display current settings type:

```
Net7KP /? (or Net7KF /?)
```

Manual Mode / Automation Offline -

Used on all Net77; *Optional on Net7K/Net99 with Automation enabled*

For Net77, or Net7K/Net99 systems with automation enabled: If the link is lost between the AES controller/computer and the automation software, the AES Net software activates a "manual acknowledge" mode. At the bottom of the screen, the prompt bar turns purple, and the message "Automation Offline" bar appears.



A beep sound is also generated, which is acknowledged and silenced using the F12 key.

IMPORTANT: When automation is disconnected, this on-screen display and the printer connected to the controller/computer are the only readout devices for all events received by the AES•IntelliNet system. Non-alarm events such as check-ins are also printed to the printer.

When an "alarm", "status", "trouble" or "restoral" message is received during an "Automation Offline" period, the following procedure is followed:

• The prompt bar at the bottom of the screen turns RED, and details of the event are displayed:

Account #### [Event Type] Zone ## Press F12 to Acknowledge ## Events Pending [time]

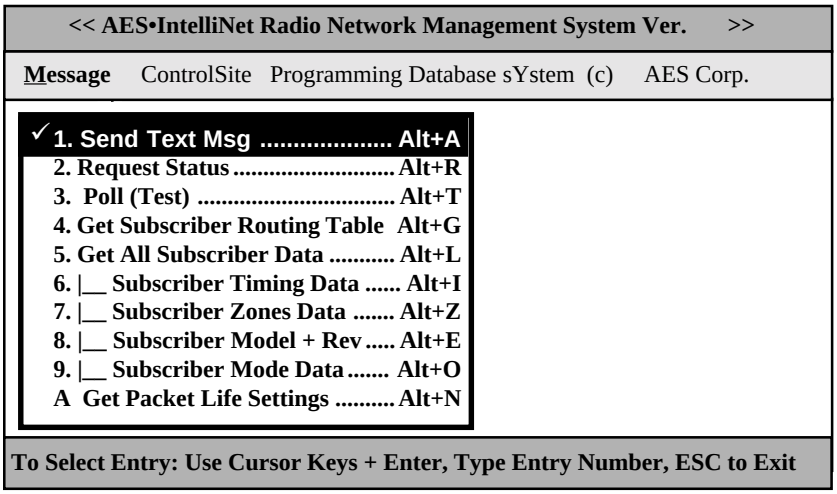
• An audible beeper is sounded.
• The alarm data is printed on the printer connected to the controller/computer
• The operator silences the tone by pushing the F3 key
• The operator acknowledges the event by pressing the F12 key
• The acknowledgment is printed on the printer connected to the controller/computer
• The "Events Pending" counter decrements by 1.
• The operator acknowledges one event each time the F12 key is pushed.

To return to normal operating mode, correct the problem that caused a loss of communication with automation. When the link to automation is reestablished :

• Acknowledge all pending events
• Reestablish link to automation by pressing F8
(The Net software-to-receiver link restores automatically when the connection is restored)
• Normal operation resumes

The Message Function Group

To access the Message function menu group, hold down the <ALT> key and press <M>. The pop-up illustrated at right will appear. Use the arrow keys to highlight a message function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.



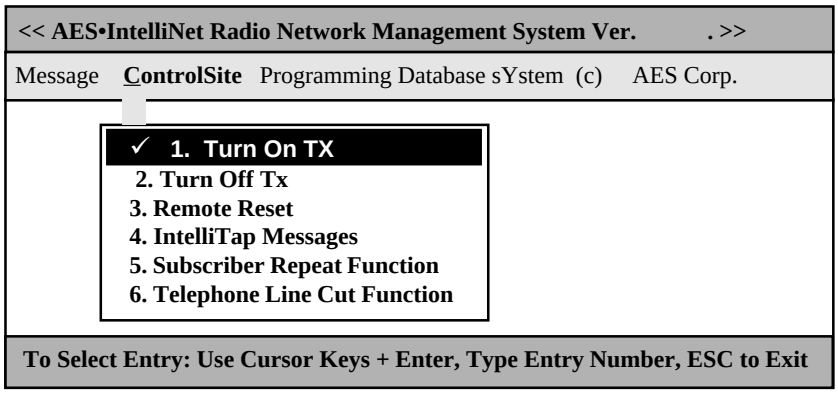
Function	Explanation
1. SEND TEXT MESSAGE **• Press <ALT>+<A> or <ALT>+<M>, then <1>** **• Select Target Unit** **• Select Route** **• Type text message** **• Press <ALT>+<S> to send**	• Sends text messages to a remote subscriber unit. To receive the data, the remote unit must have a 7041 programmer attached or be equipped with a terminal. The most common use for this function is to test the communications link by sending data packets.
2. REQUEST STATUS **• Press <ALT>+<R> or <ALT>+<M>, then <2>** **• Select Target Unit** **• Press <ENTER> for route**	• Queries a remote unit for its current status, requiring a "check-in" report back to the central station. The resulting return message provides the current status of the remote unit *and* sends a status (check-in) message to the alarm automation port. (See the manual section on messages types and interpretations).
3. POLL (TEST) **• Press <ALT>+<T> or <ALT>+<M>, then <3>** **• Select Target Unit** **• Press <ENTER> for route**	• Performs a quick test of a remote unit. No message is returned to the command center except in the case of a failure to communicate with the designated unit. Also, no message is sent to the alarm automation port.
4. GET SUBSCRIBER ROUTE TABLE **• Press <ALT>+<G> or <ALT>+<M>, then <4>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for its current routing table. It prints the routing table for this subscriber, and displays the routing table from top (best) to bottom. For each unit on the list, the following items are displayed: • ID # • LINK LAYER # • NETCON • SIGNAL QUALITY between this unit and queried unit, listed as Good, Fair or Poor

The Message Function Group, continued

Function	Explanation
5. GET ALL SUBSCRIBER DATA **• Press <ALT>+<M>, then <5> or Press <ALT>+<L>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for ALL of it s currently programmed parameters. The function automatically performs functions 6, 7, 8 and 9, retrieving Timing, Zones, Model #/Rev and Mode data for the unit you specify. (See specifics below).
6. (GET) SUBSCRIBER TIMING DATA **• Press <ALT>+<M>, then <6> or Press <ALT>+<I>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for its current timing parameters. The received data updates the timing parameters database. Timing parameters are part of the Programming Function Group described in the following pages.
7. (GET) SUBSCRIBER ZONES DATA **• Press <ALT>+<M>, then <7> or Press <ALT>+<Z>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for its current zone configurations. The received data updates the Zone Configuration database. The Zone Configuration is part of the Programming Function Group described in the following pages. NOTE: 7050 can be equipped with up to 9 banks of 8 zones each. When queried with this function, un-installed zones show as Normally Open, No Restoral, the default condition.
8. (GET) SUBSCRIBER MODEL & REV **• Press <ALT>+<M>, then <8> or Press <ALT>+<E>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for its model number (e.g. 7750F, 7450, 7050E, etc.) and its firmware revision number. This information is stored in the Net software database.
9. (GET) SUBSCRIBER MODE DATA **• Press <ALT>+<M>, then <9> or Press <ALT>+<O>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for the current "mode" settings (enable/disable) for 3 different parameters: • IntelliTap Message, default = enabled (works with 7050-E (Ver 2+), 7750-F, 7450, 7440 only) • Subscriber Repeater Function, default = enabled (works with all units *except* 7440, which do not repeat) • Telephone Line Cut Function, default = disabled (works with 7450, 7440 only)
A. (GET) SUBSCRIBER PACKET LIFE SETTINGS **• Press <ALT>+<M>, then <A> or Press <ALT>+<N>** **• Select Target Unit** **• Select Route**	• Queries a remote unit for its Packet Life Settings (aka Time-to-Live or TTL). This function can only be used with Version 2+ subscribers with TTL capability. Other are not supported. This information is stored in the Net software database. *See also - Radio Packet Life Parameters, Programming Menu.*

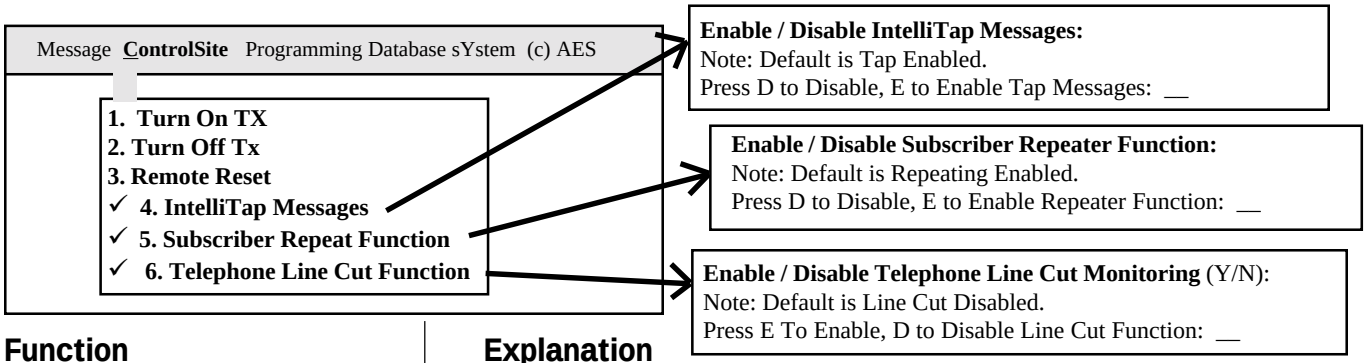
The ControlSite Function Group

To access the ControlSite function menu group, hold down the <ALT> key and press <C>. The pop-up illustrated at right will appear. Use the arrow keys to highlight a control function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.



