16x48 Blocking Switch Matrix   ZT-16X48B

Typical Applications

- Cellular base-station certification
- Cellular handset qualification
- Production testing of multi-port devices
- Testing of multi-channel MIMO systems

Product Overview

Mini-Circuits' ZT-16X48B is a high performance, 16 by 48 blocking switch matrix, covering the key worldwide telecoms bands from 600 MHz to 6GHz. The system has been developed in a modular format for ease of deployment and expandability, and can be quickly installed on site by Mini-Circuits' expert engineers in the supplied 14U rack cabinet.

This bi-directional switch matrix can be programmed to connect any of the 16 "A" ports to any combination of the 48 "B" ports, in a blocking configuration. The matrix is ideally suited to a wide range of multi-user and multi-device test systems, particularly in the cellular base-station test market where multiple base-stations, access points and user equipment can be routed and re-routed between each other.

The complete system is controlled via a single USB or Ethernet (supporting both HTTP and Telnet network protocols). Full software support is provided, including our user-friendly GUI application for Windows and a full API with programming instructions for Windows and Linux environments.
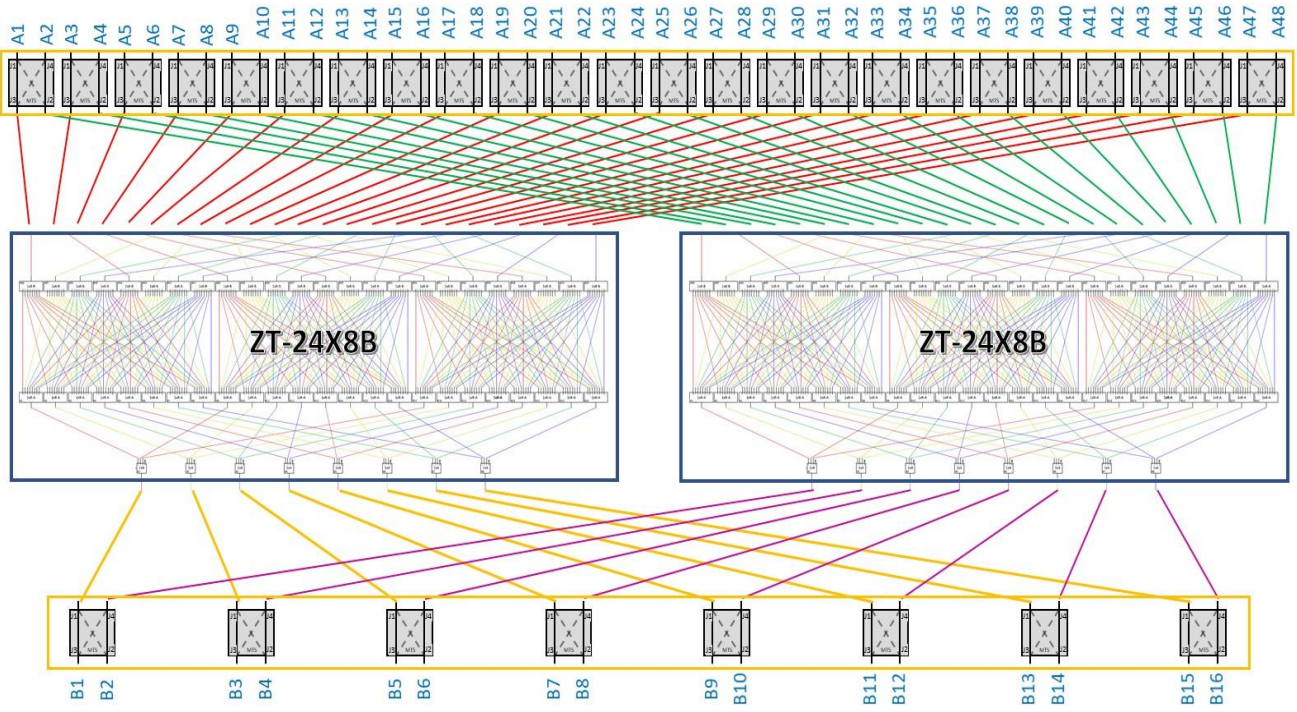
System Mechanical Specifications

