4-Channel Variable Gain Amplifier ZT-270
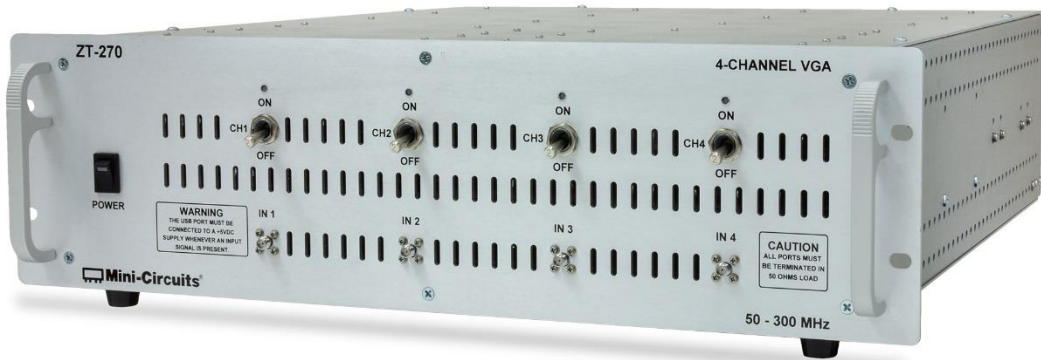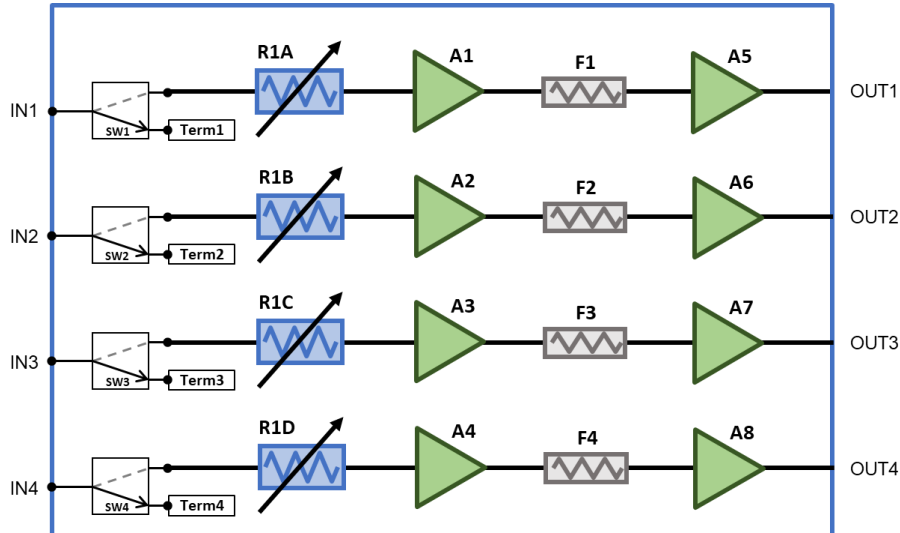
50Ω   50-300 MHz

Functional Block Diagram / Image

Product Overview

Mini-Circuits' ZT-270 is a variable gain amplifier (VGA) with 4 independently controlled channels covering 50-300 MHz. Each channel provides 30 dB gain control range, from 22 dB to 52 dB typically, in 0.25 dB steps, up to 2W output power. Four separate ON/OFF power switches on the front panel allow any channel to be quickly and safely isolated by terminating the input signal into an internal load.

The gain 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).

The system is housed in a compact 19-inch rack chassis (3U height) with SMA connectors, 4 x RF inputs on the front panel and 4 x RF outputs on the rear panel.

