

USB & Ethernet Controlled Modular Test System

ZTM2 Series

50Ω DC to 26.5 GHz

The Big Deal

- Rack-mount, modular switch system
- High reliability mechanical switches
- USB & Ethernet control
- SPDT, SP4T, SP6T, SP8T & Transfer switches

Typical Applications

- Automated test equipment
- Fail-safe / redundancy switching
- 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 options and passive components. Choose from:

- SPDT mechanical switches (DC to 18 or 26.5 GHz)
- DPDT (transfer) mechanical switches (DC to 18 GHz)
- SP4T mechanical switches (DC to 18 GHz)
- SP6T mechanical switches (DC to 12 GHz)
- SP8T mechanical switches (DC to 12 GHz)
- 2-way power splitter / combiners (0.35 to 6 GHz)
- Custom component options (including splitters, couplers and amplifiers) available on request
- Switches up to 40 GHz available on request

The modular structure allows an extremely wide variety of custom configurations with exceptionally fast turnaround times.

The system can be controlled via 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 (both 32-bit and 64-bit systems).

Key Features

Feature	Advantages
Modular, user-configurable design	Allows complex switch systems to be quickly configured and deployed with minimal cost and lead-time.
Fail-safe design	The switches revert to a known default state when the power supply is removed, allowing their use in systems that must continue to operate safely in the event of power failure
USB & Ethernet control	USB HID and Ethernet (HTTP / Telnet) interfaces provide easy compatibility with a wide range of software setups and programming environments
Full software support	User friendly Windows GUI (graphical user interface) allows manual control straight out of the box, while the comprehensive API (application programming interface) with examples and instructions allows easy automation in most programming environments



Software Package

RoHS Compliant

See our website for RoHS compliance methodologies and qualifications

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:

Slot 1

Slot 3

Slot 5

Slot 7

Slot 10

Slot 11

Slot 12

Bottom Row:

Slot 1

Slot 3

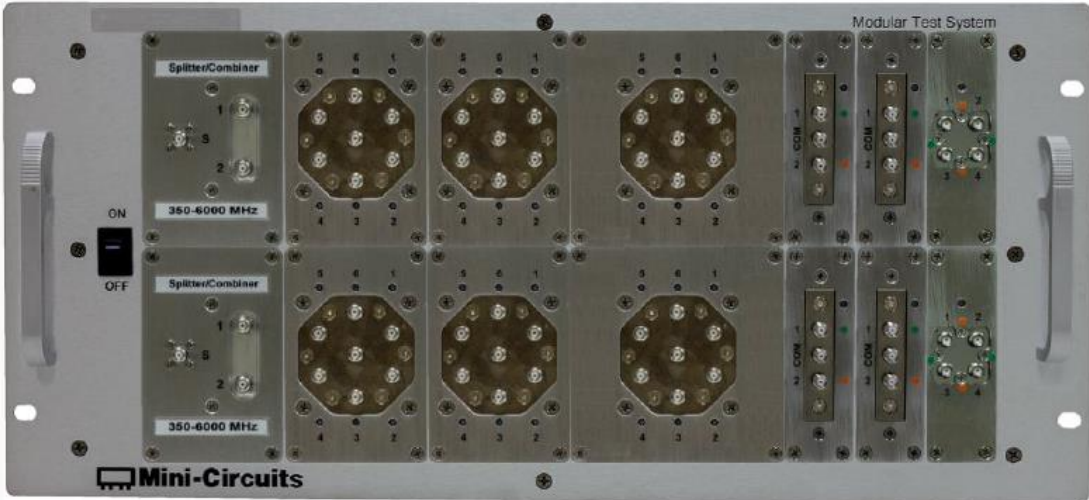
Slot 5

Slot 7

Slot 10







Slot 11

Slot 12



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

Front Panel Component Options

Type	Model Name	Width	Image
SPDT	MSP2TA-18XL+ (DC-18 GHz) MSP2TA-26+ (DC-26.5 GHz)	1 slot	
Transfer	MTS-18XL+ (DC-18 GHz)	1 slot	
SP4T	MSP4TA-18+ (DC-18 GHz)	2 slots	
SP6T	MSP6TA-12+ (DC-12 GHz)	2 slots	
SP8T	MSP8TA-12+ (DC-12 GHz)	3 slots	
Custom Options	Please contact us with your requirements: testsolutions@minicircuits.com Typical options include Mini-Circuits' standard catalog range of 2-way, 3-way & 4-way splitters, directional couplers and amplifiers	1-2 slots	

