



Interconnect Solutions & Services

Connecting to a PXI based test system

How to achieve the best technical solution

And

Reduce the cost of test

What is Mass Interconnect?

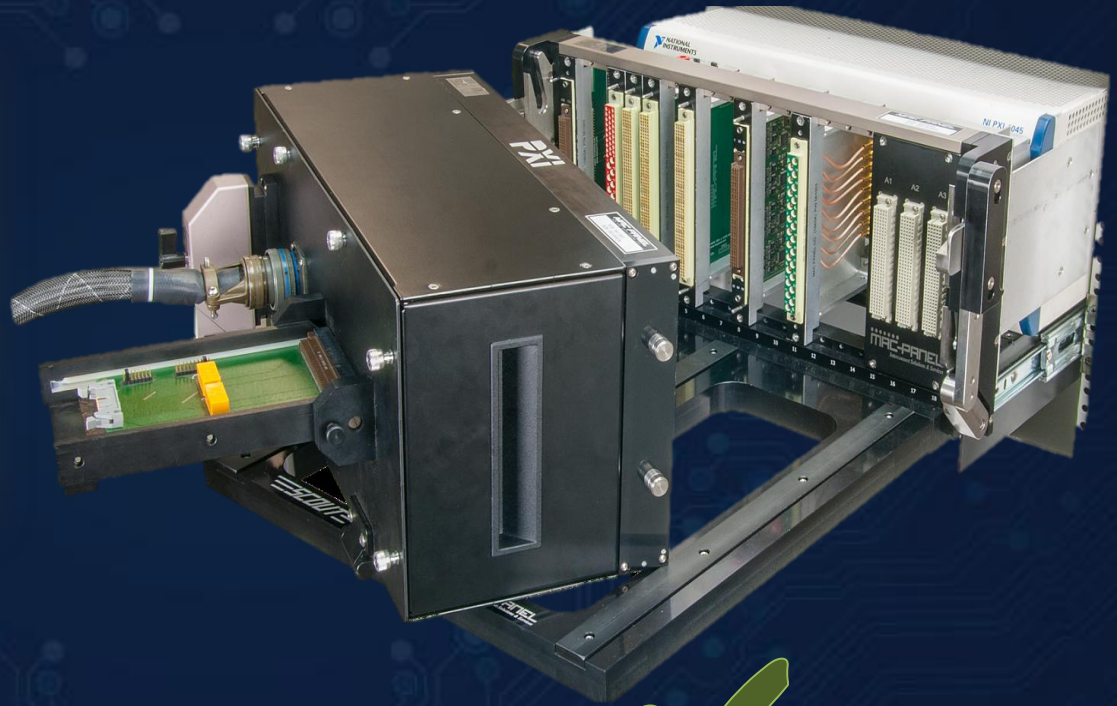
There are many ways of connecting to a test system



Cabling is sometimes efficient for the initial development stage

What is Mass Interconnect?

Mass Interconnect pulls all the test resources into one modular connector



What is Mass Interconnect?

Components of a typical system:

