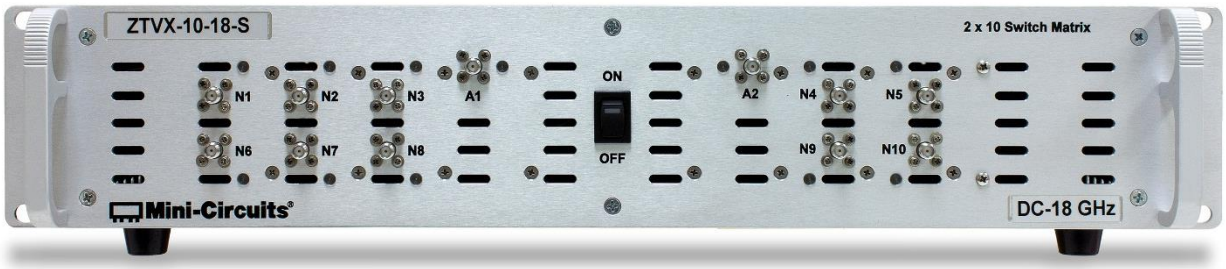
2 by 10 Switch Matrix

ZTVX-10-18-S

50Ω



Product Overview

Mini-Circuits' ZTVX-10-12-S is a flexible, bi-directional 2 by 10 switch matrix developed in a compact, 2U height, 19-inch rack-mountable chassis with all 12 RF connections (SMA) mounted on the front panel. This switch matrix can be programmed to connect the 2 A-Ports to any 2 of the 10 N-Ports. It may be used together with a 2-port VNA in a wide range of multi-port or multi-device test scenarios, including:

- Parallel testing of up to 5 separate 2 port devices (eg: filter and amplifier production testing)
- Production testing of multi-port devices
- Testing of multi-channel MIMO systems

The system supports come with USB and Ethernet-TCP/IP (HTTP and Telnet protocols) control interfaces, allowing setup flexibility and easy remote test management. Software support is provided through our easy-to-install, easy-to-use GUI application and API objects for Windows environments, with complete programming instructions for both 32 and 64 bit Windows® and Linux® operating systems.

Key Features

Feature	Advantages
High port count	Bi-directional operation from 2 to 10 or 10 to 2 ports facilitates a wide range of possible applications for the switch matrix
Tightly controlled switch configuration	Carefully optimised switch topology and precision Engineering from design to production ensures repeatable switch performance, best correlation between insertion loss and return loss, and competitive cost.
Ethernet-TCP/IP-HTTP and Telnet Protocols (Supports DHCP and Static IP)	Remote control from any Windows®, Mac®, or Linux® computer, or even a mobile device with a network connection and Ethernet-TCP/IP (HTTP or Telnet protocols) support. Using a VPN would allow remote control from anywhere in the world.
USB HID (Human Interface Device)	Local control via USB connection. Plug-and-Play, no driver required. Compatible with Windows® or Linux® operating systems using 32 and 64 bit architecture.
AC Mains Power Supply	Compatible with worldwide 90/260V AC power supplies, allowing easy, convenient setup.
GUI Software CD, programming instructions, USB & Ethernet cables, and 24VDC power adaptor included	ZTVX-10-18-S is supplied ready to use out of the box with all software, accessories, and instructions needed for immediate use.

2 by 10 Switch Matrix

ZTVX-10-18-S

50 Ω DC to 18 GHz

Features

- Bi-directional operation between 2 and 10 ports
- Active port indicators on front panel
- USB and Ethernet-TCP/IP (HTTP and Telnet protocols)
- User friendly GUI and DLLs included

