

TECHNICAL MANUAL
SENTRY™ REMOTE SYSTEM - 994 9267 001
SENTRY™ EXTENDED SYSTEM - 994 9267 002
SENTRY™ SOFTWARE PACKAGE - 994 9267 003

888-2334-003

TECHNICAL MANUAL

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Returns And Exchanges

Damaged or undamaged equipment should not be returned unless written approval and a Return Authorization is received from HARRIS CORPORATION, Broadcast Division. Special shipping instructions and coding will be provided to assure proper handling. Complete details regarding circumstances and reasons for return are to be included in the request for return. Custom equipment or special order equipment is not returnable. In those instances where return or exchange of equipment is at the request of the customer, or convenience of the customer, a restocking fee will be charged. All returns will be sent freight prepaid and properly insured by the customer. When communicating with HARRIS CORPORATION, Broadcast Division, specify the HARRIS Order Number or Invoice Number.

Unpacking

Carefully unpack the equipment and preform a visual inspection to determine that no apparent damage was incurred during shipment. Retain the shipping materials until it has been determined that all received equipment is not damaged. Locate and retain all PACKING CHECK LISTS. Use the PACKING CHECK LIST to help locate and identify any components or assemblies which are removed for shipping and must be reinstalled. Also remove any shipping supports, straps, and packing materials prior to initial turn on.

Technical Assistance

HARRIS Technical and Troubleshooting assistance is available from HARRIS Field Service during normal business hours (8:00 AM - 5:00 PM Central Time). Emergency service is available 24 hours a day. Telephone 217/222-8200 to contact the Field Service Department or address correspondence to Field Service Department, HARRIS CORPORATION, Broadcast Division, P.O. Box 4290, Quincy, Illinois 62305-4290, USA. The HARRIS factory may also be contacted through a FAX facility (217/222-7041) or a TELEX service (650/372-2976).

Replaceable Parts Service

Replacement parts are available 24 hours a day, seven days a week from the HARRIS Service Parts Department. Telephone 217/222-8200 to contact the service parts department or address correspondence to Service Parts Department, HARRIS CORPORATION, Broadcast Division, P.O. Box 4290, Quincy, Illinois 62305-4290, USA. The HARRIS factory may also be contacted through a FAX facility (217/222-7041) or a TELEX service (650/372-2976).

NOTE

The # symbol used in the parts list means used with (e.g. #C001 = used with C001).

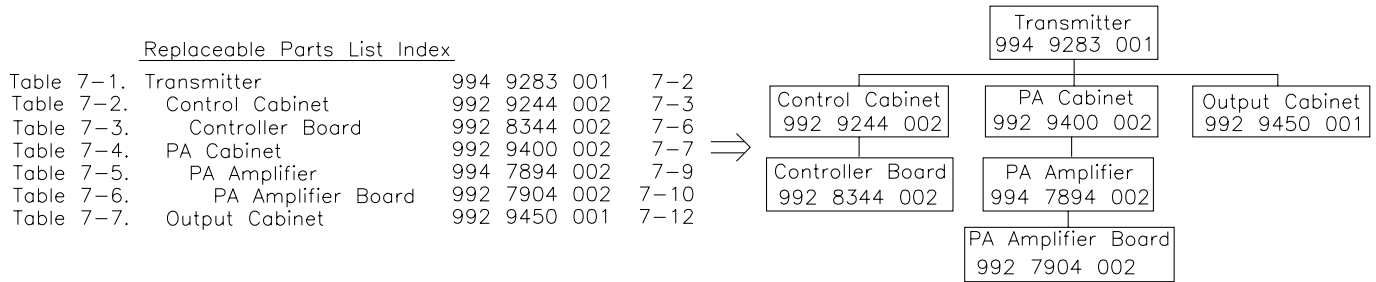
MANUAL REVISION HISTORY PAGE
SENTRY
988-2334-001

REV.	DATE	ECN	Pages Affected
003	02-27-97	TBD	Revised entire manual
003-B	05-08-98	42163	Replaced Title Page, MRH-1/MRH-2, iv, and all of Sections I, II, & III

Guide to Using Harris Parts List Information

The Harris Replaceable Parts List Index portrays a tree structure with the major items being leftmost in the index. The example below shows the Transmitter as the highest item in the tree structure. If you were to look at the bill of materials table for the Transmitter you would find the Control Cabinet, the PA Cabinet, and the Output Cabinet. In the Replaceable Parts List Index the Control Cabinet, PA Cabinet, and Output Cabinet show up one indentation level below the Transmitter and implies that they are used in the Transmitter. The Controller Board is indented one level below the Control Cabinet so it will show up in the bill of material for the Control Cabinet. The tree structure of this same index is shown to the right of the table and shows indentation level versus tree structure level.

Example of Replaceable Parts List Index and equivalent tree structure:



The part number of the item is shown to the right of the description as is the page in the manual where the bill for that part number starts.

Inside the actual tables, four main headings are used:

Table #-. ITEM NAME - HARRIS PART NUMBER - this line gives the information that corresponds to the Replaceable Parts List Index entry;

HARRIS P/N column gives the ten digit Harris part number (usually in ascending order);

DESCRIPTION column gives a 25 character or less description of the part number;

REF. SYMBOLS/EXPLANATIONS column 1) gives the reference designators for the item (i.e., C001, R102, etc.) that corresponds to the number found in the schematics (C001 in a bill of material is equivalent to C1 on the schematic) or 2) gives added information or further explanation (i.e., “Used for 208V operation only,” or “Used for HT 10LS only,” etc.).

Inside the individual tables some standard conventions are used:

A # symbol in front of a component such as #C001 under the REF. SYMBOLS/EXPLANATIONS column means that this item is used on or with C001 and is not the actual part number for C001.

In the ten digit part numbers, if the last three numbers are 000, the item is a part that Harris has purchased and has not manufactured or modified. If the last three numbers are other than 000, the item is either manufactured by Harris or is purchased from a vendor and modified for use in the Harris product.

The first three digits of the ten digit part number tell which family the part number belongs to - for example, all electrolytic (can) capacitors will be in the same family (524 xxxx 000). If an electrolytic (can) capacitor is found to have a 9xx xxxx xxx part number (a number outside of the normal family of numbers), it has probably been modified in some manner at the Harris factory and will therefore show up farther down into the individual parts list (because each table is normally sorted in ascending order). Most Harris made or modified assemblies will have 9xx xxxx xxx numbers associated with them.

The term “SEE HIGHER LEVEL BILL” in the description column implies that the reference designated part number will show up in a bill that is higher in the tree structure. This is often the case for components that may be frequency determinant or voltage determinant and are called out in a higher level bill structure that is more customer dependent than the bill at a lower level.

WARNING

THE CURRENTS AND VOLTAGES IN THIS EQUIPMENT ARE DANGEROUS. PERSONNEL MUST AT ALL TIMES OBSERVE SAFETY WARNINGS, INSTRUCTIONS AND REGULATIONS.

This manual is intended as a general guide for trained and qualified personnel who are aware of the dangers inherent in handling potentially hazardous electrical/electronic circuits. It is not intended to contain a complete statement of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation, operation, maintenance and service of this equipment involves risks both to personnel and equipment, and must be performed only by qualified personnel exercising due care. HARRIS CORPORATION shall not be responsible for injury or damage resulting from improper procedures or from the use of improperly trained or inexperienced personnel performing such tasks.

During installation and operation of this equipment, local building codes and fire protection standards must be observed. The following National Fire Protection Association (NFPA) standards are recommended as reference:

- Automatic Fire Detectors, No. 72E
- Installation, Maintenance, and Use of Portable Fire Extinguishers, No. 10
- Halogenated Fire Extinguishing Agent Systems, No. 12A

WARNING

ALWAYS DISCONNECT POWER BEFORE OPENING COVERS, DOORS, ENCLOSURES, GATES, PANELS OR SHIELDS. ALWAYS USE GROUNDING STICKS AND SHORT OUT HIGH VOLTAGE POINTS BEFORE SERVICING. NEVER MAKE INTERNAL ADJUSTMENTS, PERFORM MAINTENANCE OR SERVICE WHEN ALONE OR WHEN FATIGUED.

Do not remove, short-circuit or tamper with interlock switches on access covers, doors, enclosures, gates, panels or shields. Keep away from live circuits, know your equipment and don't take chances.

WARNING

IN CASE OF EMERGENCY ENSURE THAT POWER HAS BEEN DISCONNECTED.

WARNING

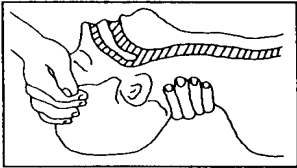
IF OIL FILLED OR ELECTROLYTIC CAPACITORS ARE UTILIZED IN YOUR EQUIPMENT, AND IF A LEAK OR BULGE IS APPARENT ON THE CAPACITOR CASE WHEN THE UNIT IS OPENED FOR SERVICE OR MAINTENANCE, ALLOW THE UNIT TO COOL DOWN BEFORE ATTEMPTING TO REMOVE THE DEFECTIVE CAPACITOR. DO NOT ATTEMPT TO SERVICE A DEFECTIVE CAPACITOR WHILE IT IS HOT DUE TO THE POSSIBILITY OF A CASE RUPTURE AND SUBSEQUENT INJURY.

TREATMENT OF ELECTRICAL SHOCK

1. IF VICTIM IS NOT RESPONSIVE FOLLOW THE A-B-C'S OF BASIC LIFE SUPPORT.
PLACE VICTIM FLAT ON HIS BACK ON A HARD SURFACE

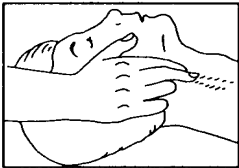
(A) AIRWAY

IF UNCONSCIOUS,
OPEN AIRWAY



LIFT UP NECK
PUSH FOREHEAD BACK
CLEAR OUT MOUTH IF NECESSARY
OBSERVE FOR BREATHING

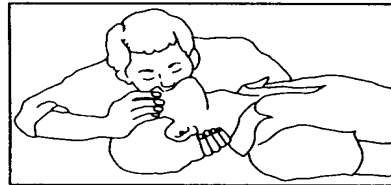
CHECK
CAROTID PULSE



IF PULSE ABSENT,
BEGIN ARTIFICIAL
CIRCULATION

(B) BREATHING

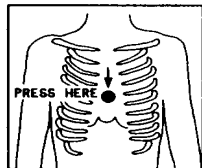
IF NOT BREATHING,
BEGIN ARTIFICIAL BREATHING



TILT HEAD
PINCH NOSTRILS
MAKE AIRTIGHT SEAL
4 QUICK FULL BREATHS
REMEMBER MOUTH TO MOUTH
RESUSCITATION MUST BE
COMMENCED AS SOON AS POSSIBLE

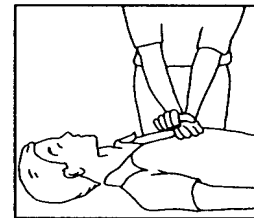
(C) CIRCULATION

DEPRESS STERNUM 1 1/2 TO 2 INCHES



APPROX. RATE
OF COMPRESSIONS { ONE RESCUER
--80 PER MINUTE { 15 COMPRESSIONS
2 QUICK BREATHS

APPROX. RATE
OF COMPRESSIONS { TWO RESCUERS
--60 PER MINUTE { 5 COMPRESSIONS
1 BREATH



NOTE: DO NOT INTERRUPT RHYTHM OF COMPRESSIONS
WHEN SECOND PERSON IS GIVING BREATH

CALL FOR MEDICAL ASSISTANCE AS SOON AS POSSIBLE.

