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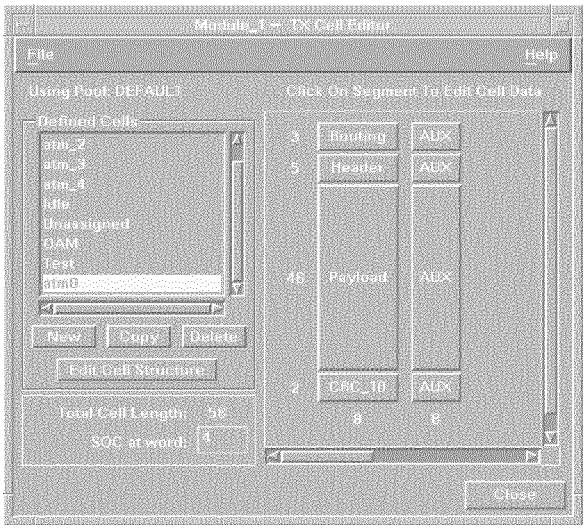
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Parallel Cell / Traffic Generator and Analyzer System

Configuration Guide



HP E4829B entry system



Cell editor; cells up to 128 byte length

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The parallel cell / traffic generator and analyzer system

- for the verification and debugging of today's cell-based communication designs, such as ATM chips, hubs, switches and cross-connects.
- connects to 8/16 bit parallel interfaces, such as UTOPIA or similar proprietary ones.
- handles proprietary cell structures with a word length of between 16 and 128.
- mix of real-time generated and memory-based cell data.
- four independent traffic generators.
- real-time cell analysis includes HEC, CRC-10, BER and cell delay variation (CDV).

The HP E4829B parallel cell / traffic generator and analyzer system is a comprehensive verification and debugging tool for today's cell-based communication designs, such as ATM chips, ASICs, hubs, switches and cross-connects. Connecting to parallel interfaces, such as the 8/16 bit wide UTOPIA or similar proprietary ones, the system meets the requirements of the design verification of chips, ASICs and sub-modules, as well as accelerating board / system debugging and root cause analysis.

Building cells from single real-time generated and memory-based data segments means that standard ATM, as well as proprietary cells, can be handled, e.g. ATM cells with additional routing tags.

Four independent traffic generators support CBR and burst cell traffic, including single, periodic and random cell burst. Full deterministic cell traffic can be set up.

The cell trigger capabilities allow the user to record dedicated cells, cell patterns, CRC-10 and HEC errors at real-time as an event. Single or multiple events can be combined to start cell acquisition, event count or real-time processing, such as time-stamp analysis for the measurement of cell delay variation.

Application examples

- validate the cell delay variation of switch fabrics under load conditions,
- stimulate and analyze proprietary cell formats,
- bring up and debug line interface cards (LIFs),
- verify UTOPIA implementation of PHY and ATM layer chips /ASICs.

Modular system

The VXI-based system can be configured for solutions up to eight ports, which is ideal for switch fabric loading and verification. A single port holds one transmitter (TX) and one receiver (RX). Two different pairs of PODs for customer / UTOPIA Level 1 or UTOPIA Level 2 (MultiPHY) interfaces are available. Both are compatible with TTL levels.

The HP E4829B is a complementary product to the HP E4200/E4210 broadband series test system (the industry's standard ATM transmission and protocol tester), and the parallel cell / traffic generator and analyzer modules can be added to existing HP E4200/E4210 systems.

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Introduction

This guide is designed to assist you in selecting the right configuration for the HP E4829B parallel cell / traffic generator and analyzer system. You may also find it useful to refer to the product overview, p/n 5964-1667E and the technical data sheet, p/n 5963-9923E.

The system includes a VXI C-size frame with an HP E1497A V743 embedded HP-UX controller.

To configure a system from the beginning, start at
Chapter 1: Configure a 13-slot entry system.

If you are considering using the system in conjunction with an HP broadband series test system, start at
Chapter 2: Configure a BSTS system.

In this case, please refer to the HP broadband series ordering guide, p/n 5964-0393E.

For multi-port systems, add modules as described in
Chapter 3: Add ports to an existing system.

The parallel cell / traffic generator and analyzer system adapts to your needs.

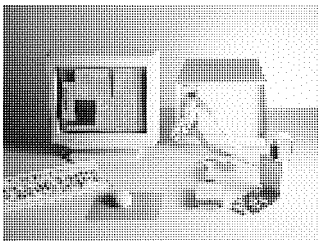
Chapter 4: Upgrade systems with new functions
shows you how to add functions you had not selected or which were not available during the initial ordering period.

To keep the configuration process simple, the chapters above show the recommended combinations for configuring an appropriate system. In certain circumstances, e.g. when integrating modules into more complex VXI-based test systems, you should order individual system components. A list of all components is shown in **Chapter 5: List of system components.**

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Chapter 1
Configure a 13-slot entry system

This chapter describes how to order a one port parallel cell / traffic generator and analyzer system (entry system). If you do not have a frame available, this is where you must start. The entry system can be expanded up to eight ports.