DEVICE UNDER
TEST SIDE

ITA

Interchangeable
Test Adapter

ITA module

Enclosure

Cabling to
DUT –
device
under test

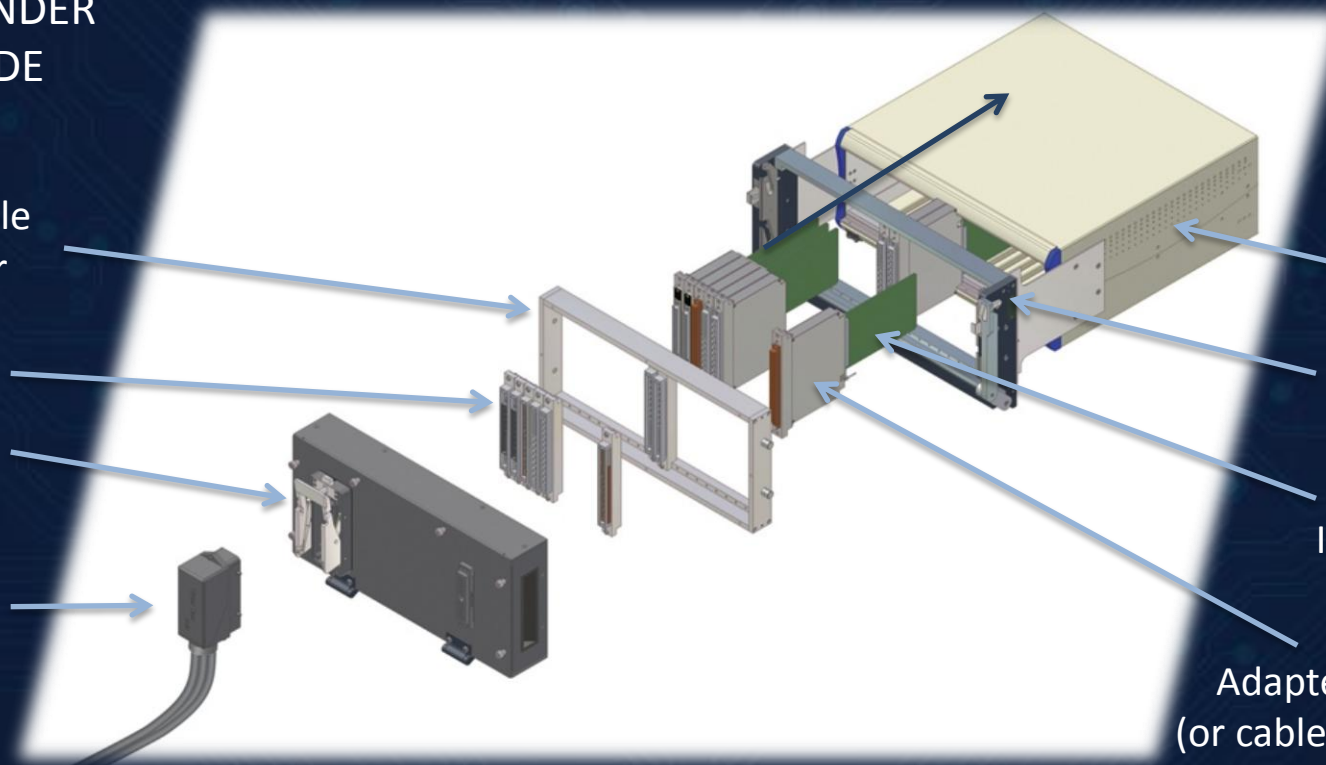
SYSTEM SIDE

PXI Chassis

Receiver

PXI
Instrument

Adapter with module
(or cables from module to
instrument)



What is Mass Interconnect?

- Receiver
 - Instrument side of the mass interconnect
 - Attaches to the chassis and rack (if used)
- Receiver modules
 - Take the signals from the instruments to the receiver
 - Specified according to the density, bandwidth, current, or special-purpose requirement of the signals being passed through them.



What is Mass Interconnect?

- Adapter

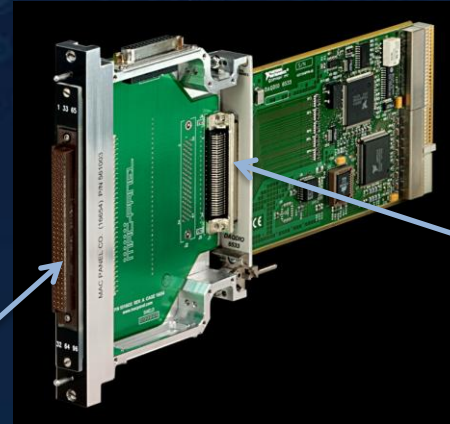
- Connects receiver module to PXI instrument
- PCB or flex circuit or short wire