2. IF VICTIM IS RESPONSIVE.

- A. KEEP THEM WARM
- B. KEEP THEM AS QUIET AS POSSIBLE
- C. LOOSEN THEIR CLOTHING
- D. A RECLINING POSITION IS RECOMMENDED

FIRST-AID

Personnel engaged in the installation, operation, maintenance or servicing of this equipment are urged to become familiar with first-aid theory and practices. The following information is not intended to be complete first-aid procedures, it is a brief and is only to be used as a reference. It is the duty of all personnel using the equipment to be prepared to give adequate Emergency First Aid and thereby prevent avoidable loss of life.

Treatment of Electrical Burns

1. Extensive burned and broken skin
 - a. Cover area with clean sheet or cloth. (Cleanest available cloth article.)
 - b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply any salve or ointment.
 - c. Treat victim for shock as required.
 - d. Arrange transportation to a hospital as quickly as possible.
 - e. If arms or legs are affected keep them elevated.

NOTE

If medical help will not be available within an hour and the victim is conscious and not vomiting, give him a weak solution of salt and soda: 1 level teaspoonful of salt and 1/2 level teaspoonful of baking soda to each quart of water (neither hot or cold). Allow victim to sip slowly about 4 ounces (a half of glass) over a period of 15 minutes. Discontinue fluid if vomiting occurs. (Do not give alcohol.)

2. Less severe burns - (1st & 2nd degree)
 - a. Apply cool (not ice cold) compresses using the cleanest available cloth article.
 - b. Do not break blisters, remove tissue, remove adhered particles of clothing, or apply salve or ointment.
 - c. Apply clean dry dressing if necessary.
 - d. Treat victim for shock as required.
 - e. Arrange transportation to a hospital as quickly as possible.
 - f. If arms or legs are affected keep them elevated.

REFERENCE:

ILLINOIS HEART ASSOCIATION

AMERICAN RED CROSS STANDARD FIRST AID AND PERSONAL SAFETY MANUAL (SECOND EDITION)

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Section I Introduction

1.1. Product Description

The SENTRY™ remote system makes possible the connection of an IBM-compatible personal computer to the Harris Platinum™ Series Solid State VHF TV transmitters. This technical manual provides the guidance needed to install and use the product. The sections of this manual are:

- Section I - Introduction
- Section II - Installation
- Section III - Operation and Logging
- Section IV - Modem Setup
- Section V - Parts List

The SENTRY™ remote system is an optional feature which may be purchased and installed in any Harris Platinum™ Series Solid State VHF TV transmitter. The option uses a PC computer to give the user an on-screen view of the Platinum™ transmitting system. The software will display the transmitter cabinet, showing the condition of all amplifier and power supply modules. Other screens display all the information available on the Platinum™ transmitter display panel.

Function keys on the PC control the display and can also command the transmitter, turn it on and off and adjust power output.

User-selectable jumpers on the Platinum™ monitor board can be used to disable SENTRY™ control of any or all of the transmitter's controls.

A printer may be connected to the SENTRY™ PC to permit logging of transmitter data. Logging to the printer may be done automatically or by operator command.

The transmitter SENTRY™ connection is an RS232 port. The SENTRY™ PC may be located near the transmitter, connected directly by cable, or it may be located at a remote point, connected via modems.

1.2. SENTRY™ Systems Available

This product may be purchased in any of three systems, depending on the intended use.

- Remote Control System
- Extended Control System
- Software

1.2.1. Remote Control System

The Remote system is intended for customers who want a "ready to run" system that allows them to monitor their Platinum™ transmitter through modems.

This system includes a PC computer, VGA color monitor, parallel printer, SENTRY™ software on floppy disk and also loaded into the PC, Hayes-compatible modems and connecting cables, and a chipset for installation in the Platinum™ monitor board at the transmitter.

1.2.2. Extended Control System

The Extended Control system is similar to the Remote system except that no modems are provided. This system will be used in cases where on-site monitoring is required.

The Extended Control System includes a PC computer, VGA color monitor, parallel printer, SENTRY™ software on floppy disk and also loaded into the PC, a connecting cable and a chipset for installation in the Platinum™ monitor board at the transmitter.

NOTE

1. Cable lengths up to 300 feet can be used without RS-232C line boosters. For longer cable lengths or for cable runs suffering from common-mode noise interference, line boosters will be required. Two boosters are recommended, one for each end of the line. Distances of up to 10,000 ft. at 9600 baud are possible if line boosters are installed.

1.2.3. SENTRY™ Software

The Software Package is intended for customers who will provide their own PC, modems, and printer.

The package includes SENTRY™ software on floppy disk and a chipset for installation in the Platinum™ monitor board at the transmitter.

The SENTRY™ equipment provided by the user should meet the following requirements:

- IBM-Compatible PC, 286 or better
- Hard Drive
- 5.25" or 3.5" floppy disk drive
- VGA color monitor
- RS-232C serial interface port
- Hayes compatible modems, if a remote system is desired
- 80-column parallel printer, if printer logging is desired

NOTE

There will be no guarantee of system compatibility when non-standard PCs, video cards, modems, or printers are used.

Connecting cables are not provided with the software-only package. The needed cables may be prepared as described in Section II of this technical manual.

1.3. Other SENTRY™ Configurations

The SENTRY™ option may be used in a number of ways to improve technical monitoring and control of a Platinum™ TV transmitter. For Example:

- Dial-Up Access
- Access by two or more PC's

1.3.1. Dial-Up Access

The SENTRY™ - equipped Platinum™ TV transmitter and the SENTRY™ PC may be configured to use telephone circuits. If Dial-Up access is chosen, an engineer can observe and control the transmitter from any convenient location using any suitable desktop or portable PC with SENTRY™ software installed.

SENTRY™ firmware provides for the entry of user-chosen passwords allowing the user to restrict dial-in access to the transmitter to authorized personnel.

1.3.2. Connecting Two or More SENTRY™ PC's

The Platinum™ television transmitter monitor board provides one RS232 port for use as a SENTRY™ connection. Only one SENTRY™ PC may be connected to it at any time. If connec-

tion to added PC's is desired, a suitable RS232 switch may be used to switch between the SENTRY™ PC's.

1.4. Platinum™ Field Upgrade Kit

A field upgrade kit is offered for users installing SENTRY™ on early-model Platinum™ television transmitters. Transmitters with monitor firmware revision level E.0.12 or lower will

require this kit in order to successfully install SENTRY™. See Section 2.2.2 for details.

1.5. Operating Environment

SENTRY™ can be operated at altitudes from 0 to 10,000 feet at temperatures from 0 to 50 degrees Centigrade.

Section II Installation

2.1. Introduction

The SENTRY™ option may be installed on a Platinum™ television transmitter as either an Extended system, connected to the transmitter by an RS232 cable, or as a Remote system, connected by means of modems. If modems are used, they may be connected by a dedicated, fulltime line, or they may be dial-up modems operating over the telephone network.

Installation of SENTRY™ is in two parts:

- Installation of SENTRY™ firmware and control jumpers in the Platinum™ transmitter monitor board.
- Connection of the SENTRY™ PC and its' communication link to the transmitter monitor board.

Installation of the SENTRY™ system is not a difficult process. It may, however, require that you have the transmitter shut down and that you replace the transmitter's monitor board firmware, losing any stored alarms and setups and resetting the clock. Careful planning will ensure that you lose no airtime and that the process goes smoothly.

If you intend to have a remote system using modems, it would be a good idea to have on hand a null modem cable or null modem adaptor to allow the PC to be connected directly to the transmitter at first. Once you are satisfied the SENTRY™ option is working properly, an easy next step is to place the system in operation remotely through the modems.

If your transmitter was not fitted with SENTRY™ firmware by our factory, you will need to install new firmware PROM's in the transmitter. Make sure you have these PROMs. They should be labelled:

HARRIS CORP 1993	HARRIS CORP 1993
917 2235 003	917 2235 003
VHFS004SC U17	VHFS004SC U18

The last line of the label on each PROM gives the firmware revision level and the IC socket location number on the monitor board.

NOTE

Check the markings on the existing U17 and U18 PROMs. Existing systems, denoted by firmware revision number E.0.12 or lower, will require 2 new memory chips, and a replacement PAL for address decoding in addition to the new U17 and U18. These added upgrade components can be purchased as P/N 994-9267-004, KIT, PLATINUM MONITOR. Transmitters requiring this kit will also require two 6 dB 50 ohm attenuators in order to correct the directional coupler sensitivities.

If required, the kit must be installed and certain monitor board jumpers must be changed during the installation of the SENTRY™ PROMs. See 2.11, Upgrading Early Monitor Boards, for the detailed procedure.

Figure 2-1 is a partial drawing of the monitor board showing the location of all jumpers as they should be installed when the SENTRY™ conversion is complete.

The first 12 jumpers on J65 are to be installed during the SENTRY™ installation.

2.2. Tools

Upgrading the transmitter monitor board to SENTRY™ firmware will require that you remove two PROMs, U17 and U18, from the monitor PC board and replace them with new SENTRY™ PROMs. (Revision E.0.12 or earlier systems will require replacement of some other IC's as well.) You should have suitable tools on hand to use in extracting the existing IC's. To avoid possible damage due to static electricity, you should have and use a properly grounded wrist strap during the handling of these PROMs.

2.3. Required Installation Time

The actual installation time can be quite short, but you will be working in an area of the transmitter which may be unfamiliar, so it is advisable to allow a few hours' unencumbered off-air time to complete the installation.

2.4. Installing SENTRY™ Firmware

Make certain you clearly understand the proper way to set the transmitter clock and calendar. The monitor board is reset by the installation process and you will need to enter the current time and date when you are done. All user setup data is stored in the monitor board and will be lost during the upgrade.

- Check the alarm list and note down any alarms you wish to keep record of. These entries will also be lost during the upgrade.
 - Check and make note of any other special setups or entries you have programmed into the transmitter.
- a. When the transmitter is off-air and available for the upgrade, open the control cabinet front panel and turn OFF the control cabinet main circuit breaker to the left of the controller board. This removes all power from the area in which you will be working.
 - b. Make sure you are using a properly-grounded wrist strap before proceeding. The memory PROM's you will be installing are static-sensitive and can be destroyed by even a very small electrostatic discharge.
 - c. Disconnect the battery from the monitor board (upper large board behind the control cabinet front panel).
 - d. On the monitor board, locate the existing firmware PROMs (U17 and U18) and remove them carefully. Take care to avoid damage to the PROMs, the board, or nearby components.
 - e. Check each of the new PROMs to be sure all pins are straight and properly oriented; then, install each in its' numbered socket, with the locator notch oriented to the left.
 - f. If the removed PROMs were Revision E.0.12 or earlier, install the added components from the 994 9267 004 upgrade kit (2.12, steps 1-7) before proceeding to the next step.
 - g. When you are satisfied the two new IC's are properly installed, turn ON the control cabinet circuit breaker and observe the front panel display. The transmitter should

come on in the normal manner and after a short delay the usual output power bargraph User Display should appear.