What to do	Qty	Product description	Product number	Price
Specify system order	1	System reference number to ensure coordinated shipment.	E4800S	0
Order the base platform and first module	1	**Parallel cell / traffic generator and analyzer system** for a one port (TX and RX) entry system. Includes a 13-slot C-size VXI frame, an embedded V743 HP-UX controller and disk module, an HP-UX rev. 9.x, first generator and analyzer module HP E4821A and graphical user interface software. CD media.	E4829B	
Depending on your application, you have to select the required interface(s). You can add both, but you need at least one!	0/1	**UTOPIA Level 1 / customer interface kit**. Two HP E4889A active TTL RX/TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes software licenses HP E4822A (ATM-8) and HP E4823A (ATM-16).	E4829B #101	
	0/1	**UTOPIA Level 2 (MultiPHY) interface kit.** One HP E4885A active TTL TX and one HP E4886A RX POD connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses HP E4824A.	E4829B #102	
Select your support options	0/1	Japan: Japanese localization.	E4829B #ABJ	0
Add the peripherals	0/1	3 year return to HP to 1 year on-site warranty.	E4829B #W01	
	1	17 inch multi-sync color monitor, resolution 1024 x 768 @ 75 Hz.	D2835A	
	1	Keyboard, mouse localization kit.	A4030D A4030D #ABK A4030D #APH	
	0/1	CD-ROM drive.	C2944D	
		SCSI cable.	C2908A	
		Termination.	C2904A	
			Total:	

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Chapter 2
Configure a BSTS system



The parallel cell / traffic generator and analyzer modules can also be added to an existing HP E4200B/E4210B broadband series test system (BSTS) as an independent test solution. This chapter describes how to connect the first module (port) to a BSTS. A maximum of two modules (two ports) are allowed.

What to do	Qty	Product description	Product number	Price
Specify system order	1	System reference number to ensure coordinated shipment.	E4800S	0
Add the graphical user interface to the system and select the software support options.	1	**User software license for HP E4821A** graphical user interface to control the HP E4821A parallel cell / traffic generator and analyzer module. Does not include CD media.	E4871A	
	1	**For HP-UX re. 9.x on CD-ROM.** Graphical user interface software HP E4871A on CD-ROM. Does not include software user license.	E4871A #002	
	0/1	Japan: Japanese localization.	E4871A #ABJ	0
Add the first generator / analyzer module to the system. Depending on your application, you have to select the required interface(s). You can add both, but you need at least one! Select the hardware support options.	1	**Parallel cell / traffic generator and analyzer module.** One independent TX/RX port per module. 0.9..52 MHz clock rate / 128 Kword memory. Requires #101 and/or #102.	E4821A	
	0/1	**UTOPIA Level 1 / customer interface kit.** Two HP E4889A active TTL RX/TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes software licenses HP E4822A (ATM-8) and HP E4823A (ATM-16).	E4821A #101	
	0/1	**UTOPIA Level 2 (MultiPHY) interface kit.** One HP E4885A active TTL TX and one HP E4886A RX POD connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses HP E4824A.	E4821A #102	
	0/1	3 year return to HP to 1 year on-site warranty.	E4821A #W01	
	0/1	Japan: Japanese localization.	E4829B #ABJ	0
			Total:	

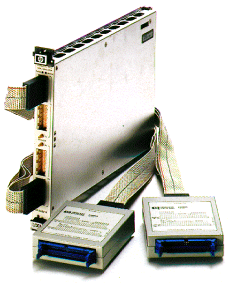
To add the second module (port), continue to Chapter 3.

Note: for the V743 controller, 64 MB of memory is recommended. To add 32 MB of memory to an existing V743 controller, order the HP A2829A. When ordering an HP E4200B/E4210B, add option ANE.

To upgrade an HP E4200A/E4210A, please order E4200 #UEA or #UEQ / E4210B #UEJ before adding the parallel cell / traffic generator and analyzer system. For order details, please refer to the HP broadband series ordering guide, p/n 5964-0393E.

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Chapter 3
Add ports to an existing system



This chapter describes how to add additional modules (ports) to a parallel cell / traffic generator system.

Before adding ports, ensure your existing system is configured for the first module (port) according to Chapter 1 ‘Configure a 13-slot entry system’ or Chapter 2 ‘Configure a BSTS system’.

For each additional port, you have to place the following order.

