Universal Switching Corporation

Specification Sheet BS1553F-001
High Performance Modular Bus Switch Matrix
System BS1553F & BS1553FX
>50Mbps from 8x8 to 64x64 - 5RU

May 2021

General

Automating "patch panels" is a proven & effective method to reduce facility operating costs by increasing efficiency, productivity, repeatability, and reliability. It can be used to route/switch 1553B signals, '422 clock/data or 4-wire Kelvin ATE testing. Our BS1553F(X) unit is a modular high density 5RU automated patch matrix that can be configured in symmetric or asymmetric configurations from 8x8 to 64x64 within the chassis.
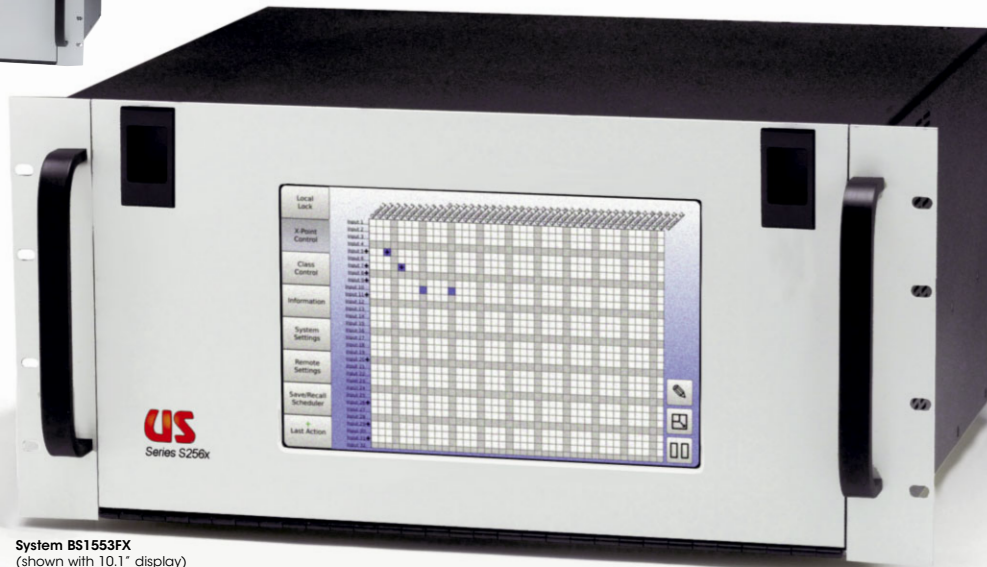
Designed specifically for a passive differential signal path, high reliability mechanical relay technology is used with DC coupling (no transformers). Each input and output is self-terminated (center pin to inner shield) when not selected to be patched. You can specify 78 ohm or 100 ohm to match your requirement. The termination can be automatic, or user controlled. The internal stub-breaking matrix design provides a nearly "transparent" 1553B environment to allow for accurate bus simulations.

Fully populated, this 5RU unit contains a total of 64 inputs and 64 outputs where each input can be connected to any one of the 64 outputs. If you only need a maximum of 32x32, there are options to reduce costs. The BS1553F**X** is the same but has a 10.1″ display (**Option X**) and additional front panel features.

The unit comes standard with redundant hot-swap power supplies, and is available with either single or dual (redundant) hot-swap C3 controllers installed. The C3 controller features 10/100/1G Ethernet (LXI certified) and multi-serial (RS-232C/422A/485) control ports, plus a hard-contact alarm port. Contact your local sales representative or the factory for assistance.

Applications

- 1553B Bus simulation connectivity
- Aircraft test lab facilities
- Clock and Data routing
- Differential 422 routing (1:1)
- 4-Wire Kelvin resistance measurement
- Data recorder data management

Features

- Passive high reliability Tri-Stage design
- Modular I/O for easy expansion & maintenance
- LED indicators adjacent to each port
- Flexible configuration: 8x8 up to 64x64 (or larger)
- Multiple units can be grouped to configure 256x256
- Ultra-high density Tri-Stage design
- DC to >50Mbps throughput
- Hot-swap module technology
- Menu driven color touchscreen display (4.3″ or 10.1″)
- Available with either single or dual CPUs
- 10/100/1G Ethernet and Serial control port
- Includes TCP/IP, SNMP, SNTP, IPv4 & IPv6 & browser
- Removable microSD card for secure environments
- Rugged 5RU high aluminum chassis (8.75″)
- International AC power range
- Self-monitoring hot-swap plug-in supplies with PFC
- Integrated rack mount design (19 inch)
- Chassis slide mounting hardware (slides not included)
- Certified CE EN61010 (LVD)
- Compatible with RouteWarePRO control software

Download our Monitor & Control software **RouteWarePRO** for a FREE 30-day trial today!

