Agilent
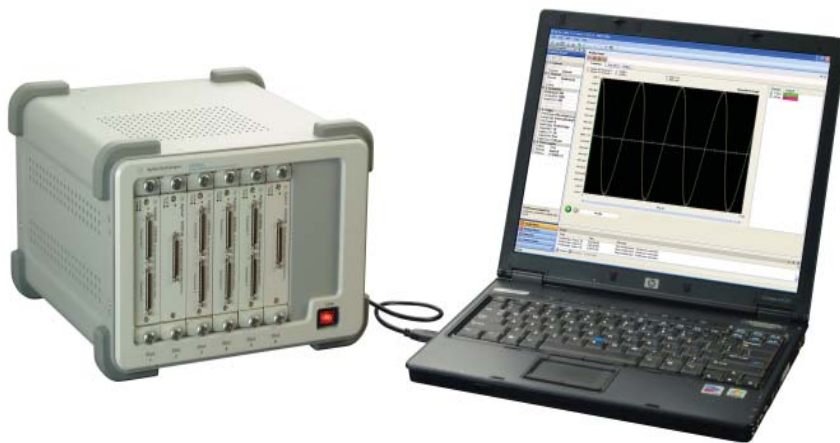
U2781A Six-Slot USB Modular Instrument Chassis

Data Sheet

Features

- **Six USB module slots**

- **System Synchronous Interface (SSI)**

- **Star trigger**

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

- **Trigger-in and trigger-out signals**

- **SCPI commands**

- **IVI-COM driver compatibility**

- **USBTMC 488.2 Standards**

- **USB 2.0 high-speed interface**

- **Rackmount kit available as an option**

Introduction

Agilent U2781A USB modular instrument chassis is a 4 U-high chassis with six USB module slots. This portable chassis provides housing for up to six Agilent U2300A Series USB modular multifunction data-acquisition (DAQ) devices. This further expands Agilent's range in PC-based data-acquisition solution, especially in the research and development (R&D), design-validation, and manufacturing fields, where engineers use DAQ extensively.

The U2781A modular chassis is an AC powered device and is equipped with an external 10 MHz reference clock and external trigger-in and trigger-out functions.

Easy to Use

The USB 2.0 high-speed interface gives the device plug-and-play and hot-swapping connectivity.

High-Density Data Acquisition

The U2781A modular chassis allows an expansion of up to 384 channels when slotted with the U2300A Series DAQ devices, providing a high- density data acquisition solution.

Triggering Using 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 pro-vides dedicated trigger lines between

the external trigger input and slotted USB modules.

Users can also achieve precise triggering between each USB module via the synchronized routing of the star trigger.

System Option

The U2781A modular instrument chassis has an optional mountable rackmount kit. This allows a better setup when it is integrated into a test system.

Compatible with wide range of ADEs

The Agilent U2300A DAQ devices are compatible with a wide range of Application Development Environments (ADE). This minimizes all the time taken by R&D and manufacturing engineers to use the devices in different software environments as they can program directly using SCPI commands.

Listed below are the popular development environments and tools that the DAQ device is compatible with:
- Agilent VEE and Agilent T&M Toolkit
- Microsoft Visual Studio.NET, C/C++ and Visual Basic 6
- LabVIEW
- MATLAB® (Agilent U2300A Adaptor is available at www.agilent.com/find/ U2300A)

For more information, please visit www. agilent.com/find/U2300A.

Product Characteristics and General Specifications

REMOTE INTERFACE
- Hi-Speed USB 2.0
- USBTMC class device

POWER CONSUMPTION
- 400 VA maximum
- Installation Category II

OPERATING ENVIRONMENT
- Operating temperature from 0 °C to +55 °C
- Relative humidity at 15% to 85% RH (non-condensing)
- Altitude up to 2000 meters
- Pollution Degree 2
- For indoor use only

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
- IEC/EN 61326-1 1998
- CISPR 11: 1990/EN55011:1991, Class A, Group 1
- 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 (without any modules slotted in)
- 6.0 kg (with maximum six modules slotted in)

WARRANTY
Three years

System Requirements

PROCESSOR
1.6 GHz Pentium IV or higher

OPERATING SYSTEM
One of the following Microsoft® Windows® versions:
- Windows XP Professional or Home Edition (Service Pack 1 or later)
- Windows 2000 Professional (Service Pack 4 or later)

BROWSER
Microsoft Internet Explorer 5.01 or higher

AVAILABLE RAM
512 MB or higher recommended

HARD DISK SPACE
1 GB

PREREQUISITES
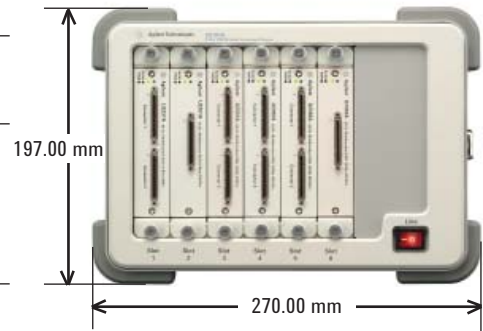- Agilent IO Libraries Suite 14.2[1] or higher
- Agilent T&M Toolkit 2.1 Runtime version[2]
- Microsoft .NET Framework version 1.0 and 2.0[2]

Product Outlook and Dimension

Front View
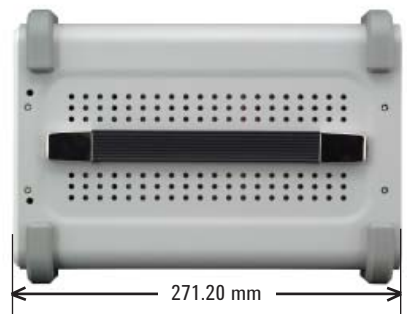

197.00 mm

270.00 mm

Rear View

Side View

271.20 mm

Standard Shipped Items
- USB Extension Cable
- Agilent U2781A USB Modular Instrument Chasis Quick Start Guide
- Agilent USB Modular Instrument U2300A & U2700A Series Product Reference CD-ROM
- Agilent Automation-Ready CD (contains the Agilent IO Libraries Suite)
- Functional Test Certificate

Optional Accessories
- U2905A rackmount kit for the U2781A 6-slot USB modular instrument chassis

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[1] Available in Agilent Automation-Ready CD
[2] Bundled with Agilent Measurement Manager software application installer

Electrical Specifications

Power Supply AC Input	
Input voltage range	100 to 240 VAC
Input frequency range	50 to 60 Hz
Power consumption	400 VA maximum
Efficiency	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 Ω ± 5 Ω
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
Fan speed	3300 rpm ±10%
Noise	37 dB(A)
Power (each fan)	2.52 W

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LXI

www.lxistandard.org
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