

USB & Ethernet Controlled Modular Test System

ZTM2 Series

50Ω DC to 50 GHz



The Big Deal

- Rack-mount, modular switch system
- High reliability mechanical switches up to 50 GHz
- USB & Ethernet control
- Custom configurations with fast turnaround



Software Package

RoHS Compliant

See our website for RoHS compliance methodologies and qualifications

Typical Applications

- 5G node / device testing
- Automated test equipment
- Fail-safe / redundancy switching
- Modular switch matrices

Product Overview

Mini-Circuits' ZTM2 Series is a 19-inch rack-mountable (5U height), modular switch system with up to 24 customizable hardware slots on the front panel. The platform supports a wide range of high-reliability mechanical switch configurations, including SPDT, SP4T, SP6T, SP8T or transfer switches, with options up to 50 GHz.

With the use of Mini-Circuits' low cost Hand-Flex™ interconnect cables, multiple matrix configurations can be easily created by the user. The switches are controlled via USB or Ethernet, allowing control directly from a PC, or remotely over a network. 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 (both 32-bit and 64-bit systems).

Key Features

Feature	Advantages
Flexible mechanical switch options	Mechanical absorptive switches provide high reliability, repeatable high performance and internal terminations of input signals on the disconnected paths
Rack-mount chassis	5U height 19" rack-chassis supports flexible range of switch configurations for integration in automated production test environments
USB & Ethernet control	USB HID and Ethernet (HTTP / Telnet) interfaces provide easy compatibility with a wide range of software setups and programming environments

Configuration

The ZTM2 Series modular switch platform is arranged with 24 hardware slots on the front panel, arranged as 2 rows of 12 slots each. Any combination of switch / component options can be specified from the list on the following page, with different options covering different numbers of slots.

Use our handy configuration tool online to experiment with your preferred configuration and submit your request to Mini-Circuits:

<https://www.minicircuits.com/WebStore/ztm2.html>

Step 1: Choose your configuration

Step 2: Enter your contact details

Step 3: We will be in touch within 24 hours!

Step 1 of 3: Configure Your Test System

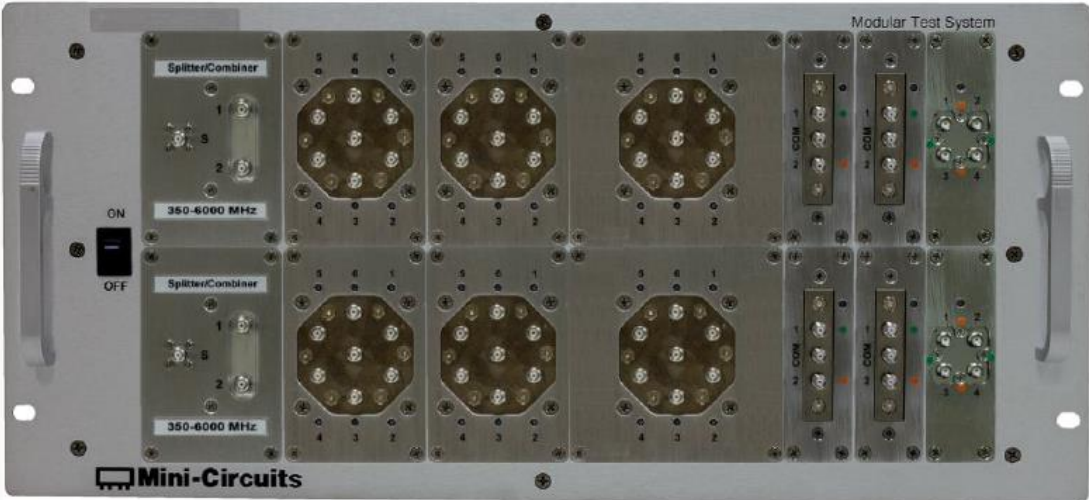
Populate each window of your test system by selecting from the 6 drop-down menus below:

Top Row:

Slot1 Slot 3 Slot 5 Slot 7 Slot 10 Slot 11 Slot 12

Bottom Row:

Slot1 Slot 3 Slot 5 Slot 7 Slot 10 Slot 11 Slot 12



Alternatively, please contact us to discuss your requirements: testsolutions@minicircuits.com.

