

Agilent E5346A

**Passively Probing a Motorola
MPC555 Target System with E5346A
High-Density Termination Adapters**

Product Note



Agilent Technologies

Innovating the HP Way

Passively Probing a Motorola MPC555 Target System with Agilent E5346A High-Density Termination Adapters

This product note describes how to connect an Agilent Technologies logic analyzer to a Motorola MPC555 target system for use with an inverse assembler.

Signals required for inverse assembly are shown in the pinout information table beginning on page 7 and must be routed to AMP Mictor 38 connectors for connection to the logic analyzer.

Six 16-channel logic analyzer pods are required for inverse assembly. These six pods are connected via the Mictor connectors to four high-density termination adapters. The adapters are not included with the inverse assembler and must be ordered separately. The remaining connectors are optional and provide visibility into system peripherals.

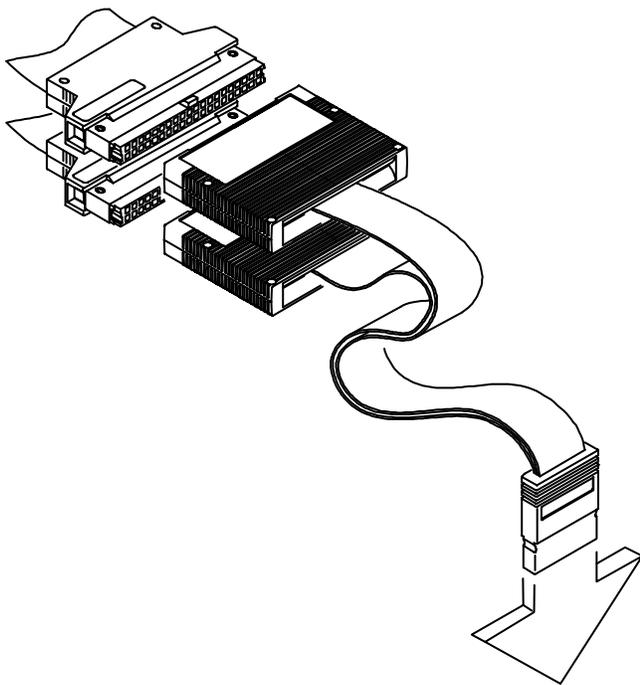


Figure 1. Connector Layout for a Motorola MPC555 BGA Target

Direct Connection through Agilent E5346A High-Density Adapter Cables

The E5346A high-density adapters use a minimal amount of board space. Each high-density adapter connects two logic analyzer pods, providing 32 channels of logic analysis per connector and access to two clock pins, as shown in figure 2.

Grounds need to be connected to pin 3 of the AMP Mictor connector. SCL, +5VDC and SDA are not to be connected to the target system (pins 1, 2, and 4 on the Mictor connector).

