



## **MetaLink Corporation Price Book for 8051 In-Circuit Emulators**

### **MetaLink's Mission**

MetaLink's mission is to be the best embedded controller in-circuit emulator company in the world. This means having the best products, best prices, and best service.

### **The MetaLink Value Proposition**

MetaLink delivers superior value. This is how we define value in the business of in-circuit emulators:

- **Price/Performance Ratio Superiority.** MetaLink emulators have the best price/performance ratio of any emulators on the market. MetaLink's real-time, non-intrusive emulators have the best feature set at all price points.
- **Broad Product Line.** MetaLink offers a variety of emulators to meet the needs of a variety of customers. MetaLink endeavors to offer the lowest entry-level prices in the industry. At the other end of the scale, MetaLink endeavors to offer emulators with the most unique features for highest debugging productivity. MetaLink supports or has plans to support all of the popular 8051 derivatives.
- **Innovative Design.** MetaLink emulators are innovative in design. They are designed from the beginning for high performance and low cost, using the most advanced electronic components available. Most use MetaLink's patented Enhanced Hooks technology, which eliminates the need for expensive and trouble-prone bond-out chips. Enhanced Hooks has been implemented on 8051 chips at Analog Devices, Atmel WM/Temic, Dallas Semiconductor, Infineon/Siemens, NXP (Philips), SST, and Hynix. Most other 8051 emulator companies must license this MetaLink technology to produce their own 8051 emulators.
- **Low Prices.** MetaLink offers the lowest prices in the United States, where our primary distribution method is factory-direct. Customers in other countries can expect higher prices due to transportation, duties, and local technical support by our regional distributors.
- **Quality.** MetaLink's commitment to quality begins with product definition and design. Every product is engineered to give the customer a high-quality debugging tool with the visibility and control required for productive design work. Then we assure quality in manufacturing with attention to detail, assembler training, specification-driven assembly processes, and repeated testing. Our products are covered by a one-year warranty on parts and labor (may not apply to emulation processors, which are unfortunately prone to damage during handling and during the debugging of new target systems).
- **Service.** Service is more than a slogan at MetaLink. We focus on delivering service through these specific programs:
  - Free Technical Support
  - One Year Warranty
  - Package Third-Party Compilers and Pin Adapters as Appropriate
  - Discounts with Trade-in of your Current Emulator
  - World-wide Sales and Service
- **Summary.** In this very competitive industry, MetaLink competes with great products, great service, and great prices. We want to earn your business, we want to earn your trust and we want to keep earning them.

Please look over our products and services. If there is anything we can do to help you, please contact us.

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## Emulator Features

The table below shows the features of the MetaICE PE Model 300 emulator.

<b>MetaICE PE Features</b>	
	<b>Model 300</b>
Hardware Breakpoints	Yes
Program Memory (Bytes)	128K
External Data Memory (Bytes)	128K
Bank Switching Support	No
Trace Memory (Frames)	64K
Time Stamp in Trace	Yes
SFR Write Data in Trace <sup>1</sup>	Yes
Monitored Registers in Trace <sup>1</sup>	Yes

Footnotes:

1. Note that these features may not be available for every device, depending on the emulation chip used by the emulator. To see if a feature is available for the device you are interested in, see the device in the Device Support Table on page 3.

## 8051 Device Support Table

MetaLink supports a broad range of 8051 derivatives from several chip companies. The chart on the next page lists the supported devices and indicates which emulator family supports them. MetaLink intends to support every popular 8051 derivative, and support for new devices is continuously being developed. If you have an interest in a derivative that is not shown, please contact us at [support@metaice.com](mailto:support@metaice.com).

Consult the chart on the next page for a summary of emulation features organized by emulator family. The number in the column represents the maximum internal CPU frequency supported. In the MetaICE PE column, letters following the frequency indicate the availability of certain features, T for SFR Write Data in Trace Memory and M for some Monitored Registers in Trace Memory. The number in parenthesis following the frequency and feature information is the page number to view for more detailed information about the emulator that supports that device.

