Agilent U2781A
6-slot USB Modular Instrument Chassis

Data Sheet

Features

- **6 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 R&D, design validation and manufacturing fields as DAQ is widely used by engineers in those areas.

The U2781A modular chassis is an AC powered device and 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 enables the device to have a plug-and-play and hot swappable 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 comprises of dedicated trigger lines between the external trigger input and slotted USB modules. Users can also achieve precise triggering between each USB modules 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.

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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
Efficiency	75%
Power Supply DC Output	
Output rated voltage	12 VDC
Max output rated current	16.7 A
Max output rated power	200 W
Overvoltage 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 (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

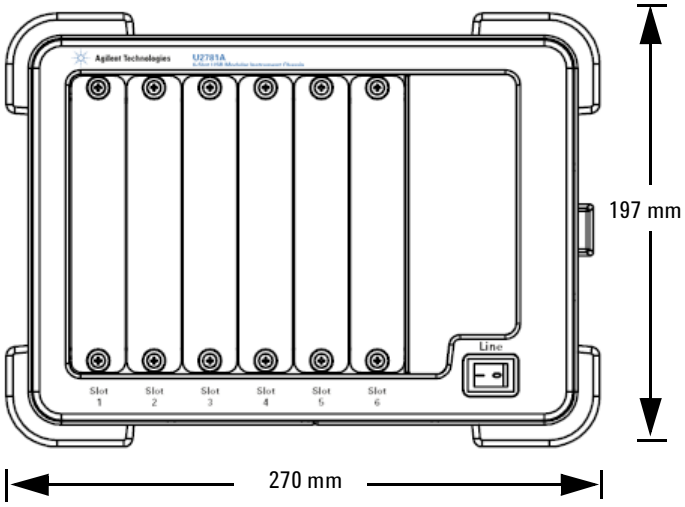
Software driver support for programming languages

Software driver : IVI-COM

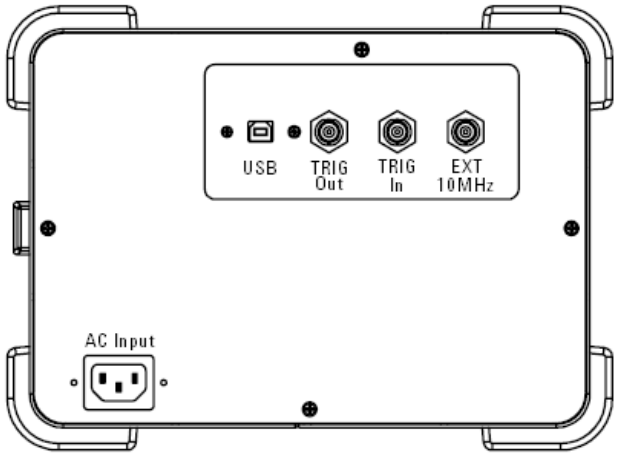
Compatible with programming environments:
Agilent VEE Pro, Agilent T&M Toolkit
Microsoft Visual Studio.NET, C/C++
Visual Basic 6
LabVIEW
MATLAB

PRODUCT OVERVIEW

FRONT VIEW



REAR VIEW



Standard Shipped Components:

- USB interface cable
- Quick Start Guide
- Functional Test Certificate
- Product Reference CD
- Agilent IO Libraries Suite 14.2 CD

Optional Accessories:

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