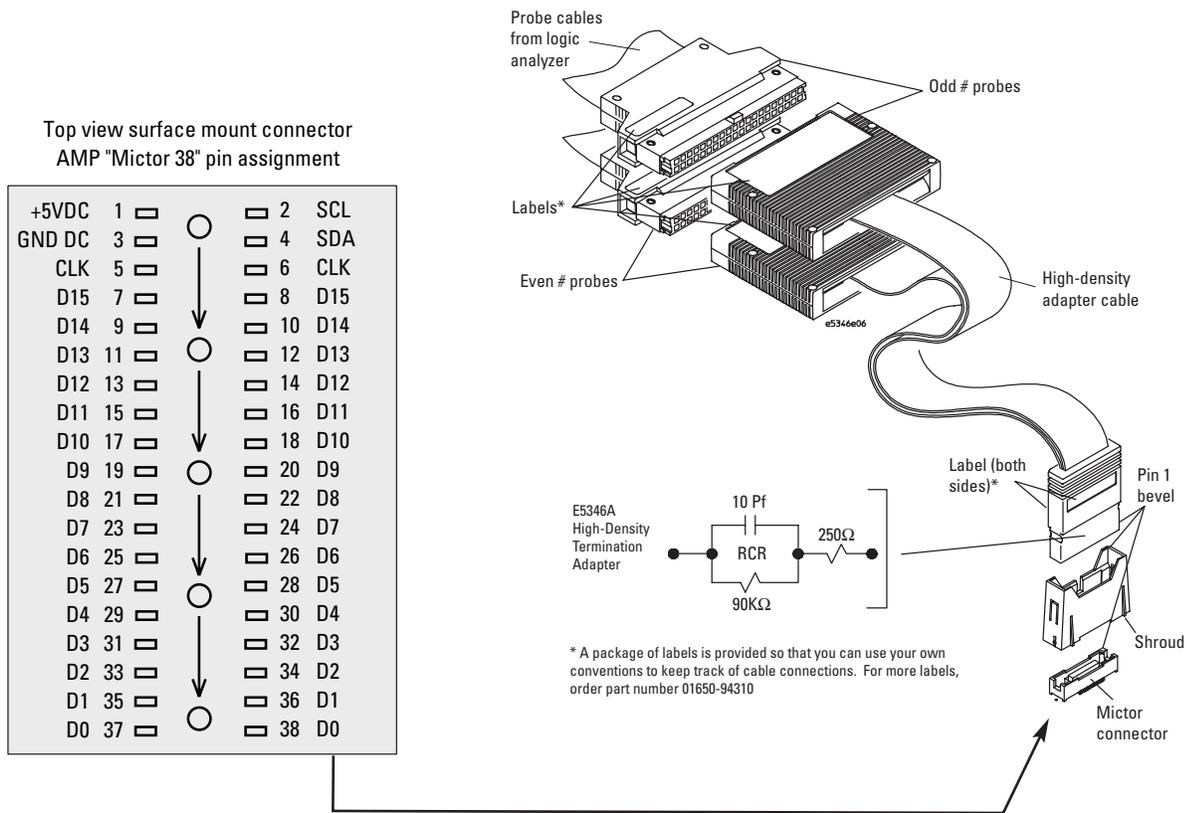


Figure 2: E5346A High-Density Termination Adapter

Termination for logic analysis is included at the probe tip of the E5346A high-density termination adapter for easy application and use. A schematic of this termination is shown in figure 3.

The AMP Mictor connector must be placed close enough to the target system so that the stub length created is less than 1/5 the T_r (bus risetime). For PC board material ($\epsilon_r=4.9$) and Z_0 in the range of 50-80 Ω , use a propagation delay of 160 ps/inch of stub.

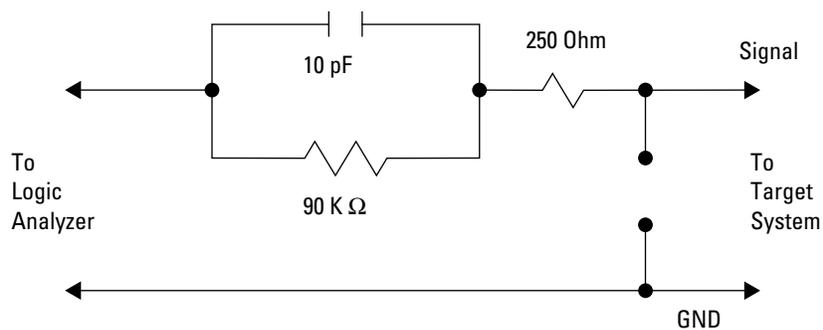


Figure 3. RC Network for Signal Termination

Four E5346A adapters and Mictor connectors are needed to probe all the required signals for inverse assembly.

Source Correlation Tool Set

The inverse assembler can be used with the Agilent B4620B source correlation tool set. This allows you to time-correlate an acquired trace to written code. The source correlation tool set uses the information provided in your object file to build a database of source files, line numbers and symbol information.

IEEE 695, Elf/Dwarf, and ASCII symbol files are supported.

