

SITAL
TECHNOLOGY

/ Company Profile

Mission **and Vision**



Safe and Secure **Databus Connectivity**

Robust and reliable communication has been the foundation of every technological system. Today more than ever, we depend on machines to work securely and reliably.

Sital Technology makes **smarter** high reality data bus communications.

AeroSpace Solutions



/// Databus Interfaces

Next generation hardware and software products for avionics databuses

/// Test Equipment

Advanced testers, couplers and software for test bench and field testing requirements

/// Network Security and Reliability

Cutting edge cyber security and physical network health monitoring for spaceborne, airborne and automotive platforms

TRUSTED PARTNER

60+ **15,000+** **100+**

Customers

Product Shipments

Projects

20

YEARS

OF

EXPERIENCE

ISO CERTIFIED

DO-254

ITAR

Customer Focused



NASA LRO
Sital hardware IP
radiation hardened
communication lines



F-16
Sital hardware IP for
mission computer
and weapons bus
communication lines



F-15
Sital hardware IP for
mission computer
and weapons bus
communication lines



**India Nuclear
Power**
Sital hardware IP for
high bandwidth
reactor
communication



Iron Dome (MDS)
Sital hardware IP for
high bandwidth mission
computer
communication



Magic Wand
Raytheon / IAI
advanced Long
Distance
Interception System



Radar System
High bandwidth
interception radars



SPICE
GPS guided tactical
warheads
communication bus



**Tactical
Helmet**
Helicopter tactical
helmet
communication bus



**Airborne
Sensor Unit**
High Frequency I/O
for military and
industrial

Proud **to Serve**



▸ Databus Interfaces

Communication Products

Protocols :

MIL-STD-1553 | EBR1553 | ARINC825 | ARINC 429

Solutions :

FPGA IP Cores

PCI, PCIe, USB, VME, PC104 Interface Cards

Transceiver Design IP

Transformers

RTOS Drivers and Software



MIL-STD-1553 Node Optimization

MIL-STD-1553B components

Software	Digital Core	Transceiver	Transformers
BRM1553	DES1553XVR	TRA1553SIT	
<p>ANSI C API library</p> <p>Test and Simulation on Windows and Linux</p> <p>Production device driver availability for VxWorks or Linux</p> <p>Full compatibility with DDC MiniACE API</p> <p>Optional Support for DO-178 Certification</p>	<p>Multi Role Support for Bus Controller, Remote Terminal and Monitor</p> <p>VHDL Netlist delivery</p> <p>Support for ANY FPGA family</p> <p>Special Edition for Space Grade requirements</p> <p>Support for DO-254 Certification</p> <p>Compact in Size</p> <p>Provided with Full Validation and Simulation Capabilities</p> <p>IP add-ons for Physical Wiring Fault detection (P-TDR) and cyber security fingerprinting</p>	<p>1553 Transceiver Design IP from discrete COTS components</p> <p>Eliminate single source dependency</p> <p>Significant cost reduction compared to transceiver chips</p> <p>Validated for Remote Terminal functionality by 3rd parties</p> <p>Improved power utilization</p> <p>Improved heat dispersion</p>	<p>1553 Transformer 1:1.79 or 1:2.5 ratios</p> <p>Singe or Dual transformer packaging</p> <p>Reduced pins for improved reliability</p> <p>Airborne and tested</p> <p>Enables massive cost reduction</p>

Sital's 1553 Approach

Components :

