

# 55300A

## GPS TELECOM PRS PROGRAMMING

This document describes the Transaction Language 1 (TL1) used by the 55300A. It includes all of the commands needed to operate and control the 55300A and is intended for use by the Control Center personnel (TL1 users).

**SERIAL PREFIX NUMBER: 3602, 3612, KR841 and above**

**FIRMWARE REVISION: 3639 and above**

Firmware revision can be identified by using the RTRV-NETTYPE TL1 command via the **REMOTE ACCESS PORT**. See Chapter 2, "Getting Started," of this guide for instructions on connecting computer or terminal to this product.

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## Warning Symbols That May Be Used In This Book



Instruction manual symbol; the product will be marked with this symbol when it is necessary for the user to refer to the instruction manual.



Indicates hazardous voltages.



Indicates earth (ground) terminal.



or



Indicates terminal is connected to chassis when such connection is not apparent.



Indicates Alternating current.



Indicates Direct current.

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# In This Guide

## *Guide Contents and Organization*

The information in this manual is intended for anyone wanting to learn how to use TL1 command to operate the 55300A GPS Telecom Primary Reference Source. The primary audience is Control Center personnel responsible for provisioning and monitoring the 55300A from a remote or local terminal.

Here is a brief summary of the entire manual by chapter and appendix to acquaint you with the information covered in this manual.

Chapter 1, “**Introduction**,” provides an overview of the system and the commands that can be used with the 55300A GPS Telecom Primary Reference Source.

Chapter 2, “**Getting Started**,” describes what to do when you first start using TL1 commands to communicate with the 55300A.

Chapter 3, “**Automatic Messages**,” describes the messages that can be displayed automatically by the 55300A.

Chapter 4, “**TL1 Commands**,” provides detailed descriptions of the TL1 Commands that can be used with the 55300A.

Chapter 5, “**TL1 Keywords**,” provides detailed descriptions of the TL1 Keywords that can be used with the Provisioning commands.

Chapter 6, “**Events**,” provides detailed descriptions of the alarmed and non-alarmed events that can be encountered when using the 55300A.

Chapter 7, “**Receiver Status Screen**,” provides a detailed description of all of the information in the Receiver Status screen.

Appendix A, “**Error Codes**,” lists all of the error codes that you may encounter when using the 55300A.

Appendix B, “**Retrieving Time of Day**,” describes how to use a SCPI command to retrieve the time of day from the 55300A.

## *Manuals*

The following guides that document the 55300A are shipped with the product.

- 55300A Programming Guide (this guide), 097-55300-02 provides TL1 command descriptions and examples for use.
- 55300A User’s Guide, 097-55300-01 provides an in-depth guide to installing, operating, and troubleshooting the 55300A.





---

## 1.1 Overview

1.1.1 The 55300A provides a highly accurate frequency output of 1544 kHz and 1544 kbps or 2048 kHz and 2048 kbps, or 10 MHz, which can be used as a synchronization source for all office levels in a telecommunication network. The 55300A maintains Stratum 1 level performance while the GPS signal is present.

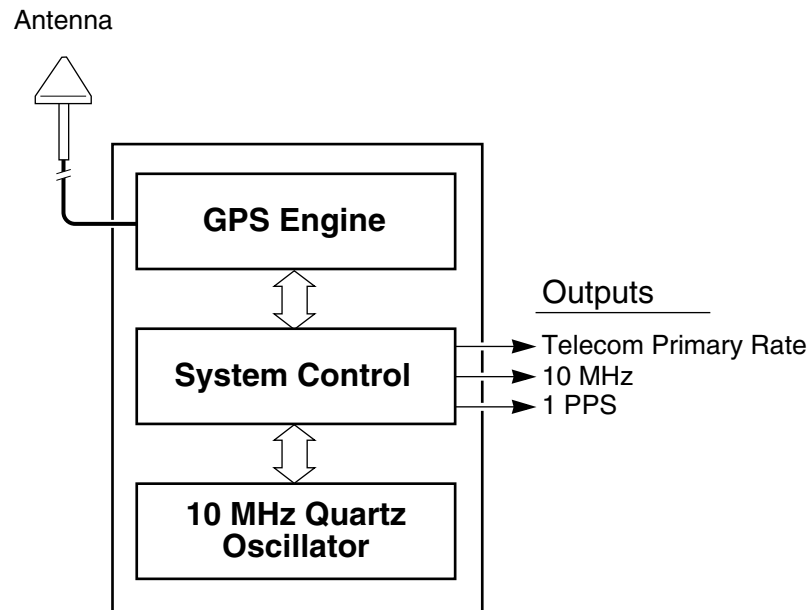
1.1.2 This chapter briefly describes the 55300A GPS Telecom Primary Reference Source and the TL1 commands that can be used with the 55300A. It includes the following information:

- System Overview
- TL1 Commands
- Manual Assumptions
- List of Terms

---

## 1.2 System Overview

1.2.1 The 55300A consists of three modules as shown in Figure 1-1. When first powered on, the 55300A searches for available satellites to acquire. Once satellites have been acquired and GPS lock has been achieved, the 55300A begins providing precise frequency and time information that can be displayed by using TL1 commands. If the GPS signal is interrupted, the 55300A enters an intelligent Holdover mode that uses SmartClock® technology. For more detailed information about the operation of the 55300A, refer to the 55300A User's Guide.



**Figure 1-1. 55300A GPS Telecom Primary Reference Source Block Diagram**

## 1.3 TL1 Commands

1.3.1 TL1 commands are used to communicate with the 55300A through Port 1 or the Remote Access Port. These commands are used primarily to configure receiver status, monitor performance, and diagnose problems. You communicate with the 55300A by using a computer running a terminal emulation program (e.g., Window's Terminal). Two users may be logged onto the 55300A at the same time: one communicating through Port 1, and the other communicating through the Remote Access Port.

1.3.2 55300A TL1 commands are used to perform the following network management tasks:

- Security management
- Configuration management
- Performance management
- Fault management

1.3.3 The 55300A automatically displays alarm and event status information and keeps this information in logs (i.e., Automatic Output Log and the Event Log) that can be retrieved by using TL1 commands. These logs are described in chapter 3 of this guide.

### ***1.3.3.1 Security Management Commands***

1.3.3.2 Security management commands are used to protect system resources and information from unauthorized users. The security feature on the 55300A is either ON or OFF. The 55300A is shipped from the factory with the security feature disabled. This means that anyone can access the 55300A without logging on. If the Security Switch is changed to the “Password Required” setting, you must log on and enter your password before using any TL1 command.

1.3.3.3 Refer to the *55300A GPS Telecom Primary Reference Source User’s Guide* for the location and use of the Security switch on the 55300 card. Setting up security is described in chapter 2 of this guide.

### ***1.3.3.4 Configuration Management Commands***

1.3.3.5 Configuration management commands, also known as Provisioning commands, are used to set up and configure the 55300A when it is first installed or when the system configuration changes. The system is shipped with factory board switch and jumper settings and software defaults. Refer to the *55300A GPS Telecom Primary Reference Source User’s Guide* for more information on the switch and jumper settings. Some of these settings can be changed by using the Provisioning commands. These settings are listed in chapter 2 of this guide.

### ***1.3.3.6 Performance Monitoring Commands***

1.3.3.7 The 55300A is constantly measuring its performance. You can retrieve this information by using TL1 commands. Once you’ve collected this information and analyzed it, you can use the Performance Monitoring commands to fine tune these values to improve system performance and identify possible future problems. These commands are described in chapter 4 of this guide.

### ***1.3.3.8 Fault Management***

1.3.3.9 Fault management is used to maintain network performance and proper operation of the 55300A as a whole, and each essential component individually. You can configure alarmed and non-alarmed events by using the Provisioning commands to set thresholds, values, and conditions. The system is constantly testing itself to make sure it is operating properly and within the limits of the user-configurable system settings. If a fault is encountered, an alarm LED displays a color associated with the severity of the alarm on the front panel and a message is displayed (if connected to a terminal).

### **Automatic Messages**

1.3.3.10 Trouble events occurring in the 55300A and events occurring on the network are classified as alarmed or non-alarmed events and cause a message to be displayed and recorded in the system logs. In general, an alarmed event has immediate or potential impact on the operation of the 55300A or network performance. Automatic Messages are described in chapter 3.

---

## 1.4 Manual Assumptions

1.4.0.11 This manual assumes that the person using this manual is a Control Center Installer/Administrator who has experience working with GPS receivers and TL1 commands. It further assumes that the 55300A has been installed according to the instructions in the *55300A GPS Telecom Primary Reference Source User's Guide* and that the user may not have direct access to the 55300A (i.e., you are remotely connected via the RS-232C serial port).

---

## 1.5 List of Terms

1.5.1 The terms listed in Table 1-1 relate to the 55300A and are used throughout this manual.

**Table 1-1. List of Terms**

<b>Term</b>	<b>Definition</b>
AIS	Alarm Indication Signal
ACO	Alarm Cutoff
BITS	Building Integrated Timing Supply
CAS	Channel Associated Signaling
CCS	Common Channel Signaling
CRC4	Cyclic Redundancy Check
DDFS	Direct Digital Frequency Synthesizer
DCE	Data Communication Equipment
DTE	Data Terminal Equipment
E1	CEPT 2048 Mbps signal
GPS	Global Positioning System
LOS	Loss of Synchronization
LNC	Local Node Clock
OOF	Out of Frame
SSM	Synchronization Status Message
SSU	Synchronization Supply Unit
ST2	Stratum 2
ST3E	Stratum 3 Extended
TDEV	Time Deviation
TNC	Transit Node Clock







---

## 2.1 Overview

2.1.1 The operation of the 55300A is designed to be as automatic as possible. However, there are situations where you may want to perform configuration, security, system administration, and performance monitoring tasks. The tasks described here are those most commonly encountered by new users.

2.1.2 Once the 55300A is communicating with a computer running a terminal emulation program (e.g., Window's Terminal), you will be able to see Automatic Messages displayed and to enter TL1 commands. Automatic Messages are described in chapter 3 and TL1 commands are described in chapter 4 of this guide.

2.1.3 This chapter provides examples of tasks a new user might want to perform from a remote terminal when the 55300A is first installed. It includes the following topics:

- Basic System Example
- Setting Up Remote Communications
- Displaying Automatic Messages
- Alarms/Events
- Beginning Tasks
- Customizing the System

---

## 2.2 Basic System Example

2.2.1 The examples in this chapter assume that you have installed the 55300A according to the instructions in the *55300A GPS Telecom Primary Reference Source User's Guide*. For purposes of this chapter, our basic system includes the following:

- One 55300A (55310A marked A in Figure 2-1; or 55320A marked B in Figure 2-1)
- Antenna and cabling
- One Personal Computer connected to the Remote Access Port running Microsoft Window's Terminal program and using TL1 commands to communicate.

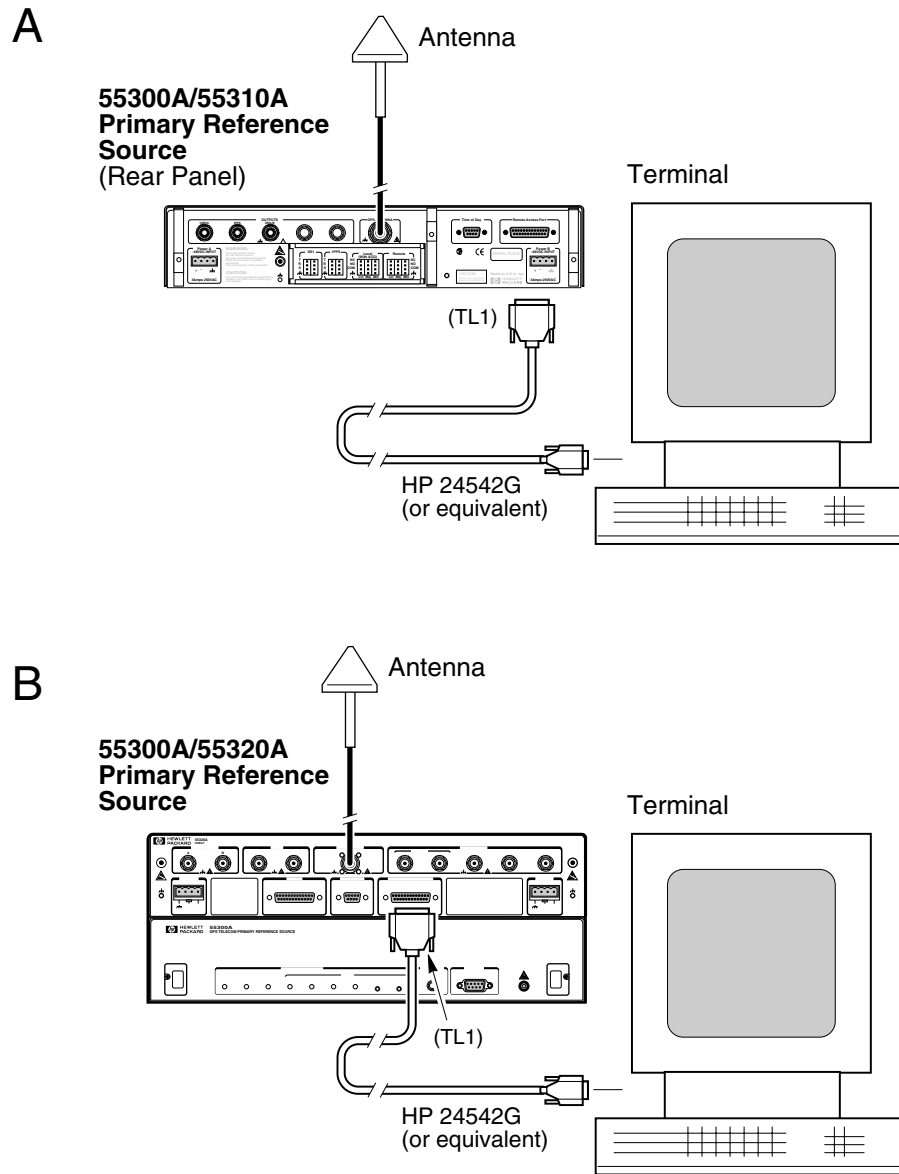


Figure 2-1. 55300A System Example

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## 2.3 Setting Up Remote Communications

2.3.1 There are two communication ports (Port 1 and the Remote Access Port) available on the 55300A. Therefore, it is possible for two users to be logged on at the same time (one at each port). Typically, one user would be connected to the Remote Access Port for remote management use and another would be connected to Port 1 for local use. In order to communicate with the 55300A, you need to set up a terminal emulation program (e.g., Windows Terminal) with the following communication parameters:

- Baud Rate = 9600
- Data Bits = 8
- Stop Bits = 1
- Parity = None
- Flow Control = None
- Connector = Typically COM 1

2.3.2 These parameter values match the default communication parameters that have been set up at the factory and shipped with the 55300A. Note that you can change these parameter values and other communication parameters using TL1 commands (see the ED-EQPT command in chapter 4 of this guide) once you have established a communication link with the 55300A.

### 2.3.2.1 Verifying the Communication Link

2.3.2.2 Once the communication parameters have been set up for one port, you should be able to communicate with the 55300A. For example, enter a “;” (semicolon).

```

;
_____
HPGPS 96-09-11 20:21:44
M 0 DENY
"IICT"
/* Input, Invalid Correlation Tag (CTAG) */
;

```

2.3.2.3 A system response should be displayed which indicates that a communication link has been established even though the “command” is denied (DENY). If you do not see a response displayed, refer to *55300A GPS Telecom Primary Reference Source User’s Guide* to check the system installation and setup.

**NOTE**

If you change the parameters for a port on the 55300A, you can restore the port to the factory default settings by setting S1 position 2 on the internal system card to the ON position. You must remove the card from the system first before you can do this. See the *55300A User's Guide*.

---

## 2.4 Displaying Automatic Messages

2.4.1 Once remote communication has been established, Automatic Messages can be displayed. Automatic Messages report alarmed or non-alarmed events. In general, alarmed events have immediate or potential impact on the operation or performance of the 55300A. These messages display under certain conditions. These conditions have been configured at the factory with the following default settings.

**Table 2-1. Automatic Messages**

Message Displays When...	Message Displayed
An alarmed event occurs. See default settings for alarmed events in chapter 6 of this guide.	REPT ALM EQPT
A non-alarmed event occurs. See default settings for non-alarmed events in chapter 6 of this guide.	REPT EVT EQPT

2.4.2 Refer to chapter 3 of this guide for more information about Automatic Messages.

2.4.3 You can change the conditions under which a message displays by using the ED-EQPT Provisioning command. This command is described in chapter 4.

**NOTE**

During the power up process, a major alarm may occur because the unit has not yet locked to GPS, and hence the outputs are invalid. This behavior is normal. The alarm will clear when the unit achieves GPS lock. Refer to the *55300A User's Guide*.

### 2.4.3.1 Alarmed Events

2.4.3.2 Alarms are events that cause the REPT ALM EQPT Automatic Message to be displayed. Alarmed events have immediate or potential impact on the operation of the 55300A or performance of the network. They are events that you want to be immediately notified about. For example:

```
HPGPS 96-09-09 19:59:18
** 0003 REPT ALM EQPT
   ":MJ,DPM1,NSA,09-09,19-59-18:\\"ENDED Digital pulse monitor 1\\"
*/
;
```

2.4.3.3 If a REPT ALM EQPT message displays, take corrective action based on the alarm condition as described in the *55300A GPS Telecom Primary Reference Source User's Guide*.

### 2.4.3.4 Non-Alarmed Events

2.4.3.5 Non-alarmed events cause the REPT EVT EQPT Automatic Message to be displayed. They report that an event has occurred. For example:

```
HPGPS 96-09-09 19:59:18
A 0001 REPT EVT EQPT
   ":HOLDOVER,SC, 09-09,19-59-18:\\"Holdover\\"
;
```

2.4.3.6 This Automatic Message reports that the system has entered Holdover mode. A REPT EVT EQPT message would also display to report leaving Holdover mode and to report clearing the condition ("CL" as the <condeff> parameter).

---

## 2.5 Beginning Tasks

2.5.1 Once you have installed the 55300A according to the instructions in the *55300A GPS Telecom Primary Reference Source User's Guide* and set up remote communications using a terminal emulation program, you can use either SCPI commands or TL1 commands to communicate with the 55300A. In addition, you can use the SatStat program to display continual status updates of the 55300A.

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**NOTE**

This manual will primarily use TL1 commands to communicate with the 55300A.

2.5.2 For more information on SCPI commands and the SatStat program, refer to the *55300A GPS Telecom Primary Reference Source User's Guide*. For more detailed information about the TL1 commands used to perform these tasks, refer to chapter 4 of this guide. In the examples in this chapter, the commands that you enter are underlined.

2.5.3 The examples in this section are designed to get you started using TL1 commands by providing step-by-step instructions to perform these basic system tasks:

- Setting Up Security
- Powering On the 55300A
- Logging Onto the System
- Retrieving System Information
- Retrieving System Logs
- Customizing the 55300A
- Bypassing Position Survey Operation
- Logging Off the System

### 2.5.3.1 *Setting Up Security*

2.5.3.2 55300A security is controlled by the Security switch on the 55300 card. When shipped from the factory, the 55300A comes with the security feature disabled. This means that users do not need to log on to access the 55300A. If it is important to protect your system's resources and information from unauthorized users, you need to set up system security and require users to log on before they can access the 55300A. The following table lists the two possible access modes.

**Table 2-2. 55300A Access Modes**

Security Feature	Security Switch	Password Required	Description
Disabled	OFF (Default)	No	No security—no password required, can use all commands without logging on. Security switch is set to OFF (No Password Required).
Enabled	ON	Yes	Requires password, can use all commands. Security switch is set to ON (Password Required).

### Security Switch

2.5.3.3 When shipped from the factory, the Security Switch on the 55300 card is set to the OFF (No Password Required) position. In order to enable the security feature, you must set the Security Switch to ON (the Password Required setting).

