

S 500CPU/510CPU Diagnostic Screens Description

Purpose

The purpose of this document is to provide personnel who have a general knowledge of the IED 500 ACS system, and its operation, a better understanding of the ACS Diagnostic Screens. These screens were designed solely for diagnostic purposes and are very helpful in diagnosing problems with the operation of the ACS. Solving problems with Mic stations, communications, system activity, and other problems associated with equipment external to the ACS or with its configuration is often made easier for on-site service personnel who have a good understanding of the use of these screens. For problems that require the assistance of IED customer service personnel over the phone, it is also very helpful for the on-site people to be familiar with these screens.

Note: The information in this document is intended for the sole use IED and its customers. It is provided as a benefit to aid customers in operating and maintaining IED 500 ACS systems. Due to the diagnostic intent of the information provided and its dependence to the internal workings of the 500CPU software, which may be revised from time to time, IED must retain the right to make changes to the diagnostic screens and this document at any time and without notice.

General Screen Description

The ACS Diagnostic Screens are a brown color with generally white text for data and yellow text for column headings, although other colors are sometimes used for various reasons. All screens have in common the top and bottom bars.

Top Bar

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Program Version Date

This is the date the program was compiled.

Screen Title

Screen 1 contains the program version number and a brief description of any special build options. The other screens contain a description of the contents of the screen.

Page Number

Bottom Bar

1=Page 1, 2=Page 2, 3=Page 3, 4=Page 4	System 5	Activity Traces: 1234
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System Number

In Multi-ACS systems, the system number is used to distinguish which Local announcements are intended for the originating system and remote systems.

Activity Traces

There are four activity traces, or character positions, that increment through a repeating sequence whenever a certain type of activity occurs. These characters generally change very rapidly and indicate that certain processes within the program are running. If they ever freeze for more than a few seconds, the program is hung and the system will need to be restarted (Note: The watchdog timer on the 500P card should reset the system automatically after 5 seconds of inactivity).

The left most character position is the High-Speed Interrupt trace. This interrupt occurs at a rate of 1165.22 Hz and should never stop for anything. The trace characters repeat through the sequence “abcdefghijklmnop”. If this trace ever stops and the character is upper case, the program has hung in the high-speed interrupt service routine. If it is lowercase, it has hung outside that routine.

The second left most character position is the Low Speed Interrupt trace. This interrupt occurs at a rate of 18.2065 Hz and should never stop for any perceptible amount of time. The trace characters repeat through the sequence “abcdefghijklmnop”. If this trace ever stops and the character is upper case, the program has hung in the low speed interrupt service routine. If it is lowercase, it has hung outside that routine.

The third left most character position is the Mic Station Poll trace. This trace advances when a minor Mic Station polling cycle occurs and may stop for short periods of time (usually less than a second) when a permanent message is loading or being saved, or when the processor is busy handling others tasks. The trace characters repeat through the sequence “0123456789;<=>?@ABCDEFGHIJKLMO”. During a minor Mic Station Poll cycle one Mic Station on each 500C card is polled. In the next minor poll cycle the next Mic Station on each card is polled, and so on. Minor poll cycles occur at a maximum rate of 194.2 Hz, although system activity generally makes the actual rate somewhat slower. Each Mic station gets polled once in 8 minor poll cycles, so major poll cycles occur at a maximum rate of 24.275 Hz.

The right most character position is the Idle Loop trace. This trace advances each time the program has finished processing its’ main program loop and may stop for short periods of time when a permanent message is loading or being saved, or when the processor is busy handling others tasks. The trace characters repeat through the sequence of the entire ASCII character set.

Screen Navigation and Operation

Boot-up

The system may boot, or be re-booted in several ways:

- Power is applied
- Reset switch on back of rack is pressed
- Reset switch on 500P is pressed
- Watchdog timer on 500P detects no system activity for 5 seconds (or 90 seconds during boot-up process)
- Ctrl-Alt-Delete is pressed on the keyboard
- Ctrl-A is pressed on the keyboard (see description below)

As the system boots-up, a blue MS-DOS startup menu will appear. If no action is taken at the keyboard for 5 seconds, the system will continue to boot in the normal mode by starting the ACS program. If any key on the keyboard is pressed before the time has expired, the countdown is stopped and the user has up to 90 seconds from the time the boot-up process started to make a selection (otherwise, the watchdog timer forces a reset). In standard ACS configurations, this menu has four menu options. These options may be selected using the arrow keys, or by pressing the number of the menu option desired, and then pressing ‘Enter’. The menu options are:

1. Normal ACS Startup
2. DOS
3. Turbo Debugger (for debugging and FTP operation)
4. Network Connection (for use on IED’s in-house network)

Keys

Once normal program execution has begun, there are several keys that are used to navigate between the various pages and to perform other tasks:

1 - 4: Page Select

Pressing the 1, 2, 3, or 4 key (Note: not F1, F2, F3, or F4) switches the display to the corresponding page.

Ctrl-H: Halt System

This key halts all normal operation of the ACS including the polling of Mic Stations and should be used with caution.

Ctrl-W: Disable Watchdog Timer

This key toggles the Watchdog Timer on and off and is primarily used for debugging purposes. When the Watchdog Timer is off, the note "Watchdog Disabled" appears at the lower right of page 1 just above the bottom bar.

Ctrl-A: Force Assertion Failure

This key forces an Assertion Failure resulting in the system being rebooted. An Assertion Failure is a problem detected by the ACS program that is so severe that the only way to recover is to reboot the system and restart the program. When this happens, the program appends a line to a file called ASSERT.DAT that describes the location in the source code where the problem was detected and a brief description of what the problem may be. The program also writes a copy of all four diagnostic screen pages to a file called STATDUMP.DAT.

One may want to force an Assertion Failure in the event of some condition that warrants the program being reset but is not detected by the program. In this way, a file containing information about the condition of the program when the problem existed will be available for IED customer service personnel to download and examine at a convenient time. NOTE: The STATDUMP.DAT file is overwritten each time an Assert Failure occurs, so Ctrl-A should only be used when it is deemed necessary to save the system status at the time of reboot.

Ctrl-Q: Quit to DOS

This key attempts to terminate the program and return control to DOS. This method for getting to DOS frequently doesn't free all the network resources, so the preferred method is to reboot the system and select the DOS startup option.

Ctrl-Z: Zero all error counts

This key only works when the currently display page is number 4. When pressed it zeros all the error counts on this page.

'+', '-', Ctrl-'+', Ctrl-'-', Alt-'+', and Alt-'-' keys: Select Microphone Station

These keys are used to select the Mic Station whose traffic is being displayed on diagnostic screen page 3 (see "Single Microphone Station Traffic" on page 15). '+' increments the station number by 1. '-' decrements the station number by 1. Ctrl-'+ and Ctrl-'-' increment and decrement the station number by 8, respectively. Alt-'+ and Alt-'-' switch the station number to the first and last station in the system, respectively.