Mechanical Specifications

Dimensions	19" (W) x 5U (H) x 20" max (D) 0.5" additional for removable feet	
Case Drawing	99-01-2891	
Case Material	Aluminum (with protective coating to prevent corrosion)	
	Front Panel	Rear Panel
Panel Marking	<ul style="list-style-type: none"> • Model Name • Modular Test System 	<ul style="list-style-type: none"> • CE / EAC / UKCA • Serial number / date code / model name
Panel Items	<ul style="list-style-type: none"> • Mechanical switches with LED state indicators • Power on / off switch with LED • Carry handles 	<ul style="list-style-type: none"> • AC mains power input (IEC C14 inlet) • USB type B socket • RJ45 (LAN) socket • Cooling vents
Power Supply	AC mains power input (90-260 V, 47-63 Hz)	
Fuse	2A, 250V rating	
Temperature	Operating: 0 to +50 °C	

Mechanical Switch Options

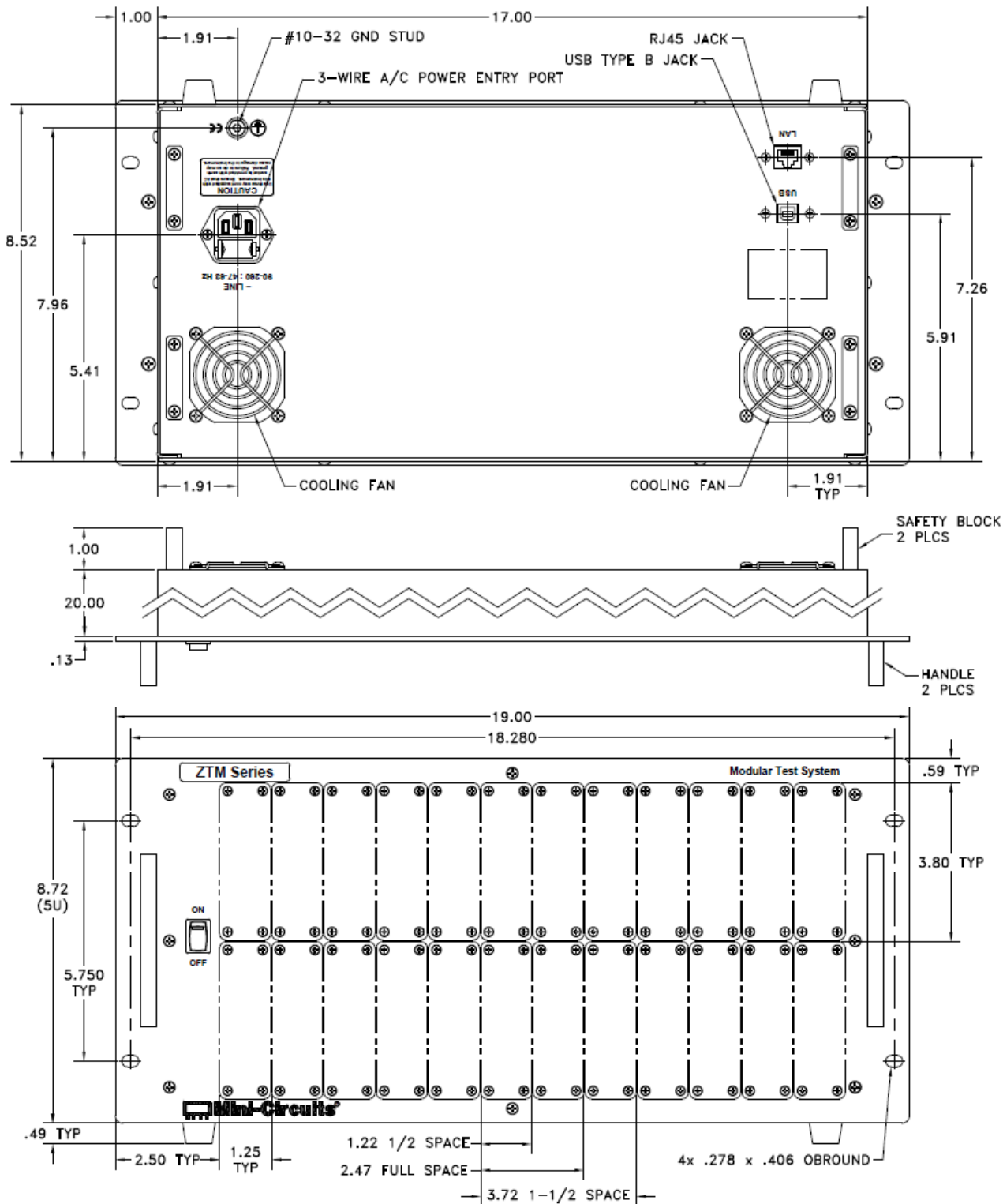
Switch Type	Model Name	Frequency Range
SPDT (Absorptive)	MSP2TA-18XL+	DC-18 GHz
SPDT (Absorptive)	MSP2TA-26+*	DC-26.5 GHz
SPDT (Absorptive)	MSP2TA-40+*	DC-40 GHz
SPDT (Reflective)	MSP2T-40+*	DC-40 GHz
SPDT (Reflective)	MSP2T-50+*	DC-50 GHz
SP4T (Absorptive)	MSP4TA-18+	DC-18 GHz
SP4T (Absorptive)	MSP4TA-26+*	DC-26.5 GHz
SP4T (Absorptive)	MSP4TA-40+*	DC-40 GHz
SP4T (Absorptive)	MSP4TA-50+*	DC-50 GHz
SP6T (Absorptive)	MSP6TA-12+	DC-12 GHz
SP6T (Absorptive)	MSP6TA-18+*	DC-18 GHz
SP6T (Absorptive)	MSP6TA-26+*	DC-26.5 GHz
SP6T (Absorptive)	MSP6TA-40+*	DC-40 GHz
SP6T (Reflective)	MSP6T-40+*	DC-40 GHz
SP6T (Absorptive)	MSP6TA-50+*	DC-50 GHz
SP8T (Absorptive)	MSP8TA-12D+	DC-12 GHz
SP8T (Absorptive)	MSP8TA-18+*	DC-18 GHz
SP8T (Absorptive)	MSP8TA-26+*	DC-26.5 GHz
Transfer Switch	MTS-18XL+	DC-18 GHz
Transfer Switch	MTS-26+*	DC-26.5 GHz
Transfer Switch	MTS-40+*	DC-40 GHz

