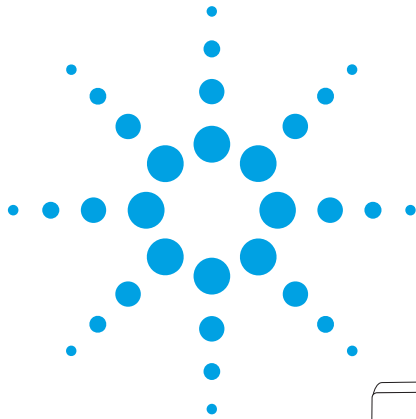
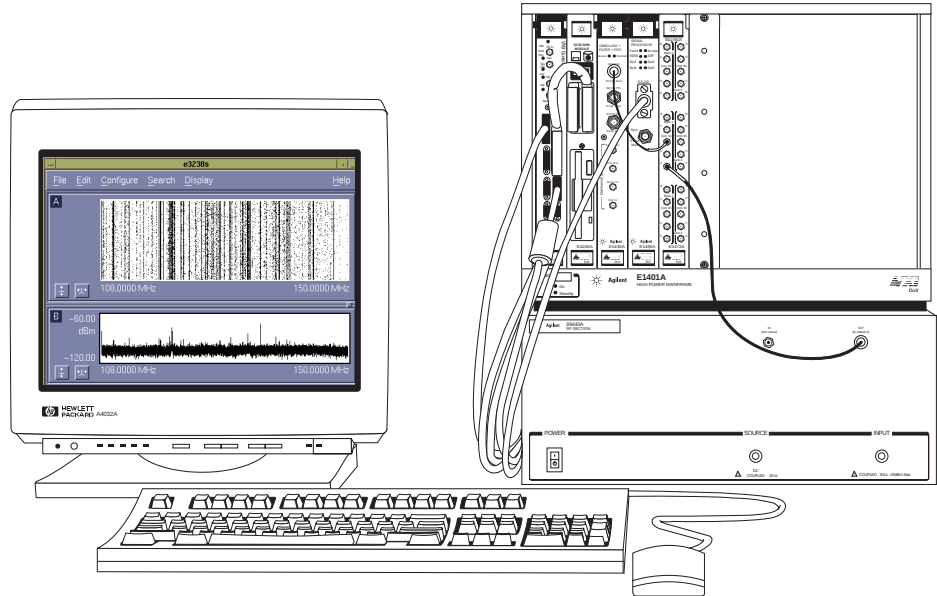


Agilent E3238 Signals Development System

Technical Specifications



HF, VHF/UHF, and μ Wave Configurations



Performance

The Agilent E3238 is designed to quickly locate elusive signals. E3238's fast sweep rate and high dynamic range significantly increase the probability of intercept. With the E3238, searches produce more hits quickly and efficiently.

Automation

The E3238 system automates common tasks so an operator can focus on more complex operations, work faster and accomplish more. It allows highly skilled operators to automate functions for less skilled operators. The system can even run unattended.

Adaptability

Optional user-programming software can be used to customize the E3238. Searches can be optimized to capture the signals of interest while disregarding extraneous signals. Displays can also be customized to increase productivity.

Integration

The E3238 can integrate with legacy systems and hand-off receivers. LAN, GP-IB, RS-232, or the VXI backplane can be used to communicate with other hardware. HP-UX and Windows NT[®] sockets provide fast communication between software processes, even from remote locations.



Agilent Technologies

Innovating the HP Way

Standard Software Features

(Applies to all configurations of the E3238)

File

Secure display
Access control
 Password
Working directory
Snapshot directory
Log files
Load mission setup
Save mission setup
Preset mission setup
Print
Print to file
Socket connections
Shared libraries
Exit

Edit

Clear log
Clear log files
Clear energy history
Clear signal database
Clear frequency lists
Clear audio output
Clear all

Configuration

Antennas
Search receiver
Handoff receivers
Time reference
Channelizer

Search

Search
 Off
 On

Search type

General search
Directed search
 Up to 100 segments
Tuner sweep control
 Locked, unlocked