1. If the monitor board does not appear to be starting up properly, press the small blue RESET button at the top left edge of the board to ensure all memory is cleared.
 2. If the monitor board still will not start properly, turn off the circuit breaker and recheck all the installed IC's for a possible misaligned pin. Check to be certain all jumpers are set as shown in Figure 2-1.
- h. Connect the battery to the monitor board terminals.
- i. Using the SETUP screens, set the clock/calendar day and date.
- j. Enter any other special data or entries needed for your transmitter operation and check all screens for normal displays and data.
- k. You should find a new SENTRY™ setup screen by selecting [Setup], [Sentry]:

SERIAL PORT & PASSWORD SETUP

Port Baud Rate: 2400
 Connection Type: DIRECT
 System Password:
 Control Password:

-> ↓ SAVE_ EXIT

This screen is used to set up the Platinum™ transmitter to communicate with SENTRY™. As with other Platinum™

screens, the legends at the bottom of the display give the functions of the function keys.

2.5. Transmitter SENTRY™ Setup

When you are ready to establish communication from the SENTRY™ PC to the transmitter, use [Setup], [Sentry] to enter the SENTRY™ setup screen on the transmitter. You will need to make certain the Port Baud Rate and the Connection Type are as intended.

The function keys below the screen are used to change the entries on the screen.

The -> key moves the cursor through the available fields.

The ↓ and keys allow you to select through the available choices. For example, pressing either of these keys repeatedly changes the Port Baud Rate through the available Baud rate choices: 1200, 2400, 4800, 9600.

When all the intended changes have been entered, pressing [SAVE] causes the choices to be saved.

Pressing [EXIT] exits the screen.

SENTRY™ Setup Options are as follows:

Port Baud Rate

Set this field to the Baud rate to be used to communicate with the PC. The choices are 1200, 2400, 4800 or 9600.

- If communicating through modems and a communication link, the setting must be no higher than the maximum rate for the modems and the link.
- If communicating locally with a direct null-modem cable, any choice will work.
- The SENTRY™ PC and the transmitter must be set to the same Baud rate.

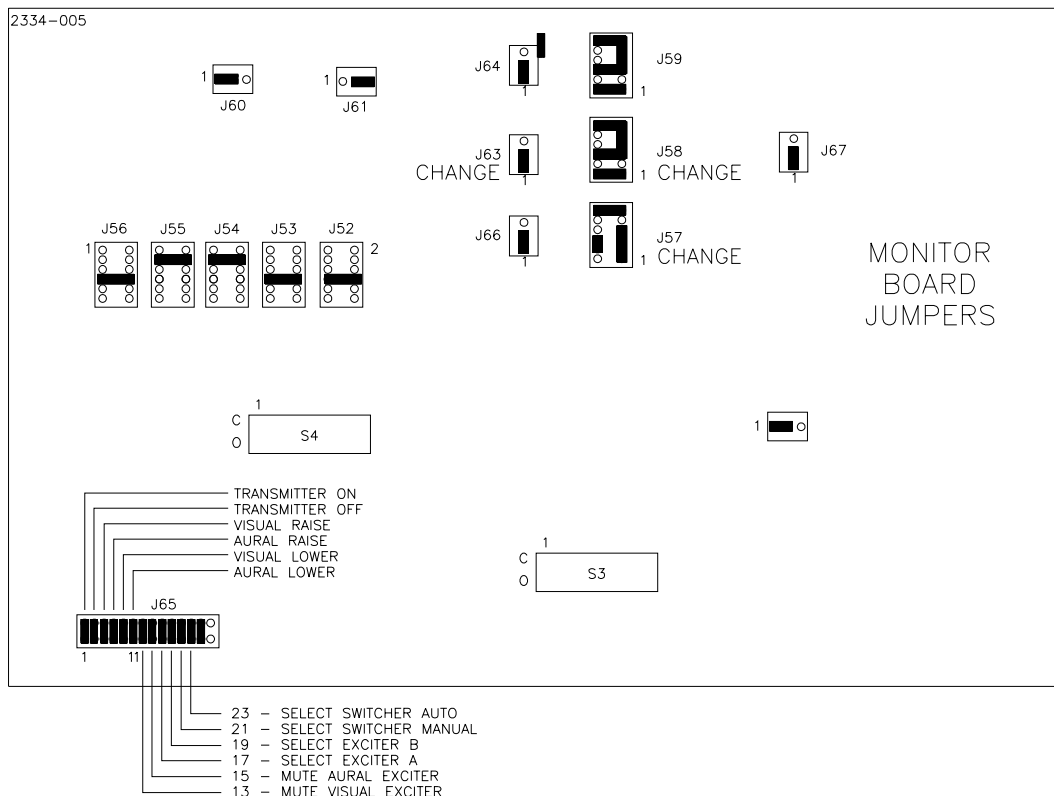


Figure 2-1
Monitor Board Jumpers After Sentry is Installed

- Slower baud rates will result in slower response times.

Connection Type

The connection may either be DIRECT or DIALUP.

- DIRECT is used if the connection is to a local computer, or if the communication link through modems uses a dedicated line.
- DIALUP is used if modems are used and they communicate over the switched telephone network. DIALUP allows the modem at the transmitter to answer a call on the incoming line and establish the connection.

NOTE

For initial check-out and familiarization with SENTRY™, it is advisable to select DIRECT and to use a computer near the transmitter.

2.6. Sentry™ Passwords

Two optional passwords may be used to control access to the SENTRY™ system.

NOTE

The passwords can be left blank (all spaces) until you need to assign them. A blank password turns off the password feature.

System Password

A password may be entered to restrict access to the transmitter from SENTRY™. Once the password has been entered here, anyone attempting to gain access will be asked for the password and must enter it correctly before access is allowed.

The password can be any combination of 8 printable ASCII characters. If all characters in a password are spaces, SENTRY™ will not request a password.

NOTE

Passwords are case-sensitive. That is, an upper case "R" is NOT the same as a lower-case "r". When entering a password, make sure you note whether the characters are upper or lower case, or your password may be rejected.

The system password might be used to prevent any unauthorized access to the SENTRY™ system.

Control Password

A control password is similar to the System Password, but is requested only when a SENTRY™ computer has accessed the transmitter and then attempts to send a control command.

The control password might be used to permit some personnel to access the system, while denying access to transmitter control commands.

NOTE

Control can be blocked completely by removing jumpers on the Monitor board - see 2.9 - Control Activation Jumpers.

When you have verified the setups in this screen are appropriate for your use, Save and return to the transmitter main screen.

2.7. Control Activation Jumpers

The SENTRY™ system allows the remote PC user to control the transmitter. Included in the shipment with the SENTRY™ firmware and software are 12 small jumpers to be used to connect the control signals from the monitor board to the

transmitter controller. If all SENTRY™ control commands are to be allowed, all of these jumpers must be installed. Removing any jumper disables one control signal.

Jumper Installation

Open the control cabinet front panel and locate J65, a 28-pin DIP header near the lower left corner of the Monitor board. A non-SENTRY™ transmitter will have only one jumper in place, in the 13th position from the left side. This jumper is used for an internal monitor function and should always be in place.

Install the jumpers supplied with SENTRY™ in the 12 positions to the left of the existing permanent jumper to enable all SENTRY™ controls.

If one or more of the SENTRY™ controls are to be blocked, the jumpers controlling these commands should be omitted. Refer to Figure 2-1 to locate the jumpers you need to omit.

NOTE

If the DIP header jumpers cannot be located they may be obtained from Harris under part number 612-1184-000.

2.8. Serial Port Connections

The connection between SENTRY™ and the transmitter is a serial RS232 line between transmitter monitor board J9 and the serial port on the PC.

J9 may be found by opening the rear door of the transmitter control cabinet, and looking at the panel behind the monitor board. J9 is near the top of the panel, on the right, to the right of the exciter switch relay panel if dual exciters are installed.

The connection may be either through modems, using standard RS232 cables, or with a direct cable between the PC and J9. If the direct connection is used, a Null Modem cable or a standard RS232 cable with a Null Modem adaptor must be used.

Connect an RS232 cable to J9 and route the connection to the PC serial port. Use a null modem cable or null modem adaptor if the PC is at the transmitter location.

NOTE

During initial checkout of the SENTRY™ installation, the direct cable connection is recommended to allow you to confirm proper operation while the equipment is all at one location.

2.8.1. RS232 Cables

SENTRY™ Remote Control Systems and SENTRY™ Extended Control Systems are supplied with the cables needed to install them.

If the SENTRY™ Software-Only Package has been purchased or if a change of plan calls for a cable which has not been supplied, off-the-shelf RS232 cables from local stores will work in most cases, if the following rules are followed:

- A cable from transmitter J9 to a modem should be standard RS232.
- A cable from the SENTRY™ PC to a modem should be standard RS232. If the SENTRY™ PC has a 9-pin RS232 connection, a standard RS232 25 pin to 9 pin cable may be used, or a standard RS232 25 pin cable with a 25 pin to 9 pin adaptor may be used.
- A cable from transmitter J9 to a SENTRY™ PC must be a Null Modem cable. If the SENTRY™ PC has a 9-pin RS232 connection, a null modem RS232 25 pin to 9 pin

cable may be used, or a null modem RS232 25 pin cable with a 25 pin to 9 pin adaptor may be used.

Suitable cables may also be purchased from Harris. See Section V - Parts List.

9-Pin RS232 Connections

The difference between the 25 pin RS232 connections and the 9 pin RS232 connections has caused some to be confused about the proper null modem connections.

An RS232 null modem cable is constructed with pin 2 of each 25 pin connector connected to pin 3 of the other connector. This causes the transmit pin of each end to connect to the receive pin of the other end.

The 25-pin RS232 standard uses pin 2 as the transmit line, and pin 3 as the receive line. The 9-pin standard uses pin 2 as receive and pin 3 as transmit. This is NOT a null modem connection, but simply a difference in the choice the designers made when the 9-pin standard was created.

RS232 Pinouts

Most of the connections provided for by the RS232 standard are not used by SENTRY™. Figure 2-2 shows the connections needed for:

- a 25 pin RS232 cable
- a 25 pin to 9 pin RS232 cable
- a 25 pin null modem cable
- a 25 pin to 9 pin null modem cable

NOTE

SENTRY™ does not use hardware handshaking. Your modems must be set with DTR and RTS forced to the ON condition.

2.9. The PC Terminal Software

Remote and Extended systems are supplied with SENTRY™ software already loaded in the PC's. The Software-Only package requires that the user install the software in his own PC. Installation of SENTRY™ software requires that you copy the SENTRY™ distribution diskette to your hard drive.

The following procedure uses DOS commands to carry out the installation. If you have File manager or some other file management program on your PC you may prefer to use them.