* Please contact testsolutions@minicircuits.com for detailed model specifications

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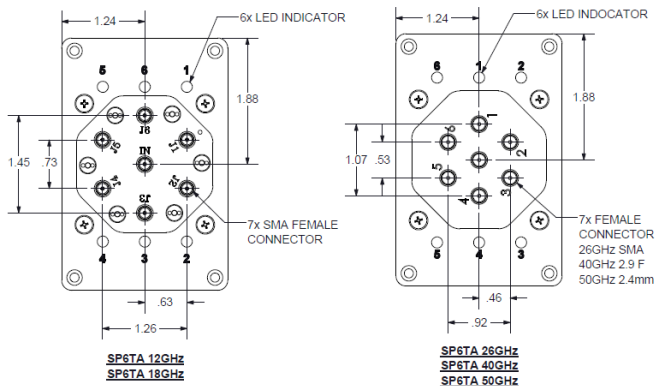
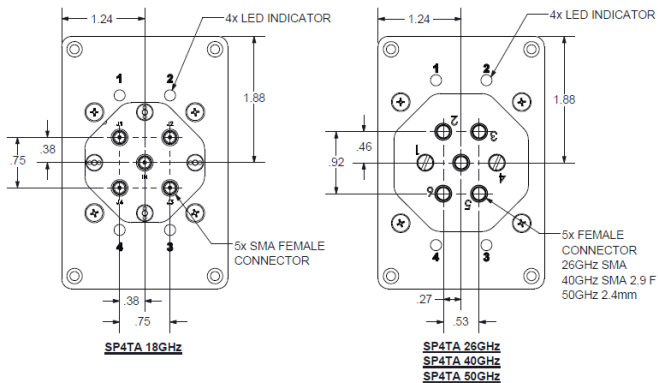
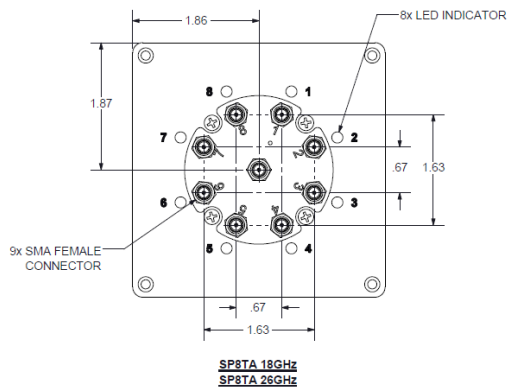
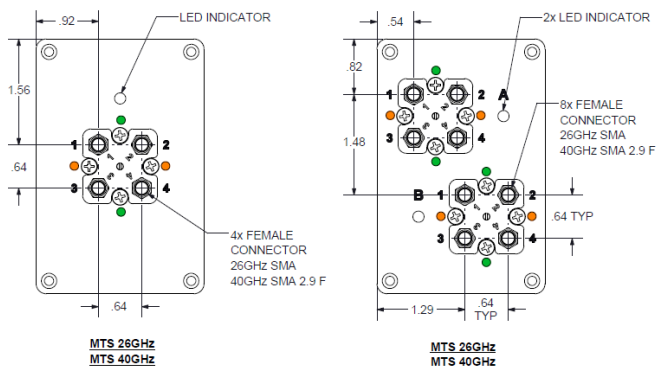
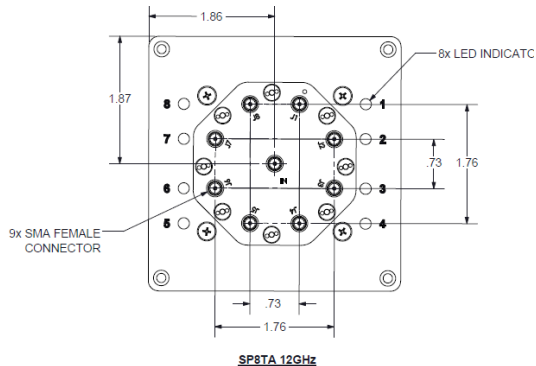
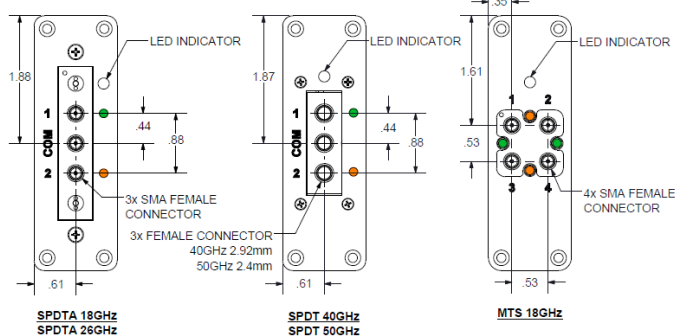
Case Drawing