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Chip Vendor	Devices Supported	MetalCE PE
Multiple	8031/32, 8xC51/52/54/58, 8xL31/32/51/52 (3v)	40, TM (4)
	8xC51FA/FB/FC, 8xC51RA/RB/RC/RD	40, TM (4)
	8xC31X2/32X2/52X2/54X2/58X2 (5v)	40, TM (4)
	8xC31X2/32X2/52X2/54X2/58X2 (3v)	40, TM (4)
Atmel	AT89C51/52/55/1051/2051 (5v)	40, TM (6)
	AT89C5130A-M, AT89C5131/AT89C5131A-L/AT89C5131A-M	40, TM (5)
	AT89C51AC2/T89C51AC2	40, TM (5)
	AT89C51AC3	40, TM (5)
	AT89C51CC01/T89C51CC01	40, TM (5)
	AT89C51CC02/T89C51CC02	40, TM (6)
	AT89C51CC03	40, TM (6)
	AT89C51ED2	40, TM (6)
	AT89C51IC2/AT89C51ID2	40, TM (6)
	AT89C51IE2	40, TM (6)
	AT89C51RB2/RC2/RD2	40, TM (6)
	AT89C51RE2	40, TM (7)
	AT89L51/52 (3v)	40, TM (6)
	T89C5115	40, TM (7)
	T89C51C2	40, TM (6)
	T8xC51RB2/RC2 (5v)	40, TM (6)
	T8xC51RB2/RC2 (3v)	40, TM (6)
TS8xC51U2	30, TM (7)	
Dallas	DS80C310/320	33, (8)
	DS80C323	18, (8)
	DS80C390	CALL FACTORY
	DS8xC520	33, (8)
	DS8xC530	33, (8)
	DS87C550	33, TM (8)
NXP (Philips)	8xC524/528/652/654	40, (9)
	89F54/58	40, TM (9)
	P8xC591	12, (9)
	P8xC51RA2/RB2/RC2/RD2	40, TM (9)
	P8xC51RA+/RB+/RC+/RD+ (5v)	40, TM (9)
	P8xC51RA+/RB+/RC+/RD+(3v)	40, TM (9)
	80C552/652	24, (9)
	P89C60X2/P89C61X2	40, TM (9)
	P89C660/662/664/668	33, (9)
	P89CV51RB2/P89CV51RC2/P89CV51RD2	40, TM (10)
SST	P89V660/662/664	33, (10)
	SST89E516RD2	40, TM (12)
	SST89E52RD2	40, TM (12)
	SST89E54RD2	40, TM (12)
	SST89E554RC/SST89E58RD2	40, TM (13)
	SST89E564RD	40, TM (13)
	SST89V516RD2	33, TM (12)
	SST89V52RD2	33, TM (12)
	SST89V54RD2	33, TM (13)
	SST89V554RC/SST89V58RD2	33, TM (13)
SST89V564RD	33, TM (13)	

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## MetaICE PE Emulators

Emulator prices include: the emulator system; RS232C cable with 9 pin connector; power supply; user interface with integrated HLL/Source Level Debugger; PDF-format manual on diskette or CD; start-up documentation; registration form for software updates. Note that MetaICE PE emulators can be run using a USB to Serial Adapter (see MHW-USB-RS-ADAPT on page 14).

MetaICE PE Emulators for Multi-Source Devices					
Emulator Name		Supported Devices			
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price
<b>PE-AT89C51ED2</b>	<b>Supported Devices:</b> 8x31/32/51/52/54/58, C501 8xC31X2/32X2/52X2/54X2/58X2 8xC51FA/FB/FC, 8xC51RA/RB/RC/RD Atmel AT89C51ED2, AT89C51RB2/RC2/RD2, T8xC51RA2/RB2/RC2 NXP (Philips) P8xC51RA+/RB+/RC+/RD+, P8xC51RA2/RB2/RC2/RD2 NXP (Philips) P8xC60X2/61X2				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33AED2-AA40D <sup>3</sup>	\$1,949 <sup>3</sup>
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AED2-AA44P	\$1,699
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AED2-AA44Q	\$1,899