- If you wish to create a subdirectory on your hard drive for the SENTRY™ software, you should do so first using the MD command (see your DOS manual).
- Change to the desired subdirectory on your hard drive using the CD command (see your DOS manual).
- You should now have your hard drive prompt showing the desired subdirectory (e. g. C:\sntry>).
- Insert the SENTRY™ diskette in drive A:, but do not change to the A: drive prompt; keep the C:\sntry> prompt showing.
- Type COPY A:*. *[CR] to copy the SENTRY™ program and related files onto the hard disk subdirectory.
- At the C:\sntry> prompt type DIR [Enter] to see if the files from the A: drive were transferred.
- At the C:\sntry> prompt type sentry [Enter] to start the program.
- If you wish to start SENTRY™ from the C:> prompt you will have to add the C:\sntry subdirectory to your PATH command in your AUTOEXEC.BAT file (see your DOS manual). Otherwise you will have to do a CD sentry

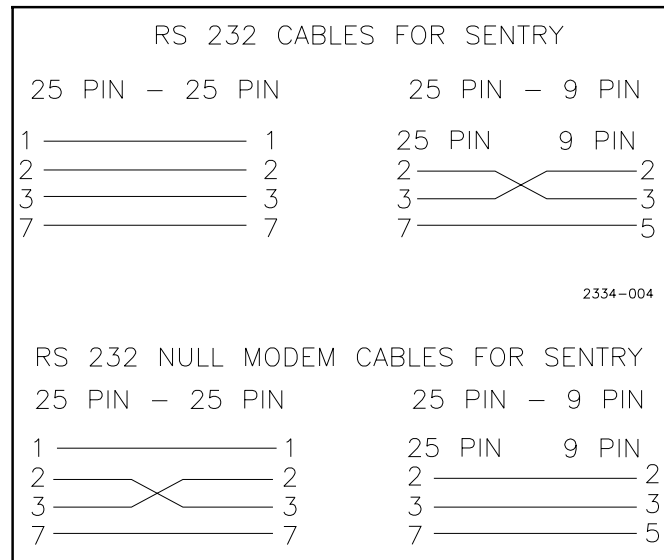


Figure 2-2
RS 232 Cables

command from the C:> prompt before typing sentry [Enter] to start the program.

2.10. Modem Setup

Most modern modems can be set up by connecting them to a PC serial port and using the PC to send the needed setup commands to the modem. The software disk provided with SENTRY™ includes files to aid users in setting their modems. Refer to Section IV -Modem Setup for a description of these files.

2.11. Starting and Configuring SENTRY™

SENTRY™ may be started from the DOS prompt or from another program such as Windows.

NOTE

SENTRY™ is not a windows program. Although it is possible to start the run the program from Windows, SENTRY™ may disconnect at times when run from Windows or any other "desktop" program.

- To start SENTRY™ from the DOS prompt (C:>), first change the current directory to the directory in which the sentry program has been placed.
- SENTRY™ is then started by typing sentry [Enter] (sentry, followed by the ENTER key.)

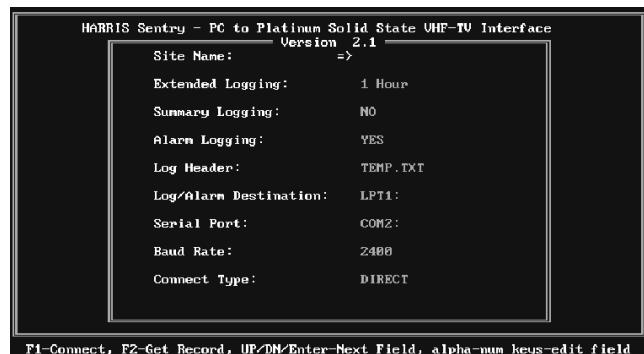


Figure 2-3
Site Selection and Configuration Screen

- c. The program should start immediately and should display the Site Selection and Configuration Screen (Figure 2-3).

The Site Selection and Configuration Screen is described fully in Section III. To complete set-up of SENTRY™, you need only verify two settings on this screen:

- Baud Rate: should be set the same as the Baud Rate in the transmitter's [Setup], [Sentry] screen.
- Connect Type: should be the same as on the transmitter's [Setup], [Sentry] screen.

NOTE

For initial check-out and familiarization with SENTRY™, it is advisable to use DIRECT and to use a computer near the transmitter.

2.12. Establishing the Connection

Once the previous steps have been completed, pressing [F1] on the SENTRY™ PC should connect with the transmitter. After a few seconds, a transmitter display screen should appear on the PC screen.

Figure 2-4 is an example of a typical transmitter display screen.

The screen for your transmitter should be a drawing of your transmitter, with the same number of PA cabinets as the transmitter.

This completes the SENTRY™ installation. Section III describes the various screens which can be called up at the SENTRY™ PC and the operation of SENTRY™.

2.13. Upgrading Early Monitor Boards

Platinum TV transmitters manufactured prior to the middle of 1990 may be equipped with an early version of the monitor board firmware marked "E.0.12" or lower.

These transmitters also can be identified by the use of saddle directional couplers in the Visual and Aural output lines. Cur-

rent transmitters use thru-line directional coupler assemblies with removable coupling elements.

Transmitters with the earlier firmware require the following added kit:

994-9267-004, KIT, PLATINUM MONITOR

The kit contains:

- Two SRAM memory IC's
- One 917 2236 001 PAL IC

These components will need to be installed at the time the new SENTRY™ firmware is installed in the monitor board.

Transmitters requiring this kit will also require two 6 dB 50 ohm attenuators in order to correct the directional coupler sensitivities.

Figure 2-5 is a partial drawing of the monitor board as it was configured with firmware prior to and including revision E.0.12. Transmitters which require the 994-9267-001 upgrade kit will find their jumpers configured as shown in this drawing prior to conversion.

Following the conversion the board will be configured as shown in Figure 2-1.

If this kit is to be installed, proceed as follows when the new U17 and U18 have been installed on the monitor board;

1. Remove old PROMs U19 and U20 from the monitor board.
2. Install the two new SRAM IC's in the U19 and U20 sockets. They should be positioned with the locator notch in the same direction as the IC's which were removed.
3. Remove the address decoding PAL IC from socket U8.
4. Install the new decoding PAL, 917 2236 001 in socket U8.



5. Examine Figure 2-1 and compare the jumper locations shown there with your monitor board jumpers. Change the monitor board jumpers to match the setting shown in Figure 2-1.
6. Install 6 dB attenuators in the sample lines of the Visual Reflected and Aural Reflected couplers at the output of the transmitter.

NOTE

Early transmitters equipped with saddle couplers were configured with 6 dB greater sensitivity in reflected directional couplers than in the forward couplers. Monitor firmware revision E.0.12 and earlier was designed to accept this difference. Current transmitter firmware does not require this 6 dB difference and will display 6 dB higher reflected power levels if the 6 dB attenuators are not installed.

7. Continue with the SENTRY™ installation sequence.

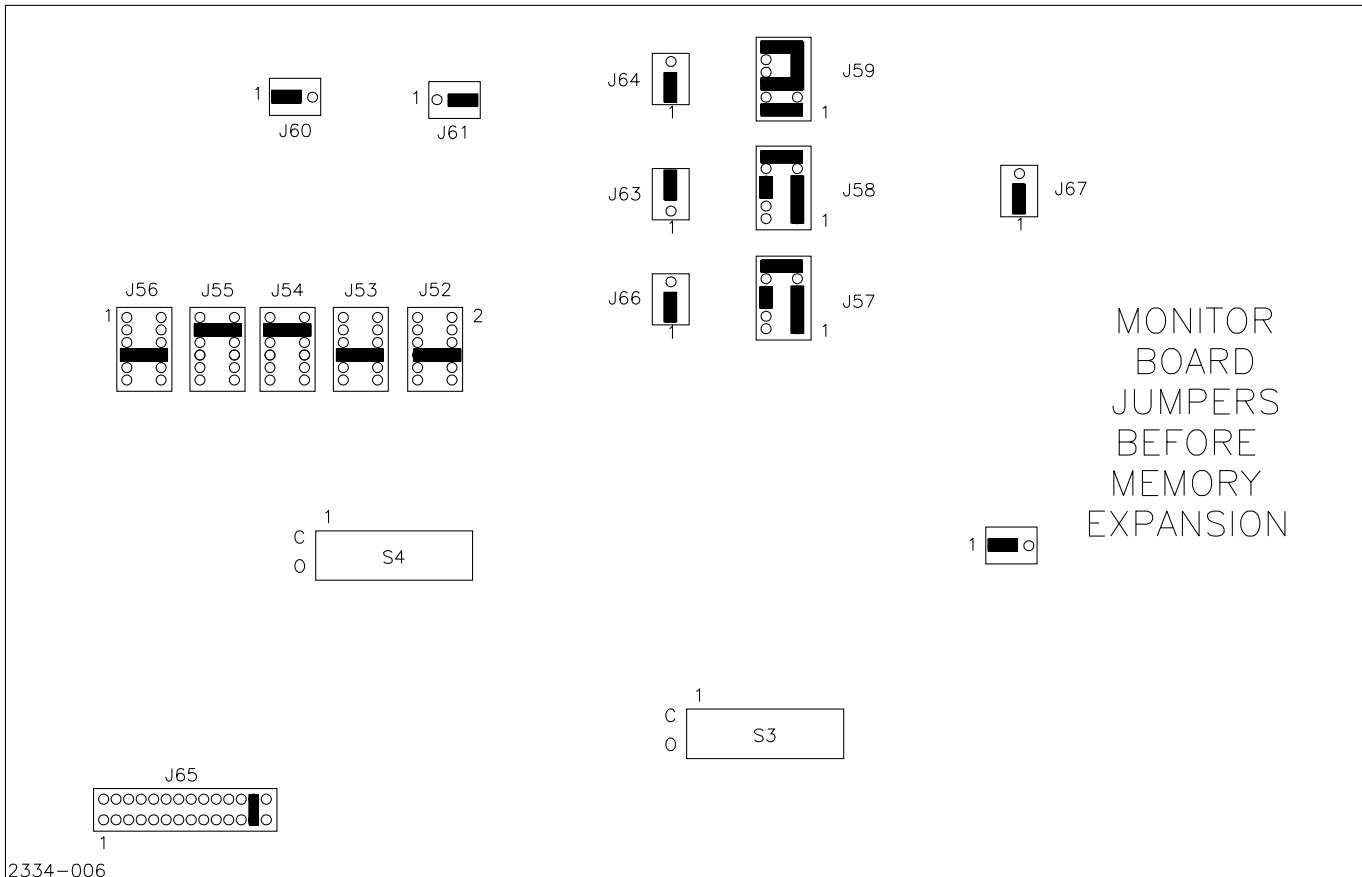


Figure 2-5
Monitor Board Jumpers with E.0.12 or earlier firmware

Section III Operation and Logging

3.1. Introduction

Monitoring and operation of a Platinum TV transmitter using the SENTRY™ option is very similar to direct operation of the transmitter at the transmitter location. The display screens on the SENTRY™ PC emulate the control panel and display screens on the transmitter control cabinet.

Function keys on the PC keyboard are used to “operate” the pushbuttons on the simulated transmitter control panel, and the displayed control panel illuminates its indicators just as the transmitter panel does.

If either the [Page Up] or the [Page Down] key is pressed, the SENTRY™ PC display switches to a drawing of the front of the whole transmitter, with lighted indicators to show the status of each module, the exciters and the ON indicator. Thus, a faulted module can be located by viewing this screen and noting which module’s light has turned red.