- Or

Receiver module

- Cabling

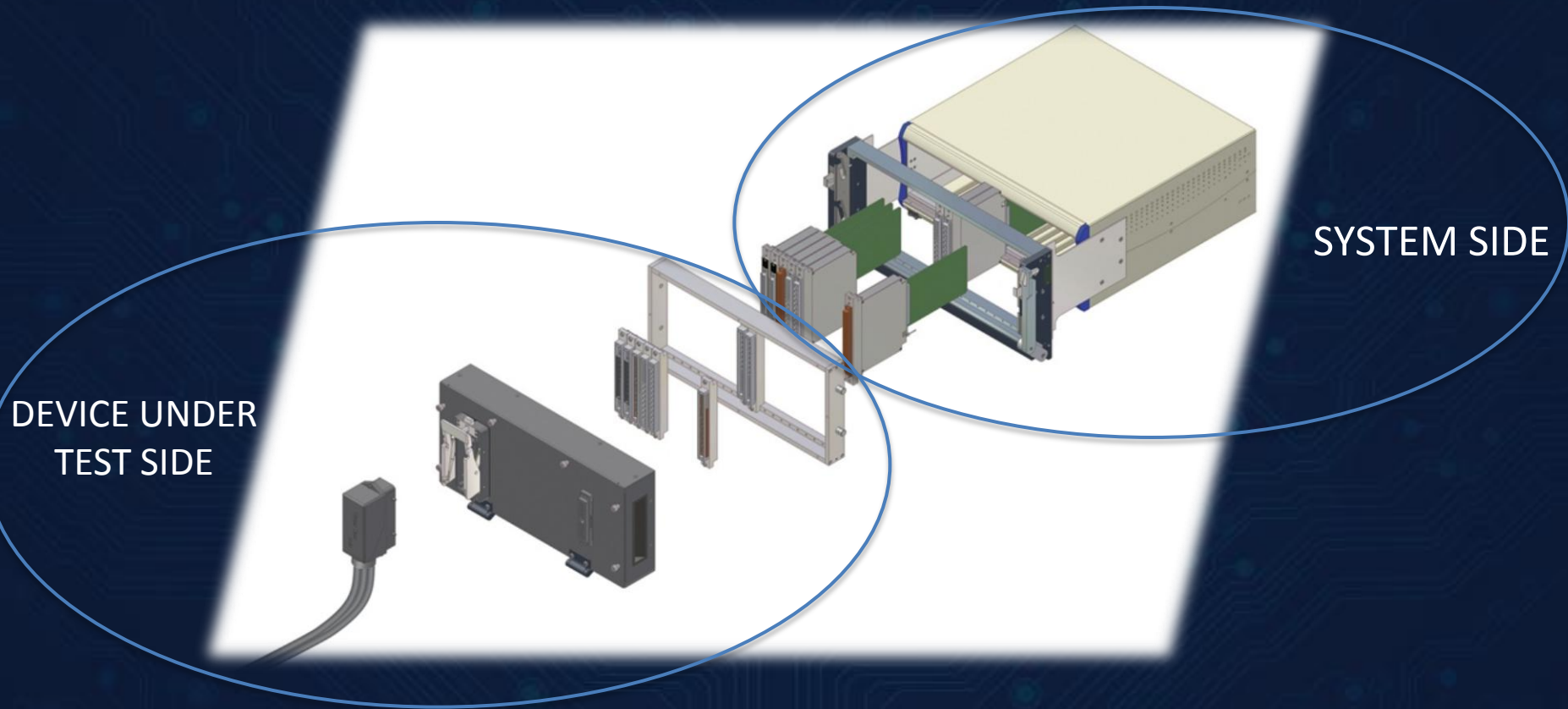
- Connects receiver module to PXI instrument



PXI instrument
connector



What is Mass Interconnect?



What is Mass Interconnect?

- ITA
 - Interchangeable Test Adapter
 - Often, many ITAs are used with one receiver
- ITA modules
 - Mate directly with the receiver modules
 - Use a variety of male contacts dependant on application



Why Use Mass Interconnect?

✓ Cleaner connection system

Multiple PXI
instruments
in chassis



One modular connector

Connect to the entire system,
including non PXI items, in one
operation

Why Use Mass Interconnect?

✓ Protect the instrument connectors



Instrument connectors are often rated
at less than 500 cycles

Cost to replace = cost of instrument
\$500? \$5,000?
Plus significant loss of production?



Mass interconnect connectors are
rated at 20,000 cycles

Cost to replace = cost of connector or
cost of individual contact
\$300 maximum or as little as \$0.80

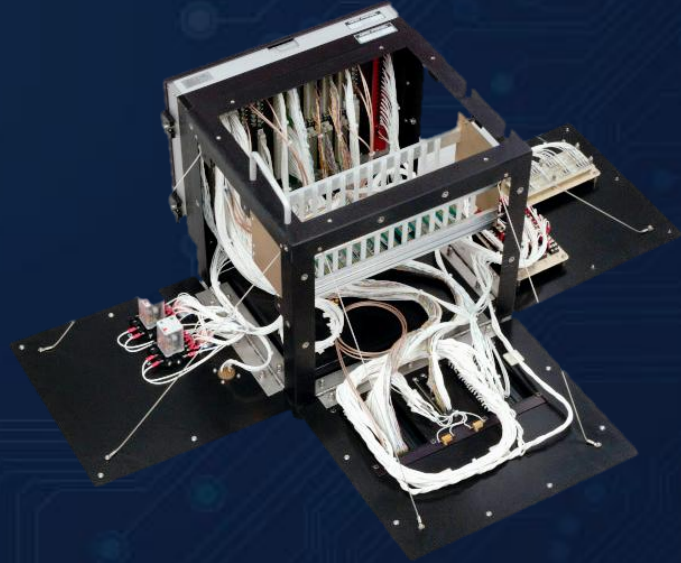
Why Use Mass Interconnect?