Footnotes:

1 – at 12 clocks per cycle

2 – at 6 clocks per cycle

3 – the 40 DIP version is shipped as a 44 PLCC emulator with a 44 PLCC to 40 DIP converter (see MHW-CONV-44P-40D on page 14)

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MetaICE PE Emulators for Atmel Devices						
Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-AT89C5131</b>		<b>Supported Devices: Atmel AT89C5130A-M, AT89C5131, AT89C5131A-L, AT89C5131A-M</b>				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	28 SOIC	PE-335131-AB28S	\$2,199	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	48 MLF	PE-335131-AC48Q	\$2,399	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	52 PLCC	PE-335131-AC52P	\$2,199	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	64 QFP	PE-335131-AC64Q	\$2,399	
<b>PE-AT89C51AC2</b>		<b>Supported Devices: Atmel AT89C51AC2, T89C51AC2</b>				
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AAC2-AB44P	\$1,999	
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AAC2-AB44Q	\$2,199	
<b>PE-AT89C51AC3</b>		<b>Supported Devices: Atmel AT89C51AC3</b>				
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AAC3-AB44P	\$1,999	
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AAC3-AB44Q	\$2,199	
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	52 PLCC	PE-33AAC3-AB52P	\$1,999	
	3.0-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	64 QFP	PE-33AAC3-AB64Q	\$2,199	
<b>PE-AT89C51CC01</b>		<b>Supported Devices: Atmel AT89C51CC01, T89C51CC01</b>				
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33ACC1-AB44P	\$1,999	
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33ACC1-AB44Q	\$2,199	

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MetaICE PE Emulators for Atmel Devices						
Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-AT89C51CC02</b>		<b>Supported Devices: Atmel AT89C51CC02, T89C51CC02</b>				
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	28 PLCC	PE-33ACC2-AB28P	\$1,999	
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	28 SOIC	PE-33ACC2-AB28S	\$1,999	
<b>PE-AT89C51CC03</b>		<b>Supported Devices: Atmel AT89C51CC03</b>				
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33CC03-AB44P	\$1,999	
	3.0-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33CC03-AB44Q	\$2,199	
<b>PE-AT89C51ED2</b>		<b>Supported Devices: 8x31/32/51/52/54/58, C501 8xC31X2/32X2/52X2/54X2/58X2 8xC51FA/FB/FC, 8xC51RA/RB/RC/RD Atmel AT89C51ED2, AT89C51RB2/RC2/RD2, T8xC51RA2/RB2/RC2 NXP (Philips) P8xC51RA+/RB+/RC+/RD+, P8xC51RA2/RB2/RC2/RD2 NXP (Philips) P8xC60X2/61X2</b>				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33AED2-AA40D <sup>3</sup>	\$1,949 <sup>3</sup>	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AED2-AA44P	\$1,699	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AED2-AA44Q	\$1,899	
<b>PE-AT89C51ID2</b>		<b>Supported Devices: Atmel AT89C51IC2, AT89C51ID2, T89C51IC2</b>				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AID2-AA44P	\$1,999	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AID2-AA44Q	\$2,199	
<b>PE-AT89C51IE2</b>		<b>Supported Devices: Atmel AT89C51IE2</b>				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33AIE2-AA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AIE2-AA44P	\$1,999	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AIE2-AA44Q	\$2,199	

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MetaICE PE Emulators for Atmel Devices						
Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-AT89C51RE2</b>		<b>Supported Devices: Atmel AT89C51RE2</b>				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33ARE2-AA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33ARE2-AA44P	\$1,999	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33ARE2-AA44Q	\$2,199	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	68 PLCC	PE-33ARE2-AA68P	\$1,999	
<b>PE-T83C51U2</b>		<b>Supported Devices: Atmel TS8xC51U2</b>				
	2.7-5.25V	DC-30 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33T3U2-AA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-5.25V	DC-30 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33T3U2-AA44P	\$1,999	
	2.7-5.25V	DC-30 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33T3U2-AA44Q	\$2,199	
<b>PE-T89C5115</b>		<b>Supported Devices: Atmel T89C5115</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	28 PLCC	PE-335115HAB28P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	28 SOIC	PE-335115HAB28S	\$1,999	