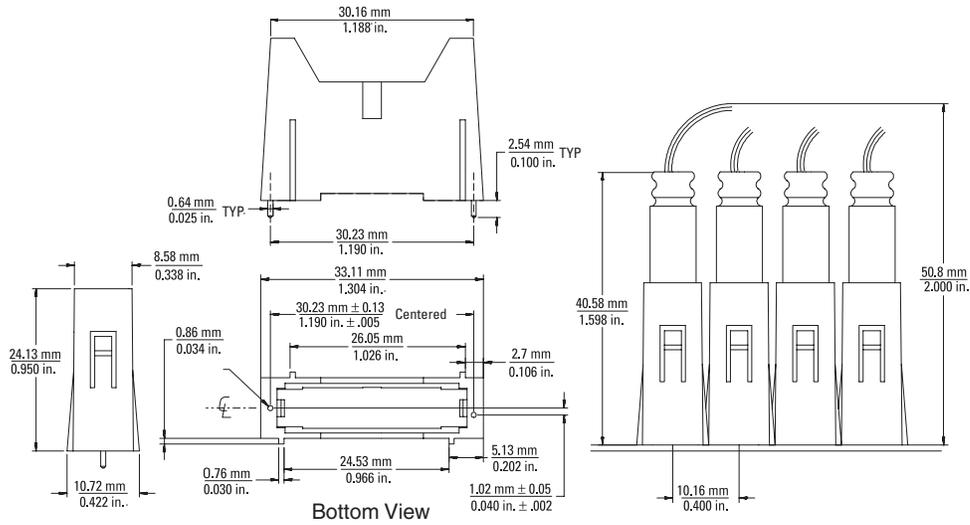


Figure 6. Support Shroud Dimensions

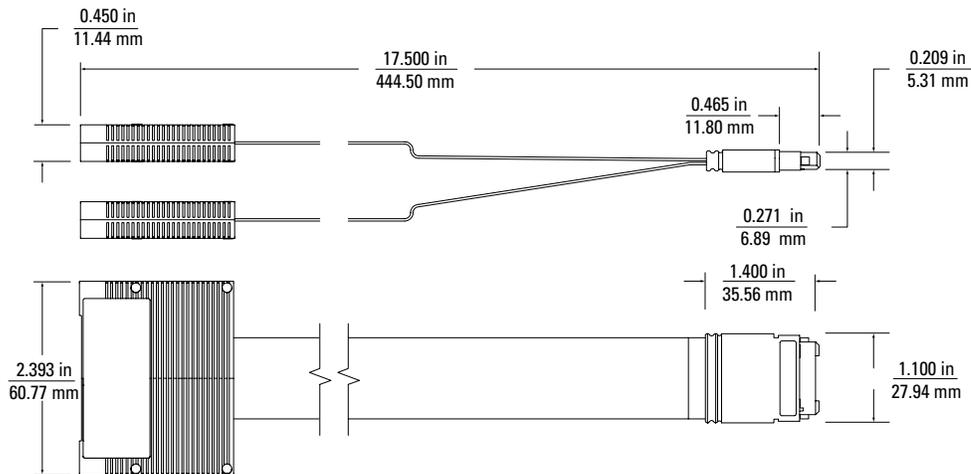


Figure 7. High-Density Termination Adapter Cable Dimensions

Pinout Information on Required Signals for Inverse Assembly

This table describes the connections for the three Mictor 38 connectors necessary for compatibility with the inverse assembler and the E5346A high-density termination adapter cables. This is intended to be a guide for placing probing connectors on a target system.

For inverse assembly, J1-J3 are required.

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J1 (odd)	38	A31	J1 (even)	37	A15
	36	A30		35	A14
	34	A29		33	A13
	32	A28		31	A12
	30	A27		29	A11
	28	A26		27	A10
	26	A25		25	A9
	24	A24		23	A8
	22	A23		21	CS3
	20	A22		19	CS2
	18	A21		17	CS1
	16	A20		15	CS0
	14	A19		13	
	12	A18		11	EXTCLK
	10	A17		9	KAPWR
	8	A16		7	#PORESET
	6	CLKOUT		5	#TS
J2 (odd)	38	D31	J2 (even)	37	D15
	36	D30		35	D14
	34	D29		33	D13
	32	D28		31	D12
	30	D27		29	D11
	28	D26		27	D10
	26	D25		25	D9
	24	D24		23	D8
	22	D23		21	D7
	20	D22		19	D6
	18	D21		17	D5
	16	D20		15	D4
	14	D19		13	D3
	12	D18		11	D2
	10	D17		9	D1
	8	D16		7	D0
	6	#TA		5	#STS

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J3 (odd)	38	#HRESET	J3 (even)	37	VF2
	36	#SRESET		35	VF1
	34	#IRQ3/#KR/#Retry		33	VF0
	32	PTR		31	NC
	30	VFLS1		29	DSDI (OPTIONAL)
	28	VFLS0		27	DSDO (OPTIONAL)
	26	TSIZ1		25	DSCK (OPTIONAL)
	24	TSIZ0		23	LWP1
	22	AT2		21	LWP0
	20	#WE3		19	IWP3
	18	#WE2		17	IWP2
	16	#WE1		15	IWP1
	14	#WE0		13	IWP0
	12	#OE		11	#RSTCONF
	10	#BDIP		9	#IRQ1/#RSV
	8	#BURST		7	#CR
	6	#TEA		5	RD/#WR

