ЦИФРОВЫЕ ПЛАТЫ

52401-25-200M;
52405-5-3, 10-2, 25-1, 25-3;
52401E-6-1, 25-200M;
52405E-5-3, 10-2, 25-1, 25-3;
33010, 36010, 36020

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72
Астана +7(7172)727-132
Астрахань (8512) 99-46-04
Барнаул (3852) 73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812) 21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692) 22-31-93
Симферополь (3652) 67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462) 77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212) 92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

сайт: chrm.nt-rt.ru || эл. почта: cmr@nt-rt.ru

HIGH PRECISION SOURCE MEASURE UNIT

MODEL 52400 SERIES

The 52400 series is a PXI based SMU (Source Measurement Unit) card designed for highly accurate source or load simulation with precision voltage and current measurements.

The SMU combines four-quadrant operation with precision and high speed measurement. This makes the SMU an ideal instrument in many parametric test applications ranging from ICs, two-leaded components such as sensors, LEDs, laser diodes, transistors, to solar cells, batteries and many other electronic devices.

The 52400 series features: 16 selectable control bandwidths to ensure high speed output and stable operation; multiple source/measure ranges with an 18-bit DAC/ADC to provide the best resolution and accuracy available with a sampling rate up to 100K s/S; programmable internal series resistance for battery simulation; ±force, ±sense and ±guards lines to avoid leakage current and reduce settling time -- especially useful for low current test applications.

The 52400 series has a patented hardware sequence engine that uses deterministic timing to control each SMU. The sequencer's on-board memory can store up to 65535 sequencer commands and 32k measurement samples per channel, allowing cross module/card synchronization and latency free output control and measurement. No PC communication is required during execution of the hardware sequencer test process.

C, C#, LabView, LabWindows APIs and versatile soft front panels come standard with each SMU. The back connectors are compatible with both PXIe and hybrid chassis. All of these features enable easy integration to PXI or PXI-hybrid systems designed for a wide range of applications.

PXI Systems Alliance

MODEL 52400 SERIES

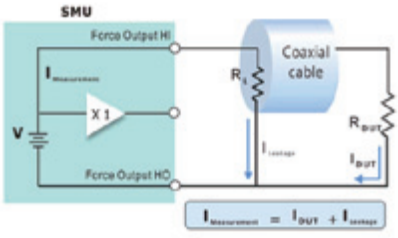
KEY FEATURES

- Hybrid compatible PXI
- Four quadrant operation
- 18-bit source/measure resolution (multiple selectable ranges)
- Low output noise
- High measurement speed (100k s/S)
- High output slew rate
- Optional measurement log
- DIO/Trigger bits
- Output profiling by hardware sequencer
- Programmable output resistance
- Floating & Guarding output
- 16 Control Bandwidth Selection
- Master / Slave operation
- Driver with LabView/LabWindows & C/C# API
- Softpanel GUI

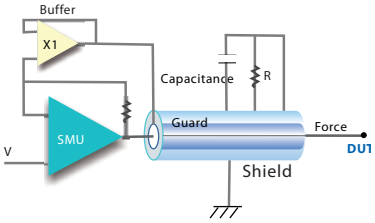
APPLICATIONS

- Semiconductor test
- LED / laser diode test
- Battery test
- Transistor test
- Solar cell test
- Electric vehicle test
- Avionics test
- Power electronics test
- Sensor test

GUARDING FOR LOW CURRENT APPLICATION



Leakage current flows through the cable's insulation resistance



Guard Connection: Cable Capacitance is eliminated with Triaxial Cable

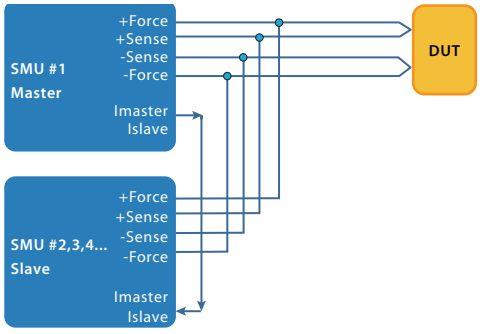
Guarding is an important technique for very-low current measurements. Guarding reduces leakage current error and decreases settling time. This is achieved by keeping the potential of the guard connector at the same potential as the force conductor, so current does not flow between the force and guard conductors. Guarding also eliminates the cable capacitance between the SMU and DUT.