2.5.3.4 If security has been enabled and you try to enter a command without first logging on, your command will be denied. For example:

```
RTRV-SID:::123;
HPGPS 96-09-16 20:03:39
M 123 DENY
  "PICC"
  /* Privilege, Illegal Command Code */
  /* Sorry, you are not authorized to execute this command */
;
```

2.5.3.5 Notice the error response. It is displayed because you did not log on before entering the RTRV-SID command. System error responses (e.g., PICC) are listed in appendix A.

### 2.5.3.6 *Powering Up the 55300A*

2.5.3.7 Since there is no power on/off button, the 55300A starts working just as soon as you connect the power supply. When the 55300A is first powered on and has successfully completed running its self tests, it automatically enters survey mode to start acquiring available satellites.



**2.5.3.8 Logging Onto the System (Only if Security Enabled)**

2.5.3.9 To log on to the system, you must have your user name, correlation tag, and password (see ACT-USER command in chapter 4 of this guide). For example:

```
ACT-USER::SUPER:123::GPS-SYNC!;
```

```
HPGPS 96-09-16 20:06:11
```

```
M 123 COMPLD
```

```
"SUPER: 96-09-16 18:09:16,1"
```

```
HPGPS 96-09-16 20:06:11
```

```
A 0006 REPT EVT SESSION
```

```
"LOCAL (Port 1)"
```

```
/* NOTICE: This is a private computer system.
```

```
Unauthorized access or use may lead to prosecution. */
```

2.5.3.10 This example shows user (always SUPER) logging on with a correlation tag of 123 and the system default password of GPS-SYNC!. Notice the COMPLD response, this means that the command was successfully completed. The date and time are automatically retrieved from the satellite information and displayed in the system header once the system has achieved GPS Lock.

**NOTE**

If you log onto a system using the same port that another user has already logged onto, you will automatically log the previous user off the system. An Automatic Message will display stating that the previous user was logged off. Two users can be logged onto the system at the same time; one at the Remote Access Port, and one at Port 1. Automatically logging off another user only happens when two users log onto the same port.

Also if the system is left inactive for over 15 minutes, it will automatically terminate the session and log you off. This means that you must enter a command (followed by a semicolon) before 15 minutes has passed in order to stay logged onto the system.

### 2.5.3.11 Retrieving System Information

2.5.3.12 While the 55300A is in the process of acquiring satellites, you can display system status information by using a TL1 command (see the RTRV-PM-EQPT command in chapter 4 of this guide). For example:

```
RTRV-PM-EQPT:::123::SYSTSTAT;

HPGPS 96-09-11 19:41:57

M 123 COMPLD

"SYSTSTAT"

/*

----- Receiver Status -----
SYNCHRONIZATION ..... [ Outputs Valid ]
SmartClock Mode _____ Reference Outputs _____
>> Locked to GPS TFOM 3 FFOM 0
Recovery 1PPS TI +99.2 ns relative to GPS
Holdover HOLD THR 1.000 us
Power-up Holdover Uncertainty _____
Predict 20.0 us/initial 24 hrs

ACQUISITION ..... [ GPS 1PPS Valid ]
Tracking: 6 _____ Not Tracking: 3 _____ Time _____
PRN El Az SS PRN El Az UTC 19:41:58 11 Sep 1996
1 31 186 26 9 10 90 GPS 1PPS Synchronized to UTC
3 47 295 44 26 11 38 ANT DLY 154 ns
17 46 87 28 31 14 319 Position _____
21 64 281 33 MODE Hold
23 62 30 37
28 58 203 36 LAT N 37:19:32.462
LON W 121:59:52.158
ELEV MASK 10 deg HGT +47.50 m (MSL)

HEALTH MONITOR ..... [ OK ]
Self Test: OK Int Pwr: OK Oven Pwr: OK OCXO: OK EFC: OK GPS Rcv: OK

*/

;
```

2.5.3.13 The Receiver Status screen displayed above contains synchronization, acquisition, and health monitor information. One of the key indicators on the screen above is the Acquisition status indicator. It shows “GPS 1 PPS Valid” as soon as satellite information is sufficient. Refer to chapter 7 in this guide for a detailed description of each part of the Receiver Status screen.

**NOTE**

You must re-enter the RTRV-PM-EQPT command each time you want to display an updated status screen.

**2.5.3.14 Retrieving System Logs**

2.5.3.15 The 55300A maintains two logs to track system activity:

- The Automatic Output (AO) Log records recent Automatic Messages in sequential order (use the RTRV-AO command). The AO Log can be used for viewing messages that may have been missed while the communications terminal was disconnected.
- The Event Log records events in reverse chronological order (use the RTRV-LOG command). Battery backed up. The Event Log provides a method of reviewing 55300A performance and therefore, may provide clues to the cause of reduced network performance.

2.5.3.16 These logs are described in chapter 3.

Use the RTRV-AO command to display the Automatic Output Log. For example:

```
RTRV-AO:::123:::ATAGSEQ=FIRST&&LAST;
  HPGPS 96-09-11 19:59:10
M 123 COMPLD
/*

  HPGPS 96-09-11 19:59:10
** 0001 REPT ALM EQPT
   ":MJ,DPM2,NSA, 09-09,19-59-18:\"Digital pulse monitor 2\""

  HPGPS 96-09-11 19:59:10
** 0002 REPT ALM EQPT
   ":MJ,DPM1,NSA, 09-09,19-59-18:\"Digital pulse monitor 1\""

  HPGPS 96-09-09 19:59:18
** 0003 REPT ALM EQPT
   ":MJ,DPM1,NSA,09-09,19-59-18:\"ENDED Digital pulse monitor 1\""
*/
;
```

This command starts displaying all of the messages in the Automatic Output Log.

**NOTE**

If you specified ATAGSEQ=FIRST&&LAST, the messages will scroll by very fast. If you want to see each message, specify a small range of message numbers or you can log the messages to a file by using your terminal emulation program. See your terminal emulation program manual for specific instructions.

Use the RTRV-LOG command to display the Event Log. For example:

```
RTRV-LOG:::123::EVTALL;

HPGPS 96-09-11 20:00:58
M 123 RTRV
/*
"1:MJ,DPM1,NSA,09-09,19-59-18:\\"ENDED Digital pulse monitor 1\\"
"2:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\"
"3:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"4:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\"
"5:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"6:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"7:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"8:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\"
"9:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"10:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\"
*/
```

This command starts displaying the Event Log from the top entries.

2.5.3.17 If you want to customize the 55300A operation, see the section titled “Customizing the 55300A Operation” in this chapter for a list of key tasks you may want to perform to customize the operating parameters of the 55300A.

### ***2.5.3.18 Logging Off the System***

2.5.3.19 When ready to log off the system, use the CANC-USER command. For example:

```
CANC-USER:::123;  
  
HPGPS 96-09-16 20:35:45  
M 123 COMPLD  
  
;
```

When logging off, an Automatic Message will also display at the port you were using.

```
HPGPS 96-09-16 20:35:45  
A 0007 CANC  
SUPER  
  
;
```

---

**NOTE**

You will automatically be logged off the system if you do not enter a command (followed by a semicolon) within 15 minutes. The system is set up to automatically terminate an inactive session (one that exceeds 15 minutes without any command activity).

---

---

## 2.6 Customizing the 55300A

2.6.1 After connecting the 55300A to the antenna, power source, RS-232C port, and after the self test is completed, you may want to customize your installation using one or more of these capabilities:

- Execute a system preset if someone else has used the 55300A and left it in an unacceptable state.
- Set the antenna delay.
- Set the elevation mask angle.
- Set the time zone.

2.6.2 For each task in this section, you can use either a terminal emulation program or the SatStat program to issue the selected commands. However, in these examples, TL1 commands will be used. Additional information about the SatStat program and SCPI commands is provided in the *55300A GPS Telecom Primary Reference Source User's Guide*.

---

**NOTE**

If required, restore all of the 55300A's internal settings to their factory shipment values by invoking a system preset as described in the next section.

### 2.6.2.1 Presetting the System

2.6.2.2 After executing the system preset, the 55300A will begin normal operation: it will acquire GPS signals, determine the date, time, and position automatically, bring the reference oscillator ovens to a stable operating temperature, lock the reference oscillator and its output to 10 MHz, and synchronize the 1 PPS output to UTC.

---

**NOTE**

Be sure to choose the correct command language for the 55310A/55320A/55322A port you are using. **System preset should be performed only when necessary.**

2.6.2.3 The 55300A is preset using the INIT-SYS command. For example:

```
INIT-SYS:::123::9;
```

2.6.2.4 Refer to chapter 4 of this guide for more information about the INIT-SYS command.

### Compensating for the Length of the Antenna Cable

2.6.2.5 The 55300A can be custom-configured to compensate for the length of the antenna cable. The phase of the 55300A's internal clock is offset by the value you enter with this command. The amount of error is typically on the order of a few hundred nanoseconds. Should you decide to correct for this error, tables in chapter 3, "Features and Functions," of the *55300A GPS Telecom Primary Reference Source User's Guide* provide typical corrections for standard antenna cable lengths.

2.6.2.6 Set the 55300A to compensate for antenna cable delay using the ED-EQPT command. For example:

```
ED-EQPT:::ADEL=154;
```

2.6.2.7 It is normal to observe that the 55300A momentarily goes into holdover after any change in antenna delay. Refer to chapter 5 of this guide for more information about the ADEL keyword.

### **Excluding Satellites Which Appear Below a Specified Elevation Angle**

2.6.2.8 At the factory, and whenever the 55300A is preset, the 55300A is set to seek satellites at least 10 degrees above the horizon—down to an “elevation mask angle” of 10 degrees. The 10 degrees setting provides a view of most of the sky while avoiding near-horizon satellites, which are more susceptible to atmospheric anomalies and multi-path effects. The 55300A can be custom-configured to use a different elevation mask angle.

2.6.2.9 Set the 55300A elevation mask angle using the ED-EQPT command. For example:

```
ED-EQPT::GPS::EMANGLE=15;
```

2.6.2.10 Refer to chapter 5 of this guide for more information about the EMANGLE keyword.

### **Displaying Local Time Rather Than UTC Time**

2.6.2.11 Set the offset from UTC time to local time using the ED-EQPT command. For example:

```
ED-EQPT::GPS:123::TZONE=(-7)-0;
```

2.6.2.12 Refer to chapter 5 of this guide for more information about the TZONE keyword.

### ***2.6.2.13 Bypassing Position Survey Operation***

2.6.2.14 In order to operate properly, the 55300A must know its position. The 55300A is able to collect enough information from four satellites to compute this position. The “position survey operation” takes in data from the satellites, iterating until the antenna position is known to the required precision. The 55300A will automatically start its position survey operation on powerup and the INIT-SYS command.

2.6.2.15 Alternatively, if the antenna position is already known to seconds of arc, and the 55300A cannot see enough satellites, you may manually enter antenna position as shown in the following text.

---

**NOTE**

---

An incorrect value for the position will confuse the 55300A, and will degrade the timing information accuracy or even prevent tracking any satellites.

2.6.2.16 Set the 55300A antenna position using the ED-EQPT command. For example:

```
ED-EQPT::GPS:::POS= N-37-19-32.462-W-121-59-52.158-47.50;
```

2.6.2.17 This command shows how to set the latitude, longitude, and height parameters to represent the latitude (in degrees, minutes, seconds), longitude (in degrees, minutes, seconds), and altitude in meters above mean sea level (MSL).

---

**NOTE**

---

If you know the position to this accuracy, the desired position is of the antenna rather than the Receiver. For faster acquisition following repair, or power failure you may want to write down the position after the 55300A has completed its survey.

2.6.2.18 Refer to chapter 5 of this guide for more information about the POS keyword.





---

## 3.1 Overview

3.1.1 As soon as a terminal emulation program is set up to communicate with the 55300A, Automatic Messages can be displayed to notify you of system events. Automatic Messages report network and system alarmed and non-alarmed events. This chapter describes the Automatic Messages that can be displayed. It includes the following topics:

- Automatic Message Description
- Message Logs

---

## 3.2 Automatic Message Description

3.2.1 Automatic Messages are automatically generated by the 55300A, saved in the Automatic Output (AO) Log, and sent to the communications ports (and displayed if there is a terminal connected to the port). There are two types of Automatic Messages:

- REPT EVT EQPT—Reports non-alarmed events—identified by the letter A, reported as a non-alarmed event, and saved in the Automatic Output (AO) Log. See chapter 6.
- REPT ALM EQPT—Reports alarm events—identified by \*\*, \*, and C, reported as an alarmed event, and saved in the Automatic Output (AO) Log. See chapter 6.

3.2.2 In contrast, responses to commands are identified by the letter M.

3.2.3 The 55300A is configured at the factory with default system settings. These settings determine under what conditions Automatic Messages are generated. Refer to chapter to find out which events have been configured at the factory to generate Automatic Messages.

### 3.2.3.1 *REPT ALM EQPT (Report Alarm Events)*

3.2.3.2 This message is generated by the 55300A to report the occurrence of an alarmed event. In general, an alarmed event causes immediate or potential impact on the operation or performance of the 55300A or the network using it. Manual or remote intervention may be required to restore normal operation or performance of the unit after the event has occurred. A non-alarmed event is not classified as an alarmed event. The system is shipped from the factory with default settings that specify what conditions cause an alarm. You can change these settings by using the ED-EQPT command. Refer to chapter 4 of this manual.

#### Example

3.2.3.3 This message reports that a Major Alarm has been generated.

```
HPGPS 96-09-09 19:59:18
** 0003 REPT ALM EQPT
":MJ,DPM1,NSA,09-09,19-59-18:\"ENDED Digital pulse monitor 1\"
*/
;
```

Where:

- Line 1 = header
- Line 2 = message type = \*\* Major alarm, the message number (0003), and the message itself (REPT ALM EQPT)
- Line 3 = a Major Alarm (MJ), the event (DPM1) and the value (NSA), and the message content (ENDED Digital pulse monitor 1)

3.2.3.4 Alarms are identified by their severity. Alarm severity is user configurable and is described in chapter 6. The following alarms can be detected by the 55300:

- \*C= Critical Alarm
- \*\*= Major Alarm
- \*^= Minor Alarm

### 3.2.3.5 *REPT EVT EQPT (Report Non-Alarmed Events)*

3.2.3.6 This message is generated by an 55300A to report the occurrence of a non-alarmed event. A non-alarmed event being reported may be a change of status or the occurrence of an irregularity, which by itself is not severe enough to warrant an alarm notification. An example of this is entering Holdover mode.

#### Example

3.2.3.7 This message reports the event that the system is going into Holdover Mode. To report leaving Holdover mode, another REPT EVT EQPT message would be displayed using “CL” as the <condeff> parameter.

```
HPGPS 00-00-00 00:00:00
A 0001 REPT EVT EQPT
  :HOLDOVER,SC,00-00,00-00-00:\ "Holdover\" "
;
```

Where:

- Line 1 = header
- Line 2 = message type—non-alarmed (A), the message number (0001), and the message itself (REPT EVT EQPT)
- Line 3 = message content (Holdover, Setting Condition, and the date and time.)

3.2.3.8 This Automatic Message reports that the system has entered Holdover mode. A REPT EVT EQPT message would also display to report leaving Holdover mode and to report clearing the condition (“CL” as the <condeff> parameter).

---

### **3.3 Message Logs**

3.3.1 The 55300A maintains two different logs:

- Event Log—records alarmed and non-alarmed events
- Automatic Output (AO) Log—records all automatic messages

3.3.2 The Event Log should not be confused with the Automatic Output Log. The Event Log is used primarily to examine a sequence of events, perhaps for diagnostic purposes. The AO Log provides a temporary record of the recent Automatic Messages. The following section describes each log and explains how to use them.

### 3.3.2.1 Event Log

3.3.2.2 The Event Log is a chronological record of both alarmed and non-alarmed events. You may configure which events are entered in this log by using the ED-EQPT command (see chapter 6). This is a circular log holding the most recent 200 logged events in battery backed up RAM.

3.3.2.3 The primary use of this log is for determining the sequence of events leading up to a network or system problem. The Event Log is retrieved in reverse chronological order (i.e., last in, first out). Events placed in the log are those which have their LOG property set to Y, and can include both alarmed and non-alarmed events as well as those not initially reported (i.e., those with ALM property set to NONE). Events are retrieved in groups of ten events at a time.

3.3.2.4 Use the RTRV-LOG command to display the Event Log. For example:

```
;RTRV-LOG:::123::EVTALL;
```

```
HPGPS 96-09-11 20:00:58
```

```
M 123 RTRV
```

```
/*
```

```
"1:MJ,DPM1,NSA,09-09,19-59-18:\\"ENDED Digital pulse monitor 1\\""
```

```
"2:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\""
```

```
"3:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\""
```

```
"4:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\""
```

```
"5:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\""
```

```
"6:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\""
```

```
"7:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\""
```

```
"8:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\""
```

```
"9:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\""
```

```
"10:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\""
```

```
*/
```

3.3.2.5 This command starts displaying the Event Log from the top entries.

3.3.2.6 You can also clear the Event Log of all existing entries. For example:

```
INIT-LOG:::123::EVT;
```

### 3.3.2.7 Automatic Output (AO) Log

3.3.2.8 The Automatic Output (AO) Log is a record of all automatic messages that have been generated. The primary purpose of this log is to allow an operating system to retrieve any Automatic Output messages that may have been missed when first transmitted (all messages are sequentially numbered). You may retrieve the log using the RTRV-AO command. For example:

```
RTRV-AO:::123:::ATAGSEQ=FIRST&&LAST;

      HPGPS 96-09-11 19:59:10
M 123 COMPLD
/*
      HPGPS 00-00-00 00:00:00
** 0001 REPT ALM EQPT
      ":MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
      HPGPS 00-00-00 00:00:00
** 0002 REPT ALM EQPT
      ":MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\"
*/
;
```

3.3.2.9 Notice that the date and time were not included in message 1 and 2. The date and time are not available to be displayed until the system has achieved GPS lock. The date and time are retrieved from satellite information.

---

#### **NOTE**

If you specified ATAGSEQ=FIRST&&LAST, the messages will scroll by very fast. If you want to see each message, specify a small range of message numbers or you can log the messages to a file by using your terminal emulation program. See your terminal emulation program manual for specific instructions.

---

3.3.2.10 This command would retrieve the first ten Automatic Messages starting with the oldest message first (specified by the ATAGSEQ=FIRST&&LAST).

3.3.2.11 These messages include alarmed and non-alarmed event reports and information on user's logging on and off of the communication ports. This is a circular log that holds the most recent 100 messages or 1000 characters of information (whichever is less). No battery backup is provided for this log.







---

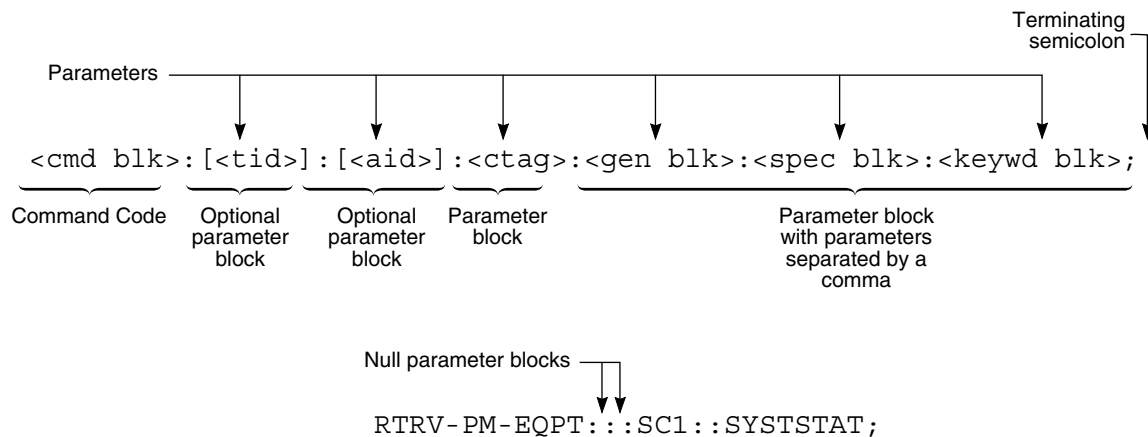
## 4.1 Overview

4.1.1 TL1 commands are used throughout the telecommunications industry to communicate with network elements, like the 55300A. These commands are entered through Port 1 or the Remote Access Port to change configuration, monitor performance, or diagnose problems. You enter TL1 commands after you have established communication with the 55300A from a computer running a terminal emulation program. This chapter describes the 55300A TL1 commands. It includes the following information:

- Command Syntax
  - Description of Blocks
  - Response Format
  - Command Summary
  - Individual Command Description
- 

## 4.2 Command Syntax

4.2.1 TL1 commands consist of a series of “blocks” separated by colons. The command is terminated with a semicolon. The general format of a command is shown in the following figure. A command can only be entered at the semicolon prompt (;) or the greater than (>) prompt.



