

Agilent E3238 Signals Development System

Configuration Guide



The E3238 Signals Development System achieves great versatility through its many configurations. Its combination of tuners, ADCs, DSP modules, and RAM modules allow it to support different frequency ranges, applications, and packaging. Functionality is enhanced through broad support of third party components. Its embedded controllers support

HP-UX and Windows NT®, with both versions providing the same functionality and user interface. Optional software allows functionality to be added to the standard software, or program the DSP modules with custom algorithms.

The following examples are just a few of the possible combinations.

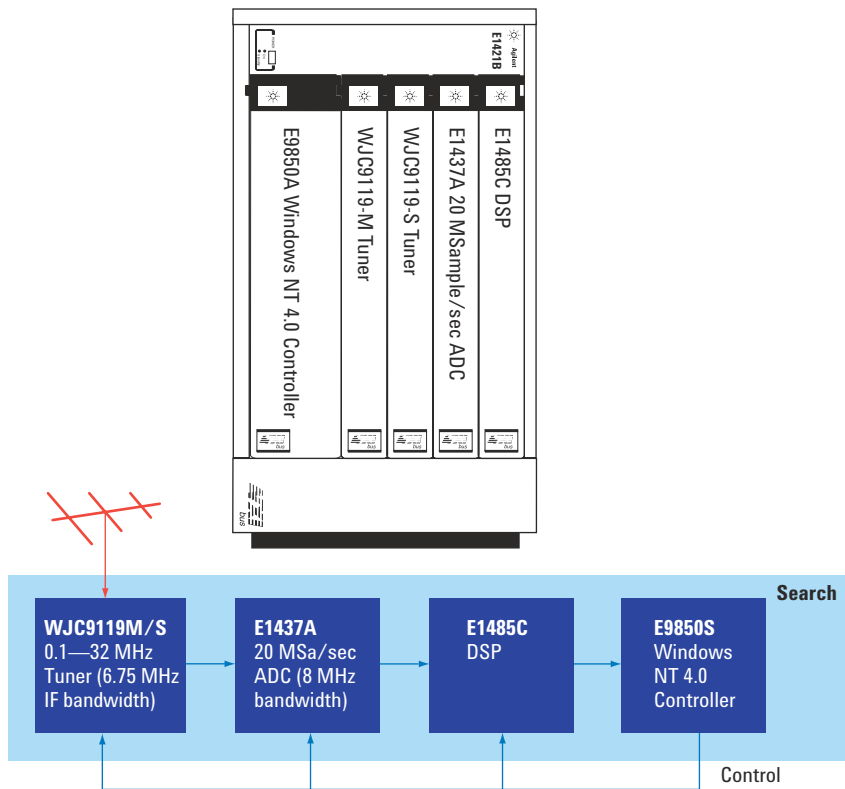
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Agilent Technologies