The 52400 series features two ±guard wires per channel, resulting in faster and more accurate measurements.

MASTER/SLAVE OPERATION

For maximum flexibility, the 52405 SMUs support Master/Slave operation when higher current under FVMI (Force Voltage Measure Current) mode is required. To ensure accurate current sharing between modules and maximum performance, Master/Slave operation is only allowed between SMUs of the same model number.

Current sharing is achieved by one channel operating as the Master under FVMI mode while the Slaves operate in FIMV mode. The Master channel is programmed in voltage mode while the Slaves are set to current mode. The Slaves will follow the Master's set voltage. The wiring diagram for current sharing in master/slave control is shown to the right.



Wiring Structure for Master/Slave Control

SPECIFICATIONS

Model Name	52401-25-200m	52405-5-3 *1	52405-10-2 *1	52405-25-1 *1	52405-25-3 *1
Slots	1				
Output Channels	2				
Source	5W x 2	25W x 2			
Load	5W x 2	10W x 2			
Input Voltage	External 48VDC source required *2				
Input Current	0.7A Max	2.2A Max			
Output Isolation	Isolated	Isolated by External Power Supply			
Bit Resolution	18 bits				
Programmable Loop Bandwidth	16 steps				
Force Voltage Ranges	±25V, ±10V, ±5V, ±2.5V, ±1V, ±500mV	±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV
Force Current Ranges	±200mA, ±20mA, ±2mA, ±200uA, ±20uA, ±2uA, ±200nA	±3.5A, ±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±3.5A(≤ 5V), ±2.5A(≤ 10V), ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA
Measure Voltage Ranges	±25V, ±10V, ±5V, ±2.5V, ±1V, ±500mV, ±250mV, ±100mV, ±50mV, ±25mV, ±10mV, ±4mV	±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV
Measure Current Ranges	±200mA, ±20mA, ±2mA, ±200uA, ±20uA, ±2uA, ±200nA	±3.5A, ±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±3.5A(≤ 5V), ±2.5A(≤ 10V), ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA

SPECIFICATIONS

Model Name	52401-25-200m	52405-5-3 *1	52405-10-2 *1	52405-25-1 *1	52405-25-3 *1
Force Voltage Accuracy	0.05% reading + 0.0076% F.S. (≥ 500mV Range) 0.02% reading + 25uV (<500mV Range)	0.05% reading + 0.008% F.S. (≥ 500mV Range) 0.05% reading + 25uV (<500mV Range)			
Force Current Accuracy	0.05% reading + 0.05% F.S. (≥ 2uA Range) 0.05% reading + 200pA (<2uA Range)	0.1% reading + 0.1% F.S. (>1A Range) 0.05% reading + 0.05% F.S. (≤ 1A Range)			
Measure Voltage Accuracy	0.05% reading + 0.0076% F.S. (≥ 500mV Range) 0.05% reading + 25uV (<500mV Range)	0.05% reading + 0.008% F.S. (≥ 500mV Range) 0.05% reading + 25uV (<500mV Range)			
Measure Current Accuracy	0.05% reading + 0.05% F.S. (≥ 2uA Range) 0.05% reading + 200pA (<2uA Range)	0.1% reading + 0.12% F.S. (>1A Range) 0.05% reading + 0.05% F.S. (≤ 1A Range)			
Wideband Source Noise	< 20 mV pp 20Mhz BW No Load				
Measurement Sampling Rate	100K Samples/s				
Output Connection	6 Wires (±Force, ±Sense, ±Guard)				
Measurement Log	32K Samples/channel				
Output Profiling	65535 Steps				
Trigger Input	1 Ch	Programmable 8 Ch			
Trigger Output					
Floating Output	Channel Isolated				
Master/Slave Mode	No	Yes			
Programmable Resistance	No	Yes			
Regulatory Compliance	CE/FCC				