Included Accessories

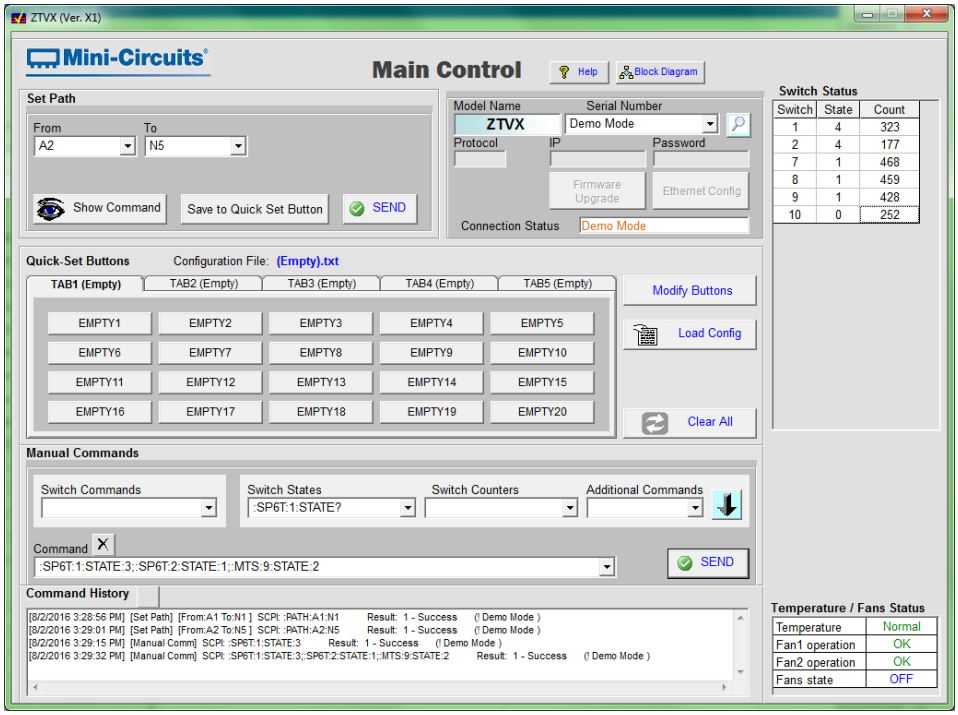
CBL-3W-US/EU	Black 3-prong AC cord	1
USB-CBL-AB-7+	USB cable (6.8 ft.)	1
HT-4-SMA	SMA cable connector wrench	1

Applications

- Parallel testing of multiple 2 port devices
- Production testing of multi-port devices
- Testing of multi-channel MIMO systems

RoHS Compliant
See our web site for RoHS Compliance methodologies and qualifications

ZTVX-10-18-S User Interface for USB/Ethernet Control



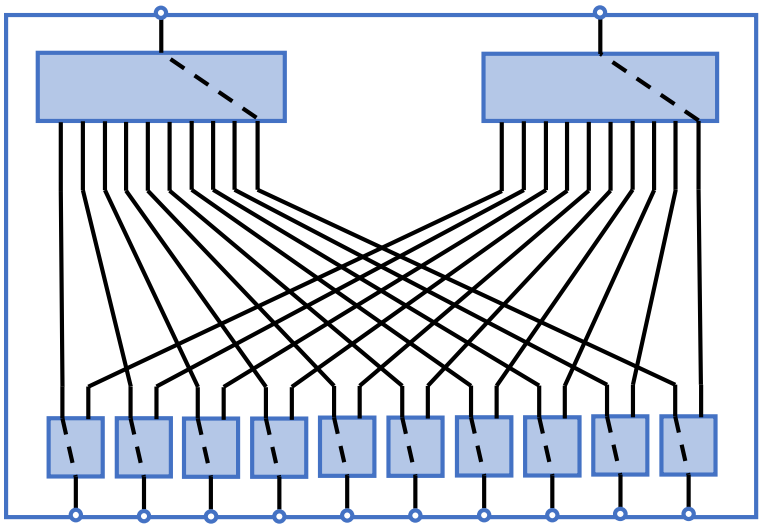
- For Demo mode of any Switch Matrix model select the model name from the drop box and click 'Start Demo' (See user guide for details)
- For programming instructions of the switch matrix see programming guide and AN-49-001 on Mini-Circuits' website

[1] Windows is a registered trademarks of Microsoft Corporation in the United States and other countries. Linux is a registered trademark of Linus Torvalds. Mac is a registered trademark of Apple Corporation in the United States and other countries.
Neither Mini-Circuits nor the Mini-Circuits RC-2SP4T-A18 are affiliated with or endorsed by the owners of the above referenced trademarks.