**Figure 4-1. Command Format**

Where:

<cmd blk> = Command Block  
 <tid> = Target Identifier (optional)  
 <aid> = Access Identifier  
 <ctag> = Correlation Tag  
 <gen blk> = General Block—not used  
 <spec blk> = Specific Block  
 <keywd blk> = Keyword Block - <keyword>=<value> See chapter 5 of this guide.

4.2.2 In most cases, some of these blocks will be empty, in which case you only need to enter a colon (to specify that there is no input for this block). It is common to see adjacent colons in a TL1 command.

4.2.3 Some commands allow you to specify multiple items or a range of items. For example:

```
ED-EQPT::GPS:123:::IGNORE=12&13;
```

4.2.4 This example shows how to set the 55300A to ignore the satellite with pseudo-random noise code (PRN) = 12 and the one with PRN=13.

4.2.5 To retrieve messages 14, 17, and 25 through 30 from the log, use this command:

```
RTRV-AO:::123:::ATAGSEQ=4&17&25&&30;
```

### **4.2.5.1 Command Rules**

4.2.5.2 These general rules apply to 55300A TL1 commands:

- Empty blocks at the end of a command line may be omitted.
- Spaces are ignored (unless occurring in the middle of an identifier).
- Case is ignored—either uppercase, lowercase, or a mixture may be used. However, see the description of the <ctag> block and password blocks.
- Carriage Return and Line Feed are ignored (but see Backspace below)
- Backspace may be used to delete characters (but only up to the last carriage return or line feed).
- The Cancel character (CTRL-X) will cause all input up to that point to be ignored.

---

## 4.3 Description of Blocks

4.3.1 This section describes the various blocks in a TL1 command. Specific details and exceptions are provided later, under the description of the specific commands.

### 4.3.1.1 *Command Block <cmd blk>*

4.3.1.2 The Command Block identifies the specific command. It consists of a verb followed by one or two modifiers. The verb and modifier(s) are separated by hyphens.

4.3.1.3 Examples:

ED-EQPT

RTRV-ALM-EQPT

### 4.3.1.4 *Target Identifier <tid>*

4.3.1.5 <tid> is a string of 1 to 20 alphanumeric characters. This field may be left empty.

4.3.1.6 The Target Identifier provides an *optional* means of ensuring that a command has been directed to the correct network element. Each 55300A is assigned a System Identifier (<sid>). The default value for this System Identifier is HPGPS, but you may change this to any arbitrary string of 20 or fewer alphanumeric characters (using the SET-SID command). If a Target Identifier (<tid>) is included in a command, it will be compared against the System Identifier of the 55300A, and the command will only be executed if these match. If they do not match, the command will be rejected.

4.3.1.7 If the [<tid>] is empty, no comparison will take place and the command will be unconditionally executed.

### 4.3.1.8 *Access Identifier <aid>*

4.3.1.9 The Access Identifier <aid> is included for completeness in TL1 commands that require it, such as ED-EQPT and RTRV-EQPT. When used, it is set to "GPS." See the individual command descriptions.

### 4.3.1.10 *Correlation Tag <ctag>*

4.3.1.11 <ctag> is a string of 1 to 6 alphanumeric characters, but not all zeroes.

4.3.1.12 The Correlation Tag is used to connect commands with their responses and acknowledgments. It is an arbitrary, user defined string of up to six alphanumeric characters. In particular, it may be a number of up to six digits in length. It may not be the number zero. All commands must provide a valid Correlation Tag. Any responses or acknowledgments produced by the command will include the original

Correlation Tag. For example, it may be convenient to use the user's initials with sequential numbers for each command. That way if there are two users sending commands at the same time, you can identify which commands and responses belong to which user.

4.3.1.13 The case (upper, lower, or mixed) of the Correlation Tag is preserved, and will be copied to the Correlation Tag field in the response or acknowledgment.

4.3.1.14 A Correlation Tag of zero may not be used with a command. It is reserved for use with error responses and acknowledgments to commands for which the Correlation Tag is missing or garbled.

#### **4.3.1.15 General Block <gen blk>**

4.3.1.16 The General Block is not used with any 55300A commands. This block must always be empty.

#### **4.3.1.17 Specific Block <spec blk>**

4.3.1.18 The Specific Block contains additional information needed for the execution of the command. This information is specific to each command is included in the description of each command.

#### **4.3.1.19 Keyword Block <keywd blk>**

4.3.1.20 In the 55300A, the Keyword Block is generally used only with the Provisioning Commands (Memory Administration Commands) such as ED-EQPT and RTRV-EQPT. In these cases, it is used instead of the Specific Block (which is empty). The Keyword Block takes this form:

<keyword>

<keyword>=<value>

4.3.1.21 This information is quite specific and is included in the description of each command.

4.3.1.22 A few of the commands allow negative integer values in the <keywd\_blk>. A negative value must be enclosed within parentheses. For example, to set a negative value for the altitude 22.08 meters below mean sea level when specifying position:

```
ED-EQPT::GPS:123:::POS=N-37-19-31.865-W-121-59-52.112-(-22.08);
```

4.3.1.23 To set a positive value for the altitude 22.08 meters above mean sea level when specifying position:

```
ED-EQPT::GPS:123:::POS=N-37-19-31.865-W-121-59-52.112-(+22.08);
```

```
ED-EQPT::GPS:123:::POS=N-37-19-31.865-W-121-59-52.112-(22.08);
```

```
ED-EQPT::GPS:123:::POS=N-37-19-31.865-W-121-59-52.112-22.08;
```

## 4.4 System Response

4.4.1 There are several types of system responses that can be displayed after you enter a command. System responses are only sent to your port. The types of responses are:

- Acknowledgment
- Normal Response
- Error Response

4.4.2 A Normal or Error response is returned when the 55300A receives a command. Both kinds of responses include the source identifier (the sender of the response), the date and time, and the correlation tag <ctag> of the given command.

4.4.3 For a rejected command, the <ctag> may not be available for inclusion in the response. In this case, the single character “0” (zero) will be output for the <ctag>.

4.4.4 A response contains the following parameters:

<sid>	The System Identifier
<aid>	The Access Identifier (always = GPS if used)
<ctag>	The Correlation Tag

4.4.5 These parameters are described in the *Parameters* section at the end of this chapter.

4.4.6 The response format consists of the 55300A Source Identifier <sid>, the date, and the time on a 24-hour clock. For example, the following is a valid response to the RTRV-HDR command:

```
RTRV-HDR:::123;
      HPGPS 96-01-02 15:30:45
M 123  COMPLD
;
```

### 4.4.6.1 Alarm Acknowledgment

4.4.6.2 The 55300A does not require acknowledgment of alarms. You can retrieve the current state of the unit at any time using the RTRV-ALM-EQPT and RTRV-COND-EQPT commands. You can also issue the OPR-ACO-ALL command, which has the same effect as pressing the Alarm Cutoff button on the front panel of the 55300A (e.g., it does not clear the alarm condition, but will silence any audible alarms).

### ***4.4.6.3 Normal Response***

4.4.6.4 A normal response is displayed when the command has been completed or information requested is returned. This response carries the COMPLD message. An example of this is shown below.

```
ACT-USER::SUPER:123::USER;  
  
HPGPS 96-01-02 15:30:45  
M 123 COMPLD  
"SUPER: 95-12-29 1:30:04,2"
```

### ***4.4.6.5 Error Response***

4.4.6.6 An error response is displayed when the command was denied. The response carries the DENY message. The Error Code, "PICC" refers to the reason the error is displayed. Error codes are listed in Appendix A.

```
RTRV-HDR>:::123;  
  
HPGPS 96-01-02 15:30:45  
M 123 DENY  
"PICC"  
/*Sorry, you are not authorized to execute this command. */
```

---

## 4.5 Command Summary

4.5.1 These tables list the 55300A TL1 commands by task. Each command is then described in detail.

**Table 4-1. Security Task/Command Summary**

Security Tasks (Security Enabled)	Command
Activate user (log on)	ACT-USER
Cancel user (log off)	CANC-USER
Edit user's password	ED-PID

**Table 4-2. Provisioning Task/Command Summary**

Provisioning Tasks	Command
Edit equipment parameters	ED-EQPT
Initialize log	INIT-LOG
Initialize system	INIT-SYS
Set system identifier	SET-SID

**Table 4-3. System Status Task/Command Summary**

System Status Tasks	Command
Retrieve equipment parameters	RTRV-EQPT
Retrieve system header information	RTRV-HDR
Retrieve equipment information	RTRV-NETTYPE

**Table 4-4. Alarm Monitoring Task/Command Summary**

Alarm Tasks	Command
Operate alarm cutoff	OPR-ACO-ALL
Retrieve alarms	RTRV-ALM-EQPT
Retrieve automatic output log	RTRV-AO
Retrieve condition	RTRV-COND-EQPT
Retrieve event log	RTRV-LOG



---

## 4.6 ACT-USER (Activate User)

4.6.1 This command allows the user to log on and begin a session. You must use this command to log on if security has been enabled. Refer to chapter 2 in this guide.

---

**NOTE** During a session, if no activity is detected for 15 minutes, the 55300A will initiate a CANCEL USER and log the user off.

---

### Syntax

```
ACT-USER: [<tid>]:<uid>:<ctag>::<pid>;
```

### Values

<uid> = User name, which is always SUPER or empty

<pid> = User password (maximum of 10 characters) Default = GPS-SYNC!

Passwords can be a string of up to ten characters that meet the following rules:

- At least two characters must not be letters of the alphabet.
- At least one special character must be included. A special character is any printing character other than a letter of the alphabet, a number, a comma, a colon, or a semicolon. The password is case sensitive.

---

**NOTE** If you want to keep your system secure, it is a good idea to change the default password (GPS-SYNC!) as soon as possible.

---

### Example

This example shows how to log on to the 55300A.

```
ACT-USER::SUPER:SC1::GPS-SYNC!;
```

```
HPGPS 96-09-16 20:06:11  
M 123 COMPLD  
"SUPER: 96-09-16 18:09:16,1"
```

**ACT-USER (Activate User)**

Issue 1

The response indicates that the previous logon for SUPER was on 96-09-16 at 18:09:16 and since then there has been one unsuccessful attempt at logging on (e.g., using the wrong password, wrong user name). An Automatic Message is displayed only at the port that SUPER is using.

```
HPGPS 96-09-16 20:06:11
A 0006 REPT EVT SESSION
"LOCAL (Port 1)"
/* NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution. */
```

---

**NOTE**

If you log onto a system via the same port that another user is already logged onto, you will automatically log the previous user off the system. An automatic message will display stating that the previous user was logged off. Two users can be logged onto the system at the same time; one at the Remote Access Port, and one at Port 1. Automatically logging off another user only happens when two users log onto the same port.

Also if the system is left inactive for over 15 minutes, it will automatically log you off. This means that you must at least enter a semicolon (;) or a key followed by a semicolon before 15 minutes has passed in order to stay logged onto the system.

---

**Related Commands**

CANC-USER ( Cancel User)

---

## 4.7 CANC-USER (Cancel User)

4.7.1 This command terminates a session with a 55300A (i.e., logs off the user).

---

### **NOTE**

During a session, if no activity is detected for 15 minutes, the 55300A will initiate a CANCEL USER and log the user off.

---

### **Syntax**

```
CANC-USER: [<tid>]: [<uid>]:<ctag>;
```

### **Example**

This example shows what command a user would use to log off the 55300A.

```
CANC-USER::SUPER:123;
```

```
HPGPS 96-09-16 20:35:45
```

```
M 123 COMPLD
```

```
;
```

If you specify the user name, it must be SUPER. Otherwise an error will be generated. When you log off, an Automatic Message will be displayed at the port you were using.

```
HPGPS 96-09-16 20:35:45
```

```
A 0007 CANC
```

```
SUPER
```

```
;
```

---

### **NOTE**

You will automatically be logged off the system if you do not enter a command (followed by a semicolon) within 15 minutes. The system is set up to automatically terminate an inactive session (one that exceeds 15 minutes without any command activity).

---

### **Related Commands**

ACT-USER (Activate User)

---

## 4.8 ED-EQPT (Edit Equipment Parameter)

4.8.1 This command is used to modify GPS parameters. It can only be used with keywords that relate to GPS parameters. These parameters are described in chapter 5 of this guide. See the RTRV-EQPT command in this chapter to find out how to display the current setting of a GPS parameter.

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>:::<keyword>=<value>;
```

### Values

<aid> = GPS

<keyword>=<value> = See TL1 Keywords chapter in this guide.

### Example

This example shows how to set the 55300A's antenna delay parameter to 154 nanoseconds.

```
ED-EQPT::GPS:123:::ADEL=154;
```

This example shows how to set the 55300A's initial date to 4 Jun 1995.

```
ED-EQPT::GPS:123:::INITDATE=95-06-04;
```

This example shows how to set the 55300A's initial time to 1:14:15 P.M.

```
ED-EQPT::GPS:123:::INITTIME=13-14-15;
```

This example shows how to set the 55300A's time zone to Pacific Standard Time (-8 hrs from UTC).

```
ED-EQPT::GPS:123:::TZONE=(-8)-0;
```

This example shows how to set the 55300A's initial position to a location in San Jose. This is used to speed up the positive survey process.

```
ED-EQPT::GPS:123:::INITPOS=N-37-19-32.016-W-121-59-52.246-78.60;
```

This example shows how to set the 55300A's position to a location in San Jose. This will override the position survey process.

```
ED-EQPT::GPS:123:::POS=N-37-19-32.016-W-121-59-52.246-78.60;
```

This example shows how to set the 55300A to ignore satellites below the angle specified.

```
ED-EQPT::GPS:123:::EMANGLE=15;
```

**ED-EQPT (Edit Equipment Parameter)**

This example shows how to set the 55300A to ignore the satellite with pseudo-random noise code (PRN) = 12 and the one with PRN=13.

```
ED-EQPT::GPS:123:::IGNORE=12&13;
```

This example shows how to set the 55300A to include the satellite with pseudo-random noise code (PRN) = 5.

```
ED-EQPT::GPS:123:::INCLUDE=5;
```

This example shows how to set the 55300A's holdover duration threshold 1 to 1800 seconds and set threshold 2 to 24 hours (86,400 seconds).

```
ED-EQPT::GPS:123:::THRESHOLD1=1800;
```

```
ED-EQPT::GPS:123:::THRESHOLD2=86400;
```

This example shows how to squelch the telecom output when the 55300A's Holdover Duration Threshold 2 has been exceeded.

```
ED-EQPT::GPS:123:::HOLDACT=SQUELCH;
```

This example shows how to set a critical alarm when the system goes into Holdover mode and specify that the alarm is put in the Event log.

```
ED-EQPT::GPS:123:::HOLDOVER=ALM-CRITICAL&LOG-Y;
```

**Other Related Keywords to Set GPS Parameters**

ADEL(Antenna Delay)

EMANGLE(Elevation Mask Angle)

IGNORE(Satellites to Ignore)

HOLDACT (Holdover Action)

INCLUDE Satellites to Include)

INITTIME (Initial Date)

THRESHOLD (Sync Holdover Duration Threshold)

TZONE (Timezone)

**Other Related Keywords to Set GPS Events**

DPM1

DPM2

DTVVALID

EEPROM

EXCTH1

EXCTH2

FIRSTSAT

GPS1PPSBAD

HOLDING

HOLDOVER

INTREF

LOCKED

LOG

MINUS15

OSCBAD

OSCPROB

OSCWARM

OVENSUPL

PLUS15

PLUS5

POSHOLD

PPSVALID

RECOVERING

SYNTHBAD

SYNTHPROB

TIFAIL

TIMERST

USEREVT

WAITING

**Other Related Keywords to Set Communication Port Parameters**

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

**Other Related Keywords to Set Date and Time**

INITDATE (Initial Date)

INITTIME (Initial Time)

**Other Related Keywords to Set Unit Position**

INITPOS (Initial Position)

POS (Position)

---

## 4.9 ED-PID (Edit Password)

4.9.1 This command is used to change your own password.

### Syntax

```
ED-PID: [<tid>]: [<uid>]: <ctag>:: <old pid>, <new pid>;
```

### Values

<uid> = User's name (SUPER)

<old pid> = User's old password

<new pid> = User's new password

Passwords can be a string of up to ten characters that meet the following rules:

- At least two characters must not be letters of the alphabet.
- At least one special character must be included. A special character is any printing character other than a letter of the alphabet, a number, a comma, a colon, or a semicolon. The password is case sensitive.

---

### NOTE

If you forget your password, a new password can be set by disabling security (change the security switch inside the 55300A—refer to the 55300A User's Guide) and then using the ED-PID command. When the security feature is disabled, the 55300A does not check old passwords.

---

### Example

This example shows what command to use to change the password from GPS-SYNC! to SYNC-NIZ!.

```
ED-PID:::123::GPS-SYNC!, SYNC-NIZ!
```

```
HPGPS 96-09-16 21:17:24
```

```
M 123 COMPLD
```

```
;
```

### Related Commands

ACT-USER (Activate User)



---

## 4.10 INIT-LOG (Initialize Event Log)

4.10.1 This command instructs the 55300A to initialize or clear the Event Log. This log stores only the events that have the LOG parameter set (see chapter 6 of this guide).

### Syntax

```
INIT-LOG: [<tid>] :: <ctag> :: EVT;
```

### Example

This example shows how to clear the Event Log.

```
INIT-LOG:::123::EVT;  
  
HPGPS 96-09-11 21:30:14  
M 123 COMPLD  
/* LOG CLEARED */  
;
```

### Related Commands

RTRV-LOG (Retrieve Log)

---

## 4.11 INIT-SYS (Initialize System)

4.11.1 This command is used to initialize the 55300A to the factory preset settings. It then causes the unit to go through its power on reset, search the sky for satellites, survey the antenna position, and attempt to lock. For normal, unassisted operation, the 55300A must be able to “see” at least four satellites. The parameter <ph>, or phase, controls the degree of initialization performed.

---

**NOTE** Issuing this command will result in disruption of all of the following:

- GPS satellite tracking
- Reference oscillator frequency
- 1PPS output timing
- Receiver status information

Information that is *not cleared* is:

- The settings for all of the communication ports (Port 1, Remote Access port, TOD port)
- The password

---

### Syntax

```
INIT-SYS: [<tid>] :: <ctag> :: <ph>;
```

### Values

<ph> = Initialization Phase

9 = Initialize to factory defaults and emulate power on.

5 = Emulate a power on only.

This command restores the Receiver’s parameter settings to their factory-default values (see the following table).

**Table 4-5. System Preset (Factory Default) Parameter Settings**

System Parameter	Setting
	Event log is cleared.
GPS Position ...	N,0,0,0,E,0,0,0,0 (NV <sup>a</sup> ) LAST is also set to this position. (NV)
GPS Position HOLDLAST	N,0,0,0,E,0,0,0,0 (NV)
GPS Position HOLDSTATE	0 (NV)
GPS Position SURVEY STATE ...	ONCE
GPS Position SURVEYSTATE POWERUP ...	ON (NV)
GPS REFERENCE A DELAY ...	0.0 (NV)
GPS SATELLITE TRACKING EMANGLE ...	10 (NV)
GPS SATELLITE TRACKING IGNORE STATE ...	0 for every PRN.
GPS SATELLITE TRACKING IGNORE ...	No satellites ignored (NV)
GPS SATELLITE TRACKING INCLUDE ...	All satellites included (NV)
GPS SATELLITE TRACKING INCLUDE STATE ...	1 for every PRN.
TIME ZONE ...	0,0 (NV)
SYNCHRONIZATION HOLDOVER DURATION	0,0 (Even if there was a prior holdover, its duration will be lost.) 1800=30 min
SYNCHRONIZATION HOLDOVER DURATION THRESHOLD1 ...	1800=30min, (NV)
SYNCHRONIZATION HOLDOVER DURATION THRESHOLD2 ...	86400 (that is, 1 day), (NV)
SYNCHRONIZATION HOLDOVER ACTION	AIS, (NV)
SYNCHRONIZATION STATE	POWerup

a. NV stands for non-volatile memory. V stands for volatile memory.

### **Example**

This example shows how to initialize the system to the preset factory default settings.