Footnotes:

1 – at 12 clocks per cycle

2 – at 6 clocks per cycle

3 – the 40 DIP version is shipped as a 44 PLCC emulator with a 44 PLCC to 40 DIP converter (see MHW-CONV-44P-40D on page 14)

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MetaICE PE Emulators for Dallas Devices					
Emulator Name		Supported Devices			
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price
<b>PE-DS80C320</b>		<b>Supported Devices: Dallas DS80C310/DS80C320</b>			
	4.5-5.25V	DC-33 <sup>1</sup>	40 DIP <sup>2</sup>	PE-33D320HAA40D <sup>2</sup>	\$2,249 <sup>2</sup>
	4.5-5.25V	DC-33 <sup>1</sup>	44 PLCC	PE-33D320HAA44P	\$1,999
	4.5-5.25V	DC-33 <sup>1</sup>	44 QFP	PE-33D320HAA44Q	\$2,199
<b>PE-DS80C323</b>		<b>Supported Devices: Dallas DS80C323</b>			
	2.7-5.25V	DC-18 <sup>1</sup>	40 DIP <sup>2</sup>	PE-33D323-AA40D <sup>2</sup>	\$2,249 <sup>2</sup>
	2.7-5.25V	DC-18 <sup>1</sup>	44 PLCC	PE-33D323-AA44P	\$1,999
	2.7-5.25V	DC-18 <sup>1</sup>	44 QFP	PE-33D323-AA44Q	\$2,199
<b>PE-DS80C390</b>		<b>Supported Devices: Dallas DS80C390</b>			
	Call For Availability				
<b>PE-DS8xC520</b>		<b>Supported Devices: Dallas DS80C310, DS80C320, DS8xC520</b>			
	4.5-5.25V	DC-33 <sup>1</sup>	44 PLCC <sup>3</sup>	PE-33D520HAA44P	\$1,999
<b>PE-DS8xC530</b>		<b>Supported Devices: Dallas DS80C310, DS80C320, DS8xC520, DS8xC530</b>			
	4.5-5.25V	DC-33 <sup>1</sup>	52 PLCC	PE-33D530HAA52P	\$1,999
<b>PE-DS87C550</b>		<b>Supported Devices: Dallas DS87C550</b>			
	4.5-5.25V	DC-33 <sup>1</sup>	68 PLCC	PE-33D550HAE68P	\$2,199
	4.5-5.25V	DC-33 <sup>1</sup>	80 PQFP	PE-33D550HAE80Q	\$2,399

Footnotes:

1 – maximum CPU frequency

2 – the 40 DIP version is shipped as a 44 PLCC emulator with a 44 PLCC to 40 DIP converter (see MHW-CONV-44P-40D on page 14)

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## MetaICE PE Emulators for NXP (Philips) Devices

Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-AT89C51ED2</b>		<b>Supported Devices:</b> 8x31/32/51/52/54/58, C501 8xC31X2/32X2/52X2/54X2/58X2 8xC51FA/FB/FC, 8xC51RA/RB/RC/RD Atmel AT89C51ED2, AT89C51RB2/RC2/RD2, T8xC51RA2/RB2/RC2 NXP (Philips) P8xC51RA+/RB+/RC+/RD+, P8xC51RA2/RB2/RC2/RD2 NXP (Philips) P8xC60X2/61X2				
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33AED2-AA40D <sup>3</sup>	\$1,949 <sup>3</sup>	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33AED2-AA44P	\$1,699	
	2.7-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33AED2-AA44Q	\$1,899	
<b>PE-P80C552</b>		<b>Supported Devices:</b> NXP (Philips) P80C552, P80C652				
	4.75-5.25V	DC-24	68 PLCC	PE-33P552HAK68P	\$2,199	
<b>PE-P89C660</b>		<b>Supported Devices:</b> NXP (Philips) P89C660, P8xC524, P8xC652, P8xC654				
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33P660HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33P660HAA44P	\$1,999	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33P660HAA44Q	\$2,199	
<b>PE-P89C662</b>		<b>Supported Devices:</b> NXP (Philips) P89C662, P8xC528, 8xC652				
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33P662HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33P662HAA44P	\$1,999	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33P662HAA44Q	\$2,199	
<b>PE-P89C664</b>		<b>Supported Devices:</b> NXP (Philips) P89C664				
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33P664HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33P664HAA44P	\$1,999	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33P664HAA44Q	\$2,199	

