

USB & Ethernet Controlled
Mechanical Switch System (12 x DPDT)

ZTM-12MTS-26

50Ω DC to 26.5 GHz



Configuration

Row	Slot	Model Name	Frequency	Connectors	Description
Top	1	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual
Top	3	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual
Top	5	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual
Top	7	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual
Top	9	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual
Top	11	MTS-26+ (B81-56+)	DC to 26.5 GHz	SMA (f)	Transfer Switches - Dual

Electrical Specifications @ 25°C (per Switch)

Parameter	Conditions	Min	Typ	Max	Units
Frequency Range		DC		26.5	GHz
Insertion Loss	DC - 8 GHz		0.15	0.30	dB
	8 - 12 GHz		0.20	0.40	
	12 - 18 GHz		0.30	0.50	
	18 - 26.5 GHz		0.50	0.70	
Isolation	DC - 8 GHz	70	90		dB
	8 - 12 GHz	65	80		
	12 - 18 GHz	60	80		
	18 - 26.5 GHz	50	70		
VSWR	DC - 8 GHz		1.30		:1
	8 - 12 GHz		1.40		
	12 - 18 GHz		1.50		
	18 - 26.5 GHz		1.70		
Switching Time			25		ms
RF Input Power (Cold Switching) ¹	DC - 8 GHz			20	W
	8 - 18 GHz			10	
	18 - 26.5 GHz			5	
Switch Lifetime	100 mW hot switching ²	2			million cycles
	1W hot switching		1		

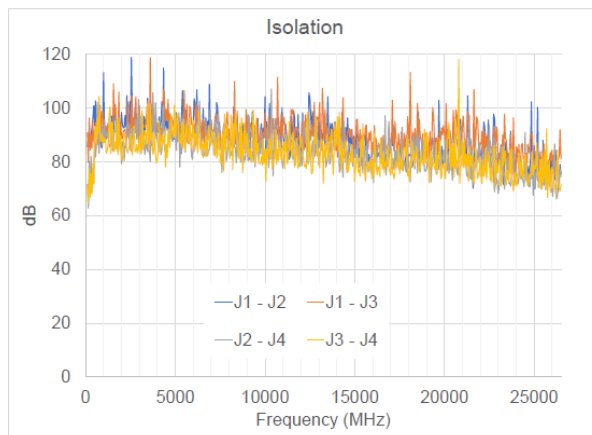
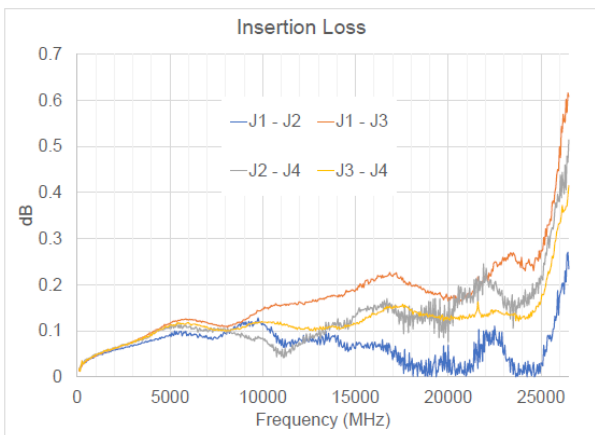
1. Maximum power for cold switching is 10W per path, 20W total, with all ports terminated into 50Ω
 2. Hot switching powers above this level will degrade the switch lifetime



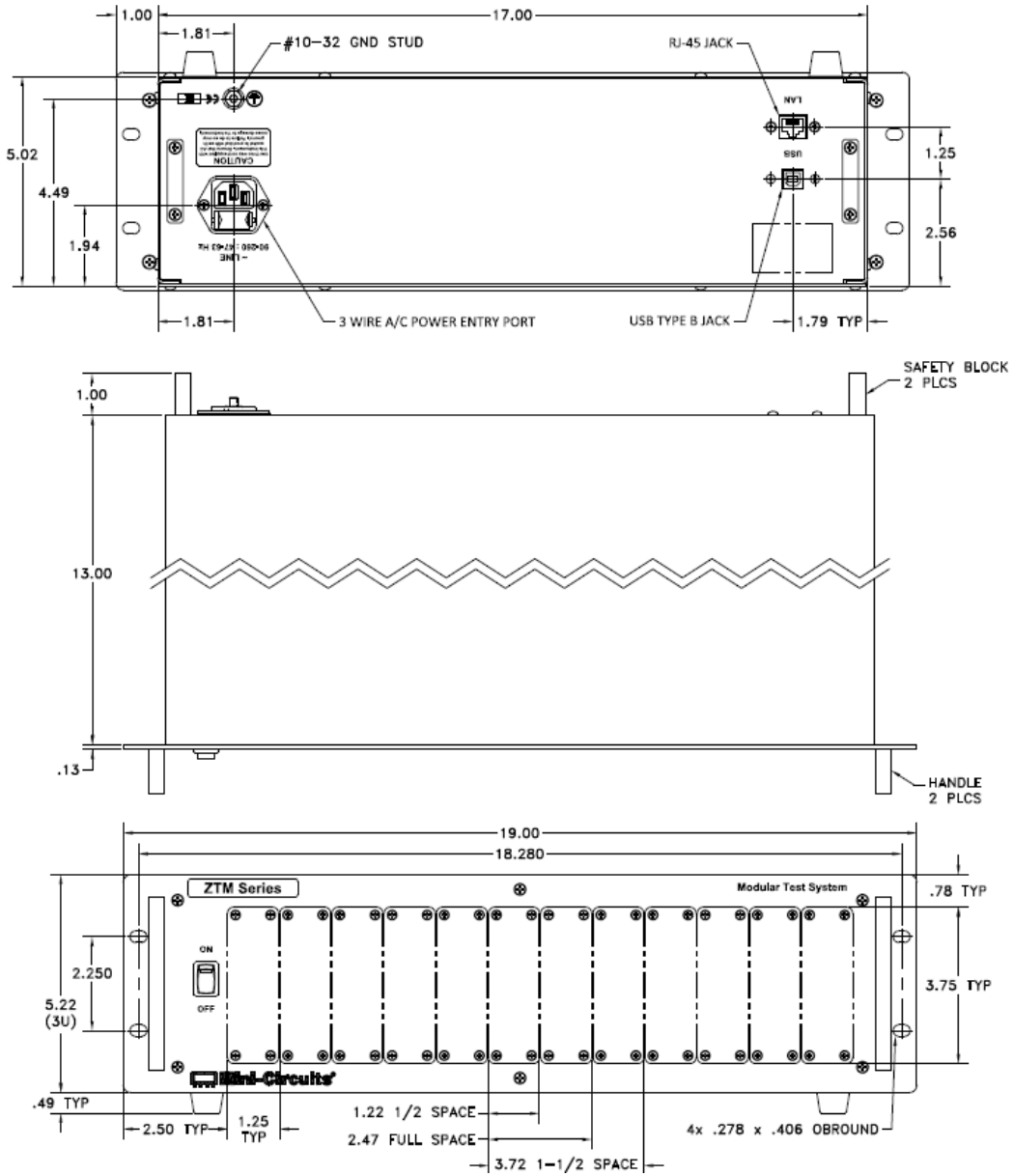
Mechanical / Environmental Specifications

Dimensions	19" (W) x 3U (H) x 13" (D)			
Case Drawing	99-01-2861			
Case Material	Aluminum (with protective coating to prevent corrosion)			
RF Connectors	Panel	Connector	Quantity	Port Labels
	Front	SMA female	48	1-4 per switch
Panel Items	Front Panel		Rear Panel	
Panel Marking	<ul style="list-style-type: none"> • ZTM-12MTS-26 • Modular Test System 		<ul style="list-style-type: none"> • CE • EAC • Serial number / date code / model name 	
Other Connectors			<ul style="list-style-type: none"> • AC mains power input (IEC C14 inlet) • USB type B socket • RJ45 (LAN) socket 	
Other	<ul style="list-style-type: none"> • Power on / off switch with LED • LED switch path indicators • Carry handles 			
Power Supply	AC mains power input (90-260 V, 47-63 Hz)			
Fuse	2A, 250V rating			
Temperature	Operating: 0 to +50 °C			

Typical Performance (per Switch)



Case Drawings



Software Specifications

- Please contact testsolutions@minicircuits.com for support

Ethernet Control	Supported Protocols	TCP / IP, HTTP, Telnet, DHCP, UDP
	Max Data Rate	10 Mbps (10Base-T Half Duplex)
USB Control	Supported Protocols	HID - Full Speed
	Min Communication Time	3 ms typ
Software Support	<ul style="list-style-type: none"> • Mini-Circuits' Universal GUI for USB & LAN control (Windows only) • ASCII / SCPI command syntax for LAN programming (all OS) • ActiveX / .Net DLL APIs for USB programming (Windows only) • Interrupt codes for direct USB programming (all OS) • Full programming instructions and examples for a wide range of languages 	
Downloads	Software & Documentation	https://www.minicircuits.com/softwaredownload/ztm_rcm.html

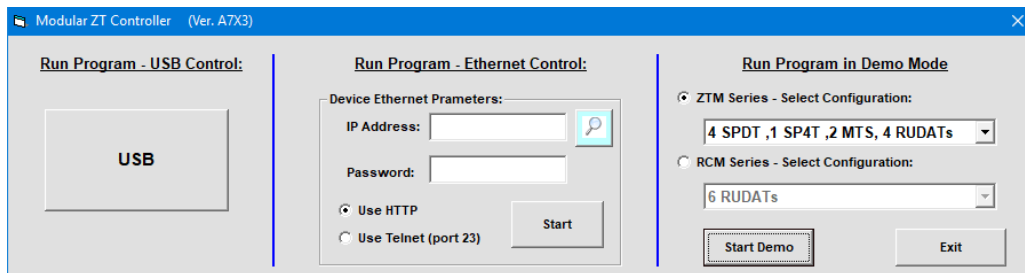
Programming Commands

- The key ASCII / SCPI commands for control of the system are summarized below
- These can be sent via the USB or Ethernet API
- Please refer to the programming manual for full details

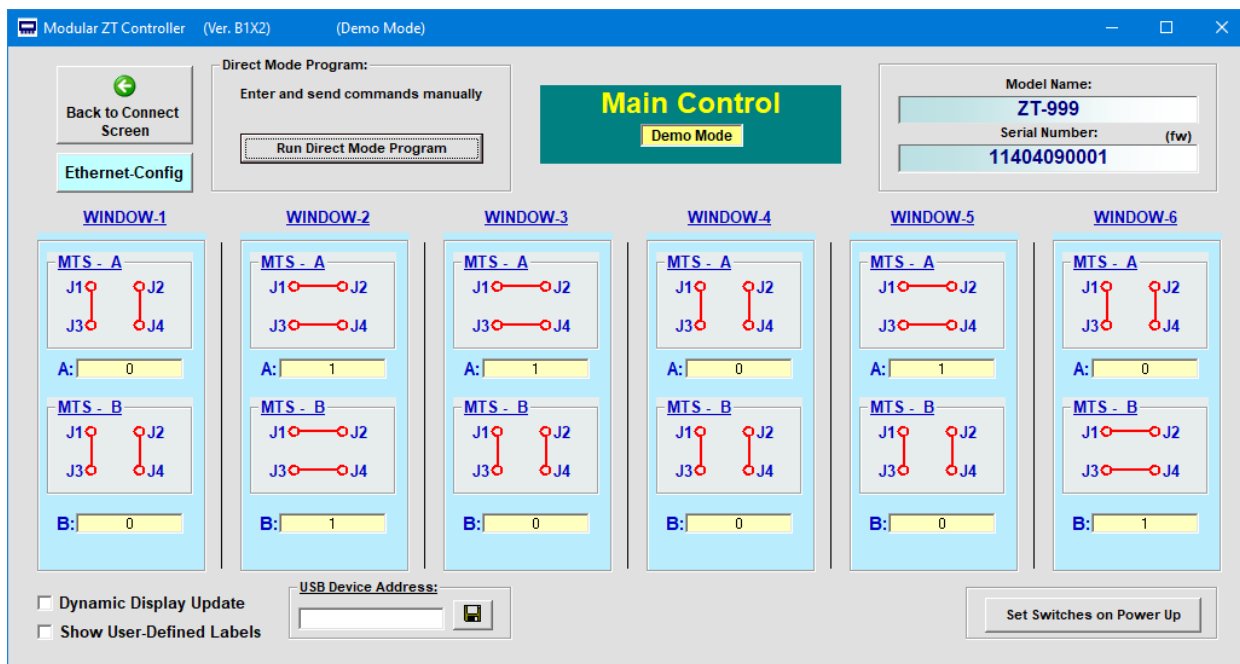
Command / Query	Description
:MN?	Read model name
:SN?	Read serial number
:FIRMWARE?	Read firmware version
:sw_type:sw_number:STATE:port	Set a single switch state: <ul style="list-style-type: none"> • sw_type = MTS or SPDT or SP4T or SP6T or SP8T • sw_number = 1 to n (refer to block diagram) • port = the switch state to set • Example: :SPDT:1:STATE:2 (set SPDT switch 1 to state 2)
:sw_type:sw_number:STATE?	Get the state of a single switch: <ul style="list-style-type: none"> • sw_type = MTS or SPDT or SP4T or SP6T or SP8T • sw_number = 1 to n (refer to block diagram) • Example: :SPDT:1:STATE? (get the state of SPDT switch 1)

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 switch / attenuator states at the click of a button
- Configure and run timed sequences
- Set start-up states
- View switch position counters
- Configure Ethernet IP settings



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 (IEC C13 connector to local plug)
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)

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

- A. 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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. 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