Function	Explanation
1. TURN ON TX **• Press <ALT> + <C>** **• Press <1>** **• Select Target Unit** **• Select Route**	• Re-enables transmitting on a remote subscriber unit that has been turned off (see Turn Off TX, next).
2. TURN OFF TX **• Press <ALT> + <C>** **• Press <2>** **• Select Target Unit** **• Select Route**	• Disables a remote subscriber unit should the need arise, such as when an alarm system fails and causes the transmitter to activate repeatedly. **NOTE:** The unit is not literally turned off, but is prevented from transmitting until it receives the "Turn On" signal (above). Note that a transceiver in the Off Mode will create route failed message when including in an outbound route. WARNING: This function disables the subscriber - use it only when absolutely necessary. • This function may be used on UL Burglar Alarm and Fire Alarm systems only with strict adherence to the requirements of UL Standard 611, Central Station Burglar Alarm Units and the National Fire Alarm Code, NFPA 72.
3. REMOTE RESET **• Press <ALT> + <C>** **• Press <3>** **• Select Target Unit** **• Select Route**	• Resets the remote subscriber unit - the same as physically pushing the reset button on the unit itself. This causes the subscriber unit to re-enroll on the network and build a new routing table. A reset may be used to restart the check-in interval timer. The new interval will commence at the time of reset (see also: subscriber unit manuals).

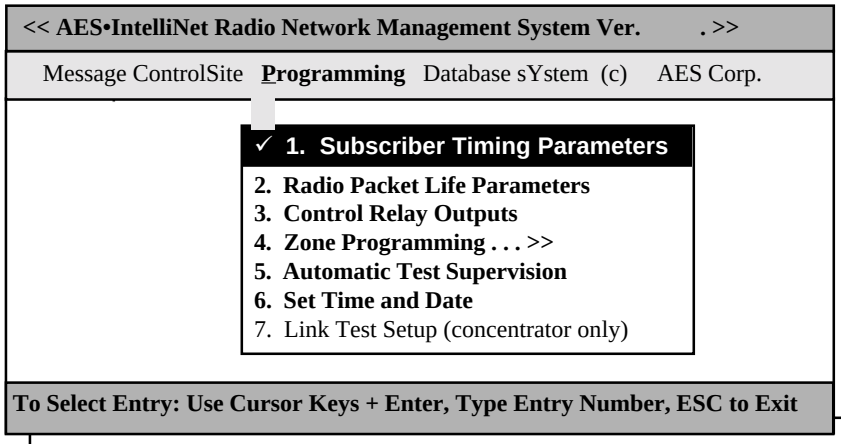
The ControlSite Function Group, continued



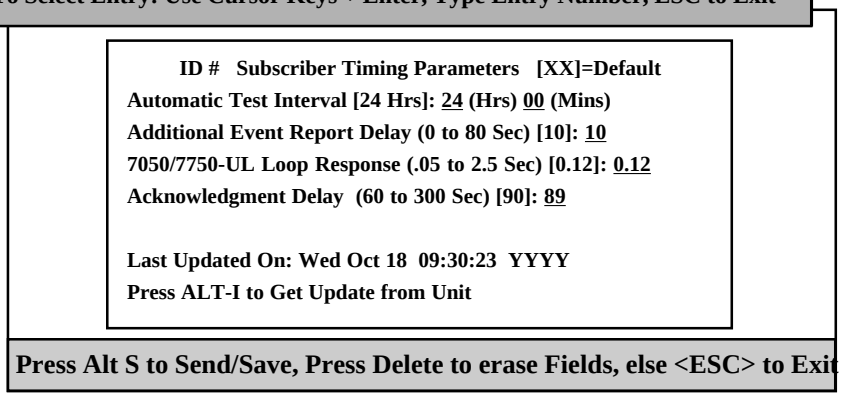
Function	Explanation
4. INTELLITAP MESSAGES **• Press <ALT> + <C>** **• Press <4>** **• Select Target Unit** **• Select Route** **• Enter D to Disable, E to Enable Tap Messages**	• Enables / Disables the subscriber unit's ability to send IntelliTap Messages. CAUTION: Once disabled, the subscriber will ignore IntelliTap or FD*X* data presented to its port. • This function works with 7750-F, 7050-E (Ver 2+), 7450 and 7440 models. • To confirm the function, perform a "Get Subscriber Mode Data" to retrieve the current status of this mode (Message group, # 9) and to update the database. • Refer to subscriber unit and IntelliTap manuals for more information.
5. SUBSCRIBER REPEATER FUNCTION **• Press <ALT> + <C>** **• Press <5>** **• Select Target Unit** **• Select Route** **• Enter D to Disable, E to Enable Repeating**	• Enables / Disables the subscriber units ability to be a repeater. • Works with Version 2 or higher subscriber units. CAUTION: Disabling the repeater capability may cause problems with the network. Disable repeating for testing purposes only, or for mobile units, which are never to be used as repeaters. • To confirm the function and update the database, perform a "Get Subscriber Mode Data" to retrieve the current status of this mode (Message group, # 9) • Refer to subscriber unit manuals for more information.
6. TELEPHONE LINE CUT FUNCTION **• Press <ALT> + <C>** **• Press <6>** **• Select Target Unit** **• Select Route** **• Enter D to Disable, E to Enable Line Cut Monitoring**	• Enables / Disables the Phone Line Cut Monitoring function in 7450 or 7440 subscriber units. • To confirm the function and update the database, perform a "Get Subscriber Mode Data" to retrieve the current status of this mode (Message group, # 9) • Refer to 7450 or 7440 subscriber unit manuals for more information.

The Programming Function Group

To access the Programming function menu group, hold down the <ALT> key and press <P>. The pop-up illustrated at right will appear. Use the arrow keys to highlight a function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.



The screen illustrated at right enables an operator to change the timing parameters of a subscriber unit from the central station. Check-in intervals and the timing for secondary alarm accumulation, debounce delay and communication timeout time limits can be programmed using this screen.



1. SET TIMING PARAMETERS for REMOTE SUBSCRIBER UNITS

• TO BEGIN: PRESS <ALT>+<P>, then 1 -- Select ID and routing. When the above screen appears, **press <ALT>+<I>** This queries the remote subscriber unit to report all its current timing parameters for your review. It also updates the Net software database.

• SET AUTOMATIC TEST INTERVAL (Check-In's): PRESS <ALT>+<P>, then 1 -- Select ID and routing. When the above screen appears, a cursor will be flashing at the check-in interval area. The intervals can be programmed between one minute and 24 hours (the default setting is at 24 hours). To minimize radio air traffic, an interval of 24 hours is recommended except in high security applications. The ability to change this timing feature by remote is a key advantage of the two-way AES•IntelliNet system. When you have entered a check-in time interval, press <ENTER> to move on to the next field. When done, press <ALT>+<S> to send.

Net77 / UL and COMMERCIAL FIRE INSTALLATION REQUIREMENTS:

- **Check In Interval: Set to required amount according to UL codes -see subscriber manual.**
- **Enable Test Time Supervision: NO**
  Supervision must be monitored by a UL Listed Automation System.
- **The maximum allowable interval between check in signals on a UL Burglary Alarm system with line security is 5 minutes.**

Note: Whether operating with a Listed Automation System or in manual mode, a UL Burglar Alarm System with line security and a Grade A Central Station Burglar Alarm System requires a missing check in signal to be responded to as an alarm condition.

Programming Function Group / 1. Timing Parameters, continued

• ADDITIONAL EVENT REPORT DELAY: This feature allows a subscriber unit to accumulate alarms, after its initial alarm report, for a programmed time period. When an alarm has occurred at a remote subscriber site, the central receiver is notified immediately. The event report delay allows a remote unit to compile subsequent alarms for a period of time, so that a comprehensive packet of alarm data is sent to the Net77 system all at once, thereby reducing network air time. The default setting for this feature is 10 seconds. To change the event report delay, enter the new value and press <ENTER> to move to the next field. **An event report delay of 10 seconds is the maximum time limit allowed for UL Burglar Alarm Systems and Commercial Fire Alarm Systems.**

• 7050 & 7750/UL LOOP RESPONSE: Programs a debounce delay for the zone inputs of 7050 and 7750/UL subscriber units to prevent input switches or relays from causing nuisance alarms and repeated reports of the same alarm. The default setting is 0**.**12 seconds. If you choose to change this setting, simply enter the new value and press <ENTER> to move to the next field. **A control unit (panel) output(s) to the 7750 RF subscriber unit shall be programmed to latch in when it triggers a zone input on the 7750. For UL & Commercial Fire Systems, contact debounce delay may be not longer than 0.12 seconds.**

Note: The loop response in the 7050-*E*, 7440, 7450 and 7750-*F* units are preset at 0.12 seconds and cannot be changed.