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## MetaICE PE Emulators for NXP (Philips) Devices

Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-P89C668</b>		<b>Supported Devices: NXP (Philips) P89C668</b>				
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33P668HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33P668HAA44P	\$1,999	
	4.5-5.25V	DC-33 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33P668HAA44Q	\$2,199	
<b>PE-P89CV51RD2</b>		<b>Supported Devices: NXP (Philips) P89CV51RB2, P89CV51RC2, P89CV51RD2</b>				
	4.5-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33CRD2HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33CRD2HAA44P	\$1,999	
	4.5-5.5V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33CRD2HAA44Q	\$2,199	
<b>PE-P89V660</b>		<b>Supported Devices: NXP (Philips) P89V660</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33V660HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33V660HAA44P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33V660HAA44Q	\$2,199	
<b>PE-P89V662</b>		<b>Supported Devices: NXP (Philips) P89V662</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33V662HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33V662HAA44P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33V662HAA44Q	\$2,199	

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## MetaICE PE Emulators for NXP (Philips) Devices

Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-P89V664</b>		<b>Supported Devices: NXP (Philips) P89V664</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33V664HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33V664HAA44P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33V664HAA44Q	\$2,199	
<b>PE-P8xC591</b>		<b>Supported Devices: NXP (Philips) P8xC591</b>				
	4.5-5.25V	DC-12	44 PLCC	PE-33P591HAA44P	\$1,999	
	4.5-5.25V	DC-12	44 QFP	PE-33P591HAA44Q	\$2,199	

Footnotes:

1 – at 12 clocks per cycle

2 – at 6 clocks per cycle

3 – the 40 DIP version is shipped as a 44 PLCC emulator with a 44 PLCC to 40 DIP converter (see MHW-CONV-44P-40D on page 14)

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MetaICE PE Emulators for SST Devices					
Emulator Name		Supported Devices			
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price
<b>PE-SST89E516RD2</b>		<b>Supported Devices: SST89E516RD2, SST89E564RD</b>			
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S56RHAA40D <sup>3</sup>	\$2,249 <sup>3</sup>
	4.5-5.25	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33S56RHAA44P	\$1,999
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33S56RHAA44Q	\$2,199
<b>PE-SST89V516RD2</b>		<b>Supported Devices: SST89V516RD2, SST89V564RD</b>			
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S56RLAA40D <sup>3</sup>	\$2,249 <sup>3</sup>
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 PLCC	PE-33S56RLAA44P	\$1,999
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 QFP	PE-33S56RLAA44Q	\$2,199
<b>PE-SST89E52RD2</b>		<b>Supported Devices: SST89E52RD2</b>			
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S52RHAA40D <sup>3</sup>	\$2,249 <sup>3</sup>
	4.5-5.25	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33S52RHAA44P	\$1,999
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33S52RHAA44Q	\$2,199
<b>PE-SST89V52RD2</b>		<b>Supported Devices: SST89V52RD2</b>			
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S52RLAA40D <sup>3</sup>	\$2,249 <sup>3</sup>
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 PLCC	PE-33S52RLAA44P	\$1,999
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 QFP	PE-33S52RLAA44Q	\$2,199
<b>PE-SST89E54RD2</b>		<b>Supported Devices: SST89E54RD2</b>			
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S54RHAA40D <sup>3</sup>	\$2,249 <sup>3</sup>
	4.5-5.25	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33S54RHAA44P	\$1,999
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33S54RHAA44Q	\$2,199