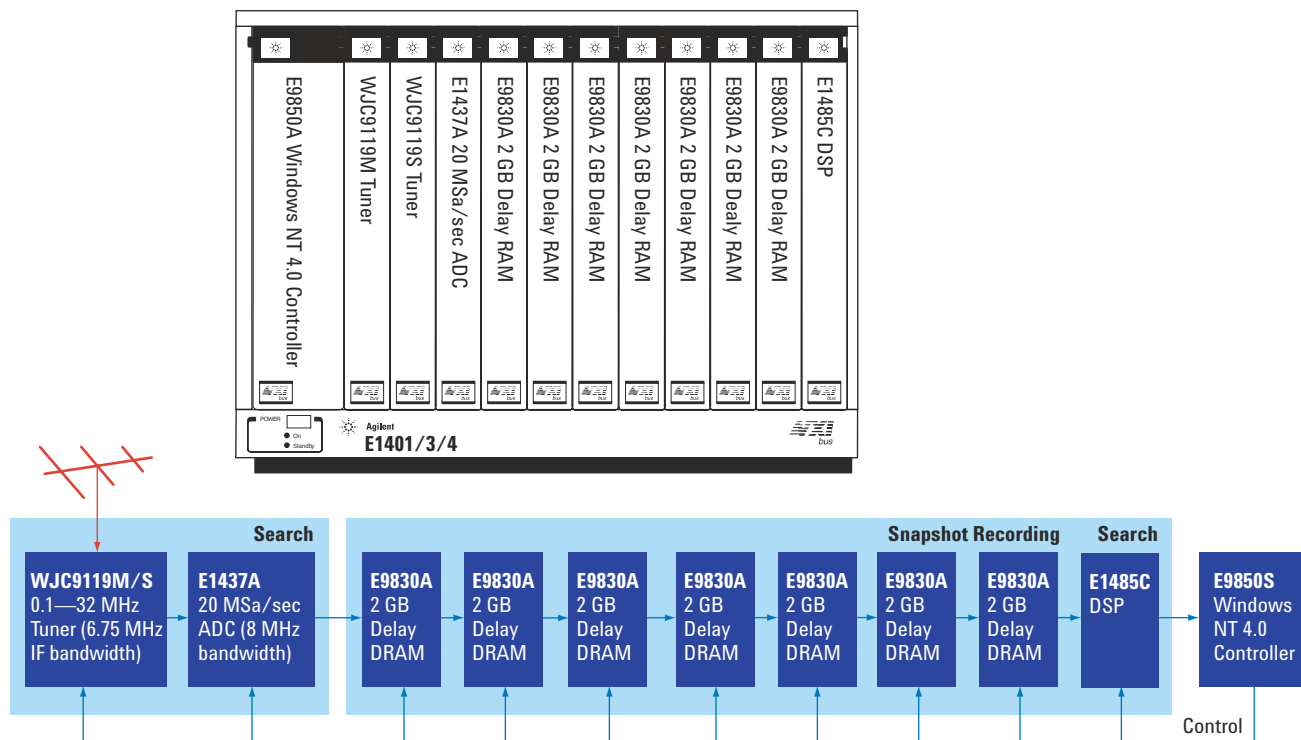
Innovating the HP Way

Frequency	HF	VHF/UHF	µWave
Mobility	Portable	Base-Station	
Application	Search	Recording	Search+Collection
Operating System	HP-UX	Windows NT	



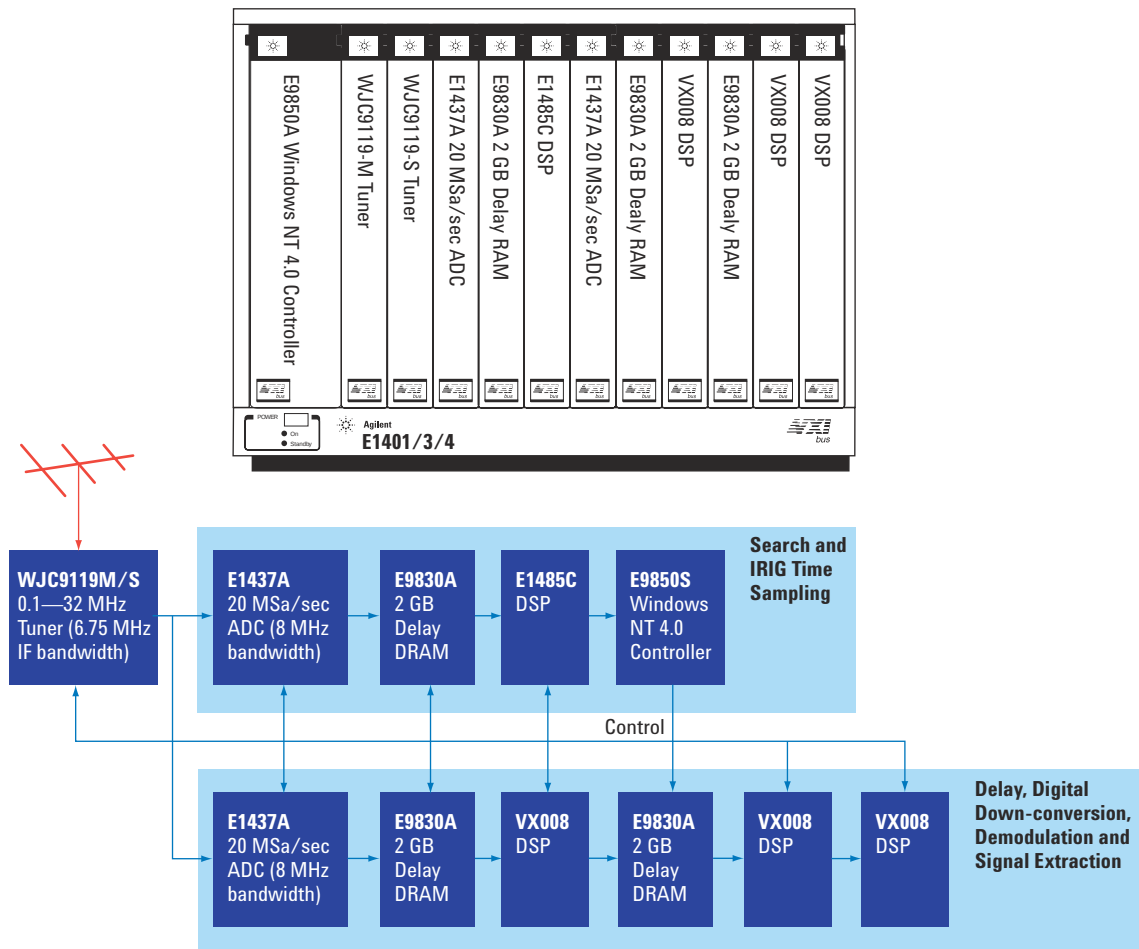
- 0.1–32 MHz frequency range
- 2.8 GHz/second sweep rate
- 6.75 MHz tuner IF bandwidth
- -110 dBfs ACD residual spurious responses