Refer to www.minicircuits.com for full component specifications and test data

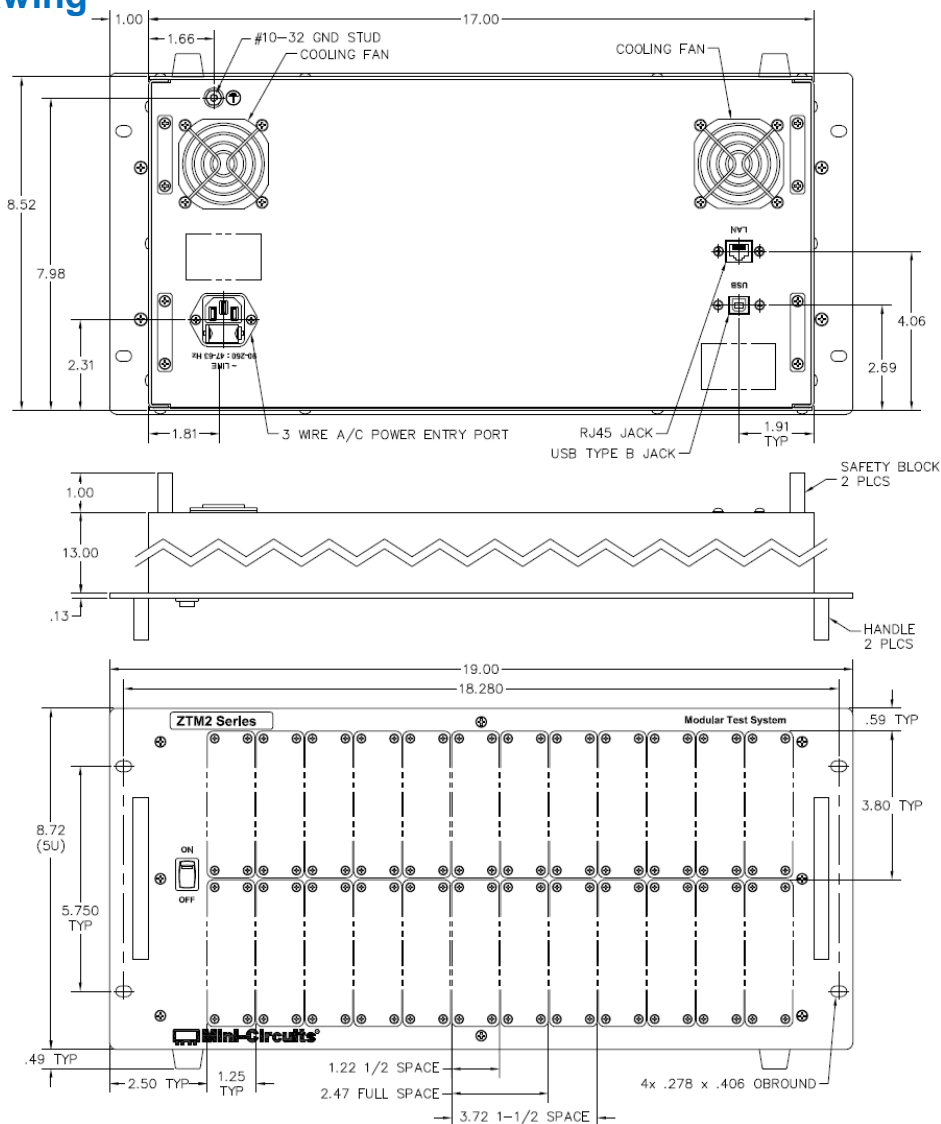
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ZTM2 Series

Mechanical Specifications

Dimensions	19" (W) x 5U (H) x 13" (D)
Case Material	Aluminum (with protective coatings to prevent corrosion)
Feet	Removable by unscrewing from the bottom.
RF Connectors	SMA female
Front panel	ON/OFF switch with indicator light 2 x carry handles SMA female for all RF connectors LED position indicators for all switch components
Rear panel	AC mains power supply input USB control connection RJ45 control connection Rear safety blocks
Control Interface	USB and Ethernet TCP/IP supporting HTTP and TELNET protocols
Power supply	AC mains power supply (90-260 V, 47-63 Hz)
Operating temp	0 to +50 deg C

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.

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ZTM2 Series

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

Contact us for pricing and availability information:

testsolutions@minicircuits.com

Model	Description
ZTM2 Series	USB & Ethernet controlled rack-mount modular switch system

Included Accessories	Part No.	Description
	CBL-3W-XX	AC power cord (select one of the regional options below)
	USB-CBL-AB-7+	6.9 ft (2.1 m) USB control cable, type A male to type B male
	CBL-RJ45-MM-5+	5 ft (1.5 m) Ethernet control cable, CAT5e, RJ45 male to male

AC Power Cords	Part No.	Description
	CBL-3W-US	Power Cord for United States
	CBL-3W-EU	Power Cord for Europe
	CBL-3W-UK	Power Cord for United Kingdom

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