



# PCI Analysis Probe FS2102 and FS2103

## State Analysis

**Step 1.** Set the front panel switches to the desired settings (factory setting for S2-S3 is ON, S1 is OFF)

	<u>Switch</u>	<u>Setting</u>	<u>LED</u>	
S1	ACQ PAR	PAR and PERR acquired	<b>ON</b>	<b>D1</b>
		PAR and PERR not acquired	<b>OFF</b>	
S2	NO WAIT	No Wait cycles acquired	<b>ON</b>	<b>D2</b>
		All Wait cycles acquired	<b>OFF</b>	
S3	NO IDLE	No Idle cycles acquired	<b>ON</b>	<b>D3</b>
		All Idle cycles acquired	<b>OFF</b>	
S4	TDO/TDI	TDO connected to TDI	<b>No LED - Switch in right most position</b>	
		TDO not connected to TDI	<b>No LED - Switch in the left most position</b>	

**Step 2.** Power down the PCI target and install the PCI Analysis Probe into the target. Install a PCI card in the add-in card extender connector if desired. Power off the logic analyzer and remove the probe tip assemblies, plug the logic analyzer cables into the PCI Analysis Probe module cable headers as shown in the following table. Then power on the logic analyzer and the target.

**Step 3.** Install the PCI Analysis Probe Software on your 16600/700 by inserting the diskette labeled **16600/16700 PCI Analysis Probe Software for the FS2102/3** into the 16600/700 diskette drive. When this has completed load the appropriate configuration file from the /configs//FuturePlus/IFS2102\_3 directory on the hard disk. Refer to the table below for a list of analyzers and corresponding configuration files. You may also use SETUP ASSISTANT.

**NOTE:** The operating system revision for the 16600A and 16700A must be **A.01.02.00 or better.**

For all other logic analyzers insert the 16500 PCI Analysis Probe Software for the FS2102/3 into the logic analyzer diskette drive and select "LOAD" or "LOAD 16500 file" from the main file menu. Refer to the table below for a list of analyzers and corresponding configuration files. The configuration files provided are defined with the single Slave card below the Master. Please consult your Format Menu after loading a configuration file to see how the cards are configured.

<u>LA</u>	<u>File name</u>	<u>Comment</u>
166x	CP223_1	<b>32 bit Multiplexed</b> - State Analysis Probe PODS 1-4 connect to Logic Analyzer PODS 1-4
166x	CP223_2	<b>32 bit Demultiplexed</b> - State Analysis Probe PODS 1-6 connect to Logic Analyzer PODS 1-6
166x	CP223_3	<b>64-bit Demultiplexed</b> - State Analysis Probe PODS 1-8 to Logic Analyzer PODS 1-8
166X	CP223_3E	<b>32 bit Demultiplexed w/ Error Analysis</b> - State Analysis Probe PODS 1-6,9-10 connect to Logic Analyzer PODS 1-6,9-10
16550A	CP223_4	<b>32 bit Multiplexed</b> - State Analysis Probe PODS 1-4 connect to Logic Analyzer PODS 1-4
16550A	CP223_5	<b>32 bit Demultiplexed</b> - State Analysis Probe PODS 1-6 connect to Logic Analyzer PODS 1-6
16550A	CP223_5E	<b>32 bit Demultiplexed w/Error Analysis</b> - State Analysis Probe PODS 1-6 connect to Logic Analyzer Master Card PODS 1-6 and PODS 1-2 on the Slave Card respectively
16550A	CP223_7	<b>64 bit Demultiplexed</b> - State Analysis Probe PODS 1-8 connect to Logic Analyzer PODS 1-6 on the Master card and PODS 1-2 on the Slave Card respectively
16550A	CP223_7E	<b>64 bit Demultiplexed w/ Error Analysis</b> - State Analysis Probe PODS 1-10 connect to Logic Analyzer PODS 1-6 on the Master card and PODS 1-4 on the Slave Card respectively
1655x,167x	CP223_8	<b>32 bit Multiplexed</b> - State Analysis Probe PODS 1-4 connect to Logic Analyzer PODS 1-4
1655x,	CP223_9	<b>32 bit Demultiplexed</b> - State Analysis Probe PODS 1-6 connect to PODS 1-4 on the Master card and 1-2 on the 1670/71 Slave card 1-2 respectively (PODS 1-6 on the 1670/71)
1655x,	CP223_9E	<b>32 bit Demultiplexed w/ Error Analysis</b> - State Analysis Probe PODS 1-6,9,10 connect to PODS 1-4 on the 1670/71 Master card and 1-4 on the Slave card (PODS 1-8 on the 1670/71)
1655x	CP223_11	<b>64 bit Demultiplexed</b> - State Analysis Probe PODS 1-8 connect to Logic Analyzer PODS 1-4 on the Master card, 1-4 on the lower slave card (positioned below the master card in the mainframe)
1655x	CP223_1E	<b>64 bit Demultiplexed w/ Error Analysis</b> - State Analysis Probe PODS 1-8 connect to Logic Analyzer PODS 1-4 on the Master card, 1-4 on the lower slave card (positioned below the master card in the mainframe) and PODS 1-2 on the upper slave card (positioned above the master card in the mainframe).