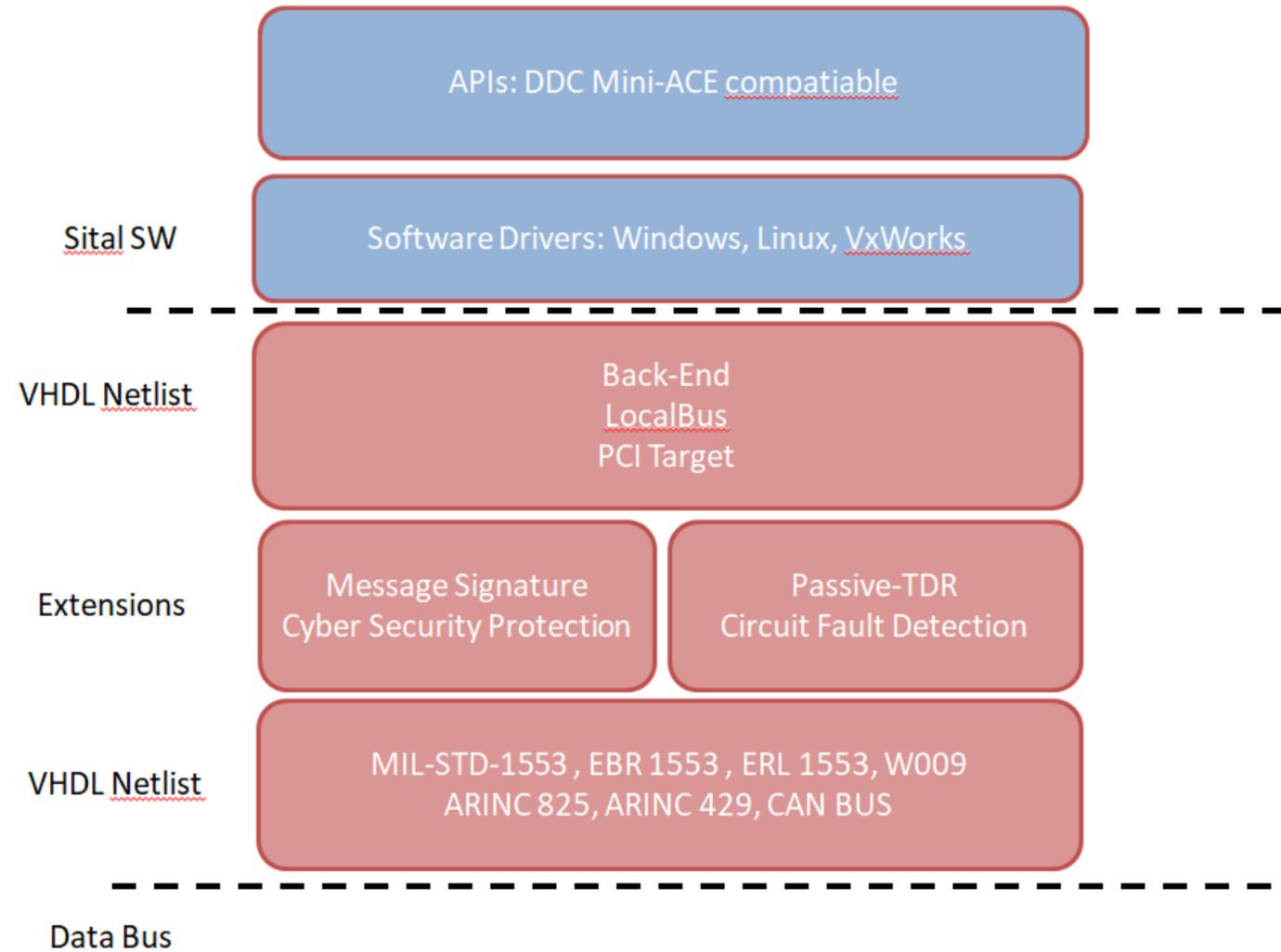
- Digital FPGA Agnostic IP Core
- MIL-STD-1553 Transceiver Design IP
- High Reliability Transformers
- Cross Platform Software API libraries and Support

Advantages :

- Reduce Single Source Dependency
- Reuse Software Assets
- Optimize space, power and heat disposal
- Significantly Improve Costs

Smart :

- Native detection of wiring circuit failures
- Message authentication cyber security



Available For Evaluation
[Click Here](#)

AVIONICS FPGA IP Core

Flexible :

- Multiple protocols
- Various Back-end
- Any CPU clock
- Supporting all popular FPGA providers

Robust :

- Passed Validation by 3rd verification houses
- Airborne and spaceborne
- DO-254 Compliant Versions

