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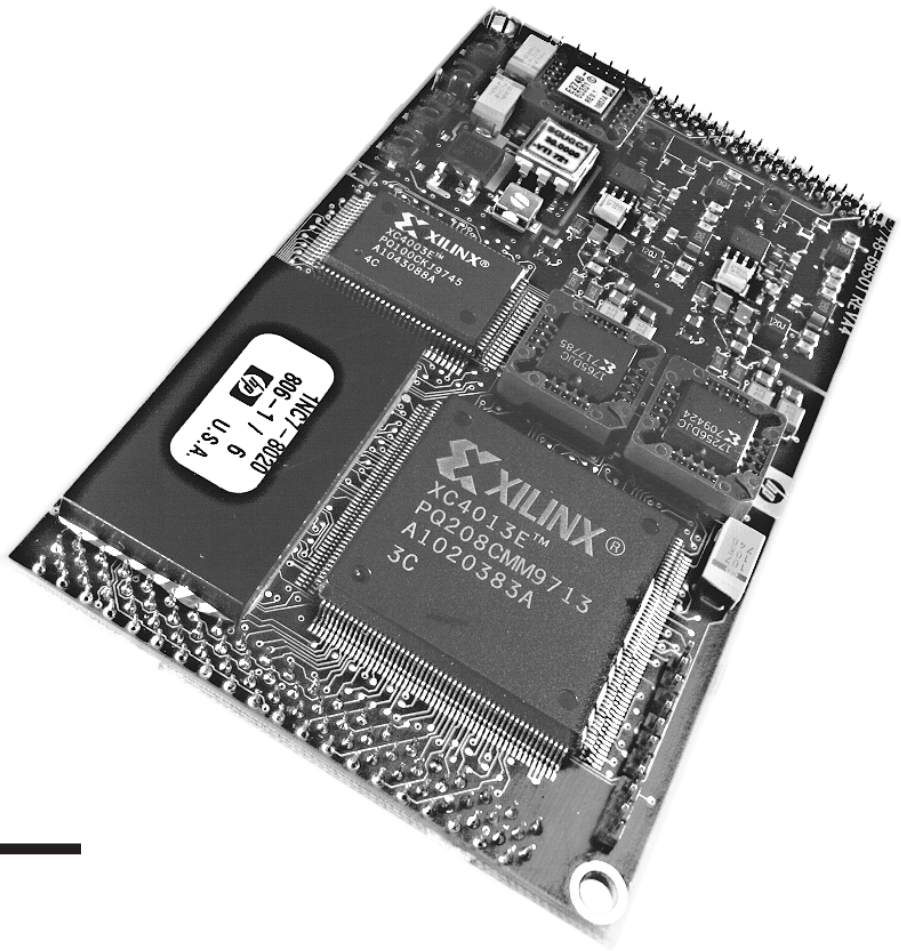
Find the *Keysight / Agilent E2748A* at our website: *Click HERE*

HP E2747/48A
Vector Waveform Generator

Configuration Guide

dc to 6 MHz

May 1998



The HP E2747A Baseband Vector Waveform Generator is a PC-format instrument, based on the flexible digital transmitter architecture of the HP E2748A Vector Waveform Generator Module. The HP E2747A is a development-focused, preconfigured system with the ease of instrument operation. The entire product provides flexible signal generation to R&D and production system prototyping engineers working with digital modulation formats.

The HP E2748A Vector Waveform Generator Module is a board assembly designed to work with either the HP SCMVX008 (TI-based VXI DSP Module with optional SMB connectors and 4MB DRAM), or the Dakar C44-Based PCI Processor Board from Spectrum Signal Processing. Intended for use in production testing, or other high-volume or application-specific testing systems, the HP E2748A Module provides programmers with the maximum flexibility to meet their demanding vector signal generation needs.

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Benchtop, Development-Focused, Preconfigured Solution

Software

Both products utilize the Vector Signal Generation Software, which includes a fill-in-the-blanks graphical user interface.

In addition to the graphical user interface, the Vector Signal Generation Software includes a programmatic user interface accessible via Microsoft® Visual BASIC or Visual C++.