✓ Enables user to easily swap from one device to another

Different adapters for different tests

From simple to complex

Adapters for self test can dramatically simplify testing the test system



Why Use Mass Interconnect?

- ✓ Improves signal integrity for a cleaner, more reliable, solution
- ✓ Can dramatically shorten the time taken to turn a development test station into a production unit

Why Use Mass Interconnect?

- ✓ Global deployment of test systems

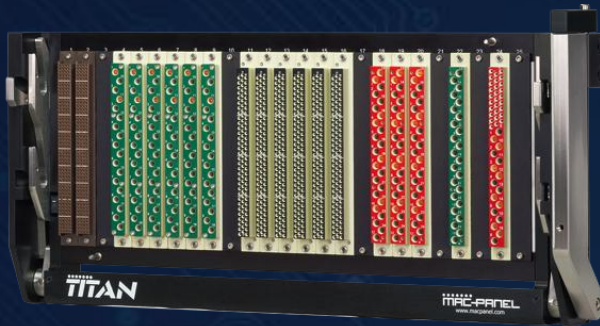


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2 Styles of Mass Interconnect

Traditional



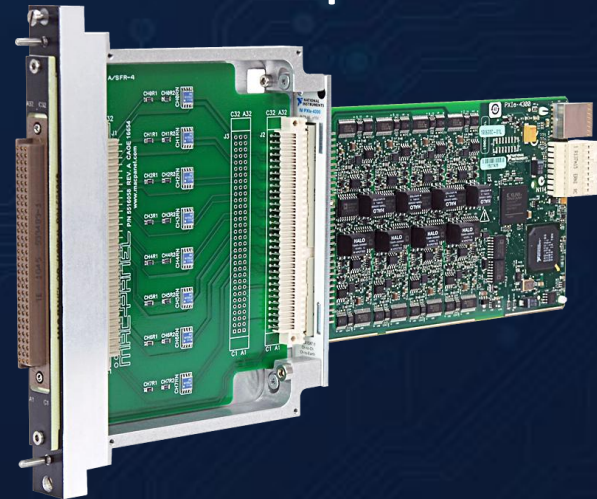
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Pull Through



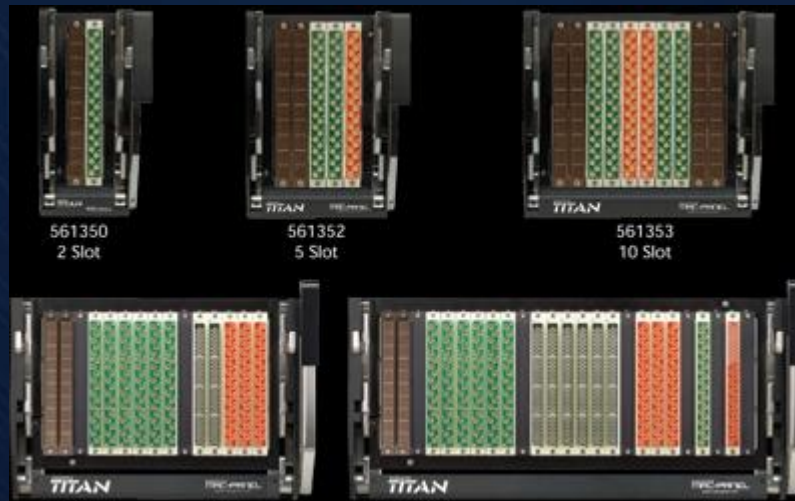
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Traditional Mass Interconnect

- ✓ Uses a mass interconnect receiver
- ✓ Attaches to the test system with cables
- ✓ Good for smaller systems
- ✓ Very adaptable
- ✓ Can be used with all test platforms