Electrical Performance (@ 25°C)

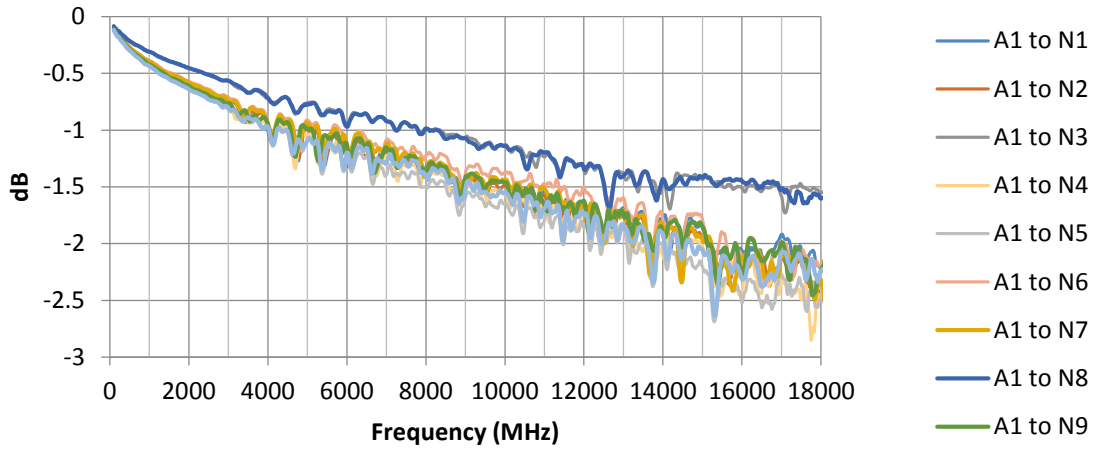
Parameter	Typical Data	Comments
Operating Frequency	DC to 18 GHz	
Insertion Loss	0.7 dB	@ 2 GHz
	2.5 dB	@ 18 GHz
Return Loss	20 dB	@ 2 GHz
	12 dB	@ 18 GHz
Isolation	90 dB	
Input Power	20 dBm max	10W Max with cold switching

Functional Schematic

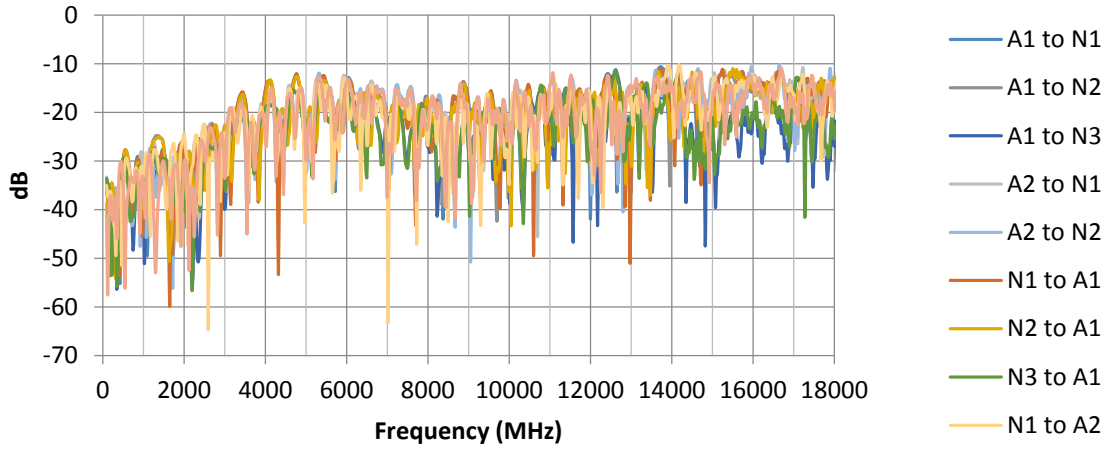


Note: *the functional schematic is indicative of the switch matrix operation. Detailed wiring diagram can be found in the user manual*