Smart :

- Native detection of wiring circuit failures
- Message authentication cyber security



Full Turnkey 1553 Solution



MIL STD 1553 Transceiver IP

Validated 1553 Transceiver design IP, for use with COTS components

[Product Brief and Documentation
Click Here!](#)

1553 Single/Dual Transformers

Lowest Cost Transformers
1.79 or 2.5 transformation ratios

[Product Brief and Documentation
Click Here!](#)



MIL-STD-1553/EBR 1553 Test Equipment



Couplers

Substantially improve test bench cost, space and functionality

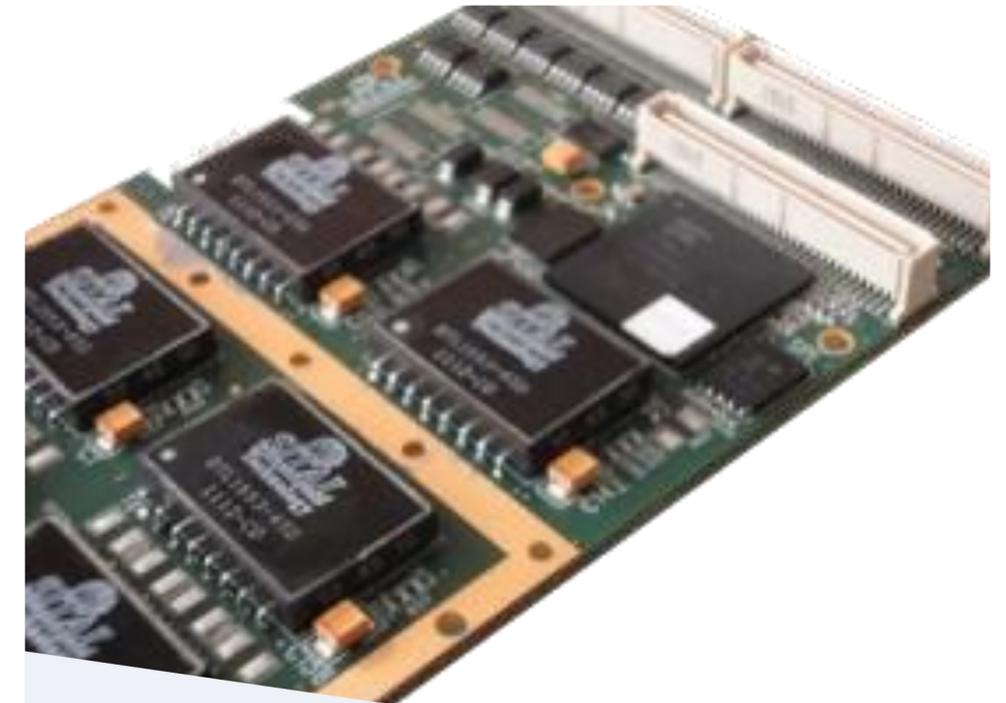
[Product Brief and Documentation Click Here!](#)



MultiComBox

Multi channel and protocol tester for development and test bench systems

[Product Brief and Documentation Click Here!](#)



Tester Cards

cPCI, PCI, PCIe, VME and PC104 tester cards

[Product Brief and Documentation Click Here!](#)

MULTICOMBOX



1553/EBR USB Tester

MultiComBox

- Small and lightweight form factor
- MIL-STD-1553, EBR 1553, W009 support
- BC/RT and MultiRT modes
- 12 x RS-485 channels support
- Error injection simulation
- Windows / Linux drivers and APIs
- Complementary Windows GUI software
- EU support
- Wiring fault detection capabilities for shorts, opens and complex intermittent disconnects.