```
INIT-SYS:::123::9;  
      HPGPS 96-09-11 21:31:26  
M 123 COMPLD  
;
```

### **Related Commands**

None

---

## 4.12 OPR-ACO-ALL (Alarm Cutoff)

4.12.1 This command is used to enable the Alarm Cutoff function. In effect, this command operates the Alarm Cutoff button on the 55300A card by silencing all current audible alarms. The alarm indicator on the front panel of the 55300A remains lit until outstanding alarms are reset. This command does not clear the alarm LEDs; it only silences the audible alarms by clearing the local or audible alarm relays.

### Syntax

```
OPR-ACO-ALL: [<tid>] :: <ctag>;
```

### Example

This example shows how to enable the Alarm Cutoff function by using the shortened command form.

```
OPR-ACO:::123;
```

### Related Commands

None

---

## 4.13 RTRV-ALM-EQPT (Retrieve Alarm)

4.13.1 This command lists the conditions of all the alarms in the 55300A.

### Syntax

```
RTRV-ALM-EQPT: [<tid>]::<ctag>;
```

### Example

This example shows how to retrieve the outstanding major alarms (if any) from the 55300A by using the shortened command form.

```
RTRV-ALM:::123;
```

### Related Commands

RTRV-LOG (Retrieve Log)

---

## 4.14 RTRV-AO (Retrieve AO Log)

4.14.1 This command is used to display the Automatic Output Log. It contains Automatic Messages (e.g., REPT ALM and REPT EVT). Messages are retrieved by an *atagseq* number or by *msgtype* or both. If you do not specify an *atagseq* or *msgtype*, the entire log will display.

### Syntax

```
RTRV-AO: [<tid>] :: <ctag> :: <keyword block>;
```

### Values

<keyword block> = ATAGSEQ = <value> LAST, FIRST, FIRST&LAST, message number

MSGTYPE = <value> for a list by message type (ALM or EVT)

---

### NOTE

It is a good idea to specify a range of message to retrieve. Otherwise, the messages will scroll off the terminal screen before you can read them. When retrieving specific messages or ranges of messages, list them from the earliest to latest (e.g., 9998&&0002 will retrieve 9998, 9999, 0001, and 0002). You can also use the terminal emulation program to log messages to a file. Refer to the terminal emulation program documentation.

---

### Example

To retrieve all messages in the log:

```
RTRV-AO:::123:::ATAGSEQ=FIRST&&LAST;
```

To retrieve messages 14, 17, and 25 through 30 from the log:

```
RTRV-AO:::123:::ATAGSEQ=4&17&25&&30;
```

To retrieve all alarmed messages in the log:

```
RTRV-AO:::123:::MSGTYPE=ALM;
```

To retrieve all non-alarmed messages with <atags> between 4 and 10:

```
RTRV-AO:::123:::ATAGSEQ=4&&10,MSGTYPE=EVT;
```

***Alarmed Message Example***

```
HPGPS 96-09-09 19:59:18
** 0003 REPT ALM EQPT
":MJ,DPM1,NSA,09-09,19-59-18:\ "ENDED Digital pulse monitor 1\ "
```

;

***Non-Alarmed Message Example***

```
HPGPS 00-00-00 00:00:00
A 0001 REPT EVT EQPT
":HOLDOVER,SC,00-00,00-00-00\ "Holdover\ "
```

;

**Related Commands**

RTRV-LOG (Retrieve Log)



---

## 4.15 RTRV-COND-EQPT (Retrieve Condition)

4.15.1 This command is used to retrieve and clear equipment related information and non-alarmed events.

### Syntax

```
RTRV-COND-EQPT: [<tid>] :: <ctag> :: [<event>] ;
```

### Values

<event> = TIMERST—Time reset event (See chapter 6 of this guide)

TIFAIL—TI measurement failed event (See chapter 6 of this guide)

EEPROM—EEPROM write failed event (See chapter 6 of this guide)

---

### NOTE

If the event parameter is not used in the RTRV-COND command, all of the currently active non-alarmed events will be retrieved. Otherwise you must specify one of the three events listed above and the specified condition will be cleared.

---

### Example

This example shows how to retrieve all of the currently active non-alarmed events.

```
RTRV-COND:::123;

  HPGPS 96-09-26 17:57:42
M 123 COMPLD
/*
  " :NR,LOCKED, SC,09-26,17-05-14:"Locked\"
  " :NR,DTVALID, SC,09-25,12-21-51:"Date and time valid\"
*/
;
```

This example shows how to clear an equipment related condition from the system by using the shortened command form.

```
RTRV-COND:::123::TIFAIL;

  HPGPS 96-09-11 21:39:06
M 123 COMPLD
  /* TIFAIL condition cleared */
;
```

---

### NOTE

If available, the Event Message will include a problem code. This code can be used to help support personnel diagnose system problems.

---

**RTRV-COND-EQPT (Retrieve Condition)**

Issue 1

**Related Commands**

RTRV-EQPT (Retrieve Equipment)

RTRV-ALM-EQPT (Retrieve Alarm Condition)

---

## 4.16 RTRV-EQPT (Retrieve Equipment Parameters)

4.16.1 This command is used to retrieve the current GPS parameter value. Refer to chapter 5 of this guide to find out more about GPS keyword parameters.

### Syntax

```
RTRV-EQPT: [<tid>]:<aid>:<ctag>::PARAMETER=<keyword>;
```

### Values

<keyword> = Refer to chapter 5 of this guide

### Examples

This example shows how to retrieve the antenna delay value.

```
RTRV-EQPT::GPS:123::PARAMETER=ADEL;
```

This example shows how to retrieve the 55300A's current baud rate and flow control for the port 1 communication port.

```
RTRV-EQPT::GPS:123::PARAMETER=LCLBAUD&LCLFLOW;
```

This example shows how to retrieve the 55300A's time zone.

```
RTRV-EQPT::GPS:123::PARAMETER=TZONE;
```

This example shows how to retrieve the 55300A's current position.

```
RTRV-EQPT::GPS:123::PARAMETER=POS;
```

This example shows how to retrieve the 55300A's current Elevation Mask Angle.

```
RTRV-EQPT::GPS:123::PARAMETER=EMANGLE;
```

This example shows how to retrieve the 55300A's current list of satellites to ignore.

```
RTRV-EQPT::GPS:123::PARAMETER=IGNORE;
```

This example shows how to retrieve the 55300A's current settings for the Holdover event.

```
RTRV-EQPT::GPS:123::PARAMETER=HOLDOVER;
```

This example shows how to retrieve the 55300A's current list of satellites to include.

```
RTRV-EQPT::GPS:123::PARAMETER=INCLUDE;
```

**RTRV-EQPT (Retrieve Equipment Parameters)**

Issue 1

**Other Related Keywords to Retrieve GPS Parameters**

ADEL (Antenna Delay)

EMANGLE (Elevation Mask Angle)

IGNORE (Satellites to Ignore)

HOLDACT (Holdover Action)

INCLUDE (Satellites to Include)

LCLAO (Local Automatic Output)

POS (Position)

RMTAO (Remote Automatic Output)

THRESHOLD1 (Sync Holdover Duration Threshold1)

THRESHOLD2 (Sync Holdover Duration Threshold2)

TIDQUIET (TID Quiet)

TZONE (Time Zone)

**Other Related Keywords to Retrieve GPS Events**

DPM1

DPM2

DTVALID

EEPROM

EXCTH1

EXCTH2

FIRSTSAT

GPS1PPSBAD

HOLDING

HOLDOVER

INTREF

LOCKED

LOG

MINUS15

OSCBAD

OSCPROB

OSCWARM

OVENSUPL

PLUS15

**RTRV-EQPT (Retrieve Equipment Parameters)**

Issue 1

PLUS5

POSHOLD

PPSVALID

RECOVERING

SYNTHBAD

SYNTHPROB

TIFAIL

TIMERST

USEREVT

WAITING

**Other Related Keywords to Retrieve Communication Port Parameters**

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 4.17 RTRV-HDR (Retrieve Header)

4.17.1 This command is used to retrieve the response header information, including the system identification (SID), date, and time for the unit. It is often used to verify operation of the communication port. If the response is returned, the cable, and all communications links are viable. If the date and time are not displayed in the header, the system has not yet achieved GPS lock.

### Syntax

```
RTRV-HDR:::<ctag>;
```

### Example

This example shows how to display system header information.

```
RTRV-HDR:::123;  
  
HPGPS 95-09-05 15:03:27  
M 123 COMPLD;  
;
```

Where:

HPGPS = system identification

95-09-05 = system date

15:03:27 = system time

### Related Commands

RTRV-SID (Retrieve System ID)

---

## 4.18 RTRV-LOG (Retrieve Log)

4.18.1 This command displays all alarmed and non-alarmed events in the Event Log. This command does not erase the messages. The Event Log is a circular log that can save up to approximately 200 logged events in battery backed up RAM. The primary use of this log is to determine the sequence of events leading up to a network or system problem.

The Event Log is retrieved in reverse chronological order (i.e., last in, first out). Events placed in the log are those which have their LOG property set to Y, and can include both alarmed and non-alarmed events as well as those not initially reported (i.e., those with ALM property set to NONE). Events are retrieved in groups of 10 events at a time.

### Syntax

```
RTRV-LOG: [<tid>]::<ctag>::<start retrieving messages>;
```

### Values

<start retrieving messages>:

= EVTTOP—Start retrieving the ten most recent events from the top of the Event Log (reverse chronological order)

= EVTCONT—Start retrieving the next ten log messages from where you last left off.

= EVTALL—Start retrieving the entire Event Log

---

### NOTE

Using EVTALL will retrieve the entire contents of the Event Log. This log can hold up to approximately 200 events consisting of 20 response blocks of ten events each. There is no way to abort the retrieval once started. EVTTOP and EVTCONT are recommended over EVTALL as a more controlled method of retrieving the Event Log.

---

**Example**

This example shows how to display the most recent ten events of the Event Log.

```
RTRV-LOG:::123::EVTTOP;
```

```
HPGPS 96-09-11 20:00:58
```

```
M 123 COMPLD
```

```
/*
```

```
"1:MJ,DPM1,NSA,09-09,19-59-18:\"ENDED Digital pulse monitor 1\""
```

```
"2:MJ,DPM1,NSA,00-00,00-00-00:\"Digital pulse monitor 1\""
```

```
"3:MJ,DPM2,NSA,00-00,00-00-00:\"Digital pulse monitor 2\""
```

```
"4:MJ,DPM1,NSA,00-00,00-00-00:\"Digital pulse monitor 1\""
```

```
"5:MJ,DPM2,NSA,00-00,00-00-00:\"Digital pulse monitor 2\""
```

```
"6:MJ,DPM2,NSA,00-00,00-00-00:\"Digital pulse monitor 2\""
```

```
"7:MJ,DPM2,NSA,00-00,00-00-00:\"Digital pulse monitor 2\""
```

```
"8:MJ,DPM2,NSA,00-00,00-00-00:\"ENDED Digital pulse monitor 2\""
```

```
"9:MJ,DPM2,NSA,00-00,00-00-00:\"Digital pulse monitor 2\""
```

```
"10:MJ,DPM2,NSA,00-00,00-00-00:\"ENDED Digital pulse monitor 2\""
```

```
*/
```

---

**NOTE**

If available, the Event Message will include a problem code. This code can be used to help support personnel diagnose system problems.

**Related Commands**

RTRV-AO (Retrieve AO Log)



---

## 4.19 RTRV-NETYPE (Retrieve NE Type)

4.19.1 This command requests network element information about the 55300A.

### Syntax

```
RTRV-NETYPE: [<tid>] :: <ctag>;
```

### Example

This example shows how to retrieve network type information from the 55300A.

```
RTRV-NETYPE:::123;  
  
HPGPS 96-09-11 21:45:31  
M 123 COMPLD  
"Hewlett-Packard Company,55300,GPS,R3639"  
  
;
```

Where:

Hewlett-Packard Company = <company>

55300 = <model>

GPS = <Eqpt Type>

R3639 = <software revision>

### Related Commands

RTRV-COND-EQPT (Retrieve Condition)

---

## 4.20 RTRV-PM-EQPT (Retrieve PM Information)

4.20.1 This command retrieves and displays the current set of system performance information.

### Syntax

```
RTRV-PM-EQPT: [<tid>] ::<ctag>::<keyword>;
```

### Values

<keyword> = See chapter 5 of this guide

### Examples

This example is probably the one you'll use most often. It shows how to retrieve the system status of the 55300A.

```
RTRV-PM-EQPT:::123::SYSTSTAT;
```

This example shows how to retrieve the 55300A's current date.

```
RTRV-PM-EQPT:::123::DATE;
```

This example shows how to retrieve the 55300A's current synchronization state.

```
RTRV-PM-EQPT:::123::SYNCSTAT;
```

This example shows how to retrieve the 55300A's Frequency Figure of Merit.

```
RTRV-PM-EQPT:::123::FFOM;
```

This example shows how to retrieve the 55300A's Time Figure of Merit.

```
RTRV-PM-EQPT:::123::TFOM;
```

This example shows how to retrieve the 55300A's current synchronization time interval.

```
RTRV-PM-EQPT:::123::SYNCTINT;
```

This example shows how to retrieve the 55300A's expected time error in 24 hours of holdover given the current holdover state.

```
RTRV-PM-EQPT:::123::HOLDTUNCPRED;
```

This example shows how to retrieve duration of the 55300A's last or present holdover.

```
RTRV-PM-EQPT:::123::HOLDDUR;
```

**RTRV-PM-EQPT (Retrieve PM Information)**

This example shows how to determine if the 55300A has been in holdover longer than the threshold for THRESHOLD1.

```
RTRV-PM-EQPT:::123::THRESHOLDEXC1;
```

This example shows how to retrieve the reason the 55300A is still waiting to recover from holdover mode.

```
RTRV-PM-EQPT:::123::WAITREASON;
```

**Other Related Keywords To Set System Parameters**

DATE (Current Date)

FFOM (Frequency Figure of Merit)

HOLDDUR (Sync Holdover Duration)

HOLDTUNCPRED (Sync Holdover Uncertainty Predicted)

HOLDTUNCPRES (Sync Holdover Uncertainty Present)

SYNCTINT (Sync Time Interval)

SYNCSTAT (Sync State)

SYSTSTAT (System Status)

TFOM (Time Figure of Merit)

THRESHOLDEXC1 (Sync Holdover Duration Threshold1 Exceeded)

THRESHOLDEXC2 (Sync Holdover Duration Threshold2 Exceeded)

TIME (Current Time)

WAITREASON (Sync Holdover Waiting Reason)

---

## 4.21 RTRV-SID (Retrieve System ID)

4.21.1 This command requests the unit to reply with the <sid> System Identifier of the 55300A.

### Syntax

```
RTRV-SID: [<tid>] ::<ctag>;
```

### Example

This example shows how to retrieve the system identifier information from the 55300A.

```
RTRV-SID:::123;  
  
HPGPS 96-09-11 21:59:31  
M 123 COMPLD  
"SID=HPGPS"  
  
;
```

### Related Commands

RTRV-HDR (Retrieve Header)

SET-SID (Set System ID)

---

## 4.22 SET-SID (Set System ID)

4.22.1 This command is used to set the system identification (SID) code to a given value.

### Syntax

```
SET-SID: [<tid>] ::<ctag>::<sid>;
```

### Values

<sid> = System identification code consisting of 20 or fewer characters.  
The default is HPGPS.

### Example

This example shows how to set the system identification code to HPGPS2.

