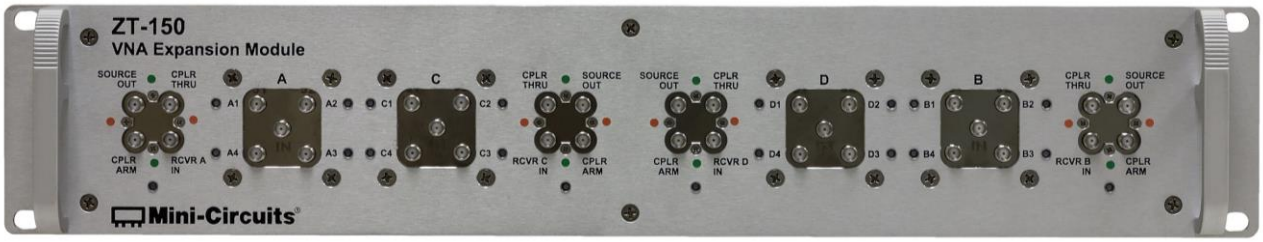
Company	General		
Model	ZT-150		

Description	*High Dynamic Range VNA Expansion Module*
Application	• *High Rejection Filter Measurements* • *High Isolation / Low Cross Talk Measurements* • *High Isolation Switching requirements* • *Applications where more ports than PNA-X can offer are needed*

Block Diagram:



Component List:

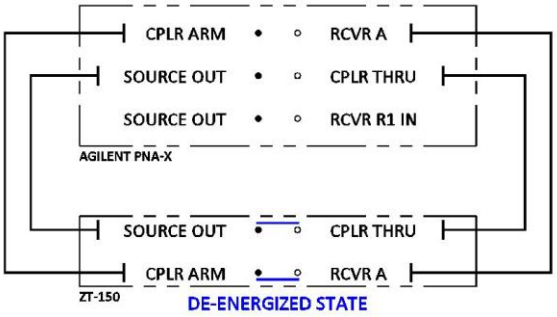
Switch Letters	Part Number	Description
Switches A – D	MSP4TA-18+	Absorptive Mechanical SP4T Switch (DC – 18 GHz)
Switches E – H	MTS-18XL-B+	Mechanical Transfer Switch (DC – 18 GHz)

Mechanical Requirement: Outline Drawing 99-01-1926

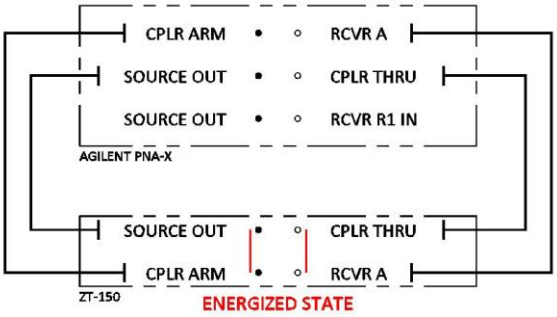
Dimensions	*19" (W) x 4U (H) x20" (D). Dimensions exclude rubber feet.*
Case	*Aluminum to be protected from corrosion/rust via protective coatings chosen by Mini-Circuits*
External	*2 handles on the front panel and rear safety block*
Support rubber feet	*4x B18-AH-002+ Included.*
Weight	*5.170 kg (Approx.)*
RF Connector	*SMA female*
Front panel	*Power ON/OFF switch. 4x MSP4TA-18+and 4x MTS-18XL+ switches with LED indicators*
Rear panel	*(a) 110/240V 50/60 Hz AC inlet (b) USB Type B port (c) RJ45 LAN port*
Part number marking	***Line 1:*** *ZT-150* ***Line 2:*** *VNA Expansion Module*
Operating temp	*0 to +40deg C*
Control interface	*USB and Ethernet TCP/IP*
Software support	*(a) API DLL to support typical software platform e.g. C#, C++ and Labview* *(b) Mini-Circuits' simplified direct mode GUI* *(c) Operating system: 32/64 bit* *(d) DLL type: ActiveX and .NET*

Company	General		
Model	ZT-150		

MTS Operating Modes (Standard vs. HDR mode):



NORMAL DYNAMIC RANGE MODE



HIGH DYNAMIC RANGE MODE

Electrical Specifications: at 25°C

MSP4TA-18+ (per switch):

Parameter	Condition	Min.	Typ.	Max.	Unit
Frequency Range		DC	—	18	GHz
Insertion Loss	DC - 1 GHz 1 - 8 8 - 12 12 - 18	— — — —	0.10 0.15 0.25 0.50	0.20 0.30 0.40 0.80	dB
Isolation	DC - 1 GHz 1 - 8 8 - 12 12 - 18	85 80 75 60	105 100 95 80	— — — —	dB
VSWR (Note 1,2)	DC - 1 GHz 1 - 8 8 - 12 12 - 18	— — — —	1.05 1.20 1.20 1.30	1.10 1.40 1.40 1.60	:1

MTS-18XL+ (per switch):

FREQUENCY (GHz)	INSERTION LOSS (dB)		ISOLATION (dB)		VSWR (:1)	
	Typ.	Max.	Typ.	Min.	Typ.	Max.
DC - 1	0.10	0.15	100	85	1.05	1.10
1 - 8	0.10	0.25	90	75	1.15	1.20
8 - 12	0.20	0.36	86	70	1.15	1.30
12 - 18	0.25	0.45	76	60	1.15	1.30

Additional Specifications

Typical Isolation between individual switches is 100 dB