/ Coupler



1553 Coupler

1553 Coupler

- Dual , 3 stub, 1553 coupler
- Industries smallest 1553 Coupler
- Internal Termination (no need to add external bus terminators)
- Optional configurations:
 - 3 stubs with termination for bus A and B
 - 6 stubs with termination for a single bus
- Low mechanical profile to fit in PCI or cPCI casing
- All connections and termination via a single D-type connector
- LED indicators when bus termination is engaged

Smallest Profile Lowest Cost

Wiring Fault Detection – an expensive Problem



The Problem

US Navy Reports:

- 1,101 mission aborts / year (401 in-flight aborts)
- Average 2 in flight fires/month
- 7.3 maintenance hours / flight hour due to wiring systems, alone
- During a 10 year period, 6 aircraft LOST due to electrical failure
- Effectively average 78 non-mission capable aircraft / year due to wiring
- This information is known to be underreported

The Challenges Facing U.S. Navy Aircraft Electrical Wiring Systems,

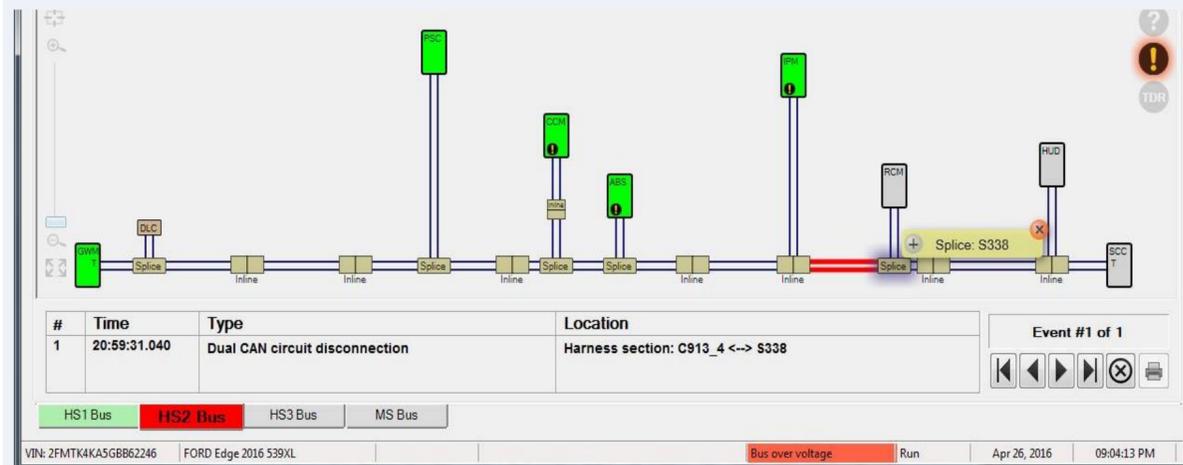
Jerome Collins, 9th Annual Aging Aircraft conference,

The Complexity

- Intermittent “come and go” disconnects
- Testing in live systems
- Location and orientation

Wiring Fault Detection

Advanced Maintenance
Passive TDR



- Intermittent and persistent wire faults, shorts and open
- Reduce “No Trouble Found”
- Proactive maintenance to save massive costs
- Supporting CAN, ARINC825, MIL-STD-1553
- 99% location accuracy with self calibration mode
- Network topology creation software for easy aircraft maintenance
- Multiple form factors:
 - BUFFALO / Grip 2.0
 - Hardware chip
 - FPGA IP



Wiring Fault Detection Case Studies



Automotive

Networks :

CAN , CAN-FD

Product :

BUFFALO

Use Case :