16715/6/7/9, 16750/1/2	CP223_12	<b>32 bit Multiplexed</b> - State Analysis Probe PODS 1-4 connect to Logic Analyzer PODS 1-4
16715/6/7/9, 16750/1/2	CP223_13	<b>32 bit Demultiplexed</b> -State Analysis Probe PODS 1-6 connect to PODS 1-4 on the Master card and PODS 1-2 on the slave card 1-2 respectively.
16715/6/7/9, 16750/1/2	CP223_13E	<b>32 bit Demultiplexed w/Error Analysis</b> - State Analysis Probe Pods 1-6,9,10 connect to PODS 1-4 on the Master card and PODS 1-4 on the slave card.
16715/6/7/9, 16750/1/2	CP223_14	<b>64 bit Demultiplexed</b> - State Analysis Probe PODS 1-8 connect to Logic Analyzer PODS 1-4 on the Master card, and 1-4 on the lower slave card (positioned below the master card in the mainframe)
16715/6/7/9, 16750/1/2	CP223_14E	<b>64 bit Demultiplexed w/Error Analysis</b> - State Analysis Probe PODS 1-8 connect to Logic analyzer PODS 1-4 on the Master card, 1-4 on the lower slave card (positioned below the master card in the mainframe) and PODS 1-2 on the lower slave card (positioned above the master card in the mainframe).

## Trigger Tips

### In the Trigger Specification

- ADDR is the latched and incremented address lines (demux mode).
- DATA is the AD lines of the PCI bus.
- DATA\_B is the upper 32 bits for 64 bit data transfers.
- ADDR\_B is the error bits

### Cycle bits *(all these signals are low true)*

**EOFT - End of Transaction** True for one clock cycle and indicates the last cycle of a transaction.

**ANYERROR - True when any of the 20 PCI compliance violations have been detected. Use PODS 9 and 10 for more information.**

**MABORT - Master Abort** True when a Master Abort condition has been detected. Five clock cycles on a single data transfer with no DEVSEL assertion and six clock cycles on a multi-beat transfer with no DEVSEL asserted. Remains true for one clock cycle.

**IDLE - Idle Cycle** True when the bus is IDLE. False when the bus is busy.

**DVALID - Data Valid** True when data is being transferred on the PCI bus.

**WINITI - Master Initiated Wait State** True when a wait state is being initiated by the master.

**WTARGET - Target Initiated Wait State** True when a wait state is being initiated by the target.

**RETRY - Retry** True when a retry condition has been detected on the PCI bus.

**TABORT - Target Abort** True when a Target Abort condition has been detected on the PCI bus. This signal is true for one clock bit.

**WNODEV - Wait state caused by no assertion of DEVSEL#** True when a wait state has been caused by no assertion of DEVSEL#.

**GNT - The Grant signal for that slot** In State Mode this signal is latched and held until end of transaction. Useful as a store qualifier.

**L\_CMD - The latched command lines** The C/BE signals latched during the command /address phase and held until end of transaction.

**AVALID - Address Valid** True on the first assertion of FRAME# and the rising edge of the PCI clock. True for one cycle except on Dual Address cycles when it is true for two cycles.

## The Extender Card Connector

The extender card connector is either a 5V or 3.3V extender card connector. The PCI Preprocessor itself is a universal card which means the Preprocessor itself can be inserted into 3.3V or 5.0V systems. The power to the Preprocessor logic is provided by the logic analyzer.

**Please note:** in order for the extender card connector and the PCI target system to work properly the logic analyzer must be attached to the Preprocessor and the logic analyzer must have the power on.

## Viewing the PCI Interrupts

POD 1 channel 0 can be configured to view any one of the four PCI interrupts. Move the jumper so that it corresponds to the desired interrupt and that interrupt line will be routed to POD 1 channel 0. The jumper and interrupt stake pins are clearly labeled in the upper left hand side of the board.

**For technical support call 603-471-2734**

**For sales and marketing call 719-278-3540**

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