Results
Through
Innovation

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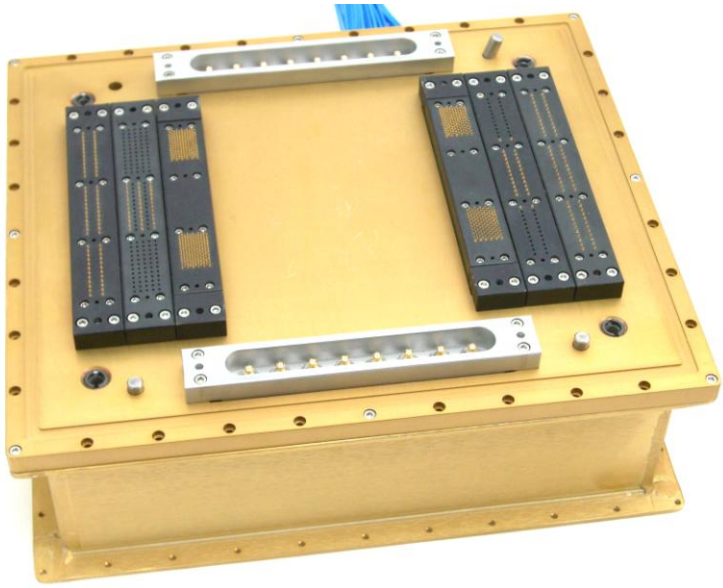
PRELIMINARY: OMNI DOCKING FIXTURES

OVERVIEW

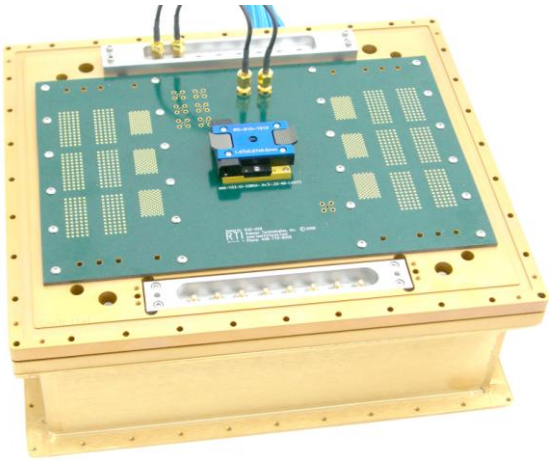


The OMNI Docking Fixture is a unique patent-pending interconnect solution for test and measurement applications in failure analysis and engineering applications as well as low to medium volume production. Its highly flexible modular interface allows the same test equipment to be used for a wide variety of devices or modules without disconnecting and rerouting cables. It is designed to Interface to "rack and stack" equipment, bench test equipment, as well as mixed signal test systems.

The OMNI Docking Fixture provides fast and reliable reconfiguration for most mixed-signal semiconductor devices, hybrids, modules, and small printed circuit boards using a modular approach to mix RF, standard digital, high-speed digital, and power signals. The base unit is easily upgraded with new modules when requirements change.

The OMNI Docking Fixture allows the user to use one standard test set up for multiple performance or DUT boards that are easily interchanged. The base unit also allows the user to use RTI "patch panel" assemblies that eliminate the need for custom DUT board designs.

The OMNI Docking Fixture uses high performance pogo pins and RF connectors to Interface to the DUT boards. RTI offers a variety of pogo pin Interface Modules for the OMNI product line that Interfaces to most any cable connector.



PERFORMANCE (DUT) BOARDS

The DUT (or performance) boards are designed for each type of UUT (unit under test), and are very easy and fast to interchange. They consist of a custom printed circuit board (the DUT board) mounted on a frame for rigidity.

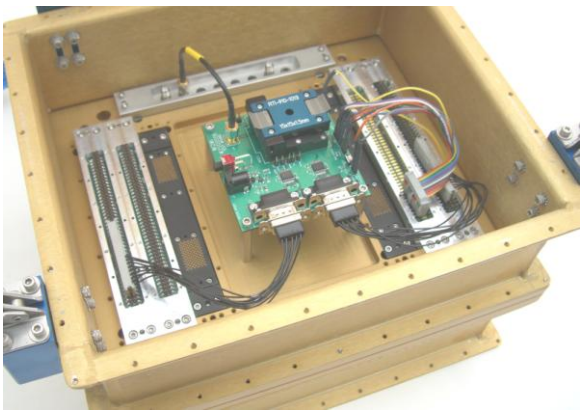
The example shows a BGA test socket and DUT board mounted on the rigid frame, and attached to the base unit. The DUT board frame is aligned using three alignment pins and held In place using four thumb screws (not shown). The DUT board frame will also allow the optional RF shield to be used.