• ACKNOWLEDGMENT DELAY: If a subscriber unit does not receive an acknowledgment within the time parameters set by the Acknowledgment Delay function, it activates an output to annunciate the problem locally. The next successful communication to the central station will include an Ack Delay fault code. The default setting for this feature is 89 seconds. If you choose to change the ACKnowledgment DELAY period, simply type in the new value, hold <ALT> and press <S> to complete and send your timing parameter data.

For 7750/UL and 7750-F Subscriber Units: A zone of the control panel shall be connected to the relay labeled "ACK DELAY", to monitor the subscriber unit against antenna removal, communication failure and to provide a local and remote annunciation of such a fault condition. (Refer to subscriber manuals.)

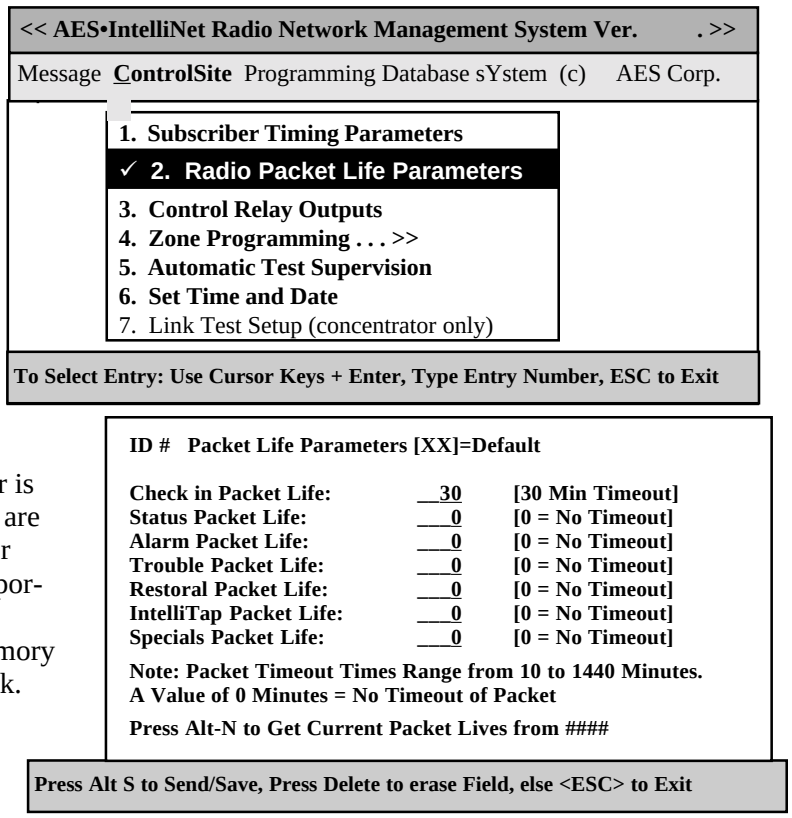
• LAST UPDATED ON: This feature displays the last time that Timing Parameters were sent to or received from the subscriber unit selected. All information of this kind is constantly updated by the Net databasing system. If no date appears, or if the date seems to be out of range, the timing parameters have not been set or downloaded through Net software.

To update the database with current Timing information, press <ALT> and <I> to access the "Get Data" functions.

NOTE: For all remote program functions, watch to make sure that a data confirmation packet is received from the target subscriber (watch scrolling message screen area).

Programming Function Group, continued

2. RADIO PACKET LIFE PARAMETERS TTL / Time-to-Live



Version 2 subscribers include the new "Time-To-Live" or "TTL" function.

Like the Internet, AES-IntelliNet is a packet-based technology. The Time-to-Live concept in the Internet is based on the fact that all data has a useful life.

The benefits of TTL are best exhibited when the central station receiver goes off line due to a lightning hit or some other unlikely, catastrophic event. While the receiver is off line, messages traveling through the system are stored in the individual subscriber units for later delivery. Under the default TTL settings, unimportant test timer messages (typically 95+% of the traffic) are deleted from the subscriber unit memory after 30 minutes of being delayed in the network. Thus, the system will not have to handle the message when the central receiver comes back on line. All other messages, such as alarms, etc. speed there way to the central station as they normally do.

• Note that even when a check-in packet is deleted due to a delay, the objective of that message has already served its purpose: the late or missing signal has been flagged at the central station (see Automatic Test Supervision section).

• Under the default (factory) settings, only test timer messages are subject to the TTL function. If you want TTL for other message types, YOU must activate it when you program the subscriber unit.

• The TTL time is included in packets generated by TTL (Ver 2+) subscribers. The timeout function works when a packet is stored for forwarding in any subscriber with TTL (Ver 2+) capability, which will decrement the TTL time for any packet it is storing. When TTL time has expired, the packet is aborted. This function does not work with non-TTL (pre-Ver 2) subscribers.

• The TTL feature works best when the majority of subscribers, or the subscribers that are most heavily used, have the feature in the firmware. Call your AES representative for upgrade information.

Default time for Check-In Packets is 00 hours, 30 minutes. DO NOT enter a greater than 24 hrs 00 mins.
Entering a time of 00 hours and 00 minutes deactivates the time-to-live function for that packet type.
The shortest allowed TTL time is 00 hours, 10 minutes.
TTL can also be set for other packet types:

- Status Packets
- Alarm Packets
- Trouble / Trouble-Restoral Packets
- Zone Restoral Packets
- AES-*IntelliTAP* Packets
- Special Packets (Vending, etc.)

The default time for the 6 packet types above is 00, i.e. the time-to-live function is deactivated for these packets. Entering anything greater than 00 HRS and 10 MINS will enable the Time-to-Live function.

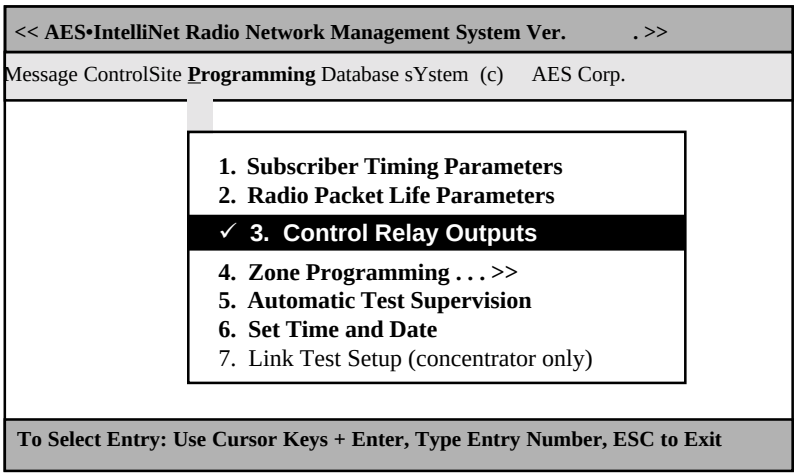
Enter the data for each type, press <ALT>+<S> to send.

To confirm the data, press <ALT>+<N> to query the subscriber. When the TTL parameters packet has been received back, check this screen again.

See also - Get Packet Life Settings, Message Functions Group

Programming Function Group, continued

3. CONTROL RELAY OUTPUT

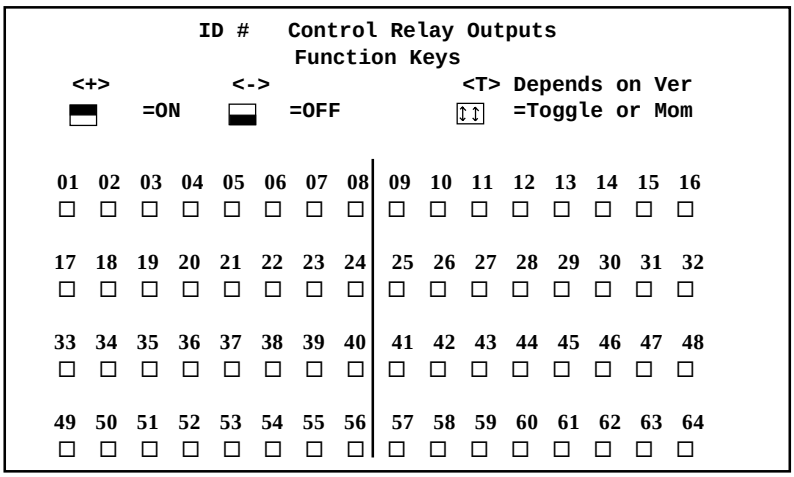


This feature controls **optional** relay outputs (part number 7065) for model 7050 subscriber units. Using this remote control capability, an operator may open gates, activate cameras or control any device at a remote location. The basic relay output uses eight relays, but as many as 64 may be controlled. This feature has not been evaluated for UL Listing.

Each relay can be individually addressed from the central station. Access the above screen by highlighting the "Control Relay Outputs" function on the Programming menu and press <ENTER>, or by pulling down the Programming menu as shown above and pressing the number <2> key. A control form appears.

Using the control block illustrated at right, the operator can turn on, turn off or toggle any switch connected to the subscriber unit relay board from the central station. Each box represents a relay.

If a box is left blank, the "OFF" command (default) will be sent.



• **USING THE CONTROL RELAY OUTPUT BLOCK** - Using the arrow keys, place the cursor on the box representing the relay you wish to activate or deactivate. To activate a relay, press the <+> key. To deactivate a relay, press the <-> key. To toggle a relay, press the <T> key. Boxes with no data entered are set to OFF mode, the default setting. Move through the control relay output boxes by using the arrow keys. To send the command and save it in the database, hold down the <ALT> key and press the <S> key. The relays are latching (except as noted below); when a function has been turned on, a separate command must be sent to turn it off.

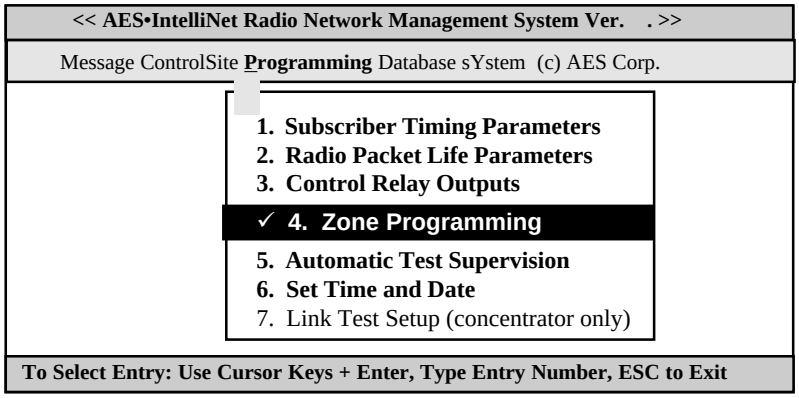
NOTES:

• For pre-version 2 model 7050 units, the toggle function may cause the relay to toggle multiple times because multiple receptions may occur. The final state cannot be predicted. It is not recommended.

• For Version 2 and new model 7050 units, the toggle function is a Momentary - i.e. the relay will pull in for approximately 1 second, then release.

Programming Function Group, continued

4. ZONE PROGRAMMING for Subscriber Units



Note: Set Timing Parameters First.

This function configures alarm zone inputs at a remote unit. **It is important to know which type of unit is being programmed.** There are five separate sub-menus to handle the different subscriber units, including:

- **7050/7750-UL**
- **7050-E** (pre-version 1.9)
- **7050-E** (version 2.0+)
- **7450 / 7440**.
- **7750-F**

Use the cursor to select "Zone Programming" or type <ALT>+<P>, then <4>. Select the subscriber unit # from the pick list. If the unit already has zone information stored in the database, the function automatically goes to the correct sub-menu. Those submenus are listed in the following pages.

If the target unit is not in the database, a menu pops up:

Unknown Subscriber Type. Download Data from Subscriber.
To Override. Enter: 1. 7050/7750-UL, 2. 7050E,
3. 7050E Rev 2.0+ 4. 7450, 5. 7750F:

It is recommended that you enter <ALT>+<L> to perform a "Get-All" data from this subscriber, including it's type. The retrieved data is stored in the database for future reference. (See more details under the Message Group pulldown.) Wait a few moments while the subscriber unit responds, then retry the Zone Programming function.

Or, you can skip the "Get Data" function if you are certain of the unit type and revision. Enter a digit 1 to 5 the for the type of unit listed on the screen pop-up.

CAUTION: Sending zone programming data to the wrong type of subscriber may cause unpredictable results.

Another warning screen pops up to remind you to be certain of which type of unit is being programmed:

Warning! No Trouble Signals* unless Central Firmware 1.70+
First put [unit #] on Test Before Programming.
The Remote Programming of Zones Can be Dangerous
Correct Wiring, and Subscriber Model can be unknown.
Changing Programming can create New Alarms.
Use at your own risk.

Note: Always Reset Subscriber after Zone Programming.
This is to Prevent Zone Conflicts.
Type Any Key to Continue.

* If you program the subscriber zones to report "trouble" (such as in "Fire" zone mode), the trouble messages can only be received by a version 1.70 or newer receiver. (This is the version of the chip in the receiver- not the software you are using here.) Upgrades are available, contact AES for details.

Programming Function Group, Zone Programming, continued

ZONE PROGRAMMING for 7750/UL & 7050 Subscribers

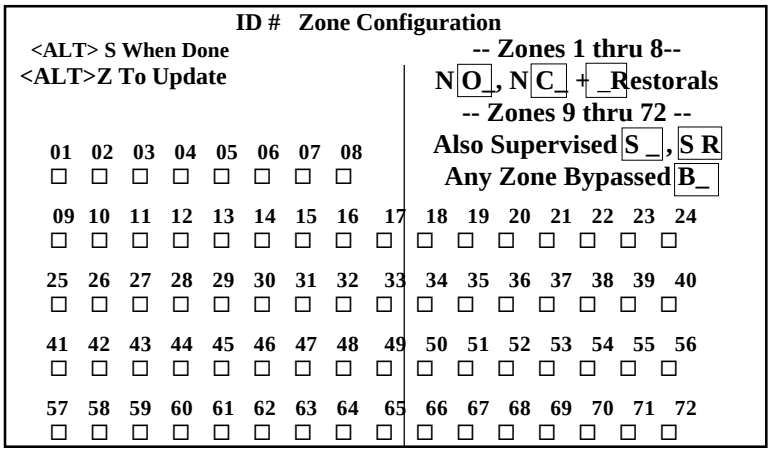
Refer to 7750/UL or 7050 Subscriber Unit Manual for details on zone wiring and programming.

This screen appears if the unit zone information is in the database, or if you selected 1 from the "Override" box choices (see preceding page).

Up to 72 separate zones on each remote subscriber unit can be addressed from the central station. Complete the Zone Configuration control block as instructed below.

The zone configuration control block offers five options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

1. Normally Open
2. Normally Open + Restoral
3. Normally Closed
4. Normally Closed + Restoral
5. Bypassed
6. Supervised
7. Supervised + Restoral



• **USING THE ZONE CONFIGURATION CONTROL BLOCK:** Use the arrow keys to place the cursor on the box of the zone you wish to program. Each zone has two sections. The left side of the box indicates the normal state of the circuit (Open, Closed, Supervised or Bypassed). The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. UL and NFPA require all zones of the 7750/UL Subscriber Unit to be programmed for Restoral signals. However, the control unit outputs to the 7750/UL unit must latch until manually reset. To make no change in a zone, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys. Zones that are not programmed will return to a default setting of Normally Open.

UL and COMMERCIAL FIRE INSTALLATION REQUIREMENTS for 7750/UL Subscriber Units:

- **Zones 1-6: Bypassed**
- **Zone 7: N.O. w/Restoral - Tamper** (creates a N.C. loop through zone 7 of 7072 module)
- **Zone 8: N.O. w/Restoral - AC Fail** (from 7072 multi-board)
- **Zones 9-24, depending on the output of the control unit:**
  Normally open with Restoral, or **Normally Closed with Restoral,** or
  Supervised with Restoral, or **if zone not used, Bypass**

Next, perform a reset (press <ALT>+<C>, then 3, then select the unit from the pick list and choose a route.

To verify the information actually stored by the subscriber unit, press <ALT>+<Z>. This downloads the data from the subscriber unit into the "Net" software database. (Upper zones not installed will show a default "O").

Programming Function Group, Zone Programming, continued

ZONE PROGRAMMING for *Pre*-Version 2.0 7050-*E* Subscriber Units

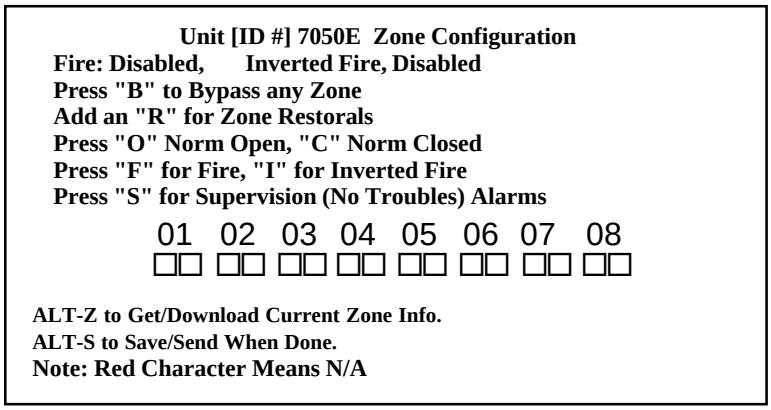
Refer to 7050-E Subscriber Unit Manual for details on zone wiring and programming.

This screen appears if the unit zone information is in the database, or if you selected 1 from the "Override" box choices (see page 19).

The zone configuration control block offers five options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

1. Normally Open
2. Normally Open + Restoral
3. Normally Closed
4. Normally Closed + Restoral
5. Bypassed
6. Supervised
7. Supervised + Restoral

NOTE: The Fire and Inverted Fire options are not available on Pre-Version 2.0 subscriber units.



•USING THE ZONE CONFIGURATION CONTROL BLOCK: Use the arrow keys to place the cursor on the box of the zone you wish to program. Each zone has two sections. The left side of the box indicates the normal state of the circuit (Open, Closed, Supervised or Bypassed). The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. To make no change in a zone, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys. Zones that are not programmed will return to a default setting of Normally Open.

To verify the information actually stored by the subscriber unit, press <ALT>+<Z> This downloads the data from the subscriber unit into the "Net" database.

Programming Function Group, Zone Programming, continued

ZONE CONFIGURATION for Version 2.0+ 7050-*E* Subscriber Units

Refer to 7050-E Subscriber Unit Manual for details on zone wiring and programming.

These screens appear if the unit zone information is in the database, or if you selected 3 from the "Override" box choices (see page 19). The following questions appear:

Will You be using Fire Zones Y/N? Currently (N):__

The programming sequence first asks if any "Fire" inputs are used (refer to subscriber manual). Answer Y/yes if you wish to use the "Fire" configuration, which includes reporting of "Trouble" conditions. Otherwise answer N/no. The default or current programming is shown in (_). If you wish to change the setting, enter Y or N. To leave unchanged, simply push ENTER. Next appears:

Will You be using Inverted Fire Zones Y/N? Currently (N): __

Here you can choose to reverse the logic for the fire input (refer to subscriber manual). The current programming is displayed. To change the setting enter Y or N. To leave unchanged, push ENTER.

IMPORTANT NOTES:

• The zone programming options are limited. Of the 3 EOL zone types - Supervised, Fire and Inverted Fire, you can choose any 2 for an individual subscriber unit. You can always choose Bypass and Restoral .

• The "Trouble" signals from Fire inputs can only be received by receivers version 1.70 or higher. Contact AES for details. Upgrades are available.

Next appears the zone configuration box:

The zone configuration control block offers the options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

Bypass
Normally Open
Normally Closed
Fire
Inverted Fire
Supervised
Restoral (on right size of zone box)

Unit [ID #] 7050E Zone Configuration
Fire: Disabled, Inverted Fire, Disabled
Press "B" to Bypass any Zone
Add an "R" for Zone Restorals
Press "O" Norm Open, "C" Norm Closed
Press "F" for Fire, "I" for Inverted Fire
Press "S" for Supervision (No Troubles) Alarms

01 02 03 04 05 06 07 08
□□ □□ □□ □□ □□ □□ □□ □□

ALT-Z to Get/Download Current Zone Info.
ALT-S to Save/Send When Done.
Note: Red Character Means N/A

NOTE: The Fire and Inverted Fire options are not available on Pre-Version 2.0 subscriber units.

•USING THE ZONE CONFIGURATION CONTROL BLOCK: Use the arrow keys to place the cursor on the box of the zone you wish to program. Each zone has two sections. The left side of the box indicates the normal state of the circuit (Open, Closed, Supervised, Fire, Inverted Fire or Bypassed). The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. To make no change in a zone, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys. Zones that are not programmed will return to a default setting of Normally Open.

To verify the information actually stored by the subscriber unit, press <ALT>+<Z> This downloads the data from the subscriber unit into the "Net" database.

Programming Function Group, Zone Programming, continued

ZONE CONFIGURATION for Rev 7450 & 7440 Subscriber Units

Refer to Subscriber Unit Manual for details on zone wiring and programming.

These screens appear if the unit zone information is in the database, or if you selected 4 from the "Override" box choices (see page 19). The following questions appear:

Will You be using Fire Zones Y/N? Currently (N):__

The programming sequence first asks if any "Fire" inputs are used. Answer Y/yes if you wish to have the zone report "Trouble" conditions. Otherwise answer N/no. The default or current programming is shown in (_). If you wish to change the setting, enter Y or N. To leave unchanged, simply push ENTER. Next appears:

Will You be using Inverted Fire Zones Y/N? Currently (N): __

Here you can choose to reverse the logic for the fire input (refer to subscriber manual). The current programming is displayed. To change the setting enter Y or N. To leave unchanged, push ENTER.

IMPORTANT NOTES:

• The zone programming options are limited. Of the 3 EOL zone types - Supervised, Fire and Inverted Fire, you can choose any 2. (You can always choose Bypass and Restoral for any zone.)

• The "Trouble" signals from Fire inputs can only be received by receivers version 1.70 or higher. Contact AES for details. Upgrades are available.

Next appears the zone configuration box, which displays the available options in :

The zone configuration control block offers the options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

Bypass
Normally Open
Normally Closed
Fire
Inverted Fire
Supervised
Restoral (on right size of zone box)

Unit [ID #] 7450(40) Zone Configuration
Fire: Disabled, Inverted Fire: Disabled
Press "B" to Bypass any Zone
Add an "R" for Zone Restorals
Press "O" Norm Open, "C" Norm Closed
Press "F" for Fire, "I" for Inverted Fire
Press "S" for Supervision (No Troubles) Alarms

Z1 Z2 Z3 Z4
□□ □□ □□ □□

ALT-Z to Get/Download Current Zone Info.
ALT-S to Save/Send When Done.
Note: Red Character Means N/A

•USING THE ZONE CONFIGURATION CONTROL BLOCK: Use the arrow keys to place the cursor on the box of the zone you wish to program. Each zone has two sections. The left side of the box indicates the normal state of the circuit (Open, Closed, Supervised, Fire, Inverted Fire or Bypassed). The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. To make no change in a zone, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys. Zones that are not programmed will return to a default setting of Normally Open.

To verify the information actually stored by the subscriber unit, press <ALT>+<Z> This downloads the data from the subscriber unit into the "Net" database.

Programming Function Group, Zone Programming, continued

ZONE CONFIGURATION for Rev 7750-*F* Subscriber Units

Refer to 7750-F Subscriber Unit Manual for details on zone wiring and programming.

This screen appears if the unit zone information is in the database, or if you selected 5 from the "Override" box choices (see page 19).

After a warning note pops up, the following menu appears:

The zone configuration control block offers the options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

Bypass
Fire
Supervised
Restoral (on right size of zone box)

Unit [ID #] 7750-F Zone Configuration

Press "F" for Fire, "S" Supervised or Press "B" to Bypass any Zone. Add an "R" for Zone Restorals.

Fire Zones				Reversing Relay			
Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
□□	□□	□□	□□	□□	□□	□□	□□

ALT-Z to Get/Download Current Zone Info.
ALT-S to Save/Send When Done.
Note: Red Character Means N/A

IMPORTANT NOTE:

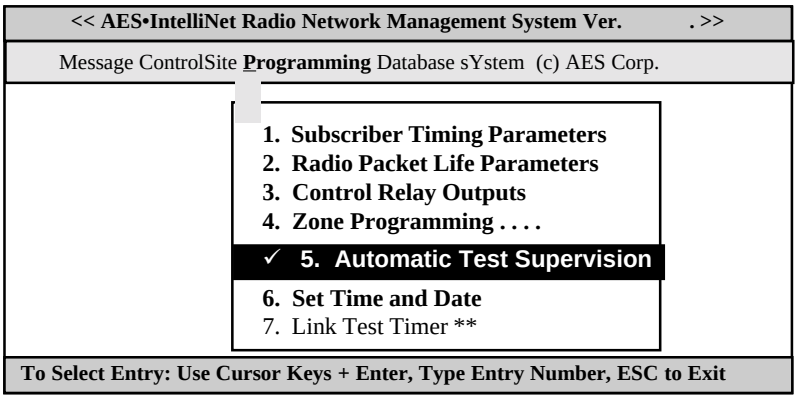
• The "Trouble" signals from Fire inputs can only be received by receivers version 1.70 or higher. Contact AES for details. Upgrades are available.

• **USING THE ZONE CONFIGURATION CONTROL BLOCK:** Use the arrow keys to place the cursor on the box of the zone you wish to program. Each zone box has two sections. The left side of the box is the zone programming, as described above. The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. To make no change in a zone, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys.

To verify the information actually stored by the subscriber unit, press <ALT>+<Z> This downloads the data from the subscriber unit into the "Net" database.

Programming Function Group, continued

AUTOMATIC TEST TIME SUPERVISION



This feature enables the Net software to monitor test timer check-ins. When enabled, it alerts an operator if a subscriber unit fails to report in at its scheduled time as programmed in the Subscriber Timing Parameters function. A missed check-in is reported as a "T906" trouble signal to automation (see document on alarm codes).

To access the function, highlight the Programming menu and use the arrow keys to select the Automatic Test Supervision on the Programming pulldown, then <ENTER>.

Or, press <ALT>+<P>, then 5, then <ENTER>. Select the Unit to be supervised. The following menu appears:

Automatic Test Supervision for [Unit ID#] is On/Off. Turn it On/Off? Y/N: __ else ESC to Exit without Change.

Answer the query by entering Y/yes or N/no.

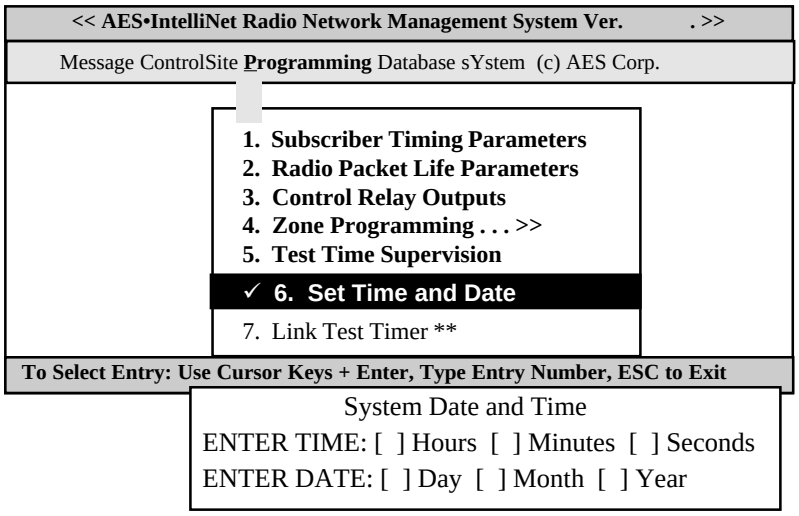
IMPORTANT NOTE: This applies only to Net software with the automation output enabled. The default setting for this feature is "N" for no. If you would like to enable the test time supervision feature, change the setting to "Y" for yes and press <ENTER> to move to the next field.

NOTE: Enabling supervision function BLOCKS check-in signals from being sent to automation.

NET77 / UL and COMMERCIAL FIRE INSTALLATION REQUIREMENTS:

- **Enable Test Time Supervision: NO**
  Supervision Must be monitored by UL Listed Automation Software.
- **When operating in Manual Mode, missing check in signals must be responded to as alarms.**

SET SYSTEM TIME AND DATE



This feature updates the controller computer's internal clock. To access the Set Date and Time function, highlight the Programming menu and use the arrow keys to select the Set Time and Date, then <ENTER>.

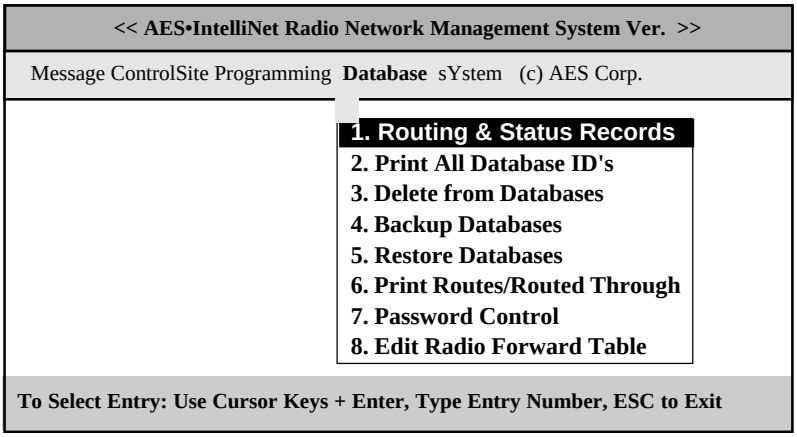
Or, press <ALT>+<P>, then 6, then <ENTER>.

Complete the block as shown.

Press <ALT>+<S> when done.

The Database Function Group

To access the Database function group, hold down the <ALT> key and press <D>. The pop-up screen illustrated at right will appear. Use the directional arrows on your keyboard to highlight your choice and then press <ENTER> or press the line number.



NOTE: The AES•IntelliNet database automatically stores routing data on all subscriber units registered in the system. The data is stored on the computer hard drive in the subdirectory c:\aes\db. The Database function group allows the computer to retrieve information on specific subscriber units and to perform basic data "housekeeping".

Function	Explanation

1. ROUTING & STATUS RECORDS

- **Press <ALT>+<D>**
- **Press <1>**
- **Select Target Unit**

• Displays the routing records of any given subscriber unit and the current status of the subscriber unit, including NETCON rating.

Routing records are automatically updated by the program.

Routes shown are "outbound", i.e. ID#1 is closest to the central.

Route Record on 1234

ID1	ID2	ID3	ID4	ID5	ID6	ID7	ID8	Date/Time	Freq
-	-	-	-DIRECT-		-	-	-	Tues Sep 08 14:53 1998	Last
-	-	-	-DIRECT-		-	-	-	Tues Sep 08 14:53 1998	Next

Most Frequent Route

-	-	-	-DIRECT-		-	-	-	Tues Sep 08 14:53 1998	1824
1800								Wed Aug 19 02:00 1998	13
7003								Tue Sep 01 08:40 1998	10

<< Latest Status and Last Known Position >>

ID Number: 1234 Link Layer: 1, VLS Time: Unknown
NetCon: 0 Fault Code: No Fault Detected, Latitude Unknown
Last Received on: Tue Sep 08 14:55:33 1998, Longitude Unknown

Certain UL Burglar Alarm Systems and Commercial Fire Alarm Systems requiring a minimum of 2 paths. Multiple paths can be proven using the Print Routes / Routed Through function.

Note: A NETCON of 5 or less ensures that at least 2 paths are open to the central station. A NETCON of 6 or more may also have multiple paths - use the Print Routes/ Routed Through functions to show this.

Database Function Group, continued

2. PRINT ALL DATABASE ID'S **• Press <ALT> + <D>** **• Press <2>**	• Prints all the ID numbers in the current database. This list is the same as the ID number "Pop-up" pick list. Have the printer ready with plenty of paper. (Press <ESC> to abort printing.)
3. DELETE FROM DATABASES **• Hold <ALT> + <D>** **• Press <3>** **• Select Target Unit**	• Deletes the current records of any given subscriber unit. Should that unit check in at a later date, it will be automatically entered into the routing database. **NOTE:** All specific programming information stored in the database for the deleted unit will revert to default settings if the deleted unit checks in again.
4. BACKUP DATABASES **• Hold <ALT> + <D>** **• Press <4>** **• Insert disk in drive A** **• Press <ENTER>**	• Backs up the current Net77 database on a floppy disk in drive A. NOTE: While the program is backing up its database, all communicatio ns are temporarily stored in a buffer. UL Note: Database backup may only be done during "Open Periods" and only on one alternate receiving systems at a time, so that there will be no loss or delay in receiving and processing alarm signals.
5. RESTORE DATABASE **• Hold <ALT> + <D>** **• Press <5>**	• Restores a database previously backed up using the BACKUP function above. CAUTION: Restoral function overwrites any database file existing on the hard drive. NOTE: While the Net77 is backing up its database, all communications are temporarily stored in a buffer. UL Note: Use this function only under extreme emergency conditions and, if possible, only on one receiving system at a time to allow alternate unit to receive and process signals.
6. PRINT ROUTES / ROUTED THROUGH **• Hold <ALT> + <D>** **• Press <6>**	• Prints out all routes used by a subscriber unit. • Also, a list of units that are "routed through" a given unit can be generated. This is important for demonstrating that a unit has multiple paths available. **Certain UL Burglar Alarm Systems and Commercial Fire Alarm Systems requiring a minimum of 2 paths, a NETCON of 5 ensures that at least 2 paths of communication are open to the central station. Or, multiple paths can be proven using the Print Routes / Routed Through function.** Note: Be sure that the printer is on. Have the printer ready with plenty of paper. (Press <ESC> to abort printing.)

Database Function Group, continued

7. PASSWORD CONTROL

- **Hold <ALT> + <D>**
- **Press <7>**

• Enables the Password Protection function. **IMPORTANT: Once this function is enabled, starting or exiting the program will require a password. Carefully note the password(s) used.** The password function can be disabled by deleting the existing passwords

```
1. Add
2. Change
3. Delete
```

1. Add a New Password

• To add a new password enter a 1-3 character ID code, and then an 1-8 character password. Type the password again to assure its accuracy. This function in NOT case sensitive.

```
<< Add a New Password >>

ID: [     ]  Password: [          ]

Confirm: [          ]
```

2. Change a Password

• To change a password enter the 3 character ID code that you wish to change. Enter the old password, and then type the new password.

```
<< Change Password >>

ID: [     ]  Old Pwd: [          ]

New Pwd: [          ]
```

3. Delete a Password

• To delete a password enter the 3 character ID code that you wish to delete. Enter the old password, and then type Y to confirm.

```
<< Delete Password >>

ID: [     ]  Old Pwd: [          ]

To Confirm Delete: [ ] Type (Y)es
```

Database Function Group, continued

8. EDIT RADIO FORWARD TABLE

• Hold <ALT> + <D>
• Press <8>

Limits and Availability:

• This function is limited to 3 units in the Net7K and Net99 software. It is not available on Net77 software.

• Net7KF software offers unlimited forwarding.

• Forwarding increases air traffic on the network, which may lead to slowdowns on busy systems. **Use forwarding only when required. Forward only essential data.**

• There is no guarantee the forwarded data will be received; the remote site that receives the data is *not* a substitute for a central receiver.

• Net software must be running for this function to perform.

• Select the ID for the unit whose data will be forwarded.

Send [Unit ID] Message to : [ ]

<< Edit Forward Table >>

Origin ID : Unit # Forward to : Unit #

Memo : Address etc.

Forward Filter Flags: Type Y/N

ALARM: [ ] -> Zones : #1 #2 #3 #4 #5 #6 #7 #8
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Z REST: [ ] -> Zones : #1 #2 #3 #4 #5 #6 #7 #8
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

STAT: [ ] CHKIN: [ ] DATA: [ ] HPBU: [ ]

Relay Following: [ ]

TEST: [ ] ZDATA: [ ] VLS: [ ] TEXT: [ ]

Alarm Automation Message: [ ]

AES Net software can forward the activity data of a subscriber unit to another subscriber unit. The data is sent to the RS-232 port of the receiving unit, where a handheld programmer (terminal), a printer or a computer may be connected. This allows a secondary site to monitor alarms, restorals check-ins, etc. at a secondary location. **This function is for secondary reporting only - the central receiver is always the primary monitoring site.**

• Enter Origin ID, and then the ID of the unit data is to be forwarded to.

• Add a memo (such as name/address) of up to 40 characters. This memo is sent with all forwarded data.

• Enter <Y> for each type of data that you want forwarded. You can forward the following data types:

Zone Alarms and Restorals; Status; Check-Ins; Data; HPBU / Programming Uploads; Test; Zone Data; VLS/Vehicle Location Data; Text Messages.

Other Options

Alarm Automation Message: Alarm activity can be transmitted to the remote unit in Alarm Automation Format. The RS-232 output of a special "FA" or "FAA" 7050 receiving unit can feed alarm data directly to a computer running automation software.

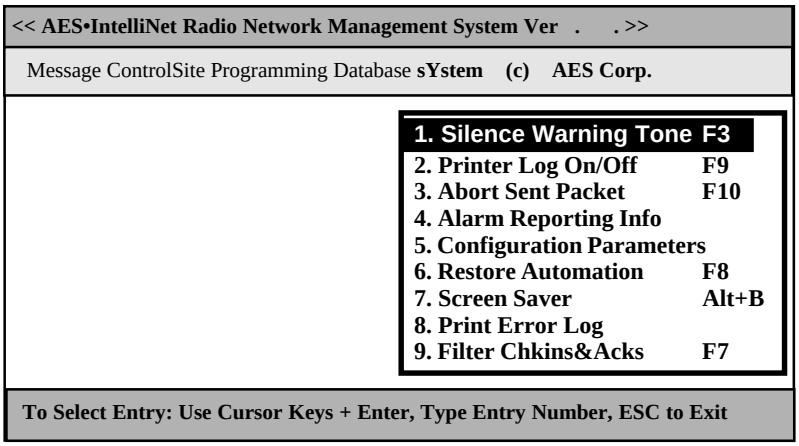
Relay Following: This special functions requires a 7050 subscriber unit with a 7065 Relay Output board installed. When a zone in alarm message is received from the origin unit, a relay on the forward-to unit will be activated. If zone goes into alarm on the origin unit, the message is received at the central station. When programmed for forwarding with relay following, a relay control command is sent to the receiving unit (which must be a 7050 unit with 7065 relay board). Zone 1 in the origin unit trips relay 1 in the forward-to unit, zone 2 trips relay 2, and so on.

For 7050 version 2 and later, the relay is activated in Momentary mode.

The Systems Function Group

The Systems Function group menu is accessed by holding <ALT> and pressing <Y>.

Note that many of the functions are reached using the "F" function keys



Function	Explanation
1. SILENCE WARNING TONE **• Press <F3>**	• Silences the warning tone that sounds whenever an error has occurred. For Net77/UL, a "chirp" continues to sound until the problem is resolved. The chirp cannot be silenced.
2. PRINTER LOG ON / OFF **• Press <F9>**	• Enables printing of all data shown on the video monitor. Intended for short duration printouts for troubleshooting. Captures data that scrolls off the screen too quickly. **NOTE:** Keep the printer power turned on, even though the logging is off. Exceptions and error messages continue to be printed even when printer log is off.
3. ABORT SENT PACKET **• Press <F10>**	• Quickly cancels an unacknowledged packet sent to a subscriber unit by the receiver. This includes "Get" query functions.
4. ALARM REPORTING INFO (Alias) **• Press <4>** **• Enter Data as Prompted** **• Hold <ALT>, press <S>**	• Applies *only* to Net77, or Net7K/Net99 with automation is enabled, where alarm reporting info is sent to automation through the program (i.e. not direct from the receiver). **• This function does NOT change automation data sent by a 7000/2, 7000/1 or 7099-S receiver.** • Allows the operator to program a different account number for alarm reporting to automation software. For example, subscriber unit "1234" can be reported to automation as "5678". - Pull down System Menu, press 5 - Enter or select original ID number of subscriber unit you wish to have changed for reporting to automation. **XXXX Automation Reporting Information** **Automation Reporting Identifier [ ]** - Enter the Account Number you want reported to automation for this subscriber unit.

SYSTEM FUNCTION GROUP, *continued*

5. CONFIGURATION PARAMETERS

Configures the computer/controller serial output to match the automation software computer. This output is always active for Net77; it is optional for Net7K or Net99. See bottom of page for how to enable this function.

Important Note: This function does NOT set the parameters for the automation/alarm output from the 7000/1, 7000/2 or 7099-S receiver. A separate procedure is required for that output - see the receiver manual for details.

Function	Explanation
5. CONFIGURATION PARAMETERS **• Press <ALT> + <Y> Keys** **• Press <5>**	**1. Central Port** **2. Local Comm Port** **3. I/O Parameters** • Sets up the parameters for integration of the AES Net Software and Computer / Controller with the central station functions.
Central Port **• Press <ALT> + <Y>** **• Press <5>** **• Press <1>**	**Central Receiver Port** **Central Receiver Port Com [2] : (1,2)** • Selects which port of the Controller/Computer to output alarm information for automation. Default is Comm 2.
Local Comm Port **• Press <ALT> + <Y>** **• Press <5>** **• Press <2>**	**Local Port (Com 1:) Configuration** **Baud Rate [1200] (1200....19200)** **Parity [O] (O)dd, (E)ven, (N)one** **Data Bits [7] (7,8)** **Stop Bits [2] (1,2)** • Sets the parameters for the Comm port used for the Automation output for the Net77/UL central station. Defaults are shown.

Enabling the Automation Output for Net7K and Net99

Option: You can use Net7K or Net99 to link to automation output in place of the alarm output from the receiver. The Net software must be in use full time for this function to work. (This function is always on for Net77.)

To enable this output in Net software

• Exit program (Alt-X). Type at the prompt:

```
Net7KP  /AON (or Net7KF  /AON).
```

• To disable the feature, type:

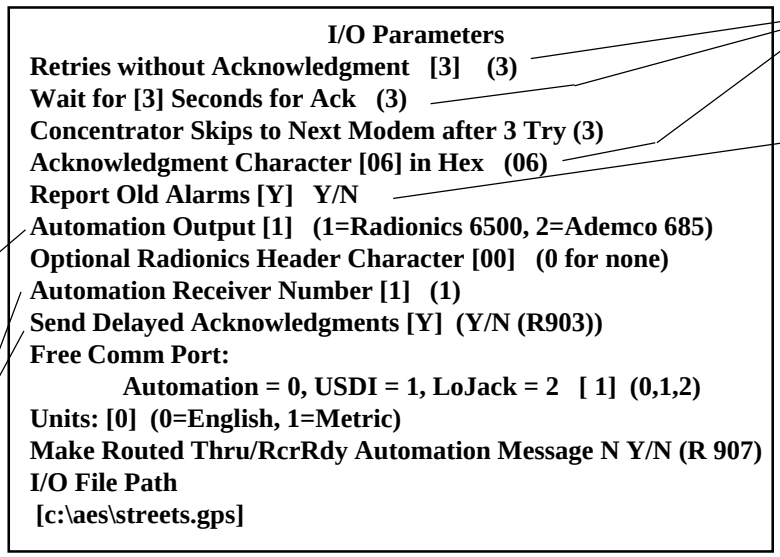
```
Net7KP  /AOFF (or Net7KF  /AOFF).
```

• To display the current setting , type

```
Net7KP  /?  (or Net7KF  /?)
```

SYSTEM FUNCTION GROUP, Configuration Parameters, *continued*

Function	Explanation
I/O Parameters • Press <ALT> + <Y> • Press <5> • Press <3>	• **This function sets up the output to alarm automation from the Computer / Controller operating Net77.** (Special versions of this software, including the Concentrator, also use these automation parameters. **NOTE: For Net7K and Net99,** the automation output is provided by the receiver, and this function is typically not used. Thus, most options below are not accessible. **If you wish to use this output from the Net7K, see preceding page - "Enable Automation Output for Net7K".**



Parameters for Link between Net software and automation.

Report Old Alarms (Y/N) - the AES subscriber units report zones that remain in alarm whenever they check in. They are flagged as "Old Alarms" and are reported to automation as such. Since the alarms were sent to automation when they were "new", you may wish to prevent the "old" alarms from being sent to automation.

Automation Output - IMPORTANT - One of the key decisions you will make during setup of your radio receiver is the choice of automation format. The Net77 / 7700 controller/computer can emulate the output of *either* Radionics 6500 *or* Ademco 685. You should configure the output to match your automation. In general, the Ademco 685 is a more capable format, and is recommended. The Radionics is a proven but simpler format. If you are using some of the new interfaces for NAPCO, CADDX, AES-IntelliTAP, choose the Ademco 685 emulation mode. For Radionics 6500 mode, enter the digit **1**; for Ademco 685 mode enter the digit **2**. Default setting is Radionics 6500. See Appendices for complete description of codes

Automation Receiver Number - IMPORTANT - The output will assign a receiver number to the output. Default is **1.**

Send Delayed Acknowledgments - IMPORTANT - The AES subscriber units will report any delays found in waiting for an acknowledgment in their routine communications. This is an indicator that an acknowledgment delay has occurred, but has been restored in the R903 message in Radionics 6500, or R356 zone 903 in Ademco 685. You have the choice to NOT send these messages to your automation **(select N)**, or to send it to automation and handle the data there **(select Y).**

Make Routed Thru/RcrRdy Automation Message N Y/N (R 907) - Set to N.

