



HEWLETT  
PACKARD

LOGICPART



5  $\mu$ S/DIV

INVESTIGATE

50 NS/SA

X-0: 13.00  $\mu$ S

TTL

2.16 V

4.60 MHz

17:51

10/28/96

POSN

EDGE

LEVEL

X-T

$\Delta$ V

OFF

ON

FUNCTION

COMPARE



DC V



TIME/DIV

KEY HELP

SHIFT



HELP

←

X → T

→



O → X



RECALL

SAVE



ALL

PRINT

ACQUISITION

CONTINUOUS

ERASE

AUTO

SCALE

SINGLE

STOP



1



0

SYSTEM



CHANNEL 1



1M $\Omega$   $\approx$  13pF MAX 40V TO  $\perp$  ALL CHANNELS

CH 2

CH 1

CH 3

# **Introducing HP LogicDart: An Advanced Logic Probe For Today's Testing Needs.**

The HP LogicDart takes logic probe performance to a whole new level. Now, from a single probe tip, you can monitor logic activity, get timing diagrams, measure voltage and frequency, and even compare waveforms. Plus, the HP LogicDart's fine-tipped probe allows you to confidently test fine pitch circuitry.

## **Focus on your circuit.**

Because you can take multiple measurements from a single probe, you won't need to switch back and forth between instruments. So you can focus on your circuit rather than your tools.

## **Packed with powerful functions.**

HP LogicDart gives you 100 MSa/s sampling speed, tristate operation, 3-channel timing diagrams, waveform storage and recall, and a host of other features.

## **Priced within your reach.**

At only \$795\*, you can afford to have your own personal HP LogicDart. And so can everyone else on your team.

*\* U.S. list price.*

# Ten ways to apply HP LogicDart to your advantage.

Let's walk through a typical diagnostic project — turning on a new digital board — so you can see just how versatile the new HP LogicDart really is. Here are ten applications made faster and easier by HP LogicDart:

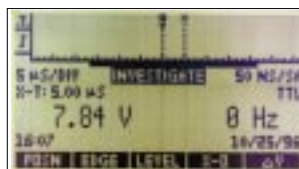
**1. Does the board layout match the design?** Use HP LogicDart to quickly verify that your board layout is hooked up the way you designed it. HP LogicDart's audible indicator makes the task even easier.



*Get more than just continuity; HP LogicDart also displays resistance.*

**2. Will the board go up in smoke?** Before you even turn on the board, use HP LogicDart to check the impedance on your voltage buses.

**3. Are the voltages correct?** Use HP LogicDart to check dc voltages. Is Vcc really 5 volts? Are all the power supplies at the right voltage?



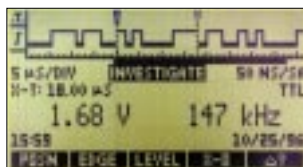
*Check voltages across the circuit with the Investigate function.*

**4. Are all the logic nodes working as expected?** Using the logic probe capabilities of HP LogicDart, you can quickly walk down a data path and make sure that things are as you want. Not only will you be able to see logic activity via the two LEDs, but you can also get audible feedback with the built-in beeper.



*Quickly check logic activity using the logic monitor LEDs.*

**5. What's the clock frequency, and is this clock chain working?** In the Investigate function, you can display voltage, frequency, logic activity and timing information simultaneously from a single probe. Frequency monitoring is especially useful when checking out clock signals or following through a clock chain.



*Instant readouts of frequency help you verify clocks and other key signals.*

## 6. What do these signals look like?

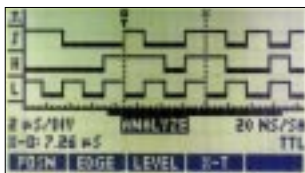
A tremendous advantage of HP LogicDart is its ability to display timing information. With an internal sample rate of 100 MSa/s, you'll be able to display timing diagrams with up to 10 ns resolution. And with zooming and panning, you'll get an exceptional window into your circuitry.



*HP LogicDart's zooming and panning help you dig down into the details.*

## 7. What happens here when that happens over there?

HP LogicDart's Analyze function really comes in handy as you get into more complex timing relationships. Independent triggering on each of the three simultaneously-displayed channels allows you to set up for edge triggering, level triggering, even "don't care" conditions.



*The on-screen markers make it easy to measure important timing relationships.*

**8. How does this new board compare to a known good board?** HP LogicDart has the ability to record timing information and later compare it to another acquired waveform. It will compare all 2048 points on both waveforms, then highlight any differences for easy analysis on your part.



*The compare mode shows you how the circuit under test compares to a known good circuit.*

**9. See tristate operation directly.** The HP LogicDart is unique among timing analyzers in that it shows high, low, and tristate conditions. Now you can really see what's going on with your circuit.

**10. Now, how do I get a hard copy of all this info?** To get a printout of any of LogicDart's screens, simply press PRINT. The built-in infrared link transfers the information to the optional printer.



*Hit the Print button, and HP LogicDart's optional printer delivers hard-copy of any waveform.*

## How well does HP LogicDart perform?

Of course, all this capability needs to be backed up with performance you can count on. That's the rest of the good news, as you can see from these specifications:

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### HP E2310A Advanced Logic Probe

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Logic families	TTL, 5V CMOS, 3.3V CMOS, ECL, USER 1, 2
Logic monitor	100 MSa/s sample rate ≥15 ns glitch detect LEDs plus beeper
Timing analyzer	3 channels, 100 MSa/s 2048 samples/channel 10 ns/div to 20 s/div
Triggering	Edge, pattern, edge/pat- tern combination, ≥15 ns glitch detect
DC voltage	±35.00 V (3½ digits) ±(0.5% of reading + 2 counts)
Frequency	1 Hz to 33.0 MHz
Resistance	0.01 kΩ to 200 kΩ
Continuity threshold	80 Ω min, 140 Ω typical
Time & date	Real-time clock
Languages	Selectable in English, German, French, Spanish, and Italian
Power	(3) 1.5 V AA alkaline or lithium batteries AC adapter included
Physical	8.9 x 19.8 x 3.8 cm (3.5 x 7.8 x 1.5 in) 12 oz (0.4 kg)

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## How can I get my hands on HP LogicDart?

Simply pick up the phone and call HP DIRECT at **1-800-452-4844, Ext. 5093**. It comes with a money-back guarantee, so there's no risk. Or check out our Web site at **<http://www.hp.com/info/LogicDart>** for complete specifications and an on-line demonstration.

So why wait? The secret to faster troubleshooting is right at your fingertips.

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### Ordering information

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**HP E2310A Advanced Logic Probe \$795.00**

Includes carrying case, probe kit,  
User's Guide, name plate,  
AC adapter, batteries, and  
Certificate of Calibration.

**HP E2320A Assembled probe  
with browser 60.00**

**HP E2321A Replacement probe 45.00**

**HP E2322A Probe accessory kit 75.00**

**HP 82240B Portable Thermal Printer 135.00**

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**LOGICDART**

Data subject to change.

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