Startup Screen

The Startup Screen appears just after the program begins to run and stays visible for a few seconds before automatically proceeding to page 1. The time the screen remains is normally 5 seconds, but can be extended by pressing the 'Space' Bar, or can be cut short by pressing 'Enter'. During this time, there is no system activity, the screen is provided as a tool to check the status of the 500C and 500D cards.

Event Traffic” on page 8). It also refers to one of the announcements in the “Announcement Activity” section of diagnostic screen page 2 described on page 8. 1001 refers to announcement 1, 1002 refers to announcement 2, and so on.

Timers in Use (TMRS)

Each announcement may use up to four timers. This column indicates by the number of “*” present how many timers each announcement is currently using. This same information appears in the “Announcement Activity” section of diagnostic screen page 2 under “Timers in Use” on page 12.

Zone Usage (ZN)

This column shows the current state of the zone map being fed audio from each bus. The possible character displays and their meaning are “-“ Zones Free, and “C” Zones Connected. More detailed information appears in the “Announcement Activity” section of diagnostic screen page 2 under “Zone Usage” on page 12.

DRP Channel Number (DRP)

DRP State Machine Number (-SM-)

Each DRP channel has several states of operation. This column shows the state code, in hexadecimal, of the current state of each channel. The state codes are described in Table 1.

State Code	State Name	Description
0000	Idle	Channel is idle and available for use
0001	Request	Request pending (play, record, etc.)
0002	Active	Operating mode (play, record, etc.)
0003	End	Leaving mode
0004	DAX Wait	Waiting for access to DAX interface
0005	Save Request	Waiting for 500R to start save
0006	Save Transfer	Transferring data from 500R
0007	Write Buffer	Writing data to hard-drive
0008	Select Next Take	Advancing to next take in list
0009	Load Request	Waiting for 500R to start load
000A	Read Buffer	Reading data from hard-drive
000B	Load Transfer	Transferring data to 500R
000C	Wait for Done	Waiting for 500R to finish transfer
000D	Do Idle Transfer	In unexpected transfer state
000E	Pre-Request	Pre-request state
00FD	Transfer Recover	Recovering from Load/Save Fault
00FE	Recover	Recovering from unexpected state
00FF	Fault	Channel faulted

Table 1 - DRP State Machine Codes

500R Channel Status (500R)

This column shows the status, in hexadecimal, of each DRP channel. The status is a bit vector where each bit corresponds to a different capability of the channel. The value of each status bit and its’ meaning is defined in Table 2. In some cases, it is possible that more than one status bit to active at a time. In that case, the status value shown would be the sum of the individual bit values.

Bit	Meaning
0001	Record Active
0002	Play Active
0004	Load Active
0008	Save Active
0010	Overrun Error
0020	Channel Busy
0040	Bypass Active
0080	Channel Faulted

Table 2 - DRP Channel Status Bits

Blocks (BLOX)

This column shows, for each channel, the number of blocks of audio data to be loaded or saved during a load or save operation. This feature is not currently used.

Pointer (PTR-)

This column shows, for each channel, the current position of the record or play pointer during a record or play operation being tracked by the PRDP Editor. This feature is not currently used.

System Statistics

The upper right side of diagnostic screen page 1 shows various system statistics of interest. The lines are as follows:

Delivered Events

The total number of events, in decimal, that have been processed since the program started.

Free, Critical, High, Medium, and Low Event Queues

There are five event queues that contain all the event buffers that are used internally in the program to transfer messages from on process to another. The five queues are the Free Queue, the Critical Event Queue, the High Priority Event Queue, the Medium Priority Event Queue, and the Low Priority Event Queue.

Initially, all the events start out in the Free Queue. When a message needs to be sent, one of the event buffers is taken out of the Free Queue. The message data is placed in the buffer and the buffer is then placed in one of the queues containing events waiting delivery. When the program has time to process events, the events in the Critical Event Queue are process first, followed by the High Priority Queue, then the Medium Priority Queue, and finally the Low Priority Queue. The number of event buffers currently in each queue is displayed immediately to the right of the queue name. Further to the right is displayed the maximum number of events that have been in the queue at any given time for the delivery pending queues, and the minimum number for the Free Queue.

```

Delivered Events: 2334632
Free Event Q: 499 475
Critical Event Q:
High Priority Q: 0 4
Medium Priority Q: 1 24
Low Priority Q: 0 6
Timer Heap: 6 11
Curnt Time (ticks)::001C8278
Next Event (ticks)::001C827C
Heap Status: OK
Free RAM: 41984
Missed DOS ticks: 15000
Mbus Flts: 1
DP faults: 0
Open files: 0
DP buff stat: F----F
Polls/sec: 21.4
TCPIP Packets Rcvd: 1149421
NIM Free Buffers: 8 6
Started: 1999/08/29 06:17:32
Current: 1999/08/30 11:01:57
DOS Time: 11:01:39

```

Timer Heap

Timers are objects that can be set to send an event message at some future time. There are a fixed number of timers available in the Timer Heap. The current number in use is displayed on the left and the maximum number in use at any given time is displayed to the right.

Current Time in DOS Ticks

The program keeps track of time internally with a counter that counts DOS timer ticks since the program was started. This line displays the current value of this counter in hexadecimal. DOS ticks occur at a rate of 18.2065 Hz and the counter will run for 7.475 years before rolling over. It is not anticipated that the program will run uninterrupted for this long, so no attempt has been made to ensure it will operate properly afterwards.

Next Event Time in DOS Ticks

This line shows the timer value, in hexadecimal, of the next timer event that will fire.

Heap Status

This line shows the status of the Memory Heap and should always be “OK”. If a number is displayed, then the heap has been corrupted. This should never be seen, however, since the program will generate an assertion failure and re-boot in that case.

Free RAM

This line shows the current amount of free RAM (memory). During certain processes, the program uses some of this available memory, but should always release it when finished. If the amount of free memory displayed dwindles over time, the program may have a memory leak problem.

Missed DOS Ticks

Occasionally, the program is too busy to service the Low Speed Interrupt. This line shows the decimal value of how many times this has happened since the program started.

Multi-Bus Faults

Any time that a Multi-bus card (500C, 500D/DR, 500P, 500R) fails to respond, this decimal display is incremented.

Dual-Port (500R Interface) Faults

Any time the Dual-Port RAM interface with the 500R card fails to respond, this decimal display is incremented.

Open Files

This line shows the number of open files at the current time. During certain processes, the program must open files on the hard-drive, but should close them when finished. If this display does not return to zero over time, the program may have file handling problem.

Status	Meaning	Owner
F	Free	CPU
R	Received, but not processed	CPU
A	Allocated, but not sent	CPU
S	Sent, but not acknowledged	500R
-	Owned by Other Side	500R
?	Undefined	Unknown

Table 3 - 500R Buffer Status Codes

Dual-Port (500R Interface) Buffer Status
The Dual-Port RAM interface with the 500R contains seven buffers for data transfer.

