

Premier Solution Partner



Probing PCI-X

For use with Agilent Logic Analyzers
and FuturePlus Systems Software

REV 2.1

Nov. 2000

Copyright 2000 FuturePlus Systems Corporation

FuturePlus Systems is a trademark of FuturePlus Systems Corporation

About the Pinout	3
What you will need to Analyze PCI-X	3
64 bit PCI-X	3
32 bit PCI-X	3
PCI-X setup and hold time	4
Where to place the MICTOR connectors on the target	4
The Termination Network	4
PCI-X Signal Assignment	5
Routing and Re-pinning Information	5
GNT#, REQ# and IDSEL signals	5
LOGIC ANALYZER POD 1	6
LOGIC ANALYZER POD 2	6
LOGIC ANALYZER POD 3	7
AGILENT E5346A/E5351A	9
E5346A/E5351A Mechanical Dimensions	10
AMP Mictor-38 Connector	10
Shroud Mechanical Information	12
Technical Support	12

Revision History

- 1.0 Initial Release
- 2.0 Remove PCIXCAP from pinout and replace with UNUSED. Specify a length of 0.5 inches for the mictor from the target.
- 2.1 Removed incorrect extension number for tech support.

About the Pinout

This document describes the pinout for the AMP Mictor 38 pin header to a 32/64 bit PCI-X local bus. Following this pinout will allow the user to use the Agilent E5346A or E5351A High-Density Termination Adapter Cable and the FuturePlus Systems PCI-X software FS1104 for PCI-X analysis with an Agilent logic analyzer. The FuturePlus PCI-X analysis software is only supported on the 16700 analysis systems. A list of supported logic analyzers appears below.

- 16715/6/7/8/9
- 16750/1/2

What you will need to Analyze PCI-X

64 bit PCI-X

- 3 AMP 2-767004-2 surface mount connectors mounted on the target board and routed to the PCI-X Local bus
- 3 Agilent E5346A or E5351A High-Density Adapter Cables available from FuturePlus Systems or Agilent Technologies
- 6 logic analyzer PODS
- FS1104 Software from FuturePlus Systems

32 bit PCI-X

- 2 AMP 2-767004-2 surface mount connectors mounted on the target board and routed to the PCI-X Local bus
- 2 Agilent E5346A or E5351A High-Density Adapter Cables from FuturePlus Systems or Agilent Technologies
- 4 logic analyzer PODS
- FS1104 Software from FuturePlus Systems

The Mictor-38 connectors will be referred to as #1 and #2 and #3 (#3 for 64 bit only). Each Mictor-38 connector connects to two logic analyzer PODS, an EVEN numbered POD and an ODD numbered POD. Pins 1,2 and 4 on the Mictor-38 connectors are no connects. Pin 3 and pins 39-43 should be connected to GROUND.

The FuturePlus Systems software (FS1104) consists of configuration files and an Inverse Assembler. ***For details on the configuration files and the Inverse Assembler please refer to the FS1101 data sheet and manual (www.futureplus.com)***

When the network is on the board before the mictor, the impedance of that trace should be as high as possible, ideally 120 ohm (the cable impedance). Since it is really hard to get impedances that high, 100 ohm is recommended as a practical maximum. If you can get to 120 ohm then the trace can be made as long as you like. However, just as with the E5346A/E5351A cables, the parasitic C will cause the divider ratio to fall below 10:1, and this will be more pronounced the longer the trace. About a foot at 120 ohm is a practical maximum before the thresholds set in the FORMAT menu need to be adjusted.

PCI-X Signal Assignment

FuturePlus Systems will supply a configuration file with the FS1104 product that matches the following pinout. However it should be noted that the pinout could be re-pinned by the user in order to match etch lengths and control skew.

Routing and Re-pinning Information

In order to control skew all etch lengths should be near equal. If it makes sense from a layout point of view, the signals may be re-pinned on the mictor connectors. The user would then only need to modify the included configuration file to match the actual layout. The following restrictions apply.