3.2. Activating SENTRY™ Terminal

SENTRY™ is started by typing sentry [Enter]. The program starts and immediately displays the SENTRY™ Site Selection & Configuration screen (Figure 3-1).

Entries made in this screen are stored and are recalled each time the program is started. Most of the entries are optional, and those which are required will have a default entry when first loaded.

To change an entry, use the ↑ or ↓ key to move the cursor to the desired location. Use the ← or → key or the SPACE bar to select the desired choice.

3.2.1. Site Name:

This is an optional entry which can be used to identify the site being accessed.

3.2.2. Extended Logging:

The SENTRY™ PC can be commanded to print a log of current transmitter data periodically. The entry here controls how often the log is to be printed.

The default entry is NO, which causes no extended log to be printed automatically. There are 8 choices allowing selection of logging at a fixed interval, and a choice allowing logging to take place at noon and midnight.

- 1 - 8 Hours
- 12am/pm

The extended log can be commanded at any time by pressing **ALT-P**.

3.2.3. Summary Logging:

SENTRY™ PC can print a short summary log periodically, with the time interval controlled by the time entered here. No entry results in no log.

The summary log can be commanded at any time by pressing **ALT-S**.

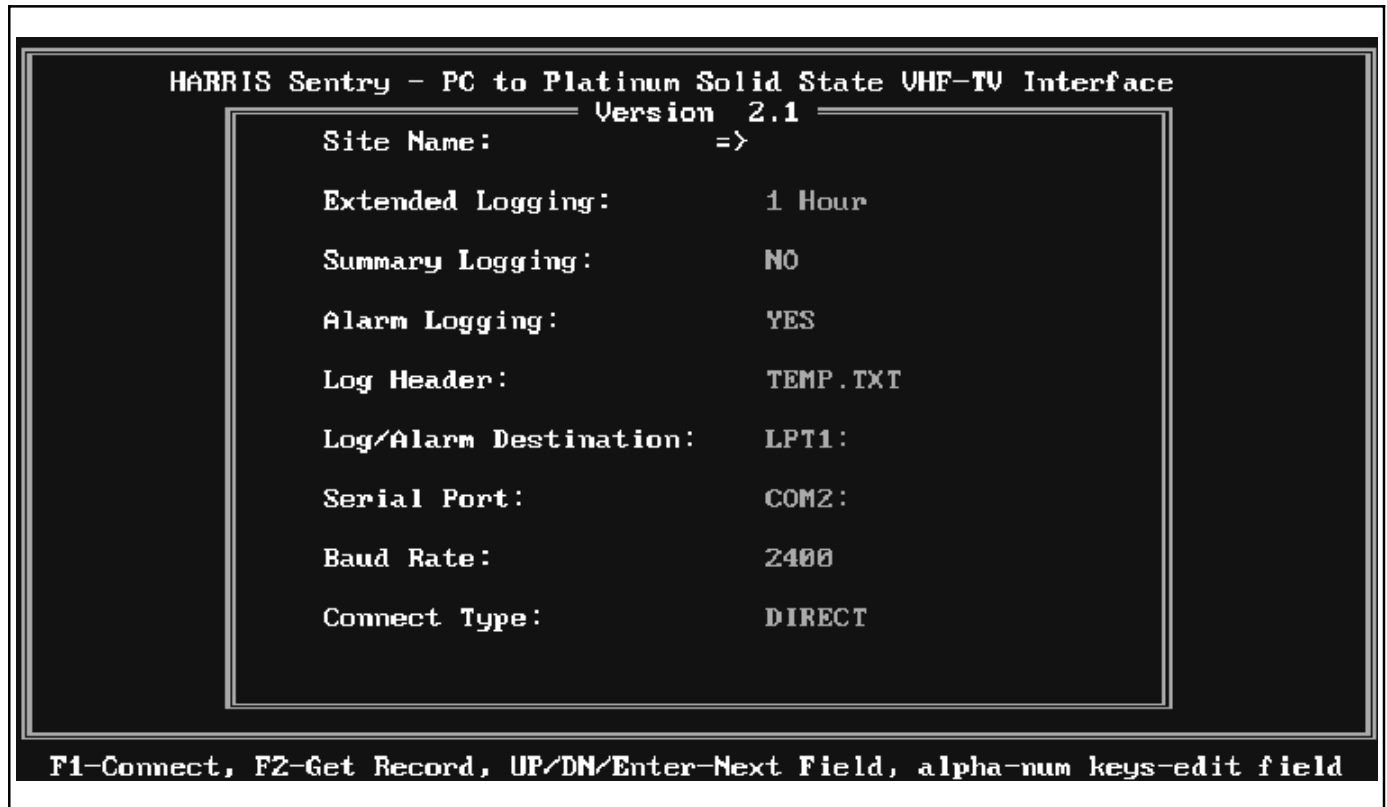


Figure 3-1
Site Selection and Configuration Screen

3.2.4. Alarm Logging:

The SENTRY™ PC can log the start and end of any alarm in the transmitter, if this entry is YES. NO causes no alarms to be logged.

3.2.5. Log Header:

Some users wish a special text entry to be logged to identify the transmitter location or to insert other information. The entry can be any text desired. For example:

Daily Transmitter Log for WZZZ-TV

The text is entered into a text file in the same directory with the SENTRY™ program, and the DOS filename of the file is typed into this field.

The Log Header text prints at the beginning of the 12am log when the Extended Log time choice is 12am/pm.

NOTE

The same log header, or a different text file, can be typed to the logging printer at any time by using the PC to command it. A simple way to do this is to create a batch file which types the file to PRN:. A macro key can then be used to start the batch file.

3.2.6. Log/Alarm Destination:

This field determines where the file is sent. SENTRY™ will only log to a printer, so this field should remain set to PRINTER if logs are desired.

3.2.7. Serial Port:

This field controls which serial PC port the SENTRY™ control option uses.

3.2.8. Baud Rate:

This field controls the communication Baud rate between the PC and the Platinum™ transmitter. It must be set to the same Baud rate as the transmitter. The choices are:

- 1200
- 2400
- 4800
- 9600

3.2.9. Connect Type:

The connect type may be either DIRECT or DIAL-UP.

DIRECT is used for all direct cabled connections and for any modem connections going through dedicated lines.

DIAL-UP is used only with modem connections which go through the switched (dial-up) telephone network.

- If DIAL-UP is chosen, a Phone Number: field appears at the bottom of the screen.

3.2.10. Phone Number:

This field is only visible if Connect Type is set to DIAL-UP. Enter the number to be dialed by the SENTRY™ PC. The number will be saved by SENTRY™ and then dialed automatically whenever the Connect key [F1] is pressed.

3.2.11. Function Keys

A line at the bottom of the screen identifies the function keys and other keys used:

[F1] causes the SENTRY™ PC to connect to the transmitter.

[Page Up], [Page Down] and [Enter] keys are used to choose the field to be edited on this screen. Once a field is chosen, the ← and → keys select through the range of available choices or the new entry is simply typed in using the keyboard.

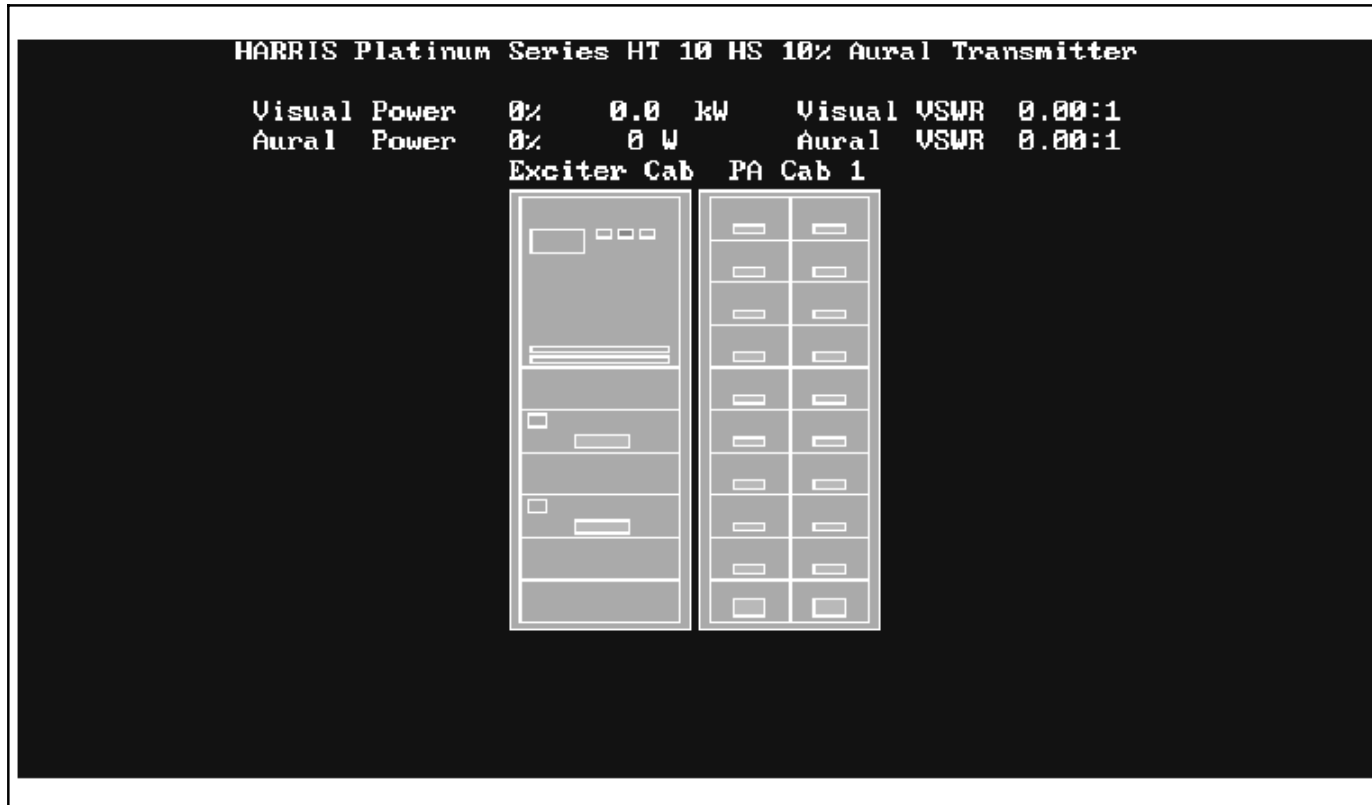


Figure 3-2
Transmitter Display Screen

3.3. Accessing the Transmitter

F1 on the Site Selection and Configuration Screen is used to connect the SENTRY™ PC with the transmitter. If the transmitter setup has been done properly and the link is in good order the connection should be completed within a few seconds.

A drawing of the front of the transmitter, the Transmitter Display Screen, should appear (Figure 3-2). The drawing shows all of the transmitter cabinets as they are actually arranged.

- Green lights indicate proper operation of each module and power supply.
- A red indicator on any module or power supply signals a fault in that unit.
- Indicators on the control cabinet part of the drawing show when the transmitter is ON and indicate which exciter is being used.

Above the transmitter drawing, current transmitter Visual and Aural power and VSWR are displayed.

NOTE

When connecting to a transmitter that is password protected, a field will display asking the user to enter the password. The entered password is then verified against the password set on the Platinum™ SERIAL PORT PASSWORD SETUP screen.