Please contact *testsolutions@minicircuits.com* for support

4-Channel Variable Gain Amplifier   ZT-270

Mechanical Specifications

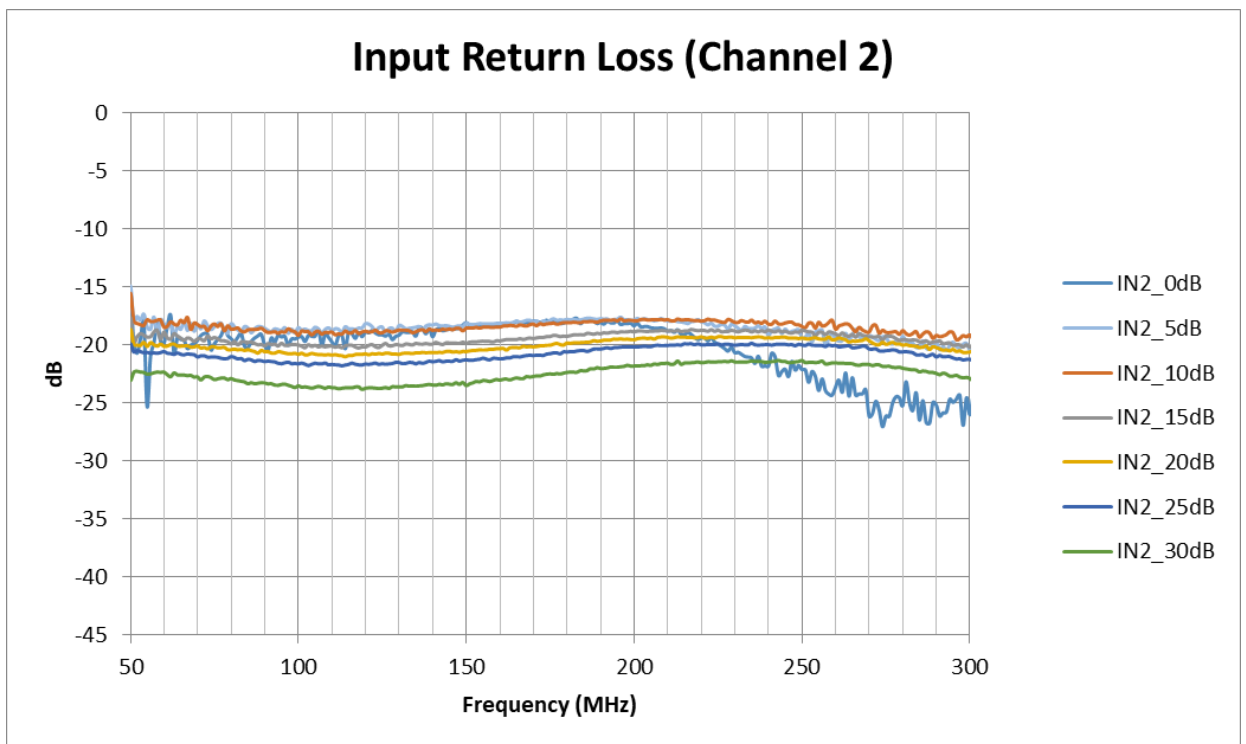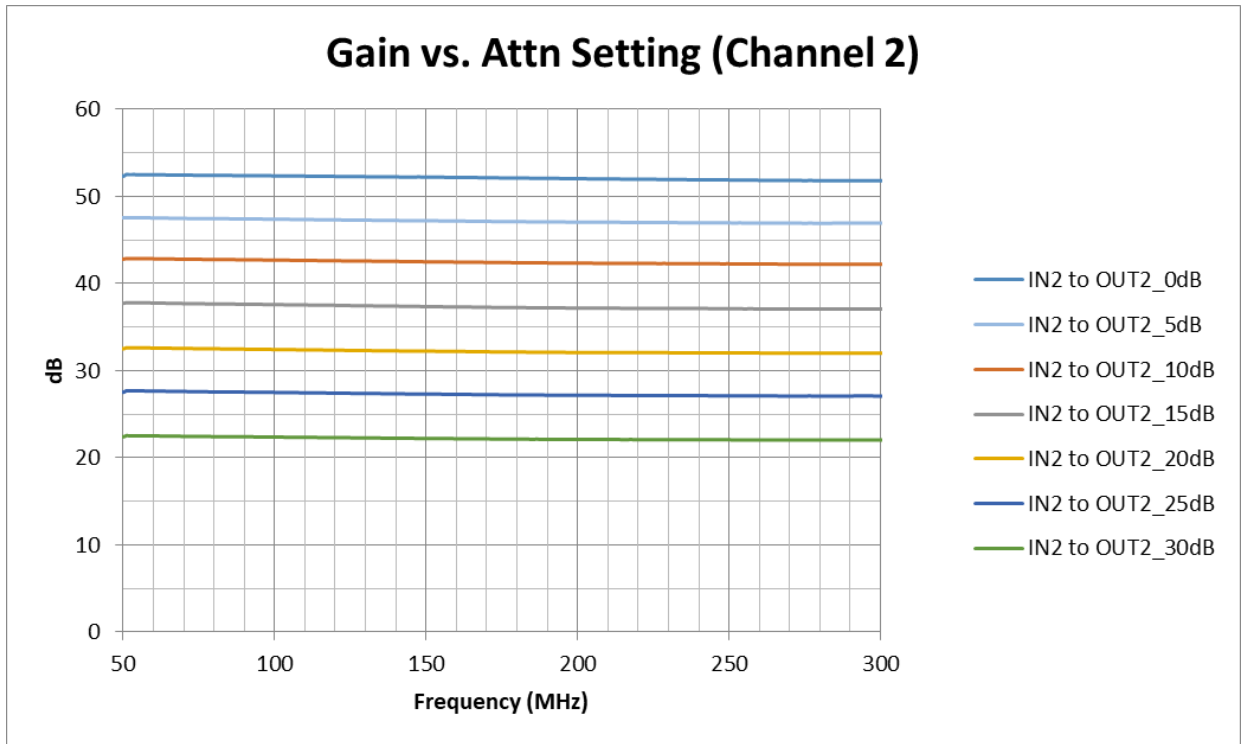|	
Dimensions	19" (W) x 3U (H) x 20" (D)
Case Material	Aluminum (with protective coatings to prevent corrosion)
Case Drawing	99-01-2714
Feet	3/4" x 3/4" Square Slides
RF Connectors	SMA female
Front Panel Marking	Product Marking: a) ZT-270 b) 4-CHANNEL VGA c) 50-300 MHz Warning Labels: a) Warning: The USB port must be connected to a +5V DC supply whenever an input signal is present b) Caution: All ports must be terminated in 50Ω load
Front Panel	a) 4 x RF inputs (SMA female) b) System ON/OFF switch with indicator light c) 4 x channel termination switch with indicator light d) Carry handles
Rear Panel	a) 4 x RF outputs (SMA female) b) AC mains power supply input c) USB & RJ45 control connections d) Cooling fan outlet e) Label with date code/serial number/MCL part# for traceability
Control Interface	a) USB and Ethernet TCP/IP supporting HTTP and TELNET protocols
Power Supply	a) AC mains power supply (90-260 V, 47-63 Hz) b) 2A, 250V fuse rating
Operating Temperature	0° to +50° C

