

FuturePlus® Systems Corporation



Agilent Technologies

Premier Solution Partner



MiniPCI Bus Analysis

**For use with Agilent Technologies Logic Analyzers
and FuturePlus Systems Software**

REV 1.3

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The Application

This document describes analyzing a MiniPCI bus by connecting an ADEX MPCIFLEX-H MiniPCI probe to an Agilent logic analyzer executing PCI Analysis software from FuturePlus Systems.

This solution requires

- 1 ADEX (www.adexelec.com) MPCIFLEX-H MiniPCI flexible extender probe

The ADEX MPCIFLEX-H is a MiniPCI 124 pin, Type III flexible extender (see Figure 1). This flexible extender allows the user to bring the Mini-PCI port out from under a laptop. It provides test points on all the signals on both sides of the board which are probed using four Agilent flying lead probe adapters

- 4 Agilent “flying lead” probe adapters

The Agilent flying lead probes normally are included with the logic analyzer. They can also be purchased from Agilent Technologies.

- 1 FS1103 PCI software license for 1670/16700 based logic analyzers **OR**
- 1 FS1110 PCI software license for Windows-based logic analyzers

The FS1103 and FS1110 are single user PCI software licenses that execute in the Agilent logic analyzer. They provide configuration files for setting up the logic analyzer and a protocol decoder that translates the acquired data into recognizable PCI bus transactions.

- An Agilent 1670/16700/16702 logic analysis mainframe with a logic analyzer module with 68 channels and 35 MHz state data acquisition speed minimum **OR**
- **An Agilent 1680/1690/16900 logic analysis mainframe with a logic analyzer module with 68 channels and 35 MHz state data acquisition speed minimum**

The cables from the logic analyzer module plug into the flying lead probe adapters.

Connect the logic analyzer pods to the ADEX MiniPCI flexible extender probe using Table 1.

Connections from Agilent "flying lead" logic analyzer adapters to an ADEX MCPIFLEX-01 to probe a MiniPCI bus with FuturePlus PCI software 9/29/2003															
Pod	Channel	Signal	Adex Pin	Pod	Channel	Signal	Adex Pin	Pod	Channel	Signal	Adex Pin	Pod	Channel	Signal	Adex Pin
1	CLK/16	USER5		2	CLK/16	USER6		3	CLK/16	CLK	25	4	CLK/16	USER6	
1	N/C	----	----	2	N/C	----	----	3	N/C	----	----	4	N/C	----	----
1	15	AD15	76	2	15	AD31	33	3	15	INTA#	20	4	15	USER4	
1	14	AD14	75	2	14	AD30	38	3	14	CCLKRUN#	65	4	14	USER3	
1	13	AD13	78	2	13	AD29	35	3	13	INTB#	17	4	13	USER2	
1	12	AD12	79	2	12	AD28	42	3	12	CCD1#		4	12	USER1	
1	11	AD11	80	2	11	AD27	39	3	11	CINT#		4	11	VS2	
1	10	AD10	81	2	10	AD26	44	3	10	RST#	26	4	10	VS1	
1	9	AD09	84	2	9	AD25	41	3	9	C/BE3#	45	4	9	TRDY#	66
1	8	AD08	85	2	8	AD24	46	3	8	C/BE2#	59	4	8	FRAME#	64
1	7	AD07	87	2	7	AD23	47	3	7	C/BE1#	73	4	7	IRDY#	61
1	6	AD06	90	2	6	AD22	52	3	6	C/BE0#	86	4	6	CSTSCHG	
1	5	AD05	91	2	5	AD21	51	3	5	DEVSEL#	72	4	5	CAUDIO	
1	4	AD04	92	2	4	AD20	54	3	4	STOP#	68	4	4	REQ#	29
1	3	AD03	95	2	3	AD19	53	3	3	LOCK#		4	3	GNT#	30
1	2	AD02	94	2	2	AD18	58	3	2	PERR#	71	4	2	RFU	
1	1	AD01	99	2	1	AD17	57	3	1	SERR#	67	4	1	RFU	
1	0	AD00	96	2	0	AD16	60	3	0	PAR	56	4	0	RFU	

Table 1

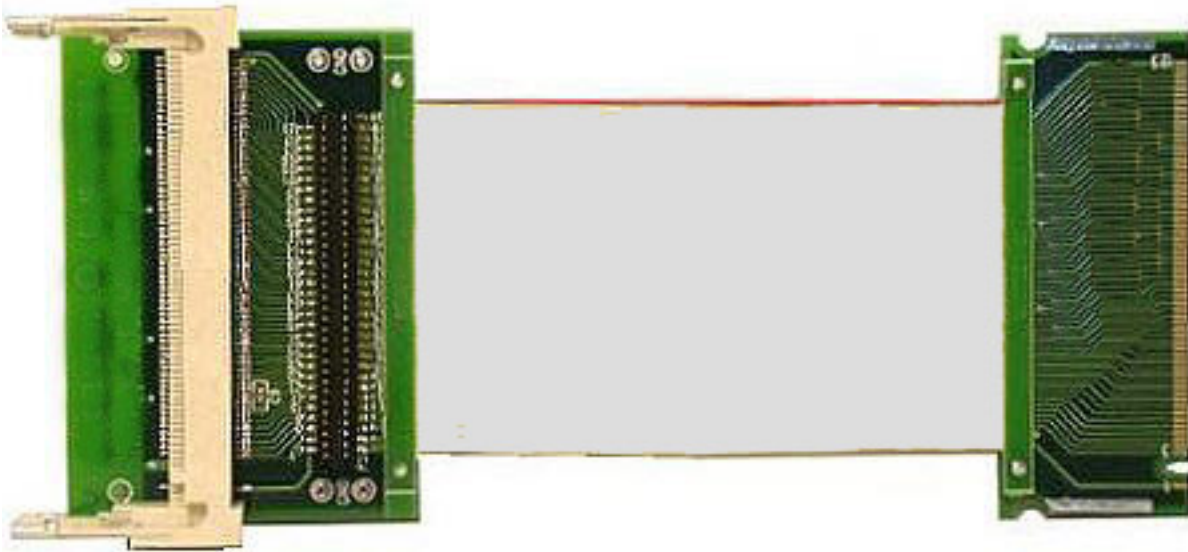


Figure 1 - ADEX MPCIFLEX-H MiniPCI flexible extender probe

Connecting the flying leads:

There are a couple of different methods for connecting the flying leads. In the first method, you must bend every other pin of the test pin headers at a 45 degree angle so the flying lead barrels can connect to the pins. In the second method, you can connect the grabbers to the pins on the test pin headers without bending them and then connect the flying leads to the grabbers.

Installing and using the software:

The FuturePlus Systems PCI software consists of configuration files and a protocol decoder. For details on loading the configuration files and the protocol decoder please refer to the FS2000 user's manual (note: the FS1103 and FS1110 do not include a separate user's manual; user instructions are included in the FS2000 manual). This manual also contains complete information on analyzing the PCI traffic on the MiniPCI bus.

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