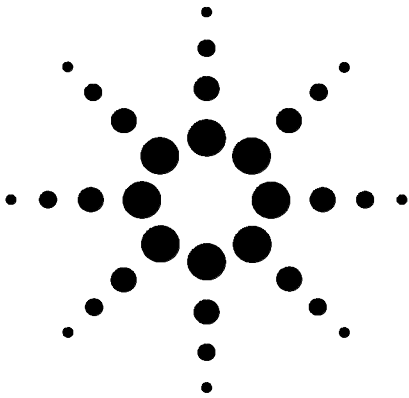# Agilent U2781A
6-slot USB Modular Instrument Chassis

Data Sheet

Features

- **6 USB module slots**

- **Simultaneous Synchronization (SSI)**

- **Star Trigger**

- **Internal and external 10 MHz reference clock**

- **Trigger in and trigger out signals**

- **SCPI commands**

- **IVI-COM driver compatibility**

- **USB TMC 488.2 Standards compliant**

- **USB 2.0 high speed interface**

- **Rackmount kit available as an option**

Introduction

Agilent U2781A USB Modular Instrument Chassis is a 4U height chassis with 6 USB module slots. It is a portable chassis with high performance added value. It targets a wide range of applications in both industrial and scientific environments. It helps you lower your cost of test and accelerate your test system integration and development.

The Agilent U2781A comes with USB plug and play connectivity. The USB interface that is compliant with the USBTMC 488.2 Standards works seamlessly with Agilent Measurement Manager software and can be controlled remotely via industry standard SCPI commands. In addition, the U2781A USB modular instrument chassis comes with Agilent IO Libraries Suite 14.2. The IO Libraries provide robust instrument control and work with the software development environment you choose. IVI-COM driver is also included to ensure an easy integration and compatibility with different programming environments.

Star trigger bus
The U2781A USB modular instrument chassis comes with star trigger bus, which offers precise synchronization between

USB modules and the external trigger signal. The star trigger bus is a dedicated trigger lines between the external trigger input and USB slots. Users can achieve precise trigger between each USB modules via the synchronization routing of the star trigger.

USB backplane
The USB backplane provides a means to synchronize the modules.

Additional Features
A 10MHz system reference clock is supplied to each modules slots. There are two temperature sensors and a monitoring fan control circuit to monitor the internal temperature and speed of the fans. The fans are mainly used for heat dissipation. The chassis also provides external 10MHz reference clock, external trigger in and trigger out functions via BNC connectors at the rear panel.

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ELECTRICAL SPECIFICATIONS

Power Supply AC Input	
Input voltage range	100 to 240 VAC
Input frequency range	50 to 60 Hz
Input current rating	3.5 A/115 VAC; 1.7 A/230 VAC
Effiency	75%
Power Supply DC Output	
Output rated voltage	12 VDC
Max output rated current	16.7 A
Max output rated power	200 W
Over voltage protection	13.2 to 16.2 V

Internal 10 MHz Reference Clock	
Accuracy	25 ppm for operating range
Slot to slot skew	350 ps
External 10 MHz Reference Clock	
Auto detection level	Yes
Input frequency range	10 MHz
Input magnitude	100 mVpp to 5 Vpp (sine/square wave)
Input impedance	$50\,\Omega \pm 5\,\Omega$
Damage level	10 Vrms
External Trigger In	
Compatibility	TTL
V_{IH} (Positive threshold voltage)	2.0 V
V_{IL} (Negative threshold voltage)	0.8 V
Hold time	8 ns pulse width
Input voltage range	0 to 5.0 V
Slot to slot skew	350 ps
External Trigger Out	
V_{OH}	2.9 V
V_{OL}	0.1 V
Output voltage range	0 to 3.3 V

MECHANICAL SPECIFICATIONS

Physical Layout	
Number of USB module slots	6
Dimension of each module slot	25.40 mm (W) x 174.54 mm (D) x 105.00 mm (H)
Dimension of chassis	270.00 mm (W) x 271.20 mm (D) x 197.00 mm (H)
Weight	3.7 kg
Power LED	ON/OFF type
USB Backplane	
Connector	55 pins Ernet male type C
Input signals	External 10 MHz clock in (BNC connector)
	External trigger in (BNC connector)
Output signal	Trigger out (BNC connector)
Cooling Fan	
Number of fans	2 (at the bottom of the chassis)
Fan speed	3300 rpm ±10%
Noise	37 dB(A)
Power (each fan)	2.52 W

GENERAL SPECIFICATIONS

REMOTE INTERFACE
USB 2.0 High Speed
USBTMC Class Device

POWER CONSUMPTION
400 VA maximum

OPERATING ENVIRONMENT
Operating temperature from 0 °C to +55 °C
Relative humidity at 15% to 85% RH (non-condensing)
Altitude up to 4600 meters

STORAGE COMPLIANCE
−20°C to +70°C

SAFETY COMPLIANCE
Certified with:
- IEC 61010-1:2001/EN 61010-1:2001 (2nd Edition)
- USA: UL61010-1: 2004
- Canada: CSA C22.2 No.61010-1:2004

EMC COMPLIANCE
Certified with:
- IEC/EN 61326-1 1998
- CISPR 11: 1990/EN55011:1991 , Group 1, Class A
- CANADA: ICES-001: 1998
- Australia/New Zealand: AS/NZS 2064.1

ACOUSTIC EMISSION
- Sound pressure level: 45.5 dB(A)
- Sound power level: 56.6 dB(A)

SHOCK and VIBRATION
Tested to IEC/EN 60068-2

DIMENSION (WxDxH)
270.00 mm x 271.20 mm x 197.00 mm

WEIGHT
3.7 kg

WARRANTY
One year

SOFTWARE REQUIREMENT

Agilent connectivity software included
Agilent IO Libraries Suite 14.2

Minimum system requirements (IO libraries and drivers)

PC hardware	500 MHz Pentium III or higher,
	256 MB RAM,
	40 GB hard disk space, CD-ROM drive
Operating System	Windows 2000 or higher
Computer Interface	USB 2.0 high speed

Software driver support for programming languages

Software driver :	IVI-COM

Compatible with programming environments:
Agilent VEE Pro, Agilent T&M Toolkit
Microsoft Visual Studio.NET, C/C++
Visual Basic 6
LabVIEW
MATLAB

PRODUCT OVERVIEW

FRONT VIEW

REAR VIEW

Standard Shipped Components:
- USB Interface Cable
- Quick Start Guide
- Functional Test Certificate
- Product Reference CD-ROM
- Agilent IO Libraries Suite 14.2 CD-ROM

Optional Accessories:
- U2905A Rackmount Kit for the U2781A 6-slot USB Modular Instrument Chassis

Agilent Technologies' Test and Measurement Support, Services, and Assistance
Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

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