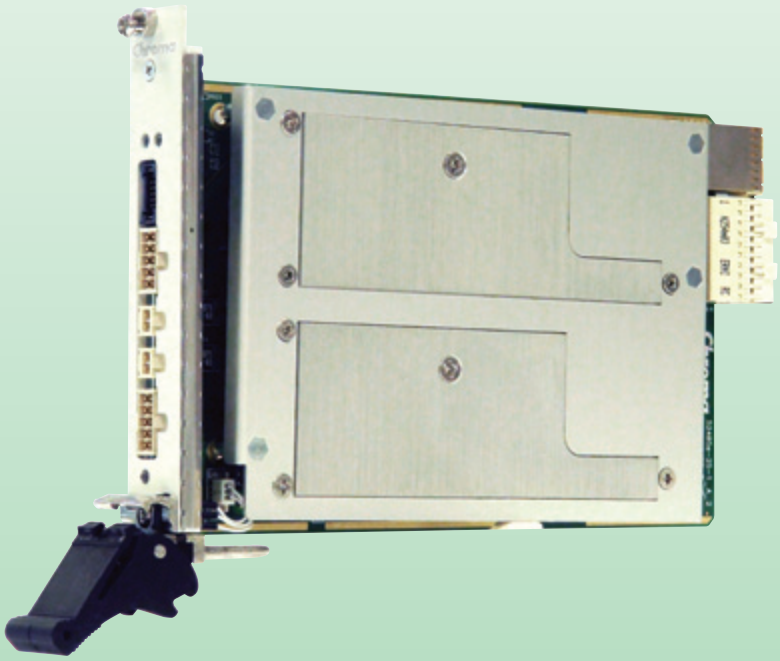
Note *1 : The limitation of the duty cycle for 52405 series.

Below are the maximum duty cycles while PXI-SMU card is at full load with frequency larger than 1Hz :

duty cycle = 50% at 2.5A range ; duty cycle = 40% at 3.5A range

When the PXI-SMU card is over temperature, it will automatically disconnect output to protect the unit

Note *2 : Required voltage range 48V ± 5% ; required voltage noise ≤ 100mVpp



HIGH PRECISION SOURCE MEASURE UNIT

MODEL 52400e SERIES

The 52400e series is a PXIe based SMU (Source Measurement Unit) card designed for highly accurate source or load simulation with precision voltage and current measurements.

The SMU combines four-quadrant operation with precision and high speed measurement. This makes the SMU an ideal instrument in many parametric test applications ranging from ICs, two-leaded components such as sensors, LEDs, laser diodes, transistors, to solar cells, batteries and many other electronic devices.

The 52400e series features: 16 selectable control bandwidths to ensure high speed output and stable operation; multiple source/measure ranges with an 18-bit DAC/ADC to provide the best resolution and accuracy available with a sampling rate up to 100K s/S; programmable internal series resistance for battery simulation; ±force, ±sense and ±guards lines to avoid leakage current and reduce settling time -- especially useful for low current test applications.

The 52400e series has a patented hardware sequence engine that uses deterministic timing to control each SMU. The sequencer's on-board memory can store up to 65535 sequencer commands and 32k measurement samples per channel, allowing cross module/card synchronization and latency free output control and measurement. No PC communication is required during execution of the hardware sequencer test process.

C, C#, LabView, LabWindows APIs and versatile soft front panels come standard with each SMU. The back connectors are compatible with both PXIe and hybrid chassis. All of these features enable easy integration to PXIe or PXI-hybrid systems designed for a wide range of applications.

PXI Systems Alliance

MODEL 52400e SERIES

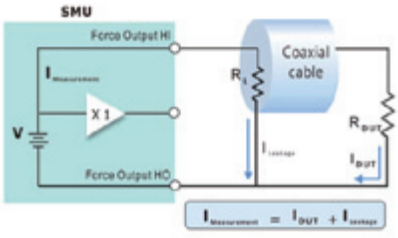
KEY FEATURES

- 1- Slot PXI express module
- 2/4 independent channels (4 ch for Model 52401e-6-1)
- 18-bit resolution
- Four quadrant operation
- 6-wire Force/Sense/Guard
- Low output noise
- DIO/Trigger bits
- Deterministic hardware sequencer
- Programmable resistance
- 16 control bandwidth selection
- Master/Slave operation
- LabView/LabWindows & C/C#
- Softpanel GUI