HP E2747A dc to 6 MHz Baseband Vector Waveform Generator

The base unit features one channel (both I & Q or composite IF) output, comes preloaded with the Vector Waveform Generation Software and on-line documentation, and includes the following system components, preloaded and configured:

- HP PC workstation with the following minimum configuration: 32 MB RAM, 2GB disk, CD-ROM, sound card, 17" 1280x1024 video display, Windows NT® 4.0 or later operating system, mouse, U.S. keyboard, minimum 2 PCI slots
- Dakar C44-Based PCI Processor Board from Spectrum Signal Processing
- HP E2748A Vector Waveform Generator Module
- Necessary cabling
- Back-up disk set for Vector Waveform Generation Software (compatible with Windows NT 4.0)
- Documentation
- One-year return to HP warranty

For additional signal output channels, select from the following. System maximum is three channels:

Option 001 Add one additional vector waveform channel (total two). Result is two composite IF channels, or two I/Q signal pairs (2xI + 2xQ). Includes power combiner and necessary cabling.

Option 002 Add two additional vector waveform channels (total three). Result is three composite IF channels, or three I/Q signal pairs (3xI + 3xQ). Includes power combiner and necessary cabling.

For signal upconversion, the following options are provided for your ordering convenience:

Option 003 Add single-channel upconversion via the HP E4432B, ESG-Series Signal Generator for 250 KHz to 3 GHz. Includes necessary cabling. No options are included. If you need an option for the ESG, please order the

Selecting the Right Product

If you want:	HP E2747A	HP E2748A in VXI development environment	HP E2748A in PCI development environment
Pre-tested, pre-configured, "instrument" operation	Included	User-developed	User-developed
PC form factor	Included	No - External PC or embedded slot-0 PC in a VXI mainframe	Must order PC separately
VXI form factor,	Not available	Must order VXI mainframe, controller and HP SCMVX008 DSP carrier board separately	N/A
More than three channels (3xI + 3xQ, or three composite IF outputs)	Not supported	Supported	Not supported
Total system availability from HP	Yes	Yes	No - Must order PCI DSP carrier from a third party
Fill-in-the-blanks user interface	Included	Included	Included
Programmatic user interface for system development	Included	Included	Included
Windows NT Operating System	Included	Supported - Order from software distributor	Supported - Order from software distributor
Windows '95 Operating System	Not available	Supported - Order from software distributor	Supported - Order from software distributor

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ATE Developer-Focused System Elements

ESG (with option) and the cabling separately. The required cabling includes a BNC-to-BNC adapter, PN#1250-0080 and a 24" BNC-to-BNC cable, PN#8120-1839.

Option 004 Add single- or multi-channel upconversion via the HP 89431A 2.65 GHz RF section with option AY8 source. Includes necessary cabling.

HP E2748A Vector Waveform Generator Module

For use with the HP SCMVX008 TI-based VXI DSP Module with option 001 SMB connectors and option 082 4 MB DRAM, or the Dakar C44-Based PCI Processor Board from Spectrum Signal Processing[1]. Includes:

- Necessary cabling[2]
- Vector Signal Generation Software (Windows NT 4.0 and Windows'95 compatible)
- Documentation
- 3 year return to HP warranty

Option 0B0 Delete manuals and software disk set. For use when you do not want multiple software and documentation when ordering multiple HP E2748A modules. Please order at least 1 manual and disk set when ordering multiple HP E2748A modules.

Option W01 Convert three-year return to HP warranty to one year on-site warranty.

[1] Available from Spectrum Signal Processing, Inc., Suite #100-8525 Baxter Place, Burnaby, BC Canada V5A4V7 (604) 421-5442

[2] Order additional E2748-61601 cable if using external reference clock

HP E2748A System Configuration Requirements

When configuring your system, the following elements must be included:

1) Choose your development environment form factor—VXI or PCI:

VXI:

- Choose a VXI mainframe capable of supplying the power and cooling required for the number of HP SCMVX008 DSP Carrier cards, HP E2748A generator modules, and computer or interface card needed. See the Technical Specifications for the individual system elements' requirements.
- Choose a Windows NT or Windows '95 computer for the VXI environment. This can be either an embedded slot 0 Pentium-class controller, or a MXI module extender card to an external Pentium-class PC from National Instruments[3]. See the HP VXI catalog for choices.
- Order your DSP Carrier Card for the VXI development environment: HP SCMVX008 TI-based VXI DSP Module with option 001 SMB connectors and option 082 4MB DRAM (Maximum six HP E2748A modules per SCMVX008)