Ownership of these buffers is passed back and forth between the 500CPU and the 500R. A status code character is displayed for each of these buffers, and the meaning of the character displayed is provided in Table 3. The 500R sends a status update message approximately twice a second, so when there is no other 500R activity, the CPU will be continually gaining ownership of more and more buffers. When the CPU owns all the buffers, it grants five buffers back to the 500R so the 500R can continue to send messages. This process results in a display that should appear as a marching line of F's, changing from "----FF" to "FFFFRFF".

Average Polls Per Second

This line shows the average number of times each Mic Station was polled over the past 5 second period.

TCPIP Packets Received

The total number of TCPIP packets received, in decimal, via the Ethernet interface since the program started.

NIM (Network Interface Module) Free Buffers

The program has a fixed number of buffers allocated for sending or receiving TCPIP messages via the Ethernet interface. The number on the left is the current number of free buffers, and the number on the right is the minimum number of free buffers that have existed at any time since the program started.

Date and Time Started

The date and time was started according to the BIOS clock in YYYY/MM/DD hh:mm:ss format.

Current Date and Time

The current date and time according to the BIOS clock in YYYY/MM/DD hh:mm:ss format.

DOS Time

The time according to the DOS clock. This time is only used for the time on file stamps and for the time entries in the ASSERT.DAT and STATDUMP.DAT files.

```
\DA\LANG000\24\TAKE9992.DAX
007D/007D
FF 001D/001D
```

```
DigAud Successful Transfer: 1256
```

PDRP Activity

The PDRP (or Digital Audio) interface can load or save takes from or to the hard-drive, one take at a time. The status of this interface is shown on middle left side of diagnostic screen page 1. The items shown are as follows:

Last Take File Pathname

The top line is the DOS pathname of the current or last file to be loaded or saved via the Digital Audio Interface.

Total Blocks Loaded or Saved

The second line shows, in hexadecimal, the current number of blocks transferred and the total number of blocks in the audio take. Each block is 256 samples of digital audio data, or 16 msec. When saving a take, the total number of blocks remains zero.

Buffer Blocks Loaded or Saved

On the third line, directly below the Total Blocks display, the current number of blocks transferred and the total number of blocks in the digital audio transfer buffer is shown, in hexadecimal. When saving a take, the total number of blocks remains zero.

Current Owner of Digital Audio Interface

The 1 based hexadecimal bus number of the current owner of the Digital Audio Interface is shown on the left side of line 3. When there is no owner, "FF" is appears.

Take-List File Pathname

The fourth line is used to display the DOS pathname of the current file being scanned when the PDRP Editor is getting a list of all takes on the system. This line only appears during the scan.

Number of Digital Audio Takes Successfully Transferred

This is the total number of takes loaded or saved via the Digital Audio Interface since the program started.

Event Traffic

Events are used internally in the program to transfer messages from one process to another. The last 16 events are displayed on the lower left side of diagnostic screen page 1. Each line in the display is a separate event. New events are displayed on the line below the last event until the bottom line is reached. The display then wraps from the bottom line to the top again. The last event to be displayed is indicated with the ">" symbol to the left of the line. All numeric data displayed is in hexadecimal. The columns of the display, as they appear left to right, are as follows:

```

M E800 FFF0 0000 E5E875.
M E800 FFF0 0000 E5E875.
M E800 FFF0 0000 E5E876.
M E800 FFF0 0000 E5E876.
>M E800 FFF0 0000 E5E877.
L 03EF FFFF 0000 E5E84E.
M 03EE 0045 0000 E5E869.
M 03E8 0098 0005 E5E869.
M 03EE 0098 0000 E5E869.
M 03EE 0064 0000 E5E86A.
M 03EE 004B 0000 E5E86A.
M 03EE 0065 0000 E5E86A.
M 03EE 0066 0000 E5E86B.
M 03E8 0095 0005 E5E870.
M E800 FFF0 0000 E5E874.
M 03EE 0042 0000 E5E874.
  
```

Priority

The priority of the event, indicated by "C" for Critical, "H" for High, "M" for Medium, and "L" for Low.

Destination Object ID

The object ID of the destination of the event message. Table 4 shows the Object ID's for objects in the ACS that can receive event messages.

Message

The message code. The exact interpretation of the message code may depend on the object receiving the message, and on the circumstances under which the message is received. The general meaning of the message code is listed in Table 5.

Parameter Data

Some event messages contain additional data. The relevance and meaning of the data in this field depends on the circumstances under which the message was sent.

Time of Delivery

The time, in High Speed Ticks, that the event message was delivered. High Speed Ticks occur at a 145.6521 Hz rate, or 8 times the rate of the DOS timer ticks displayed in the System Statistics section of diagnostic screen page 1 (see the description of "Current Time in DOS Ticks" on page 6). Only the lower 6 hex digits of the time are displayed, which is sufficient for distinguishing between events that occur within a 32 hour window.

ID (Dec)	ID (Hex)	Object(s)
0	0000	Error Logger
1000	03E8	Announcement Manager
1001 – 1030	03E9 - 0406	Announcements 1 – 30
1031	0407	Puppet Announcement
4000	0FA0	Zone Manager
4001 – 5024	0FA1 – 13A0	Zones 1 – 1024
6000 – 6256	1770 – 1870	Mic Stations 1 – 257
8001 – 8030	1F40 – 1F5E	Permanent Messages 1 - 30
8031 – 8038	1F5F – 1F66	Assembled Messages 1 - 8
10000	2710	Audio System Controller
53248	D000	508R40 Mic Station Manager
57344	E000	590 Command Code Interface
57376	E020	PDRP Take Length Processor
57392	E030	PDRP Waveform Data Processor
59392	E800	Network Interface
59648	E900	IEDnet Message Processor
61440	F000	IEDnet Node Monitor

Table 4 - Object ID Values

500R Messages Sent

This display shows the messages sent to the 500R by the CPU. The last 16 messages are displayed on the lower center of diagnostic screen page 1. Each line in the display is a separate message. New messages are displayed on the line below the last message until the bottom line is reached. The display then wraps from the bottom line to the top again. The last message to be displayed is indicated with the ">" symbol to the left of the line

```

01 01-7D 0D E5E55D.
07 0C-7D 00 E5E7E0.
01 03-7D 0D E5E848.
01 32-7D 00 E5E84E.
>07 04-7D 0D E5E870.
04 03-08 17 E5CDDE.
04 1A-FF EF E5CDE8.
04 2B-08 17 E5CDF2.
05 01-08 00 E5D126.
05 03-08 17 E5D6DF.
05 1A-FF EF E5D6E8.
05 2B-08 00 E5D6F3.
06 2B-08 17 E5D87F.
06 07-08 00 E5D893.
07 2B-05 17 E5E28D.
07 0B-85 0D E5E2BB.
  
```

All numeric data displayed is in hexadecimal. The columns of the display, as they appear left to right, are as follows:

Channel Number

The DRP Channel Number to which the message is being sent.

Message Code

The Message Code byte indicating which operation is to be preformed. The meaning of these codes is shown in Table 6 on page 10.