Electrical Specifications at 25°C

Parameter	Conditions	Min	Typical	Max	Unit
Frequency		50		300	MHz
Small Signal Gain	@ 0dB Attenuation	50	52		dB
Input Return Loss			18		dB
Output Return Loss			15		dB
Attenuation Range	0.25dB Step Size	0		30	dB
Input Power	@ 0dB Attenuation			-20	dBm

Approximate Attenuation Settings for 2W Output

Input Power (dBm)	RCDAT Setting (dB)	Output Power (dBm)
4	24	33
0	20	33
-3	17	33

Mini-Circuits®

Typical Performance Data

Gain vs. Attn Setting (Channel 2)

Legend:
- IN2 to OUT2_0dB
- IN2 to OUT2_5dB
- IN2 to OUT2_10dB
- IN2 to OUT2_15dB
- IN2 to OUT2_20dB
- IN2 to OUT2_25dB
- IN2 to OUT2_30dB

Input Return Loss (Channel 2)

Legend:
- IN2_0dB
- IN2_5dB
- IN2_10dB
- IN2_15dB
- IN2_20dB
- IN2_25dB
- IN2_30dB

Typical Performance Data

Output Return Loss (Channel 2)
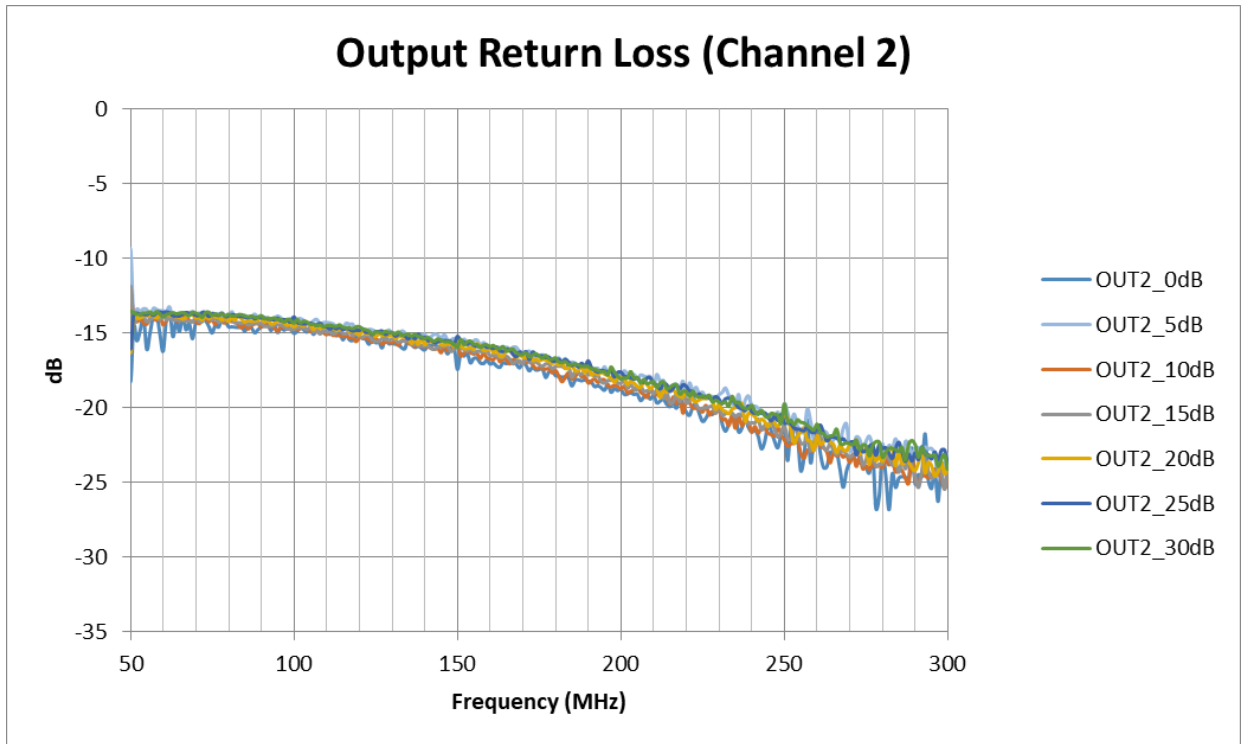
Outline Drawing
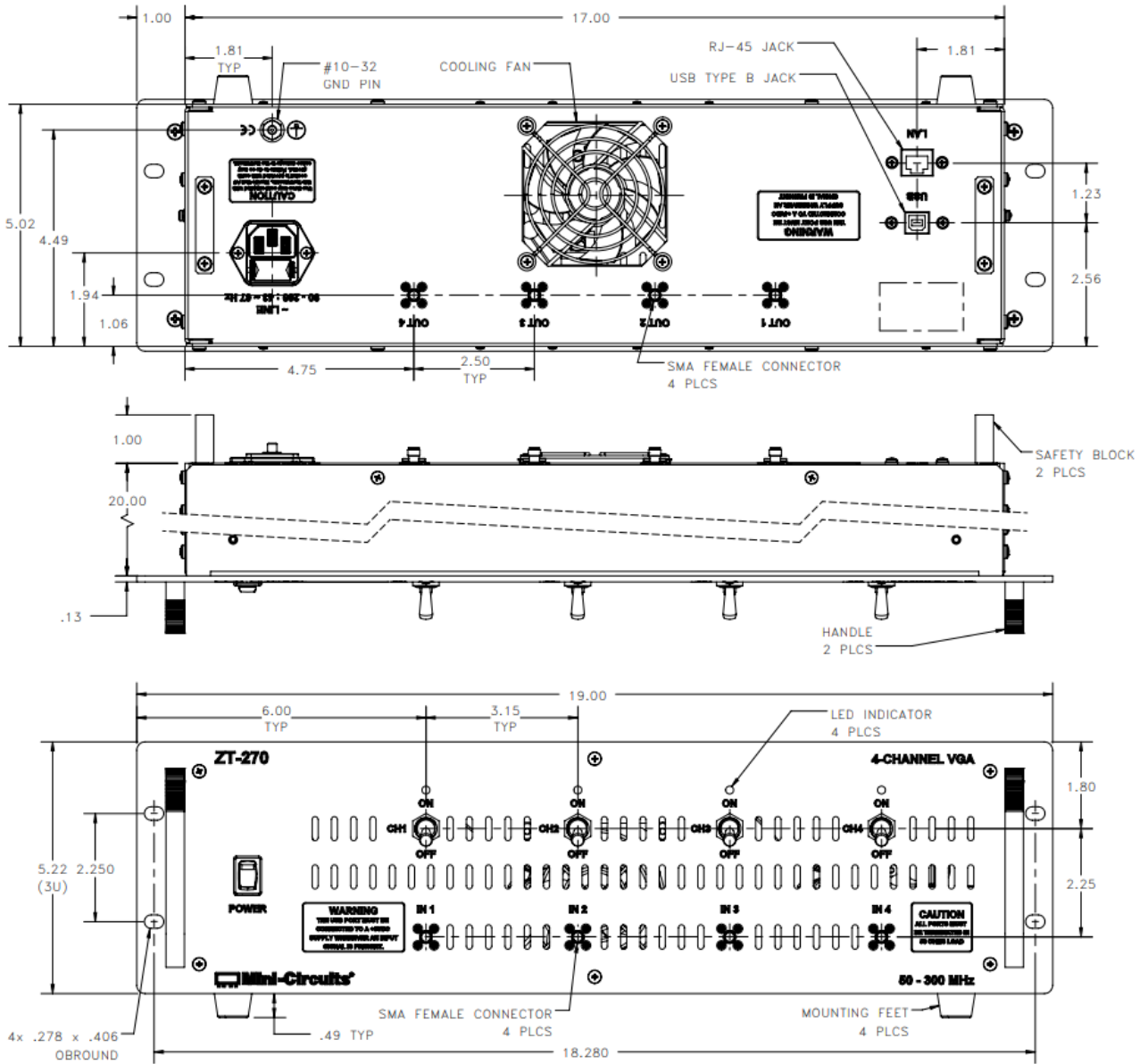
Software Specifications

Software & Documentation Download:

- Mini-Circuits' full software and support package including user guide, Windows GUI, DLL files, programming manual and examples are available for download from:
  https://www.minicircuits.com/softwaredownload/patt.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.

4-Channel Variable Gain Amplifier ZT-270

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 attenuation for each channel
- Set attenuation individually or for multiple channels at once
- Configure attenuation sweep / hop sequences
- Configure Ethernet settings
- Upgrade firmware