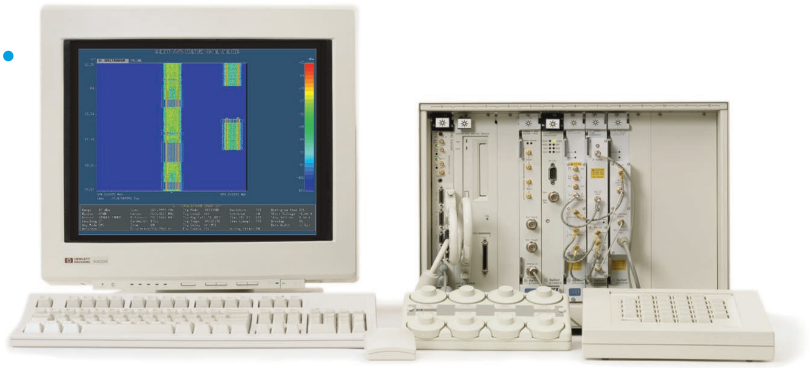
Agilent 3587S

Signal Analysis System Option ATR

Product Overview



Wideband, deep signal capture software

When your signal analysis and characterization needs have pushed the limits of traditional instrumentation, consider a new approach. The Agilent 3587S signal analysis system combines wide dynamic range digitizing, high-power signal processing, versatile high-speed displays, and signal capture tools to find and study signal characteristics that may have escaped detection in the past.

Option ATR extends the capabilities of the 3587S by adding wideband, real-time deep signal capture capabilities, and post-capture signal processing to its powerful feature set.

Highest Dynamic Range

Using Option ATR, see things you can't see when using analog recording techniques. With Option ATR and four E1562 fast data disk modules, the 3587S captures and records signals with up to 110 dBfs spurious-free dynamic range. That's more dynamic range than any analog tape recording. It's also state-of-the-art for digital recording.

Deep Capture Memory

With eight fast E1562 data disk VXI modules, Option ATR accesses 32 GB of hard disk storage, providing 26 minutes of 4 MHz bandwidth signal capture time.

If you have signals that come and go unpredictably with long periods of "dead air" between, use Option ATR's circular buffer mode to capture them. In this mode, specify the signal capture file size. Once the file is filled, recording continues at the beginning of the file, overwriting old data. Thus, you write over the "dead-air" and stop the capture once the signal is recorded.

Random Access Playback

Because recording is done to hard disk, you don't have to wind back through an entire recording session to review interesting signals. Instead, you can jump directly to every signal of interest marked during capture. An event log of all tagged signals is provided to help you. Of course, you can still play back the entire session if you choose.

Additional DSP Tools

Option ATR adds signal processing tools to the 3587S to help you analyze recorded data.

Focus in on narrowband signals using post-process filtering and zoom. Filter and zoom on signals recorded at any bandwidth to maximize the signal-to-noise ratio in the analysis bandwidth. Whatever the recorded bandwidth, it can be reduced by a factor of 2^n (n=1 to 14). Use zoom to tune the center frequency of these filters anywhere within the original recorded bandwidth.

File Management

Option ATR has a full set of file management tools, so you can record multiple files, assign file names for each session, add comments to the file header to document the session, write protect the file, delete the file, copy to/from the controller system disk, and archive signals to DDS tape. To speed the archiving process, you can save only the portions of a capture file that contain interesting signals.

Configuration

To run Option ATR, a 3587S with an HP E1498A workstation, HP E1401B mainframe and at least one E1562B are required. To achieve 4 MHz real-time capture rates, four E1562s (one E1562B and three E1562Cs) are required.

Features

Record

- Assign file name
- Set throughput file size (sec.,min., A/D samples, largest possible)
- Monitor while recording
- Log (mark) events while recording (< 2000 marks)
- Comment logged (marked) events
- Repeat record (circular buffer mode)
- Stop delay
- Event delay
- Record file status
- Write protect on/off
- Comment header included in file

Post Process

- Start at: time, next event, previous event
- Pause/continue
- Display file information (name, date, time, analyzer state, file size, events)
- Display file comment
- Display event log (list)
- Change span
- Change center frequency
- Change resolution

Disk Utilities

- File information
- Initialize disk
- Delete file
- Rename file
- Copy throughput files to/from host system disk
- Write protect on/off

File Utilities

- File name
- Display file information
- Display data comment
- Display event log (list)
- Edit data comment
- Extract data from file (copy begin, copy end, copy to file name, file to copy from)
- Archiving (archive/restore files to/from DDS tape and E1562)

Specifications

Capacity:	4 GB per E1562B or E1562C disk module

Disk modules per system: 1 - 8

Minimum number of disk modules required for recording (gap free, 16 bit samples):

Bandwidth	Disk modules required
4 MHz	4
2 MHz	2
1 MHz	1
500 kHz to 0.24 Hz	1

Recording time (16 bit samples, one file):

Bandwidth	Disk Modules	Time (sec)
4 MHz	4	781
2 MHz	2	781
1 MHz	1	781
500 kHz	1	1,563
250 kHz	1	3,125
125 kHz	1	6,250
62.5 kHz	1	12,500
31.2 kHz	1	25,000
15.6 kHz	1	50,000
7.8 kHz	1	100,000
3.9 kHz	1	200,000
1.9 kHz	1	400,000
976 Hz	1	800,000
< 976 Hz[1]	1	>800,000

Incremental recording time per disk module added (16 bit samples, one file):

Bandwidth	Time (sec)
4 MHz	195
2 MHz	391
1 MHz	781
500 kHz	1,563
250 kHz	3,125
125 kHz	6,250
62.5 kHz	12,500
31.2 kHz	25,000
15.6 kHz	50,000
7.8 kHz	100,000
3.9 kHz	200,000
1.9 kHz	400,000
976 Hz	800,000
< 976 Hz[1]	>800,000

Example: Maximum recording time for the 4 MHz span using 4 additional disk modules:

T = 781 sec + 4 x 195 sec = 1561 sec = 26 min.

Disk calibration

Disk calibrations occur automatically and are a function of warm-up time. After 160 minutes of continuous power-on time, the interval between calibrations will be approximately 1 hour. A disk calibration can be started manually to avoid conflict with a signal capture session. If a disk calibration occurs while recording at bandwidths greater than 500 kHz (16 bit, 250 kHz at 32 bits), the recording session will be terminated. Recording bandwidths of 500 kHz and less are not affected by disk calibration.

For a complete listing of the 3587S features, please see publication number 5963-6607E.

[1] Spans provided down to 0.24 Hz

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

Our Promise means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

Your Advantage means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional engineering services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

For More Assistance with Your Test & Measurement Needs go to

www.agilent.com/find/assist

Or contact the test and measurement experts at Agilent Technologies
(During normal business hours)

United States:
(tel) 1 800 452 4844

Latin America:
(tel) (305) 267 4245
(fax) (305) 267 4286

Canada:
(tel) 1 877 894 4414
(fax) (905) 206 4120

Australia:
(tel) 1 800 629 485
(fax) (61 3) 9272 0749

Europe:
(tel) (31 20) 547 2323
(fax) (31 20) 547 2390

New Zealand:
(tel) 0 800 738 378
(fax) 64 4 495 8950

Japan:
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Asia Pacific:
(tel) (852) 3197 7777
(fax) (852) 2506 9284

Printed in U.S.A. 5/00
5964-3631E

Agilent Technologies
Innovating the HP Way