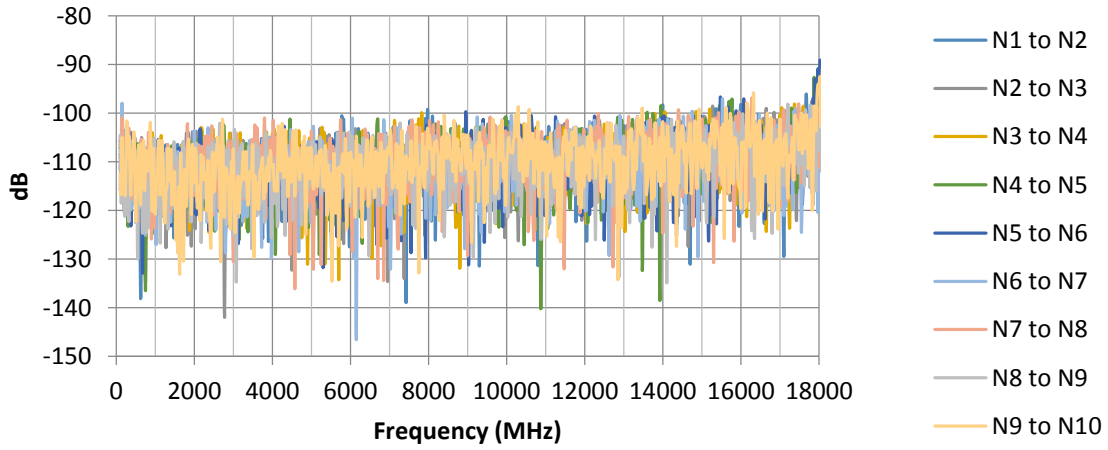
Insertion Loss



Return Loss



Isolation



Mechanical Specifications

Dimensions	19" (W) x 2U (H) x 20" (D). Support feet adds ¼" height
Case Material	Aluminum to be protected from corrosion/rust
External	a) 2 handles on the front panel and rear safety block b) Non-slip feet
Labelling	**Line 1:** ZTVX-10-18-S **Line 2:** 2x10 Switch Matrix (DC-18GHz)
Top Panel	Reinforced cover to support VNA mounted on top of switch matrix
Front Panel	a) SMA female for all RF connections b) LED position indicators c) Power ON/OFF switch with indicator light
Port Labelling	a) A1, A2 b) N1, … , N10
Rear Panel	a) 90/260V 47/63 Hz AC inlet b) USB type B connector for local control c) RJ45 LAN jack for Ethernet control d) Cooling fan(s)
Operating Temperature	5°C to 45°C
Control Interface	USB or Ethernet TCP/IP supporting HTTP and TELNET protocols
Software Support	a) Windows GUI b) Windows API DLL for USB control (ActiveX and .NET) c) SCPI command set for Ethernet control d) USB interrupt codes for Linux operating systems