Frequency	HF	VHF/UHF	µWave
Mobility	Portable	Base-Station	
Application	Search	Recording	Search+Collection
Operating System	HP-UX	Windows NT	



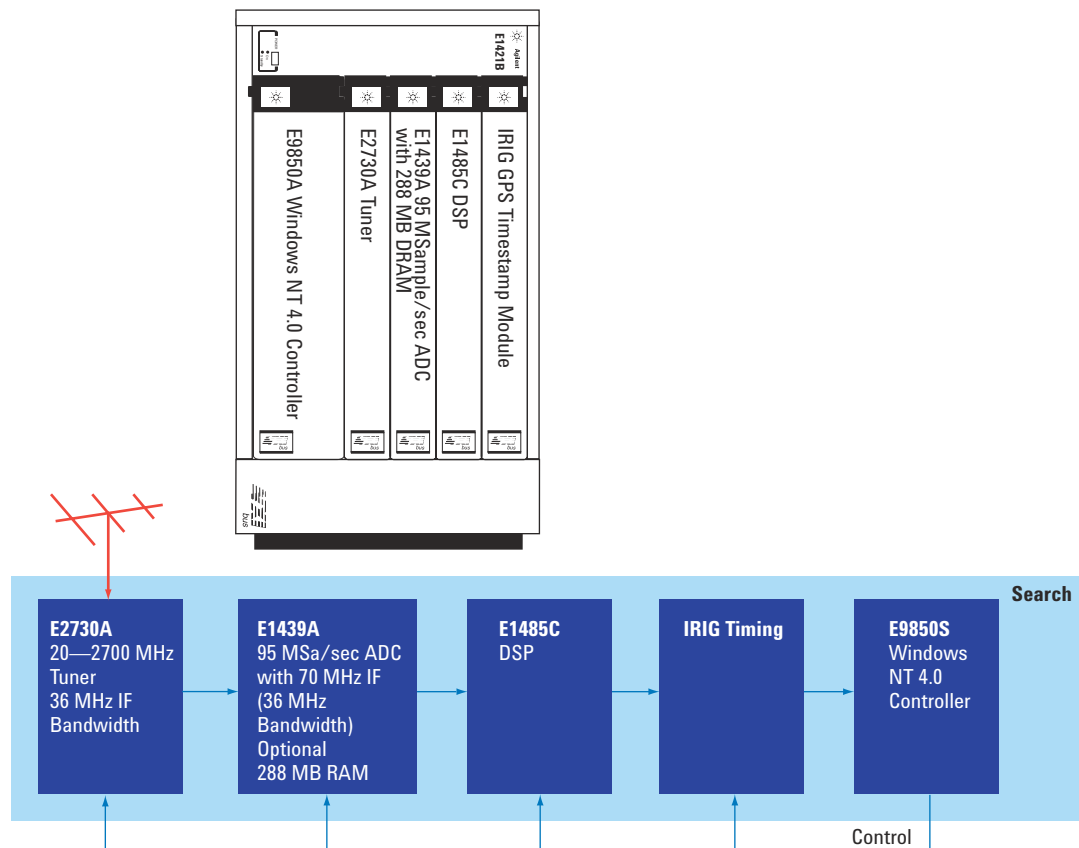
- 0.1–32 MHz frequency range
- 2.8 GHz/second sweep rate
- 6.75 MHz tuner IF bandwidth
- -110 dBfs ADC residual spurious responses
- 2–14 GB Delay/snapshot RAM