Msg (Hex)	Description	Msg (Hex)	Description	Msg (Hex)	Description
0000	Kill Process	0034	Bus Events (contd.)	0080	Announcement Events
	Timer Events	0035	Input Gain Changed	0090	Restart Announcement
0001	Timer 1 – Threshold 1	0036	Output gain Changed	0091	Done
0002	Timer 1 – Threshold 2		Bus Fault	0095	Fault
0003	Timer 1 – Threshold 3			0096	Announce Active
0004	Timer 1 – Threshold 4	0040	DRP Events	0097	Announce Complete
0005	Timer 2 – Threshold 1	0041	Record Active	0098	Announce Idle
0006	Timer 2 – Threshold 2	0042	Record End	0099	Announce Ready
0007	Timer 2 – Threshold 3	0043	Play Active	009A	Announce Died
0008	Timer 2 – Threshold 4	0044	Play End	009B	Announce Warning
0009	Timer 3 – Threshold 1	0045	Load Active	009C	Announce Loading
000A	Timer 3 – Threshold 2	0046	Load End	009D	Announce Saving
000B	Timer 3 – Threshold 3	0047	Save Active		Announce Holding
000C	Timer 3 – Threshold 4	0048	Save End		Zone Control
000D	Timer 3 – Threshold 4	0048	DRP Fault	00A0	Zone State is Idle
000E	Timer 4 – Threshold 1	0049	Overrun	00A1	Zone State is Owned
000F	Timer 4 – Threshold 2	004A	Audio Present	00A2	Zone State is Connected
0010	Timer 4 – Threshold 3	004B	Channel Ready	00A3	Zone State is Connected
0011	Timer 4 – Threshold 4	004C	Take Size Adjusted	00A4	Zone State is Active
	No Audio Timeout			00A5	Zone State is Active
	Mic Station Messages		Zone Map Management	00A6	Allocate Zone
0020	MS New Request	0061	Partial Preempt	00A7	Connect Zone
0021	MS Ready	0062	Total Preempt	00A8	Activate Zone
0022	MS Dispatch	0063	Free Zones	00A9	Free Zone
0023	Assembled Msg Request	0064	Zones Allocated	00AA	Disconnect Zone
0024	MS Preempted	0065	Zones Connected	00AB	Deactivate Zone
0025	MS Version Request	0066	Zones Activated	00AC	Preempt Zone
0026	Assembled Msg Accepted	0067	Zones Processing	00AD	Zone Processing
0027	Assembled Msg Rejected	0069	Zones Free	00AF	Zone Done
	Bus Events	006F	Zones Busy		Miscellaneous Events
0030	Bus Found	0074	Add Zones	FFF0	Process IEDnet Message
0031	Bus Lost	0075	Delete Zones	FFF1	Process IEDnet Response
0032	Bypass Active			FFFF	Operation Failed
0033	Bypass End	0070	PDRP Messages		
		0071	Save Take		
			Load Take		

Table 5 - Event Message Codes

Parameter Bytes 1 - 2

The first two bytes of the parameter data, if the message has any. If the message has fewer than two valid bytes of parameter data, both values are still shown, but the second or both are meaningless.

Time of Delivery

The time, in High Speed Ticks, that the message was sent. See the “Time of Delivery” description on page 8.

Messages to Channels 1 Through 8				Messages Received		
Code (Hex)	Message Description	Parm Bytes	Parameter Description	Res. Type	Parm Bytes	Parameter Description
00	Report Channel Status	0		01	2	Status
01	Start Record	0		01	2	Status
02	Continue Record	0		01	2	Status
03	Stop Record	0		01	2	Status
04	Start Play	0		01	2	Status
05	Continue Play	0		01	2	Status
06	Stop Play	0		01	2	Status
07	Bypass On	0		01	2	Status
08	Bypass Off	0		01	2	Status
0B	Start Load	2	Block Count	03	4	Status, Blocks
0C	Continue Load	2	Block Count	03	4	Status, Blocks
0D	Abort Load	0		01	2	Status
0E	Start Save	0		03	4	Status, Blocks
10	Abort Save	0		01	2	Status
17	Get Record Position	1	Mode	04	2	Position
18	Get Play Position	1	Mode	04	2	Position
19	Adjust Recording Begin	2	Adjustment	07	2	Blocks
1A	Adjust Recording End	2	Adjustment	07	2	Blocks
28	Report Input Gain	0		05	1	Gain
29	Set Input Gain	1	Gain	05	1	Gain
2A	Report Output Gain	0		06	1	Gain
2B	Set Output Gain	1	Gain	06	1	Gain
32	Reset Channel	0		01	2	Status

Table 6 - 500R Message Codes

500R Messages Received

This display shows the messages received by the CPU from the 500R. The last 16 messages are displayed on the lower right of diagnostic screen page 1. Each line in the display is a separate message. New messages are displayed on the line below the last message until the bottom line is reached. The display then wraps from the bottom line to the top again. The last message to be displayed is indicated with the ">" symbol to the left of the line. All numeric data displayed is in hexadecimal. The columns of the display, as they appear left to right, are as follows:

Transaction ID

The Transaction ID identifies the type of message received. Values of 01₁₆ through 08₁₆ indicate a status update from the 500R for channels 1 through 8, respectively. Values of 0B₁₆ through 12₁₆ indicate a response to a command has been received from the 500R for channels 1 through 8, respectively. Transaction ID 13₁₆ is also used for the heartbeat status update received twice a second from the 500R, but is not shown to allow better viewing of the other messages.

Result Type

When the Transaction ID is in the range of 0B₁₆ through 12₁₆, the result type code for the expected command response is displayed. The meaning of these codes is shown in Table 6.

Parameter Bytes 1 - 4

The first four bytes of the parameter data, if the message has any. If the message has fewer than four valid bytes of parameter data, all values are still shown, but some or all are meaningless.

>07	-20	02	00	00-60	F9	E5E874
0E	06-07	2B	08	EC-60	98	E5CDFC
05	-20	01	08	EC-60	A3	E5D129
05	-20	00	08	EC-60	B6	E5D6E2
0F	07-02	60	FF	EC-60	B7	E5D6ED
0F	06-07	2B	08	EC-60	B8	E5D6FA
10	06-07	2B	08	00-60	BE	E5D88B
06	-20	40	08	00-60	BF	E5D896
11	06-04	2B	05	EC-65	DF	E5E298
07	-20	04	00	00-60	E0	E5E302
01	-20	01	7D	00-60	EA	E5E561
07	-20	00	00	00-61	F2	E5E7D7
07	-20	04	7D	00-60	F3	E5E7ED
01	-20	00	7D	00-60	F6	E5E851
01	-20	00	7D	00-61	F7	E5E85D
07	-20	00	00	00-64	F8	E5E85F

Dual-Port RAM Buffer Code

The first digit of this hex number is always '6', the second is the number, from 0 to 6, of the Dual-Port RAM Buffer used to send the message from the 500R to the CPU.

Fly Count

This is a running count, in hexadecimal, of the buffers used to send messages from the 500R.