Dimensions	19" (W) x 14U (H) x 20" (D)
RF Connectors	SMA female
Power supply	3 x AC mains power supply, 90-260 V, 47-63 Hz (to each module)
Operating temp	0° to +50° C

System Block Diagram

Schematic of actual switch connections


ZT-310 Rear

ZT-24X8B

ZT-24X8B

ZT-310 Front

Included Hardware

Model Name	Quantity	Rack Height	Description
ZT-310	1	4U each	32 x Transfer Switch Rack
https://www.minicircuits.com/pdfs/ZT-310.pdf			
ZT-24X8B	2	5U each	24 x 8 Blocking Switch Matrix
https://www.minicircuits.com/pdfs/ZT-24X8B_Datasheet.pdf			
086 Series	64	N/A	RF Interconnect Cables
https://www.minicircuits.com/WebStore/Cables.html			

Electrical Specifications at 25°C

| Parameter	Conditions	Min	Typ	Max	Units
Frequency		600		6000	MHz
Path Loss	@ 600 MHz		5		dB
	@ 6 GHz		15		
Return Loss	All ports		12		dB
Isolation	Between adjacent ports		80		dB
	A port to B port when disconnected		90		
Input Power	Per port			+30	dBm

Typical Performance Data

Isolation of Inactive Paths
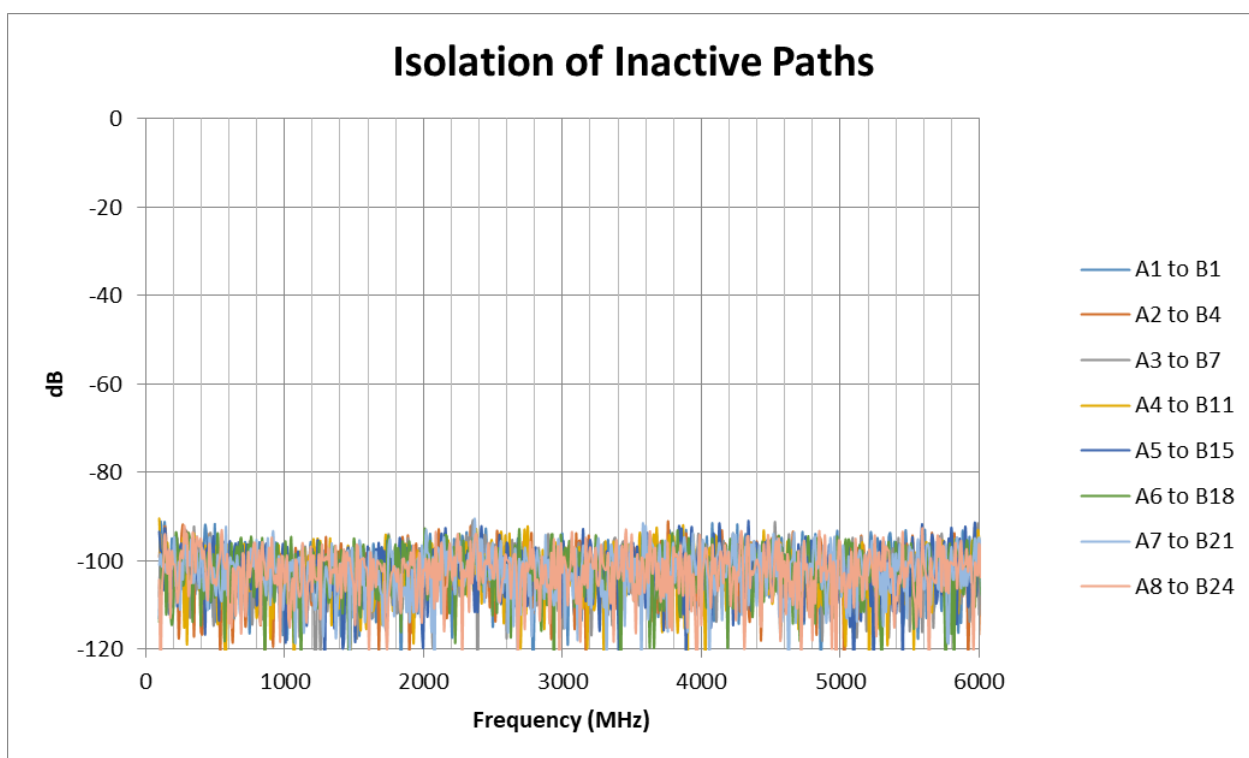
* An inactive path is any path where the input "A" port is not connected to the specified output "B" port, ie: the path is turned off. For example the path from port A1 to B1 when A1 is connected to B2.
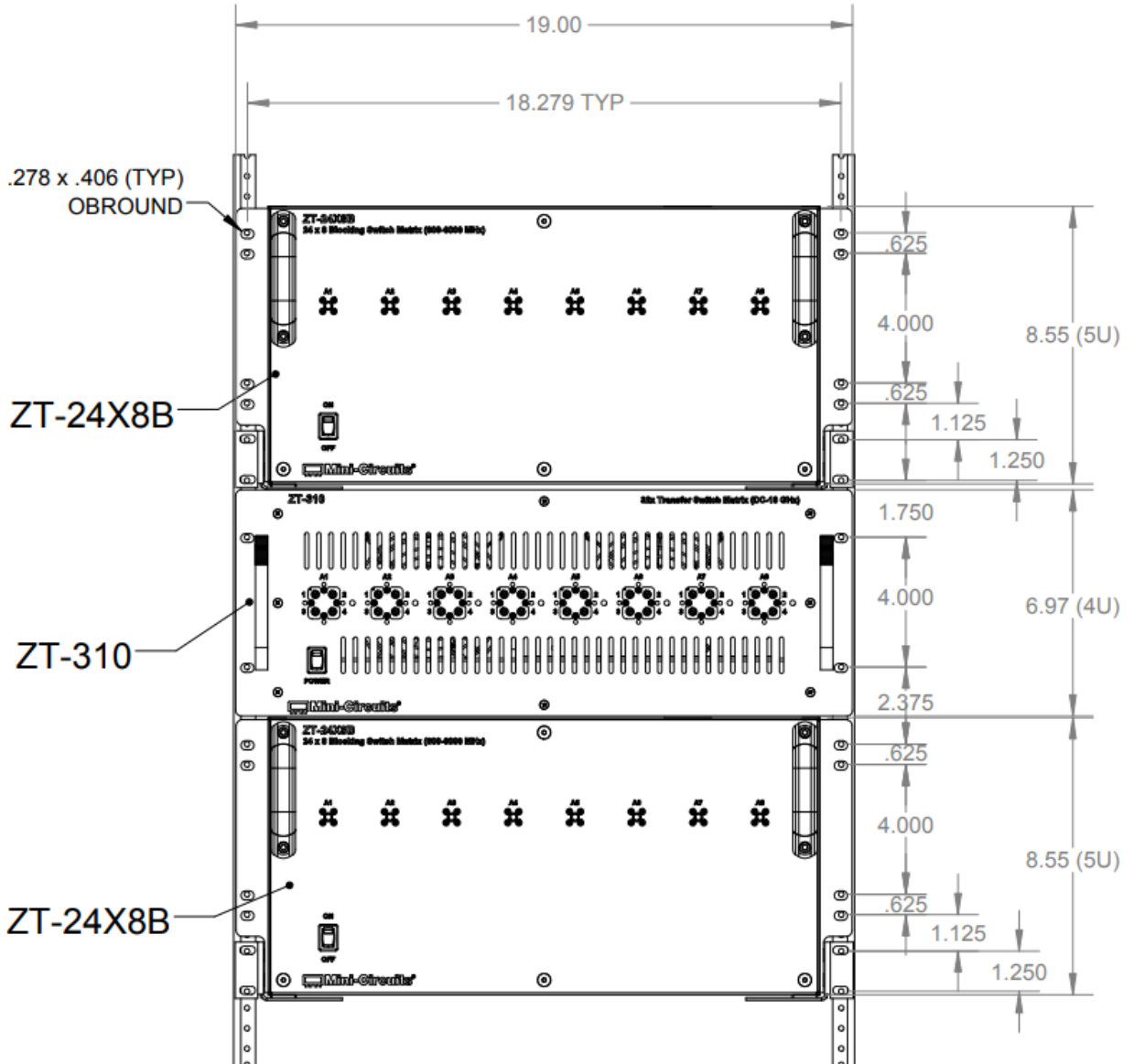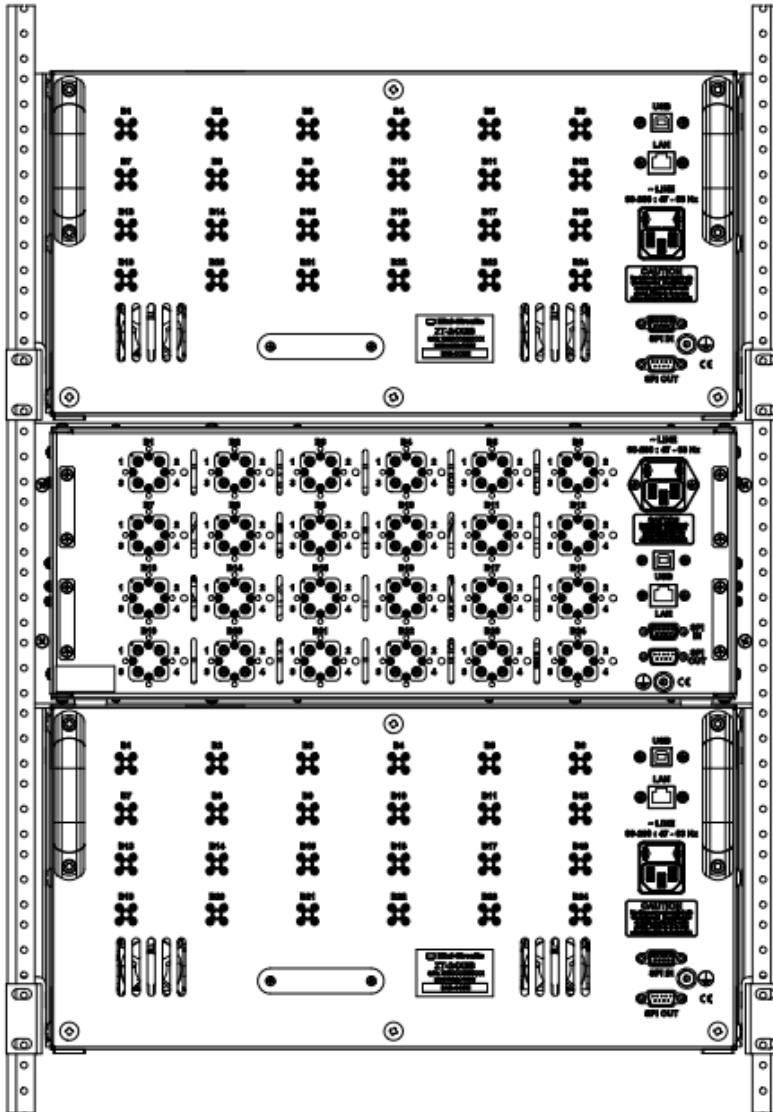
Typical Performance Data