Frequency	HF	VHF/UHF	µWave
Mobility	Portable	Base-Station	
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Operating System	HP-UX	Windows NT	



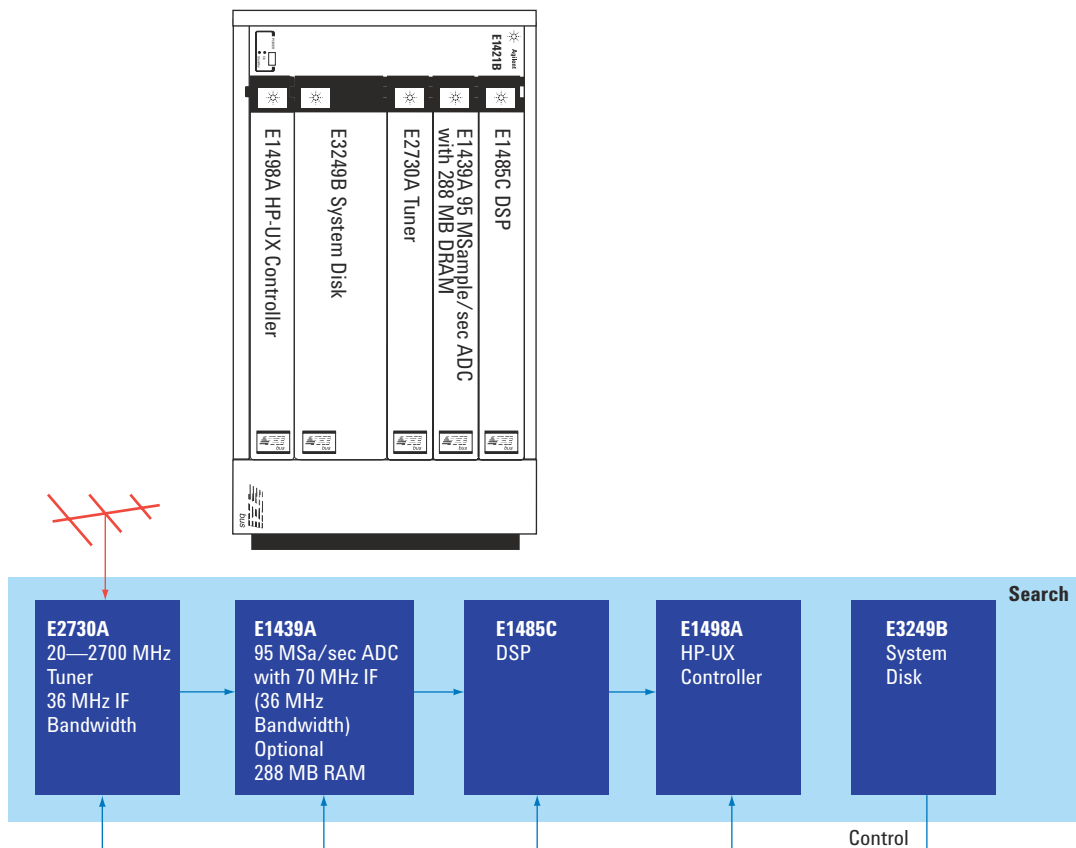
- 0.1-32 MHz frequency range
- 2.8 GHz/second sweep rate
- 6.75 MHz Tuner IF Bandwidth
- -110 dBfs ADC residual spurious responses
- Delay FIFOs to allow narrowband processors time to see the first bit of signal
- Dual VX008 DSPs use digital down-converters and C40 DSP to demodulate and extract information from narrowband data

Frequency	HF	VHF/UHF	µWave
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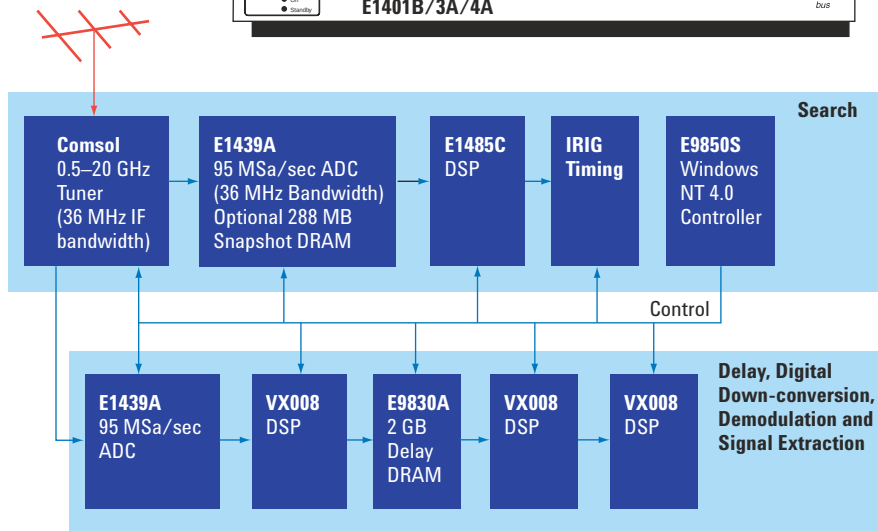
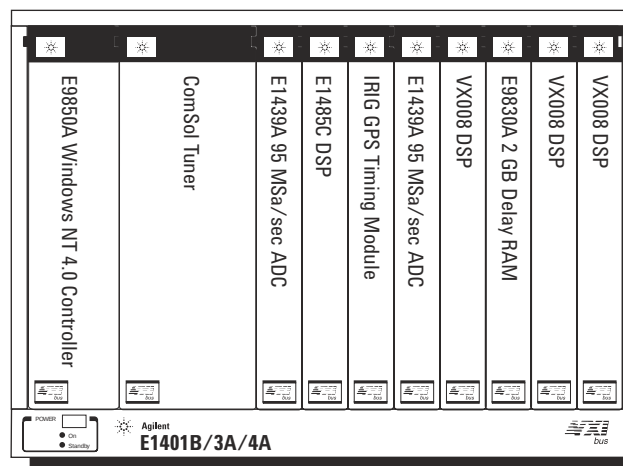
- 20–2700 MHz frequency range
- 7.2 GHz/second sweep rate
- 36 MHz IF bandwidth
- -90 dBfs ADC residual spurious responses
- 288 MB DRAM provides 2 second snapshot at full 36 MHz bandwidth
- Optional IRIG module for 1 ms timestamp accuracy

Frequency	HF	VHF/UHF	µWave
Mobility	Portable	Base-Station	
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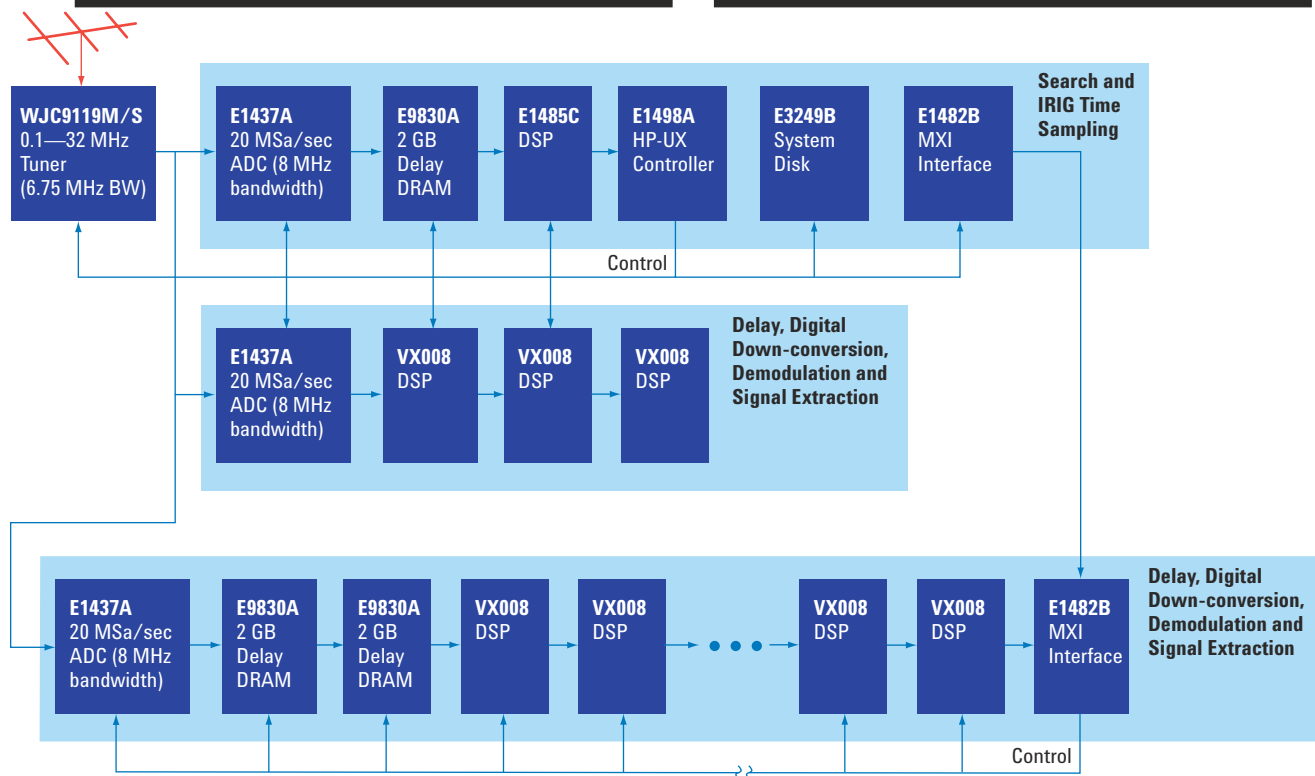
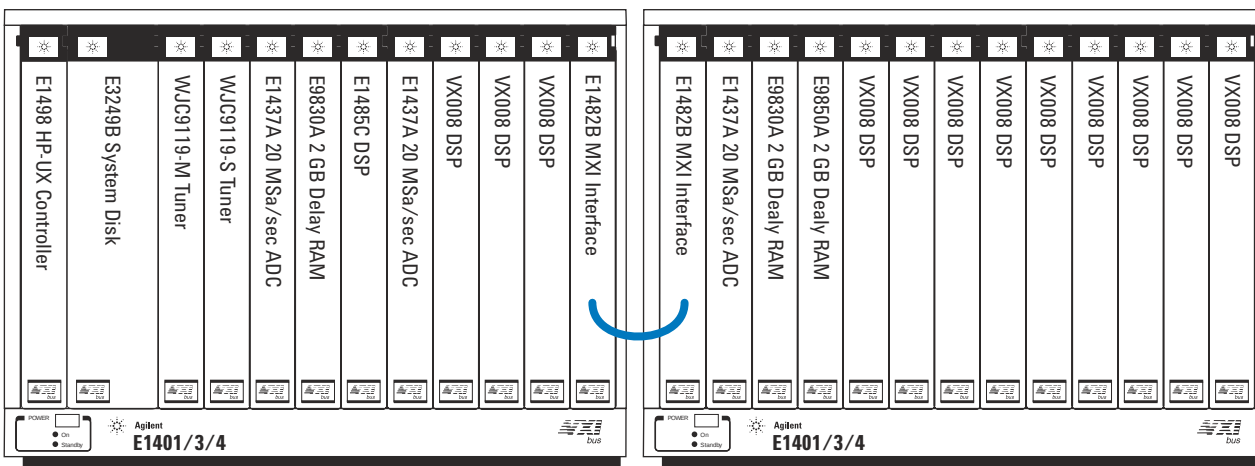
- 20—2700 MHz frequency range
- 7.2 GHz/second sweep rate
- 36 MHz IF bandwidth
- -90 dBfs ADC residual spurious responses
- 288 MB DRAM provides 2 second snapshot at full 36 MHz bandwidth

Frequency	HF	VHF/UHF	μ Wave
Mobility	Portable	Base-Station	
Application	Search	Recording	Search+Collection
Operating System	HP-UX	Windows NT	



- 0.5–20 GHz frequency range
- 3.2 GHz/second sweep rate
- 36 MHz IF bandwidth
- -90 dBfs ADC residual spurious responses
- 288 MB DRAM provides 2 second snapshot at full 36 MHz bandwidth
- Dual VX008 DSPs use digital down-converters and C40 DSP to demodulate and extract information from narrowband data

Frequency	HF	VHF/UHF	µWave
Mobility	Portable	Base-Station	
Application	Search	Recording	Search+Collection
Operating System	HP-UX	Windows NT	



- 0.1–32 MHz frequency range
- 2.8 GHz/sec sweep rate
- 6.75 MHz tuner IF bandwidth
- -110 dBm residual spurious responses
- Delay FIFOs to allow narrowband processors time to see first bit of signal
- 96–192 narrowband channels, depending on how much DSP is required per channel

Software Options

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.