Time of Delivery

The time, in High Speed Ticks, that the message was received. See the "Time of Delivery" description on page 8.

```
0FA0 03EA 03EB 03EC 03ED 03EE -- -- --
```

Timer Usage

The area at the bottom of diagnostic screen page 1 shows the owning object ID (in hexadecimal) of any timers that are currently in use. If a timer has been used and is currently free, "--" will appear in the display. Object ID values are shown in Table 4 on page 8.

Page 2 - Announcements, Microphone Stations, Zones

Announcement Activity

The upper left corner of diagnostic screen page 2 shows all announcement activity. Announcements are entities that coordinate the operation of various resources (such as Mic Stations, Buses, and Zones) for the purpose of making an audio page or performing some control function. There are 30 announcement "slots" available plus a 31st, which is reserved for the "puppet" announcement used for Audible Tests, and the PDRP Editor. Each slot is shown on a separate line of the display. The columns, from left to right, are as follows

##	State	MS	PR	B	Z	PM	RC	Tmrs	Time
1	REC009	62	40	8					001B27EE
2	REC006	65	40	3	R		*		001C7A69
3	REC006	65	40	4	R		*		001C7F2F
4	REC006	65	40	5	R		*		001C804F
5	DIR004	74	80	6	A		*		001C8081
6	PPM005		40	7	A	13	*		001C8275
7	-Free-	54	40						001C8271
8	-Free-		40			13			001C2E9D
9	-Free-		40			25			001C2B97
10									
11									
12									

Announcement Index (##)

The announcement slot number from 1 to 30. The Object ID for any given announcement can be found by adding the index to the Object ID of the Announcement Manager, which is 1000₁₀ or 03E8₁₆, as shown in Table 4 on page 8.

Announcement State (State)

Announcements operate according to a state machine that moves through a sequence of states as the announcement progresses. It moves from state to state when certain events occur and may perform certain actions when entering or exiting each state. There is a different state machine for each announcement type. The first 3 letters of the field are a mnemonic that indicates the announcement type, followed by the current state number, in decimal. The meaning of these mnemonics and the state numbers are defined in Table 7 on page 12. The states are shown in the table in the order they are normally encountered, which is not necessarily in numerical order.

Mic Station or Source (MS)

This column shows, in decimal, the Mic Station that is currently directing the announcement, if there is one. If there is not, then the Mic station that started the announcement is shown, if there was one. If not, the number of the remote machine that initiated the announcement, if there was one, is shown with a "R" at the beginning of the field. Finally, if none of the above sources are responsible for the announcement (such as is the case when a permanent message plays according to a schedule), the field is left blank.

Priority (PR)

This column shows the running priority, in hexadecimal, of the announcement. Higher numbers correspond to a higher (more urgent) priority.

Type/State	Description	Type/State	Description	Type/State	Description
DIR	Direct Announce	PPM	Play Perm Message	MAC	Multi-ACS Slave Ann
001	Getting Bus	001	Getting Bus	001	Getting Bus
006	Setting Input Gain	008	Setting Output Gain	002	Setting Input Gain
007	Setting Output Gain	002	Loading Takes	003	Setting Output Gain
002	Holding for Zones	013	Waiting For Ann. Ready	004	Getting Zones
003	Wait for MS Ready	003	Holding for Zones		Direct Option
008	Connecting Zones	004	Holding for DRP Ready	006	Connecting Zones
004	Announce Active	010	Connecting Zones	007	Master Activate Wait
005	Freeing Zones	011	Activating Zones	008	Activating Zones
009	Freeing Bus	005	Play Active	009	Master Deactivate Wait
		012	Freeing Zones	010	De-activating Zones
REC	Recorded Announce	006	Pause Between Plays	011	Master Disconnect Wait
001	Getting Bus	014	Testing Lockout Priority	012	Freeing Zones
011	Setting Input Gain	007	Wait For Play End & Die		Record Option
002	Wait for MS Ready	009	Stop Play & Retry	005	Master Activate Wait
003	Starting DRP Record			015	Starting DRP Record
004	Recording Just Active	RPM	Record Perm Message	016	Master Deactivate Wait
005	Recording Active	001	Getting Bus	024	Stopping DRP Record
016	Stopping DRP Record	009	Setting Input Gain	017	Holding for Zones
010	Adjusting Recording End	002	Wait for MS Ready	018	Holding for DRP Ready
012	Setting Output Gain	003	Starting DRP Record	019	Connecting Zones
006	Holding for Zones	004	Recording Just Active	020	Activating Zones
007	Holding for DRP Ready	005	Recording Active	021	Play Active
013	Connecting Zones	007	Stopping DRP Record	022	Freeing Zones
014	Activating Zones	008	Adjusting Recording End	023	Freeing Bus
008	Play Active	006	Saving Take	013	Not Used
009	Freeing Zones			014	Not Used
015	Freeing Bus				
		PMA	Perm Msg. Active Alert	KPA	Kill PM Active Alert
AMA	Assembled Msg. Alert	001	Start Perm. Msg. Active	001	Stop Perm. Msg. Active
001	Processing Msg. Data				
002	Assembled Msg. Accept	PMB	Perm Msg. Busy Alert	KPB	Kill PM Busy Alert
003	Assembled Msg. Reject	001	Start Perm. Msg. Busy	001	Stop Perm. Msg. Busy

Table 7 - Announcement Types and States

Bus (B)

This column shows the bus the announcement is currently using. If no bus is being used, the field is blank.

Zone Usage (Z)

This column shows the current state of the zone map associated with the announcement. The possible character displays and their meaning are: “ ” Zones Free, “R” Zones Requested, “C” Zones Connected, “A” Zones Active (background music ducked), and “o” Zones Owned but not released. Similar information appears in the “Bus Activity” section of diagnostic screen page 1 under “Zone Usage” on page 5.

Permanent Message Number (PM)

This column shows, in decimal, the Permanent Message Number associated with the announcement, if there is one.

Repeat Count (RC)

This column shows, in hexadecimal, the repeat count for permanent messages. Note: This number does not appear until the announcement has played the message once.

Timers in Use (Tmrs)

Each announcement may use up to four timers. This column indicates by the number of “*” present how many timers each announcement is currently using. This same information appears in the “Bus Activity” section of diagnostic screen page 1 under “Timers in Use” on page 5.

Time in DOS Ticks (Time)

This was the time in DOS ticks when the announcement last changed state. The time is displayed in the same format as described in “Current Time n DOS Ticks” on page 6.

Microphone Station Activity

The upper right corner of diagnostic screen page 2 shows the Mic Station activity of all Mic Stations. The display is organized with two fields for each Mic Station with one field shown above the other. There are 8 Mic Stations shown on each pair of rows, corresponding to one 500C Card. Additional pairs of rows are provided for additional 500C cards.