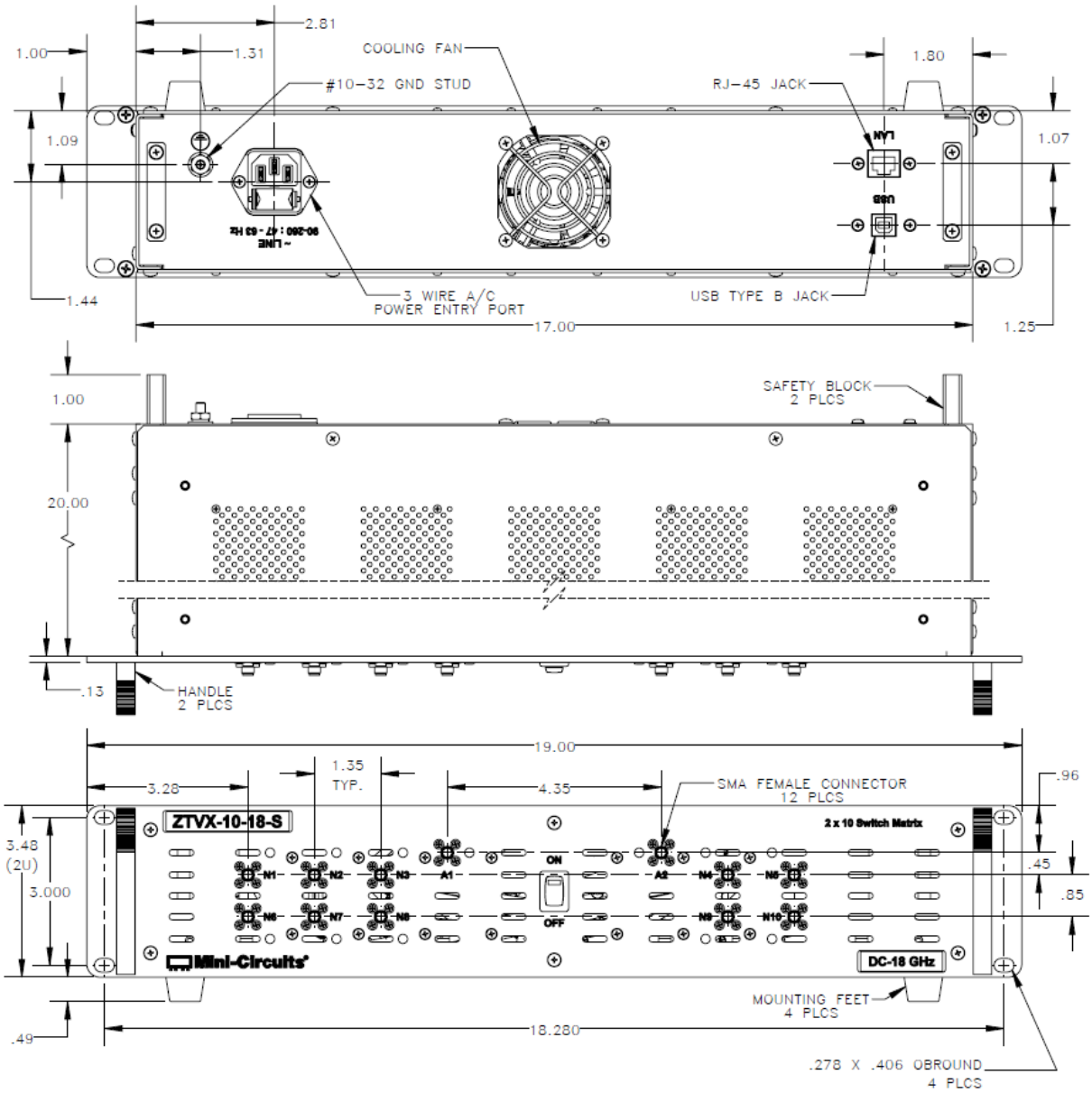
Software Specifications

Minimum System Requirements

Interface	USB HID or HTTP Get/Post or Telnet protocols
Host operating system - USB Control	**Windows 32/64 Bit operating system:** Windows 98®, Windows XP®, Windows Vista®, Windows 7®, Windows 8.® **Linux® support:** 32/64 Bit operating system
Host operating system - Ethernet Control	Any Windows®, Mac®, or Linux® computer with a network port and Ethernet-TCP/IP (HTTP or Telnet protocols) support
Hardware	Pentium® II or better [6]

[6] Pentium® is a registered trademark of Intel Corporation

Outline Drawing



DIMENSIONS ARE IN INCHES

TOLERANCES ON:
2 PL DECIMALS ± .03
3 PL DECIMALS ± .015
ANGLES ±
FRACTIONS ±