Final Assembly Line

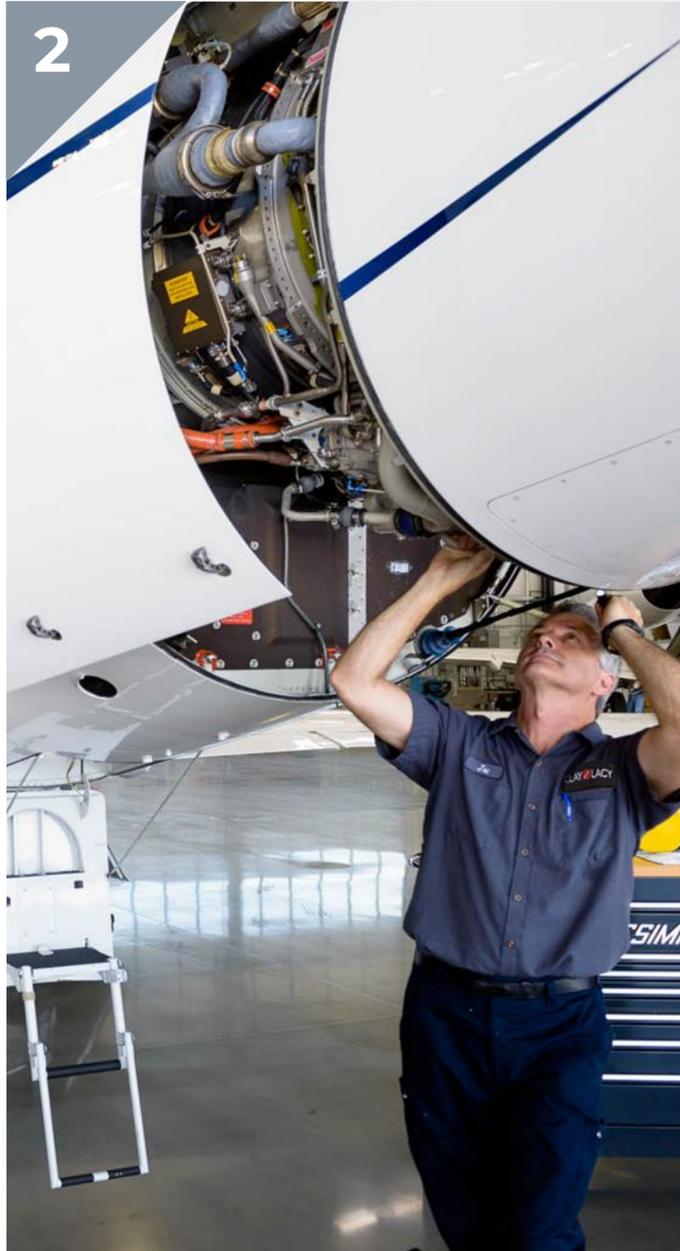
Results :

Reduce collateral damage,
shorten repair time

2



Wiring Fault Detection Case Studies



Aerospace

Networks :

MIL-STD-1553B , ARINC825, ARINC429

Product :

BUFFALO-I

Use Case :

Field Engineering

Results :

Reduce collateral damage,
shorten repair time, increase
aircraft worthiness



Wiring Fault Detection Case Studies



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Aerospace and Automotive

Networks :

MIL-STD-1553B , ARINC825, ARINC429, CAN , CAN-FD

Product :

FPS – Embedded Module

Use Case :

Embedded within aircraft avionics unit

Results :

Intermittent Wiring Disconnect detection, reduce ad-hoc repairs, provide early stage wire prognosis, reduce No-trouble-found scenarios

Wired Network Communication Lockdown



The Problem

Legacy Mission Critical data buses are not designed with security in mind

- Modifying RT into BC modes via software
- Man in the middle attacks
- No transmitting source identification
- ARINC825, MIL-STD-1553/EBR 1553 and any other multi-drop bus architecture is vulnerable
- Multiple reports on attacks on commercial and military aircrafts.
- Threats on strategic infrastructures: power plants, airports, railways

The Complexity

- Supplier governance - multiple Tier-1 Sources for different avionic systems
- Insufficient bits for encryption
- Expensive CPU/RAM resources boost costs for OEMs

Cyber Protection

Real-time validation for all messages :

MIL-STD-1553 | EBR1553 | ARINC825 | ARINC 429

Applicable for any multi-drop bus

Solution :

Detect and Prevent unauthorized transmission

Prevent DoS attacks on critical communication buses

No need for any CPU/RAM resources

Software independent

Seamlessly integrate with any Sital FPGA IP Core

Compact VHDL Netlist securing all nodes on the bus



Product Video Demo

Fill out an information inquiry form and type "FPS Avionics VIDEO" in the open text area
[Click Here!](#)

Experience More

