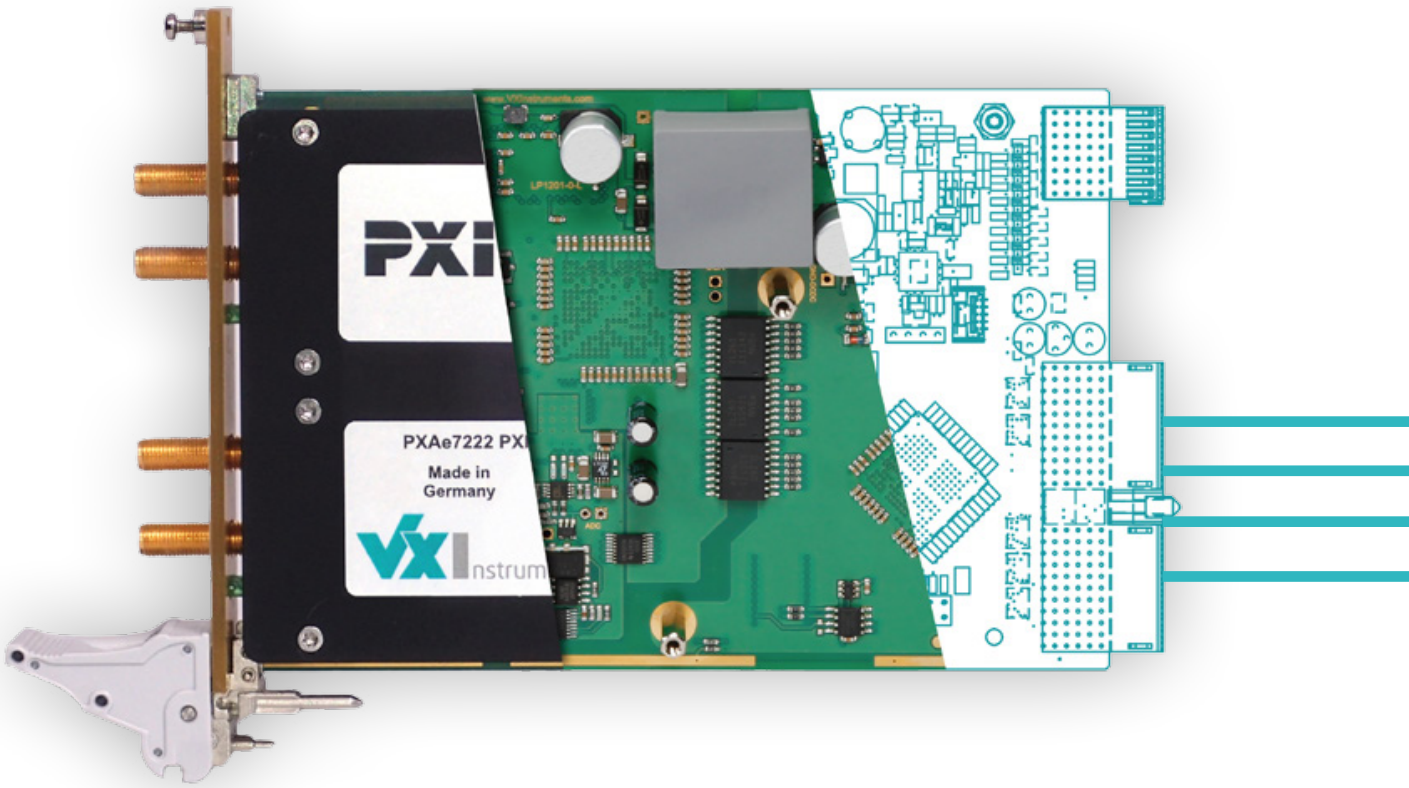
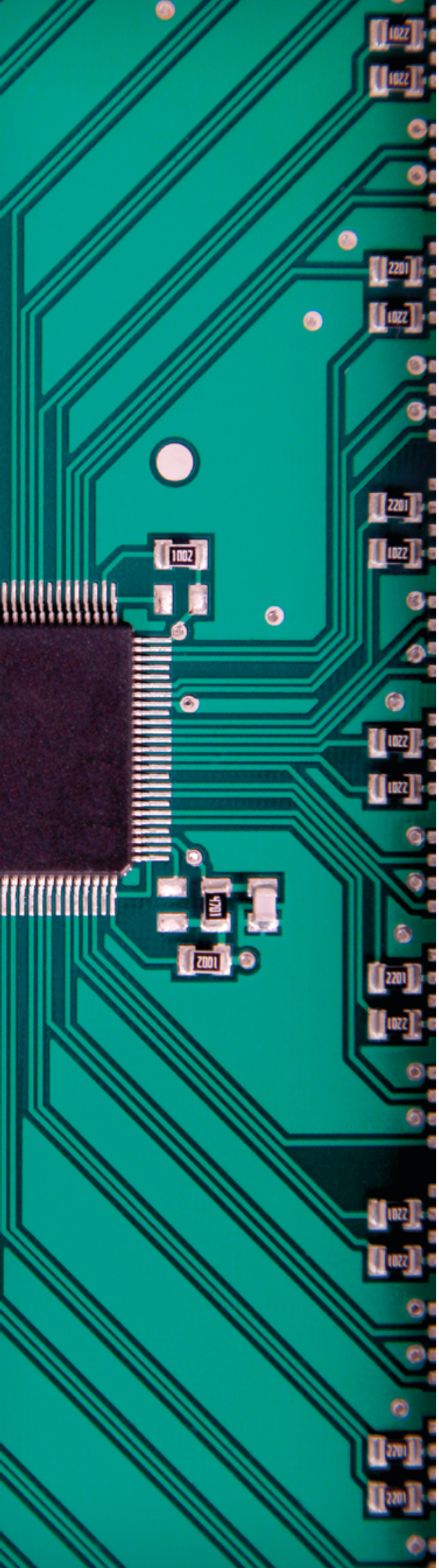
PRODUCT CATALOG
2021 | ENGLISH



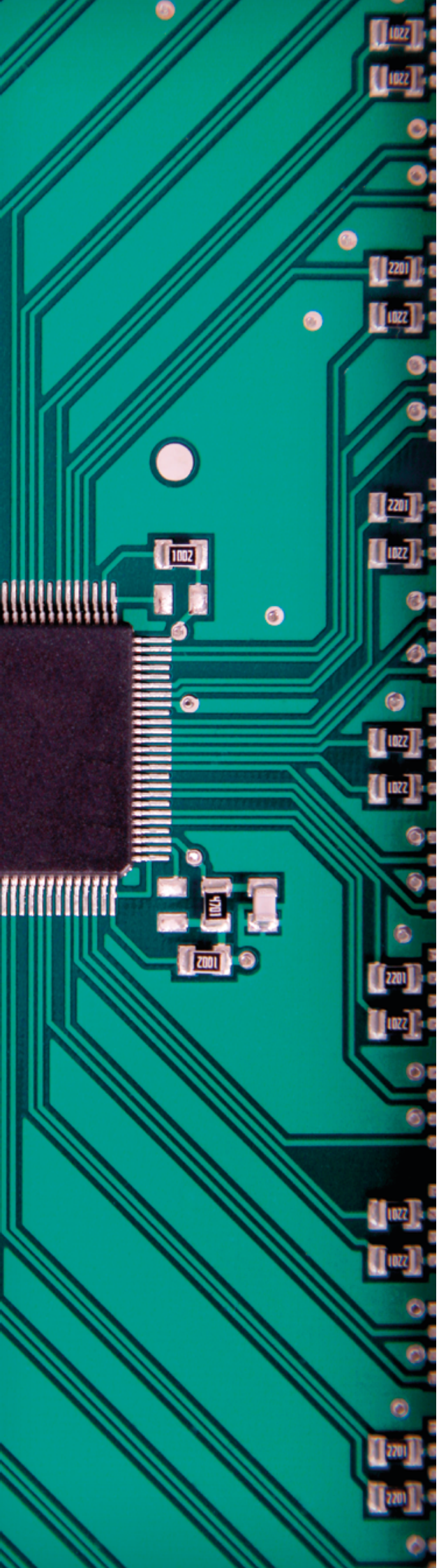
Functional test equipment for laboratory and high speed production testing

VXI Instruments
the test solutions provider



PRODUCT CATEGORIES

Revision Date: 2021-11-24



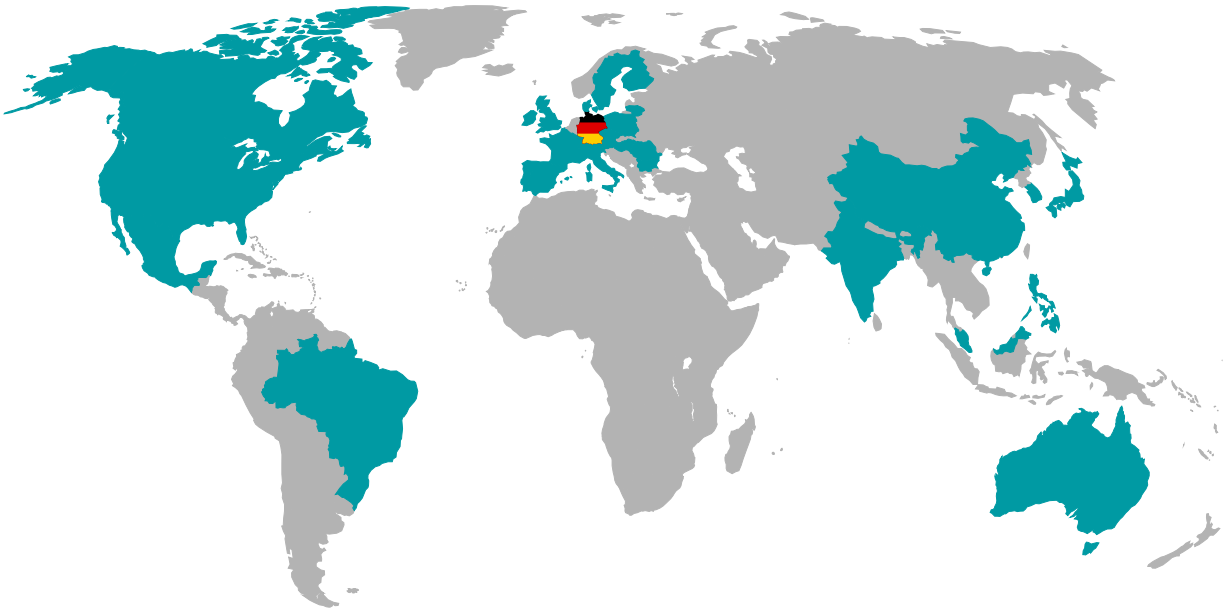
INDEX

Christian Degenhart
Business Development Manager

„Development of testsytems is a fascinating counterplay of high-precision analogue engineering and tomorrows high-speed digital data processing.

Complexity of our world is growing very fast. Sensors, mobile devices, E-Bikes and automobiles are getting more complex day by day and some of them make us feel like living in the future. As complexity of all these devices is rising, the DUTs requirements to the test systems for sure are growing as well.

VX Instruments supports customers all over the world to build fast and relyable 24/7 test sytems with customizable measurement instruments, based on a unique low-noise isolated measurement technology, which makes testing a bit easier."



VX Instruments – the standard for quality

With great success VX Instruments develops and produces highly innovative measurement instruments and test systems for automation and production.
Our customers in over 30 countries in Europe, America, Asia and Far East highly appreciate our systems with their outstanding precision and performance.

The reliability and high quality of our products made in Germany is confirmed by certification according to ISO 9001:2015.

WAVEFORM DIGITIZER

PXD7113
FlexRay Digitizer

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Designed for FlexRay measurements
- 100 MS/s with 16 Bit resolution
- Fully isolated design with two selectable inputs in differential or single ended mode
- Multiple instrument and channel synchronization possibilities
- Built-in timer/counter engine for high speed timer/counter
- Built-in DVM function for high precision measurement

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXD7113.pdf

Product Information

High resolution FlexRay Digitizer
The PXD7113 FlexRay Digitizer features a 100 MS/s input with 16 Bit resolution, input voltages up to ±10 V and a bandwidth up to 10 MHz.

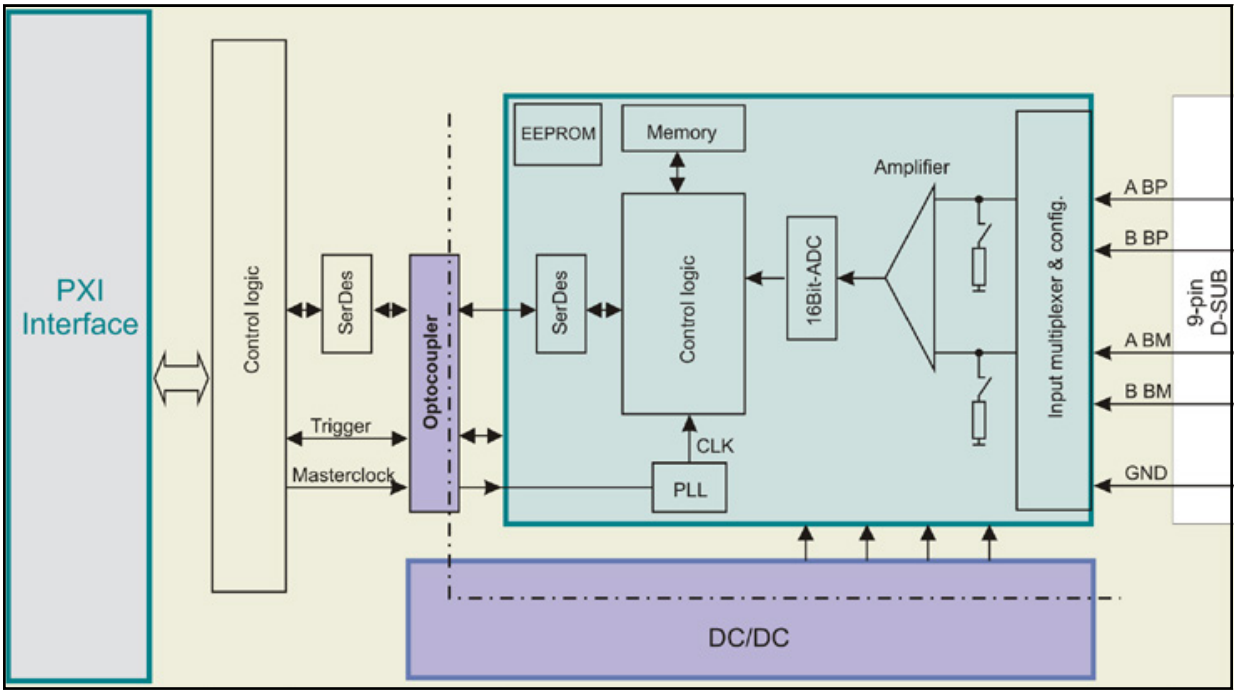
The PXD7113 FleyRay Digitizer has a 2 MB memory which allows up to 1 million samples. The device has a high common mode rejection ratio (CMRR).

Two multiplexed inputs – selectable as differential or single ended inputs
The PXD7113 FlexRay Digitizer can be configured in differential or single ended mode. In both modes, an optional 95 Ω termination resistor can be activated. This allows a FlexRay signal measurement without additional signal conditioning.

Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

Multiple instrument synchronization possibilities
A great amount of trigger capabilities results in multiple instrument synchronization possibilities.
Furthermore the PXD7113 FlexRay Digitizer has a built-in timer/counter and voltage measurement engine.

High throughput design for many applications
The PXD7113 FlexRay Digitizer is designed for high throughput testing.
This design guarantees highest quality measurements and is perfect for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Front connector type	9-pin D-SUB male	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth	>10 MHz	2 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms.	Software selectable
Input impedance	1 MΩ // <20 pF, 95 Ω	Software selectable
Input coupling	DC	
Maximum input voltage	1 MΩ: 10 V_p 95 Ω: 5 V_p	
Input range	10 V	
DC accuracy[1]	0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	

DVM	Specification	Comment
DC accuracy[2]	0.2% of input + 0.05% of full scale	With auto offset correction
Measurement time	1...500 ms	Software programmable

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.
[2] DC accuracy specified with measurement time of 100 ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

PXI Capabilities	Specification	Comment
PXI trigger usage	Possible	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Possible	Input only

Trigger System	Specification	Comment
Input from		
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
PXI trigger	Output to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

T/C Measurement Modes	Specification
Frequency	
Counter width	40 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	50 ns
Period	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Time interval and pulse width	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Rise and fall time	
Resolution	10 ns
Accuracy[2]	±10 ns
Range	50 ns ... 10 s
Totalize (edge count)	
Minimum pulse width	50 ns
Range	0 ... 2^{40}-1

1 Square wave signal with T_{Rise} <1 ns and T_{Fall} <1 ns.
2 Trigger comparator error not included.

PXD(e)721x
High Resolution Waveform Digitizer Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Based on VX Instruments FlexCPeP
- Input voltage up to 120 V_{pp}
- 100 MS/s with 16 Bit resolution
- Available as isolated and non-isolated version
- Up to 100 MHz bandwidth
- Available with PXI or PXI Express interface
- Multiple instrument and channel synchronization possibilities
- Built-in DVM function for high precision measurement (option DVM)
- Built-in timer/counter engine for high speed timer/counter (option T/C)

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXD721x.pdf

Product Information

Flexible Configurable PXIe Platform

This family of Waveform Digitizers is based on the "Flexible Configurable PXIe Platform" (FlexCPeP). This platform allows many variations of customer configured digitizers.

High speed, high resolution Waveform Digitizer

The PXD(e)721x High Resolution Digitizer Family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ±60 V and a bandwidth of 50 MHz (100 MHz with option DBW).
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Depending on the amount of channels and the isolated option, the digitizers are built into a compact 3U PXI device for 1 or 2 slots.
All isolated devices have a high common mode rejection ratio (CMRR).
A great number of trigger capabilities results in multiple instrument and channel synchronization possibilities.

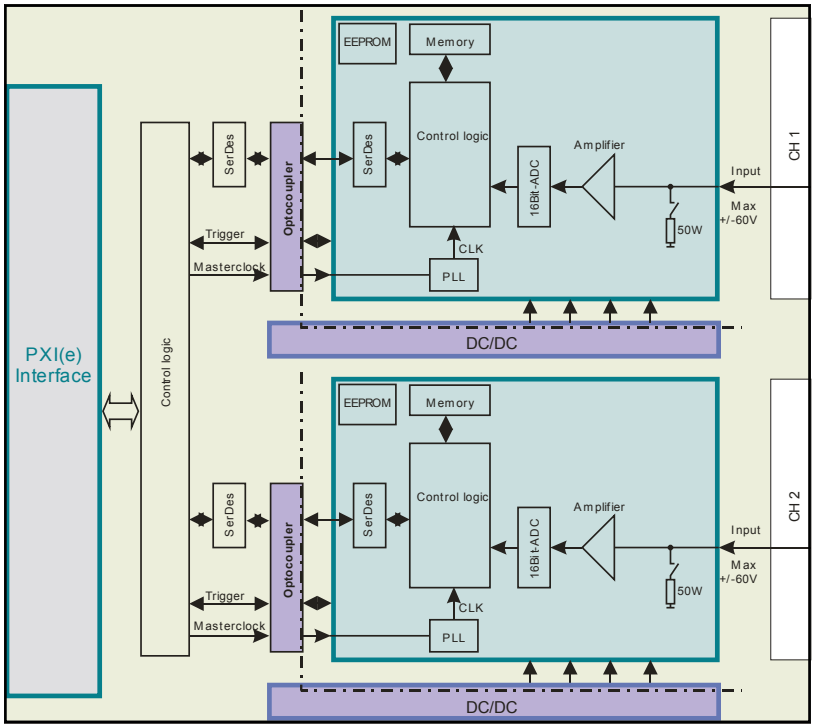
Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

High input voltage range allows easy measurement

The maximum voltage for each signal input is ±60 V. This allows high voltage signals to be measured without additional signal conditioning.

High troughput design for many applications

The PXD(e)721x Digitizer Family is designed for high throughput testing. Multiple measurements in combination with the memory segmenting feature (option MEMSEG) results in additional test time improvement.
This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.



Ordering Option	Comment
PXDe721x	PXIExpress interface
PXD721x	PXI interface
Option DVM	Digital Voltmeter
Option T/C	Timer/counter
Option DBW	Double bandwidth
Option MEMSEG	Memory segmenting

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD(e)7211, PXD(e)7212, PXD(e)7213 PXD(e)7214
Module weight	<0.4 kg <0.6 kg	PXD(e)7211, PXD(e)7212, PXD(e)7213 PXD(e)7214
Front connector type	SMA	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	60 V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth	50 MHz, 100 MHz with option DBW	2 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ // <20 pF, 50 Ω	Software selectable
Input coupling	DC	
Input ranges	50 Ω: 250 mV, 500 mV, 1 V, 2 V, 4 V 1 MΩ: 250 mV, 500 mV, 1 V, 2 V, 4 V, 8 V, 16 V, 32 V, 60 V	
DC accuracy[1]	250 mV, 500 mV: 0.3% of input +2 mV others: 0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

Time Base	Specification	Comment
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	

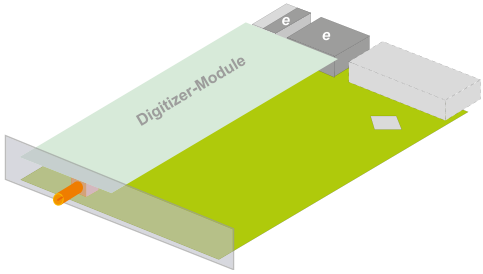
DVM and Timer/Counter	Specification	Comment
DVM Averaging	500 ms	
T/C counter width	40 Bit	Rise/fall time and frequency measurement

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s.

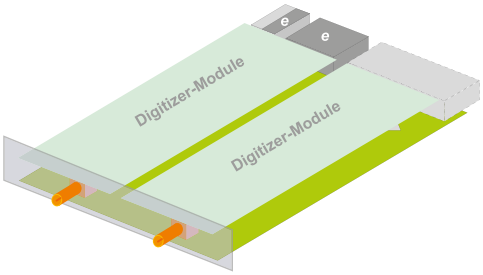
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

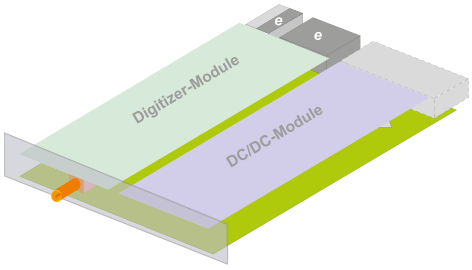
PXI Capabilities	Specification	Comment
PXI 10 MHz usage	On request	Then time base accuracy depends on PXI rack
PXI trigger usage	Possible	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Possible	Input only



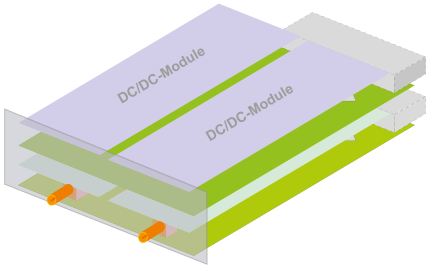
PXD(e)7211
1 channel non-isolated digitizer in 1 slot



PXD(e)7212
2 channel non-isolated digitizer in 1 slot



PXD(e)7213
1 channel isolated digitizer in 1 slot



PXD(e)7214
2 channel isolated digitizer in 2 slots

PXD731x/PXD70xx
High Voltage Waveform Digitizer Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- High input voltage range with up to 500 V_{pp}
- 100 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Multiple instrument and channel synchronization possibilities
- Built-in timer/counter engine for high speed timer/counter
- Built-in DVM function for high precision measurement

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXD731x.pdf

Product Information

High Voltage, High Resolution Waveform Digitizer
The PXD731x High Voltage Waveform Digitizer family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ±250 V and a bandwidth up to 50 MHz.
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

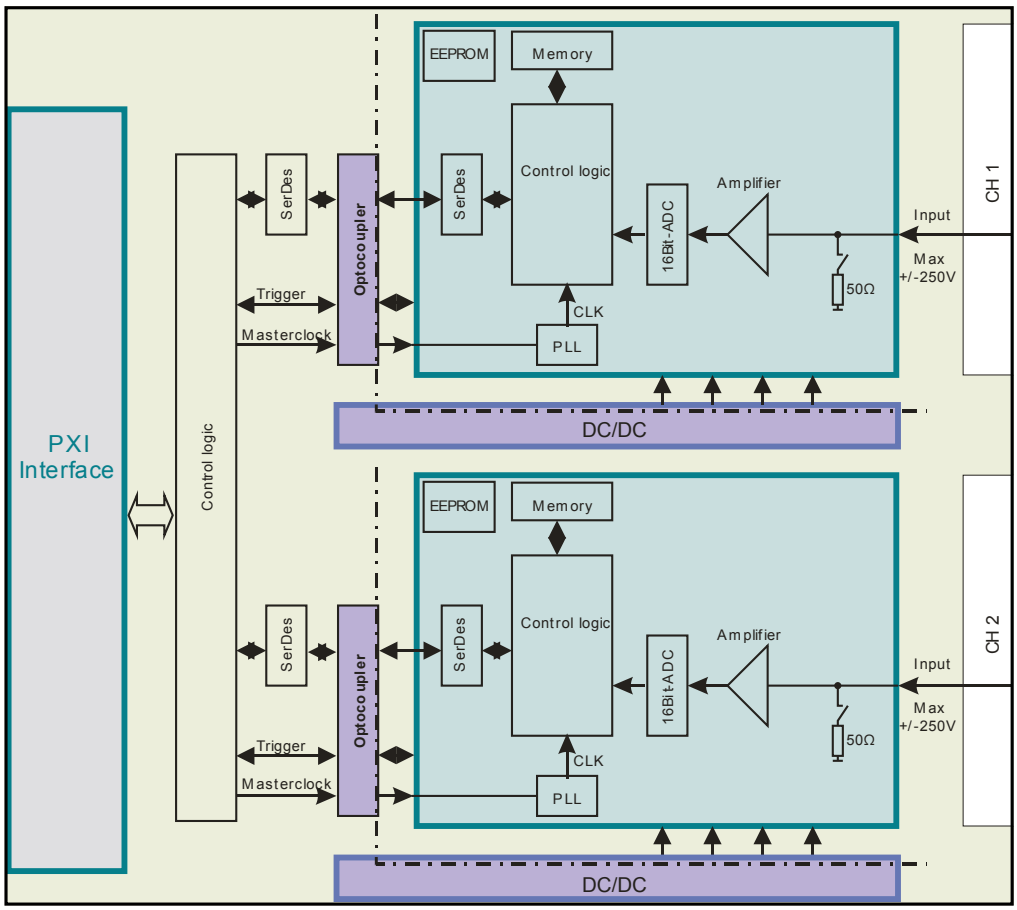
All PXD731x High Voltage Waveform Digitizer family devices have a high common mode rejection ratio (CMRR).

A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

Highest input voltage range allows easy measurement
The maximum voltage for each signal input is ±250 V. This allows high voltage signals to be measured without additional signal conditioning.

High throughput design for many applications
The digitizers of the PXD731x family are designed for high throughput testing.
This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.

Available with 1 and 2 channels
The single channel device PXD7313 High Voltage Waveform Digitizer uses only one PXI-slot (3U). The dual channel device PXD7314 High Voltage Waveform Digitizer needs two PXI-slots (3U).



General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD7xx3 PXD7xx4
Module weight	<0.4 kg <0.6 kg	PXD7xx3 PXD7xx4
Front connector type	BNC (isolated)	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s | 40 MS/s | 20 MS/s	See ordering information
Bandwidth Range 250mV, 500mV Range 1V, 2V, 4V All other ranges	 >30 MHz >50 MHz >15 MHz	 0.5 V_{pp} input signal; no filter 2 V_{pp} input signal; no filter 20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ // <20 pF, 50 Ω	Software selectable
Input coupling	DC	
Maximum input voltage	1 MΩ: f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 50 MHz: 10 V_p 50 Ω: 5 V_p	Input voltage may not exceed selected input voltage range
Input ranges	50 Ω: 250 mV, 500 mV, 1 V, 2 V, 4 V 1 MΩ: 250 mV, 500 mV, 1 V, 2 V, 4 V, 8 V, 16 V, 32 V, 64 V, 128 V, 250 V	
DC accuracy[1]	250 mV, 500 mV: 0.3% of input +2 mV others: 0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

DVM	Specification	Comment
DC accuracy[2]	250mV, 500mV: 0.3% of input +0.5mV others: 0.2% of input + 0.025% of full scale	With auto offset correction
Measurement time	1 ... 500 ms	Software programmable

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.
[2] DC accuracy specified with measurement time of 100ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	40 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	50 ns
Period	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Time interval and pulse width	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Rise and fall time	
Resolution	10 ns
Accuracy[2]	±10 ns
Range	50 ns ... 10 s
Totalize (edge count)	
Minimum pulse width	50 ns
Range	0 ... 2^{40}-1

1 Square wave signal with T_{Rise} <1 ns and T_{Fall} <1 ns.
2 Trigger comparator error not included.

Available as 1 and 2 channel version

Ordering Information	Comment
PXD7313	100 MS/s, 1 channel
PXD7314	100 MS/s, 2 channel
PXD7023	40 MS/s, 1 channel
PXD7024	40 MS/s, 2 channel
PXD7013	20 MS/s, 1 channel
PXD7014	20 MS/s, 2 channel

PXD821x
High Performance Digitizer Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- 1 GS/s with 12 Bit resolution
- High input voltage range up to 120 V_{pp}
- Fully isolated design with up to two independent channels
- Multiple instrument and channel synchronization possibilities
- Built-in DVM function for high precision measurement

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXD821x.pdf

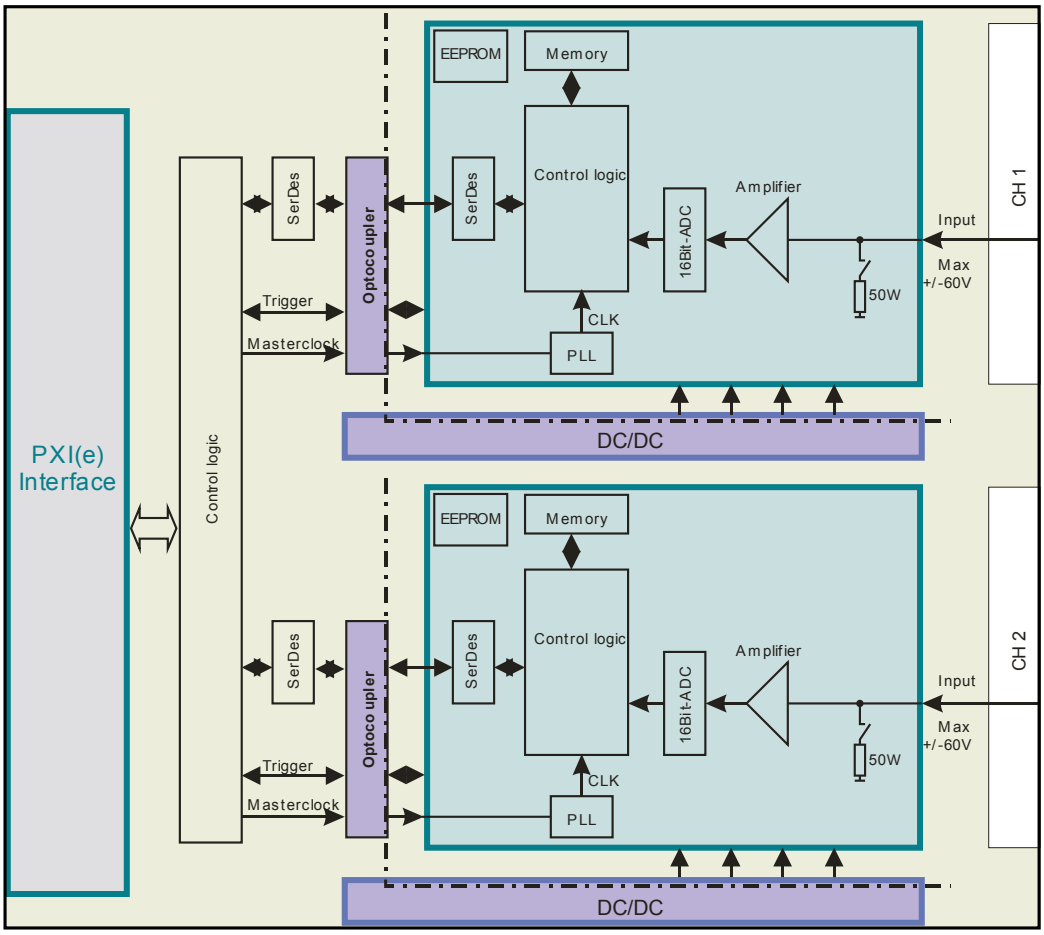
Product Information

High speed, high resolution waveform digitizer
The PXD821x High Performance Digitizer family features up to two 1 GS/s simultaneously sampled input channels with 12 Bit resolution, input voltages up to ±60 V and a bandwidth up to 125 MHz.
Every digitizer channel has its own memory which allows up to 50 k samples.
All PXD821x High Performance Digitizer family devices have a high common mode rejection ratio (CMRR).

High throughput design for many applications
The digitizers of the PXD821x family are designed for high throughput testing.

This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.

Available with 1 and 2 channels
The single-channel device PXD8213 High Performance Waveform Digitizer uses only 1 PXI-slot (3U). The dual channel device PXD8214 High Performance Waveform Digitizer needs 2 PXI-slots (3U).



General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD8213 PXD8214
Module weight	<0.4 kg <0.6 kg	PXD8213 PXD8214
Front connector type	BNC (isolated)	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	60V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	1 GS/s	
Bandwidth		
Range 300 mV	>25 MHz	0.5 V_{pp} input signal; no filter
Range 1 V	>125 MHz	2 V_{pp} input signal; no filter
Range 3 V, 10 V	>75 MHz	2 V_{pp} input signal; no filter
All other ranges	>15 MHz	20 V_{pp} input signal; no filter
Vertical resolution	12 Bit	
Sampling times	1 ns, 2 ns, 5 ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ || <20 pF, 50 Ω	Software selectable
Input coupling	DC	
Input ranges	50 Ω: 300 mV, 1 V, 3 V 1 MΩ: 300 mV, 1 V, 3 V, 10 V, 30 V, 100 V	
DC accuracy[1]	0.25% of input + 0.25% of full scale	
Filter	300 kHz, 1 MHz, 20 MHz, 100 MHz	Software selectable

[1] DC accuracy specified for an average value of 1 000 samples with a sample rate of 50 kS/s and active 300 kHz.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 … 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 … 7	
Level resolution	12 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger slope	Positive or negative	

DVM	Specification	Comment
DC accuracy[1]	0.25% + 0.25%	±(of reading value + of full range)
Measurement time	1 … 500 ms	Software programmable

PXI Capabilities	Specification	Comment
PXI trigger usage	Possible	PXI trigger 0 … 7; input and output
PXI star trigger usage	Possible	Input only

[1] DC accuracy specified with measurement time of 100 ms.

PXD730x
High Resolution Waveform Digitizer Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Available input voltage range with up to 120 V_{pp}
- 100 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Multiple instrument and channel synchronization possibilities
- Built-in timer/counter engine for high speed timer/counter
- Built-in DVM function for high precision measurement

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXD730x.pdf

Product Information

High voltage, high resolution waveform digitizer
The PXD730x High Resolution Waveform Digitizer family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ±60 V and a bandwidth up to 50 MHz.
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

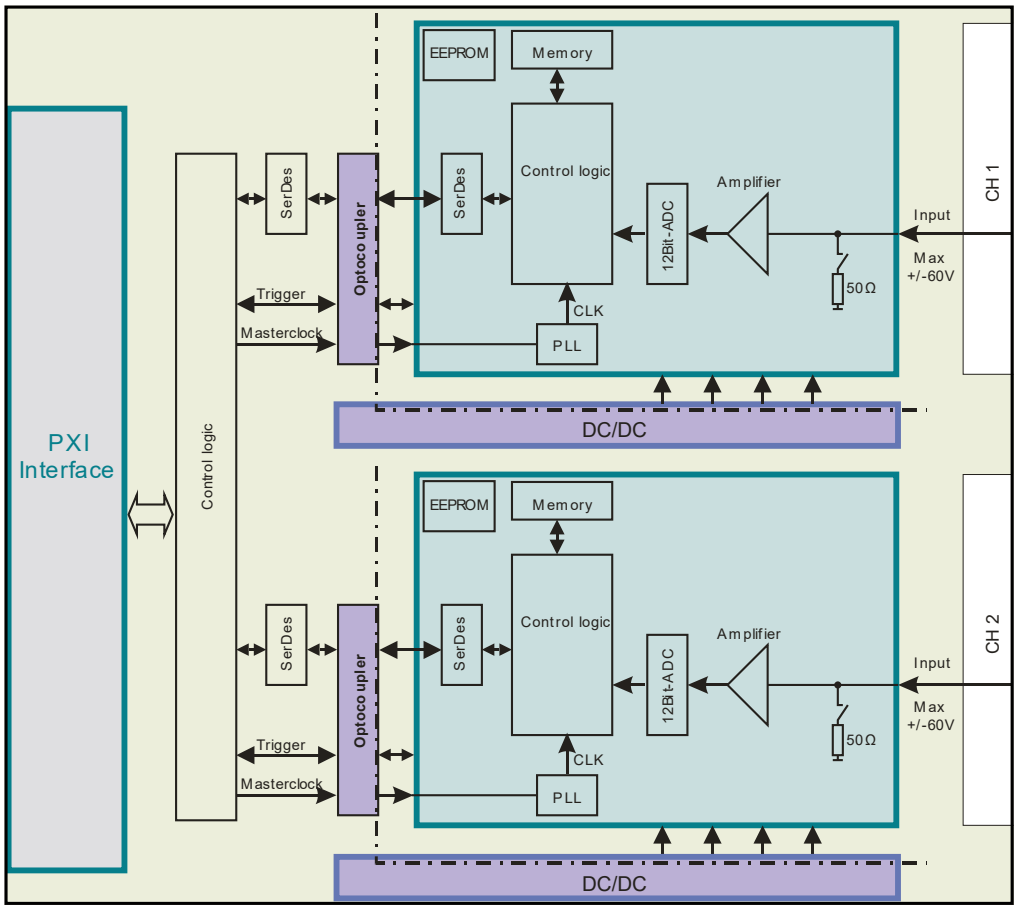
All PXD730x High Resolution Waveform Digitizer family devices have a high common mode rejection ratio (CMRR).

A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

Highest input voltage range allows easy measurement
The maximum voltage for each signal input is ±60 V. This allows high voltage signals to be measured without additional signal conditioning.

High throughput design for many applications
The digitizers of the PXD730x family are designed for high throughput testing.
This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.

Available with 1 and 2 channels
The single channel device PXD7303 High Resolution Waveform Digitizer uses only 1 PXI slot (3U). The dual channel device PXD7304 High Resolution Waveform Digitizer needs 2 PXI slots (3U).



General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD7303 PXD7304
Module weight	<0.4 kg <0.6 kg	PXD7303 PXD7304
Front connector type	BNC (isolated)	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250 V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth Range 250mV, 500mV Range 1V, 2V, 4V All other ranges	 >30 MHz >50 MHz >15 MHz	 0.5 V_{pp} input signal; no filter 2 V_{pp} input signal; no filter 20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ // <20 pF, 50 Ω	Software selectable
Input coupling	DC	
Maximum input voltage	1 MΩ: f < 160 kHz: 60 V_p 160 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 50 MHz: 10 V_p 50 Ω: 5 V_p	Input voltage may not exceed selected input voltage range
Input ranges	50 Ω: 250 mV, 500 mV, 1 V, 2 V, 4 V 1 MΩ: 250 mV, 500 mV, 1 V, 2 V, 4 V, 8 V, 16 V, 32 V, 60 V	
DC accuracy[1]	250 mV, 500 mV: 0.3% of input +2 mV others: 0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

DVM	Specification	Comment
DC accuracy[2]	250mV, 500mV: 0.3% of input +0.5mV others: 0.2% of input + 0.025% of full scale	With auto offset correction
Measurement time	1 ... 500 ms	Software programmable

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.
[2] DC accuracy specified with measurement time of 100 ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

Timer/Counter

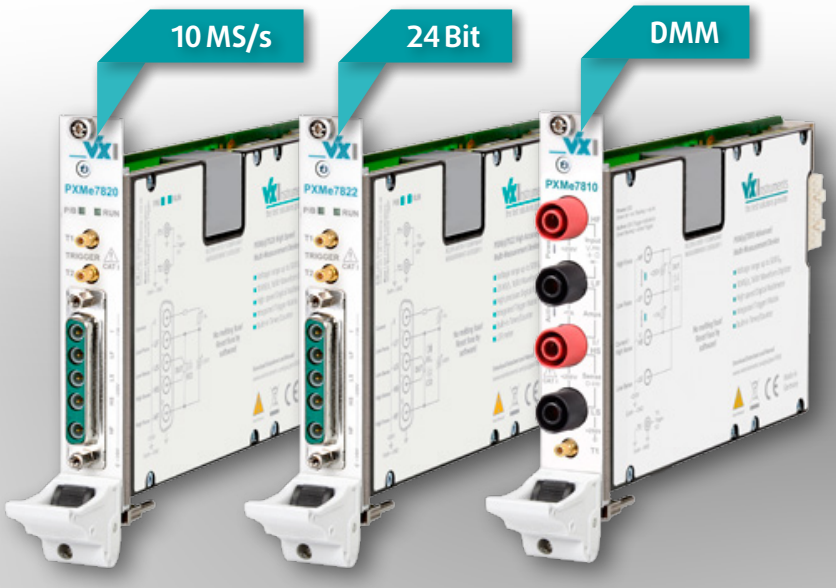
T/C Measurement Modes	Specification
Frequency	
Counter width	40 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	50 ns
Period	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Time interval and pulse width	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Rise and fall time	
Resolution	10 ns
Accuracy[2]	±10 ns
Range	50 ns ... 10 s
Totalize (edge count)	
Minimum pulse width	50 ns
Range	0 ... 2^{40}-1

1 Square wave signal with T_{Rise} <1 ns and T_{Fall} <1 ns.
2 Trigger comparator error not included.

PXD7303
1 channel floating digitizer in 1 slot

PXD7304
2 channel floating digitizer in 2 slots

PRECISION MEASUREMENT



PXM(e)7810
Advanced Multi-Measurement Device

NEW

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- High voltage range with up to 500 V_{pp}
- 16 Bit Waveform Digitizer 64 MS, 10 MS/s
- High precision Digital Multimeter with 16 Bit resolution
- Fully isolated design
- >1 GΩ || <20 pF input impedance up to 8 V range
- 10 MΩ || <20 pF for all other ranges
- Extremely low switching time of <1 ms for ranges and functions
- 2- and 4-wire resistance measurement
- Highly configurable trigger matrix
- Trigger engine for instrument synchronization
- Built-in timer/counter engine
- Electronic protection against overcurrent and overvoltage
- Memory segmenting
- Available with PXI or PXI Express interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXM7810.pdf

Product Information

General

The PXM(e)7810 High Speed Multi-Measurement Device combines a 16 Bit DMM, a 10 MS/s Digitizer with a resolution of 16 Bit, a timer/counter and a trigger card. One special feature of the PXM(e)7810 is a very high input impedance of 10 MΩ || <20 pF also in all AC ranges. Therefore the influence on DC and AC signals is reduced to a minimum.
A trigger input and output is provided as well as electronic protection against overvoltage and overcurrent.

High voltage, high resolution Waveform Digitizer

The PXM(e)7810 High Speed Multi-Measurement Device features waveform sampling with 10 MS/s, 16 Bit resolution, input voltages up to ±250 V_p and a bandwidth up to 5 MHz. This allows the measurement of high voltage signals without additional signal conditioning. Data can be acquired before and after the trigger event with a programmable sample counter that controls a number of up to 64 million data points. The memory segmenting function allows to save different digitizing events in the memory.
A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

High precision Digital Multimeter

The PXM(e)7810 High Speed Multi-Measurement Device features a high precision Digital Multimeter (DMM) for high performance measurements with 16 Bit resolution.
It provides measurement of DC voltage up to 250 V, AC voltage up to 250 V_p, DC current up to 1 A and AC current up to 2 A_p.

High resolution timer/counter

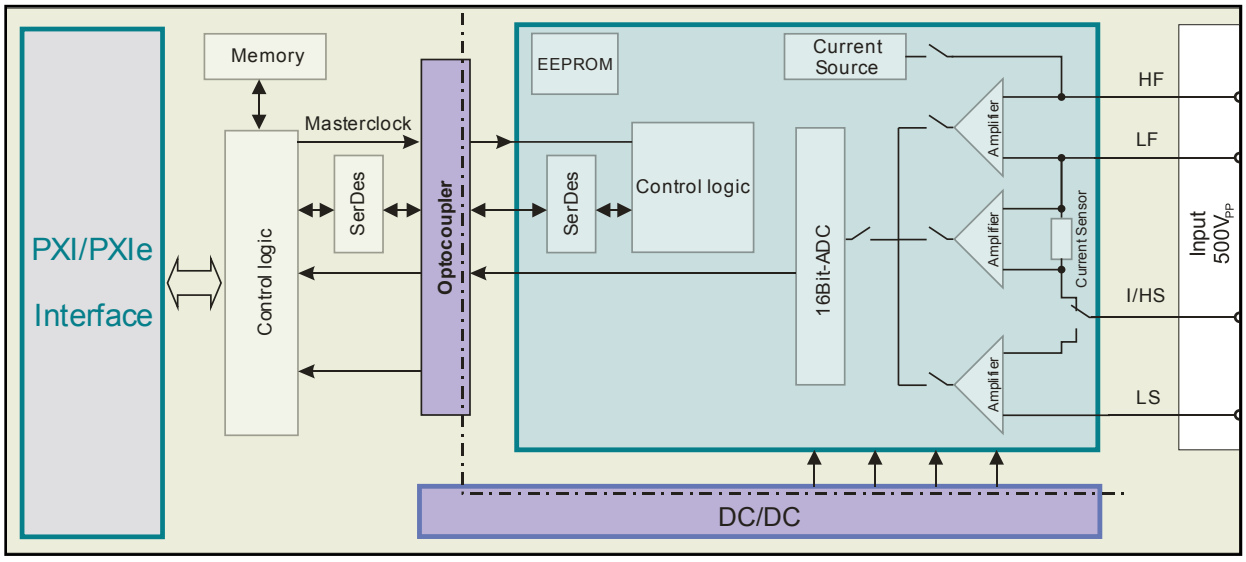
The PXM(e)7810 High Speed Multi-Measurement Device features a high precision timer/counter for high performance measurements of frequency, period time, interval and pulse width and rise and fall times with a resolution of up to 100 ns.

Configurable trigger matrix

The PXM(e)7810 High Speed Multi-Measurement Device features a complex trigger matrix. The trigger connector on the front panel, internal trigger events and all trigger lines on the backplane can be connected individually.

High throughput design for many applications

The PXM(e)7810 High Speed Multi-Measurement Device is designed for high throughput production testing. One key feature is the extremely low switching time of <1 ms for the changing of ranges and functions like switching from AC to DC.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Front connector type	FM5W5P	
Storage temperature range	-25 ... 70°C	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250 V CAT I, Pollution Degree 2	

Waveform Digitizer

Acquisition	Specification	Comment
Maximum sample rate	10 MS/s	
Bandwidth		
Range 250 mV_p, 500 mV_p	>2 MHz	0.5 V_{pp} input signal; no filter
Range 1 V_p, 2 V_p, 4 V_p, 8 V_p	>5 MHz	2 V_{pp} input signal; no filter
All other ranges	>1 MHz	20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling interval	100 ns ... 1 s	Software selectable
Input impedance	10 MΩ // <20 pF	
Input coupling	DC or AC	Software selectable
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Input ranges	250 mV_p, 500 mV_p, 1 V_p, 2 V_p, 4 V_p, 8 V_p, 16 V_p, 32 V_p, 64 V_p, 128 V_p, 250 V_p	5% overrange 5% overrange
DC accuracy[1]		
Range 250 mV_p	0.2 + 0.2	±(% of input + % of full scale)
Range 500 mV_p	0.15 + 0.15	±(% of input + % of full scale)
All other ranges	0.1 + 0.1	±(% of input + % of full scale)
Filter	1 kHz, 10 kHz, 100 kHz, 1 MHz	Software selectable
Waveform memory	64 MS	

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	In operating temperature range

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 10 kHz filter performed within 24 hours after an offset correction.

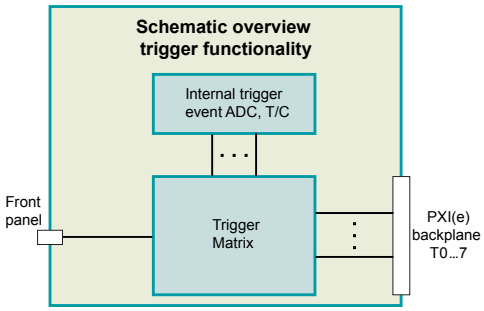
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time). Product specification and description in this document are subject to change without notice.

Trigger

Trigger System	Specification	Comment
Input from		
Internal function module	Module can trigger itself	
Software	Via software command	
Front connector	Front trigger input (TTL level)	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Module can trigger itself	
Front connector	Front trigger output (TTL level)	
PXI trigger	Trigger 0 ... 7	To the PXI backplane
Level resolution	16 Bit	
Level accuracy	0.6 + 0.3	±(% of programmed value + % of full range)
Trigger delay	0 ... 200 s	Programmable delay, 100 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event
Trigger Mode	Asynchronous, synchronous level, synchronous slope	

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	32 Bit
Range	0.1 Hz ... 2.5 MHz
Minimum pulse width	200 ns
Gate time	1 µs ... 10 s
Period	
Resolution	100 ns
Accuracy[1,2]	±100 ns
Range	1 µs ... 10 s
Time interval and pulse width	
Resolution	100 ns
Accuracy[2]	±100 ns
Range	1 µs ... 10 s
Rise and fall time	
Resolution	100 ns
Accuracy[2]	±100 ns
Range	1 µs ... 10 s
Totalize	
Minimum pulse width	1 µs
Range	0 ... 2^{32}-1



1 Square wave signal with T_{Rise}<1 ns and T_{Fall}<1 ns.
2 Trigger comparator error not included.

Digital Multimeter (DMM)

DC Voltage Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input voltage	±250 V	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,2,5,7]		
Range 250 mV	0.08 + 0.02	Input resistance >1 GΩ
Range 500 mV	0.08 + 0.015	Input resistance >1 GΩ
Range 1 V	0.08 + 0.01	Input resistance >1 GΩ
Range 2 V	0.08 + 0.01	Input resistance >1 GΩ
Range 4 V	0.08 + 0.01	Input resistance >1 GΩ
Range 8 V	0.08 + 0.01	Input resistance >1 GΩ
Range 16 V	0.08 + 0.01	Input resistance 10 MΩ
Range 32 V	0.08 + 0.01	Input resistance 10 MΩ
Range 64 V	0.08 + 0.01	Input resistance 10 MΩ
Range 128 V	0.08 + 0.01	Input resistance 10 MΩ
Range 250 V	0.08 + 0.01	Input resistance 10 MΩ

AC Voltage Measurement	Specification	Comment
Resolution	16 Bit	
Input impedance	10 MΩ // <20 pF	
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Overrange	5% of range	

AC Voltage Accuracy[1,2,3,4,5,8]	1 ... 40 Hz[6]	40 Hz ... 20 kHz	20 ... 50 kHz	50 ... 100 kHz
Range 250 mV_{RMS}	0.4 + 0.1	0.4 + 0.1	0.3 + 0.15	0.8 + 0.1
Range 500 mV_{RMS}	0.3 + 0.1	0.2 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 1 V_{RMS}	0.15 + 0.1	0.15 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 2 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 4 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 8 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 16 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 32 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 64 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 128 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1[9]

1 For measurements >10% of range.
2 ±(% of reading + % of full scale).
3 For sine wave signals >5% of range.
4 Maximum peak input voltage = 2x full scale (e.g. maximum input voltage for 128 V_{RMS} range = ±256 V_p).
5 With auto offset correction.
6 With DC coupling.
7 5 PLC.
8 Measurement aperture greater than 5/f_{Low}, where f_{Low} is the lowest frequency component of the signal being measured.
9 Maximum input voltage must be satisfied.

DC Current Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input current	±1 A	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,3,4]		
Range 10 mA	0.2 + 0.05	
Range 100 mA	0.2 + 0.05	
Range 1 A	0.2 + 0.05	

AC Current Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input current	±2 A_p	
Overrange	5% of range	

AC Current Accuracy[2,3,4,5,6]	40Hz ... 5 kHz	5 kHz ... 20 kHz
Range 10 mA_{RMS}	0.3 + 0.1	0.5 + 0.3
Range 100 mA_{RMS}	0.1 + 0.02	0.2 + 0.04
Range 1 A_{RMS}	0.1 + 0.02	0.3 + 0.04

1 For measurements >8% of range.
2 For sine wave signals >8% of range.
3 With auto offset correction.
4 ±(% of reading + % of full scale).
5 Maximum peak input current = 2x full scale (e.g. maximum input current for 1 A_{RMS} range = ±2 A_p).
6 With DC coupling.

Resistance

Resistance Measurement	Specification	Comment
Resolution	16 Bit	
Overrange	5% of range	
Resistance accuracy[1,2,3,4]		
Range 100 Ω	0.1 + 0.01	Test current 8 mA
Range 1 kΩ	0.1 + 0.01	Test current 8 mA
Range 10 kΩ	0.1 + 0.01	Test current 800 µA
Range 100 kΩ	0.1 + 0.01	Test current 80 µA
Range 1 MΩ	0.1 + 0.01	Test current 8 µA
Range 10 MΩ	0.1 + 0.01	Test current 800 nA

PXI(e) Trigger

PXI Capabilities	Specification	Comment
PXI(e) TTL/trigger usage	Possible	PXI(e) trigger 0...7; input and output
PXI(e) star trigger usage	Possible	Input only

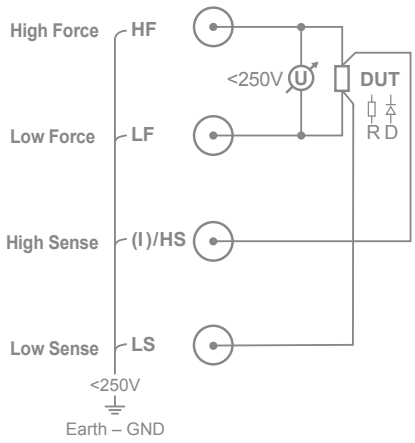
Operating Times

Scope of Application	Specification	Comment
Ranges	<1 ms	
Functions[5]	<1 ms	For all U–, I–, R–Ranges[5]

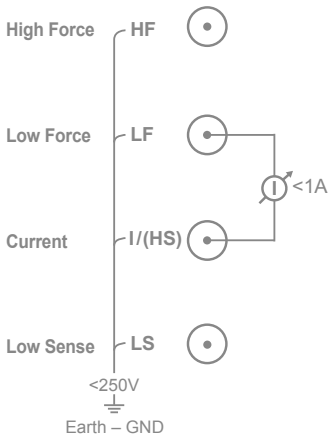
1 For measurements >8% of range.
2 Only 4 wire measurement.
3 With auto offset correction.
4 ±(% of reading + % of full scale).
5 For AC modes with DC coupling.

Pin Assignment

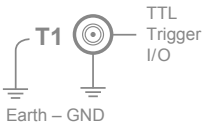
U/R-Measurement



I-Measurement



Trigger Line



Ordering Information

Ordering Information	Comment
PXM7810	Device with PXI interface
PXMe7810	Device with PXI Express interface

Accessory Parts	MPN	VPN
SMB Trigger Connector		
SMB connector soldering	11_SMB-50-1-40	ZJ1522-0
Isolation sleeve	78_Z-5-1-1	ZJ1523-0

FOR YOUR NOTES

PXM(e)7820
High Speed Multi-Measurement Device

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- High voltage range with up to 500 V_{pp}
- 16 Bit Waveform Digitizer 64 MS, 10 MS/s
- High precision Digital Multimeter with 16 Bit resolution
- Fully isolated design
- >1 GΩ || <20 pF input impedance up to 8 V range
- 10 MΩ || <20 pF for all other ranges
- Extremely low switching time of <1 ms for ranges and functions
- 2- and 4-wire resistance measurement
- Highly configurable trigger matrix
- Trigger engine for instrument synchronization
- Built-in timer/counter engine
- Electronic protection against overcurrent and overvoltage
- Memory segmenting
- Available with PXI or PXI Express interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/pdf/PXM7820.pdf

Product Information

General

The PXM(e)7820 High Speed Multi-Measurement Device combines a 16 Bit DMM, a 10 MS/s Digitizer with a resolution of 16 Bit, a timer/counter and a trigger card. One special feature of the PXM(e)7820 is a very high input impedance of 10 MΩ || <20 pF also in all AC ranges. Therefore the influence on DC and AC signals is reduced to a minimum.
A trigger input and output is provided as well as electronic protection against overvoltage and overcurrent.

High voltage, high resolution Waveform Digitizer

The PXM(e)7820 High Speed Multi-Measurement Device features waveform sampling with 10 MS/s, 16 Bit resolution, input voltages up to ±250 V_p and a bandwidth up to 5 MHz. This allows the measurement of high voltage signals without additional signal conditioning. Data can be acquired before and after the trigger event with a programmable sample counter that controls a number of up to 64 million data points. The memory segmenting function allows to save different digitizing events in the memory.
A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

High precision Digital Multimeter

The PXM(e)7820 High Speed Multi-Measurement Device features a high precision Digital Multimeter (DMM) for high performance measurements with 16 Bit resolution.
It provides measurement of DC voltage up to 250 V, AC voltage up to 250 V_p, DC current up to 1 A and AC current up to 2 A_p.

High resolution timer/counter

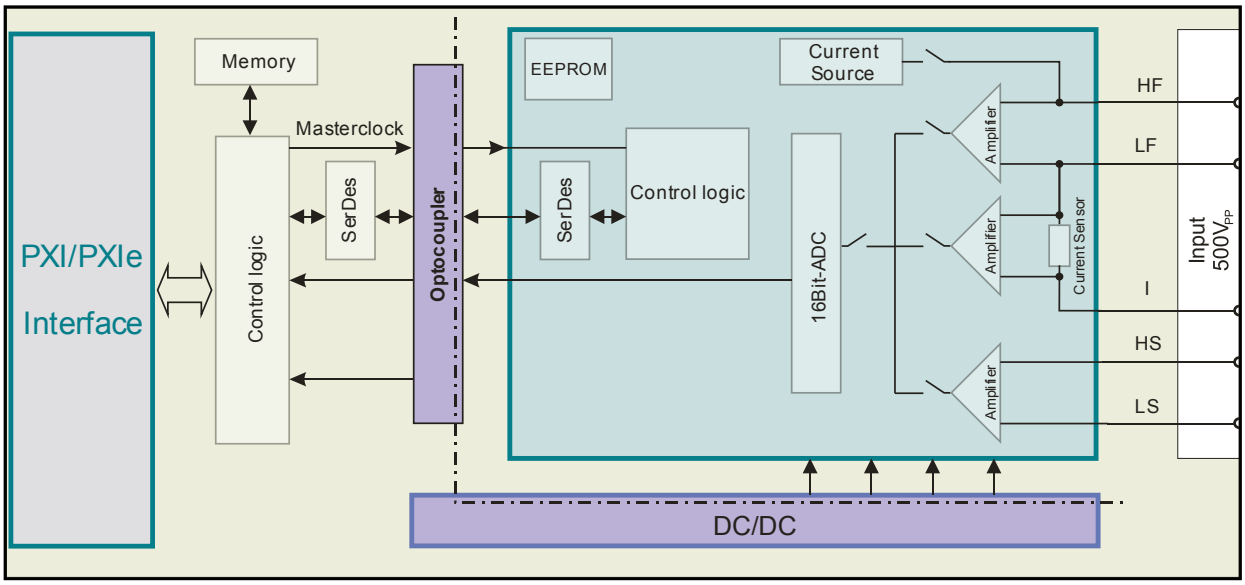
The PXM(e)7820 High Speed Multi-Measurement Device features a high precision timer/counter for high performance measurements of frequency, period time, interval and pulse width and rise and fall times with a resolution of up to 100 ns.

Configurable trigger matrix

The PXM(e)7820 High Speed Multi-Measurement Device features a complex trigger matrix. Both trigger connectors, internal trigger events and all trigger lines on the backplane can be connected individually.

High throughput design for many applications

The PXM(e)7820 High Speed Multi-Measurement Device is designed for high throughput production testing. One key feature is the extremely low switching time of <1 ms for the changing of ranges and functions like switching from AC to DC.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Front connector type	FM5W5P	
Storage temperature range	-25 ... 70°C	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250 V CAT I, Pollution Degree 2	

Waveform Digitizer

Acquisition	Specification	Comment
Maximum sample rate	10 MS/s	
Bandwidth		
Range 250 mV_p, 500 mV_p	>2 MHz	0.5 V_{pp} input signal; no filter
Range 1 V_p, 2 V_p, 4 V_p, 8 V_p	>5 MHz	2 V_{pp} input signal; no filter
All other ranges	>1 MHz	20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling interval	100 ns ... 1 s	Software selectable
Input impedance	10 MΩ // <20 pF	
Input coupling	DC or AC	Software selectable
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Input ranges	250 mV_p, 500 mV_p, 1 V_p, 2 V_p, 4 V_p, 8 V_p, 16 V_p, 32 V_p, 64 V_p, 128 V_p, 250 V_p	5% overrange 5% overrange
DC accuracy[1]		
Range 250 mV_p	0.2 + 0.2	±(% of input + % of full scale)
Range 500 mV_p	0.15 + 0.15	±(% of input + % of full scale)
All other ranges	0.1 + 0.1	±(% of input + % of full scale)
Filter	1 kHz, 10 kHz, 100 kHz, 1 MHz	Software selectable
Waveform memory	64 MS	

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	In operating temperature range

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 10 kHz filter performed within 24 hours after an offset correction.

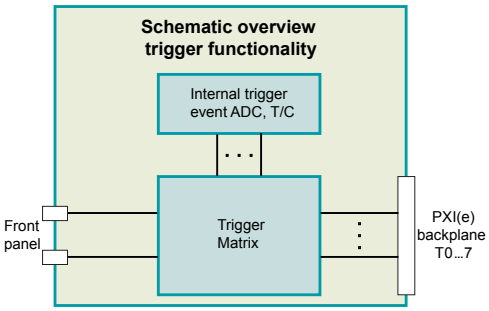
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time). Product specification and description in this document are subject to change without notice.

Trigger

Trigger System	Specification	Comment
Input from		
Internal function module	Module can trigger itself	
Software	Via software command	
Front connector	Front trigger input (TTL level)	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Module can trigger itself	
Front connector	Front trigger output (TTL level)	
PXI trigger	Trigger 0 ... 7	To the PXI backplane
Level resolution	16 Bit	
Level accuracy	0.6 + 0.3	±(% of programmed value + % of full range)
Trigger delay	0 ... 200 s	Programmable delay, 100 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event
Trigger Mode	Asynchronous, synchronous level, synchronous slope	

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	32 Bit
Range	0.1 Hz ... 2.5 MHz
Minimum pulse width	200 ns
Gate time	1 µs ... 10 s
Period	
Resolution	100 ns
Accuracy[1,2]	±100 ns
Range	1 µs ... 10 s
Time interval and pulse width	
Resolution	100 ns
Accuracy[2]	±100 ns
Range	1 µs ... 10 s
Rise and fall time	
Resolution	100 ns
Accuracy[2]	±100 ns
Range	1 µs ... 10 s
Totalize	
Minimum pulse width	1 µs
Range	0 ... 2^{32}-1



1 Square wave signal with T_{Rise}<1 ns and T_{Fall}<1 ns.
2 Trigger comparator error not included.

Digital Multimeter (DMM)

DC Voltage Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input voltage	±250 V	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,2,5,7]		
Range 250 mV	0.08 + 0.02	Input resistance >1 GΩ
Range 500 mV	0.08 + 0.015	Input resistance >1 GΩ
Range 1 V	0.08 + 0.01	Input resistance >1 GΩ
Range 2 V	0.08 + 0.01	Input resistance >1 GΩ
Range 4 V	0.08 + 0.01	Input resistance >1 GΩ
Range 8 V	0.08 + 0.01	Input resistance >1 GΩ
Range 16 V	0.08 + 0.01	Input resistance 10 MΩ
Range 32 V	0.08 + 0.01	Input resistance 10 MΩ
Range 64 V	0.08 + 0.01	Input resistance 10 MΩ
Range 128 V	0.08 + 0.01	Input resistance 10 MΩ
Range 250 V	0.08 + 0.01	Input resistance 10 MΩ

AC Voltage Measurement	Specification	Comment
Resolution	16 Bit	
Input impedance	10 MΩ // <20 pF	
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Overrange	5% of range	

AC Voltage Accuracy[1,2,3,4,5,8]	1 ... 40 Hz[6]	40 Hz ... 20 kHz	20 ... 50 kHz	50 ... 100 kHz
Range 250 mV_{RMS}	0.4 + 0.1	0.4 + 0.1	0.3 + 0.15	0.8 + 0.1
Range 500 mV_{RMS}	0.3 + 0.1	0.2 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 1 V_{RMS}	0.15 + 0.1	0.15 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 2 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 4 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 8 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 16 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 32 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 64 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1
Range 128 V_{RMS}	0.15 + 0.1	0.1 + 0.1	0.2 + 0.1	0.8 + 0.1[9]

1 For measurements >10% of range.
2 ±(% of reading + % of full scale).
3 For sine wave signals >5% of range.
4 Maximum peak input voltage = 2x full scale (e.g. maximum input voltage for 128 V_{RMS} range = ±256 V_p).
5 With auto offset correction.
6 With DC coupling.
7 5 PLC.
8 Measurement aperture greater than $5/f_{Low}$, where f_{Low} is the lowest frequency component of the signal being measured.
9 Maximum input voltage must be satisfied.

DC Current Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input current	±1 A	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,3,4]		
Range 10 mA	0.2 + 0.05	
Range 100 mA	0.2 + 0.05	
Range 1 A	0.2 + 0.05	

AC Current Measurement	Specification	Comment
Resolution	16 Bit	
Maximum input current	±2 A_p	
Overrange	5% of range	

AC Current Accuracy[2,3,4,5,6]	40Hz ... 5 kHz	5 kHz ... 20 kHz
Range 10 mA_{RMS}	0.3 + 0.1	0.5 + 0.3
Range 100 mA_{RMS}	0.1 + 0.02	0.2 + 0.04
Range 1 A_{RMS}	0.1 + 0.02	0.3 + 0.04

1 For measurements >8% of range.
2 For sine wave signals >8% of range.
3 With auto offset correction.
4 ±(% of reading + % of full scale).
5 Maximum peak input current = 2x full scale (e.g. maximum input current for 1 A_{RMS} range = ±2 A_p).
6 With DC coupling.

Resistance

Resistance Measurement	Specification	Comment
Resolution	16 Bit	
Overrange	5% of range	
Resistance accuracy[1,2,3,4]		
Range 100 Ω	0.1 + 0.01	Test current 8 mA
Range 1 kΩ	0.1 + 0.01	Test current 8 mA
Range 10 kΩ	0.1 + 0.01	Test current 800 µA
Range 100 kΩ	0.1 + 0.01	Test current 80 µA
Range 1 MΩ	0.1 + 0.01	Test current 8 µA
Range 10 MΩ	0.1 + 0.01	Test current 800 nA

PXI(e) Trigger

PXI Capabilities	Specification	Comment
PXI(e) TTL/trigger usage	Possible	PXI(e) trigger 0...7; input and output
PXI(e) star trigger usage	Possible	Input only

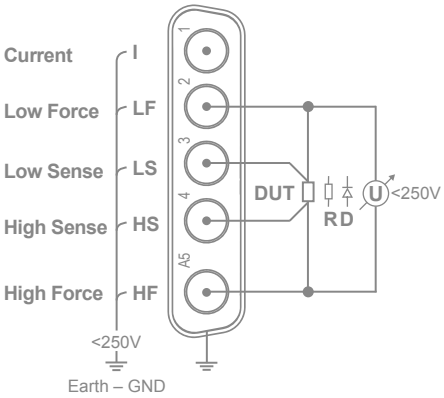
Operating Times

Scope of Application	Specification	Comment
Ranges	<1 ms	
Functions[5]	<1 ms	For all U–, I–, R–Ranges[5]

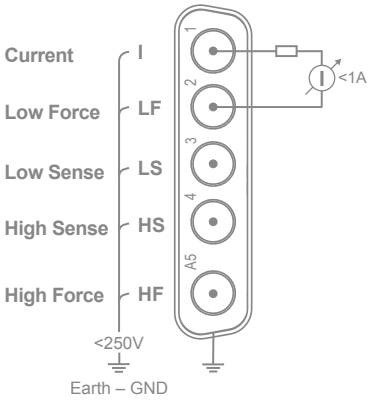
1 For measurements >8% of range.
2 Only 4 wire measurement.
3 With auto offset correction.
4 ±(% of reading + % of full scale).
5 For AC modes with DC coupling.

Pin Assignment

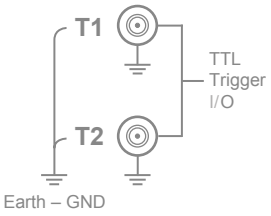
U-Measurement



I-Measurement



Trigger Lines



Ordering Information

Ordering Information	Comment
PXM7820	Device with PXI interface
PXMe7820	Device with PXIe interface

Accessory Parts	MPN	VPN
Mixed Signal Connector		
Pin connector shell	FCT FM5W5P	ZJ1353-0
High voltage contact, plug	FCT FMV001P107K	ZJ1385-0
Metal hood	FCT FMK3G	ZJ1850-0
SMB Trigger Connector		
SMB connector soldering	11_SMB-50-1-40	ZJ1522-0
Isolation sleeve	78_Z-5-1-1	ZJ1523-0
Cable Adapters		
Banana-Jack adapter	---	KA1111-0
BNC adapter	---	KA1112-0

FOR YOUR NOTES

PXM(e)7822
High Accuracy Multi-Measurement Device

New in 2022

–preliminary–

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external PCIe

Features

- High voltage range with up to 500 V_{pp}
- 16 Bit Waveform Digitizer 64 MS, 20 MS/s
- High precision Digital Multimeter with 24 Bit resolution and 1 MS/s
- Fully isolated design
- >1 GΩ || <20 pF input impedance up to 8 V range
- 10 MΩ || <20 pF for all other ranges
- Extremely low switching time of <1 ms for ranges and functions
- Highly configurable trigger matrix
- Trigger engine for instrument synchronization
- Built-in timer/counter engine
- Electronic protection against overcurrent and overvoltage
- Memory segmenting
- Available with PXI or PXI Express interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXM7822.pdf

Product Information

General

The PXM(e)7822 High Speed Multi-Measurement combines a 24 Bit DMM with up to 1 MS/s, a timer/counter, a 20 MS/s Digitizer with a resolution of 16 Bit and a trigger card. One special feature of the PXM7822 is a very high input impedance of 10 MΩ || <20 pF also for all AC ranges. Therefore the influence on DC and AC signals is reduced to a minimum. A trigger input and output is provided as well as electronic protection against overvoltage and overcurrent.

High voltage, high resolution waveform digitizer

The PXM(e)7822 High Speed Multi-Measurement Device features waveform sampling with 20 MS/s, 16 Bit resolution, input voltages up to ±250 V_p and a bandwidth up to 5 MHz. This allows the measurement of high voltage signals without additional signal conditioning. Data can be acquired before and after the trigger event with a programmable sample counter that controls a number of up to 64 million data points. The memory segmenting function allows to save different digitizing events in the memory.
A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

High precision digital multimeter

The PXM(e)7822 High Speed Multi-Measurement Device features a high precision Digital Multimeter (DMM) for high performance measurements with 24 Bit resolution.
It provides measurement of DC voltage up to 250 V, AC voltage up to 250 V_{ACPeak}, DC current up to 1 A and AC current up to 1 A_{RMS} (2 A_{ACPeak}).

High resolution timer/counter

The PXM(e)7822 High Speed Multi-Measurement Device features a high precision timer/counter for high performance measurements of frequency, period time, interval pulse width and rise and fall time with a resolution of up to 50 ns.

High precision LCR meter

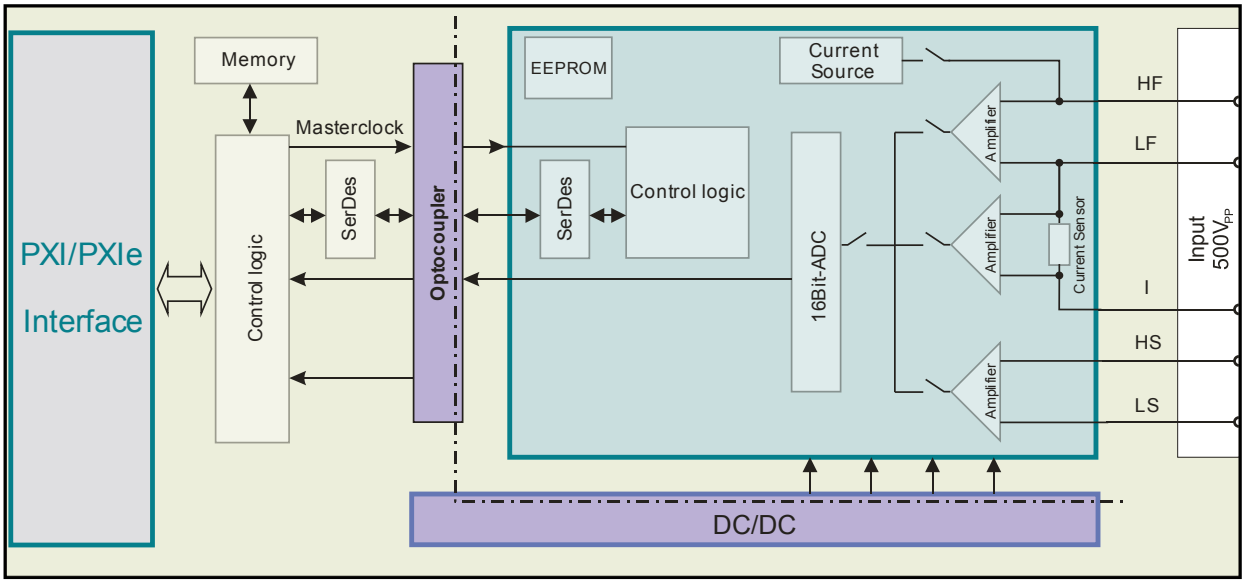
The PXM(e)7822 High Speed Multi-Measurement Device features a high precision LCR-Meter for resistance, capacitance and inductance measurement.

Configurable trigger matrix

The PXM(e)7822 High Speed Multi-Measurement Device features a complex trigger matrix. Both trigger connectors, internal trigger events and all trigger lines on the backplane can be connected individually.

High throughput design for many applications

The PXM(e)7822 High Speed Multi-Measurement Device is designed for high throughput production testing. One key feature is the extremely low switching time of <1 ms for the changing of ranges and functions like switching from AC to DC.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Front connector type	FM5W5P	
Storage temperature range	-25 ... 70°C	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250 V CAT I, Pollution Degree 2	

Waveform Digitizer

Acquisition	Specification	Comment
Maximum sample rate	20 MS/s	
Bandwidth		
Range 250 mV_p, 500 mV_p	>2 MHz	0.5 V_{pp} input signal; no filter
Range 1 V_p, 2 V_p, 4 V_p, 8 V_p	>5 MHz	2 V_{pp} input signal; no filter
All other ranges	>1 MHz	20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling interval	50 ns ... 1 s	Software selectable
Input impedance	10 MΩ // <20 pF	
Input coupling	DC or AC	Software selectable
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Input ranges	250 mV_p, 500 mV_p, 1 V_p, 2 V_p, 4 V_p, 8 V_p, 16 V_p, 32 V_p, 64 V_p, 128 V_p, 250 V_p	5% overrange 5% overrange
DC accuracy[1]		
Range 250 mV_p	0.3 + 4	±(% of input + mV)
Range 500 mV_p	0.3 + 4	±(% of input + mV)
All other ranges	0.1 + 0.1	±(% of input + % of full scale)
Filter	1 kHz, 10 kHz, 100 kHz, 1 MHz	Software selectable
Waveform memory	64 MS	

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	In operating temperature range

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 10 kHz filter performed within 24 hours after an offset correction.

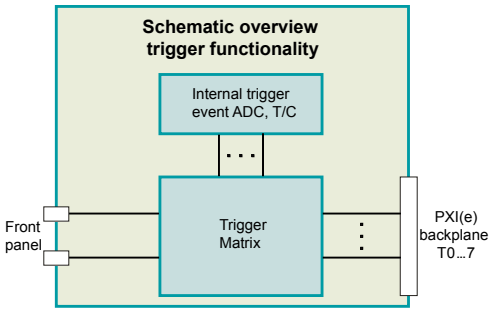
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time). Product specification and description in this document are subject to change without notice.

Trigger

Trigger System	Specification	Comment
Input from		
Internal function module	Module can trigger itself	
Software	Via software command	
Front connector	Front trigger input (TTL level)	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Module can trigger itself	
Front connector	Front trigger output (TTL level)	
PXI trigger	Trigger 0 ... 7	To the PXI backplane
Level resolution	16 Bit or 24 Bit	
Level accuracy		
250 mV_p	0.2 + 0.2	±(% of programmed value + % of full range)
500 mV_p	0.15 + 0.15	±(% of programmed value + % of full range)
All other ranges	0.1 + 0.1	±(% of programmed value + % of full range)
Trigger delay	0 ... 200 s	Programmable delay, 50 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event
Trigger Mode	Asynchronous, synchronous level, synchronous slope	

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	32 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	10 µs
Gate time	1 µs ... 10 s
Period	
Resolution	50 ns
Accuracy[1,2]	±50 ns
Range	1 µs ... 10 s
Time interval and pulse width	
Resolution	50 ns
Accuracy[2]	±50 ns
Range	1 µs ... 10 s
Rise and fall time	
Resolution	50 ns
Accuracy[2]	±50 ns
Range	1 µs ... 10 s
Totalize	
Minimum pulse width	1 µs
Range	0 ... 2^{32}-1



1 Square wave signal with T_{Rise}<1 ns and T_{Fall}<1 ns.
2 Trigger comparator error not included.

Digital Multimeter (DMM)

DC Voltage Measurement	Specification	Comment
Resolution	24 Bit	
Maximum input voltage	±250 V	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,2,5,7]		
Range 250 mV	0.019 + 0.0045	Input resistance >1 GΩ
Range 500 mV	0.014 + 0.003	Input resistance >1 GΩ
Range 1 V	0.0095 + 0.002	Input resistance >1 GΩ
Range 2 V	0.0095 + 0.002	Input resistance >1 GΩ
Range 4 V	0.0095 + 0.002	Input resistance >1 GΩ
Range 8 V	0.0095 + 0.002	Input resistance >1 GΩ
Range 16 V	0.0095 + 0.002	Input resistance 10 MΩ
Range 32 V	0.0095 + 0.002	Input resistance 10 MΩ
Range 64 V	0.0095 + 0.0025	Input resistance 10 MΩ
Range 128 V	0.0095 + 0.003	Input resistance 10 MΩ
Range 250 V	0.0095 + 0.003	Input resistance 10 MΩ

AC Voltage Measurement	Specification	Comment
Resolution	16 Bit	
Input impedance	10 MΩ // <20 pF	
Maximum input voltage	f < 40 kHz: 250 V_p 40 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 5 MHz: 10 V_p	Input voltage may not exceed selected input voltage range
Overrange	5% of range	
Ranges	250 mV_{RMS}, 500 mV_{RMS} 1 V_{RMS}, 2 V_{RMS}, 4 V_{RMS} 8 V_{RMS}, 16 V_{RMS}, 32 V_{RMS}, 64 V_{RMS}, 128 V_{RMS}	

AC Voltage Accuracy[1,2,3,4,5,8]	1 ... 40 Hz[6]	40 Hz ... 20 kHz	20 ... 50 kHz	50 ... 100 kHz	100 ... 300 kHz
Range 250 mV_{RMS}	0.3 + 0.05	0.3 + 0.05	0.3 + 0.05	0.8 + 0.08	3.6 + 0.8
Range 500 mV_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 1 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 2 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 4 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 8 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 16 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8
Range 32 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8[9]
Range 64 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08	3.6 + 0.8[9]
Range 128 V_{RMS}	0.2 + 0.04	0.3 + 0.05	0.2 + 0.04	0.8 + 0.08[9]	3.6 + 0.8[9]

1 For measurements >5% of range.
2 ±(% of reading + % of full scale).
3 For sine wave signals >5% of range.
4 Maximum peak input voltage = 2x full scale (e.g. maximum input voltage for 128 V_{RMS} range = ±256 V_p).
5 With auto offset correction.
6 With DC coupling.
7 50 PLC.
8 Measurement aperture greater than $5/f_{Low}$, where f_{Low} is the lowest frequency component of the signal being measured.
9 Maximum Input Voltage must be satisfied.

DC Current Measurement	Specification	Comment
Resolution	24 Bit	
Maximum input current	±1 A	
Overrange	5% of range	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
DC accuracy[1,3,4]		
Range 10 mA	0.1 + 0.1	
Range 100 mA	0.1 + 0.1	
Range 1 A	0.1 + 0.1	

AC Current Measurement[6]	Specification	Comment
Resolution	16 Bit	
Maximum input current	±2 A_p	
Overrange	5% of range	

AC Current Accuracy[1,2,3,4,5,6]	40Hz ... 5 kHz	5 kHz ... 20 kHz	Comment
Range 10 mA_{RMS}	0.3 + 0.2	0.5 + 0.3	
Range 100 mA_{RMS}	0.1 + 0.01	0.2 + 0.02	
Range 1 A_{RMS}	0.1 + 0.01	0.3 + 0.02	

Diode Measurement	Specification	Comment
Resolution	24 Bit	
Overrange	5% of range	
Accuracy[1,3,4,7]		
Range 500 mV	0.1 + 0.01	Test current 1 µA, 10 µA, 100 µA, 1 mA
Range 1 V	0.1 + 0.01	Test current 1 µA, 10 µA, 100 µA, 1 mA
Range 2 V	0.1 + 0.01	Test current 1 µA, 10 µA, 100 µA, 1 mA
Range 4 V	0.1 + 0.01	Test current 1 µA, 10 µA, 100 µA, 1 mA
Range 8 V	0.1 + 0.01	Test current 1 µA, 10 µA, 100 µA, 1 mA

1 For measurements >5% of range.
2 For sine wave signals >5% of range.
3 With auto offset correction.
4 ±(% of reading + % of full scale).
5 Maximum peak input current = 2x full scale (e.g. maximum input current for 1 A_{RMS} range = ±2 A_p).
6 With DC coupling.
7 Only 4 wire measurement.

LCR meter

Resistance Measurement	Specification	Comment
Resolution	24 Bit	
Overrange	5% of range	
Accuracy[1,2,3,4]		
Range 100 Ω	0.1 + 0.01	Test current 8 mA
Range 1 kΩ	0.1 + 0.01	Test current 8 mA
Range 10 kΩ	0.1 + 0.01	Test current 800 µA
Range 100 kΩ	0.1 + 0.01	Test current 80 µA
Range 1 MΩ	0.1 + 0.01	Test current 8 µA
Range 10 MΩ	0.1 + 0.01	Test current 800 nA

Capacitance Measurement	Specification	Comment
Resolution	24 Bit	
Overrange	5% of range	
Accuracy[1,2,3,4]		
Range 1 nF	0.15 + 0.1	
Range 10 nF	0.15 + 0.1	
Range 100 nF	0.15 + 0.1	
Range 1 µF	0.18 + 0.1	
Range 10 µF	0.18 + 0.1	
Range 100 µF	0.18 + 0.1	
Range 1 mF	0.18 + 0.1	
Range 10 mF	0.18 + 0.1	

Inductance Measurement	Specification	Comment
Resolution	24 Bit	
Overrange	5% of range	
Accuracy[1,2,3,4]		
Range 10 µH	0.5 + 1	
Range 100 µH	0.2 + 0.1	
Range 1 mH	0.2 + 0.1	
Range 10 mH	0.15 + 0.1	
Range 100 mH	0.15 + 0.1	
Range 1 H	0.18 + 0.1	

1 For measurements >5% of range.
2 Only 4 wire measurement.
3 With auto offset correction.
4 ±(% of reading + % of full scale).

PXI(e) Trigger

PXI Capabilities	Specification	Comment
PXI(e) trigger usage	Possible	PXI(e) trigger 0...7; input and output
PXI(e) star trigger usage	Possible	Input only

Switching Times

Scope of Application	Specification	Comment
Ranges	<1 ms	
Functions[1]	<1 ms	For all U–, I–, R–, L–, C–Ranges[1]

Ordering Information

Ordering Information	Comment
PXM7822	Device with PXI interface
PXMe7822	Device with PXIe interface

Accessory Parts	MPN	VPN
Mixed Signal Connector		
Pin connector shell	FCT FM5W5P	ZJ1353-0
High voltage contact, plug	FCT FMV001P107K	ZJ1385-0
Metal hood	FCT FMK3G	ZJ1850-0
SMB Trigger Connector		
SMB connector soldering	11_SMB-50-1-40	ZJ1522-0
Isolation sleeve	78_Z-5-1-1	ZJ1523-0
Cable Adapters		
Banana-Jack adapter	---	KA1111-0
BNC adapter	---	KA1112-0

[1] For AC modes with DC coupling.

WAVEFORM GENERATOR

- **PXA(e)72xx**
  Arbitrary Waveform Generator Family **53**
  16 Bit | <200 MS/s | <30 V_{pp} | Bandwidth: 40 MHz

- **PXA(e)73xx**
  Arbitrary Current Generator Family **57**
  16 Bit | <200 MS/s | <30 mA | Bandwidth: 3 MHz

PXA(e)72xx
Arbitrary Waveform Generator Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Output voltages up to +30 V or ±15 V
- Up to 200 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Complex waveform sequencing
- Multiple instrument and channel synchronization possibilities
- High configurable trigger engine
- On the fly amplitude and offset changing
- Two additional marker outputs
- Wide range of sample rates due to programmable internal PLL
- High bandwidth
- Available with PXI or PXI Express interface
- Based on VX Instruments FlexCPeP for easy custom design

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXA72xx.pdf

Product Information

Flexible Configurable PXI(e) Platform
This family of Arbitrary Function Generators is based on the "Flexible Configurable PXI(e) Platform" (FlexCPeP). This platform allows many variations of customer configured Arbitrary Function Generators.

High speed, high resolution arbitrary waveform generator
The PXA(e)72xx ArbGen family features up to two simultaneously working channels with up to 200 MS/s, 16 Bit resolution and an output voltage up to +30 V or ±15 V.

Every channel is equipped with up to 16 MB memory. The whole amount of up to 8 million samples can be partitioned into one or more waveform segments.

Depending on the number of channels and the floating option, the Arbitrary Function Generators are built into a compact 3U PXI(e) device for 1 or 2 slots.

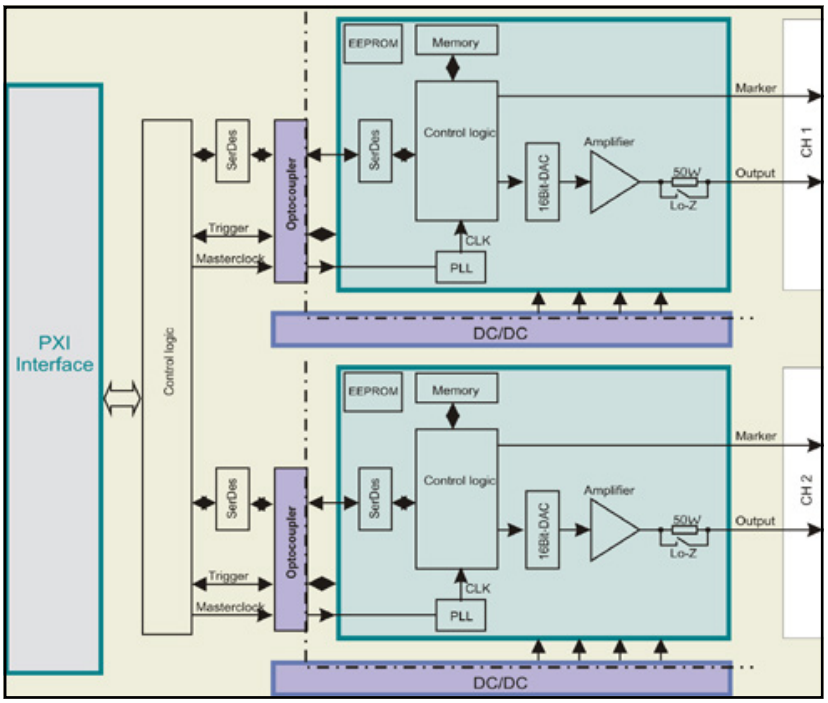
Built-in waveform functions
Predefined waveforms (DC, sine, square, triangle, sawtooth) can be configured via software driver. Furthermore it is possible to load an user created waveform.

Fully independent channels
Each channel has its own clock-PLL, memory and state machine for START, STOP, TRIGGER, SAMPLING and SEQUENCING. This guarantees the two channels to work completely independent. The great amount of trigger capabilities results in multiple sophisticated instrument and channel synchronization possibilities.

Complex waveforms without memory reloading
Arbitrary waveforms can be loaded via data files into the on-board memories for up to 8 MS waveform data and 512 sequences. The memory can be segmented and sequenced in any desired order.

Furthermore, amplitude and offset can be changed on the fly without writing new data into the memory.

High output voltages allows easy stimulation
The standard output voltage is ±15 V (30 V_{pp}). With an optional extension the output stage can be switched to achieve output voltages up to +30 V into high impedance load. This allows high voltage waveform stimulation without additional signal conditioning.



Ordering Option	Comment
PXAe722x	100 MS/s, PXI Express interface
PXAe724x	200 MS/s, PXI Express interface
PXA722x	100 MS/s
PXA724x	200 MS/s
Option MEM4MB	4 MB Memory
Option MEM8MB	8 MB Memory
Option MEM16MB	16 MB Memory
Option EXTVOLT	Extended output voltage range
Option TCXO	Temperature compensated crystal oscillator

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXA(e)72x1, PXA(e)72x2, PXA(e)72x3 PXA(e)72x4
Module weight	<0.4 kg <0.6 kg	PXA(e)72x1, PXA(e)72x2, PXA(e)72x3 PXA(e)72x4
Front connector type	SMA	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	60 V CAT I, Pollution Degree 2	

Waveform	Specification	Comment
Output voltage resolution	16 Bit	
Output impedance	50 Ω or Lo-Z (≈10 Ω)	$R_{out,}$ Software selectable
Output voltage ranges		Software selectable
Range 1	±2.5 V	
Range 2	±5.0 V	
Range 3	±10 V	
Range 4	±15 V	
Range 5	0 ... 10 V	Additionally with option EXTVOLT
Range 6	0 ... 20 V	Additionally with option EXTVOLT
Range 7	0 ... 30 V	Additionally with option EXTVOLT
Max. output current		
Range 1 ... 3	100 mA_p	
All other ranges	30 mA_p	
AC bandwidth[1]		
Range 1+2	40 MHz (3 dB)	R_{load}= 50 Ω; R_{out}= 50 Ω or Lo-Z
All other ranges	10 MHz (3 dB)	R_{load}= 1 kΩ
Slew rate	>200 V/µs	For all ranges; into Hi-Z
DC accuracy		For all ranges; into Hi-Z
DC Offset	<0.2% of full scale	
DC Gain	<0.2% of value	
Waveform memory	2 MB, 1 MS	Standard
	4 MB, 2 MS	With option MEM 4MB
	8 MB, 4 MS	With option MEM 8MB
	16 MB, 8 MS	With option MEM 16MB

Time Base	Specification	Comment
Accuracy	50 ppm, 1 ppm with option TCXO	In operating temperature range
Aging per year	5 ppm, 1 ppm with option TCXO	
Sampling frequency	0.10 S/s ... 100 MS/s 0.10 S/s ... 200 MS/s	PXA(e)722x PXA(e)724x
Output frequency resolution	100 ppm	Of programmed value (frequency)

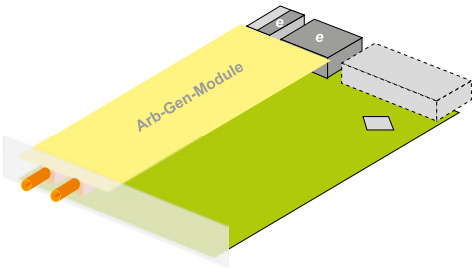
[1] At 50% amplitude of chosen range.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

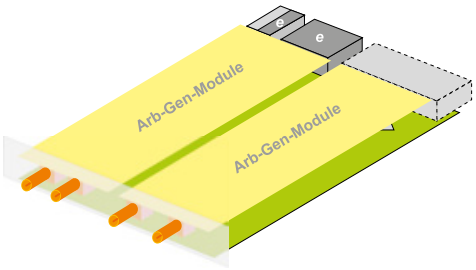
Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger the other channel	E. g. trigger on marker-bit
Software	Via software command	
PXI trigger	Trigger 0 … 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other channel	E. g. marker-bit
PXI trigger	Output of each channel trigger source to the trigger lines of the PXI backplane	
System delay	Max. 1 sample clock + 120 ns	Trigger to waveform output

Marker Output	Specification	Comment
Output voltage	TTL	TTL output via SMA front connector
Output current (low state)	25 mA	
Output current (high state)	25 mA	

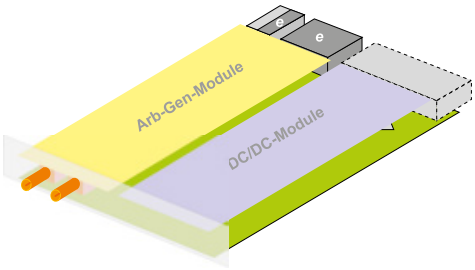
PXI Capabilities	Specification	Comment
PXI 10 MHz usage	On request	Then time base accuracy depends on PXI rack
PXI trigger usage	Supported	PXI trigger 0 … 7; input and output
PXI star trigger usage	Supported	Input only



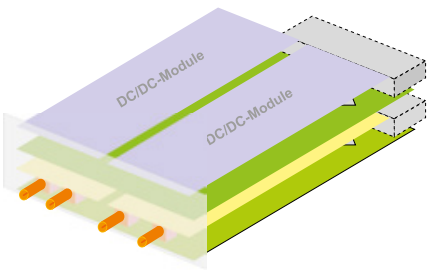
PXA(e)72x1
1 channel non-isolated ArbGen in 1 slot



PXA(e)72x2
2 channel non-isolated ArbGen in 1 slot



PXA(e)72x3
1 channel isolated ArbGen in 1 slot



PXA(e)72x4
2 channel isolated ArbGen in 2 slots

PXA(e)73xx
Arbitrary Current Generator Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Output currents up to 30 mA or ±20 mA
- Up to 200 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Complex waveform sequencing
- Multiple instrument and channel synchronization possibilities
- High configurable trigger engine
- On the fly amplitude and offset changing
- Two additional marker outputs
- Wide range of sample rates due to programmable internal PLL
- High bandwidth
- Available with PXI or PXI Express interface
- Based on VX Instruments FlexCPeP for easy custom design

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXA73xx.pdf

Product Information

Flexible Configurable PXI(e) Platform
This family of Arbitrary Function Generators is based on the "Flexible Configurable PXI(e) Platform" (FlexCPeP). This platform allows many variations of customer configured Arbitrary Function Generators.

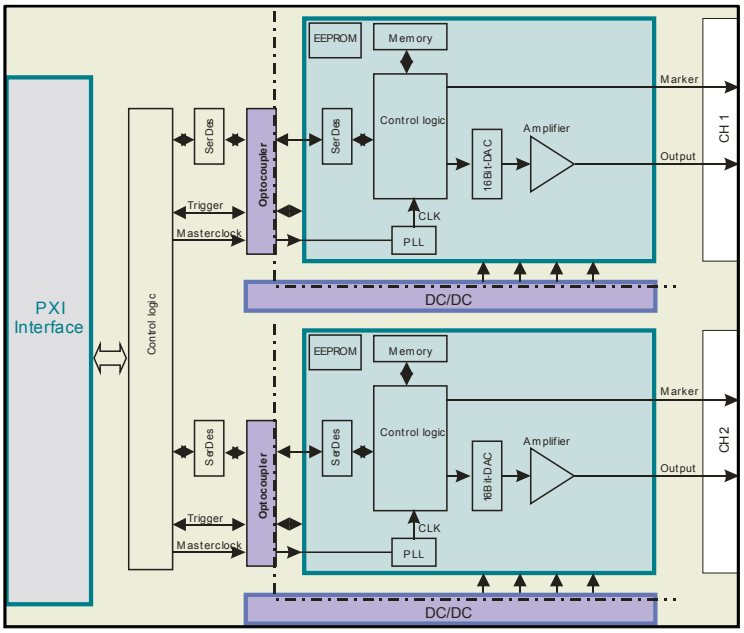
High speed, high resolution arbitrary waveform generator
The PXA(e)73xx ArbGen family features up to two simultaneously working channels with up to 200 MS/s, 16 Bit resolution and an output current up to 30 mA in sink mode (at up to 30 V) or ±20 mA in combined source/sink mode (at up to ±10 V).
Every channel is equipped with 2 MB memory. The whole amount of 1 million samples can be partitioned into one ore more waveform segments.
Depending on the number of channels and the floating option, the Arbitrary Function Generators are built into a compact 3U PXI(e) device for 1 or 2 slots.

Built-in waveform functions
Predefined waveforms (DC, sine, square, triangle, sawtooth) can be configured via software driver. Furthermore it is possible to load an user created waveform.

Fully independent channels
Each channel has its own clock-PLL, memory and state machine for START, STOP, TRIGGER, SAMPLING and SEQUENCING. This guarantees the 2 channels to work completely independent. A great amount of trigger capabilities results in multiple sophisticated instrument and channel synchronization possibilities.

Complex waveforms without memory reloading
Arbitrary waveforms can be loaded via data files into the on-board memories for 1 MS waveform data and 512 sequences. The memory can be segmented and sequenced in any desired order.

Furthermore amplitude and offset can be changed on the fly without writing new data into the memories.



Ordering Option	Comment
PXAe732x	100 MS/s, PXI Express interface
PXAe734x	200 MS/s, PXI Express interface
PXA 732x	100 MS/s
PXA 734x	200 MS/s
Option TCXO	Temperature compensated crystal oscillator

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXA(e)73x1, PXA(e)73x2, PXA(e)73x3 PXA(e)73x4
Module weight	<0.4 kg <0.6 kg	PXA(e)73x1, PXA(e)73x2, PXA(e)73x3 PXA(e)73x4
Front connector type	SMA	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	60V CAT I, Pollution Degree 2	

Waveform	Specification	Comment
Output current resolution	16 Bit	
Output current ranges Bipolar source/sink Unipolar sink	 ±20 mA 0 ... 30 mA	 At up to ±10 V At up to 30 V
AC Bandwidth[1] Bipolar source/sink Unipolar sink	 3 MHz (3 dB) 500 kHz (3 dB)	 R_{load} = 5 Ω R_{load} = 5 Ω
Slewrate Bipolar source/sink Unipolar sink	 >250 mA/µs >50 mA/µs	For all ranges; R = 10 Ω
DC Accuracy DC-Offset DC-Gain	 <0.25% of full scale <0.25% of value	For all ranges; R = 50 Ω
AC Accuracy f <1 kHz f <10 kHz f <30 kHz	 <0.5% of full scale <1.0% of full scale <2.0% of full scale	Sine wave; R = 50 Ω
Waveform memory	2 MB, 1 MS	

Time Base	Specification	Comment
Accuracy	50 ppm, 1 ppm with option TCXO	In operating temperature range
Aging per year	5 ppm, 1 ppm with option TCXO	
Sampling frequency	0.10 S/s ... 100 MS/s 0.10 S/s ... 200 MS/s	PXA(e)732x PXA(e)734x
Output frequency resolution	100 ppm	Of programmed value (frequency)

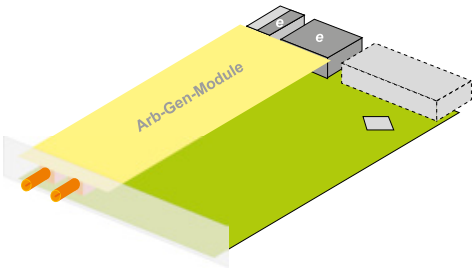
[1] At 50% amplitude of chosen range.

Notes: All product data are specified for an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

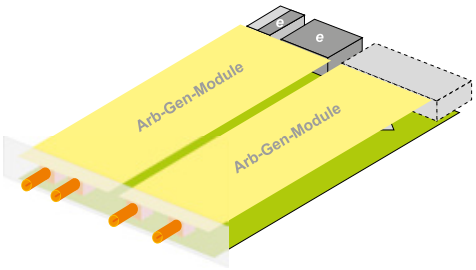
Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger the other channel	E.g. trigger on marker-bit
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other channel	E.g. marker-bit
PXI trigger	Output of each channel trigger source to the trigger lines of the PXI backplane	
System delay	Max. 1 sample clock + 120 ns	Trigger to waveform output

Marker Output	Specification	Comment
Output voltage	TTL	TTL output via SMA front connector
Output current (low state)	25 mA	
Output current (high state)	25 mA	

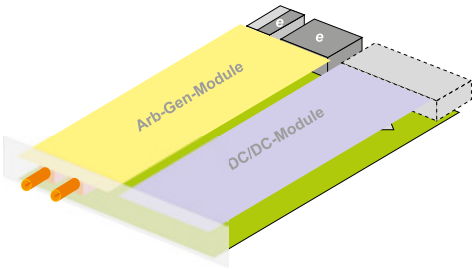
PXI Capabilities	Specification	Comment
PXI 10 MHz usage	On request	Then time base accuracy depends on PXI rack
PXI trigger usage	Supported	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Supported	Input only



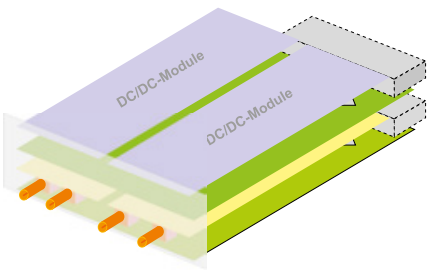
PXA(e)73x1
1 channel non-isolated ArbGen in 1 slot



PXA(e)73x2
2 channel non-isolated ArbGen in 1 slot



PXA(e)73x3
1 channel isolated ArbGen in 1 slot



PXA(e)73x4
2 channel isolated ArbGen in 2 slot

HIGH POWER SMU

A5710
AC Current Source

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Modern switching technology
- Output current up to 1600 A_{eff}
- Variable output frequency between 45 and 65 Hz (option FREQ)
- Continous data acquisition (option DAQ)
- Readback of output current (option MEAS)
- Digital regulation loop with the integrated digital processing unit
- Digital calibration

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/A5710.pdf

Product Information

The A5710 AC Current Source is a high current AC source in a 3U 19" chassis.

In combination with a separate special power supply (3U 19") the A5710 supplies currents up to 1 600 A_{eff}.

Benefits of modern switching technology:

- Much lower power dissipation
- Much lower heat generation
- Much lower weight and size
- Much lower fan noise

Various output ratings available

This AC current source is available with output currents from 125 A_{eff} to 1 600 A_{eff}. With the option FREQ the output sine frequency is programmable between 45 and 65 Hz. The maximum output voltage depends on the device variant.

Digital signal processing unit

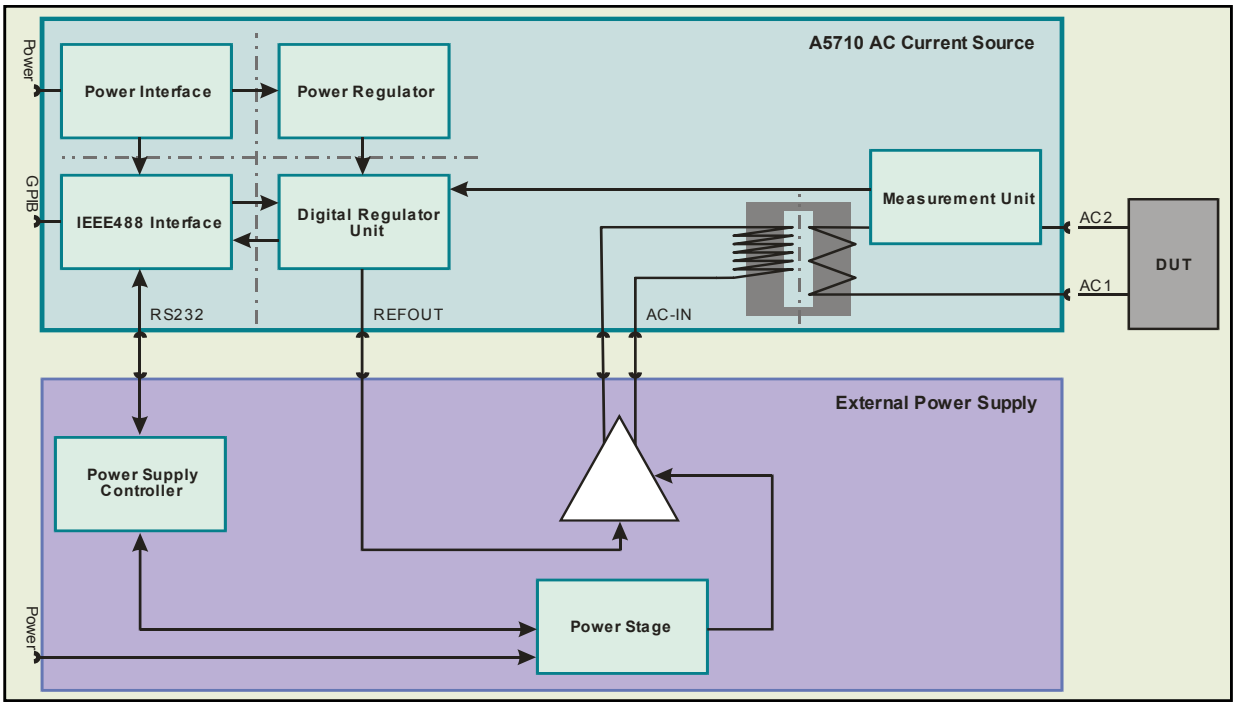
The A5710 contains a digital signal processing unit which provides the following advantages:

- Digital current regulation guarantees stable regulation even with long load-lines
- Open circuit detection provides high operation security
- Continous current sampling for waveform recording (option DAQ)

Controller interface

The A5710 is equipped with a GPIB interface.

Ordering Option	Comment
Option FREQ	Frequency changeable (45 ... 65 Hz)
Option MEAS	RMS output-current measurement
Option DAQ	Data acquisition for waveform recording
Option RMK	19" rack mounting kit



General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 53 Hz	
Power consumption	<(50 W + up to 4 000 W)	A5710 + external power supply
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	50 V CAT I, Pollution Degree 2	

Device Specification	A5710-125-17V0	A5710-160-3V0	A5710-200-11V0
Output Ratings Output current (RMS) Output voltage (Peak)	 1 ... 125 A_{eff} 17.0 V, 1 Phase AC	 2 ... 160 A_{eff} 3.0 V, 1 Phase AC	 5 ... 200 A_{eff} 11.0 V, 1 Phase AC
Output frequency	50 Hz (45 ... 65 Hz optional)	50 Hz (45 ... 65 Hz optional)	50 Hz (45 ... 65 Hz optional)
Output current gain error	<1% of full scale	<1% of full scale	<1% of full scale
Measurement gain error	<1% of full scale	<1% of full scale	<1% of full scale
Size (+ext. power supply)	19" 12U	19" 6U	19" 12U
Weight (+ext. power supply)	≈65 kg	≈42 kg	≈65 kg

Device Specification	A5710-250-2V5	A5710-400-2V0
Output Ratings Output current (RMS) Output voltage (Peak)	 5 ... 250 A_{eff} 2.5 V, 1 Phase AC	 10 ... 400 A_{eff} 2.0 V, 1 Phase AC
Output frequency	50 Hz (45 ... 65 Hz optional)	50 Hz (45 ... 65 Hz optional)
Output current gain error	<1% of full scale	<1% of full scale
Measurement gain error	<1% of full scale	<1% of full scale
Size (+ext. power supply)	19" 6U	19" 6U
Weight (+ext. power supply)	≈44 kg	≈46 kg

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Device Specification	A5710-630-1V5	A5710-630-3V5	A5710-630-5V0
Output Ratings Output current (RMS) Output voltage (Peak)	 20 … 630 A_{eff} 1.5 V, 1 Phase AC	 20 … 630 A_{eff} 3.5 V, 1 Phase AC	 20 … 630 A_{eff} 5.0 V, 1 Phase AC
Output frequency	50 Hz (45 … 65 Hz optional)	50 Hz (45 … 65 Hz optional)	50 Hz (45 … 65 Hz optional)
Output current gain error	<1% of full scale	<1% of full scale	<1% of full scale
Measurement gain error	<1% of full scale	<1% of full scale	<1% of full scale
Size (+ext. power supply)	19" 6U	19" 12U	19" 12U
Weight (+ext. power supply)	≈50 kg	≈85 kg	≈87 kg

Device Specification	A5710-1600-1V0	A5710-1600-2V0
Output Ratings Output current (RMS) Output voltage (Peak)	 40 … 1600 A_{eff} 1.0 V, 1 Phase AC	 40 … 1600 A_{eff} 2.0 V, 1 Phase AC
Output frequency	50 Hz (45 … 65 Hz optional)	50 Hz (45 … 65 Hz optional)
Output current gain error	<1% of full scale	<1% of full scale
Measurement gain error	<1% of full scale	<1% of full scale
Size (+ext. power supply)	19" 6U	19" 12U
Weight (+ext. power supply)	≈60 kg	≈80 kg

AXC755x
500 A High Current SMU Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 500 A pulse mode
- Programmable output voltage up to 50 V
- Programmable current pulse
- Integrated current measurement unit
- Integrated differential voltage measurement unit
- Integrated LAN, GPIB and USB interface
- Front touch display available
- Hardware trigger I/O available
- Integrated isolated voltage measurement unit on request

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC755x.pdf

Product Information

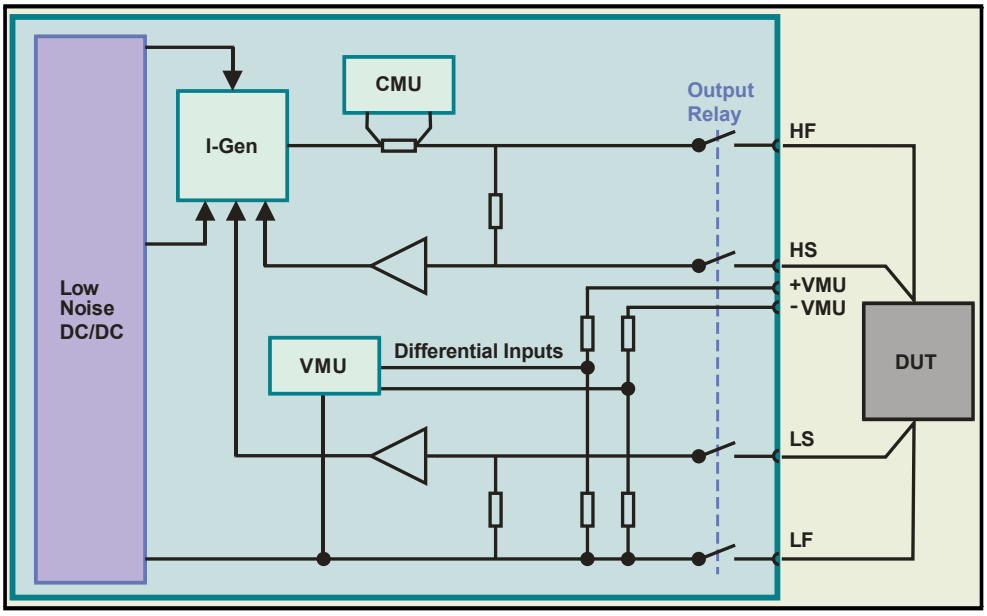
The AXC755x 500 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage
The very fast rise time allows current pulses up to 500 A with a programmable pulse length.

The pulse duration can be configured from 300 µs to 2 ms at maximum current (4 ms at the AXC7552 on request).
An integrated "Ixt limiter" monitors the maximum current-time product of 500 A x 2 ms (4 ms at the AXC7552 on request). This allows a multitude of current-pulse-length combinations.

Integrated measurement units...
Due to the integrated differential voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.
An optional isolated VMU is available on request. This VMU will have an additional measurement range and a much higher CMRR.

Multiple interfaces included
Interfaces for LAN, GPIB and USB are included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC7552	500 A / 20V on request
AXC7555	500 A / 50V
Option VMU-ISOL	Isolated VMU on request
Option NON-ISOL	Non-isolated device
Option HIGH-ISOL	Isolated device by gas discharge tube
Option Trigger	Hardware Trigger I/O
Option FE	Front touch display
Option RMK	19" rack mounting kit

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 35°C	Up to 50°C but degrading pulse-pause-ratio
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x ≈595 mm	≈655 mm with handles
Weight	≈46 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	100 V CAT I, Pollution Degree 2	Standard 15kΩ LF to PE Option NON-ISOL: direct connection of LF to PE Option HIGH-ISOL: isolation LF to PE by gas discharge tube

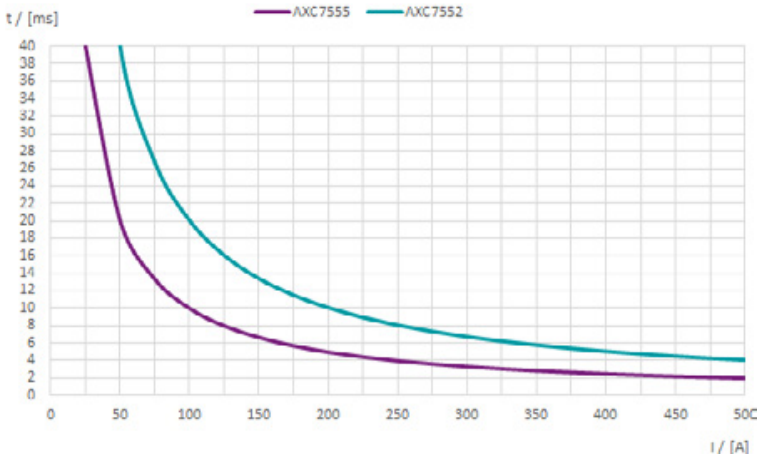
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy	0.1 + 0.1	±(% of reading + % of range)
Output voltage Range	 0 V ... 20 V (AXC7552) 0 V ... 50 V (AXC7555)	Programmable output voltage

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy	0.5 + 0.5	±(% of reading + % of range)
Output current Maximum pulse current Average output current	 500 A 10 A	 Programmable output current 15 ... 500 A[1] Max. pulse length see "IxT-Limiter" diagram See manual for calculation
Minimum pulse length	300 µs	Lower pulse length on request

[1] Lower currents on request.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Ixt Limiter Diagram



The integrated "Ixt limiter" provides a multitude of current -pulse length combinations while monitoring the maximum current-time product.

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 50 A	±0.5% of reading ±1.0% of range
Range 500 A	±0.5% of reading ±0.5% of range

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>80 dB
DC accuracy[1]	
Range 1 V	±0.1% of reading ±0.1% of range
Range 10 V	±0.1% of reading ±0.1% of range
Range 50 V	±0.1% of reading ±0.1% of range

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

On Request

Isolated Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>110 dB
DC accuracy[1]	
Range 100 mV	±0.1% of reading ±0.3% of range
Range 1 V	±0.1% of reading ±0.1% of range
Range 10 V	±0.1% of reading ±0.1% of range
Range 50 V	±0.1% of reading ±0.1% of range

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

Voltage Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

Current Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

AXC757x
250 A High Current SMU Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 250 A pulse mode
- Programmable output voltage up to 50 V
- Programmable current pulse
- Integrated current measurement unit
- Integrated voltage measurement unit
- Integrated LAN, GPIB and USB interface
- Front touch display available
- Optional: integrated isolated voltage measurement unit

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC757x.pdf

Product Information

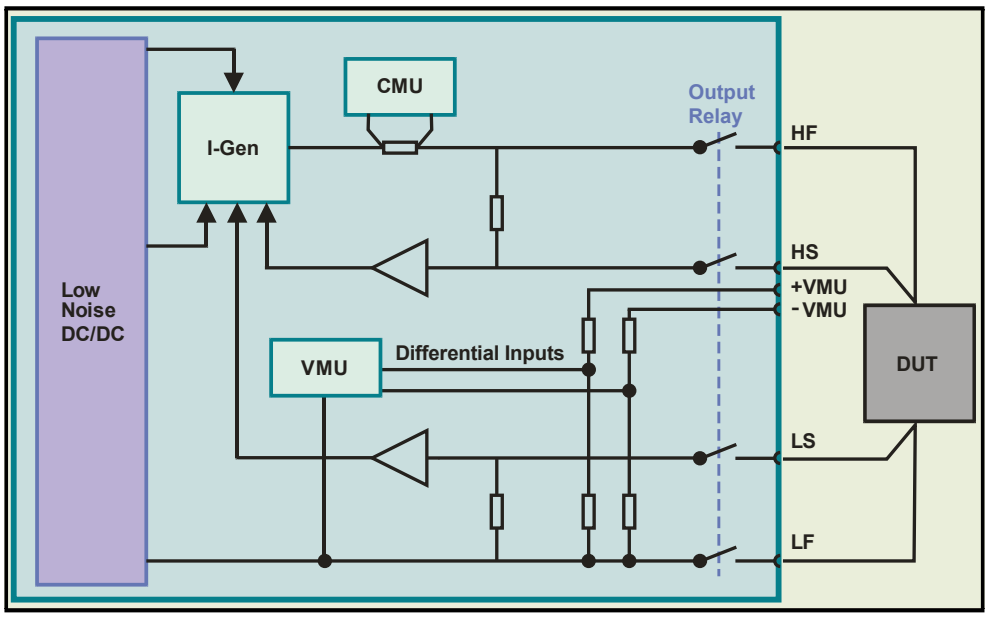
The AXC757x 250 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage
The very fast rise time allows current pulses up to 250 A with a programmable pulse length.

The pulse duration can be configured from 250 µs to 2 ms at maximum current (4 ms at the AXC7572 on request).
An integrated "Ixt limiter" monitors the maximum current-time product of 250 A x 2 ms (4 ms at the AXC7572 on request). This allows a multitude of current-pulse-length combinations.

Integrated measurement units...
Together with the integrated differential voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.
An optional isolated VMU is available on request. This VMU will have an additional measurement range and a much higher CMRR.

Multiple interfaces included
Interfaces for LAN, GPIB and USB are included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC7572	250 A / 20V on request
AXC7575	250 A / 50V
Option VMU-ISOL	Isolated VMU on request
Option NON-ISOL	Non-isolated device
Option HIGH-ISOL	Isolated device by gas discharge tube
Option FE	Front touch display
Option RMK	19" rack mounting kit

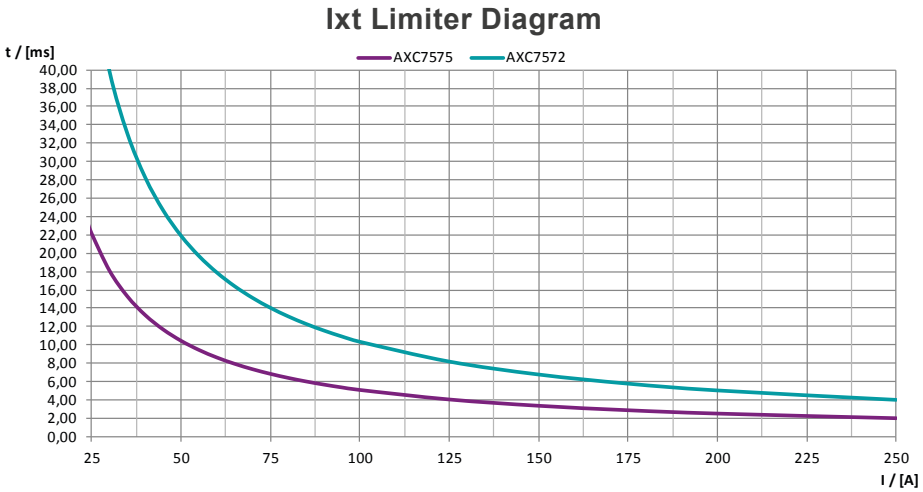
General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 35°C	Up to 50°C but degrading pulse-pause-ratio
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x ≈595 mm	≈655 mm with handles
Weight	≈46 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	100 V CAT I, Pollution Degree 2	Standard 15kΩ LF to PE Option NON-ISOL: direct connection of LF to PE Option HIGH-ISOL: isolation LF to PE by gas discharge tube

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Output voltage		Programmable output voltage
Range	0 V ... 20 V (AXC7572) 0 V ... 50 V (AXC7575)	

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy		
Gain error	±0.5% of value	
Offset error	±0.5% of full scale	
Output current		
Maximum pulse current	250 A	Programmable output current 15 ... 500 A[1] Max. pulse length see "IxT-Limiter" diagram
Average output current	10 A	See manual for calculation
Minimum pulse length	250 µs	Lower pulse length on request

[1] Lower currents on request.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.



The integrated "Ixt limiter" provides a multitude of current -pulse length combinations while monitoring the maximum current-time product.

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 25 A	±1.0% of range ±0.5% of value
Range 250 A	±0.5% of range ±0.5% of value

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>80 dB
DC accuracy[1]	
Range 1 V	±0.1% of range ±0.1% of value
Range 10 V	±0.1% of range ±0.1% of value
Range 100 V	±0.1% of range ±0.1% of value

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

On Request

Isolated Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>110 dB
DC accuracy[1]	
Range 100 mV	±0.3% of range ±0.1% of value
Range 1 V	±0.1% of range ±0.1% of value
Range 10 V	±0.1% of range ±0.1% of value
Range 50 V	±0.1% of range ±0.1% of value

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

Voltage Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

Current Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

AXC7583
1000A High Current SMU

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 1000 A pulse mode
- Programmable output voltage up to 0 V
- Programmable current pulse
- Integrated current measurement unit
- Integrated voltage measurement unit
- Integrated LAN, GPIB and USB interface
- Front touch display available
- Optional: integrated isolated voltage measurement unit

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC7583.pdf

Product Information

The AXC7583 1000 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage

The very fast rise time allows current pulses up to 1000 A with a programmable pulse length.

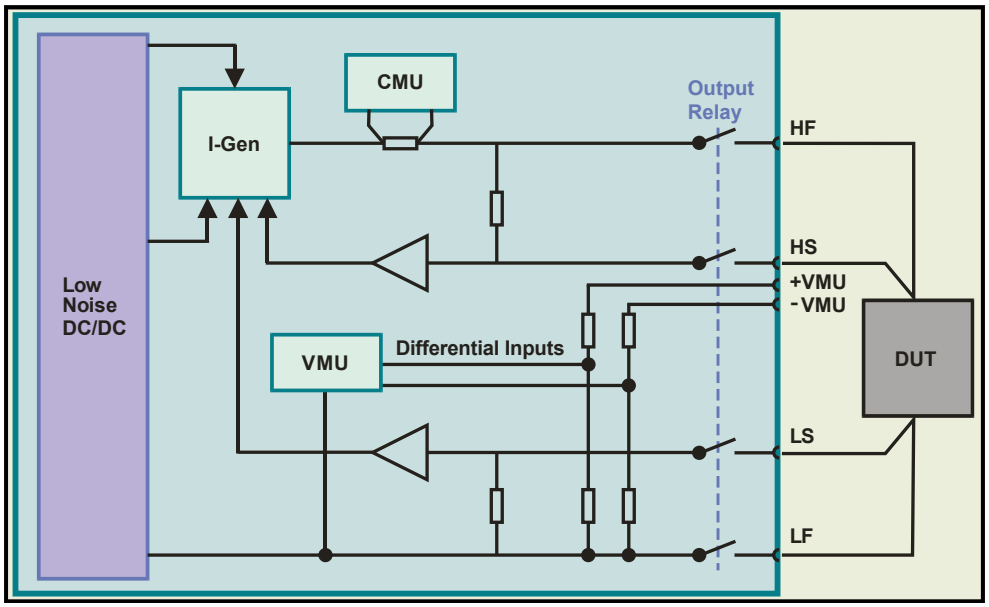
The pulse duration can be configured from 300 µs to 4 ms at maximum current.
An integrated "Ixt limiter" monitors the maximum current-time product of 1000 A x4 ms. This allows a multitude of current-pulse-length combinations.

Integrated measurement units...

Together with the integrated differential voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.
An optional isolated VMU is available on request. This VMU will have an additional measurement range and a much higher CMRR.

Multiple interfaces included

Interfaces for LAN, GPIB and USB are included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC7583	1 000 A / 30 V maximum
Option VMU-ISOL	Isolated VMU on request
Option NON-ISOL	Non-isolated device
Option HIGH-ISOL	Isolated device by gas discharge tube
Option FE	Front touch display
Option RMK	19" rack mounting kit

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 35°C	Up to 50°C but degrading pulse-pause-ratio
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x ≈595 mm	≈655 mm with handles
Weight	≈46 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	100 V CAT I, Pollution Degree 2	Standard 15kΩ LF to PE Option NON-ISOL: direct connection of LF to PE Option HIGH-ISOL: isolation LF to PE by gas discharge tube

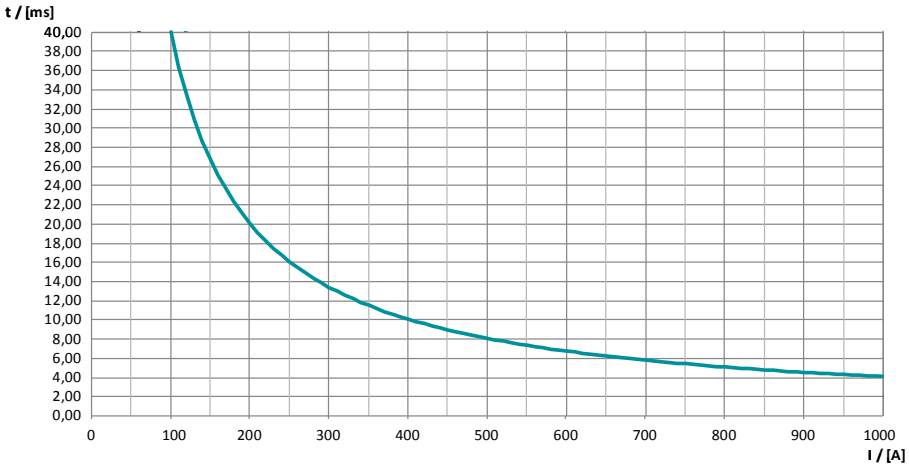
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Output voltage		Programmable output voltage
Range	-30 V ... 30 V	

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy		
Gain error	0.5% of value	
Offset error	0.5% of full scale	
Output current		
Maximum pulse current	1 000 A	Programmable output current 30 ... 1000 A[1] Max. pulse length see "IxT-Limiter" diagram
Average output current	10 A	See manual for calculation
Minimum pulse length	300 µs	Lower pulse length on request

[1] Lower currents on request.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Ixt Limiter Diagram



The integrated "Ixt limiter" provides a multitude of current -pulse length combinations while monitoring the maximum current-time product.

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 100 A	±1.0% of range ±0.5% of value
Range 1 000 A	±0.5% of range ±0.5% of value

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>80 dB
DC accuracy[1]	
Range 1 V	±0.1% of range ±0.1% of value
Range 10 V	±0.1% of range ±0.1% of value
Range 50 V	±0.1% of range ±0.1% of value

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

On Request

Isolated Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>110 dB
DC accuracy[1]	
Range 100 mV	±0.3% of range ±0.1% of value
Range 1 V	±0.1% of range ±0.1% of value
Range 10 V	±0.1% of range ±0.1% of value
Range 50 V	±0.1% of range ±0.1% of value

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

Voltage Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

Current Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

AXC 7585
1600 A High Current SMU Family

NEW

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 1600 A pulse mode
- Programmable output voltage up to 40 V
- Programmable current pulse
- Integrated current measurement unit
- Integrated differential voltage measurement unit
- Integrated LAN, GPIB and USB interface
- Front touch display available
- Hardware trigger I/O available
- Integrated isolated voltage measurement unit on request

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC7585.pdf

Product Information

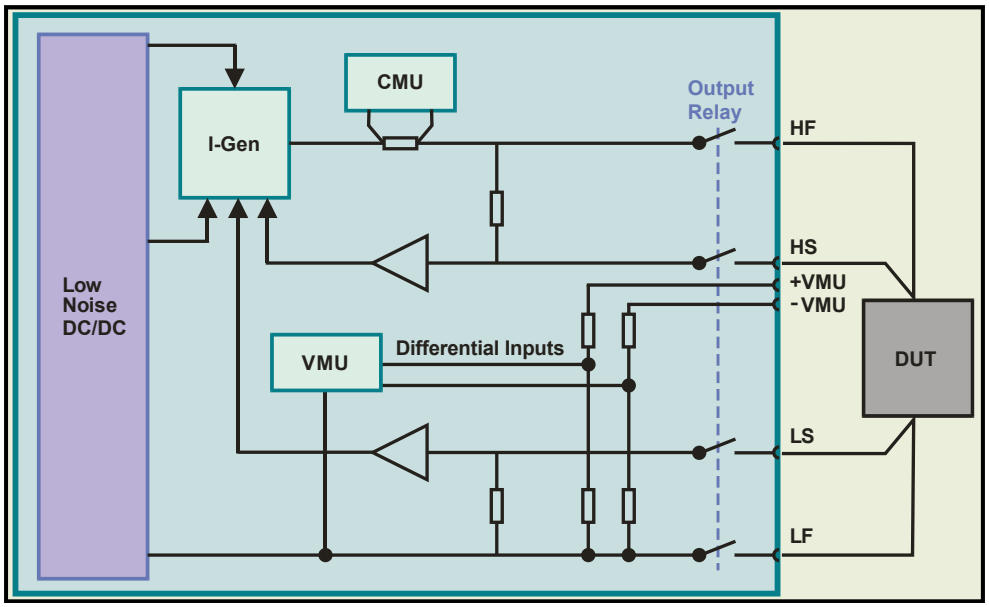
The AXC7585 1600 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage
The very fast rise time allows current pulses up to 1600 A with a programmable pulse length.

The pulse duration can be configured from 300 µs to 1 ms at maximum current.
An integrated "Ixt limiter" monitors the maximum current-time product of 1600 A x1 ms. This allows a multitude of current-pulse-length combinations.

Integrated measurement units...
Due to the integrated differential voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.
An optional isolated VMU is available on request. This VMU will have an additional measurement range and a much higher CMRR.

Multiple interfaces included
Interfaces for LAN, GPIB and USB are included to offer an easy communication with most usual control devices.



Ordering Option	Comment
AXC7585	1600 A / 30 V maximum
Option 40 V	1600 A / 40 V maximum
Option VMU-ISOL	Isolated VMU on request
Option NON-ISOL	Non-isolated device
Option HIGH-ISOL	Isolated device by gas discharge tube
Option Trigger	Hardware Trigger I/O
Option FE	Front touch display
Option RMK	19" rack mounting kit

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 35°C	Up to 50°C but degrading pulse-pause-ratio
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x ≈595 mm	≈655 mm with handles
Weight	≈46 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	100 V CAT I, Pollution Degree 2	Standard 15kΩ LF to PE Option NON-ISOL: direct connection of LF to PE Option HIGH-ISOL: isolation LF to PE by gas discharge tube

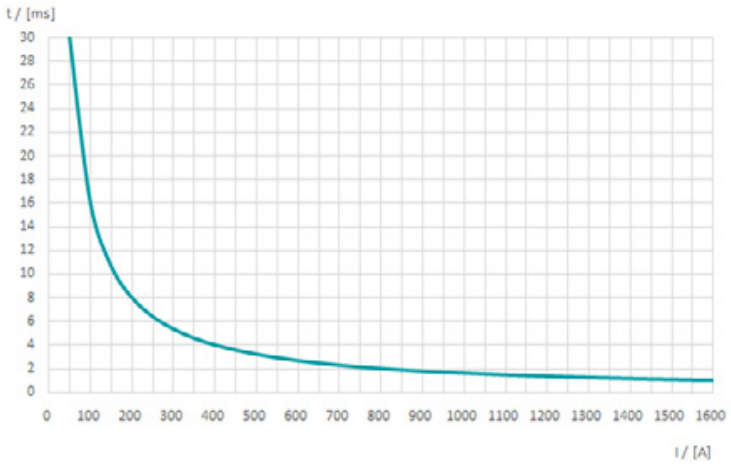
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy	0.1 + 0.1	±(% of reading + % of range)
Output voltage Range	 -30 V ... 30 V	Programmable output voltage

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy	0.5 + 0.5	±(% of reading + % of range)
Output current Maximum pulse current Average output current	 1 600 A 10 A	 Programmable output current 48 ... 1600 A[1] Max. pulse length see "IxT-Limiter" diagram See manual for calculation
Minimum pulse length	300 µs	Lower pulse length on request

[1] Lower currents on request.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Ixt Limiter Diagram



The integrated "Ixt limiter" provides a multitude of current -pulse length combinations while monitoring the maximum current-time product.

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 100 A	±0.5% of reading ±1.0% of range
Range 1 600 A	±0.5% of reading ±0.5% of range

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>80 dB
DC accuracy[1]	
Range 1 V	±0.1% of reading ±0.1% of range
Range 10 V	±0.1% of reading ±0.1% of range
Range 50 V	±0.1% of reading ±0.1% of range

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

On Request

Isolated Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
Common mode voltage range	60 V
CMRR	>110 dB
DC accuracy[1]	
Range 100 mV	±0.1% of reading ±0.3% of range
Range 1 V	±0.1% of reading ±0.1% of range
Range 10 V	±0.1% of reading ±0.1% of range
Range 50 V	±0.1% of reading ±0.1% of range

[1] With 100 Hz filter and 20 samples with an interval of 1 ms.