Option 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.

Option ASH User Signal Processing

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.

Optional Agilent hardware

VXI Mainframes

E1401B	13-slot VXI mainframe
E1421B	6-slot VXI mainframe
E8403A	13-slot VXI high-power mainframe with basic monitoring
E8404A	13-slot VXI high-power mainframe with enhanced monitoring

Peripherals

UIKIT	User interface kit (mouse and keyboard)
EXTDVD	(HP-UX only) External desktop DVD drive
EXTCDROM	(Windows NT only) External desktop CD-ROM drive
EXTDAT	External desktop DAT backup device
EXTHD	(HP-UX only) External desktop 9 GB hard disk
E3249B	(HP-UX only) 4.3 GB VXI system disk, with DAT drive
MANCD	(HP-UX only) HP-UX manuals on CD-ROM
MANPAP	(HP-UX only) HP-UX manuals on paper
MON17	17 inch color monitor
MON19	19 inch color monitor
MON21	21 inch color monitor
MONRACK	Universal monitor rack mount kit

Miscellaneous hardware

E1482B	VXIbus extender (for multi-mainframe configurations)
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Compatible Tuners

Tuner	Frequency Range	E1430A	E1437A	E1438A	E1439A	Interface Type
HP89431A	2.0—2650 MHz	X	X	X ²		RS232
WJC9119L/R	0.5—32 MHz	X	X	X ²		VXI
WJC9119M/S	0.5—32 MHz	X	X	X ²		VXI
CS5040 ¹	500 —20000 MHz				X	VXI
E2730	20—2700 MHz				X	VXI

¹ Communications Solutions, Inc.

² Not recommended due to lower dynamic range

Compatible Handoff Receivers

Handoff Receiver	Frequency Range	Interface Type
WJ-8607 ¹	VHF/UHF	RS232
WJ-8611 ¹	VHF/UHF	RS232/GPIB
WJ-8615P ¹	VHF/UHF	GPIB
WJ-8629 ¹	VHF/UHF	VXI
WJ-8634 ¹	VHF/UHF	VXI
WJ-8711 ¹	HF	RS232/GPIB
WJ-8712 ¹	HF	RS232
WJ-8721 ¹	HF	VXI
Cubic VXI-3250 ²	HF	VXI
Cubic VXI-3550 ²	VHF/UHF	VXI
Cubic VXI-3570 ²	VHF/UHF	VXI
Cubic R-2411/U ²	MF/HF	GPIB
Cubic R-2412/U ²	VHF/UHF	GPIB
Icom IC-R8500 ³		RS232
Icom IC-R9000 ³		RS232
Rohde & Schwarz EK-895 ⁴	VLf/HF	RS232
Agilent 89441	HF/VHF/UHF	GPIB

¹ BAE Systems

² Cubic Communications, Inc.

³ Icom America, Inc.

⁴ Rohde & Schwarz

Compatible RF and μ Wave Switches

Switch	Frequency Range	Number of Switches	VXI Slots
E1472A (50 Ω)	RF	16:1	C-1
E1475A (75 Ω)	RF	16:1	C-1
E1368A (50 Ω)	μ Wave	4:1	C-1
E1369/E1370 (50 Ω)	μ Wave	user configurable	C-1

Compatible IRIG GPS Module

IRIG Module	Timestamp Accuracy
BC350VXI ¹	0.001 seconds

¹ Datum, Inc.

E9830A Data Rates and Quantities

E9830A Specifications	Max Bandwidth	Max Data Rate	Max Samples (2GB)	Max Samples (1GB)
16 bit ADC data (recommended for VHF/UHF / μ Wave)	10.35 MHz	53 MB/sec	1,073,741,824	536,870,912
32 bit ADC data (recommended for HF)	5.17 MHz	53 MB/sec	536,870,912	268,435,456

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.

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 Option ASH Product Overview
literature number 5968-7077E

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

E3238 Signals Development System Technical Specifications
literature number 5963-6609E

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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