What to do	Qty	Product description	Product number	Price
Add the generator and analyzer module	1	**Parallel cell / traffic generator and analyzer module.** One independent TX/RX port per module. 0.9..52 MHz clock rate / 128 Kword memory. Requires #101 and/or #102.	E4821A	
Depending on your application, you have to select the required interface(s). You can add both, but you need at least one! Select the hardware support options.	0/1	**UTOPIA Level 1 / customer interface kit.** Two HP E4889A active TTL RX/TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes software licenses HP E4822A (ATM-8) and HP E4823A (ATM-16).	E4821A #101	
	0/1	**UTOPIA Level 2 (MultiPHY) interface kit.** One HP E4885A active TTL TX and one HP E4886A RX POD connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses HP E4824A.	E4821A #102	
	0/1	3 year return to HP to 1 year on-site warranty.	E4821A #W01	
	0/1	Japan: Japanese localization.	E4821A #ABJ	0
			Total:	

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Chapter 4
Upgrade existing systems with new functions

This chapter shows how to upgrade the functions of existing systems to meet the latest test requirements.

- upgrade an 8 bit UTOPIA Level 1 / customer interface port to an 8/16 bit UTOPIA Level 1 / customer interface port (**n** = number of ports).

Qty	Product description	Product number	Price
n	**16 bit ATM / UTOPIA software licenses for HP E4821A.** Supports 16 bit UTOPIA Level 1 rev. 2.01 or customer interfaces in conjunction with TX/RX/POD, HP E4889A.	E4823A	
0/1	Japan: Japanese localization.	E4871A #ABJ	0

- upgrade a 16 bit UTOPIA Level 1 / customer interface port to an 8/16 bit UTOPIA Level 1 / customer interface port (**n** = number of ports).

Qty	Product description	Product number	Price
n	**8 bit ATM / UTOPIA software licenses for HP E4821A.** Supports 8 bit UTOPIA Level 1 rev. 2.01 or customer interfaces in conjunction with TX/RX/POD, HP E4889A.	E4822A	
0/1	Japan: Japanese localization.	E4871A #ABJ	0

- add UTOPIA Level 2 interfaces to **n** modules (ports).

Qty	Product description	Product number	Price
n	**UTOPIA Level 2 (MultiPHY) interface kit.** One HP E4885A active TTL TX and one HP E4886A RX POD connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses HP E4824A.	E4821A #102	
0/1	Japan: Japanese localization.	E4821A #ABJ	0

- add UTOPIA Level 1 / customer interfaces to **n** modules (port).

Qty	Product description	Product number	Price
n	**UTOPIA Level 1 / customer interface kit.** Two HP E4889A active TTL RX/TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes software licenses HP E4822A (ATM-8) and HP E4823A (ATM-16).	E4821A #101	
0/1	Japan: Japanese localization.	E4821A #ABJ	0

- for any upgrade order, ensure that you have the right media with the latest software revision available, or add one to your order.

Qty	Product description	Product number	Price
0/1	**For HP-UX rev. 9.x on DDS cartridge.** Graphical user interface software HP E4871A on CD-ROM. Does not include software user license.	E4871A #001	
0/1	**For HP-UX rev. 9.x on CD-ROM.** Graphical user interface software HP E4871A on DDS cartridge. Does not include software user license.	E4871A #002	
0/1	Japan: Japanese localization.	E4821A #ABJ	0

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Chapter 5
List of single system components

The use of single components allows special configurations to be used, e.g. platforms other than the HP E4829B or the HP E4200B/E4210B. Please contact your local field representative for detailed advice.

Product	Opt.	Description
E4829B		Parallel cell / traffic generator and analyzer system.
	101	UTOPIA Level 1 / customer interface kit. Active TTL RX and TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes ATM-8/16 software licenses
	102	UTOPIA Level 2 (MultiPHY) interface kit. Active TTL RX / TX PODs connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses.
	ABJ	Japan: Japanese localization.
	W01	3 year return to HP to 1 year on-site warranty.
E4821A		Parallel cell / traffic generator and analyzer module.
	101	UTOPIA Level 1 / customer interface kit. Active TTL RX / TX PODs connect to 8/16 bit wide customer or UTOPIA Level 1 interfaces. Includes ATM-8/16 software licenses.
	102	UTOPIA Level 2 (MultiPHY) interface kit. Active TTL RX / TX PODs connect to 8/16 bit wide UTOPIA Level 2 interfaces. Includes MultiPHY software licenses.
	W01	3 year return to HP to 1 year on-site warranty.
E4822A		8 bit ATM / UTOPIA software license for HP E4821A.
E4823A		16 bit ATM / UTOPIA software license for HP E4821A.
E4824A		8/16 bit ATM MultiPHY software license for HP E4821A.
E4871A		User software for HP E4821A.
	001	For HP-UX 9.05 on DDS cartridge.
	002	For HP-UX rev. 9.x on CD-ROM.
	ABJ	Japan: Japanese localization.
E4889A		UTOPIA Level 1 / customer POD for HP E4821A.
E4885A		UTOPIA Level 2 TX POD for HP E4821A.
E4886A		UTOPIA Level 2 RX POD for HP E4821A.

Related HP literature

- Parallel cell / traffic generator and analyzer system, technical data sheet, p/n 5963-9923E.
- Parallel cell / traffic generator and analyzer system, product overview, p/n 5964-1667E.

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