System BS1553F
(shown with 4.3″ display)

System BS1553FX
(shown with 10.1″ display)

Made in the USA

BS1553F-2021-05

Model Number Assignment

B S 1 5 5 3 F X - i o - X Z

Series Number
(add "X" for 10.1" display)
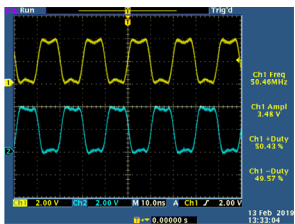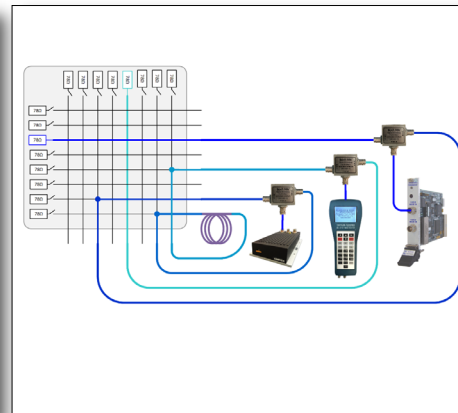
Input Modules
(1 to 8)

Output Modules
(1 to 8)

I/O Switched Termination *
7 = 78 ohm
1 = 100 ohm

1 = Single CPU
2 = Dual CPU (redundant)

* Termination can be set to automatic, or
user has control of each individual port. No
termination is a programmed event.

1553B Bus Simulation - Physical
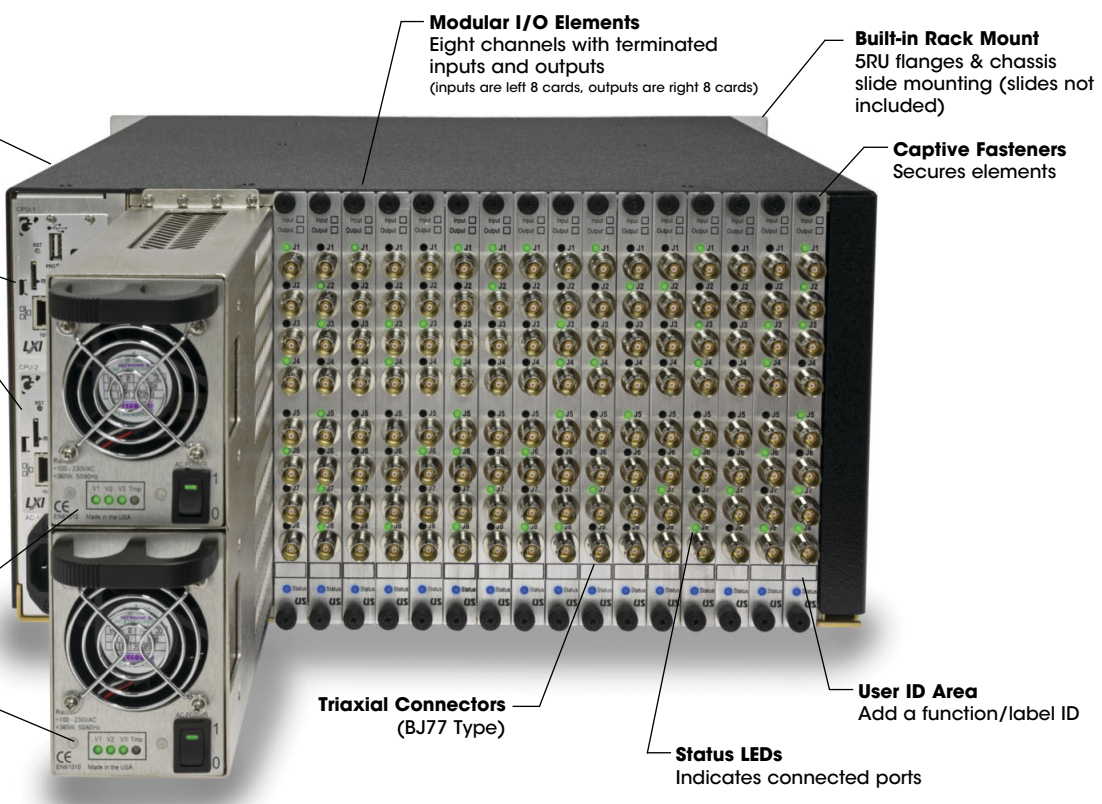Automated patch for including cables
and hardware into the configuration.
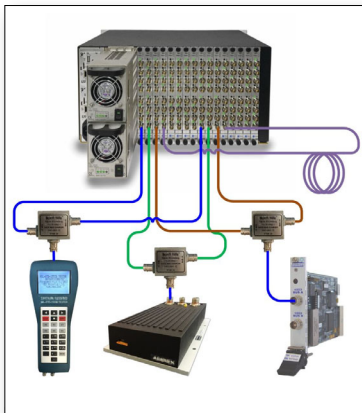
1553B Bus Simulation - Connectivity
With the automated patch, you can program
and simulate any connectivity scenario.