If the password matches, the system connect will occur.

If the password does not match, SENTRY™ will display a descriptive message and request the password again.

The operator has 3 chances to enter the correct password. After the third unsuccessful entry, SENTRY™ will terminate and exit the program.

3.4. Bargraph Meter Screen

When SENTRY™ has accessed the transmitter, two screens are available. Either can be selected by pressing [Page Up] or [Page Down].

- The Transmitter Display Screen (Figure 3-2)
- The Main Control Panel Screen (Figure 3-3)

The Transmitter Display Screen is a useful ongoing display of the transmitter, showing:

- ON or OFF status
- LOCAL control
- Visual output power and VSWR
- Aural output power and VSWR
- Selected Exciter (If dual exciters are installed)
- PA faults
- Power supply faults

The Main Control Panel Screen is a drawing of the front panel of the transmitter with flat panel display, control pushbuttons and two rows of transmitter fault indicators. The illuminated buttons and the fault indicators mimic the actual indicators on the front of the transmitter. Each button on the panel is labelled with the number of the PC function key which controls it. (The Local pushbutton is not controlled by SENTRY™, but will indicate if the transmitter control panel has been switched to Local.)

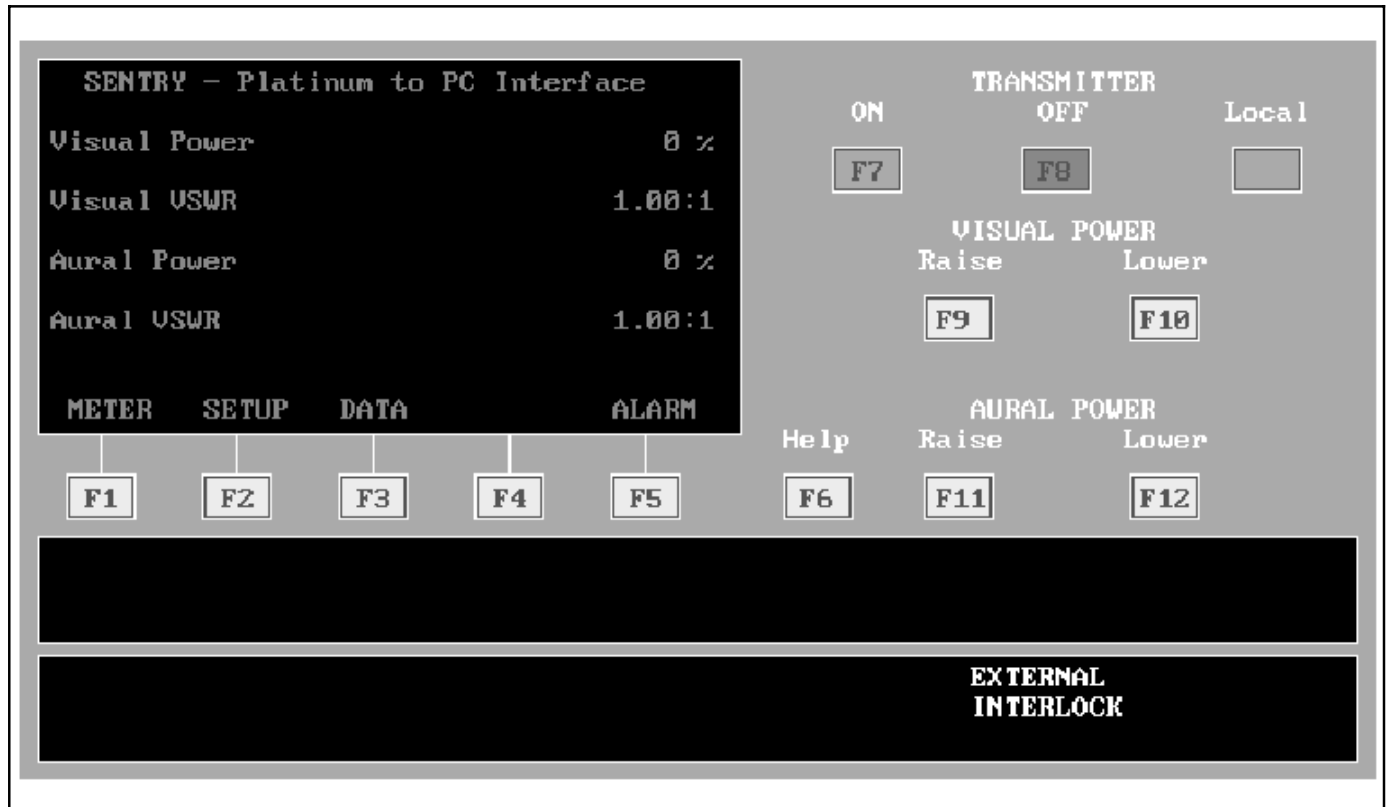


Figure 3-3
Main Control Panel Screen with User Display

The flat panel display and the 5 function keys drawn below it mimic the action of the transmitter flat display panel and its' function keys.

3.4.1. User Display

The user display shown in figure 3-3 is the screen which appears when SENTRY™ first selects the Main Control Panel Display Screen. Pressing EXIT from other screens returns to this display screen.

The User Display on SENTRY™ is, as on the transmitter, the main screen showing current operating power and VSWR. Unlike the transmitter panel, the SENTRY™ display does not show bargraph indications of the power levels - only the numeric values.

From this screen, all other normal Platinum displays can be accessed and checked using the function keys shown on the CRT screen.

SENTRY™ PC function keys F1 through F5 control these 5 function pushbuttons. F6 activates the Help messages.

3.4.2. Controlling the Transmitter

PC function keys F7 through F12 control transmitter ON/OFF and Visual and Aural power control.

To avoid undesired ON or OFF commands' being sent to the transmitter by SENTRY™, whenever an ON [F7] or OFF [F8] command is sent, a requestor field appears:

[Confirm Transmitter ON Command - 'Y' for Yes _]

- [Y] will confirm the command and cause it to be sent.

- [Esc] will cancel the command and clear the requestor field.

3.5. Exciter Selection and Mute Control

Those users who have dual exciters in their transmitters can call up an additional screen by pressing [Alt]/[E] (Press the [Alt] and the [E] keys at the same time). The Dual Exciter Display & Operate Page (Figure 3-4) will appear on top of the current screen. This page shows the status of aural and visual mute, the currently active exciter and whether the exciter switch is set to manual or automatic. The function keys used to make these selections are listed at the bottom of the screen.

NOTE

Control of each transmitter function by SENTRY™ is optional and may be deactivated partially or completely by removing jumpers on the transmitter monitor board. See Section II for details.

3.6. SENTRY™ Screens

The SENTRY™ PC is able to display nearly all of the screens available at the transmitter control panel. The screens omitted from SENTRY™ are used for setup at the transmitter and cannot be accessed remotely.

All screens are described in the transmitter technical manual. A brief description of each screen is included here as an aid for remote control operators. For more complete information on the data included on the screens, refer to the transmitter technical manual.



Figure 3-4
Dual Exciter Display & Operate Page

3.6.1. User Display

SENTRY - Platinum to PC Interface
Visual Power 101%
Visual VSWR 1.06:1
Aural Power 99%
Aural VSWR 1.12:1

METER SETUP DATA ALARM

From the User Display, METER, SETUP, or DATA may be selected. (ALARM can also be selected if there are alarms stored in memory, but this choice disappears if there are no alarms stored.)

3.6.2. METER Screens

The METER screens include VISUAL INFORMATION, AURAL INFORMATION, SUPPLY INFORMATION and LINE (voltage) information.

VISUAL INFORMATION
Power 101% 10.1kW
Reflected Power 9 W
VSWR 1.06:1
Drive 527 W
DC Input Power 25.0 kW
AGC Voltage 12.15 V
NEXT AURAL SUPPLY LINE EXIT

This is a typical VISUAL INFORMATION screen. Output power, reflected power, VSWR, drive power, DC input power and AGC voltage are displayed. If the transmitter is large enough to require it, one or more additional VISUAL screens are available and can be selected from the first VISUAL screen by pressing NEXT. Large transmitters may also display reject load power readings on these screens.

AURAL Screen

Pressing the AURAL function key switches to the AURAL INFORMATION screen, which contains power, drive and AGC information for the aural part of the transmitter, including any reject load readings.

AURAL INFORMATION
Power 99% 990 W
Reflected Power 3 W
VSWR 1.12:1

AGC Voltage 12.13 V
NEXT VISUAL SUPPLY LINE EXIT

SUPPLY screens

The first power supply screen lists the output voltage and output current of each PA cabinet power supply in the transmitter.

POWER SUPPLY INFORMATION

Supply 1 Supply 2
49.5V 180 A 51.3 V 210 A

NEXT VISUAL AURAL LINE EXIT

The NEXT key selects the second power supply screen.

POWER SUPPLY INFORMATION

Main Logic Supply voltages:

(+5) + 4.88
(+12) +12.1
(-12) -12.0
(UNREG) + 1.7
MAIN BATT + 4.09
MON BATT + 4.25

PREV VISUAL AURAL LINE EXIT

This second screen lists all the output voltages from the Main Logic Power Supply located in the base of the control cabinet. Also listed are the voltages of the controller battery (MAIN BATT) and the monitor board (MON BATT).

LINE Screen

The LINE screen is included to give the user access to the line voltages applied to the transmitter power input terminals.

LINE VOLTAGE INFORMATION

Line Voltages:

Phase A-B Phase B-C Phase A-C
208 V 209 V 207 V

VISUAL AURAL SUPPLY EXIT

The three readings here are sampled by three line voltage samples in the base of the transmitter control cabinet, connected between the three legs of the incoming power circuit. (The "Delta" voltages are metered.)

From the LINE screen or any other of the METER screens, the function keys allow the user to:

- Switch to any other METER screen (Sometimes by moving through other METER screens)

EXIT back to the User Display Screen showing the current Visual and Aural output powers and VSWR readings.

3.6.3. SETUP Screens

Selecting SETUP from the User Display Screen produces a screen with a single choice:

USER SETUP SELECTION MENU

1. Edit User Display

USER	EXIT
------	------

When the USER key is pressed, the USER DISPLAY EDIT screen appears.

USER DISPLAY EDIT

- (1) Visual Power
 - 1 Visual Power
 - 2 Visual VSWR
 - 3 Aural Power
 - 4 Aural VSWR
 - Visual Reflected Power
 - Aural Reflected Power
 - VISUAL AURAL SUPPLY EXIT
-

This screen allows the user to alter the way the User Display screen displays power and VSWR by substituting other choices from the list on the EDIT screen.

NOTE

Changes made using this screen do not affect displays on the transmitter front panel. Likewise, if the transmitter front panel display is altered using the USER DISPLAY EDIT screen at the transmitter, the display on the SENTRY™ PC will not be changed.

The procedure to alter the user display with this screen is as follows:

- a. Use the F4 key to select the User Display reading you wish to replace.
- b. Use the F1 and F2 keys to select the reading you wish to insert in place of the reading you selected above.
- c. Press F3 to substitute your new selection.
- d. When you are done editing, use F5 - EXIT to return to the User Display screen.

Larger transmitters offer some additional display choices not shown above.