MS	1	2	3	4	5	6	7	8
0	01	01	01		01	01	01	01
	a-	a-	a-	a-	a-	a-	a-	a-
8	01	01	01	01		01	01	01
	a-	a-	a-	a-	a-	a-	a-	a-
16	01					01	01	01
	a-	a-	a-	a-	a-	a-	a-	a-
24				01	01	01	01	01
	a-	a-	a-	a-	a-	a-	a-	a-
32								01
	a-	a-	a-	a-	a-	a-	a-	a-
40	01	01	01					
	a-	a-	a-	a-	a-	a-	a-	a-
48				01	01	29	01	
	a-	a-	a-	a-	a-	a-	a-	a-
56		01	01	01	01	01	01	01
	a-	a-	a-	a-	a-	a-	a-	a-
64	01	01	MA	MA	MA	MA	MA	MA
	a-	a-	A0	A0	A0	A0	A0	A0
72		40						
	a-	a2	a-	a-	a-	a-	a-	a-

Row and Column Headings

The column heading shows the Mic Station’s number on its associated 500C card. The row heading for a particular station can be added to the column heading to obtain the station’s number in the system.

Polling State

The top field for a particular Mic Station is the current polling state of the station, in hexadecimal. If the state is a normal condition, the field will be displayed with white on green characters. If the state is a faulted condition, the field will be yellow on red. If the state indicates the station has never been polled, the field will be white on black. The polling state codes and their meaning is defined in Table 8. Multi-ACS Inputs display “MA” in this field.

State (Hex)	Description	State (Hex)	Description	State (Hex)	Description
	All Mic Stations		508 Rev 4.x & 5.x (Contd.)		508 Rev 2.5x
00	Normal	25	Soft Resync	20	Announce Request
01	Idle/Poll	26	Setup: Busy	21	Announce Request X
7F	Doesn't Exist	27	Setup: Get conf size	22	Setup
80	Never Responded	28	Setup: Fail	23	Setup 1
81	Board Fault	2A	Setup: Active	24	Setup X
82	Software Fault	2B	Setup: Set conf stamp	25	Combined
83	Hard Fault	2C	Setup: Check conf status	26	Combined 1
84	Wrong type	2D	Check Configuration	27	Assembled
	508 Rev 4.x & 5.x	2E	Set Default String	28	Assembled 1
20	Set options	40	Read Combined Zone Buffer	29	Pre-idle 1
21	Read request buffer	41	Announce Mode	2A	Pre-idle 2
22	Read config stamp	42	Announce Mode -1	2B	Pre-idle 3
23	Synchronize	90	Announce Mode -2		
24	Soft Reset		508 Rev 5.x		
		18	Read Prompt Vector		

Table 8 - Mic Station Polling States

Announcement Progress and Type

The bottom field for a particular Mic Station is made up of a two-character code indicating the Mic Station’s current status. The left character indicates the announcement progress, show in Table 9. The character to the right indicates the announcement type as defined in ANNCODE.INI. These codes are described in Table 10 on page 14. Multi-ACS Inputs display the last event message received from the remote system, as defined in Table 5 on page 9.

Progress Code	Meaning
a	Active
b	Busy
w	Warning
r	Ready

Table 9 - Progress Codes

Zone Activity

The Zone Activity of all zones is displayed just below the Mic Station activity display on the right side of diagnostic screen page 2. There are 8 zones shown on each row, corresponding to one 500D Card. Additional pairs of rows are provided for additional 500D cards.

Row and Column Headings

The column heading shows the Zone's number on its associated 500D card. The row heading for a particular station can be added to the column heading to obtain the Zone's number in the system.

Zone Type

When a Zone is not in use (i.e. not owned by an announcement), its type is displayed. The meaning of the different Zone Type Codes displayed is shown in Table 12.

Zone State

When a Zone is in use (i.e. owned by an announcement), its state is displayed on the left side of the Zone's field. The meaning of the different Zone State Codes displayed is shown in Table 11. When a zone is "Owned", it has been allocated to an announcement, but has not yet been connected to a bus. "Connected" indicates the zone has been connected to a bus and audio is being delivered to the zone. "Active" indicates, for a 500D zone, that the green LED on the 500D card has been turned on and background music has been ducked. For a 500DR card, it indicates the relay has been activated. "Preempted" indicates the zone is in the process of being preempted by another announcement. "Faulted" indicates the zone is in a fault state.

ZN	1	2	3	4	5	6	7	8
0	D	D	D	D	D	D	D	D
8	D	D	D	A 6	D	D	D	D
16	D	D	D	A 6	D	D	D	D
24	D	D	A 6	D	D	D	D	D
32	D	D	A 6	A 6	D	D	D	D
40	D	D	D	A 6	A 6	D	D	D
48	D	D	A 6	D	D	D	D	D
56	A 6	D	D	D	A 5	D	D	D
64	D	D	D	D	D	D	D	D
72	D	D	D	D	D	D	D	D
80	D	D	D	D	D	D	D	D
88	D	A 6	D	D	D	D	D	D
96	D	D	D	D	D	D	D	D
104				MA		MA		A 1

Ann Type Code	INI File Entry	Meaning	Mic Station Display
-	0	No Announce	
1	1	Terminal	ANNOUNCE
2	2	Local	LOCAL ANN
3	3	Emergency	EMERGENCY
4	4	Assembled	
5	5	Multi-Local	START MSG
6	6	Recorded Local	REC LOCAL
7	7	Test Tone	TEST TONE
8	8	Multi-Sys	ANNOUNCE
9	9	Combined Zone	ANNOUNCE
A	10	Recorded Term	REC TERM
B	11	Relay Zones	ANNOUNCE
C	12	Stop Message	STOP MSG
D	13	Start Message	START MSG
E	14	Monitor Message	MSG MON
F	15	Record Message	REC MSG
V	31	508 Setup	508 SETUP

Table 10 - Announce Type Codes

Owning Announcement

Also when a Zone is in use, its owning announcement is displayed on the right side of the Zone's field. This decimal number corresponds to the announcement number displayed on the left side of the Announcement Activity display (see "Announcement Index" on page 11).

Zone State Code	Meaning
O	Owned
C	Connected
A	Active
P	Preempting
F	Faulted

Table 11 - Zone States

Zone Type Code	Meaning
	Unused
D	500D
DR	500DR
MA	Multi-ACS
SN	Sign
XB	UDAPS Bus
XR	UDAPS Relay
8K	8000
64	564 Relay
??	Unknown

Table 12 - Zone Types

trace data, see the description of the 'Ctrl-H' key on page 3. Note: This key will stop **all** operations of the ACS, so it should only be used under the proper circumstances.

508 Request Buffer

The line below the Trace Display is used to show the most recent buffers read from 508 type Mic Stations. The Request Buffer for the Rev 4.x and 5.x Mic Stations is displayed starting in character position 20 on this line (under the 5th field from the right on the line above). All other Rev 4.x/5.x and Rev 2.5x buffers are displayed in the leftmost 20 characters of the line. The actual meaning of the data in these buffers depends on the circumstances under which it was read and is beyond the scope of this document.