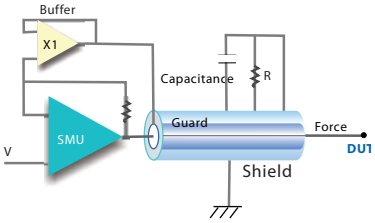
APPLICATIONS

- Semiconductor
- LED / Laser Diode
- Solar Cell
- Battery / BMS
- Transistor
- Automotive
- Avionics
- Power Electronics
- Sensor / IoT

GUARDING FOR LOW CURRENT APPLICATION



Leakage current flows through the cable's insulation resistance



Guard Connection: Cable Capacitance is eliminated with Triaxial Cable

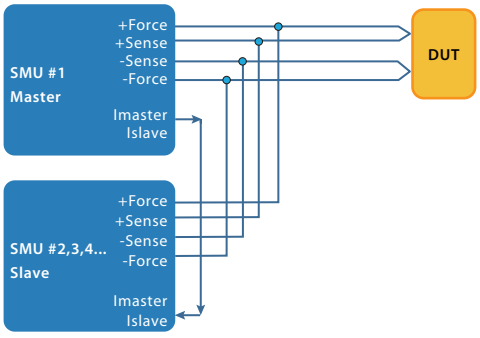
Guarding is an important technique for very-low current measurements. Guarding reduces leakage current error and decreases settling time. This is achieved by keeping the potential of the guard connector at the same potential as the force conductor, so current does not flow between the force and guard conductors. Guarding also eliminates the cable capacitance between the SMU and DUT.

The 52400e series features two ±guard wires per channel, resulting in faster and more accurate measurements.

MASTER/SLAVE OPERATION

For maximum flexibility, the 52405e SMUs support Master/Slave operation when higher current under FVMI (Force Voltage Measure Current) mode is required. To ensure accurate current sharing between modules and maximum performance, Master/Slave operation is only allowed between SMUs of the same model number.

Current sharing is achieved by one channel operating as the Master under FVMI mode while the Slaves operate in FIMV mode. The Master channel is programmed in voltage mode while the Slaves are set to current mode. The Slaves will follow the Master's set voltage. The wiring diagram for current sharing in master/slave control is shown to the right.



Wiring Structure for Master/Slave Control

SPECIFICATIONS

Model Name	52401e-6-1	52401e-25-200m	52405e-5-3 *1	52405e-10-2 *1	52405e-25-1 *1	52405e-25-3 *1
Slots	1					
Output Channels	4	2				
Source	3W x 4	5W x 2	25W x 2			
Load	1.8W x 4	5W x 2	10W x 2			
Input Voltage	Backplane Power	External 48VDC source required *2				
Input Current	2.5A Max	0.7A Max	2.2A Max			
Output Isolation	Isolated but share common LO	Isolated	Isolated by External Power Supply			
Bit Resolution	16 Bits	18 bits				
Programmable Loop Bandwidth	8 steps	16 steps				
Settling Time	<30µSec, typically					
Force Voltage anges	±6V	±25V, ±10V, ±5V, ±2.5V, ±1V, ±500mV	±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV
Force Current Ranges	±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA	±200mA, ±20mA, ±2mA, ±200uA, ±20uA, ±2uA, ±200nA	±3.5A, ±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±3.5A(≤5V), ±2.5A(≤10V), ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA
Measure Voltage Ranges	±6V	±25V, ±10V, ±5V, ±2.5V, ±1V, ±500mV, ±250mV, ±100mV, ±50mV, ±25mV, ±10mV, ±4mV	±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV	±25V, ±12.5V, ±10V, ±5V, ±2V, ±1V, ±500mV, ±200mV, ±100mV
Measure Current Ranges	±1A, ±100mA, ±10mA, ±100uA, ±10uA	±200mA, ±20mA, ±2mA, ±200uA, ±20uA, ±2uA, ±200nA	±3.5A, ±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±2.5A, ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA	±3.5A(≤5V), ±2.5A(≤10V), ±1A, ±100mA, ±10mA, ±1mA, ±100uA, ±10uA, ±1uA