3.6.4. DATA Screens

Data screens, also called Raw Data screens, list all inputs to the transmitter monitor board. SENTRY™ displays several screens for each transmitter raw data screen in order to make them more readable.

Selecting DATA from the User Display screen produces the MAIN RAW A/D SCREEN 1 From this screen, NEXT, STATUS and SLAVE call up the remaining Raw Data screens. EXIT returns to the User Display.

NOTE

The raw data on these screens has not been "scaled" by the monitor board and appears simply as On or Off, or as num-

bers. Refer to the transmitter technical manual for an explanation of these screens.

3.6.5. ALARM Screens

SENTRY™ stores transmitter alarms in the PC memory hard drive and updates its' list:

- Whenever a new alarm occurs while SENTRY™ is in communication with the transmitter.
- Whenever SENTRY™ establishes communication with the transmitter.

If one or more alarms is stored in memory, ALARM appears above the F5 function key on the User Display screen and F5 calls up the SYSTEM ALARMS list.

F1 and F2 allow the cursor to be moved through the list, which may be longer than the user display screen.

DELETE (F3) deletes the alarm identified by the cursor if it is inactive (I). An active alarm (A) cannot be deleted until it becomes inactive.

DESC (F4) switches to the ALARMS FULL DESCRIPTION screen. Here, the alarms identified by the cursor on the SYSTEM ALARMS screen is more fully described. DELETE (F3) on this screen can delete the alarm if it is inactive.

Pressing EXIT (F5) from these screens returns to the User Display.

3.6.6. The HELP Key

Pressing the HELP key (F6) at any time displays a text description of the current screen. Pressing any of the screen function keys (F1 - F5) while the Help screen is selected calls up a description of the function of the key.

Pressing HELP again while the Help screen is displayed returns to the previous display.

3.7. Logging

A printer connected to the PC's parallel port can be used to print current SENTRY™ screens and to log transmitter alarms, current faults and metered readings.

3.7.1. Print Screen

The [Print Screen] key of the SENTRY™ PC can be used to directly print the current screen to the printer. To prevent accidental print commands, [Shift] and [Print Screen] must be pressed at the same time to send this command.

NOTE

The printer displays only characters. It will not print graphics. Screens which contain graphic drawings of parts of the transmitter can be printed, but will not reproduce the graphic images.

Site Selection Page

Pressing the [Shift][Print Screen] keys on the Site Selection and Configuration screen will dump the contents of the screen to the printer. This will provide a hardcopy of the Site setup parameters for the selected site. The printout will have the same format as depicted on the screen.

Exciter Panel Page

Pressing the [Shift][Print Screen] keys on the Main Control Panel screen will send the contents of the screen to the printer. The graphics data will not be printable, but the text will print acceptably. The information displayed will consist of the cur-

rently selected page and the Fault status display panel. This is a useful way to quickly print current transmitter data.

Print Transmitter Configuration Page

Pressing the [Shift][Print Screen] keys on the Transmitter Configuration page does not produce a useful result, since this screen is almost entirely graphic.

Pressing [Alt-P] key on this screen will produce a text print of the data from the screen. First, the Print selection window will display and request confirmation of the Print request. When the command has been confirmed with "Y", a list of current faults, power levels and voltages will be sent to the printer.

3.7.2. Alarm Logging

If SENTRY™ Alarm Logging is set to YES, SENTRY™ will, when connected to Platinum™, log all alarms that occur within Platinum™ to the printer. The log entry will contain the alarm and the time & date that the alarm occurred.

When SENTRY™ logs on to the transmitter, the current transmitter alarm list is sent to the printer.

3.7.3. Summary Logging

Summary Logging is selected by the **ALT-S** keys. The Summary Log will print the Visual and Aural Percent of Power, Output Power, and VSWR with a date and time stamp. Sample Output is shown in Figure 3-5. No confirmation for the Summary Log is required -output to the printer is immediate.

3.7.4. Extended Logging

As part of the Site Configuration setup, a field is provided to allow the user to select extended logging. This feature, if selected, will cause SENTRY™ to do periodic logging of the Platinum™ transmitter parameters. Figures 3-6, 3-7 and 3-8 show the form of extended logs from a typical SENTRY™ installation.

- The time period entered in Site Configuration is the interval between logs. If this entry is set to NO, no extended log is sent to the printer.

NOTE

Extended logs only occur if SENTRY™ is connected. SENTRY™ cannot automatically dial up access in order to receive a log.

The Extended Log can be commanded from the PC keyboard by pressing **ALT-P**.

```

Thu Jun 27 19:51:49 1991 Visual Power 102% at 61.4 kW Visual VSWR 1.13:1
                        Aural Power 41% at 4.99 kW Aural VSWR 1.08:1
Thu Jun 27 08:00:00 1991 Visual Power 102% at 61.4 kW Visual VSWR 1.13:1
                        Aural Power 41% at 4.97 kW Aural VSWR 1.08:1
Thu Jun 27 09:00:01 1991 Visual Power 102% at 61.4 kW Visual VSWR 1.14:1
                        Aural Power 41% at 4.97 kW Aural VSWR 1.08:1

Thu Jun 27 11:00:00 1991 Visual Power 101% at 61.1 kW Visual VSWR 1.14:1
                        Aural Power 41% at 4.99 kW Aural VSWR 1.09:1
Thu Jun 27 12:00:00 1991 Visual Power 102% at 61.4 kW Visual VSWR 1.14:1
                        Aural Power 41% at 4.93 kW Aural VSWR 1.08:1

```

*Figure 3-5
Sample of Summary Log Page*

```

***** Platinum 60 LS 10% Alarms Queue Dump *****
Date: Mon May 06 19:59:39 1991

```

ID	Description	Date	Time	Alarm Status
000	Power Fault	21-Jan-90	08:30	ACTIVE
001	Visual VSWR Overload	12-Feb-90	09:30	INACTIVE - Cleared: 12-Feb-90 09:30
002	Aural VSWR Overload	21-Mar-90	10:40	ACTIVE
003	Visual Drive Fault	12-Apr-90	11:50	INACTIVE - Cleared: 12-Apr-90 11:50
004	Aural Drive Fault	21-May-90	12:15	ACTIVE
005	Visual PLL Unlock	12-Jun-90	01:00	INACTIVE - Cleared: 12-Jun-90 01:00
006	Aural PLL Unlock	21-Jul-90	02:10	ACTIVE
007	Aur B Module Fault	12-Aug-90	02:11	INACTIVE - Cleared: 12-Aug-90 02:11
008	VPA A Air Fault	21-Sep-90	03:12	ACTIVE
009	VPA B Slave Fault	12-Nov-90	04:13	INACTIVE - Cleared: 12-Nov-90 04:13
010	VPA C Door Fault	21-Dec-90	05:14	ACTIVE
011	VPA A PS 1 Fault	12-Nov-90	06:15	ACTIVE
012	Watchdog Fault	31-Dec-90	06:15	INACTIVE - Cleared: 31-Dec-90 06:15
013	Operator Abort	31-Dec-90	06:15	INACTIVE - Cleared: 31-Dec-90 06:15
014	Operator Reset	31-Dec-90	06:15	INACTIVE - Cleared: 31-Dec-90 06:15
015	Brownout Condition	31-Dec-90	11:59	INACTIVE - Cleared: 31-Dec-90 11:59
016	Exciter A Fault	31-Dec-90	11:59	INACTIVE - Cleared: 31-Dec-90 11:59
017	Exciter B Fault	31-Dec-90	11:59	INACTIVE - Cleared: 31-Dec-90 11:59
018	Aur B Interlock Fault	1-Jan-91	00:00	INACTIVE - Cleared: 1-Jan-91 00:00

*Figure 3-6
Sample of Page One Extended Log Output*

***** Platinum 60 LS 10% Metering Information *****
 Date: Mon May 06 19:59:42 1991

```

Visual Power      0.0 kW
Visual VSWR      0.00:1
Aural Power      0.00 kW
Aural VSWR      0.00:1

Visual Reflected Power      0 W
Aural Reflected Power      0 W

Aural Chain A Power      0 W
Aural Chain B Power      0 W

Visual Drive A Power      0 W
Visual Drive B Power      0 W
Visual Drive C Power      0 W
Visual Drive D Power      0 W

Visual PA A Power      0.0 kW
Visual PA A Reflected Power      0 W
Visual PA B Power      0.0 kW
Visual PA B Reflected Power      0 W
Visual PA C Power      0.0 kW
Visual PA C Reflected Power      0 W
Visual PA D Power      0.0 kW
Visual PA D Reflected Power      0 W
    
```

***** Visual Reject Load Data *****

```

Final((AB)(CD))      0 W
INT(AB)              0 W
INT(CD)              0 W
    
```

***** Aural Reject Load Data *****

```

Final((AB)(CD))      0 W
INT(AB)              0 W
INT(CD)              0 W
    
```

***** Cabinet Power Supply Data *****

Cabinet	Supply 1		Supply 2	
-----	-----	-----	-----	-----
Aural A	0.0 V	0 A	0.0 V	0 A
Aural B	0.0 V	0 A	0.0 V	0 A
Visual PA A	0.0 V	0 A	0.0 V	0 A
Visual PA B	0.0 V	0 A	0.0 V	0 A
Visual PA C	0.0 V	0 A	0.0 V	0 A
Visual PA D	0.0 V	0 A	0.0 V	0 A

Line Voltages:	Phase A-B	Phase B-C	Phase A-C
	0 V	0 V	0 V

```

Main Logic Supply Voltages
(+5)      + 0.00 V
(+12)     + 0.0 V
(-12)     - 0.0 V
(UNREG)   + 0.0 V
MAIN BATT + 0.00 V
MON BATT  + 0.00 V
    
```

Figure 3-7
 Sample of Page Two Extended Log Output

***** Platinum 60 LS 10% Transmitter Faults *****
 Date: Mon May 06 19:59:46 1991

Cabinet	Fault Status					
-----	-----	-----	-----	-----	-----	-----
Exciter Cab	EXCITER A	EXCITER B				
Aural A	CONTROLLER MODULE 15 MODULE 09	DOOR MODULE 14 MODULE 08	AIR MODULE 13 MODULE 07	PWR SUP 2 MODULE 12	PWR SUP 1 MODULE 11	CAB INTLK MODULE 10
Aural B	CONTROLLER MODULE 15 MODULE 09	DOOR MODULE 14 MODULE 08	AIR MODULE 13 MODULE 07	PWR SUP 2 MODULE 12	PWR SUP 1 MODULE 11	CAB INTLK MODULE 10
Visual PA A	CONTROLLER MODULE 15 MODULE 09 MODULE 03	DOOR MODULE 14 MODULE 08 MODULE 02	AIR MODULE 13 MODULE 07 MODULE 01	PWR SUP 2 MODULE 12 MODULE 06	PWR SUP 1 MODULE 11 MODULE 05	MODULE 16 MODULE 10 MODULE 04
Visual PA B	CONTROLLER MODULE 15 MODULE 09 MODULE 03	DOOR MODULE 14 MODULE 08 MODULE 02	AIR MODULE 13 MODULE 07 MODULE 01	PWR SUP 2 MODULE 12 MODULE 06	PWR SUP 1 MODULE 11 MODULE 05	MODULE 16 MODULE 10 MODULE 04
Visual PA C	CONTROLLER MODULE 15 MODULE 09 MODULE 03	DOOR MODULE 14 MODULE 08 MODULE 02	AIR MODULE 13 MODULE 07 MODULE 01	PWR SUP 2 MODULE 12 MODULE 06	PWR SUP 1 MODULE 11 MODULE 05	MODULE 16 MODULE 10 MODULE 04
Visual PA D	CONTROLLER MODULE 15 MODULE 09 MODULE 03	DOOR MODULE 14 MODULE 08 MODULE 02	AIR MODULE 13 MODULE 07 MODULE 01	PWR SUP 2 MODULE 12 MODULE 06	PWR SUP 1 MODULE 11 MODULE 05	MODULE 16 MODULE 10 MODULE 04

Figure 3-8
Sample of Page Three Extended Log Output

Section IV Modem Setup

4.1. Introduction

Modern modems are complex devices which must be configured, or “set up”, for the intended use. Selecting the proper combination of parameter settings for a modem for a particular use can be a daunting task.