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MetaICE PE Emulators for SST Devices						
Emulator Name		Supported Devices				
	Voltage	Maximum CPU Frequency	Pinout	Model 300 Ordering Code	Price	
<b>PE-SST89V54RD2</b>		<b>Supported Devices: SST89V54RD2</b>				
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S54RLAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 PLCC	PE-33S54RLAA44P	\$1,999	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 QFP	PE-33S54RLAA44Q	\$2,199	
<b>PE-SST89E58RD2</b>		<b>Supported Devices: SST89E554RC, SST89E58RD2</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S58RHAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33S58RHAA44P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33S58RHAA44Q	\$2,199	
<b>PE-SST89V58RD2</b>		<b>Supported Devices: SST89V554RC, SST89V58RD2</b>				
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S58RLAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 PLCC	PE-33S58RLAA44P	\$1,999	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 QFP	PE-33S58RLAA44Q	\$2,199	
<b>PE-SST89E564</b>		<b>Supported Devices: NXP (Philips) P89V51RVB2, P89V51RC2, P89V51RD2 SST89E564RD</b>				
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S564HAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	4.5-5.25	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 PLCC	PE-33S564HAA44P	\$1,999	
	4.5-5.25V	DC-40 <sup>1</sup> , DC-20 <sup>2</sup>	44 QFP	PE-33S564HAA44Q	\$2,199	
<b>PE-SST89V564</b>		<b>Supported Devices: NXP (Philips) P89LV51RVB2, P89LV51RC2, P89LV51RD2 SST89V564RD</b>				
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	40 DIP <sup>3</sup>	PE-33S564LAA40D <sup>3</sup>	\$2,249 <sup>3</sup>	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 PLCC	PE-33S564LAA44P	\$1,999	
	2.7-3.6V	DC-33 <sup>1</sup> , DC-16 <sup>2</sup>	44 QFP	PE-33S564LAA44Q	\$2,199	

Footnotes:

1 – at 12 clocks per cycle

2 – at 6 clocks per cycle

3 – the 40 DIP version is shipped as a 44 PLCC emulator with a 44 PLCC to 40 DIP converter (see MHW-CONV-44P-40D on page 14)

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## QFP Connection Components

Unlike DIP and PLCC devices, QFP devices are usually soldered to the target board, not socketed. Therefore, a different method of connecting the emulator probe card to the target electronics is required. MetaLink uses an industry standard method supported by components from Ironwood Electronics and other third-party suppliers. In this approach, a fixture known as a 'foot' is soldered to the target board in place of the QFP component, and then the MGA socket on the emulator's probe card mates with the foot. It is often necessary to increase the distance between the probe card and the target, so the MGA sockets can serve as spacers for that purpose.

MetaLink will always ship one foot with each QFP-style probe card. However, since the customer may have several boards that require emulation, the feet and MGA sockets are available as accessories.

uC Devices	Device	Description	Order Code	Price (\$)
All 44 QFP 8051 Types	Many	Ironwood Chip Carrier Adapter, 44 PQFP	MHW-CA44SALZT01	429
		Ironwood Target Foot, 44 PQFP	MHW-FT44SAL01	71
		Ironwood MGA Socket, 44 PQFP	MHW-MG8-44A01-3	51
Infineon (Siemens) C504	C504			
Analog Devices	uC812, uC816, uC824, uC831, uC832, uC834, uC836	Ironwood Chip Carrier Adapter, 52 PQFP	MHW-CA52SBLZT01	435
		Ironwood Target Foot, 52 PQFP	MHW-FT52SBL01	79
		Ironwood MGA Socket, 52 PQFP	MHW-SKMG8-52A01-3	55
Atmel	AT89C5130, AT89C5131	Ironwood Chip Carrier Adapter, 64 PQFP	MHW-CA64SDLZT01	441
Dallas	DS80C390	Ironwood Target Foot, 64 PQFP	MHW-FT64SDL01	84
		Ironwood MGA Socket, 64 PQFP	MHW-MG8-64A01-3	66