SPECIFICATIONS

Model Name	52401e-6-1	52401e-25-200m	52405e-5-3 *1	52405e-10-2 *1	52405e-25-1 *1	52405e-25-3 *1
Force Voltage Accuracy	0.02% reading + 0.01% F.S.	0.05% reading + 0.0076% F.S. (≥500mV Range) 0.02% reading + 25uV (<500mV Range)	0.05% reading + 0.008% F.S. (≥500mV Range) 0.05% reading + 25uV (<500mV Range)			
Force Current Accuracy	0.1% reading + 0.1% F.S. (1A Range) 0.05% reading + 0.05% F.S. (<1A Range)	0.05% reading + 0.05% F.S. (≥2uA Range) 0.05% reading + 200pA (<2uA Range)	0.1% reading + 0.1% F.S. (>1A Range) 0.05% reading + 0.05% F.S. (≤1A Range)			
Measure Voltage Accuracy	0.02% reading + 0.01% F.S.	0.05% reading + 0.0076% F.S. (≥500mV Range) 0.05% reading + 25uV (<500mV Range)	0.05% reading + 0.008% F.S. (≥500mV Range) 0.05% reading + 25uV (<500mV Range)			
Measure Current Accuracy	0.1% reading + 0.1% F.S. (1A Range) 0.05% reading + 0.05% F.S. (<1A Range)	0.05% reading + 0.05% F.S. (≥2uA Range) 0.05% reading + 200pA (<2uA Range)	0.1% reading + 0.12% F.S. (>1A Range) 0.05% reading + 0.05% F.S. (≤1A Range)			
Wideband Source Noise	< 30 mV pp 20Mhz BW No Load					
Measurement Sampling Rate	600K Samples/s	100K Samples/s				
Output Connection	5 Wires (±Force, ±Sense, +Guard)	6 Wires (±Force, ±Sense, ±Guard)				
Measurement Log	32K Samples/channel					
Output Profiling	65535 Steps					
Trigger Input	Programmable 4 Ch	1 Ch	Programmable 8 Ch			
Trigger Output						
Floating Output	No	Channel Isolated				
Master/Slave Mode	Yes	No	Yes			
Programmable Resistance	Yes	No	Yes			
Regulatory Compliance	CE/FCC					

Note *1 : If chassis has less than 38.2W/slot, then the below output limitations apply.

2.5Amp range = 50% on duty cycle, 500mSec maximum continuous on time

3.5Amp range = 40% on duty cycle, 500mSec maximum continuous on time (1250mSec off during maximum on time case)

If the PXI-SMU card is over temperature, it will automatically disconnect output to protect the unit.

Note *2 : Required Voltage Range 48V ± 5% ; Required Voltage Noise ≤ 100mVpp

All specifications are subject to change without notice.

PROGRAMMABLE HIGH SPEED PXIE DIGITAL IO CARD MODEL 33010

33010 is a high-density 100MHz PXIe digital IO card designed for characterizing, validating, and testing a variety of digital and mixed-signal ICs. Each IO card consists of a Sequencer Pattern Generator (SQPG) and 32 channels of full ATE-like features. The 33010 IO card is expandable up to 256 channels. Some unique features of the 33010 include an on-board SQPG, per pin timing/levels/PMU/TFMU, multiple time domains, and multi-threaded testing for complex IC testing. Each channel is also equipped with 64M vector memory, 16 timing sets with on-the-fly timing change, and per pin timing and frequency measurements up to 400 MHz.

Proprietary Software, CRAFT_PXI and other rich features of software support

In addition to LabView and LabWindows support, provides a proprietary software option, CRAFT_PXI, for Windows-based systems. CRAFT_PXI contains a full set of production tools and user debugging tools. The production tools include ease-of-use GUI software with an Operator Interface, Test Data Output, Binning and Sequence Control, Wafer Map, Summary Tool, and rich sets of prober/handler drivers. The user debugging tools include a Data Logger, Debug Plan, TCM, Shmoo, Pattern Editor, Waveform, and more. A CAD to ATE pattern conversion tool is also supported to cover WGL/STIL/VCD/EVCD conversions.

Addressing the emerging market and test cost challenges

With a high-density per pin and per site architecture, full suite of ATE Pin Electronics (PE) card functions, expandable channel count, and a rich set of software support, the 33010 digital IO card will help users address the emerging market and test cost challenges. 33010 PXIe cards can be easily adopted with other PXI/PXIe solutions such as RF, SMUs, and Mixed-signal cards to address a variety of applications such as MCUs, Sensors, RF ICs, PMICs, or ICs with combined functions.

MODEL 33010

KEY FEATURES

- Standard PXIe-Hybrid [3U] compatible bus type
- 100MHz maximum clock rate
- 32 channels per board
- Extendable up to 256 channels in one chassis
- Any pin to any site
- Per board sequencer architecture (multiple time domains supported)
- Per-pin timing with per-pin, per-cycle bidirectional control
- Per-pin frequency measurement unit
- Per-pin DC level & PMU
- 16 timing sets with on-the-fly timing changes
- 64M sequencer command memory per pin
- 64M vector memory per pin
- SCAN pattern function support
- Windows 7 operating system
- LabView and LabWindows support
- Proprietary CRAFT_PXI software tools option
- Master / Slave architecture for boards chaining
- Similar to pattern and timing structure as 3380D/3380P/3380 series ATE

APPLICATIONS

- Semiconductor
- LED / Laser Diode
- Solar Cell
- Battery / BMS
- Transistor
- Automotive
- Avionics
- Power Electronics
- Sensor / IoT

PXI Systems Alliance

SPECIFICATIONS

Model	33010
Clock Rate	100 Mhz
Pin Channels per Card	32 pins (chained to max. 256 pins)
Pattern Memory	64M
Sequence Control Memory	64M
Parallel Testing Capability	Any pin to any site
Timing Generator per Pin	
Timing Generators	8 edges per pin (4 drive / 2 strobes / 2 IO markers)
No. of Timing Sets	16
Rate Setting Resolution	625 pS
Rate Setting Range	10ns to 5ms
Driver / Comparator / Load	
Pin Driver (Vil/Vih) Range	-1.5V to +6V
Pin Driver(Vil/Vih) Accuracy	±10mV
Output Current Limit	75 mA
Output Impedance	50±5Ω
Pin Comparator (Voh/Vol) Range	-1.5V to +6V
Pin Comparator (Voh/Vol) Accuracy	±10mV
Pin Load (Iol/Ioh) Range	±25mA
Vref Setting Range	-1.5V to +6V
Scan Chains	
Scan Chains Numbers	Configurable to 1, 2, 4, 8 chains per board
Scan Pattern Memory Size	3G /1.5G / 768M / 384M
PPMU	
Channel	Per Pin (32 Chs FIMV / FVMI)
Voltage Force Range	-2.0V to +6V
Current Measured Range	±2uA /±10uA / ±100uA / ±1mA / ±40mA
Current Force Range	±2uA / ±10uA / ±100uA / ±1mA / ±40mA
Voltage Measured Range	-2.0V to +6V
Time & Frequency Measurement Unit	
Maximum Frequency Measurement	Per pin, 400MHz
Maximum Time Measurement	Per pin, 40 sec. (0.025Hz / resolution : 10ns)
Free-run Clock	Per Pin, Max. : 200MHz
Others	
System Environment	Window 7
Programming Language	C \ C# \ Labview
Power Consumption	80W
Dimension	PXIe 3U

Optional PXIe Power Supply	A330101 (AP15)
Input Voltage (VAC)	100 ~ 240 ±10% V_{LN}
Source Line Frequency Range	47 ~ 63Hz
Input Current , Continuous (A)	0.1 ~ 2.7A
Output Range (Vdc)	17.6~18.9 VDC ± 5%
Output Current, Continuous (A)	11.2A
Output Voltage Ripple Noise	150mV
Max. Support Watt	up to 200W (33010 x 4)
Occupy Slots	2 slots

PROGRAMMABLE PIN ELECTRONICS MODULE

MODEL 36010

The 36010 is a 100MHz programmable pin electronic module designed for characterizing, validating and testing digital and mixed signal IC or electronics. Each module consists of a Sequence Pattern Generator and Logic Pin Electronics Card containing 8 channels. The 36010 module is expandable to provide up to 64 channels hardware resource for various purposes. Besides, based on the per-pin architecture, each channel is equipped with 32M vector memory, 32 sets of clocks, 32 sets of waveforms and one PMU channel. It provides fast and accurate testing, with same performance and features as other stand ATE equipment.

Sequence Pattern Generator

The Sequence Pattern Generator of the 36010 module provides more than 17 sequence commands including ''jump'', ''match'', ''loop'', ''repeat'', etc. to control the flow of pattern execution. It equips with 32M sequence command memory, which allows each vector to has its own sequence command to control the flow of pattern execution flexibly. Besides, each Sequence Pattern Generator can support up to 8 Logic Pin Electronics Cards, which means it can support up to 64 I/O channels and performs testing on 8 DUT simultaneously.

Logic Pin Electronics Card

In each Logic Pin Electronics Card, it adopts ® PINF ICs on it to achieve high timing accuracy and flexible waveform output functions.

The per-pin timing generator provides 32 sets of clock containing 6 programmable edges. As for the per-pin waveform generator, it provides each digital I/O channel 32 sets of programmable waveform with the change-one-the-fly feature. In the analog function, the Logic Pin Electronics card has the tri-level driver and comparator with 610uV programmable resolution. It also equips with active load, per-pin PMU and high voltage driver functions. Moreover, the 36010 supports scan pattern function for scan test.

Proprietary Software, CRISP

I n addition to suppor t the LabView and LabWindows environments, ® also provides the proprietary software option, CRISP. To cover the various requirements for the IC debugging, CRISP contains lots of software modules. Running on the Microsoft Windows XP® operation system and using C++ as the test program language, CRISP provides users the flexible, easy-to-use and fast-runtime GUI software to meet the various demands. The project IDE tool makes it easy to create the test program quickly. In the test program debugging stage, CRISP provides the suite of debugging software tools for user, which includes Plan Debugger, Datalog, Waveform, Scope, SHMOO, Pin Margin, Wafer Map, Summary, Histogram, STDF, Test Condition Monitor, Pattern Editor, and so on.

CE PXI Systems Alliance

MODEL 36010

KEY FEATURES

- Standard PXI 3U bus type
- 100MHz maximum data rate
- 8 channels with per-pin, per-cycle bidirectional control
- Scalable architecture to provide up to 64-pin
- 32M sequence command memory
- More than 17 pattern sequence commands
- Per-pin architecture
- 32M vector memory per pin
- 32 sets of clock and waveform per pin
- Waveforms changes on-the-fly
- Programmable tri-level driver in 610uV resolution
- One high voltage driver per board
- Per-channel PMU
- Per-channel timing measurement unit
- Support scan pattern function
- Windows XP/7 operating system
- Support LabView and LabWindows
- Proprietary software tools option

APPLICATIONS

- Logic and mixed signal validation and test
- Digital pattern generator and vector capture
- Consumer IC and electronics test
- Logic test subsystem for DC and RF ATE

SPECIFICATIONS

Model	36010
Test Rate	50/100MHz
Channels Per Board	8 (Scalable to 64 channels)
Vector Depth	32M
Sequence Control Memory	32M
Number of Sequence Control Command	17
Parallel test capability	8
Timing Generator Per Pin	
No. of Edges	6 edges / pin (2 Driver, 2 Driver & I/O, 2 Strobe)
No. of Timing Sets	32 sets / pin
Rate / Edge Setting Resolution	125ps / 62.5ps
Rate Setting Range	20nS → 1mS
Waveform Generator Per Pin	
No. of Waveform Sets	32 sets / pin
Driver	
VIL/VIH Range	-1.5V~+5.9V / -1.4V~+6V
VIL/VIH Accuracy	±5mV@VIH ≧ VIL+200mV
Output Current (Static/Dynamic)	±50mV/±100mA
Output Impedance	50±5Ω
Comparator	
VOL/VOH Range	-1.5V ~ +6V
VOL/VOH Accuracy	±15mV
Programmable Load	
IOL/IOH Range	±12mA
IOL/IOH Accuracy	±25uA
VREF Setting Range	-1.5V ~ +6V
VREF Accuracy	±50mV

High Voltage Driver	
HV Channel	1 HV channels / board
VIL/VIH Range	0V ~ +13.5V
VIL/VIH Accuracy	±20mV
VIL/VIH Output Current	±60mA
Scan Chain	
Chain number / LPC	1/2/4
Size per chain	256M/128M/64M
PPMU	
Channel Number	1 channel / 1 pin
Voltage Force Range	-1.5V ~ +6V
Current Measured Range	32mA/2mA/200μA/20μA/2μA
Current Forced Range	32mA/2mA/200μA/20μA/2μA
Voltage Measured Range	-1.5V ~ +6V
Power and Dimensions	
Power Consumption	25W per Slot
Size	PXI 3U Standard Board (Extendable)
Cooling System	Standard PXI Chassis Fan (Forced Air Cooling)

All specifications are subject to change without notice.

FOUR CHANNELS DUT POWER SUPPLY MODEL 36020

The 36020 is a four channels programmable DUT power supply in a single-slot 3U PXI module. Each 36020 features 4 channels with the ability to source voltage and measure current. There are two selectable voltage ranges, +5V/-2V and +10V/-2V, with 16-bit resolution for programming the voltage output. In order to provide better accuracy, 36020 provides six selectable current ranges including ±5μA, ±25μA, ±250μA, ±2.5mA, ±25mA and ±250mA with 18-bit resolution for the current measurement functionality. Moreover, the board-to-board isolation design makes it possible to source the larger voltage than 10V by the series connection with multiple 36020 modules. The versatile supply rails and high accuracy make 36020 an excellent general-purpose, four channels power supply for design validation and manufacturing test application. Especially, the extraordinary accuracy in the small current measurement makes the 36020 very suitable for semiconductor IC test.

Power Supply with Precision Source and Measurement Capability

The 36020 uses a combination of switching and linear regulation to provide the excellent voltage source and accuracy. It has the ability to source voltage from each of its four outputs. It can be programmed in 113μV steps on the +5V/-2V range and 189μV steps on the +10V/-2V channels. As a current measure unit, it can measure in minimum 47.6pA resolution on each channel in the ±5μA current range. You can use this impressive level of current resolution in many power supply applications.

Proprietary Software, CRISP

In addition to support the LabView and LabWindows environment, Chroma® provides the front panel tool of the 36020 for users to quickly troubleshoot or debug. Users can monitor or refer the setting of the 36020 through this front panel tool. Besides, ® also provides the proprietary software option, CRISP, for the 36020 to meet the demands of users for various purposes. Based on Microsoft Windows XP® operation system and C++ programming language, CRISP provides the powerful, easy-to-use, intuitive, and fast-runtime GUI tools for users. For the test debugging and data analyzing purposes, CRISP provides users the abundant software modules for the 36020, including Datalog, SHMOO, Summary, Histogram, STDF and Test Condition Monitor.

MODEL 36020

KEY FEATURES

- 4 Channels in standard PXI 3U/ PXIe-hybird compatible bus type
- +5V/-2V and +10V/-2V force ranges
- 16-bit voltage force resolution
- 18-bit current measurement resolution
- 6 selectable ranges from 5uA to 250mA for current measurement
- Programmable current clamp function
- Ganged function available for larger current
- Board-to-board isolation
- Windows XP/7 operating system
- Support LabView and LabWindows
- Proprietary software tools for data analysis

APPLICATIONS

- Logic and mixed signal validation and test
- Consumer IC and electronics test
- DUT Power Supply

SPECIFICATIONS

Model		36020
Input		PXI Internal Power
Channel Number		4
Voltage Source		
Range		VR1: +10v/-2v VR2: +5v/-2v
Resolution		16bits
Accuracy		±0.05% + 1mV
Noise		3mVrms
Current Measurement		
Range		±5μA, ±25μA, ±250μA, ±2.5mA, ±25mA, ±250mA
Resolution		18bits
Accuracy	250mA	±0.05% + 100μA
	25mA	±0.05% + 10μA
	2.5mA	±0.05% + 1μA
	250μA	±0.05% + 100nA + 1nA/V
	25μA	±0.105% + 20nA + 1nA/V
	5μA range	±0.05% + 10nA + 1nA/V
Slew Rate		0.7V / 1μs
Load Regulation		2mV
Load Transient		
Time Response		100μs
Voltage Response		50mv
Overshoot/Undershoot		<3%
Clamp Flag Response		100μs
Clamp Resolution		10bits
Protection Function / Alarm Flag		Short current limit Clamp alarm flag
Max Stable Load Capacitance		100μF

All specifications are subject to change without notice.

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72
Астана +7(7172)727-132
Астрахань (8512) 99-46-04
Барнаул (3852) 73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812) 21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692) 22-31-93
Симферополь (3652) 67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462) 77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212) 92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

сайт: chrm.nt-rt.ru || эл. почта: cmr@nt-rt.ru