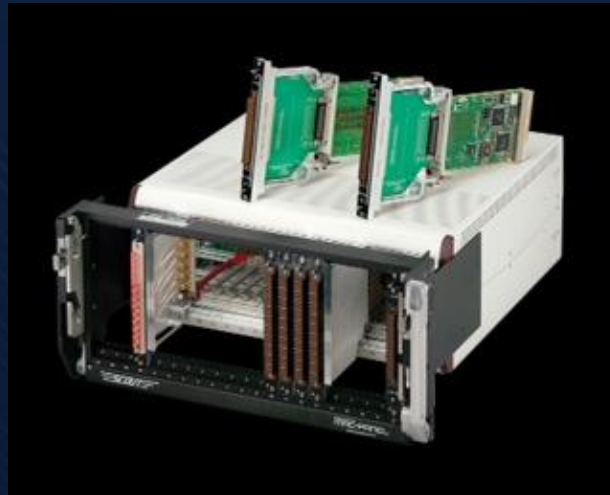
MAC Panel
TITAN



Pull Through Mass Interconnect

- ✓ Uses a mass interconnect receiver
 - ✓ Can be used with every PXI chassis currently available
- ✓ Attaches to the test system with adapters
 - ✓ high performance pcb, flex or short cable
- ✓ Outstanding for almost every PXI test application

MAC Panel
SCOUT

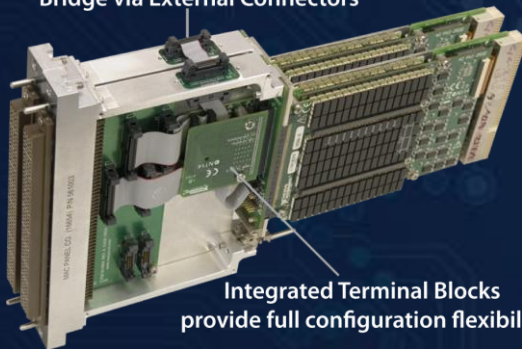


Pull Through Mass Interconnect

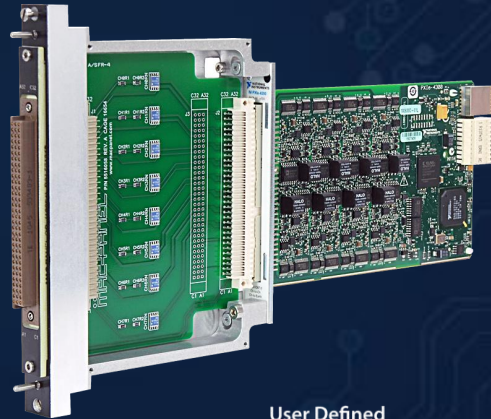
Benefits of SCOUT Pull Through Technology

- ✓ **Performance** – SCOUT connections always have superior electrical performance
- ✓ **COTS** – over 650 PXI instruments supported with the list growing every week