## Miscellaneous Hardware Components

Product Number	Unit Price	Description
MHW-CABLE6-9	\$50	RS232 cable (RJ11) with 9-pin converter.
MHW-CONV-44P-40D	\$250	Convert emulator's 44 PLCC footprint to 40 DIP footprint on target system.
MHW-CONV-52P-44P	\$250	Convert emulator's 52 PLCC footprint to 44 PLCC footprint on target system.
MHW-EXT40D	\$85	40 pin DIP 6" extender cable.
MHW-PS15-AU	\$50	5V, 2A power supply, Australian wall plug.
MHW-PS15-EU	\$50	5V, 2A power supply, European wall plug.
MHW-PS15-UK	\$50	5V, 2A power supply, UK wall plug.
MHW-PS15-US	\$50	5V, 2A power supply, US wall plug.
MHW-USB-RS-ADAPT	\$30	USB to Serial Adapter for MetaICE PE and MetaICE XF emulators.

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## Software Products for PC Hosted Systems

### MetaLink Software Update

Product Number	Unit Price	Description
MSW-SWU12	\$200	One year of access to the most current emulator host software version via website download.
MSW-SWU01	\$100	One time access to the most current emulator host software version via website download.

### Keil Software

Product Number	Unit Price	Description
MSW-KEIL-A51	\$495	A51 Assembler for PC-hosted Systems
MSW-KEIL-CA51	\$1895	C51 Compiler and A51 Assembler for PC-hosted Systems
MSW-KEIL-PK51	\$3295	8051 Professional Developer's Kit with C51 Compiler, A51 Assembler, Banking Linker 51, Tiny Real Time Operating System 8051 and uVision Simulator / Debugger

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**Emulators.** All electronics contained in the MetaLink series of emulators are guaranteed against defects due to materials or workmanship for one (1) year period from invoice date. The MetaLink series of emulators contain no user-serviceable components. THIS WARRANTY IS VOIDED AND ANY UNPAID BALANCE IS DUE IMMEDIATELY IF AN EMULATOR’S SERIAL NUMBER HAS BEEN REMOVED OR TAMPERED WITH OR IF AN EMULATOR CHASSIS HAS BEEN DAMAGED OR OPENED FOR ANY REASON.

**Emulator Probe Assembly.** The emulator’s probe assembly is guaranteed against defects due to materials or workmanship for one (1) year period from invoice date. This warranty does not include damage to the pins of the probe assembly. Some MetaLink emulators are shipped with a special “Bondout” version of a device. MetaLink’s warranty of this special device is limited to that of the manufacturer.

**Repairs.** MetaLink emulators serviced beyond their one-year warranty period are guaranteed against defects due to materials or workmanship for a 90-day period starting from the repair work’s invoice date. If an emulator is returned to MetaLink for non-warranty repairs and has payment due after six months from the date returned to MetaLink, it will be considered abandoned and will be disposed of by MetaLink. After this six month period there will be no claim against MetaLink for the emulator, a replacement emulator or a refund of the emulator's original purchase price.

No warranty extended by MetaLink shall apply to any goods which have been modified or altered by persons other than MetaLink’s authorized personnel or to goods that are defective due to misuse, neglect, improper installation, soldering or accident.

Note that this warranty applies only to MetaLink manufactured products; the only warranty applicable to third party software or hardware products is that of the manufacturer.

The foregoing limited warranties shall not apply unless Buyer has paid in full for the MetaLink products.

MetaLink’s liability hereunder is expressly limited, at MetaLink’s option, to either: a) the repair or replacement of the emulator that meet MetaLink’s Limited Warranty, or b) to a credit to Buyer in an amount equal to the Purchase Price of the emulator. IN NO EVENT SHALL METALINK BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES OR EXPENSES DIRECTLY OR INDIRECTLY ARISING FROM THE SALE, HANDLING, INSTALLATION OR USE OF METALINK PRODUCTS OR FROM ANY OTHER CAUSE RELATED THERETO.

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