RTI can design your performance boards, or you can design them yourself. The DUT board can have the RF connectors mounted on the back side of the DUT board or cabled to the base unit as shown In the example.

PATCH PANEL ASSEMBLIES

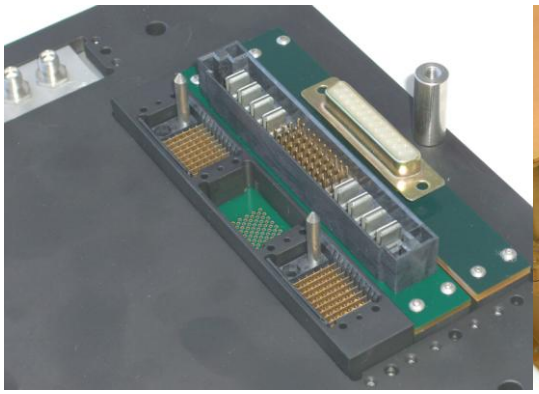
The user can also use our uniquely designed patch panel frame Instead of designing a custom DUT board. The patch panel approach allows the test engineer to connect an evaluation PCB or module to a universal frame.

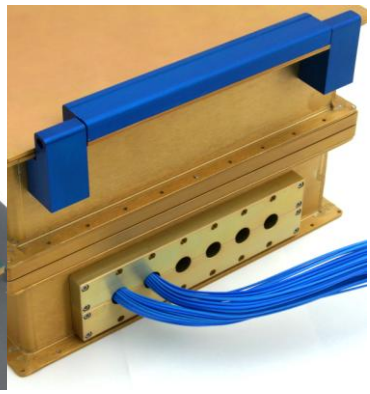
The frame holds Interfaces modules that make contact to the base fixture's pogo pin modules. The example shown uses headers to connect to the evaluation board. The evaluation board shown uses an RTI test socket and the universal frame also has the RF shield attached.



PATCH PANEL ASSEMBLIES

The OMNI Docking Fixture shown on page one uses a typical configuration, with two RF modules (top and bottom), two high-speed digital modules (toward center left and right), and four standard digital/power modules (toward edges left and right). Up to a total of eight modules can be used with a single base unit. The location of the modules Is user defined, and any module can be placed In any of the 8 locations. (RTI also has other fixtures with different number of modules)





Digital, RF, and power cables attach to the bottom side of the Interface modules mounted In the base fixture. The cables are routed to the test equipment through an opening in the backside of the base. Optional RF shielding can also be provided (as shown).

RTI offers a wide variety of digital connectors, high current power modules, and RF modules. RTI will also custom design modules to mate to almost any cable connector.

STANDARD RF MODULES

RF modules for the OMNI Docking Fixture are available with from one to eight SMP female bulkhead to SMA female connectors (rated up to 38Ghz). The mating unit can be either a male SMP unit mounted to the DUT board a Patch Panel RF Module.

DIGITAL MODULES (LOW-SPEED)

Standard digital modules are fully assembled with connector(s) and a pogo pin block. Only the pogo pins required for connections are loaded in the pogo pin block. The pogo pin blocks use several standard patterns to minimize the complexity of the DUT board design and the interface modules on the patch panel frames. An aluminum support block is used to prevent any flexing of the module, and in many cases also provides a cable strain relief. The modules are easily replaced for repair or up grades when requirements change.

DIGITAL MODULES (HIGH-PERFORMANCE)

The high speed Digital Module is designed to accept up to three Molex 74059 connectors. Up to 60 signal pins per connector (10 rows x 6 pins = 60) can be used for a total of 180 signal pins per module. The cables mate directly with several standard test systems Including the Credence D10 series.

RTI also offers a high-speed 50-ohm coaxial ribbon cable interface with a total of 96 signal pins. These cables are designed to Interface directly to the module pogo pins and provide excellent signal Integrity.

OPTIONS and TURN KEY SOLUTIONS:

Optional RF shielding can be used with both the DUT boards and patch panel frames. Forced air heating and cooling is also available for many applications. RTI can also supply base units in other configurations (more or fewer modules), and also provide cables and custom modules to meet most any application. RTI can also provide complete turnkey solutions including the base fixture, cables, DUT board (or patch panel assembly), and test socket.