IEDnet Pending Responses (Standard Build Option)

(This section to be added)

590 Traffic (Alternate Build Option)

(This section to be added)

Network Traffic

(This section to be added)

Page 4 - Error Counts

Diagnostic screen page 4 is used to display the number of various errors encountered by the system since it was started, or since the 'Ctrl-Z' key was hit (see page 3). Each line contains a description of the error and the error count in hexadecimal. Values that have not changed from their initial zero value are displayed with dim white text, those that have changed are displayed with bright white text. If the count goes past $FFFF_{16}$ ($65,535_{10}$), the display will restart at zero, but will be displayed with white text on a red background. Most of the error descriptions are self-explanatory, those that are not require a level of detail that is beyond the scope of this document.

Appendix 1 - Startup Screen Display

```
Sep 28 1999          *** ACSplus v4.32d - Std ML & 500SMS ***          page 1
500C cards:
  0123456789ABCDEF
0  ██████████ .....
1  .....
2  .....
3  .....
4  .....
5  .....
6  .....
7  .....

500D/DR cards:
  0123456789ABCDEF
0  ██████████ .....
1  .....
2  .....
3  .....
4  .....
5  .....
6  .....
7  .....

Starting in  3 seconds.

Hit 'Space Bar' for more time,
hit 'Enter' to start now.

1=Page 1, 2=Page 2, 3=Page 3, 4=Page 4          Activity Traces:
```

Appendix 2 - Page 1 Display

```

Sep 28 1999          *** ACSplus v4.33a - Std ML & 500SMS ***          page 1
BUS AP ANNID TMRS ZN | DRP -SM- 500R BLOX PTR-      Delivered Events: 2334632
 1 - ----- -- -   | 1 0000 2000 ----      Free Event Q: 499 475
 2 - ----- -- -   | 2 0000 0000 ----      Critical Event Q:
 3 - 1002 *- -       | 3 0000 0000 ----      High Priority Q: 0 4
 4 - 1003 *- -       | 4 0000 0000 ----      Medium Priority Q: 1 24
 5 - 1004 *- -       | 5 0000 0000 ----      Low Priority Q: 0 6
 6 * 1005 *- C       | 6 0002 0040 ----      Timer Heap: 6 11
 7 - 1006 *- C       | 7 0002 2002 ----      Curnt Time (ticks):001C8278
 8 - 1001 -- -       | 8 0000 0000 ----      Next Event (ticks):001C827C
                                     Heap Status: OK
                                     Free RAM: 41984
\DA\LANG000\24\TAKE9992.DAX      Missed DOS ticks: 15000
 007D/007D                        MBus Flts: 1
FF 001D/001D                       DP faults: 0
                                     Open files: 0
DigAud Successful Transfer: 1256   DP buff stat: F-----F
                                     Polls/sec: 21.4
                                     TCPIP Packets Rcvd: 1149421
                                     NIM Free Buffers: 8 6
                                     Started: 1999/08/29 06:17:32
                                     Current: 1999/08/30 11:01:57
                                     DOS Time: 11:01:39

M E800 FFF0 0000 E5E875. 01 01-7D 0D E5E55D. >07 -20 02 00 00-60 F9 E5E874
M E800 FFF0 0000 E5E875. 07 0C-7D 00 E5E7E0. 0E 06-07 2B 08 EC-60 98 E5CDFC
M E800 FFF0 0000 E5E876. 01 03-7D 0D E5E848. 05 -20 01 08 EC-60 A3 E5D129
M E800 FFF0 0000 E5E876. 01 32-7D 00 E5E84E. 05 -20 00 08 EC-60 B6 E5D6E2
>M E800 FFF0 0000 E5E877. >07 04-7D 0D E5E870. 0F 07-02 60 FF EC-60 B7 E5D6ED
L 03EF FFFF 0000 E5E84E. 04 03-08 17 E5CDDE. 0F 06-07 2B 08 EC-60 B8 E5D6FA
M 03EE 0045 0000 E5E869. 04 1A-FF EF E5CDE8. 10 06-07 2B 08 00-60 BE E5D88B
M 03E8 0098 0005 E5E869. 04 2B-08 17 E5CDF2. 06 -20 40 08 00-60 BF E5D896
M 03EE 0098 0000 E5E869. 05 01-08 00 E5D126. 11 06-04 2B 05 EC-65 DF E5E298
M 03EE 0064 0000 E5E86A. 05 03-08 17 E5D6DF. 07 -20 04 00 00-60 E0 E5E302
M 03EE 004B 0000 E5E86A. 05 1A-FF EF E5D6E8. 01 -20 01 7D 00-60 EA E5E561
M 03EE 0065 0000 E5E86A. 05 2B-08 00 E5D6F3. 07 -20 00 00 00-61 F2 E5E7D7
M 03EE 0066 0000 E5E86B. 06 2B-08 17 E5D87F. 07 -20 04 7D 00-60 F3 E5E7ED
M 03E8 0095 0005 E5E870. 06 07-08 00 E5D893. 01 -20 00 7D 00-60 F6 E5E851
M E800 FFF0 0000 E5E874. 07 2B-05 17 E5E28D. 01 -20 00 7D 00-61 F7 E5E85D
M 03EE 0042 0000 E5E874. 07 0B-85 0D E5E2BB. 07 -20 00 00 00-64 F8 E5E85F

OFA0 03EA 03EB 03EC 03ED 03EE -- -- --

1=Page 1, 2=Page 2, 3=Page 3, 4=Page 4      System 5      Activity Traces: 1234

```

Appendix 3 - Page 2 Display

Sep 28 1999		*** Announcements, Mic Stations, Zones ***										page 2						
##	State	MS	PR	B	Z	PM	RC	Tmrs	Time	MS	1	2	3	4	5	6	7	8
1	REC009	62	40	8					001B27EE	0	01	01	01		01	01	01	01
2	REC006	65	40	3	R			*	001C7A69		a-	a-	a-	a-	a-	a-	a-	a-
3	REC006	65	40	4	R			*	001C7F2F	8	01	01	01	01			01	01
4	REC006	65	40	5	R			*	001C804F		a-	a-	a-	a-	a-	a-	a-	a-
5	DIR004	74	80	6	A			*	001C8081	16	01						01	01
6	PPM005		40	7	A	13		*	001C8275		a-	a-	a-	a-	a-	a-	a-	a-
7	-Free-	54	40						001C8271	24					01	01	01	01
8	-Free-		40			13			001C2E9D		a-	a-	a-	a-	a-	a-	a-	a-
9	-Free-		40			25			001C2B97	32								01
10											a-	a-	a-	a-	a-	a-	a-	a-
11										40	01	01	01					
12											a-	a-	a-	a-	a-	a-	a-	a-
13										48					01	01	29	01
14											a-	a-	a-	a-	a-	a-	a-	a-
15										56		01	01	01	01	01	01	01
16											a-	a-	a-	a-	a-	a-	a-	a-
17										64	01	01	MA	MA	MA	MA	MA	MA
18											a-	a-	A0	A0	A0	A0	A0	A0
19										72		40						
20											a-	a2	a-	a-	a-	a-	a-	a-
21																		
22																		
23										ZN	1	2	3	4	5	6	7	8
24										0	D	D	D	D	D	D	D	D
25										8	D	D	D	D	D	D	D	D
26										16	D	D	D	A	6	D	D	D
27										24	D	D	A	6	D	D	D	D
28										32	D	D	A	6	A	6	D	D
29										40	D	D	D	A	6	A	6	D
30										48	D	D	A	6	D	D	D	D
										56	A	6	D	D	D	A	5	D
										64	D	D	D	D	D	D	D	D
										72	D	D	D	D	D	D	D	D
										80	D	D	D	D	D	D	D	D
										88	D	A	6	D	D	D	D	D
										96	D	D	D	D	D	D	D	D
										104					MA		MA	A