Early modems were configured by setting switches or jumpers inside the modem. Today, most modems are set up by inputting commands to the modem, although some models still do have certain jumpers inside which must be set during setup.

This section describes a simple modem setup program which is provided users with certain HARRIS products.

4.2. Description

The modem setup utility consists of two files:

- modemset.exe is the actual setup program. When run, it sends the required setup data to the modem.
- modem.cfg is the configuration data for the modem. Data from this file, along with the entries by the user, determine the commands sent to the modem to set it up. Modem.cfg can be edited by a user to customize the modem setup. Modem.cfg contains notes, where appropriate, giving the proper setting of any modem jumpers.

4.3. Using the Setup Utility

Each modem in a system must be connected to the PC serial port using an RS232 cable. The setup procedure will save the setup information in the modem. Following setup the modem may be removed and taken to another location. The installed setup will be retained.

To use modemset.exe to set up a modem:

- a. Both modem.cfg and modemset.exe should be in the same subdirectory of the computer hard drive or of a floppy disk.
- b. Connect the modem to the computer serial port and identify the serial port number.

c. Run modemset.exe.

1. The program should start and ask you to choose the serial port connected to the modem.
2. When you have entered the serial port number, you are asked for the baud rate to be used.
3. When you have entered the baud rate, you are given a list of modems, and asked to choose the modem you are setting up. The choices in the list may include the intended use — for instance, leased line or dial-up.
4. After choosing, you are asked to “Press SPACE to configure Modem.” If you do so, the program will send the appropriate series of commands to the modem to set it up and store the setup in the modem.

d. If other modems are to be set up, connect each to the serial port and repeat the process.

4.4. Customized Modem Setup

The modems whose setup information is included in modem.cfg are the modems normally supplied with HARRIS systems. HARRIS does not provide configuration entries for all available modems. If your modems are not on the list but you wish to use this setup utility, you have two options:

- Use the “Hayes Compatible” choice from the list of possible modems. This will set up Hayes compatible modems and in most cases will cause them to work satisfactorily.
- Modify modem.cfg to the parameters needed by your modem. This will require careful study of your modem technical manual to identify the setup commands required.

The following is the text of a typical modem.cfg file. Your file may differ as we add or change entries to accommodate newer modems supplied by Harris.

NOTE

SENTRY™ does not use hardware handshaking. Your modems must be set with DTR and RTS forced to the ON condition.

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Section V Parts List

Introduction

This section contains a list of replaceable parts for the Sentry™ options.

Replaceable Parts List Index

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Table 5-1. SENTRY REMOTE SYSTEM - 994 9267 001

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
746 0142 000	COMPUTER SYSTEM, 80286	1 ..	
746 0144 000	MODEM 2400 BAUD	2 ..	
917 2237 001	SENTRY PLATINUM VHF TO PC. . .	1 ..	
917 2235 001	SENTRY MONITOR PROM SET . .	1 ..	
988 2334 001	DP, SENTRY	1 ..	
922 0744 010	CABLE, MODEM 10'	0 ..	(NEED 2 CABLES)
922 0744 025	CABLE, 202T MODEN 25'	0 ..	(NEED 2 CABLES)
922 0744 050	CABLE, MODEM 50'	0 ..	(NEED 2 CABLES)
356 0089 000	CABLE TIE TY RAP	6 ..	
358 1024 000	CABLE STRIP MOUNT	6 ..	

Table 5-2. CABLE, MODEM 10' - 922 0744 010

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0744 001	ASSY INSTR, CABLE	0 ..	
250 0366 000	CABLE, 10C 24AWG 5 PR	10 . FT	
610 0539 000	PLUG 25 POS	2 ..	P001 P002
408 0216 000	SHIELD 25 POSITION	2 ..	#P001 #P002
354 0384 000	CONTACT, PIN	18 .	
296 0263 000	TUBING, SHRINKABLE .37525 . FT	
356 0087 000	CABLE TIE TY RAP	2 ..	

Table 5-3. CABLE, 202T MODEN 25' - 922 0744 025

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0744 001	ASSY INSTR, CABLE	0 ..	
250 0366 000	CABLE, 10C 24AWG 5 PR	25 . FT	
610 0539 000	PLUG 25 POS	2 ..	P001 P002
408 0216 000	SHIELD 25 POSITION	2 ..	#P001 #P002
354 0384 000	CONTACT, PIN	18 .	
296 0263 000	TUBING, SHRINKABLE .37525 . FT	
356 0087 000	CABLE TIE TY RAP	2 ..	

Table 5-4. CABLE, MODEM 50' - 922 0744 050

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0744 001	ASSY INSTR, CABLE	0 ..	
250 0366 000	CABLE, 10C 24AWG 5 PR	50 . FT	
610 0539 000	PLUG 25 POS	2 ..	P001 P002
408 0216 000	SHIELD 25 POSITION	2 ..	#P001 #P002
354 0384 000	CONTACT, PIN	18 .	
296 0263 000	TUBING, SHRINKABLE .37525 . FT	
356 0087 000	CABLE TIE TY RAP	2 ..	

Table 5-5. SENTRY EXTENDED SYSTEM - 994 9267 002

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
746 0142 000	. COMPUTER SYSTEM, 80286	1 . . .	
917 2237 001	. SENTRY PLATINUM VHF TO PC . .	1 . . .	
917 2235 001	. SENTRY MONITOR PROM SET . .	1 . . .	
988 2334 001	. DP, SENTRY	1 . . .	
922 0745 025	. CABLE, TERM 25' M-M	0 . . .	(NEED 1 CABLE)
922 0745 050	. CABLE, TERM 50' M-M	0 . . .	(NEED 1 CABLE)
922 0745 075	. CABLE, NULL-MODEM 75'	0 . . .	(NEED 1 CABLE)
922 0745 100	. CABLE, NULL-MODEM 100'	0 . . .	(NEED 1 CABLE)
922 0745 150	. CABLE, NULL-MODEM 150'	0 . . .	(NEED 1 CABLE)
922 0745 200	. CABLE, NULL-MODEM 200'	0 . . .	(NEED 1 CABLE)
356 0089 000	. CABLE TIE TY RAP	6 . . .	
358 1024 000	. CABLE STRIP MOUNT	6 . . .	

Table 5-6. CABLE, TERM 25' M-M - 922 0745 025

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	. ASSY INSTR, CABLE	0 . . .	
253 0074 000	. CABLE 4C 22AWG 400V	25 . . FT	
610 0539 000	. PLUG 25 POS	2 . . .	P001 P002
408 0216 000	. SHIELD 25 POSITION	2 . . .	#P001 #P002
354 0384 000	. CONTACT, PIN	12 . .	
296 0262 000	. TUBING, SHRINKABLE .2525 . FT	
356 0087 000	. CABLE TIE TY RAP	2 . . .	
252 0235 000	. WIRE, STRD 22AWG GRN2 . . FT	

Table 5-7. CABLE, TERM 50' M-M - 922 0745 050

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	. ASSY INSTR, CABLE	0 . . .	
253 0074 000	. CABLE 4C 22AWG 400V	50 . . FT	
610 0539 000	. PLUG 25 POS	2 . . .	P001 P002
408 0216 000	. SHIELD 25 POSITION	2 . . .	#P001 #P002
354 0384 000	. CONTACT, PIN	12 . .	
296 0262 000	. TUBING, SHRINKABLE .2525 . FT	
356 0087 000	. CABLE TIE TY RAP	2 . . .	
252 0235 000	. WIRE, STRD 22AWG GRN2 . . FT	

Table 5-8. CABLE, NULL-MODEM 75' - 922 0745 075

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	. ASSY INSTR, CABLE	0 . . .	
253 0074 000	. CABLE 4C 22AWG 400V	75 . . FT	
610 0539 000	. PLUG 25 POS	2 . . .	P001 P002
408 0216 000	. SHIELD 25 POSITION	2 . . .	#P001 #P002
354 0384 000	. CONTACT, PIN	12 . .	
296 0262 000	. TUBING, SHRINKABLE .2525 . FT	
356 0087 000	. CABLE TIE TY RAP	2 . . .	
252 0235 000	. WIRE, STRD 22AWG GRN2 . . FT	

Table 5-9. CABLE, NULL-MODEM 100' - 922 0745 100

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	ASSY INSTR, CABLE	0	
253 0074 000	CABLE 4C 22AWG 400V	100 FT	
610 0539 000	PLUG 25 POS	2	P001 P002
408 0216 000	SHIELD 25 POSITION	2	#P001 #P002
354 0384 000	CONTACT, PIN	12	
296 0262 000	TUBING, SHRINKABLE .25	.25 FT	
356 0087 000	CABLE TIE TY RAP	2	
252 0235 000	WIRE, STRD 22AWG GRN	.2 FT	

Table 5-10. CABLE, NULL-MODEM 150' - 922 0745 150

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	ASSY INSTR, CABLE	0	
253 0074 000	CABLE 4C 22AWG 400V	150 FT	
610 0539 000	PLUG 25 POS	2	P001 P002
408 0216 000	SHIELD 25 POSITION	2	#P001 #P002
354 0384 000	CONTACT, PIN	12	
296 0262 000	TUBING, SHRINKABLE .25	.25 FT	
356 0087 000	CABLE TIE TY RAP	2	
252 0235 000	WIRE, STRD 22AWG GRN	.2 FT	

Table 5-11. CABLE, NULL-MODEM 200' - 922 0745 200

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
822 0745 001	ASSY INSTR, CABLE	0	
253 0074 000	CABLE 4C 22AWG 400V	200 FT	
610 0539 000	PLUG 25 POS	2	P001 P002
408 0216 000	SHIELD 25 POSITION	2	#P001 #P002
354 0384 000	CONTACT, PIN	12	
296 0262 000	TUBING, SHRINKABLE .25	.25 FT	
356 0087 000	CABLE TIE TY RAP	2	
252 0235 000	WIRE, STRD 22AWG GRN	.2 FT	

Table 5-12. SENTRY SOFTWARE PACKAGE - 994 9267 003

HARRIS P/N	DESCRIPTION	QTY/UM	REF. SYMBOLS/EXPLANATIONS
917 2237 001	SENTRY PLATINUM VHF TO PC..	1	
917 2235 001	SENTRY MONITOR PROM SET	1	
988 2334 001	DP, SENTRY	1	