Modular I/O Elements
Eight channels with terminated
inputs and outputs
(inputs are left 8 cards, outputs are right 8 cards)

Built-in Rack Mount
5RU flanges & chassis
slide mounting (slides not
included)

Forced Cooling
Redundant monitored
cooling fans

Captive Fasteners
Secures elements

C3 Hot-Swap CPUs
Single or Dual (LXI)
10/100/1G Ethernet
uSD slot, RS232/433/485
Alarm port w/hard contact

Hot-Swap Supplies
Dual supplies standard
(AC power switch on each supply)

Triaxial Connectors
(BJ77 Type)

Status LEDs
Indicates connected ports

User ID Area
Add a function/label ID

System BS1553F Specifications

Minimum array size . . . . .8 input, 8 output
Maximum array size . . . . .64 input, 64 output
Expansion increment . . . . .8 ports per module
Switching technology . . . . .Passive (mechanical relay)
Type of system . . . . .1:1 connectivity (patching)
Architecture . . . . .Tri-Stage redundant, bidirectional

Signal Characteristics

Signal type . . . . .1553B differential, analog, or '422
Connector . . . . .Triaxial (BJ77)
Termination . . . . .None*, 78 or 100 ohms (between pair)
Frequency . . . . .DC - 50Mbps

Factory Spares

I/O module, 8 Ports Triax (78 ohm) . . . . . .VS1553B-12864 (78 ohm, Triax) *
I/O module, 8 Ports Triax (100 ohm) . . . . .VS1553B-12864-1 (100 ohm, Triax) *
Mid-module . . . . .VSM1553B-D6432 (for up to 32x32)
Mid-module . . . . .VSM1553B-D12864 (for up to 64x64)
Power supply element PS256XF-200

* Termination can be automatic, or user has control of individual ports.
I/O module types can be mixed.

General Specifications

Module technology . . . . .Hot-Swappable
Power supply section . . . . .Redundant hot-swap
Controller CPU . . . . .Single or Dual (redundant), hot-swap
Remote interface . . . . .10/100/1G Ethernet, Serial (232/422/485)
Protocol . . . . .TCP/IP, SNMP (v1/v2C/v3), SNTP, IPV4, IPV6, HTTPS
Alarm port . . . . .Hard contact
Local control . . . . .Color touchscreen (4.3" or 10.1")
Configuration routing . . . . .AutoRoute or manual
Configuration memory . . . . .Flash
Cooling . . . . .Forced cooling with RPM monitoring
AC power requirements . . . . .90-264VAC, 47-63Hz, <400Watts
Power cords . . . . .Dual inputs (USA 15A), 6-foot
Weight . . . .<50lbs
Size . . . . .8.73H x 22.00D x 19.00W (5RU)
Operating temp . . . . .0 to +60C
Non-operating temp . . . .-20 to +85C
Humidity . . . . .0 to 95% (NC @ +25C)
MTBF . . . .>135,000 hours (per MIL-HDBK-217F N1,
ground benign @ +25C) estimated

Universal Switching's policy is one of continuous development, and con-
sequently the company reserves the right to vary from the descriptions
and specifications shown in this publication.

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