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Case Drawing



Software Specifications

Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples can be downloaded free of charge from <https://www.minicircuits.com/softwaredownload/ztm2.html>
- 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 preview functionality without ZTM2 hardware
- View and set all switch states at the click of a button
- View system status
- Configure user profiles to label switches and control access
- Send programmatic commands
- Configure Ethernet IP settings

Switch	Type	State	Count
1: Switch 1	SPDT	2: Port 2	-
2: Switch 2	SP4T	0: Disconnected	-
3: Switch 3	MTS	2: Port 2	-
4: Switch 4	SP6T	0: Disconnected	-
5: Switch 5	SP8T	6: Port 6	-
6: Switch 6	SPDT	1: Port 1	-
7: Switch 7	SP4T	0: Disconnected	-
8: Switch 8	MTS	2: Port 2	-
9: Switch 9	SP6T	0: Disconnected	-
10: Switch 10	SP8T	6: Port 6	-
11: Switch 11	SPDT	2: Port 2	-
12: Switch 12	SP4T	0: Disconnected	-
13: Switch 13	MTS	1: Port 1	-
14: Switch 14	SP6T	0: Disconnected	-
15: Switch 15	SP8T	7: Port 7	-
16: Switch 16	SPDT	2: Port 2	-
17: Switch 17	SP4T	0: Disconnected	-
18: Switch 18	MTS	2: Port 2	-
19: Switch 19	SP6T	0: Disconnected	-
20: Switch 20	SP8T	3: Port 3	-
21: Switch 21	SPDT	2: Port 2	-
22: Switch 22	SP4T	0: Disconnected	-
23: Switch 23	MTS	1: Port 1	-
24: Switch 24	SP6T	0: Disconnected	-

Temperature / Fans Status	
Temperature	Normal
Fan1 operation	OK
Fan2 operation	OK
Fans state	OFF

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Ordering Information

Please contact Mini-Circuits' Test Solutions department for price and availability:

testsolutions@minicircuits.com

Included Accessories

Model Name	Quantity	Description
CBL-3W-xx*	1	AC power cord
USB-CBL-AB-7+	1	USB cable (6.8 ft)
CBL-RJ45-MM-5+	1	Ethernet cable (5 ft)
HT-4-SMA	1	SMA Cable Wrench (4 in)
B13-67-11+	2	Rear safety block
B18-DD-125+	4	Pan-head screw

Cable Model	Region
CBL-3W-US	USA
CBL-3W-EU	Europe
CBL-3W-IL	Israel
CBL-3W-UK	UK
CBL-3W-AU	Australia / China

*Please specify one option on the purchase order, at no charge

Additional Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp