

50Ω 1-6000 MHz



Product Overview

ZT-320 is part of Mini-Circuits' flexible series of rack-mounted solid-state switch systems, offering high performance and fast turnaround for automated test setups. The 19" rack chassis incorporates 30 independent SP8T switches, with all RF connectors arranged in logical rows on the rear panel, with SMA female for the 30 COM ports and SMP female for ports 1-8 of each switch.

Each switch covers 1 MHz to 6 GHz with high isolation (85 dB typical). With the use of Mini-Circuits' low cost Hand-Flex™ interconnect cables, multiple matrix configurations can be created easily by the user. The compact panel layout is well suited to dense automated test environments and the additional daisy-chain control interface allows the system to be incorporated into Mini-Circuits' integrated test systems, including the modular 80 x 30 non-blocking switch matrix.

The system is 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
High performance switches	30 high isolation solid-state SP8T switches covering the key worldwide telecoms bands up to 6 GHz.
Rack-mount chassis	Compact, 4U height 19" rack-chassis with all connections on the rear, suits integration in automated production test environments
USB & Ethernet control	USB HID and Ethernet (HTTP / Telnet / SSH) interfaces provide easy compatibility with a wide range of software setups and programming environments

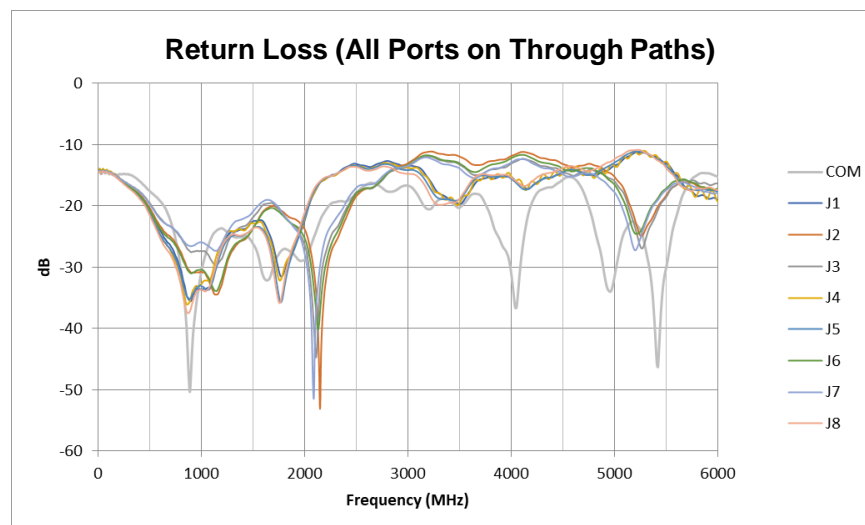
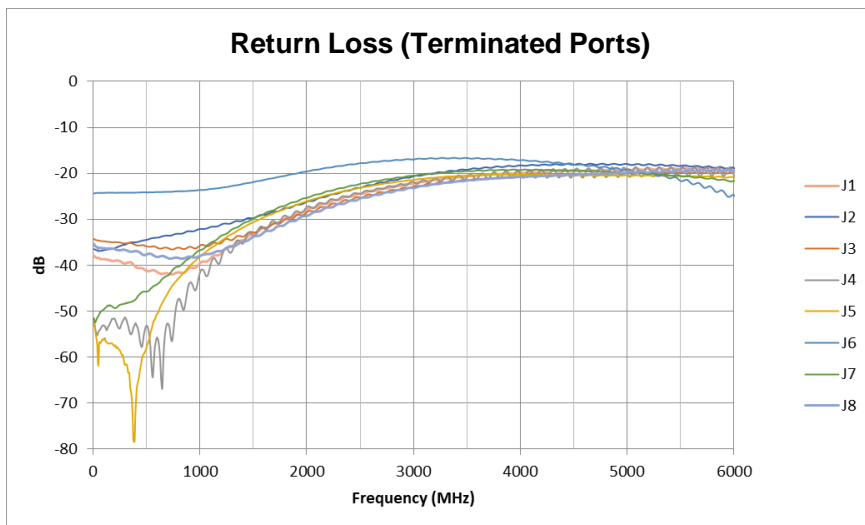
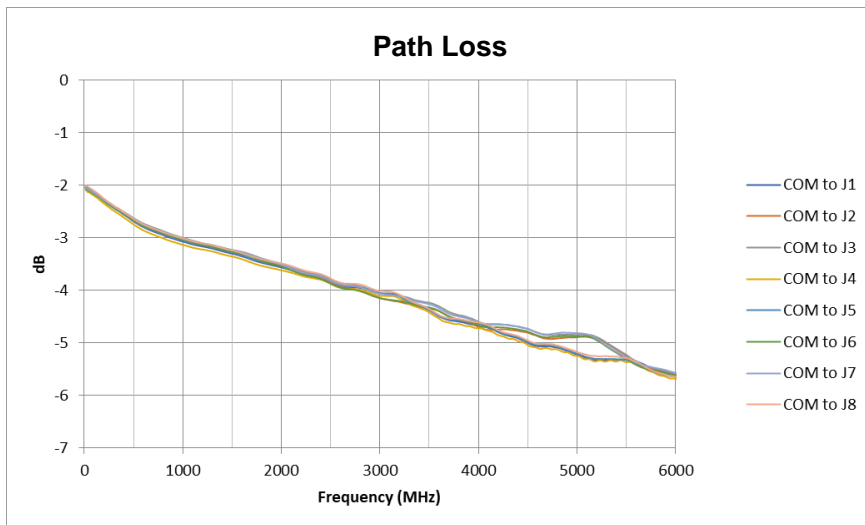
Mechanical Specifications

Dimensions	19" (W) x 4U (H) x 13" (D)			
Case Drawing	99-01-3029			
Case Material	• Aluminum (with protective coating to prevent corrosion)			
RF Connectors	Panel	Connector	Quantity	Port Labels
	Front	SMA female	30	COM 01 to COM 30
		SMP female	240	1 to 8 per switch (switches 01 to 30)
Front Panel Marking	<ul style="list-style-type: none"> • ZT-320 • 30 x SP8T Solid-State Switch Matrix • 1-6000 MHz • CE • EAC • Serial number / date code / model name 			
Front Panel Items	<ul style="list-style-type: none"> • AC mains power input (IEC C14 inlet) • USB type B socket • RJ45 (LAN) socket • 2 x D-sub 9-pin (Serial In & Out) • 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			

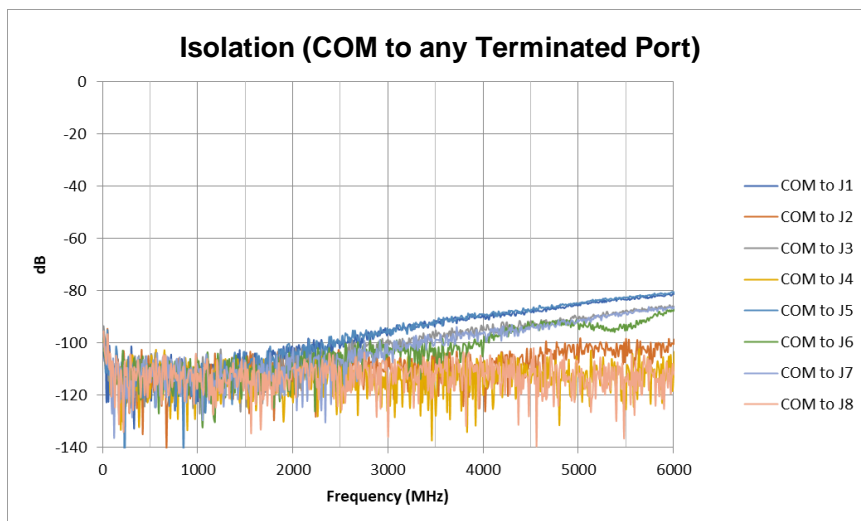
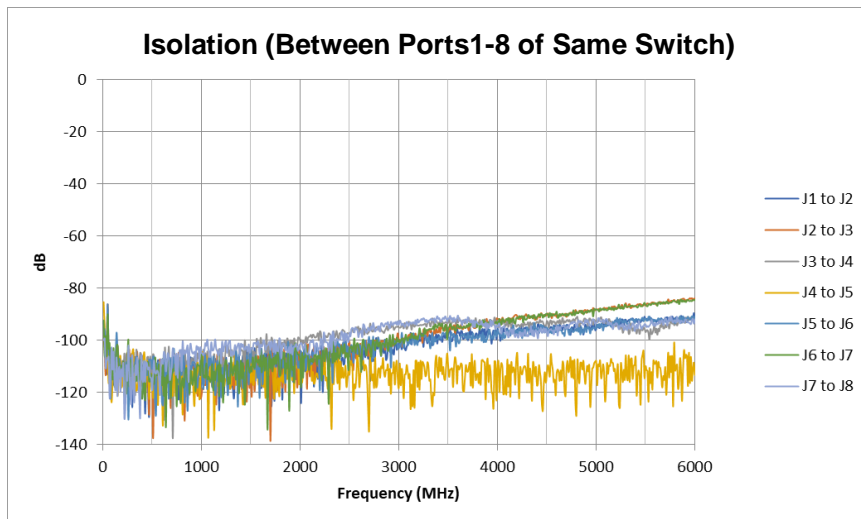
Electrical Specifications at 25°C

Parameter	Conditions	Min	Typ	Max	Units
Frequency		1	-	6000	MHz
Path Loss	1 – 3000 MHz	-	3.2	5.0	dB
	3000 – 6000 MHz	-	5.5	6.5	
Isolation (between ports 1-8 of same switch)	1 – 3000 MHz	70	95	-	dB
	3000 – 6000 MHz	65	85	-	
Isolation (COM to any terminated port)	1 – 3000 MHz	65	95	-	dB
	3000 – 6000 MHz	60	85	-	
Return Loss (all ports on through path)	1 – 3000 MHz	-	18	-	dB
	3000 – 6000 MHz	-	12	-	
Return Loss (terminated ports)	1 – 3000 MHz	-	25	-	dB
	3000 – 6000 MHz	-	20	-	
Input Power	Hot switching	-	-	+17	dBm
	Into internal termination	-	-	+17	
	Cold switching	-	-	+27	

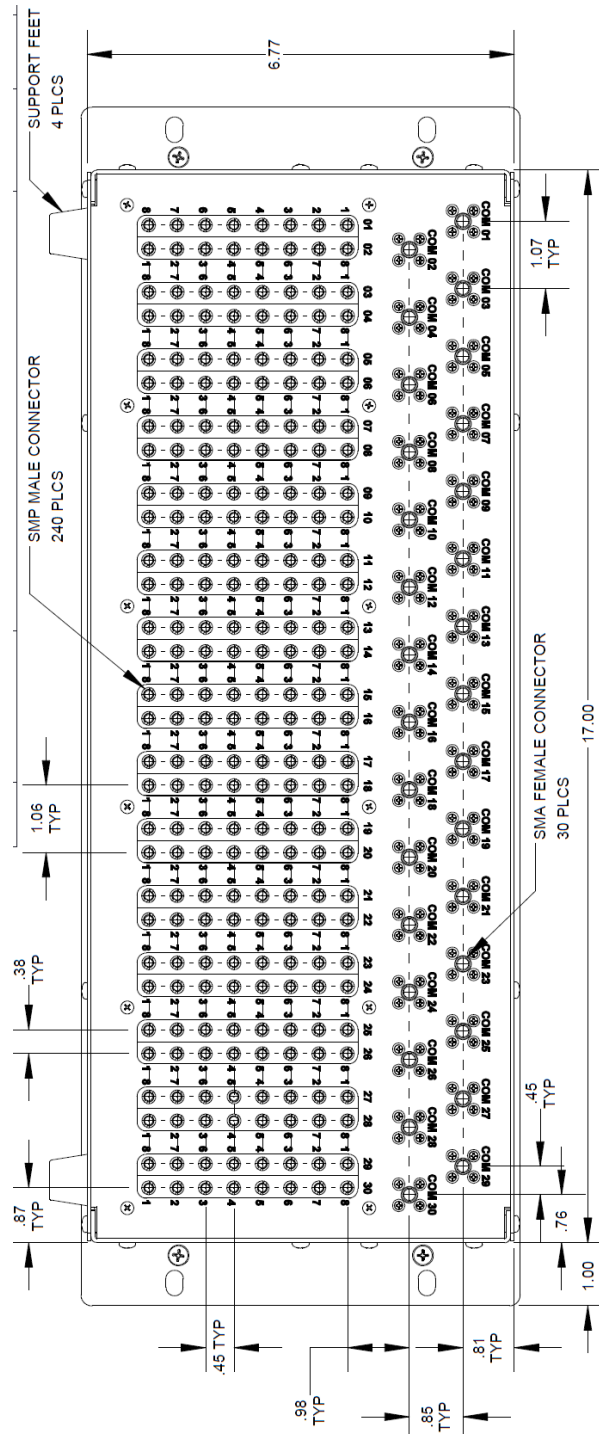
Typical Performance Data



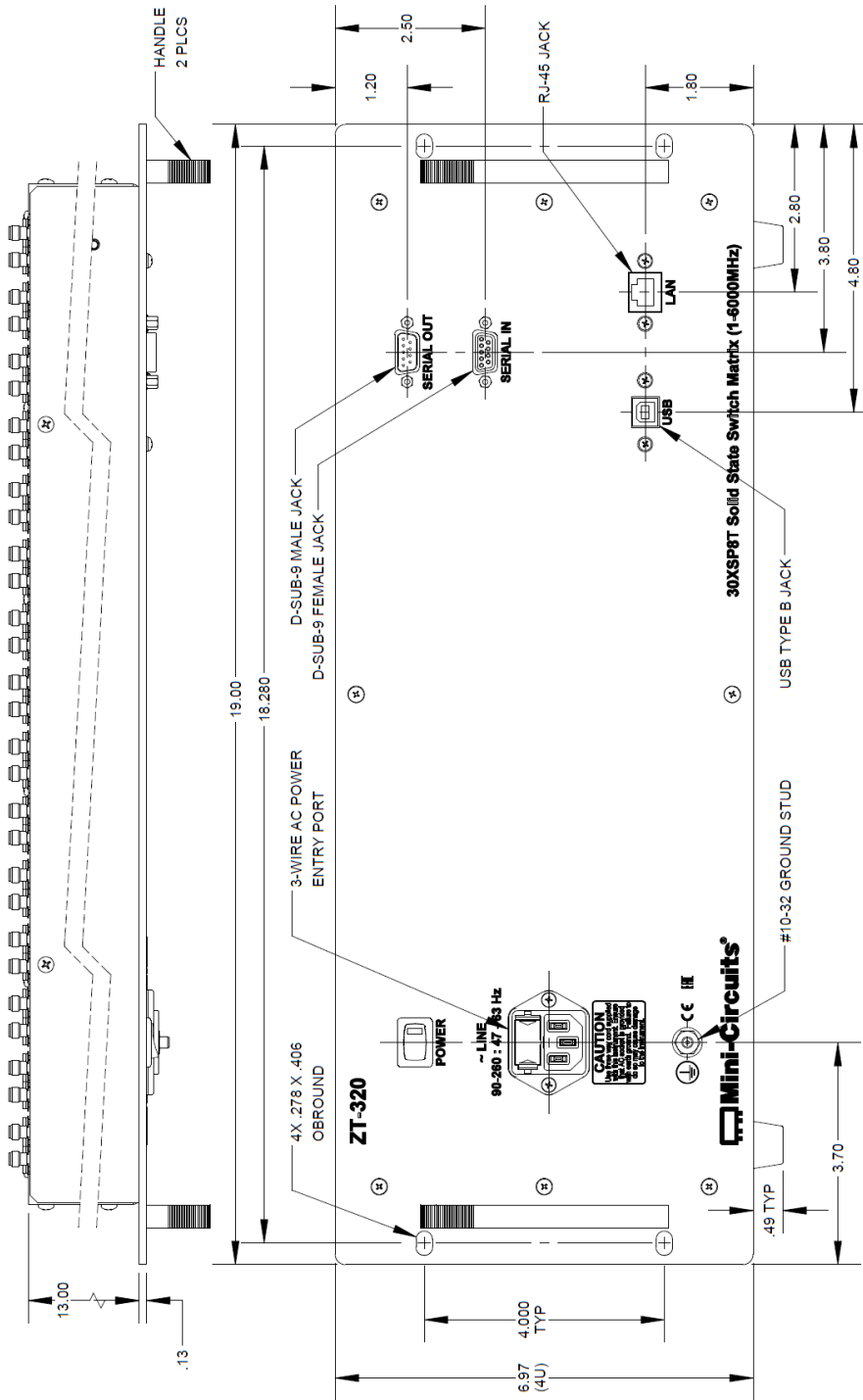
Typical Performance Data



Outline Drawing



Outline Drawing



Software Specifications

- Please contact testsolutions@minicircuits.com for support

Ethernet Control	Supported Protocols	TCP / IP, SSH, HTTP, Telnet, DHCP, UDP
	Max Data Rate	100 Mbps (100Base-T Full Duplex)
USB Control	Supported Protocols	HID - High Speed
	Min Communication Time	400 μ s 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	http://yoni-il.minicircuits.com/download/ZT320_UG_CD_X0.zip

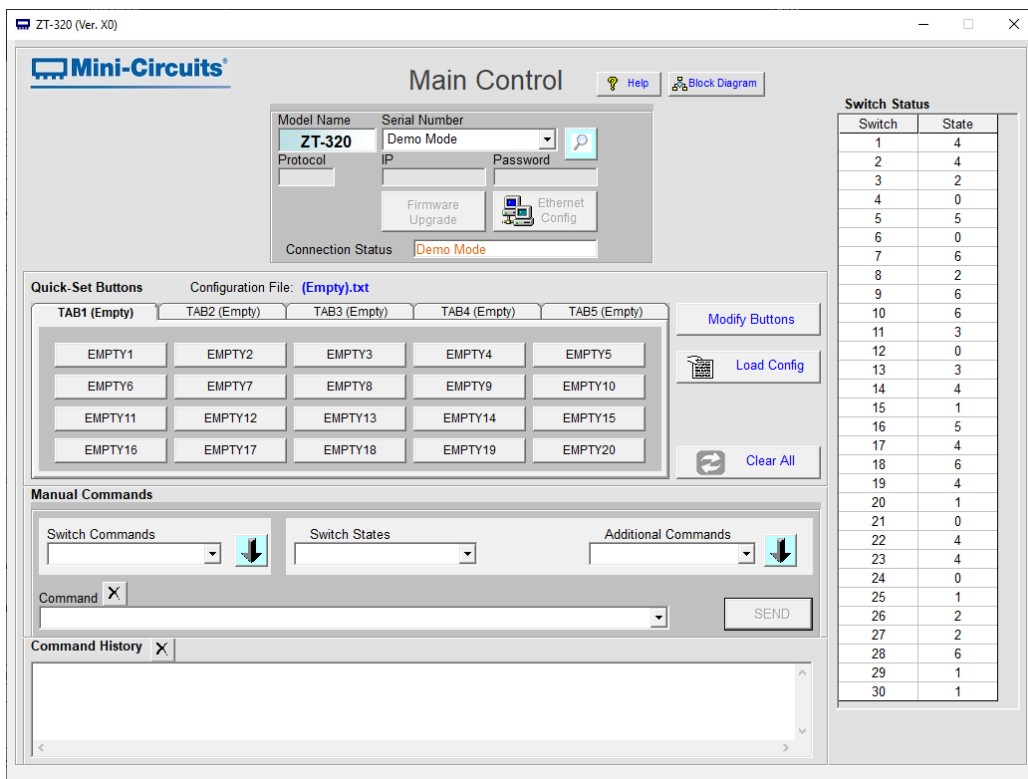
Programming Commands

- 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
:SP8T:sw_number:STATE:port	Set a single switch state: <ul style="list-style-type: none"> • sw_number = 1 to 30 • port = the switch state to set • Example: :SP8T:1:STATE:8
:SP8T:sw_number:STATE?	Get the state of a single switch: <ul style="list-style-type: none"> • sw_number = 1 to 30 • Example: :SP8T:1:STATE?

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 states
- Configure Ethernet settings
- Upgrade firmware
- Send SCPI commands



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

- 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