1=Page 1, 2=Page 2, 3=Page 3, 4=Page 4 System 5 Activity Traces: 1234

Appendix 4 - Page 3 Display

```

Sep 28 1999          *** Communications Information ***          page 3
  4 ms508r40  Announce Mode
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180
8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180
8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8180 8100 8100
1600 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000
8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000
8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8000 8083 1500 A280 E280 8200
8200 1600 8000 8000 8000 8000 8000 8000 8083 1500 E280 E280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280 8280
      0A 0A 00
  I Mach MsgN TFD      I Mach MsgN TFD      I Mach MsgN TFD
  1                      9                      17
  2                      10                     18
  3                      11                     19
  4                      12                     20
  5                      13                     21
  6                      14                     22
  7                      15                     23
  8                      16                     24

      Network Messages to/from this IP Addr: 150.120.015.001
Sent:
Mach  OID  MID  MNum  Len  0  1  2  3  4
0008 09FF 0000 6CB3 000A 02 00 00 00 00
0008 09FF 8004 0BA9 000A 00 00 00 00 00
0008 09FF 0004 6CB4 0013 00 00 00 00 00
0008 09FF 8005 0BAA 000A 00 00 00 00 00
0008 09FF 0005 6CB5 0011 00 00 20 20 20
0008 09FF 8006 0BAB 000A 00 00 20 20 20
0008 09FF 0006 6CB6 0011 FF FF FF FF FF
0008 09FF 800A 0BAC 000A 00 FF FF FF FF
0008 09FF 000A 6CB7 0059 00 00 00 00 00
0008 09FF 800C 0BAD 000A 00 00 00 00 00
>0008 09FF 000C 6CB8 0079 00 00 00 00 00
0009 09FF 8006 B0B2 000A 00 00 20 20 20
0009 09FF 0006 6CB1 0011 35 FF FF FF FF
0009 09FF 800A B0B3 000A 00 FF FF FF FF
0009 09FF 000A 6CB2 0059 00 00 00 00 00
0008 09FF 8000 0BA8 000A 00 00 00 00 00
Received:
OID  MID  MNum  Len  0  1  2  3  4TYP
>09FF 0000 B0B4 0009 00 00 00 0E 00 5
09FF 0005 0BA5 0009 00 00 00 00 00 5
09FF 0006 0BA6 0009 00 00 00 00 00 5
09FF 000A 0BA7 0009 00 00 00 00 00 5
09FF 0000 B0AE 0009 00 00 00 00 00 5
09FF 0000 B0AF 0009 00 00 00 00 00 5
09FF 0004 B0B0 0009 00 00 00 00 00 5
09FF 0005 B0B1 0009 00 00 00 00 00 5
09FF 0006 B0B2 0009 00 00 00 00 00 5
09FF 000A B0B3 0009 00 00 00 00 00 5
09FF 0000 0BA8 0009 00 00 00 00 00 5
09FF 0004 0BA9 0009 00 00 00 00 00 5
09FF 0005 0BAA 0009 00 00 00 00 00 5
09FF 0006 0BAB 0009 00 00 00 00 00 5
09FF 000A 0BAC 0009 00 00 00 00 00 5
09FF 000C 0BAD 0009 00 00 00 00 00 5

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Appendix 5 - Page 4 Display

Sep 28 1999		*** Error counts ***		page 4	
-----Error Type-----	CNT	-----Error Type-----	CNT	-----Error Type-----	CNT
Unknown error	0000	DP Message Rejected	0000		
No free announcement	0000	DP INBOX: Processing Fault	0000		
No free zone buffers	0000	DP INBOX: Invalid Command	0001		
No Zones in Announcement	0001	ANN: Bad Activation Flags	0000		
No free RAM	0000	ANN: Unexpected event	0000		
MSB: Bad Multizone Grp #	0000	MS: Alloc/Con/Discon/Free seq	0000		
500: Button bobble	0000	MS: Invalid operation	0000		
508: Ann Req Bobble	0001	MS: Unexpected value	0000		
Last station bobbled	0005	MS: Bad Bus ID	0000		
508: Misc. error	0000	MS: Unexpected event	0000		
508+: Unexpected state	0000	Kill cascade averted	0000		
508+: Bad REQ buff len	0000	PM: Bad Take # used	0000		
508+: Config Corrupted	0000	500C: Bad Serial com	0000		
EVT: dispatch time	0000	500C: Serial com dropout	0032		
EVT: delivery error	0DC3	Zone: Ownership clash	0003		
EVT: Event Queing Error	0000	Zone: Unknown type	0000		
RemMach: Unreckonized IP Addr	0000	ZoneMgr: Can't queue req	0000		
RemMach: Miscellaneous Errors . .	0D96	WorkZnMgr: Unexp EVT	0000		
RemMach: Last Misc. Error	0105	ZoneMultiACS: Unexp EVT	0037		
RemMach: Out of RAM	0000	ZoneMultiACS: Remote Timeout	0009		
NodeMonitor: Unexpected event	0000	ZoneSign: Remote Timeout	0000		
Timeheap management error	0000	IEDnet: Unexp EVT	0000		
No free Timer Events	0000	IEDnet: Response Table Full . . .	0000		
File I/O error	0000	IEDnet: Message Retry	003E		
File I/O warn	0000	IEDnet: Ann Request Rejected . . .	0000		
Announce Killed	0000	IEDnet: Req Rejection Reason	0000		
Bus alloc: DRP busy	0000	L590: Bad CC found	0000		
Bus alloc: Full Queue	0000	L590: Bad CC Data	0000		
Bus alloc: Max Queue Depth	0001	L590: Last Bad CC	0000		
DAX: Idle mode transfer	0000	L590: Bad Obj.Meth ID	0000		
DAX: Unexp EOB	0000	L590: CC Buff out of Sync	0003		
DAX: Busy Timeout	0000	Puppet: Unexpected state	0000		
DAX: EOB ACK mismatch	0000	Puppet: Unexpected event	0000		
DAX: Bad Blocksize	0000	RFM: Write error	0000		
DAX: Request Q full	0000	Lock rejected	0000		
DAX: Bad Req in Q	0000				
DAX: Take file too large	0000				
DAX: No Block Strt from 500R . . .	0000				
DAX: Goose xfer	0000				
DRP: No response	0000				
DRP: Not ready	0000				
DRP: Txn # unused	0000				
DRP: Request Dumped	0000				
ASD: DRP Response Timeout	0002				
ASD: PDRP Save Timeout	0000				
DP communications error	0000				
DP retry	0000				

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