```
SET-SID:::123::HPGPS2;
```

### Related Commands

RTRV-SID (Retrieve System ID)

---

## 4.23 Parameter Definitions

4.23.1 The following table lists the parameters that can be used with 55300A TL1 commands.

**Table 4-6. Parameter Definitions**

Parameter	Description	Primary Use
<aid>	Access Identifier (optional). When used is GPS. When used in a command, the aid is the equipment that the command affects. When output in a response, the aid is the equipment reporting the condition.	Command, response
<almcde>	Alarm severity code	Automatic Message
<atag>	Automatic Message Tag—a number assigned to sequence and correlate automatic messages.	Automatic Message
<conddescr>	Trouble Condition Description—describes the trouble condition or state reported.	Automatic Message
<condeff>	Condition Effect—Indicates the effect of the event on the condition of the 55300A. CL=Standing Condition Cleared, SC=Standing Condition Raised, TC=Transient Condition. The 55300A uses CL and SC to indicate the two “senses” of an event.	Automatic Message
<condtype>	Condition Type or event. See chapter 6. Type of alarm condition. Valid values of <condtype> are from appendix C of GR-833-	Command, response, Automatic Message
<ctag>	Correlation Tag—an arbitrary string of 1 to 6 alphanumeric characters. It must not be the number 0.	Command, response
<date>	Current Date	Command, response
<errcde>	Error Code. See appendix A.	Response
<maxmsg>	Always defined as 200.	
<monval>	The measured value of a monitored parameter. The 55300A uses this for the “Holdover Time Exceeded” alarm.	Command, response Automatic Message
<ntfcncde>	Notification Code—reports the status of a condition. Valid value are: CR—Critical Alarm MJ—Major Alarm MN—Minor Alarm CL—Cleared NA—Non-Alarmed (Event log only) NR—Not Reported (Event log only)	Automatic Message

**Table 4-6. Parameter Definitions (continued)**

<b>Parameter</b>	<b>Description</b>	<b>Primary Use</b>
<pid>	Password Identifier. Limited to a maximum of ten characters. Default is GPS-SYNC!	Command
<sid>	System Identifier—55300A identifies the system sending the response or automatic message.	Response
<start retrieving messages>	EVTTOP = Start retrieving messages from the top of the log (reverse chronological order) EVTCONT = Start retrieving messages from where you left off. EVTALL = Retrieve all messages	Command, response
<tid>	Target Identifier—the 55300A (target) to which a command is directed. The [<tid>] is comprised of a maximum of 20 ASCII characters limited to letters, digits, and hyphens. The value of [<tid>] may be null.	Command
<uid>	User name, always SUPER	Command







---

## 5.1 Overview

5.1.1 TL1 keywords are used with TL1 commands to set up and provision the 55300A. This chapter describes all of the TL1 keywords and includes a task/keyword summary and a detailed description of each keyword. Other keywords that are used with events are described in chapter 6.

---

## 5.2 Task/Keyword Summary

5.2.1 Provisioning commands are used with keywords to perform memory administration tasks. Table 5-1 lists the 55300A TL1 keywords by task and includes the command and the type of value. The keywords are then listed in alphabetical order and described in detail.

**Table 5-1. TL1 Task/Keyword Summary**

Task	Keyword	Command	Value
Set/retrieve antenna delay	ADEL	ED-EQPT, RTRV-EQPT	ns
Retrieve current date	DATE	RTRV-PM-EQPT	yy-mm-dd
Set/retrieve elevation mask angle	EMANGLE	ED-EQPT, RTRV-EQPT	degrees
Retrieve SmartClock status	FFOM	RTRV-PM-EQPT	PLL num <sup>a</sup>
Set/retrieve holdover action	HOLDACT	ED-EQPT, RTRV-EQPT	enum <sup>b</sup>
Retrieve most recent period of holdover	HOLDDUR	RTRV-PM-EQPT	num
Retrieve time interval error for one day holdover	HOLDTUNCPRED	RTRV-PM-EQPT	num
Retrieve time interval error for current time	HOLDTUNCPRES	RTRV-PM-EQPT	num
Set/retrieve ignored satellites	IGNORE	ED-EQPT, RTRV-EQPT	num
Set/retrieve included satellites	INCLUDE	ED-EQPT, RTRV-EQPT	num
Set initial date	INITDATE	ED-EQPT	yy-mm-dd
Set initial position	INITPOS	ED-EQPT	pos
Set initial time	INITTIME	ED-EQPT	hh-mm-ss
Set/retrieve format of the IRIG-B output.	IRIGFORMAT	ED-EQPT, RTRV-EQPT	enum
Report automatic output always or only when logged in on Local Port or never.	LCLAO	ED-EQPT, RTRV-EQPT	enum
Set/retrieve local baud rate	LCLBAUD	ED-EQPT, RTRV-EQPT	num
Set/retrieve local bits	LCLBITS	ED-EQPT, RTRV-EQPT	num

Table 5-1. TL1 Task/Keyword Summary (continued)

Task	Keyword	Command	Value
Set/retrieve local echo	LCLECHO	ED-EQPT, RTRV-EQPT	Y/N
Set/retrieve local flow control	LCLFLOW	ED-EQPT, RTRV-EQPT	enum
Set/retrieve local pace	LCLPACE	ED-EQPT, RTRV-EQPT	enum
Set/retrieve local parity	LCLPARITY	ED-EQPT, RTRV-EQPT	enum
Set/retrieve local stop bits	LCLSBITS	ED-EQPT, RTRV-EQPT	num
Set/retrieve the severity of the –48 Vdc alarm/event.	MINUS48VA MINUS48VB	ED-EQPT, RTRV-EQPT	enum
Set/retrieve current position	POS	ED-EQPT, RTRV-EQPT	num
Report automatic output always or only when logged in on Remote Port or never.	RMTAO	ED-EQPT RTRV-EQPT	enum
Set/retrieve remote baud rate	RMTBAUD	ED-EQPT, RTRV-EQPT	num
Set/retrieve remote bits	RMTBITS	ED-EQPT, RTRV-EQPT	num
Set/retrieve remote echo	RMTECHO	ED-EQPT, RTRV-EQPT	Y/N
Set/retrieve remote flow control	RMTFLOW	ED-EQPT, RTRV-EQPT	enum
Set/retrieve remote pace	RMTPACE	ED-EQPT, RTRV-EQPT	enum
Set/retrieve remote parity	RMTPARITY	ED-EQPT, RTRV-EQPT	enum
Set/retrieve remote stop bits	RMTSBITS	ED-EQPT, RTRV-EQPT	num
Set/retrieve the squelch behavior of the 2048 kbps output.	STARTSQUEL	ED-EQPT, RTRV-EQPT	Y/N
Retrieve sync state	SYNCSTAT	RTRV-PM-EQPT	enum
Retrieve sync time interval	SYNCTINT	RTRV-PM-EQPT	num
Retrieve system status	SYSTSTAT	RTRV-PM-EQPT	enum
Retrieve time figure of merit	TFOM	RTRV-PM-EQPT	num

Table 5-1. TL1 Task/Keyword Summary (continued)

Task	Keyword	Command	Value
Set/retrieve sync holdover duration threshold1	THRESHOLD1	ED-EQPT, RTRV-EQPT	sec
Set/retrieve sync holdover duration threshold2	THRESHOLD2	ED-EQPT, RTRV-EQPT	sec
Retrieve sync holdover duration threshold1 exceeded	THRESHOLDEXC1	RTRV-PM-EQPT	0/1
Retrieve sync holdover duration threshold2 exceeded	THRESHOLDEXC2	RTRV-PM-EQPT	0/1
Set no response on bad <tid>	TIDQUIET	ED-EQPT RTRV-EQPT	Y/N
Retrieve current time	TIME	RTRV-PM-EQPT	hh-mm-ss
Set/retrieve time of day baud rate	TODBAUD	ED-EQPT, RTRV-EQPT	num
Set/retrieve time of day bits	TODBITS	ED-EQPT, RTRV-EQPT	num
Set/retrieve time of day echo	TODECHO	ED-EQPT, RTRV-EQPT	Y/N
Set/retrieve time of day flow control	TODFLOW	ED-EQPT, RTRV-EQPT	enum
Set/retrieve time of day pace	TODPACE	ED-EQPT, RTRV-EQPT	enum
Set/retrieve time of day parity	TODPARITY	ED-EQPT, RTRV-EQPT	enum
Set/retrieve time of day stop bits	TODSBITS	ED-EQPT, RTRV-EQPT	num
Set/retrieve current Time zone	TZONE	ED-EQPT, RTRV-EQPT	hh-mm
Retrieve the Sync holdover wait reason	WAITREASON	RTRV-PM-EQPT	enum
Set/retrieve the display mode (2 or 4 digit) of the year.	Y2KEXT	ED-EQPT, RTRV-EQPT	Y/N

a. num = some integer

b. enum = some constant name (i.e., AIS, CONTINUE)

---

## 5.3 ADEL (Antenna Delay)

5.3.1 This keyword allows you to retrieve and to enter an Antenna Delay value to compensate for the delay in the antenna cable.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::ADEL=<nanoseconds>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=ADEL;
```

### Value

<nanoseconds> = nanoseconds of antenna delay (Default = 0) Range =  
0 to 999000 ns

### Example

This example shows what command to use to set the 55300A's antenna delay parameter to 154 nanoseconds.

```
ED-EQPT::GPS:123::ADEL=154;
```

### Related Keywords

---

## 5.4 DATE (Current Date)

5.4.1 This keyword requests the 55300A to reply with the current date.

### Syntax

```
RTRV-PM-EQPT: [<tid>]::<ctag>::DATE;
```

### Example

```
RTRV-PM-EQPT:::123::DATE;
```

```
HPGPS 96-09-11 21:48:00  
M 123 COMPLD  
"DATE=96-09-11"  
;
```

### Related Keywords

RTRV-PM-EQPT

---

## 5.5 EMANGLE (Elevation Mask Angle)

5.5.1 This keyword is used to retrieve the existing Elevation Mask Angle or to set a new one. It causes the 55300A to ignore satellites below the angle specified.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::EMANGLE=<degrees>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=EMANGLE;
```

### Value

<degrees> = degrees of the mask angle. The 55300A will ignore any satellite that is between the horizon and the mask angle.  
Default = 10 degrees (min. = 0 degrees, max. = 89 degrees)

### Example

This example shows what command to use to set the Elevation Mast Angle to 15 degrees.

```
ED-EQPT::GPS:123::EMANGLE=15;
```

### Related Keywords

---

## 5.6 FFOM (Frequency Figure of Merit)

5.6.1 This keyword is used to retrieve the status of the 55300A's SmartClock. Possible states are described below. Use this query when you want to know the stability of the 55300A's output. The output is controlled by the SmartClock's Phase-Locked Loop (PLL). Thus, the FFOM value is determined by monitoring the status of the PLL.

### Syntax

```
RTRV-PM-EQPT:[<tid>]::<ctag>::FFOM;
```

### Example

This example shows what command to use to retrieve the Frequency Figure of Merit <ffom> from the 55300A.

```
RTRV-PM-EQPT:::123::FFOM;  
  
HP 55300A 95-06-04 15:12:04  
M 123 COMPLD  
"FFOM=0"  
  
;
```

Where:

- 0 PLL stabilized—output within specification.
- 1 PLL stabilizing
- 2 PLL unlocked (holdover)—Initially the output will be within specifications. However, when in holdover, the output will eventually drift out of specification.
- 3 PLL unlocked (not in holdover)—Do not use the output.

### Related Keywords



---

## 5.7 HOLDACT (Holdover Action)

5.7.1 This keyword can be used to retrieve and to set the action that the 55300A will take when the Holdover Duration Threshold 2 has been exceeded. Three actions are allowed:

- Squelch (turn off) the output
- Send the AIS message (Default)
- Continue output as normal

The outputs that are controlled are the 1.544 MB/s or 2.048 MB/s outputs. The 1 PPS, 10 MHz, and 1.544/2.048 MHz outputs are not affected.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::HOLDACT=<action>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=HOLDACT;
```

### Value

<action> = SQUELCH—Turn off the telecom output  
AIS—Generate AIS on the telecom output (Default)  
CONTINUE—Continue output as normal

### Example

This example shows what command to use to squelch the telecom output after Holdover Duration Threshold 2 seconds have elapsed.

```
ED-EQPT::GPS:123::HOLDACT=SQUELCH
```

### Related Keywords

---

## 5.8 HOLDTUNCPRED (Sync Holdover Uncertainty Predicted)

5.8.1 This keyword returns an estimate of the time interval error that can be expected for a one day holdover, given the current state of SmartClock learning in the 55300A. The time is returned as a value followed by a single ASCII-encoded byte to indicate holdover state.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: HOLDTUNCPRED;
```

### Example

Retrieve the expected time error in 24 hours of holdover given the current holdover state.

```
RTRV-PM-EQPT:::123::HOLDTUNCPRED;
```

```
HP 55300A 95-06-04 15:12:04
M 123 COMPLD
"HOLDTUNCPRED=9.210E-06,0"
;
```

There are three places of accuracy past the decimal (e.g., 9.xxxE-06,0) as shown above. Data is returned in the following format (units are seconds):

0 = not in holdover

1 = in holdover

### Related Keywords

HOLDTUNCPRES (Sync Holdover Uncertainty Present)

---

## 5.9 HOLDTUNCPRES (Sync Holdover Uncertainty Present)

5.9.1 This keyword returns an estimate of the time interval error at the current time (during holdover operation) given the current state of SmartClock learning in the 55300A.

### Syntax

```
RTRV-PM-EQPT:[<tid>]::<ctag>::HOLDTUNCPRES;
```

### Example

This example shows how to retrieve the currently estimated time error.

```
RTRV-PM-EQPT:::123::HOLDTUNCPRES;
```

```
HP 55300A 95-06-04 15:12:04
```

```
M 123 COMPLD
```

```
"HOLDTUNCPRES=3.021E-07"
```

```
;
```

There are three places of accuracy past the decimal (e.g., 3.xxxE-07) as shown above. Units are seconds.

### Related Keywords

HOLDTUNCPRED (Sync Holdover Uncertainty Predicted)

---

## 5.10 HOLDDUR (Sync Holdover Duration)

5.10.1 This keyword returns the duration of the present or most recent period of operation in the holdover mode. This is the length of time in seconds that the reference oscillator was not locked to GPS.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: HOLDDUR;
```

### Example

This example shows how to retrieve the duration of the last or present holdover. The answer is in seconds in a format followed by a single byte that indicates the holdover mode where:

```
RTRV-PM-EQPT:::123::HOLDDUR;
HP 55300A 95-06-04 15:12:04
M 123 COMPLD
"HOLDDUR=6.790E+03,0"
;
```

There are three places of accuracy past the decimal (e.g., 6.790E+03) as shown above. Units are seconds.

Where:

0 not in holdover

1 in holdover

The example response above says that the unit is not currently in holdover, but that the holdover lasted 6,790 seconds. This query is always valid. If this query is sent before the first holdover has occurred, the answer returned will be 0.00E+00,0 indicating that the unit is not in holdover, and the “last holdover” was zero seconds.

### Related Keywords

HOLDTUNCPRED (Sync Holdover Uncertainty Predicted)

HOLDTUNCPRES (Sync Holdover Uncertainty Present)

---

## 5.11 IGNORE (Satellites to Ignore)

5.11.1 This keyword allows you to retrieve or to set the 55300A to ignore satellites listed by pseudo-random noise code (PRN) Zero (0) indicates no satellites being ignored.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::IGNORE=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=IGNORE;
```

### Value

<value> = <prn> the pseudo-random noise code for the satellite(s) you wish to ignore. This may be a list or a range: list = 12&13&15 (12,13,15); range = 12&&15 (12,13,14,15)

NONE—removes all satellites from the list to be ignored. (Default)

ALL—adds all available satellites to the list of satellites to be ignored.

### Example

This example shows how to tell the 55300A to ignore the satellite with PRN=12 and the one with PRN=13.

```
ED-EQPT:::GPS:123:::IGNORE=12&13;
```

### Related Keywords

INCLUDE (Satellites to Include)

---

## 5.12 INCLUDE (Satellites to Include)

5.12.1 This keyword is used to retrieve and to set the 55300A to include the satellites specified.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::INCLUDE =<value>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=INCLUDE;
```

### Value

<value> = <prn>—the pseudo-random noise code for the satellite(s) you wish to include. This may be a list or a range: list = 12&13&15 (12, 13, 15); range = 12&&15 (12, 13, 14, 15)

NONE—removes all satellites from the list to be included.

ALL—adds all available satellites to the list of satellites to be included. (Default)

### Example

This example shows how to tell the 55300A to include the satellite with PRN=5.

```
ED-EQPT::GPS:123::INCLUDE=5;
```

### Related Keywords

IGNORE (Satellites to Ignore)

---

## 5.13 INITDATE (Initial Date)

5.13.1 This keyword allows you to retrieve and to establish the initial date for faster initial GPS acquisition. It is not normally used. It does not affect the current date value. Once a valid GPS signal is received, the current date is updated based on the GPS signal. The command is valid prior to first satellite tracked. Sending this command after this time will generate an error. The initial date and time needs to be within three minutes of the actual date and time to be effective in enabling faster initial GPS acquisition.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::INITDATE=<year>-<month>-<day>;
```

### Value

<year> = two-digit number indicating the year, e.g., 95. (Default = 00)

<month> = a two-digit number indicating the month from 01-12. (Default = 00)

<day> = a two-digit number indicating the day of the month. It must be a valid number for that month. (Default = 00)

### Example

This example shows what command to use to set the 55300A initial date to 4 Jun 1995.

```
ED-EQPT: [<tid>]:GPS:123:::INITDATE=95-06-04;
```

### Related Keywords

INITTIME (Initial Time)

INITPOS (Initial Position)

---

## 5.14 INITPOS (Initial Position)

5.14.1 This keyword allows you to retrieve and to establish the initial position of the unit for faster initial GPS acquisition. It is not normally used. It does not affect the current position value. Once a valid GPS signal is received, the current position is updated based on the GPS signal. The numeric form of this command requires three position coordinates: latitude, longitude, and height. Position must be specified with respect to the World Geodetic System 1984 (WGS-1984) datum absolute earth coordinates.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::INITPOS=<position>;
```

### Value

<position> = {N | S}, <latitude degree>, <latitude minute>, <latitude second>, {E | W}, longitude degree>, <longitude minute>, <longitude second>, <height above mean sea level in meters> Default is last known position.

---

**NOTE**

---

In order to specify a position below sea level, specify the last parameter in parentheses.

### Example

This example shows how to set the 55300A's initial position to a location in San Jose.

```
ED-EQPT::GPS:123:::INITPOS=N-37-19-32.016-W-121-59-52.246-78.60;
```

This example shows how to specify a position below sea level.

```
ED-EQPT::GPS:123:::INITPOS=N-37-19-32.016-W-121-59-52.246-(-78.60);
```

### Related Keywords

INITDATE (Initial Date)

INITTIME (Initial Time)



---

## 5.15 INITTIME (Initial Time)

5.15.1 This keyword allows you to retrieve and to establish the initial time for faster GPS acquisition. This keyword is not normally used. It does not affect the current time value. Once a valid GPS signal is received, the current time is updated based on the GPS signal. Since the GPS signal sets the time, use the Edit / Set Time zone command to obtain the correct local time. The command is valid prior to first satellite tracked. Sending this command after this time will generate an error. The initial date and time needs to be within three minutes of the actual date and time to be effective in enabling faster initial GPS acquisition.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::INITTIME=<hours>-<minutes>-<seconds>;
```

### Value

<hours> = a two-digit initial hour (GMT) with the range of 00 to 23  
(Default = 00)

<minutes> = the two-digit initial minutes (GMT) with a range of 00-59  
(Default = 00)

<seconds> = the two-digit initial seconds (GMT) with a range of 00-59  
(Default = 00)

### Example

This example shows how to set the 55300A's initial time to 1:14:15pm.

```
ED-EQPT::GPS:123::INITTIME=13-14-15;
```

### Related Keywords

INITDATE (Initial Date)

INITPOS (Initial Position)

---

## 5.16 IRIGFORMAT (IRIG FORMAT)

5.16.1 This keyword allows you to select either the IEEE-1344 or IRIG-B123 formatted timecode.

**IRIGFORMAT Keyword is Only Available in Firmware Versions 3812 and Later**

Past firmware versions only output IRIG-B123 timecode. In firmware versions 3812 and later, the IEEE standard 1344-1995 (ISBN 1-55937-693-7) was added.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::IRIGFORMAT=<value>;
```

### Value

<value> = IEEE\_1344 (IEEE-1334) format.

IRIG\_B123 (IRIG-B123) format (default).

### Example

The following example shows how to retrieve the current timecode format for the IRIG-B output:

```
RTRV-EQPT::GPS:123::PARAMETER=IRIGFORMAT;
```

The following example shows how to set the timecode format to IRIG-B123:

```
ED-EQPT::GPS:123::IRIGFORMAT=IRIG_B123;
```

or

```
ED-EQPT::GPS:123::IRIGFORMAT=IRIG;
```

The following example shows how to set the timecode format to IEEE-1344:

```
ED-EQPT::GPS:123::IRIGFORMAT=IEEE_1344;
```

or

```
ED-EQPT::GPS:123::IRIGFORMAT=IEEE;
```

---

## 5.17 LCLAO (Local Automatic Output)

5.17.1 This keyword sets the local port to report Automatic Messages always, never, or only when logged into the local port.

You can also use the RTRV-EQPT command to find out the reporting that has been set up on the local port.

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>:::LCLAO=<value>;  
RTRV-EQPT: [<tid>]:<aid>:<ctag>:::PARAMETER=LCLAO;
```

### Values

<aid> = GPS

<value> = ALWAYS—Always report Automatic Messages (Default)

LOGIN—Only report Automatic Messages when logged in

NEVER—Never report Automatic Messages

### Example

This example shows how to set up Automatic Message reporting on the local port only when logged in to the local port.

```
ED-EQPT::GPS:123:::LCLAO=LOGIN;
```

### Other Keywords Used to Set the State of a Communication Port

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

**LCLAO (Local Automatic Output)**

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.18 LCLBAUD (Local Baud Rate)

5.18.1 This keyword sets the baud rate on Port 1.

You can also use the RTRV-EQPT command to find out the baud rate that has been set up on Port 1.

### NoteSyntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLBAUD=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLBAUD;
```

### Values

<value> = 1200, 2400, 9600, 19200 (Default = 9600)

### Example

This example shows how to set the baud rate for Port 1 to 2400.

```
ED-EQPT::GPS:123::LCLBAUD=2400;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**LCLBAUD (Local Baud Rate)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.19 LCLBITS (Local Bits)

5.19.1 This keyword sets the number of communication bits for Port 1.

You can also use the RTRV-EQPT command to find out the number of bits that have been set up for Port 1.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLBITS=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLBITS;
```

### Values

<value> = 7 or 8 (Default = 8)

### Example

This example shows how to set the Port 1 bits to 8.

```
ED-EQPT::GPS:123::LCLBITS=8;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**LCLBITS (Local Bits)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)



---

## 5.20 LCLECHO (Local Echo)

5.20.1 This keyword tells the system to echo commands on the local terminal connected to Port 1.

You can also use the RTRV-EQPT command to find out if the system has been set up to echo commands on the local terminal.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLECHO=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLECHO;
```

### Values

<value> = Y (True) N (False) Default = Y

### Example

This example shows how to tell the system not to echo commands to the local terminal.

```
ED-EQPT::GPS:123::LCLECHO=N;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**LCLECHO (Local Echo)**

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

## 5.21 LCLFLOW (Local Flow)

5.21.1 This keyword sets the flow control on Port 1.

You can also use the RTRV-EQPT command to find out if flow control has been set up on Port 1.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLFLOW=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLFLOW;
```

### Values

<value> = None, Hardware (Default = None)

### Example

This example shows how to set the flow control to hardware for Port 1.

```
ED-EQPT::GPS:123::LCLFLOW=HARDWARE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**LCLFLOW (Local Flow)**

Issue 1

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.22 LCLPACE (Local Pace)

5.22.1 This keyword sets the communication port pace for Port 1.

You can also use the RTRV-EQPT command to find out the pace that has been set up for Port 1.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLPACE=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLPACE;
```

### Values

<value> = NONE or XON (Default = NONE)

### Example

This example shows how to set the pace for Port 1 to NONE.

```
ED-EQPT::GPS:123::LCLPACE=NONE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**LCLPACE (Local Pace)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.23 LCLPARITY (Local Parity)

5.23.1 This keyword sets the parity for the Port 1 communication port.

You can also use the RTRV-EQPT command to find out the parity that has been set up for Port 1.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLPARITY=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLPARITY;
```

### Values

<value> = ODD, EVEN, or NONE (Default = NONE)

### Example

This example shows how to set the parity for Port 1 to EVEN.

```
ED-EQPT::GPS:123::LCLPARITY=EVEN;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)



---

## 5.24 LCLSBITS (Local Stop Bits)

5.24.1 This keyword sets the Stop bits for communication Port 1.

You can also use the RTRV-EQPT command to find out the value of the S bits that has been set up for Port 1.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::LCLSBITS=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=LCLSBITS;
```

### Values

<value> = 1 or 2 (Default = 1)

### Example

This example shows how to set the Stop bits for Port 1 to 2.

```
ED-EQPT::GPS:123::LCLSBITS=2;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**LCLSBITS (Local Stop Bits)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

## 5.25 MINUS48VA (–48 Vdc Power A) MINUS48VB (–48 Vdc Power B)

5.25.1 These keywords allow you to set the properties for the events triggered by the absence of –48 Vdc supply. If either –48 Vdc supply is not detected, an alarm will be issued and the corresponding LED, automatic output (AO), and log events will occur. Detection is disabled during the power-on self-test (approximately 30 to 60 seconds after power-up).

The default alarm severity for a missing –48V supply is major. By default, the event is also logged. There is an event for both the –48V (A) and the –48V (B) supplies. These events can be configured differently if desired. Both the alarm severity and log option are stored in nonvolatile memory.

**MINUS48VA and MINUS48VB keywords are only available in firmware versions 3912 and later.**

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::MINUS48VA=<value>;
```

or

```
ED-EQPT: [<tid>]:GPS:<ctag>::MINUS48VB=<value>;
```

### Value

<value> = ALM–<severity>; where <severity> = Critical, Major (default), Minor, Nonalm, or None. See Chapter 6 for information on alarm and events log.

LOG–<BOOL>; where <BOOL> = Y (Logged, default) or N (Not logged). See Chapter 6 for information on alarm and events log.

### Example

The following example shows how to retrieve the current event properties:

```
RTRV-EQPT::GPS:123::PARAMETER=MINUS48VA;
```

```
RTRV-EQPT::GPS:123::PARAMETER=MINUS48VB;
```

The following example shows how to configure the MINUS48VA event to generate a Critical alarm without a log entry when the –48 Vdc (A) supply is not detected:

```
ED-EQPT::GPS:123::MINUS48VA=ALM-CRITICAL&LOG-N;
```

The following example shows how to configure the MINUS48VB event to generate a Minor alarm with a log entry when the -48 Vdc (B) supply is not detected:

```
ED-EQPT::GPS:123:::MINUS48VB=ALM-MINOR&LOG-Y;
```

---

## 5.26 POS (Position)

5.26.1 This keyword allows you to retrieve and to establish the position of the unit directly, avoiding the need for a “survey”. This keyword is not normally used. The numeric form of this command requires three position coordinates: latitude, longitude, and height. Position must be specified with respect to the World Geodetic System 1984 (WGS-1984) datum absolute earth coordinates.

The timing accuracy of the 1 PPS depends directly on the position of the unit. Errors in setting position will cause errors in the timing of the 1 PPS output.

This command is valid while the 55300A is in Survey Mode prior to first computed position. Sending this command after this time will generate an error.

The survey specifies the position of the antenna, not the receiver itself.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::POS=<position>;
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=POS;
```

### Value

<position> = {N | S}, <latitude degree>, <latitude minute>, <latitude second>, {E | W}, longitude degree>, <longitude minute>, <longitude second>, <height above mean sea level in meters>

LAST—sets the position of the 55300A to the last position specified. This parameter is provided to cancel surveying and restore the last position setting (useful to shorten the power up cycle when the position of the antenna has not moved).

SURVEY—Directs the receiver to stop surveying and use the computed position. This position is the average of the individual POS computation.

### Example

This example shows how to set the 55300A’s position to a location in San Jose.

```
ED-EQPT::GPS:123:::POS=N-37-19-32.016-W-121-59-52.246-78.60;
```

This example shows how to specify negative heights.

```
ED-EQPT::GPS:123:::POS=N-37-19-32.016-W-121-59-52.24-(-50.00);
```

### Related Keywords

---

## 5.27 RMTAO (Remote Automatic Output)

5.27.1 This keyword sets the remote port to report Automatic Messages always, never, or only when logged into the remote port.

You can also use the RTRV-EQPT command to find out the reporting that has been set up on the remote port.

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>:::RMTAO=<value>;  
RTRV-EQPT: [<tid>]:<aid>:<ctag>:::PARAMETER=RMTAO;
```

### Values

<aid> = GPS

<value> = ALWAYS—Always report Automatic Messages (Default)

LOGIN—Only report Automatic Messages when logged in

NEVER—Never report Automatic Messages

### Example

This example shows how to set up reporting Automatic Messages on the remote port only when logged in to the remote port.

```
ED-EQPT::GPS:123:::RMTAO=LOGIN;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

**RMTAO (Remote Automatic Output)**

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.28 RMTBAUD (Remote Baud Rate)

5.28.1 This keyword sets the baud rate on the remote access port.

You can also use the RTRV-EQPT command to find out what baud rate has been set up for the remote access port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTBAUD=<value>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTBAUD;
```

### Values

<value> = 1200, 2400, 9600, 19200 (Default = 9600)

### Example

This example shows how to set the baud rate to 2400 for the remote access port.

```
ED-EQPT::GPS:123::RMTBAUD=2400;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)



**RMTBAUD (Remote Baud Rate)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.29 RMTBITS (Remote Bits)

5.29.1 This keyword sets the number of communication bits for the Remote Access Port.

You can also use the RTRV-EQPT command to find out the number of bits that have been set up for the Remote Access Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTBITS=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTBITS;
```

### Values

<value> = 7 or 8 (Default = 8)

### Example

This example shows how to set the Remote Access Port bits to 8.

```
ED-EQPT::GPS:123::RMTBITS=8;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**RMTBITS (Remote Bits)**

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.30 RMTECHO (Remote Echo)

5.30.1 This keyword tells the system to echo commands to the remote terminal connected to the remote access port.

You can also use the RTRV-EQPT command to find out if the system has been set up to echo commands to the remote terminal.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTECHO=<value>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTECHO;
```

### Values

<value> = Y/N—Yes or No. (Default = Yes)

### Example

This example shows how to tell the system not to echo commands to the remote port terminal.

```
ED-EQPT::GPS:123::RMTECHO=N;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)  
TODFLOW (TOD Flow)  
TODPACE (TOD Pace)  
TODPARITY (TOD Parity)  
TODSBITS (TOD Stop Bits)

---

## 5.31 RMTFLOW (Remote Flow)

5.31.1 This keyword sets the flow control on the remote access port.

You can also use the RTRV-EQPT command to find out what flow control has been set up on the remote access port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::RMTFLOW=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=RMTFLOW;
```

### Values

<value> = None, Hardware (Default = None)

### Example

This example shows how to set the flow control to hardware for the remote access port.

```
ED-EQPT::GPS:123:::RMTFLOW=HARDWARE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)  
TODFLOW (TOD Flow)  
TODPACE (TOD Pace)  
TODPARITY (TOD Parity)  
TODSBITS (TOD Stop Bits)

---

## 5.32 RMTSPACE (Remote Pace)

5.32.1 This keyword sets the communication port pace for Remote Access Port.

You can also use the RTRV-EQPT command to find out the pace that has been set up for Remote Access Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTSPACE=<value>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTSPACE;
```

### Values

<value> = NONE or XON (Default = NONE)

### Example

This example shows how to set the pace for the Remote Access Port to NONE.

```
ED-EQPT::GPS:123::RMTSPACE=NONE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)



TODFLOW (TOD Flow)  
TODPACE (TOD Pace)  
TODPARITY (TOD Parity)  
TODSBITS (TOD Stop Bits)

---

## 5.33 RMTPARITY (Remote Parity)

5.33.1 This keyword sets the parity for the Remote Access Port communication port.

You can also use the RTRV-EQPT command to find out the parity that has been set up for the Remote Access Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTPARITY=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTPARITY;
```

### Values

<value> = ODD, EVEN, or NONE (Default = NONE)

### Example

This example shows how to set the parity for Remote Access Port to EVEN.

```
ED-EQPT::GPS:123::RMTPARITY=EVEN;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

TODBITS (TOD Bits)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.34 RMTSBITS (Remote Stop Bits)

5.34.1 This keyword sets the Stop bits for the Remote Access Port.

You can also use the RTRV-EQPT command to find out the value of the S bits that has been set up for the Remote Access Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::RMTSBITS=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=RMTSBITS;
```

### Values

<value> = 1 or 2 (Default = 1)

### Example

This example shows how to set the Stop bits for the Remote Access Port to 2.

```
ED-EQPT::GPS:123::RMTSBITS=2;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

**RMTSBITS (Remote Stop Bits)**

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.35 STARTSQUEL (Start Squelch)

5.35.1 The STARTSQUEL keyword allows you to set the 2048 kbps telecom output to be squelched or unsquelched when the unit is in startup. When the 55300A's 2048 kbps signal is set to "Squelch ON"(Y), the signal is not present until the unit has reached complete phase lock. The default performance of the firmware is "Squelch OFF"(N).

<b>STARTSQUEL keyword is only available in firmware versions 3812 and later.</b>
--

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>::STARTSQUEL=<value>;  
RTRV-EQPT: [<tid>]:<aid>:<ctag>::PARAMETER=STARTSQUEL;
```

### Values

<value> = N (OFF) — unsquelched 2048 kbps output signal (default).  
Y (ON) — squelched 2048 kbps output signal.

### Example

The following example shows how to retrieve the startup squelching behavior of the 2048 kbps output signal:

```
RTRV-EQPT::GPS:123::PARAMETER=STARTSQUEL;
```

The following example shows how to set the startup squelching behavior:

```
ED-EQPT::GPS:123::STARTSQUEL=Y;
```

### Related Keyword

DATE (Current Date)

---

## 5.36 SYNCSTAT (Sync State)

5.36.1 This keyword retrieves the status of the 55300A's synchronization. Possible states are: HOLD, WAIT, REC, LOCK, or POW. The normal cycle after power is applied is from POW to LOCK.

### Syntax

```
RTRV-PM-EQPT: [<tid>] ::<ctag>::SYNCSTAT;
```

### Example

This example shows how to Instruct the 55300A to return the current synchronization state <sync state>:

```
RTRV-PM-EQPT:::123::SYNCSTAT;
HP 55300A 95-06-04 15:12:04
M 123 COMPLD
"SYNCSTAT=LOCK"
;
```

Where:

HOLD = in manual holdover

WAIT = waiting for external conditions to allow recovery from holdover

REC = actively recovering from holdover

LOCK = locked to GPS

POW = in powerup cycle prior to first lock

### Related Keywords

SYNCTINT (Sync Time Interval)

---

## 5.37 SYNCTINT (Sync Time Interval)

5.37.1 This keyword returns the difference or timing shift between the SmartClock 1 PPS and the GPS 1 PPS signals. It generates an error when this interval is unavailable.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: SYNCTINT;
```

### Example

This example shows how to return the timing shift between the SmartClock PPS and the HPS 1 PPS signals 1. Units are in seconds.

```
RTRV-PM-EQPT:::123::SYNCTINT;  
  
HP 55300A 95-06-04 15:12:04  
M 123 COMPLD  
"SYNCTINT=1.56E-08"  
  
;
```

### Related Keywords

SYNCSTAT (System Status)

---

## 5.38 SYSTSTAT (System Status)

5.38.1 This keyword outputs a fully-formatted status screen to a terminal or PC. Use this screen to see how the 55300A is progressing towards tracking satellites to eventually lock to the GPS signal.

### Syntax

```
RTRV-PM-EQPT: [<tid>] ::<ctag>::SYSTSTAT;
```

### Example

This example shows how to display system status.

```
RTRV-PM-EQPT:::123::SYSTSTAT;

HPGPS 96-09-11 19:41:57

M 123 COMPLD

  "SYSTSTAT"

/*

----- Receiver Status -----
SYNCHRONIZATION ..... [ Outputs Valid ]
SmartClock Mode _____ Reference Outputs _____
>> Locked to GPS                TFOM      3          FFOM      0
  Recovery                       1PPS TI +99.2 ns relative to GPS
  Holdover                       HOLD THR 1.000 us
  Power-up                       Holdover Uncertainty _____
                                   Predict 20.0 us/initial 24 hrs

ACQUISITION ..... [ GPS 1PPS Valid ]
Tracking: 6 _____ Not Tracking: 3 _____ Time _____
PRN  El  Az  SS  PRN  El  Az  UTC      19:41:58    11 Sep 1996
  1  31 186  26   9  10  90  GPS 1PPS Synchronized to UTC
  3  47 295  44  26  11  38  ANT DLY 154 ns
17  46  87  28  31  14 319  Position _____
21  64 281  33  MODE      Hold
23  62  30  37
28  58 203  36  LAT      N 37:19:32.462
                                   LON      W 121:59:52.158
                                   HGT      +47.50 m (MSL)
ELEV MASK 10 deg
HEALTH MONITOR ..... [ OK ]
Self Test: OK   Int Pwr: OK   Oven Pwr: OK   OCXO: OK   EFC: OK   GPS Rcv: OK

*/
;
```



**SYSTSTAT (System Status)**

Refer to chapter 7 for a description of the information contained in the above system status report.

**Related Keywords**

---

## 5.39 TFOM (Time Figure of Merit)

5.39.1 This keyword retrieves the Time Figure of Merit. Use this query when you want to know the accuracy of the Receiver's 1PPS output. A low TFOM value indicates a more accurate output. A value of 3 indicates that the Time Error ranges from 100 to 1000 nanoseconds.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: TFOM;
```

### Example

This example shows how to retrieve the Time Figure of Merit <tfom> from the 55300A

```
RTRV-PM-EQPT:::123::TFOM;
HP 55300A 95-06-04 15:12:04
M 123 COMPLD
"TFOM=3"
;
```

Where <TFOM> = Timer Error (in nanoseconds)

3 = 100–1000 ns

4 =  $10^3$ – $10^4$

5 =  $10^4$ – $10^5$

6 =  $10^5$ – $10^6$

7 =  $10^6$ – $10^7$

8 =  $10^7$ – $10^8$

9 =  $> 10^8$

### Related Keywords

---

## 5.40 THRESHOLD1 (Sync Holdover Duration Threshold1)

5.40.1 This keyword retrieves or establishes the time in holdover allowed before the first or second event action takes place. The event action for threshold #1 can be used to cause an alarm (with a programmable priority). In addition to causing an alarm, the event action for threshold #2 can be set to squelch the telecom output (see HOLDACT keyword).

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::THRESHOLD1=<seconds>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=THRESHOLD1;
```

### Value

<seconds> = Range = 0 -> 3,888,000 seconds in holdover before an alarm or the EXCEED state is set. (Default = 1800 seconds)

### Example

This examples show how to set the 55300A's holdover duration threshold1. Units are in seconds.

```
ED-EQPT::GPS:123::THRESHOLD1=1800;
```

### Related Keywords

THRESHOLD2 (Sync Holdover Duration Threshold2)

HOLDACT (Holdover Action)

---

## 5.41 THRESHOLD2 (Sync Holdover Duration Threshold2)

5.41.1 This keyword retrieves or establishes the time in holdover allowed before the first or second event action takes place. The event action for threshold #1 can be used to cause an alarm (with a programmable priority). In addition to causing an alarm, the event action for threshold #2 can be set to squelch the telecom output (see HOLDACT keyword).

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::THRESHOLD2=<seconds>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=THRESHOLD2;
```

### Value

<seconds> = range = 0-> 3,888,000 seconds in holdover before an alarm or the EXCEED state is set. (Default = 86400 seconds)

### Example

These examples show how to set the 55300A's holdover duration threshold 2 to 86400 seconds.

```
ED-EQPT::GPS:123:::THRESHOLD2=86400;
```

### Related Keywords

THRESHOLD1 (Sync Holdover Duration Threshold)

HOLDACT (Holdover Action)

---

## 5.42 THRESHOLDEXC1 (Sync Holdover Duration Threshold1 Exceeded)

5.42.1 This keyword identifies if the 55300A has been in holdover longer than the amount of time specified by the THRESHOLD1 command. If it has, a 1 is returned.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: THRESHOLDEXC1;
```

### Example

This example shows how to determine if the 55300A has been in holdover longer than the threshold.

```
RTRV-PM-EQPT:::123::THRESHOLDEXC1;
```

```
HP 55300A 95-06-04 15:12:04
```

```
M 123 COMPLD
```

```
"THRESHOLDEXC1=0"
```

```
;
```

The answer is {0 | 1} where:

0 = unit was not in holdover longer than the duration threshold

1 = unit was in holdover longer than the duration threshold

### Related Keywords

THRESHOLDEXEC2 (Sync Holdover Duration Threshold2 Exceeded)

THRESHOLD1 (Sync Holdover Duration Threshold)

THRESHOLD2 (Sync Holdover Duration Threshold)

HOLDACT (Holdover Action)

---

## 5.43 THRESHOLDEXC2 (Sync Holdover Duration Threshold2 Exceeded)

5.43.1 This keyword identifies if the 55300A has been in holdover longer than the amount of time specified by the THRESHOLD2 command. If it has, a 1 is returned.

### Syntax

```
RTRV-PM-EQPT: [<tid>] ::<ctag>::THRESHOLDEXC2;
```

### Example

This example shows how to determine if the 55300A has been in holdover longer than the threshold.

```
RTRV-PM-EQPT:::123::THRESHOLDEXC2;
```

```
HP 55300A 95-06-04 15:12:04
```

```
M 123 COMPLD
```

```
"THRESHOLDEXC2=0"
```

```
;
```

The answer is {0 | 1} where:

0 = unit was not in holdover longer than the duration threshold

1 = unit was in holdover longer than the duration threshold

### Related Keywords

THRESHOLDEXEC1 (Sync Holdover Duration Threshold 1 Exceeded)

THRESHOLD1 (Sync Holdover Duration Threshold)

THRESHOLD2 (Sync Holdover Duration Threshold)

HOLDACT (Holdover Action)

---

## 5.44 TIDQUIET (TID Quiet)

5.44.1 This keyword allows you to set up the system to suppress the DENY response that is normally generated when the <tid> specified in the current command does not match the current <sid>.

You can also use the RTRV-EQPT command to find out if TIDQUIET is set to Yes or No on your system.

---

**NOTE**

In normal operation, the system will produce a TL1 DENY response to any command if a non-null <tid> does not match the system's current <sid>. However, some operating systems may prefer that the system give no response to these commands. The TIDQUIET keyword provides this capability.

---

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>:::TIDQUIET=<value>;  
RTRV-EQPT: [<tid>]:<aid>:<ctag>:::PARAMETER=TIDQUIET;
```

### Values

<aid> = GPS

<value> = N (FALSE)—Display a DENY response when the <tid> specified is not the same as the current <sid>. (Default)

Y (TRUE)—Do not display a DENY response when the <tid> specified is not the same as the current <sid>.

### Example

This example shows how to set up the system to not issue a DENY response when the <tid> specified in a command does not match the currently specified <sid>.

```
ED-EQPT::GPS:123:::TIDQUIET=Y;
```

### Related Keywords

None

---

## 5.45 TIME (Current Time)

5.45.1 This keyword requests the 55300A to reply with the current time.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: TIME;
```

### Example

This example shows how to display the current time.

```
RTRV-PM-EQPT:::123::TIME;  
  
HP 55300A 95-06-04 15:12:04  
M 123 COMPLD  
"TIME=15-12-04"  
  
;
```

### Related Keywords

DATE (Current Date)

POS (PositionPostion)

TZONE (Time zoneTimezone)



---

## 5.46 TODBAUD (TOD Baud Rate)

5.46.1 This keyword sets the baud rate on the Time of Day port .

5.46.2 You can also use the RTRV-EQPT command to find out the baud rate that has been set up on the Time of Day port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::TODBAUD=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=TODBAUD;
```

### Values

<value> = 1200, 2400, 9600, 19200 (Default = 9600)

### Example

This example shows how to set the baud rate for the Time of Day port to 2400.

```
ED-EQPT::GPS:123:::TODBAUD=2400;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.47 TODBITS (TOD Bits)

5.47.1 This keyword sets the number of communication bits for the Time of Day Port.

5.47.2 You can also use the RTRV-EQPT command to find out the number of bits that have been set up for the Time of Day Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TODBITS=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TODBITS;
```

### Values

<value> = 7 or 8 (Default = 8)

### Example

This example shows how to set the bits for the Time of Day Port to 8.

```
ED-EQPT::GPS:123::TODBITS=8;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

**TODBITS (TOD Bits)**

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.48 TODECHO (TOD Echo)

5.48.1 This keyword tells the system to echo commands on the Time of Day port.

5.48.2 You can also use the RTRV-EQPT command to find out if the system has been set up to echo commands on the TOD port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TODECHO=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TODECHO;
```

### Values

<value> = Y (True) N (False) Default = Y

### Example

This example shows how to tell the system not to echo commands to the TOD port.

```
ED-EQPT::GPS:123::TODECHO=N;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**TODECHO (TOD Echo)**

Issue 1

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

## 5.49 LCLFLOW (TOD Flow)

5.49.1 This keyword sets the flow control on the Time of Day port .

5.49.2 You can also use the RTRV-EQPT command to find out if flow control has been set up on the Time of Day port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>:::TODFLOW=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>:::PARAMETER=TODFLOW;
```

### Values

<value> = None, Hardware (Default = None)

### Example

This example shows how to set the flow control to hardware for the Time of Day port.

```
ED-EQPT::GPS:123:::TODFLOW=HARDWARE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

**LCLFLOW (TOD Flow)**

Issue 1

TODBITS (TOD Bits)

TODECHO (TOD Echo)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)



## 5.50 TODPACE (TOD Pace)

5.50.1 This keyword sets the communication port pace for Time of Day Port.

5.50.2 You can also use the RTRV-EQPT command to find out the pace that has been set up for Time of Day Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TODPACE=<value>;
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TODPACE;
```

### Values

<value> = NONE or XON (Default = NONE)

### Example

This example shows how to set the pace for the Time of Day Port to NONE.

```
ED-EQPT::GPS:123::TODPACE=NONE;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**TODPACE (TOD Pace)**

Issue 1

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

TODSBITS (TOD Stop Bits)

---

## 5.51 TODPARITY (TOD Parity)

5.51.1 This keyword sets the parity for the Time of Day Port communication port.

5.51.2 You can also use the RTRV-EQPT command to find out the parity that has been set up for the Time of Day Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TODPARITY=<value>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TODPARITY;
```

### Values

<value> = ODD, EVEN, or NONE (Default = NONE)

### Example

This example shows how to set the parity for Time of Day Port to EVEN.

```
ED-EQPT::GPS:123::TODPARITY=EVEN;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**TODPARITY (TOD Parity)**

Issue 1

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODSBITS (TOD Stop Bits)

---

## 5.52 TODSBITS (TOD Stop Bits)

5.52.1 This keyword sets the Stop bits for the Time of Day port.

5.52.2 You can also use the RTRV-EQPT command to find out the value of the S bits that has been set up for the Time of Day Port.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TODSBITS=<value>;  
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TODSBITS;
```

### Values

<value> = 1 or 2 (Default = 1)

### Example

This example shows how to set the Stop bits for the Time of Day port to 2.

```
ED-EQPT::GPS:123::TODSBITS=2;
```

### Other Keywords Used to Set the State of a Communication Port

LCLAO (Local Automatic Output)

LCLBAUD (Local Baud)

LCLBITS (Local Bits)

LCLECHO (Local Echo)

LCLFLOW (Local Flow Control)

LCLPACE (Local Pace)

LCLPARITY (Local Parity)

LCLSBITS (Local Stop Bits)

RMTAO (Remote Automatic Output)

RMTBAUD (Remote Baud Rate)

RMTBITS (Remote Bits)

RMTECHO (Remote Echo)

RMTFLOW (Remote Flow Control)

RMTPACE (Remote Pace)

RMTPARITY (Remote Parity)

RMTSBITS (Remote Stop Bits)

TODBAUD (TOD Baud)

TODBITS (TOD Bits)

**TODSBITS (TOD Stop Bits)**

Issue 1

TODECHO (TOD Echo)

TODFLOW (TOD Flow)

TODPACE (TOD Pace)

TODPARITY (TOD Parity)

---

## 5.53 TZONE (Time Zone)

5.53.1 This keyword establishes a local time zone for the 55300A. By default, the 55300A powers up showing Greenwich Mean Time or “UTC.” This command changes the time reported to local time.

### Syntax

```
ED-EQPT: [<tid>]:GPS:<ctag>::TZONE=<hours>-<minutes>;
```

```
RTRV-EQPT: [<tid>]:GPS:<ctag>::PARAMETER=TZONE;
```

### Value

<hours> = two-digit hours from GMT with a range -12 to 12

<minutes> = two-digit minutes from GMT with a range 00-59

---

**NOTE**

Enclose negative numbers in parenthesis ().

### Example

This example shows how to set the 55300A's time zone to Pacific Standard Time.

```
ED-EQPT::GPS:123::TZONE=(-8)-0;
```

### Related Keywords

DATE (Current Date)

POS (Position)

TIME (Current Time)

---

## 5.54 WAITREASON (Sync Holdover Waiting Reason)

5.54.1 This keyword returns the prioritized reason for why the 55300A is waiting to recover. The keyword is always valid. If not in holdover and waiting to recover, NONE will be the response.

### Syntax

```
RTRV-PM-EQPT: [<tid>] :: <ctag> :: WAITREASON;
```

### Example

This example shows the reason the 55300A is waiting to recover.

```
RTRV-PM-EQPT:::123::WAITREASON;

    HP 55300A 95-06-04 15:12:04
M 123 COMPLD
    "WAITREASON=NONE"
;
```

Answer returned is <wait code> where <wait code> =

HARD = there is an internal hardware reason

GPS = there are no satellites

LIM = the Time Interval between GPS and the internal oscillator is exceeding the limit

NONE = the 55300A isn't waiting to recover.

### Related Keywords



---

## 5.55 Y2KEXT (Four-Digit Year Format)

The Y2KEXT keyword controls the manner in which the year is displayed in the header line of all output messages. If set to Y, then the year is displayed in four-digit format. If set to N, then two-digit format is used.

This keyword has no affect on the manner of setting dates. Firmware versions 3812 and later support four-digit year entry. If a date is entered in two-digit format, it is interpreted as being in the range of 1990 to 2089.

### **Y2KEXT keyword Only Available in Firmware Versions 3812 and Later**

In firmware versions 3812 and later, the Y2KEXT keyword was added to allow either two-digit or four-digit year format in the header line of the output messages, and four-digit year entry.

### Syntax

```
ED-EQPT: [<tid>]:<aid>:<ctag>:::Y2KEXT=<value>;  
RTRV-EQPT: [<tid>]:<aid>:<ctag>:::PARAMETER=Y2KEXT;
```

### Values

<value> = N (OFF) — Two-digit year format response (default).  
Y (ON) — Four-digit year format response.

### Example

The following example shows how to retrieve the current year format:

```
RTRV-EQPT::GPS:123:::PARAMETER=Y2KEXT;  
  
HP 55300A 99-03-30 15:12:04  
M 123 COMPLD  
"Y2KEXT = N"  
;
```

The following example shows how to set the year output format to four digits:

```
ED-EQPT::GPS:123:::Y2KEXT=Y;
```

### Related Keyword

DATE (Current Date)





---

## 6.1 Overview

6.1.1 Events tell you what is happening on the network and the 55300A. You determine what you want to know about (which conditions should generate an event?) and how important it is (which events should generate an alarm?). Most of the events have default settings, however, you can customize your 55300A to meet your specific network needs. This chapter describes events that can be detected by the 55300A. It includes the following information:

- Events and Alarms
- Changing/Displaying Event Properties
- Logging Events

---

## 6.2 Events and Alarms

6.2.1 This section describes events and alarms.

- *Events* are conditions that occur or are detected in the 55300A
- *Alarms* are a subset of these events which have been configured, either by default or by the user, to generate an alarm indication and to produce a RPT ALM EQPT message.

6.2.2 Every event has two *properties* which are configured to default values at the factory. These properties are completely independent of each other.

- ALM property—specifies the severity of the event
- LOG property—specifies whether to capture the event in the Event Log

6.2.3 These properties are user configurable. Refer to *Changing/Displaying Event Properties* in this chapter and the ED-EQPT command in chapter 4.

6.2.4 The current state of system events is constantly being maintained, updated, and reported automatically (if configured to report). However, you can use the RTRV-ALM-EQPT command at any time to retrieve a report of alarms that are currently active. A similar command, RTRV-COND-EQPT, can be used to retrieve a report of any non-alarmed standing conditions.

### 6.2.4.1 Types of Events

6.2.4.2 The 55300A is capable of detecting two types of events:

- State events—an ongoing condition
- Transient events—something has just happened

6.2.4.3 For example, the **HOLDOVER** event represents an ongoing condition, namely, that the 55300A is operating in Holdover Mode, whereas the **TIMERST** event represents a transient occurrence, namely, that the 55300A has reset its time.

#### State Events

6.2.4.4 State Events have an *active (set)* and *cleared* state. Depending on the configuration of the **ALM (severity)** property of the event, alarms can be generated or cleared, and the 55300A detects and reports that these events have changed their state.

#### ALM Property

6.2.4.5 The following values are available for the **ALM** property:

NONE	No alarms or reports are generated by either the setting or clearing of this event. (Note: the <b>RTRV-COND-EQPT</b> command can be used to retrieve the setting of all state events, including those with the <b>ALM</b> property set to NONE.)
NONALM	Both the setting and clearing of this event will generate a <b>RPT EVT EQPT</b> message, indicating the change in state. No alarms are generated.
MINOR	The setting of this event will generate a Minor Alarm indication and generate a <b>RPT ALM EQPT</b> message. The clearing of this event will clear the associated alarm indication and will generate another <b>RPT ALM EQPT</b> message indicating the clearing of the alarm.
MAJOR	The setting of this event will generate a Major Alarm indication and generate a <b>RPT ALM EQPT</b> message. The clearing of this event will clear the associated alarm indication and will generate another <b>RPT ALM EQPT</b> message indicating the clearing of the alarm.
CRITICAL	The setting of this event will generate a Critical Alarm indication and generate a <b>RPT ALM EQPT</b> message. The clearing of this event will clear the associated alarm indication and will generate another <b>RPT ALM EQPT</b> message indicating the clearing of the alarm.

### 6.2.4.6 *Event Summary*

6.2.4.7 The following tables list the events that can be detected by the 55300A.

**Table 6-1. State Events Related to Powerup**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>
DTVALID	Date and time valid	NONE	YES (NO in firmware versions prior to 3912)
FIRSTSAT	First satellite tracked	NONALM (NONE in firmware versions prior to 3912)	YES (NO in firmware versions prior to 3912)
OSCWARM	Oscillator oven warm	NONE	YES (NO in firmware versions prior to 3912)
MINUS48VA*	Missing -48 Vdc Power A	MAJOR	YES
MINUS48VB*	Missing -48 Vdc Power B	MAJOR	YES

\* MINUS48VA and MINUS48VB events are only available in firmware versions 3912 and later.

**Table 6-2. State Events Related to Holdover**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>
EXCTH1	Exceeding holdover duration threshold 1	MINOR	YES
EXCTH2	Exceeding holdover duration threshold 2	MAJOR	YES
HOLDING	Holding in holdover	NONE	NO
HOLDOVER	Holdover	NONALM (NONE in firmware versions prior to 3912)	YES (NO in firmware versions prior to 3912)
RECOVERING	Recovering from holdover	NONE	NO
WAITING	Waiting to recover	NONE	NO

**Table 6-3. State Events Related to Operation**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>
PPSVALID	1 PPS reference valid	NONE	YES (NO in firmware versions prior to 3912)
LOCKED	Locked	NONALM (NONE in firmware versions prior to 3912)	YES (NO in firmware versions prior to 3912)
LOG	Log almost full	NONE	NO
POSHOLD	Position hold	NONALM (NONE in firmware versions prior to 3912)	YES (NO in firmware versions prior to 3912)

**Table 6-4. State Events Related to Non-Specific Operation**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>	<b>Notes</b>
TIMERST	Time reset	NONE	NO	
USEREVT	User-reported event	MINOR	YES	Only from SCPI port

**Table 6-5. State Events Related to Hardware**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>
DPM1	Digital pulse monitor 1	MAJOR	YES
DPM2	Digital pulse monitor 1	MAJOR	YES
EEPROM	EEPROM write failed	MAJOR	YES
GPS1PPSBAD	GPS1 PPS failure	MAJOR	YES
GPSBAD	GPS failure—not listed in command document	MAJOR	YES
INTREF	Internal reference failure	MAJOR	YES
MINUS15	–15V supply exceeds tolerance	MAJOR	YES
OSCBAD	Oscillator EFC voltage full scale	MAJOR	YES
OSCPROB	Oscillator EFC voltage near full scale	MINOR	YES
OVENSUPL	Oven supply exceeds tolerance	MAJOR	YES
PLUS15	+15V supply exceeds tolerance	MAJOR	YES
PLUS5	+5V supply exceeds tolerance	MAJOR	YES
SELFTTEST	Selftest failure	MAJOR	YES
SYNTHBAD	Synthesizer EFC full scale	MAJOR	YES
SYNTHPROB	Synthesizer EFC near full scale	MINOR	YES
TIFAIL	TI measurement failed	MAJOR	YES

**Transient Events**

6.2.4.8 The 55300A handles transient events similarly to state events. Therefore they can generate alarms.

**Table 6-6. State Events Related to Transient Events**

<b>Events</b>	<b>Description</b>	<b>Default Properties</b>	<b>Default Log</b>
EEPROM	EEPROM write failed	MAJOR	YES
TIFAIL	TI measurement failed	MAJOR	YES
TIMERST	Time reset	NONE	NO



---

## 6.3 Retrieving Events

6.3.1 Alarmed and non-alarmed events can be retrieved by using TL1 commands.

6.3.2 To retrieve a list of all currently active non-alarmed events use the RTRV-COND-EQPT command. For example:

6.3.3 This example shows how to retrieve all of the currently active non-alarmed events.

```
RTRV-COND:::123;  
  
    HPGPS 96-09-26 17:57:42  
M 123 COMPLD  
/*  
    :NR,LOCKED, SC,09-26,17-05-14:\"Locked\"  
    :NR,DTVALID, SC,09-25,12-21-51:\"Date and time valid\"  
*/  
;
```

---

### **NOTE**

If available, the Event Message will include a problem code. This code can be used to help support personnel diagnose system problems.

6.3.4 Since transient events do not have an ongoing state, they cannot be retrieved. The RTRV-ALM-EQPT command is similar to the RTRV-COND-EQPT command except that it only reports events which are causing alarms (CR, MJ, MN).

6.3.5 To retrieve a list of all events that are causing alarms use the RTRV-ALM-EQPT command. For example:

```
RTRV-ALM-EQPT:::123;  
  
    HPGPS 96-09-16 20:23:58  
M 123 COMPLD  
/*  
    :MJ,SELFTTEST,NSA,00-00,00-00-00:\"Selftest failure\"  
*/  
;
```

6.3.5.1 This example shows how to retrieve alarms (if any) from the 55300A. Notice the response includes an alarm severity code.

6.3.6 The possible alarm severity codes are listed below:

- CR—Critical Alarm
- MJ—Major Alarm
- MN—Minor Alarm
- NA—Non-Alarmed
- NR—Not Reported

6.3.6.1 The hardware default definition of these alarm severity codes (e.g., the hardware conditions that the 55300A considers a critical alarm) is included in the 55300A User's Guide.

---

## 6.4 Clearing Events

6.4.1 Once you've determined that a transient event has occurred (by using the RTRV-COND command as previously described), the event can be cleared. The transient events that can be cleared are:

- TIMERST—Time reset event
- TIFAIL—TI measurement failed event
- EEPROM—EEPROM write failed event

---

### **NOTE**

If the event parameter is not used in the RTRV-COND command, all of the currently active conditions will be retrieved. Otherwise you must specify one of the three events listed above and the specified condition will be cleared.

---

6.4.2 This example shows how to retrieve and clear an equipment related condition from the system by using the shortened command form.

```
RTRV-COND:::123::TIFAIL;

  HPGPS 96-09-11 21:39:06
M 123 COMPLD
  /* TIFAIL condition cleared */
;
```

---

### **NOTE**

If available, the Event Message will include a problem code. This code can be used to help support personnel diagnose system problems.

---

---

## 6.5 Changing/Displaying Event Properties

### 6.5.0.1 Changing Event Properties

6.5.1 Use the ED-EQPT command to change the properties of an event. For example:

```
ED-EQPT::GPS:123:::HOLDOVER=ALM-CRITICAL&LOG-Y;
```

6.5.2 This example shows how to set a critical alarm and log the event when the system goes into Holdover mode.

### 6.5.2.1 Displaying Event Properties

6.5.3 You can also find out what properties are set for a particular event by using the RTRV-EQPT command. For example:

```
RTRV-EQPT::GPS:123:::PARAMETER=HOLDOVER;
```

```
HPGPS 96-09-11 18:55:29
```

```
M 123 COMPLD
```

```
"HOLDOVER=NONALM, LOG=N"
```

```
;
```

6.5.4 This example shows that when Holdover mode is detected, an Automatic Message will be generated and the event will not be recorded in the Event Log.

---

## 6.6 Logging Events

6.6.1 The 55300A maintains two separate logs:

- Event Log
- Automatic Output (AO) Log

6.6.2 The Event Log should not be confused with the Automatic Output Log, which provides a temporary record of recent Automatic Messages. The Event Log is useful for examining a sequence of events, perhaps for network or equipment diagnostic purposes, while the Automatic Output Log is useful for retrieving messages that may have been missed or overlooked by the Operating System. Note that logging of events in the Event Log is controlled by the LOG property of the event, while the ALM property controls which events generate messages and hence are included in the Automatic Output Log (other automatic reports, such as automatic performance monitoring uploads and session related messages, will be included in the Automatic Output Log).

