Probing and Analysis Adapters

We offer probing and logic analyzer adapters for all SMT package types, as well as socket probes for DIP and PLCC. We are Agilent and Tektronix partners. In addition, we offer adapters to facilitate the use of in-circuit emulators and FPGA development systems.

Probing Adapters - Simplifies system verification

No matter how well designed a circuit is, there is almost always a need to hook up test instruments to it to verify function, look for bugs, or baseline performance. As IC packages become smaller and pin counts grow this becomes harder and harder. probing adapters are required to alleviate this de-bug problem. Many different types of adapters fall into the test and debug category. The common feature is that they bring the signals of an IC out to a format that is easy to interface with test and analysis equipment.

Emulator Adapters

When an engineer is developing a circuit that uses a microprocessor or micro controller, they need to test the software that will be running on the device. To do this they will often use an In Circuit Emulator (ICE).

This is a device that replaces the microprocessor in the circuit and allows the developer to step through their software and debug it in the environment it will be running in. An In Circuit Emulator usually consists of a box housing the emulation electronics, a cable to connect to a workstation, and another cable to an emulator pod which plugs into the developers circuit. It is the emulator pod that we are interested in. Most microprocessors and micro controllers come in two or more package types. Most emulator pods come in only one package type, usually through hole such as DIP or PGA. If an engineer has a PGA emulator pod, and a target board with a QFP land pattern on it, they need Ironwood emulator Adapter!

Logic Analyzer Adapters

In-circuit testing of surface mount packages such as BGA, PLCC, QFP, and SOIC presents the challenge of

reliably gaining access to signals for probing. Testing may require use of a high speed logic analyzer. To meet these challenges, Ironwood creates the most reliable, versatile probing systems for the Design and Development engineer. Ironwood's "Logic Analyzer Adaptors" are probing adaptor products that are designed for use with specific logic analyzer equipment. High speed analyzers such as one of the Tektronix TLA700 or Agilent 16000 series require vendor-specific interfaces and clean, controlled impedance signals.

Probing Adapters

Probing adapters primarily full fill the test and debug function for various Surface Mount package types such as BGA, QFN QFP, SOIC including SOJ and PLCC. We use the term "Carrier Adapter" to designate a modular system that plugs into an SMT emulation base, or foot, that is soldered in place of the IC being tested. Various probe board modules and socket combinations can then be plugged into the base as needed. "Probe boards" refer to components that provide test points, which are usually pins suitable for use with test clips and flying leads.

Ironwood's line of probing and testing adapters consists of the following products:

- *BGA Probing Systems (Carrier Adapters)*

Ironwood leads the industry in BGA probing systems. We have developed probing adapters for 0.75mm pitch BGA packages. Some of our BGA probing adaptors incorporate our own high performance GHz BGA sockets.

Most of our BGA probing systems are modular and are called "carrier adapters". Typically, a carrier adaptor system uses a BGA emulator base adaptor, a probe board, and a choice of socket interfaces ranging from an SMT "land socket" to an industry standard ZIF socket.

- *QFN Probing Systems (Carrier Adapters)*

Ironwood leads the industry in QFN probing systems using patented technology. We have developed probing adapters for 0.4mm and 0.5mm pitch QFN packages. Some of our QFN probing adapters incorporate our own high performance GHz QFN sockets.

- *Socket Probes for DIP and PLCC*

Our socket probe adapters provide connections for test equipment to in-circuit DIP and socketed PLCC packages. The DIP socket probes are available with 3-level wire wrap pins.

- *PLCC Probing Adapters*

PLCC systems may be probed by using a surface mounted carrier adaptor system or one of Ironwood's two clip-on probe adaptor systems. We also offer PLCC socket probes that provide access to in-socket signals.

- *QFP Probing Adapters*

Our QFP carrier adaptors consist of an SMT emulation base and a probe board that plugs into the base. Options for specifying ZIF sockets, production sockets, or surface mount lands are generally available for probe boards. All of our QFP probe boards may be specified to provide test lands, rather than test pins.

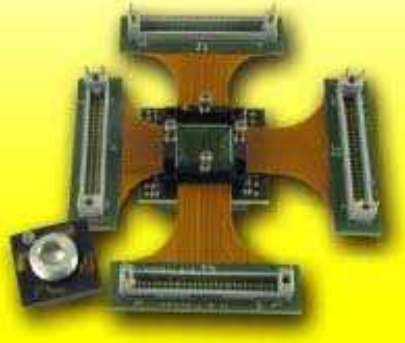
- *SOIC Probing Adapters*

Our SOIC probing adapters include an SMT emulation base and a probe board that plugs into the base. Open top ZIF sockets or surface mount land options provide connections to the device. Our SOIC probe boards may be specified to provide test lands, rather than test pins.

New Innovative Technologies

Heat Sink compression screws for GHz Socket

Ironwood Electronics' heat sink screws are constructed with 7075 aluminum and optimized using fin design with maximum surface area per simulation results from Qfin software. In addition to the heat dissipation, the heat sink screws provide compression mechanism for the device. The heat sink screw family consists of 4 different types with a cross reference to corresponding GHz socket family

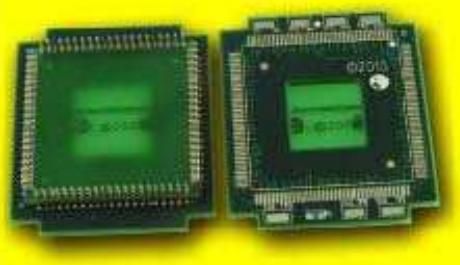


Multi-Level GHz Bandwidth Socket for Memory Probing

Ironwood Electronics offers high performance BGA sockets for high speed probing of the memory chip and debugging of the system during the design phase. The contactor operates at bandwidths up to 10GHz with less than 1dB insertion loss. Installation is quick and easy with a compression mechanism.

Stacked GHz Bandwidth Socket for POP (Processor and Memory)

Ironwood Electronics offers double stacked sockets addressing high performance requirements for testing processor and memory simultaneously. The contactor is a stamped spring pin with 26 gram actuation force per ball and cycle life of 500,000 insertions. A known good memory attached to the socket lid allows processor screening quick and easy by testing both sides simultaneously.



Device Converter allows reliable conversion to upgraded modules

Ironwood Electronics offers device converters allowing upgraded system programmable devices to be used in the previous generation system boards. These device converters can be soldered directly onto the SMT pads using standard solder methods. Ironwood Electronics device converter consists of footprint and pin out conversion multi layer PCB with a true j-lead adapter for SMT processing.

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