- The clock cannot be re-pinned to a signal pin
- Bit re-ordering can be used to put the command/AD signals back in order . If the AD signals are RE-ORDERED then the user will not be able to use the IN RANGE feature in the triggering menu for address range triggering.
- The CYCLE variable will need to be bit re-ordered to match the supplied symbols in the configuration file. (This is not a difficult task).

GNT#, REQ# and IDSEL signals

This pinout contains the signals GNT#, REQ# and IDSEL# for whatever PCI-X device the user connects. Since these are radially routed signals it is recommended that the remaining target system GNT# lines and optionally the REQ# and IDSEL signals be connected to the unused pins. This may make debugging and performance analysis easier.

LOGIC ANALYZER POD 1

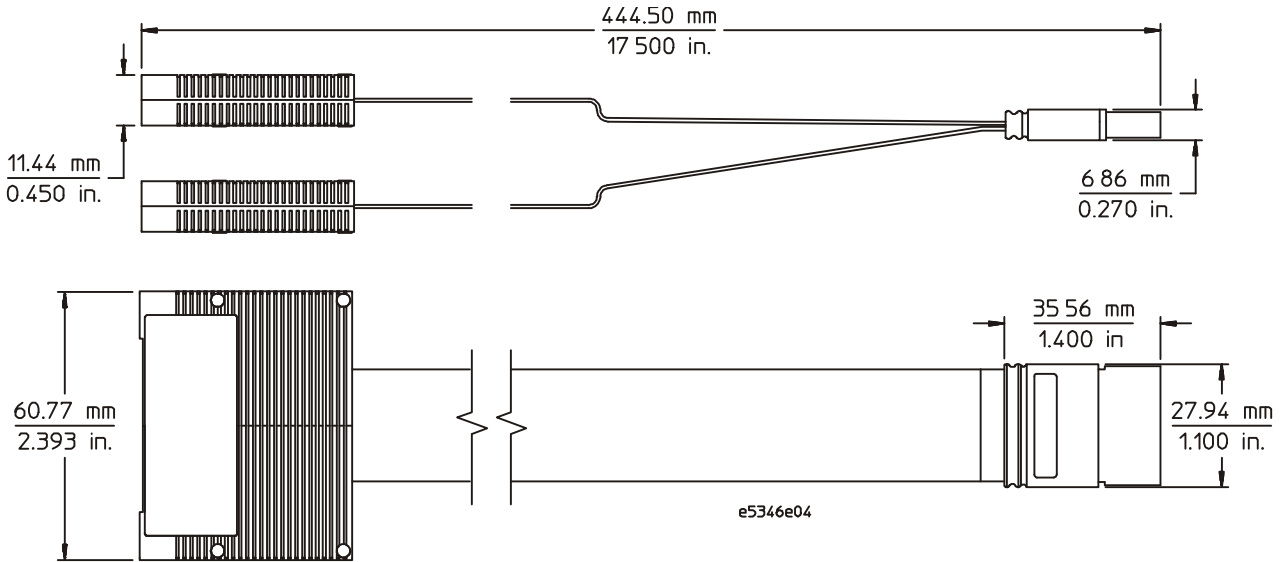
Mictor-38 #1 Pin Number ODD POD	Logic Analyzer channel number	PCI-X Signal name
6	CLK/16	CLK
8	15	C/BE4
10	14	C/BE6
12	13	C/BE5
14	12	C/BE7
16	11	ACK64
18	10	REQ64
20	9	UNUSED*
22	8	PME
24	7	C/BE0
26	6	M66EN
28	5	C/BE1
30	4	SERR
32	3	PAR
34	2	PERR
36	1	LOCK
38	0	STOP