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J4 (odd)	38		J4 (even)	37	
	36	MDA15		35	
	34	MDA14		33	
	32	MDA13		31	MPWM19
	30	MDA12		29	MPWM18
	28	MDA11		27	MPWM17
	26	RXD2/QGPI2		25	MPWM16
	24	RXD1/QGPI1		23	MPWM3
	22	TXD2/QGPO2		21	MPWM2
	20	TXD1/QGPO1		19	MPWM1
	18	MOSI/QGPI05		17	MPWM0
	16	MISO/QGPI04		15	MDA31
	14	PCS3/QGPI03		13	MDA30
	12	PCS2/QGPI02		11	MDA29
	10	PCS1/QGPI01		9	MDA28
	8	PCS0/#SS/QGPI00		7	MDA27
	6	SCK/QGPI06		5	ECK

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J5 (odd)	38	MGPI015	J5 (even)	37	A_TPUCH15
	36	MGPI014		35	A_TPUCH14
	34	MGPI013		33	A_TPUCH13
	32	MGPI012		31	A_TPUCH12
	30	MGPI011		29	A_TPUCH10
	26	MGPI09		25	A_TPUCH9
	24	MGPI08		23	A_TPUCH8
	22	MGPI07		21	A_TPUCH7
	20	MGPI06		19	A_TPUCH6
	18	MGPI05		17	A_TPUCH5
	16	MGPI04		15	A_TPUCH4
	14	MGPI03		13	A_TPUCH3
	12	MGPI02		11	A_TPUCH2
	10	MGPI01		9	A_TPUCH1
	8	MGPI00		7	A_TPUCH0
	6	ENGCLK/BUCLK		5	A_T2CLK

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J6 (odd)	38	B_TPUCH15	J6 (even)	37	
	36	B_TPUCH14		35	
	34	B_TPUCH13		33	
	32	B_TPUCH12		31	
	30	B_TPUCH11		29	
	28	B_TPUCH10		27	#TRST
	26	B_TPUCH9		25	TMS
	24	B_TPUCH8		23	#IRQ7
	22	B_TPUCH6		19	#IRQ5
	18	B_TPUCH5		17	#IRQ0
	16	B_TPUCH4		15	EPEE
	14	B_TPUCH3		13	#CNRX0B
	12	B_TPUCH2		11	#CNTX0B
	10	B_TPUCH1		9	#CNRX0A
	8	B_TPUCH0		7	#CNTX0A
	6	B_T2CLK		5	

Mictor Conn. #	AMP Mictor Pin #	Signal Name	Mictor Conn. #	AMP Mictor Pin #	Signal Name
J7 (odd)	38	A_AN59/PQA7	J7 (even)	37	B_AN59/PQA7
	36	A_AN58/PQA6		35	B_AN58/PQA6
	34	A_AN57/PQA5		33	B_AN57/PQA5
	32	A_AN56/PQA4		31	B_AN56/PQA4
	30	A_AN55/PQA3		29	B_AN55/PQA3
	28	A_AN54/MA2/PQA2		27	B_AN54/MA2/PQA2
	26	A_AN53/MA1/PQA1		25	B_AN53/MA1/PQA1
	24	A_AN52/MA0/PQA0		23	B_AN52/MA0/PQA0
	22	A_AN51/PQB7		21	B_AN51/PQB7
	20	A_AN50/PQB6		19	B_AN50/PQB6
	18	A_AN49/PQB5		17	B_AN49/PQB5
	16	A_AN48/PQB4		15	B_AN48/PQB4
	14	A_AN3/ANZ/PQB3		13	B_AN3/ANZ/PQB3
	12	A_AN2/ANY/PQB2		11	B_AN2/ANY/PQB2
	10	A_AN1/ANX/PQB1		9	B_AN1/ANX/PQB1
	8	A_AN0/ANW/PQB0		7	B_AN0/ANWPQB0
6	A_ETRIG1	5	B_ETRIG2		

Related Literature

Probing Solutions for Agilent Logic Analysis Systems

Pub. Number

5968-4632E

Product Ordering Information

E5346A High-Density Termination Adapter

E5346-68701 Kit of Five Mictor Connectors and
Five Support Shrouds

E5346-63201 High-Density Right Angle Adapter

E5346-44701 High-Density Termination Adapter
Support Shroud

E9610A Opt. #001 Motorola M-CORE Inverse
Assembler

B4620B Source Correlation Tool Set

AMP PN 2-767004-2 AMP Mictor Connector (order
from AMP)

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