General search setup

Center frequency
Span frequency
Start frequency
Stop frequency
Full span
Antenna selection
Attenuation
Resolution bandwidth
 7.3 Hz – 120 kHz (tuner and ADC dependent)
Shape factor
 9:1
 4:1
 2.6:1
Average type
 Off
 RMS
 Peak
Number of averages
 1-31

Energy detection

Energy detection

Off

On

Energy criteria

dB above threshold

Bandwidth

Features

User-generated with AS9

Threshold

Threshold margin (dB)

Number of segments

Smoothing factor

Minimum signal level

Energy history filter

(User-created with AS9)

Pre-filter(s) enable

Pre-filter(s) disable

Post-filter(s) enable

Post-filter(s) disable

Alarms Setup

Alarms

Enable

Disable

Alarm type

Energy

Signal

Status

Active

Inactive

Trigger

Always

Per sweep

Once

Events

Single

Multiple

Priority

Low

Medium

High

Critical

Energy detection schedule

Continuous

Band

Hourly

Daily

Energy features

Energy

Frequency

Bandwidth

Min

Max

Average

Current

Amplitude

Min

Max

Average

Current

Duration

Min

Max

Average

Current

Number of intercepts

Number of detections

Occupancy %

Intercept time

First

Last

Number of sweeps since first intercept

Studio (user defined with AS9)

RFSK

Energy type

New energy

Once energy

Each energy

Any energy

No energy

Alarm tasks

Handoff

Visual

Audible

Frequency snapshot

Time snapshot

Add to frequency list

Remove from frequency list

Signal Processors

User-defined pane

Display

Display layout

Number of active layouts
6

Number of panes
8

Pane content types

Off
Trace A
Trace B
Trace C
Trace D
Handoff receivers
Handoff log
Text editor
Command line
Toolbar
New energy log
Alarm log
Energy history
Signal database
Visual alarms
Frequency lists
Feature studio

Trace

Number of traces
4

Trace type

Spectrum
Spectrogram
Color spectrogram

Threshold presentation

Off
Line
Mask

Grid type

Off
Graticules
Handoffs
Energy history
Alarm regions
Frequency list

Grid frequency list

List 1-20

Marker

Off
On

Handoff receiver link

Receiver 1-100

Handoff setup

Snapshot setup

Trace scaling

Number of independent traces
4

Maximum amplitude

Minimum amplitude

Minimum frequency

Maximum frequency

Trace mouse functions

Left mouse button

Off
Marker
Directed search band
Delta marker

Middle button

Off
Drag and drop

Right mouse button

Off
Trace scaling
Search receiver tuning
Handoff new energy
Handoff all energy

Trace color setup

Elements

Background
Trace
Marker
Grid
Labels
Threshold

Color layering order

Colors in color spectrogram
2-32

Default

General

Operating systems

HP-UX 10.2
Windows NT® 4.0

Control interfaces

GPIO
RS-232
LAN
VXI

Process-to-process communication

Sockets (Requires AS9)

Number of antennas

16 (requires E1472A RF multiplexer)

Online, context-sensitive help system

Optional Software Features

AS9 User Programming

Option AS9 allows users to extend the functionality of the E3238 and connect it to legacy systems. AS9 extensions are written in C, and are dynamically linked into the E3238 as shared libraries. Software can be developed in HP-UX or Windows NT. Added functionality integrates seamlessly into the E3238 user-interface.

Shared library entry points

- Socket interface
- Spew interface
- User menu
- User pane (may require Motif™ programming)
- User alarm task
- Spectrum feature extraction
- Energy history database pre-filter
- Energy history database post-filter

ASH User Signal Programming

Option ASH is an integrated software development environment to create, test, and deploy new signal types. Using a Programming Wizard, you can easily generate a working signal framework, and then drop in your own custom signal algorithms. The resulting program runs on a multi-processor VX008 DSP module, and is seamlessly integrated into the E3238 system. Using option ASH, you can develop their own sensitive signals quickly.

ASM Feature Studio

Option ASM is a graphical program for creating complex-shaped upper and lower limit lines. ASM generates C code that is used with option AS9 to implement limit lines to use as pre-filters in the E3238.