LOGIC ANALYZER POD 2

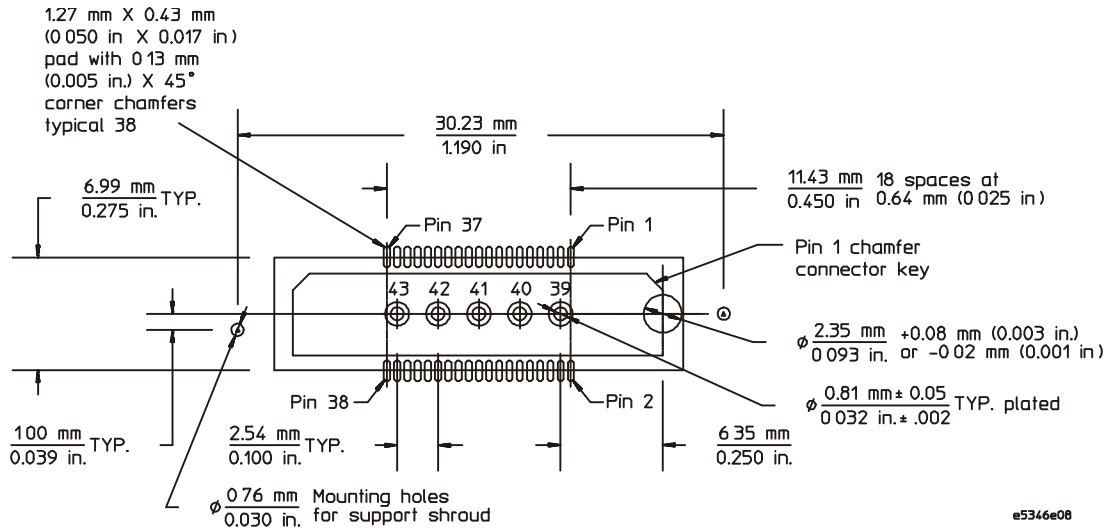
Mictor-38 #1 Pin Number EVEN POD	Logic Analyzer channel number	PCI-X Signal name
5	CLK/16	FRAME
7	15	DEVSEL
9	14	TRDY
11	13	C/BE2
13	12	C/BE3
15	11	IDSEL
17	10	REQ
19	9	GNT
21	8	RST
23	7	INTD
25	6	INTC
27	5	INTB
29	4	INTA
31	3	UNUSED*
33	2	UNUSED*
35	1	UNUSED*
37	0	UNUSED*

***These pins are unused and can be connected to any signal and assigned by the user in the Format menu.**

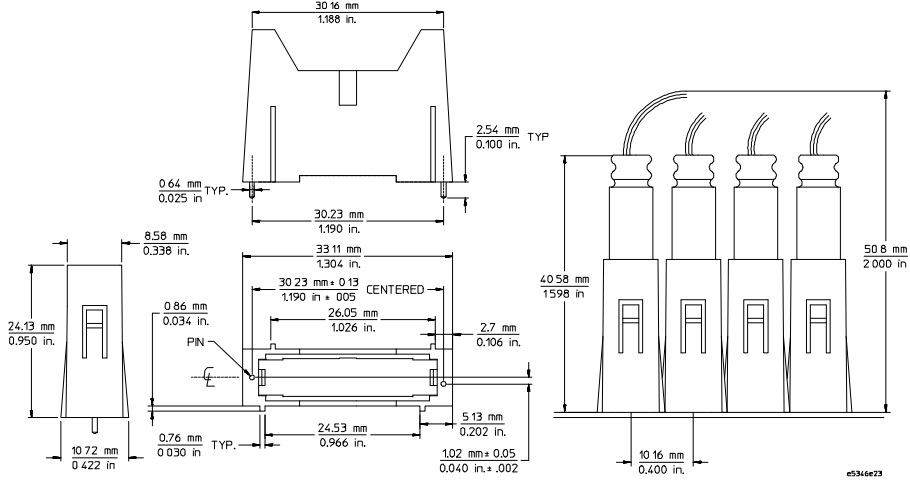
E5346A/E5351A Mechanical Dimensions



AMP Mictor-38 Connector



Shroud Mechanical Information



Technical Support

For technical support please call 603-471-2734 or www.futureplus.com