### 6.6.2.1 Event Log

6.6.2.2 The Event Log is a chronological record of both alarmed and non-alarmed events. You may configure which events are entered in the log. This is a circular log holding the most recent 200 logged events in battery backed up RAM. You may retrieve the log using the RTRV-LOG command. For example:

```
RTRV-LOG:::123::EVTTOP;
```

```

      HPGPS 96-09-11 19:32:28
M 123 COMPLD
/*
"1:MJ,DPM1,NSA,09-09,19-59-18:\\"ENDED Digital pulse monitor 1\\"
"2:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\"
"3:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"4:MJ,DPM1,NSA,00-00,00-00-00:\\"Digital pulse monitor 1\\"
"5:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"6:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"7:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"8:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\"
"9:MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"10:MJ,DPM2,NSA,00-00,00-00-00:\\"ENDED Digital pulse monitor 2\\"
*/
;
```

6.6.2.3 The primary use of this log is for determining the sequence of events leading up to a network or system problem.

6.6.2.4 The Event Log is retrieved in reverse chronological order (i.e., last in, first out). Events placed in the log are those which have their LOG property set to Y, and can include both alarmed and non-alarmed events as well as those not initially reported (i.e., those with ALM property set to NONE). Events are retrieved in groups of 10 events at a time.

### **6.6.2.5 Automatic Output (AO) Log**

6.6.2.6 The Automatic Output (AO) Log is a record of all Automatic Messages that have been generated. The primary purpose of this log is to allow an operating system to retrieve any Automatic Output Messages that may have been missed when first transmitted (all messages are sequentially numbered).

6.6.2.7 These messages include alarmed and non-alarmed event reports and information on user's logging on and off of the communications ports. This is a circular log that currently holds the most recent 100 messages or 1000 characters of information (whichever is less). No battery backup is provided for this log.

6.6.2.8 To retrieve all of the alarmed Automatic Messages currently saved in the Automatic Output Log, use the RTRV-AO command. For example:

```
RTRV-AO:::123:::MSGTYPE=ALM
```

```

      HPGPS 96-09-11 19:37:20
M 123 COMPLD
/*

      HPGPS 00-00-00 00:00:00
** 0001 REPT ALM EQPT
      ":MJ,DPM2,NSA,00-00,00-00-00:\\"Digital pulse monitor 2\\"
"

      HPGPS 00-00-00 00:00:00
** 0002 REPT ALM EQPT
      ":MJ,DPM1,NSA,09-09,19-59-18:\\"Digital pulse monitor 1\\"
"

      HPGPS 96-09-09 19:59:18
** 0003 REPT ALM EQPT
      ":MJ,DPM1,NSA,09-09,19-59-18:\\"ENDED Digital pulse monitor 1\\"
"
*/
;
```

6.6.2.9 Notice that the time and date for message 1 and 2 are not available. When this happens, the 55300A has not achieved GPS lock. Once the system has achieved GPS lock and has retrieved satellite information, the time and date will be displayed in the header as shown in message 3.



---

## 7.1 Overview

7.1.1 The Receiver Status screen is used to find out the synchronization progress, satellite acquisition, and overall health of the 55300A. It is used for retrieving system status, performance, and problem diagnosis information. This chapter describes all of the information displayed in the screen.

---

## 7.2 Receiver Status Screen Data

7.2.1 When you use the RTRV-PM-EQPT to display the Receiver Status screen, the following information displays:

```

----- Receiver Status -----
SYNCHRONIZATION ..... [ Outputs Valid ]
SmartClock Mode _____ Reference Outputs _____
>> Locked to GPS                TFOM      3          FFOM      0
Recovery                        1PPS TI +99.2 ns relative to GPS
Holdover                        HOLD THR 1.000 us
Power-up                         Holdover Uncertainty _____
                                  Predict  20.0 us/initial 24 hrs

ACQUISITION ..... [ GPS 1PPS Valid ]
Tracking: 6 _____ Not Tracking: 3 _____ Time _____
PRN  El  Az  SS  PRN  El  Az  UTC      19:41:58    11 Sep 1996
   1  31 186  26   9  10  90  GPS 1PPS Synchronized to UTC
   3  47 295  44  26  11  38  ANT DLY 154 ns
  17  46  87  28  31  14 319  Position _____
  21  64 281  33  MODE      Hold
  23  62  30  37  LAT      N  37:19:32.462
  28  58 203  36  LON      W 121:59:52.158
ELEV MASK 10 deg                HGT      +47.50 m (MSL)

HEALTH MONITOR ..... [ OK ]
Self Test: OK   Int Pwr: OK   Oven Pwr: OK   OCXO: OK   EFC: OK   GPS Rcv: OK
*/
;

```

**Figure 7-1. Receiver Status Screen**



7.2.2 This section describes the information that displays in the screen. The status screen has three major sections:

- **Synchronization** Shows how the 55300A's SmartClock™ technology is progressing towards its objective, which is to synchronize the 55300A's oscillator to the 1 PPS reference signal produced by the 55300A's internal GPS Engine.
- **Acquisition** Shows how the 55300A's internal GPS Engine is progressing towards its objective, which is to produce an accurate internal 1 PPS reference signal. It does so through tracking GPS satellites.
- **Health Monitor** Summarizes the overall health of the product.

### 7.2.2.1 *Synchronization Section of the Status Screen*

7.2.2.2 The Synchronization line in the screen summarizes the SmartClock Status and Reference Outputs. One of three Synchronization messages is shown:

- *Outputs Invalid* while the 55300A (unit) is warming up,
- *Outputs Valid/  
Reduced Accuracy* while the unit is in holdover or is locked but has not achieved steady-state operation, or
- *Outputs Valid* while the unit is in steady-state operation.

### SmartClock Mode

7.2.2.3 The SmartClock Mode area of the screen shows the four operating modes:

- Locked to GPS
- Recovery
- Holdover
- Power-up

7.2.2.4 As shown in the sample status screen in Figure 7-1, a >> symbol indicates the current operating mode.

7.2.2.5 **Locked to GPS** indicates that the 55300A is locked to GPS. The front-panel GPS Lock LED will be illuminated.

7.2.2.6 When *stabilizing frequency ...* is shown, the time output (1 PPS) signal is locked and can be used, but the frequency outputs (10 MHz, 1544 kHz or 2048 kHz) are not at their final or most stable state.

7.2.2.7 **Recovery** indicates that the unit is actively working to become locked to GPS. All conditions needed to proceed towards a lock have been met. Expect an eventual spontaneous transition to a lock (unless changing external conditions prevent this, such as loss of tracked satellites.)

7.2.2.8 **Holdover** indicates that the unit is waiting for conditions that are needed to allow the process of recovery from holdover to begin. Once these conditions are met, the unit will transition on its own to the recovery mode.

7.2.2.9 When the **GPS 1PPS CLK invalid** message follows the **Holdover** label, the internal GPS 1 PPS reference signal is inaccurate.

7.2.2.10 When the *manually initiated* message follows the **Holdover** label, the unit has been placed in holdover by the user. An explicit command is required to initiate an exit from manual holdover.

7.2.2.11 When the *internal hardware problem* message follows the **Holdover** label, a measurement hardware error exists.

7.2.2.12 The *Holdover Duration* message indicates the duration that the unit has been operating in holdover (and recovery). Thus, this message gives you an assessment of the quality of the outputs. The longer the unit is in holdover the more degraded the outputs become.

7.2.2.13 **Power-up** indicates that the 55300A hasn't yet achieved GPS lock or acquired satellites since it has been powered up. The 55300A is measuring the internal reference oscillator's frequency and adjusting it to 10 MHz during this power-up period. Other queries can provide insight as to the cause if the 55300A is remaining in powerup longer than expected.

### 7.2.2.14 Reference Outputs

7.2.2.15 **TFOM** (Time Figure of Merit) indicates the *accuracy* of the 55300A's 1 PPS output. A low TFOM value indicates a more accurate output. In the sample screen of Figure 7-1, a value of 3 is displayed, meaning that the Time Error ranges from 100 to 1000 nanoseconds. The following table lists the TFOM values that could be displayed and the corresponding Time Error.

TFOM Value	Time Error (in nanoseconds)	TFOM Value	Time Error (in nanoseconds)
<sup>a</sup> 0	less than 1	5	10 <sup>4</sup> –10 <sup>5</sup>
a1	1–10	6	10 <sup>5</sup> –10 <sup>6</sup>
a2	10–100	7	10 <sup>6</sup> –10 <sup>7</sup>
3	100–1000	8	10 <sup>7</sup> –10 <sup>8</sup>
4	10 <sup>3</sup> –10 <sup>4</sup>	9	greater than 10 <sup>8</sup>

a. The TFOM values 0, 1, and 2 are not presently used in the 55300A. The 55300A will display TFOM values ranging from 9 to 3, which is consistent with the specifications of each product.

7.2.2.16 **FFOM** (Frequency Figure of Merit) indicates the *stability* of the 55300A's 10 MHz output. The 10 MHz output is controlled by the SmartClock's Phase-Locked Loop (PLL). Thus, the FFOM value is determined by monitoring the status of the PLL.

7.2.2.17 In the sample screen, the 3 indicates that the SmartClock's PLL is unlocked. The following table lists and defines the FFOM values that could be displayed.

FFOM Value	Definition
0	PLL stabilized—10 MHz output within specification.
1	PLL stabilizing
2	PLL unlocked (holdover)—Initially the 10 MHz output will be within specifications. However, when in holdover, the 10 MHz output will eventually drift out of specification.
3	PLL unlocked (not in holdover)—Do not use the output.

7.2.2.18 **1PPS TI** indicates the difference (timing shift) between the SmartClock 1 PPS and the internal GPS 1 PPS signals.

7.2.2.19 **HOLD THR** (holdover threshold) displays the user-entered time error value.

### 7.2.2.20 Acquisition Section of the Status Screen

7.2.2.21 The **Acquisition** line in the screen summarizes the state of the internal GPS Engine as indicated by the **Tracking**, **Not Tracking**, and **Position** areas of the screen.

7.2.2.22 If the Receiver Engine was considered to be synchronized to the GPS signal, the [*GPS 1 PPS Valid*] message will appear at the end of the **Acquisition** line. If the 55300A has not yet synchronized to GPS, the [*GPS 1 PPS CLK Invalid*] message will be displayed.

### Tracking, Not Tracking

7.2.2.23 The **Tracking** table indicates the number of satellites the unit is tracking.

7.2.2.24 The **Not Tracking** table indicates satellites predicted to be visible that are not tracked, and all of the satellites that are assigned to a GPS Engine channel but are not currently tracked.

7.2.2.25 Health and status indicators in the tables are defined as follows:

<b>PRN</b>	indicates the pseudorandom noise (PRN) code assigned to the satellite.
<b>EI</b>	indicates the predicted elevation angle, from a range of 0 to 90°. The predicted elevation is derived from the almanac.
<b>--</b>	indicates that the elevation angle is unknown (the almanac did not provide this data).
<b>Az</b>	indicates the predicted azimuth angle, from a range of 0 to 359°. The predicted azimuth angle is referenced to true north, and is derived from the almanac.
<b>---</b>	indicates that the azimuth angle is unknown (the almanac did not provide this data).
<b>SS</b>	indicates the strength of the signal, from a range of 0 to 255. A signal strength of 20 to 30 is a weak signal that may not be acquired by the 55300A.

The health and status indicators in the **Not Tracking** table are described as follows:

*Ignore* indicates that the user has chosen to exclude this satellite from a list of satellites available for tracking.

*Not OK* indicates GPS has reported that this satellite is unhealthy.

*Acq* indicates the unit is attempting to acquire the satellite signal.

*Acq .* indicates the unit is reading timing information from the satellite.

*Acq .* indicates the unit is reading satellite orbital information.

**ELEV MASK** indicates the elevation mask angle in degrees. Satellites at or above this elevation angle are considered for tracking.

*\*attempting to track* indicates that the unit is attempting to track a satellite.

### Time

7.2.2.26 When you first power up the unit the time and date that is stored in the internal GPS Engine may not be the actual date. The actual time and date will be valid after one satellite has been tracked by the 55300A.

---

#### **NOTE**

---

There are two accurate ways to express time (GPS or UTC). GPS time is offset from UTC time by the number of accumulated leap seconds since midnight of January 6, 1980 UTC.

7.2.2.27 The **Time** area of the status screen provides three types of information: **Time**, **1PPS CLK**, and **ANT DLY**.

7.2.2.28 **Time** has four possible modes: *GPS*, *UTC*, *LOCL GPS*, and *LOCAL*.

- *GPS* indicates current time and date collected from a satellite in GPS Time.
- *LOCL GPS* indicates GPS Time, offset for the local time zone
- *UTC* indicates current time and date collected from a satellite in UTC time.
- *LOCAL* indicates current time and date collected from a satellite offset from UTC for the local time zone.

7.2.2.29 **1PPS CLK** can indicate several possible advisory messages. These messages are:

<i>Synchronized to GPS Time</i>	1 PPS locked to GPS, referenced to GPS Time.
<i>Synchronized To UTC</i>	1 PPS locked to GPS, referenced to UTC.
<i>Assessing stability ...</i>	applying hysteresis to locked 1 PPS signal.
<i>Inaccurate, not tracking</i>	not tracking satellites.
<i>Inaccurate, inacc position</i>	in survey mode, but has not yet calculated a position.
<i>Absent or freq incorrect</i>	no 1PPS signal; or the internal GPS Engine is idle.

7.2.2.30 **ANT DLY** (antenna delay) displays the user-entered value that is used to compensate for the propagation delay of the antenna cable.

### Position

7.2.2.31 **Position** area of the status screen provides four types of information: **MODE** (hold or survey), **LAT** (latitude), **LON** (longitude), and **HGT** (height).

7.2.2.32 **MODE** indicates whether the unit is set to Hold or Survey position mode.

7.2.2.33 When *Hold* is displayed, the unit's antenna position has been provided by the user, or the average position has been found after completion of survey.

7.2.2.34 If the unit is in the position *Hold* mode, the **LAT**, **LON**, and **HGT** "held" position coordinates will be displayed.

7.2.2.35 If *Survey*: *57.3% complete* is displayed, for example, the 55300A is set to survey mode trying to determine the position of the antenna. The % value indicates the progress of the surveying.

7.2.2.36 At the beginning of a survey (0% completion), the following “estimated” position coordinates will be displayed:

7.2.2.37 **INIT LAT** indicates the estimated latitude (North or South) position of the unit in degrees, minutes, and seconds.

7.2.2.38 **INIT LON** indicates the estimated longitude (East or West) position of the unit in degrees, minutes, and seconds.

7.2.2.39 **INIT HGT** indicates estimated height of the 55300A’s antenna, in meters above mean sea level (MSL).

7.2.2.40 Once survey starts, the following “averaged” position coordinates will be displayed:

7.2.2.41 **AVG LAT** indicates the average latitude (North or South) position of the unit in degrees, minutes, and seconds.

7.2.2.42 **AVG LON** indicates the average longitude (East or West) position of the unit in degrees, minutes, and seconds.

7.2.2.43 **AVG HGT** indicates average height of the 55300A’s antenna, in meters above mean sea level (MSL).

7.2.2.44 The possible advisory messages that can be displayed when position mode is Survey are:

- *Suspended: track <4 sats*
- *Suspended: poor geometry*
- *Suspended: no track data*

### ***7.2.2.45 Health Monitor Section of the Screen***

7.2.2.46 The Health Monitor section of the status screen reports errors or failures of the key hardware functions. The *OK* summary message at the end of the **Health Monitor** line indicates that no errors or failures were detected. *Error* indicates that one or more hardware tests failed.

7.2.2.47 For each hardware function, *OK* is reported when it is operating normally; *Err* is displayed when a failure or an error is detected.

7.2.2.48 Hardware functions are monitored periodically, with the exception of Self Test, which is performed at powerup or when requested.

7.2.2.49 The health and status indicators in the Health Monitor section are described as follows:

<b>Self Test</b>	Last diagnostic check of the microprocessor system, reference oscillator, satellite receiver, and power supplies failed.
<b>Int Pwr</b>	Internal power supply voltage(s) exceeds tolerance.
<b>Oven Pwr</b>	Oscillator oven power supply voltage exceeds tolerance.
<b>OCXO</b>	Oscillator output failed, or output is squelched.
<b>EFC</b>	Oscillator control voltage is at or near full-scale.
<b>GPS Rcv</b>	Satellite receiver communication failed, or GPS 1PPS reference is absent.



---

A

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Error Codes

---

## A.1 Overview

A.1.1 This chapter lists all of the error codes that you might see when using the 55300A. Table A-1 lists the 55300A error codes. Error codes are displayed in error responses.

**Table A-1. 55300A Error Codes**

<b>Code</b>	<b>Description/Cause</b>	<b>Action</b>
IBEX	Block, extra	Check command syntax
IDNV	Input, data not valid	Reenter valid data
IIAC	Input, invalid access identifier (AID)	Reenter valid (AID)
IICM	Invalid command	Check command syntax
IICT	Input, invalid Correlation tag (CTAG)	Reenter valid (CTAG)
IIPG	Input, invalid parameter grouping	Check command syntax
IISP	Input, invalid syntax or punctuation	Reenter valid syntax or punctuation
IITA	Input, invalid target identifier (TID)	Reenter valid (TID)
INUP	Input, non-null unimplemented parameter	Check command syntax
IPMS	Input, parameter missing	Check command syntax
IPNV	Input, parameter not valid	Reenter valid parameter
ISCH	Input, syntax, invalid character	Reenter valid syntax
ISPC	Input, syntax, invalid punctuation	Reenter valid syntax
PICC	Privilege, illegal command code	
PIUC	Privilege, illegal user code	
PIUI	Privilege, illegal user identity	
SARB	Status, all resources busy	Try again later
SNVS	Status, not in valid state	
SROF	Status, requested operation failed	Check command description
SSRE	Status, system resources exceeded	Try again later

---

B

---

Retrieving Time of Day

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## B.1 Overview

B.1.1 This appendix describes how to retrieve the time of day value from the 55300A using SCPI commands. It is meant to be used as a quick “how to” guide, and is not intended to fully describe all of the SCPI commands and syntax. You can also use the SATSTAT program to retrieve the time of day value.

B.1.2 Retrieving time of day from the 55300A, consists of the following tasks:

- Connecting the 55300A to a PC
- Running a terminal emulation program
- Entering a SCPI command

### ***B.1.2.1 Connecting the 55300A to a PC***

B.1.2.2 Connect the 55300A to a PC or laptop via the rear-panel TIME of DAY RS232C port using cabling and connectivity instructions provided in the section titled, “Connecting to a Terminal/Computer or Modem” in the *55300A GPS Telecom Primary Reference Source User’s Guide*.

### ***B.1.2.3 Running a Terminal Emulation Program***

1. Once the 55300A has been connected to a PC, turn on the PC and start the terminal emulation program (e.g., Microsoft Windows Terminal) according to the instructions included with the program.
2. Enter the following RS232C port configuration values:
  - Pace: NONE
  - Baud Rate: 9600
  - Parity: NONE
  - Data Bits: 8
  - Stop Bits: 1

#### ***B.1.2.4 Entering the SCPI Command***

1. Press the Enter (or Return) key on the PC.
2. Verify that either a **SCPI>** or **E-xxx>** prompt is returned on the computer display. (The E-xxx prompt will appear if a pre-existing error occurred.)
3. From the computer keyboard, type:

```
:PTIME:TCODE?
```

and press Enter (or Return).

An alphanumeric string which starts with a “T” should be displayed as shown in the following example:

```
T2199505112055233000049
```

The data is of the form “Tx” which indicates the type of time code, followed by the year (yyyy), month (mm), day (dd), hour (hh), minute (mm), and microseconds (sssssss), and may be concluded with another letter. All of the “x”s above will be filled with numbers indicating the internal time of the module.



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