[3] Available from National Instruments, 6504 Bridge Point Pkwy, Austin, TX 78730 USA (512) 794-0100

PCI:

- Choose a Pentium class PC with minimum 2 expansion slots available, with at least one being a PCI slot. The HP E2748A and its carrier board require a single PCI slot electrically, but physically require a second slot in order to bring the signals to the back bulkhead connectors.
- PC expansion bus environment: The PC should ensure continuous, positive airflow over the PCI slot where the Dakar board (see below) is installed. This ordinarily requires a fan, or ducts and vents which ensure that air is specifically directed over the Dakar board and through the expansion bus area. The specific PC model HP ships with the HP E2747A Vector Waveform Generator is tested to meet this requirement.

  Note: Unlike VXI systems, the PC thermal and electrical environment is not well specified. Because of this, it may be difficult to guarantee operability of the E2748A. Contact HP for the model of the currently shipping PC.

- Windows NT 4.0, or Windows '95
- Order the DSP Carrier card: the Dakar C44-Based PCI Processor Board from Spectrum Signal Processing, Model F5M1S1, part number 600-00054. (Maximum three HP E2748A modules per Dakar. Maximum one Dakar per PC.)

2) Choose and purchase from your local software distributor your development language of choice.

Note, this is only necessary if you need full programmatic control for test system development. If you are using only the soft front panel user interface with its fill-in-the-blanks parameter input, this is not required.)

- Microsoft Visual BASIC
- Microsoft Visual C++

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Ordering Information

HP E2747A	**dc to 6 MHz Vector Waveform Generator**
Option 001	Add one additional vector waveform channel (total two).
Option 002	Add two additional vector waveform channels (total three).
Option 003	Add single channel upconversion via the HP E4432B, ESG-Series Signal Generator for 250 KHz to 3 GHz.
Option 004	Add single- or multi-channel upconversion via the HP 89431A 2 MHz -2.65 GHz RF Source section with option AY8.
HP E2748A	**Vector Waveform Generator Module**
Option 0B0	Delete manuals and software disk set.
Option W01	Convert three-year return to HP warranty to one-year on-site warranty

Accessories Available from HP

E2748-60201	PC adapter plate assembly (for HP E2748A use in PCI)
E2748-61601	Mini to SMB cable assembly
8120-6269	SMB to BNC cable assembly
1250-0080	BNC-m to BNC adapter
92227P	BNC Terminator
8120-1839	BNC-to-BNC 24 inch cable
0955-0857	Power Combiner

Related HP Literature

HP E2747A & HP E2748A Product Overview, Publication No. 5966-4764E

HP E2747A & HP E2748A Technical Specifications, Publication No. 5966-4765E

HP SCMVX008 Technical Specification, Publication No. 5966-0904E

HP ESG Series RF Digital and Analog Signal Generators, Publication No. 5966-3687E

HP Test System and VXI Products Catalog, Publication No. 5966-2815EN

Test System and VXI Products Data Book, Publication No. 5965-5497E

For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our web site, http://www.hp.com/go/tmdir. You can also contact one of the following centers and ask for a test and measurement sales representative.

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Englewood, CO 80155-4026
1 800 452 4844

Canada:
Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
(905) 206 4725

Europe:
Hewlett-Packard
European Marketing Centre
P.O. Box 999
1180 AZ Amstelveen
The Netherlands
(31 20) 547 9900

Japan:
Hewlett-Packard Japan Ltd.
Measurement Assistance Center
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Tokyo 192, Japan
Tel: (81) 426 56 7832
Fax: (81) 426 56 7840

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Latin American Region Headquarters
5200 Blue Lagoon Drive
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Australia/New Zealand:
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Blackburn, Victoria 3130
Australia
Tel: 1 800 629 485 (Australia)
0800 738 378 (New Zealand)
Fax: (61 3) 9210 5489

Asia Pacific:
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