Benchmarks

	HF	HF/VHF/UHF	VHF/UHF	µWave
Tuner/Digitizer	WJC9119/E1437A	89431A/1437A	E2730A/E1439A	ComSol 5040/E1439A
Frequency range	0.1–32 MHz	2–2650 MHz	20–2700 MHz	0.5–20 GHz
Sweep rate No averages, single display, grounded input, 16 bit data				
1 GHz sweep span at 15 kHz resolution bandwidth	2.8 GHz/second	2.7 GHz/second	7.2 GHz/second	3.2 GHz/second
25 MHz sweep span at 1 kHz resolution bandwidth	400 MHz/second	350 MHz/second	450 MHz/second	350 MHz/second
6 MHz sweep span at 60 Hz resolution bandwidth	>30 MHz/second	>30 MHz/second	>30 MHz/second	>30 MHz/second
Useable IF bandwidth	6.75 MHz at 5.12 MHz IF	6 MHz at 5 MHz IF	36 MHz at 70 MHz IF	36 MHz at 70 MHz IF
Tuner noise figure	13 dB, typical	14–15 dB, typical	11–12 dB, typical	15 dB maximum
Tuner internally- generated spurious	-130 dBm, typical	N/A	-110 dBm, maximum	-100 dBm maximum
RF input attenuation	0–47dB, in 1 dB steps	0–75dB, in 5 dB steps	0–60dB, in 2 dB steps	None
Tuner pre-selection	Yes	No	No	No
Tuner form factor	2 VXI C-1 modules	Rack and stack, 5.25"	1 VXI C-1 module	1 VXI C-3 module
ADC residual spurious responses	-110 dBfs	-110 dBfs	-90 dBfs	-90 dBfs
ADC harmonic distortion	-75 dBc or -110 dBfs	-75 dBc or -110 dBfs	-70 dBc or -90 dBfs	-70 dBc or -90 dBfs
ADC form factor	1 VXI C-1 module	1 VXI C-1 module	1 VXI C-1 module	1 VXI C-1 module
Operating temperature range	0–50° C	0–50° C	0–50° C (specified from 20–30° C)	0–50° C

Specification Note

Specifications describe warranted and benchmarked performance over a temperature range of 0° to 50 °C (except where noted), after a 30 minute warm up from ambient conditions. Supplemental characteristics identified as “typical” and “characteristic” provide useful information by giving non-warranted performance parameters. Typical performance is applicable from 20° to 30 °C. For more detailed specifications refer to the technical specification datasheets of the individual system components.

Definitions

Baseband	=	dc to the ADC bandwidth
dBfs	=	dB relative to full scale
fs	=	full scale, same as amplitude range

Support

Agilent Technologies products are available globally. The E3238 is a commercial product and is easy to buy, maintain, and obtain professional support services.

The E3238 arrives with everything pre-installed and ready to run. Because the E3238 is standards-based, your investment is protected. As technology ramps, so can your system.

Warranty

The hardware in the E3238 system is covered by a three-year return to Agilent Technologies parts and labor warranty. The software is warranted for 90 days. Additional coverage may be purchased from Agilent. Contact your local Agilent representative.

Ordering information

Agilent E3238	E3238 signals development system software
Agilent 35688C	E3238 signals development system software upgrade
Option 100	Standard E3238 software
Option AS9	User programming
Option ASM	Feature Studio
Option ASH	User signal processing
Option ORU	Software update installation planning

Export of the product identified in this literature is subject to U.S. Export control laws. Export licenses are approved on a case-by-case basis and sale of any of these products is dependent on approval of the United States Government.

Related Agilent Literature

3587 Signals Analysis System Brochure
literature number 5968-2076E

Agilent Communications Intelligence Solutions Overview
literature number 5988-0633EN

E3238 Signals Development System Configuration Guide
literature number 5988-0562EN

E3238 Signals Development System Option ASH Product Overview
literature number 5968-7077E

E3238 Signals Development System Product Overview
literature number 5968-2075E

Test Systems and VXI Products Catalog
literature number 5980-0307E

Visit Our Websites

Agilent Communications Intelligence Information —
www.agilent.com/find/COMINT

Agilent VXI Product Information —
www.agilent.com/find/vxi

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