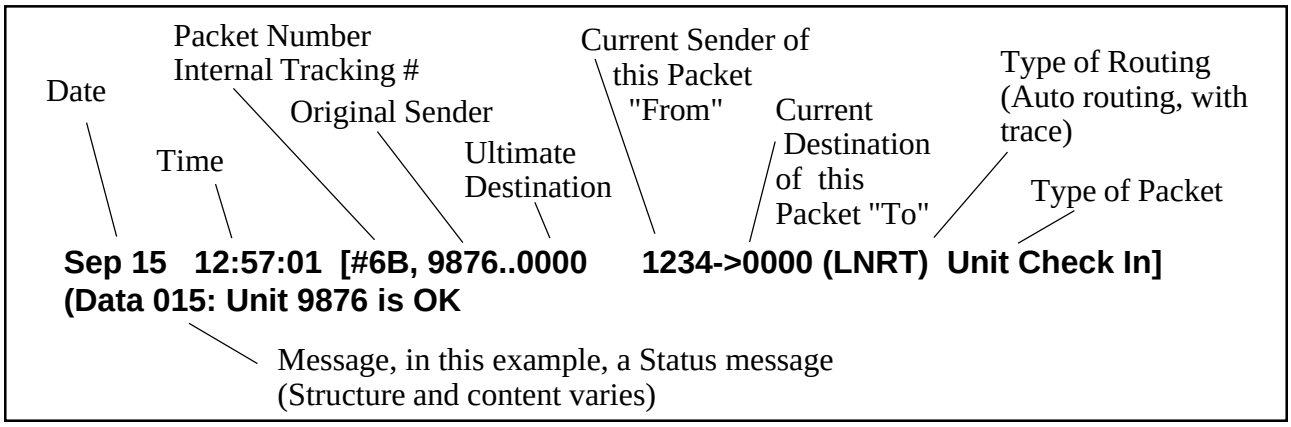
SYSTEM FUNCTION GROUP, *continued*

Function	Explanation
6. RESTORE AUTOMATION **• Press <F8>**	• For Concentrators Only: If the link between this software and automation has been taken off line for any reason, this reestablishes the link to automation. Note: In Net77, "Restore" is automatic. Note: This function does not apply to the link between an AES 7000 or 7003 Series receiver and automation.
7. PRINT ERROR LOG **•Hold <ALT>, press <Y>** **•Press <8>**	• This is a diagnostic function. A log of system status problems (such as disconnected cables, lost links to automation, etc.) is stored in a file. This function prints out that file. Have the printer ready with plenty of paper - this file may print many pages. Press <ESC> during printing to abort.
8. FILTER CHKINS & ACKS **• Press <F7>**	• To filter out screen "clutter", this function prevents noncritical check-in and acknowledgment messages from appearing on the screen. This is "toggle" function: to turn on the filter, press F7; a "checkmark" figure will appear on the lower message bar of the screen with the filter is on. To turn off the filter, press F7 again.
9. FORWARDING TOGGLE **• Press <ALT>+<K>**	• This one command allows you to globally enable or disable the forwarding function. It affects only those units that have been programmed for forwarding. (For more information, see the section on Database Group / Edit Radio Forward Table.) A pop up window shows you the current status global forwarding (On or Off). Enter Y/yes or N/no to change the status.

Interpreting Screen Messages

The network communications which appear on the monitoring screen are unscrambled data packets as sent and received by this receiver.

SAMPLE CHECK IN MESSAGE:



WHO, WHAT, WHEN, WHERE...

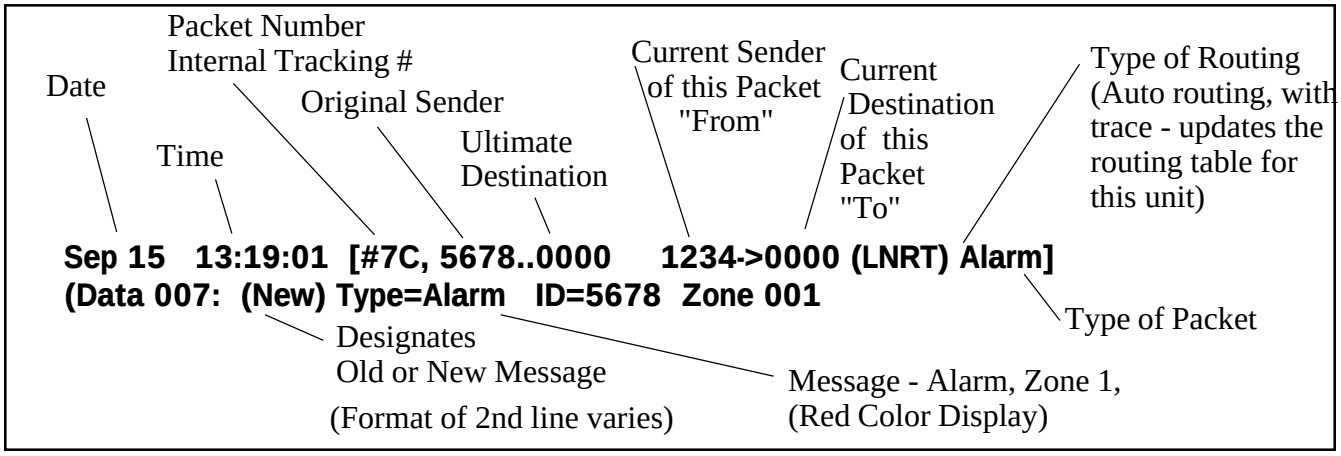
The following information can be extracted from the sample message above:

- The message was sent on September 15th at 12:57:01.
- The message originated at subscriber unit #9876, and is addressed to Unit #0000 (the central station).
- This specific message is being sent by subscriber #1234 - a "repeater" in the message path
- This specific message is being sent to Unit #0000 (the designation for the central station).
- This is a Unit Check In / Automatic Test Timer Message. It says that all is well.
- The type of routing used by the unit in its communication.
    - (LNR): automatic routing was used.
    - (LNRT): automatic routing was used, but a trace was placed on the route (each ID that assisted in forwarding the message is added to the packet).
    - (EXR): an explicit route was specified by an operator or computer.
- "Data" refers to all the data attached or included with this communication. In this case, the data indicates that the unit is OK.
- The direction of data flow has also been established. The unit ID before the "-> is the originating unit and the one after the "->" is the destination unit**.**

continued ->

Interpreting Screen Messages, *continued*

SAMPLE ALARM MESSAGE:



WHO, WHAT, WHEN, WHERE...

The above example shows an alarm message being sent by a subscriber unit to the central station via another unit.

- The message originated from the unit #5678 - this is where the alarm occurred.
- The screen displays the message in red.
- The message was relayed through subscriber unit #1234 using the automatic routing (LNRT). Subscriber unit #1234 is acting as a repeater, forwarding a message from unit 5678 to the central station.
- The data in the packet is a New Alarm.
- The data in the packet is an Alarm on Zone 001 of the subscriber unit. (IntelliTap or FD*X* data from an alarm control panel may not be displayed here.)
- Sometimes the data is shown in its raw hex format.

ON- SCREEN WARNING MESSAGES

The following are messages that may appear on the screen while Net77 is running. They are displayed at the base of the screen and are typically highlighted in red.

A Warning Tone usually accompanies a Warning Message. To SILENCE WARNING TONE that accompanies an error condition, PUSH F3 key. For Net77/UL, a "Chirp" tone will continue to sound approximately every 30 seconds until condition clears.

Screen Message	Description
Radio Transceiver Tamper Fault	Cover of 7730 was removed, cable cut / tamper (Net77 only)
Error No Target ID	No ID was entered, cannot execute function
Central Receiver in Standby	Receiver connected to 7700 is in Standby / NOT Active (Net77)
Radio Transceiver Fault	7730 radio transceiver problem (Net77 only)
ERROR-Check Central Receiver ---	
Comm Watchdog Timeout	Central Receiver has a problem; may have already restored
Timed Out Writing to Port (DSR False)	Central Receiver not responding, cable may be disconnected
Timed Out Reading Port (no Chars)	Central Receiver not responding, cable may be disconnected
Error-Check Central Receiver-Serial Cable	Check Cable

PRINTED WARNING MESSAGES:

Refers to printer connected to the AES 7100 or 7700 controller, output by "Net" program.

Structure: <Day/Date> <Time> <year>, <Event Type> <Description>

Error Messages:

ERROR -- Event not Reported to Automation -- nnnua nnnn A 000
This message appears if Net software is unable to send an alarm event to the automation software; digits at end of message is the data that could not be sent (applies only to Net77, or to Net7K/Net99 with automation output activated).

Radio Transceiver Fault
Indicates a problem with the transceiver.

Radio Transceiver Tamper Fault
Indicates a tamper problem with the transceiver or cables between receiver and transceiver.

Central Receiver in Standby Mode
Indicates that Receiver has been set to Standby mode, is NOT Active and cannot respond to network traffic.

Multiple Central Stations Detected
Indicates that more than one central station is operating on the same network (i.e. same frequency, same cipher / dealer code). This is SERIOUS fault - Be sure that ONLY ONE Receiver is ACTIVE.

ERROR - No Acknowledge from Automation Computer
Indicates problem with automation software, or trouble with the link between the controller/computer and the automation computer and software (applies only to Net77, or to Net7K/Net99 with automation output activated)