Path Loss
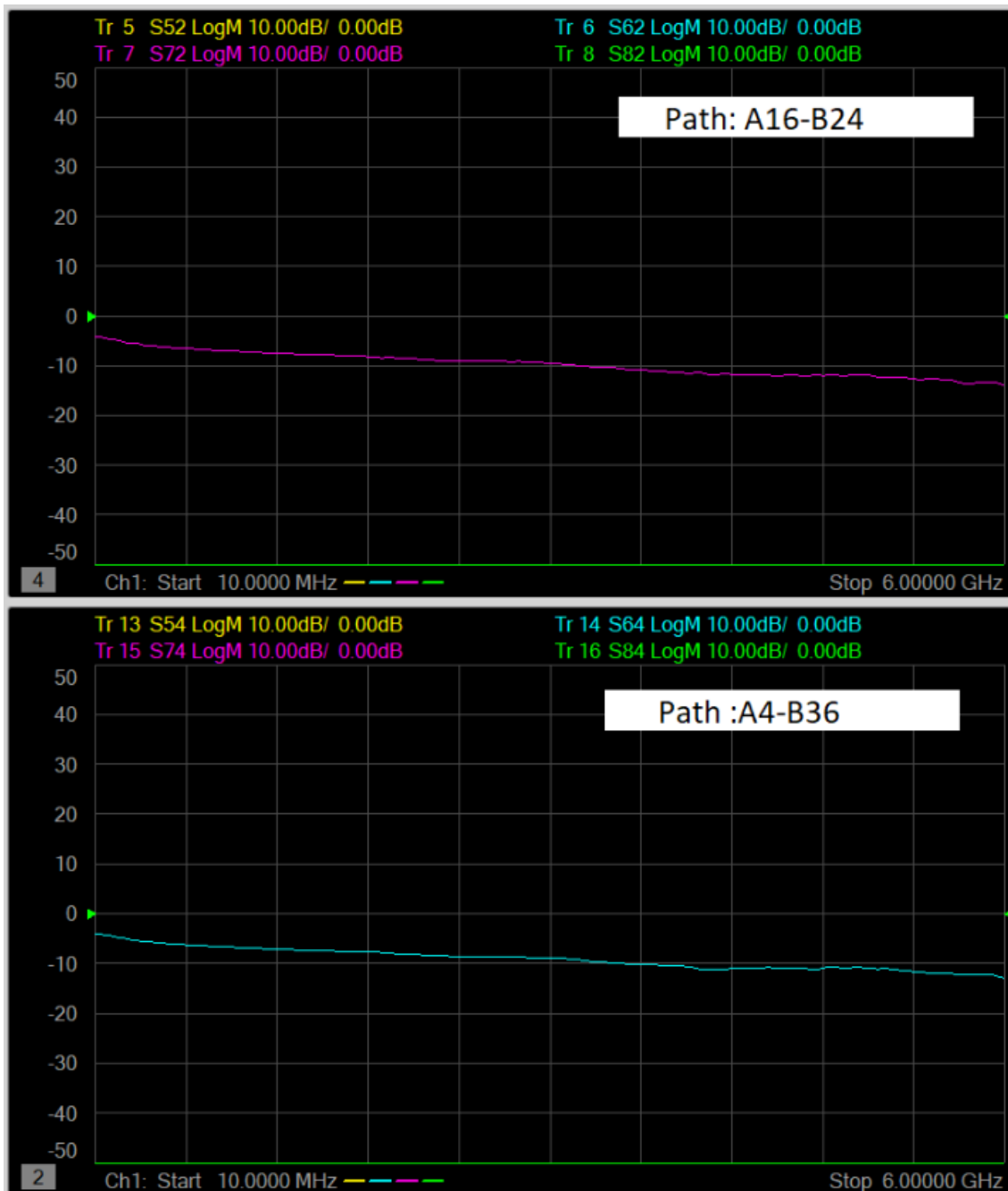
Case Drawing

FRONT VIEW

Case Drawing

REAR VIEW

Software Specifications

Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples are available on request
- Please contact testsolutions@minicircuits.com for support

Minimum System Requirements:

Parameter	Requirements	
Interface	USB HID & Ethernet (HTTP & Telnet)	
System Requirements	GUI	Windows 98 or later
	USB API DLL	Windows 98 or later and programming environment with ActiveX or .NET support
	USB Direct Programming	Linux; Windows 98 or later
	Ethernet	Windows, Linux or Mac computer with a network port and Ethernet TCP / IP support
Hardware	Pentium II or later with 256 MB RAM	

Application Programming Interface (API)

Ethernet Support:
- Simple ASCII / SCPI command set for attenuator control
- Communication via HTTP or Telnet
- Supported by most common programming environments

USB Support (Windows):
- ActiveX COM DLL file for creation of 32-bit programs
- .NET library DLL file for creation of 32 / 64-bit programs
- Supported by most common programming environments (refer to application note AN-49-001 for summary of supported environments)

USB Support (Linux):
- Direct USB programming using a series of USB interrupt codes

Full programming instructions and examples available for a wide range of programming environments / languages.

Graphical User Interface (GUI) for Windows - Key Features

- Connect via USB or Ethernet
- Run GUI in "demo mode" to evaluate software without a hardware connection
- View and set all switch paths with simple button clicks
- Graphically view the active switch paths
- Configure Ethernet settings
- Upgrade firmware
- Send SCPI commands for custom control

Mini-Circuits