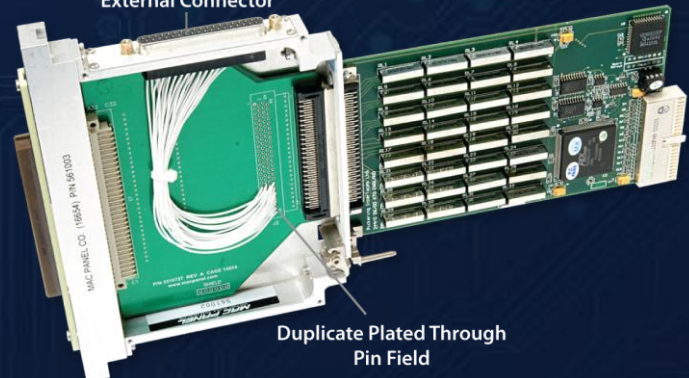
Bridge via External Connectors



Integrated Terminal Blocks
provide full configuration flexibility

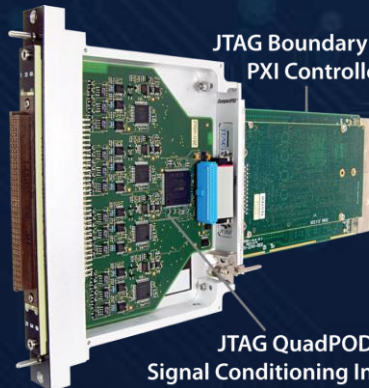


User Defined
External Connector



Duplicate Plated Through
Pin Field

JTAG Boundary Scan
PXI Controller

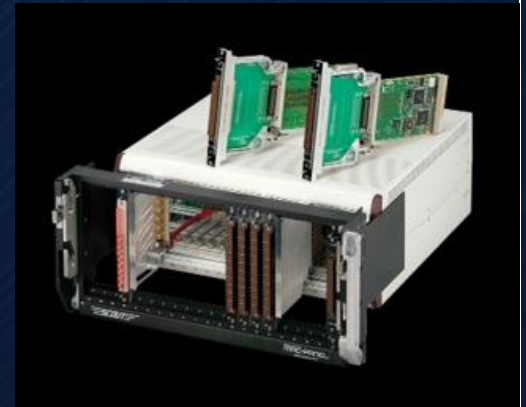


JTAG QuadPOD
Signal Conditioning Interface

Pull Through Mass Interconnect

Benefits of SCOUT Pull Through Technology

- ✓ **Simplified Integration and Maintenance** – a PXI instrument can be removed and replaced in minutes with no risk of interfering with other instruments or connectors
- ✓ **Reduced Cost of Test** –
 - ✓ Lower Engineering Costs – no system side cabling to design
 - ✓ Much Faster System Build Time – most items are COTS
 - ✓ Build time can reduce from weeks to days
 - ✓ Significant reduction in maintenance and upgrade costs
 - ✓ Less wire = less problems



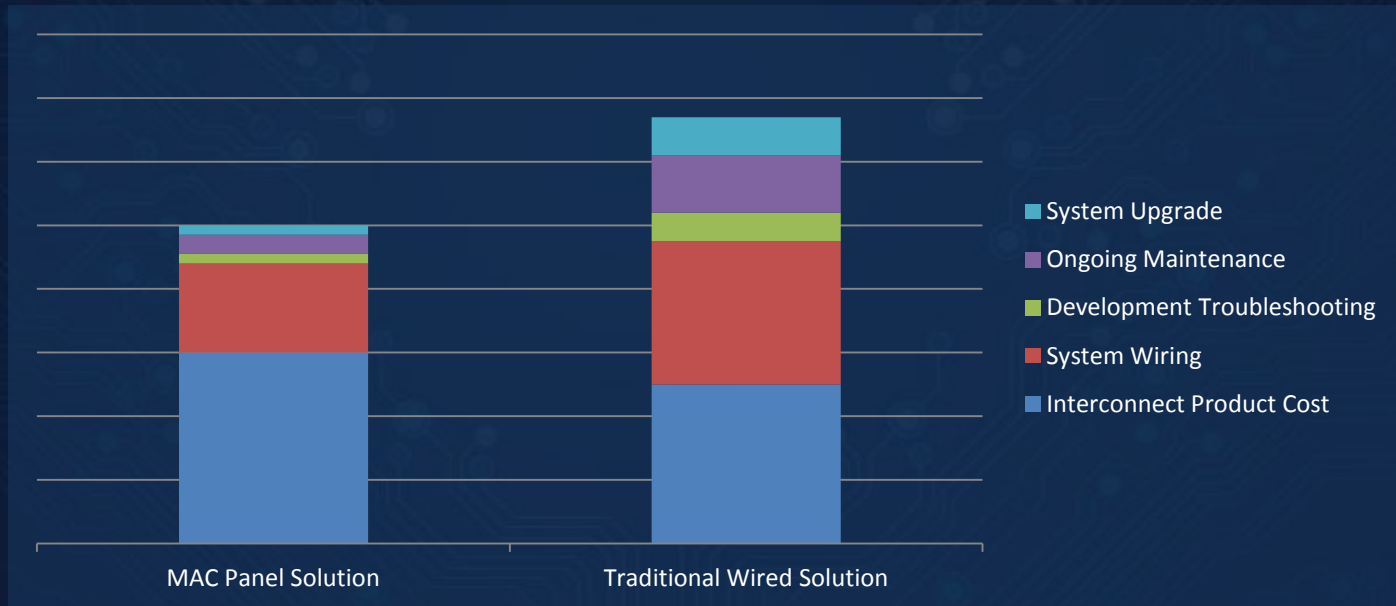
Pull Through Mass Interconnect

Example of a recent SCOUT system:

A US military customer compared the cost of 2 similar test systems, one with a conventional wired mass interconnect and the other with **SCOUT**

This customer **saved over \$30,000** in the first 3 years and expects the system to run for at least 5 more years

Cost of
System
over 3
years



SCOUT Customers include the following:



LOCKHEED MARTIN



EADS



NORTHROP GRUMMAN





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