Voltage Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

Current Monitor	Specification
Output voltage	tbd
Internal resistance	tbd
Accuracy	tbd

AXC760x
100 A High Current SMU Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Output current up to 100 A pulse mode
- Output current up to 20 A (temp. control)
- Programmable output voltage up to 50 V
- Very fast rise time (50 A/µs)
- Programmable current pulse
- Integrated voltage measurement unit with voltage monitor
- Integrated current measurement unit with current monitor
- Front touch display available

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC760x.pdf

Product Information

The AXC760x 100 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

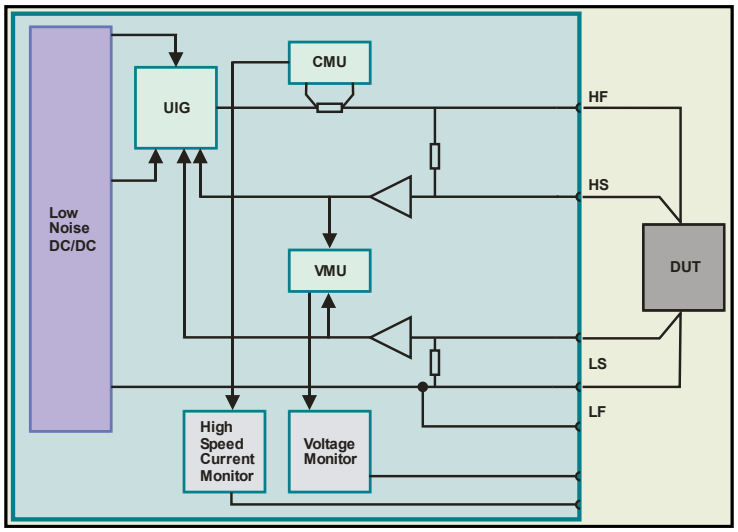
Very fast linear output stage
The very fast rise time allows short current pulses up to 100 A with a programmable pulse length. Three voltage ranges allow accurate programming of the output voltage.

Integrated measurement units...
Together with the integrated voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.

...with monitor signals
Output current and voltage drop on the load can be measured with an oscillocope in a very easy way using the integrated monitor outputs.

Two operation modes
In "Static Current" operation mode an output current up to 20 A can be set. The source can provide a continuous current up to 10 A without time limit. In addition, the use of the integrated temperature control circuit allows the generation of output currents of up to 20 A as long as the maximum power dissipation is not exceeded.

In "Pulsed Current" operation mode output current pulses up to 100 A can be generated. The pulse duration can be configured from 100 µs to 2 ms (8 ms at the AXC7608).
An integrated "Ixt limiter" monitors the maximum current-time product of 100 A x 2 ms (8 ms at the AXC7608). This allows a multitude of current-pulse-length combinations.



Ordering Option	Comment
AXC7603	100 A / 50V / 2 ms
AXC7608	100 A / 40V / 8 ms
Option GPIB[1]	GPIB interface
Option USB[1]	USB 2.0 interface
Option LAN[1]	Ethernet interface
Option EPCIE[1]	External PCIe interface
Option FE	Front touch display
Option HIRES	High resolution volt meas.
Option RMK	19" rack mounting kit

[1] One of the interface options is mandatory.

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2 000 W	
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x 455 mm	
Weight	≈32 kg	
Electrical safety	According EN61010-1	
Isolation output to PE	100 V CAT I, Pollution Degree 2	

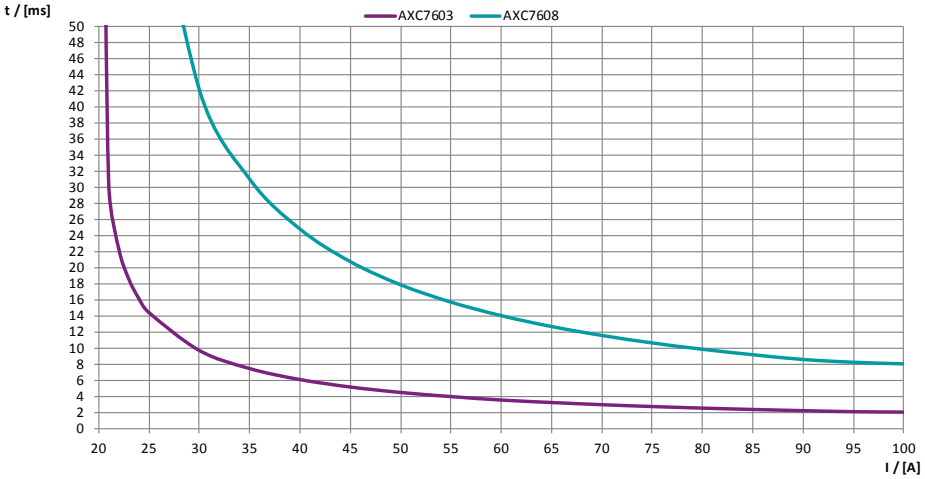
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Voltage drop at force cable	±8 V	Maximum regulated voltage drop
Output voltage		Programmable output voltage
Range 1	-1 V ... +1 V	
Range 2	-10 V ... +10 V	
Range 3	-50 V ... +50 V (AXC7603) -40 V ... +40 V (AXC7608)	

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy		
Gain error	±1.0% of value	
Offset error	±1.0% of full scale	
Pulse length	100 µs ... DC	
Maximum output current		
Continous current	-20 A ... +20 A	With temperature control
Continous current	-10 A ... +10 A	Without temperature control
Pulse current[1]	-100 A ... +100 A	Maximum pulse length see "IxT-Limiter" diagram
Minimum pulse length	100 µs	Fixed to ≥2 ms with option HIRES

[1] See "IxT-Limiter" diagram.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

IxT-Limiter – Maximum pulse length in milliseconds depending upon the output current														
I [A]	100	90	80	75	70	65	60	55	50	45	40	35	30	25
$t_{AXC7603}$	2.00	2.18	2.50	2.69	2.92	3.19	3.50	3.93	4.45	5.12	6.05	7.42	9.67	14.20
$t_{AXC7608}$	8.00	8.55	9.82	10.61	11.53	12.65	14.00	15.68	17.85	20.72	24.78	31.00	42.14	100.00



The integrated "Ixt limiter" provides a multitude of current - pulse length combinations while monitoring the maximum current-time product.

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies[1]	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[2]	
Range 100 mV (opt. HIRES)	±0.5 % of full scale
Range 1 V	±0.1 % of full scale
Range 10 V	±0.1 % of full scale
Range 100 V	±0.1 % of full scale

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[2]	
Range 10 A	±1.0% of full scale
Range 100 A	±1.0% of full scale

Voltage Monitor	Specification
Output voltage	+5 V equivalent to +full scale in each range
Internal resistance	10 k
Accuracy	±2 % of full scale

Current Monitor	Specification
Output voltage	+5 V equivalent to +full scale in each range
Internal resistance	10k
Accuracy	±2% of full scale

1 The 100 mV range supports filter frequencies of 100 Hz and 1 kHz only.
2 With 100 Hz filter and 20 samples with an interval of 1 ms.

AXC76xx
High Current SMU Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Output current up to 2 000 A and output voltage up to 120 V; Pulse and DC capable
- Very fast rise and fall time
- Programmable current pulse with auto-measurement of current and voltage
- Very high power density in less space
- Fully isolated design, isolated outputs
- Trigger capabilities and digital I/Os
- Integrated measurement units with current monitor signal
- Front touch display available

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXC76xx.pdf

Product Information

The AXC76xx High Current SMU was designed for power semiconductor and high throughput testing.

Modern switching regulator technology
The AXC76xx High Current SMU is based on modern and efficient switching regulator technology.
This allows a very high power density in less space. Furthermore the fan noise is reduced significantly due to less heat production. The AXC76xx High Current SMU family contains devices with up to 30 kW. The outputs are isolated due to a isolated design.

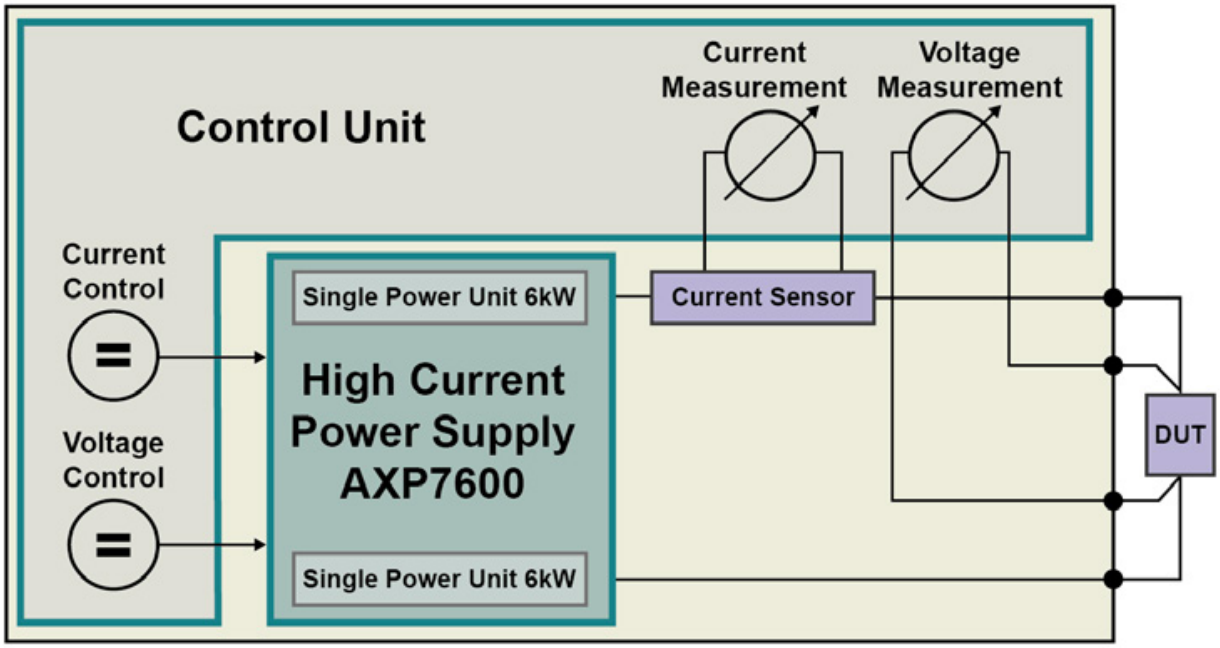
DC or pulse mode
Every AXC76xx High Current SMU is capable of generating full scale DC current and voltage. For power semiconductor testing the integrated current pulse mode might be very helpful. Very fast rise and fall times allow current pulses down to 2 ms.
Automatic current and voltage measurement time stamps can be configured in pulse mode.

Integrated measurement units...
Together with the integrated voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done easily.

...with monitor signal
The output current can be measured on the integrated current monitor output with an oscilloscope.

Many safety features
Integrated safety features like various temperature monitorings, mains monitoring, overcurrent detection and a safety interlock help to avoid danger to personnel, equipment or the device under test.

Trigger- and digital-I/Os
The integrated trigger input and output allows interaction with other test equipment. The AXC76xx High Current SMU has 4 digital outputs to control relays.



General	Specification	Comment
AC line voltage	3~400 V_{AC} ±10%	
AC line frequency	50/60 Hz	
Power consumption	6 kW per Single Power Unit	Up to 5 SPUs possible
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19"	Height see ordering information table
Weight	See ordering information table	Depending on configuration
Electrical safety	According EN61010-1	
Isolation output to PE	120 V CAT I, Pollution Degree 2	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy	±0.3% of full scale	
Maximum output voltage	See ordering information table	

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy	±0.3% of full scale	±0.1% of full scale with option HP
Maximum output current	See ordering information table	
Pulse length	>2 ms	

Voltage Measurement Unit	Specification	Comment
Resolution	16 Bit	
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz	
DC accuracy[1]		
Range 1 V	±0.1% of full scale	
Range 10 V	±0.1% of full scale	
Range 100 V	±0.1% of full scale	

Current Measurement Unit	Specification	Comment
Resolution	16 Bit	
Filter frequencies	100 Hz, 1 kHz,10 kHz, 100 kHz	
DC accuracy[1]	±0.3% of full scale	±0.1% of full scale with HP option
Range *A	Max. output current	See ordering information table

[1] With 100 Hz-filter and 20 samples with an interval of 1 ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Ordering Information	Max. Current	Max. Voltage	Height	Weight	Comment
AXC 7611	400 A	15 V	7U	50 kg	High Current SMU 400 A / 15 V
AXC 7613	200 A	30 V	7U	50 kg	High Current SMU 200 A / 30 V
AXC 7616	100 A	60 V	7U	50 kg	High Current SMU 100 A / 60 V
AXC 7618	50 A	120 V	7U	50 kg	High Current SMU 50 A / 120 V
AXC 7621	800 A	15 V	11U	80 kg	High Current SMU 800 A / 15 V
AXC 7623	400 A	30 V	11U	80 kg	High Current SMU 400 A / 30 V
AXC 7626	200 A	60 V	11U	80 kg	High Current SMU 200 A / 60 V
AXC 7628	100 A	120 V	11U	80 kg	High Current SMU 100 A / 120 V
AXC 7631	1200 A	15 V	15U	110 kg	High Current SMU 1200 A / 15 V
AXC 7633	600 A	30 V	15U	110 kg	High Current SMU 600 A / 30 V
AXC 7636	300 A	60 V	15U	110 kg	High Current SMU 300 A / 60 V
AXC 7638	150 A	120 V	15U	110 kg	High Current SMU 150 A / 120 V
AXC 7641	1600 A	15 V	19U	140 kg	High Current SMU 1600 A / 15 V
AXC 7643	800 A	30 V	19U	140 kg	High Current SMU 800 A / 30 V
AXC 7646	400 A	60 V	19U	140 kg	High Current SMU 400 A / 60 V
AXC 7648	200 A	120 V	19U	140 kg	High Current SMU 200 A / 120 V
AXC 7651	2000 A	15 V	23U	170 kg	High Current SMU 2000 A / 15 V
AXC 7653	1000 A	30 V	23U	170 kg	High Current SMU 1000 A / 30 V
AXC 7656	500 A	60 V	23U	170 kg	High Current SMU 500 A / 60 V
AXC7658	250 A	120 V	23U	170 kg	High Current SMU 250 A / 120 V
Option GPIB[2]					GPIB Interface
Option USB[2]					USB 2.0 Interface
Option LAN[2]					Ethernet Interface
Option FE[2]					Front panel display
Option HP					High precision DC accuracy

[2] One of these interface options is mandatory.

AXS844x
Source and Measurement Unit Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external PCIe

Features

- Extremely low noise with linear output stage
- Up to 4 independent channels with 200 W_{DC} each
- Configurable as 2 independent channels with 400 W_{DC} each or 1 channel with 800 W_{DC}
- Programmable output current up to 100 A
- Programmable output voltage up to 400 V_{DC}
- Very fast and programmable rise and fall times
- Integrated contact check
- Integrated voltage measurement unit
- Integrated current measurement unit
- Fully isolated design, isolated inputs and outputs
- Especially designed for automatic test equipment and high troughput testing of e. g. LEDs, MOSFETs and diodes
- Short rise and fall times due to integrated sink capability
- Trigger inputs and outputs

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXS844x.pdf

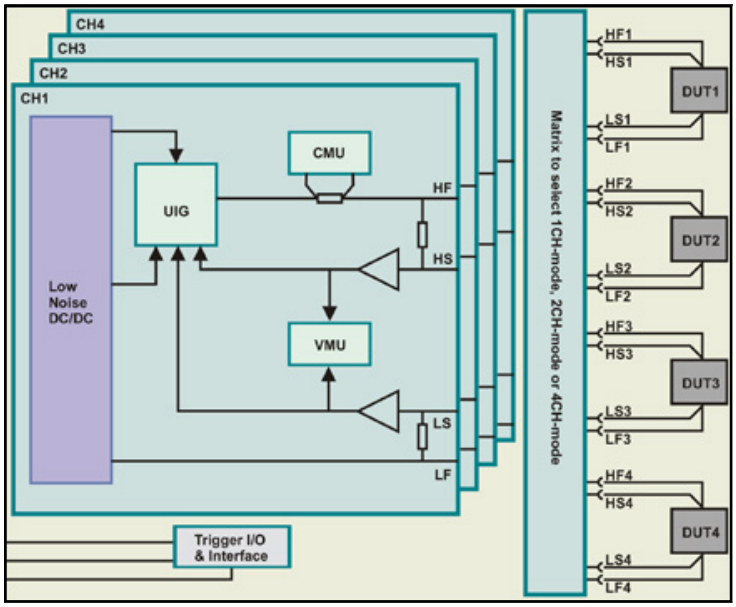
Product Information

The AXS844x Source and Measurement Unit family is designed for high throughput semiconductor testing. It is perfect for the very fast and precise measurement of e. g. LEDs, MOSFETs and diodes.

The linear output stage with a very short rise time allows current pulses up to 100 A. Three voltage ranges (100 V, 200 V, 400 V) and ten current ranges (20 µA ... 100 A) allow accurate programming of the output.

With two integrated measurement units for voltage (VMU) and current (CMU) all high current tests of power semiconductors can be done.

The AXS844x devices are able to generate current- or voltage pulses with automated measurement after a programmed delay. A versatile trigger engine with different trigger in- and outputs allows synchronization with additional equipment.

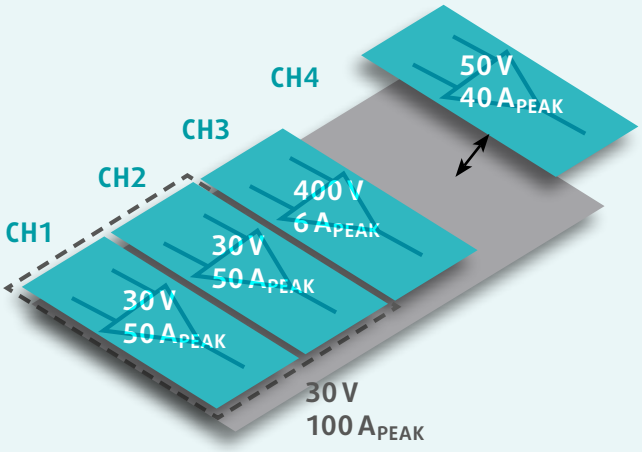


Ordering Option	Comment
AXS8441	1 channel output
AXS8442	1 or 2 channel output
AXS8444	1, 2 or 4 channel output
Option EXTVOLT	Extended output voltage range
Option PCG	Primary current generator
Option GPIB[1]	GPIB interface
Option USB[1]	USB 2.0 interface
Option LAN[1]	Ethernet interface
Option EPCIE[1]	External PCIe interface
Option FE	Front touch display
Option ECR-L	Extended current ranges L
Option ECR-H	Extended current ranges H
Option RMK	19" rack mounting kit

[1] One of the interface options is mandatory.

Modular Concept

Due to the modulear concept of this unit, it is easily possible to customize the power stage and output specification. The hardware architecture of the AXS844x family supports output currents up to 100 A and output voltages up to 400 V. The maximum static output power is limited to 800 W and the maximum pulse output power can be up to 10 kW.
A mixture of output channels with different specification is possible.



Example configuration

General	Specification	Comment
AC line voltage	100 ... 250 V_{AC} ; 47 Hz ... 63 Hz	
Power consumption	<1500 W	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 6U x 690 mm	
Weight	≈40 kg	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.05% of value	
Offset error	±0.10% of full scale	
Voltage drop at force cable	±5 V	Maximum regulated voltage drop
Output voltage		Programmable output voltage
Range 1	-50 V ... +100 V	
Range 2	-50 V ... +200 V	Additionally with option EXTVOLT
Range 3	-50 V ... +400 V	Additionally with option EXTVOLT
Pulse length	100 µs ... DC	Pulse mode
Maximum capacitive load		
Ranges ±2 ... ±100 A	<500 µF	
Ranges ±20 ... ±200 mA	<300 nF	
Ranges ±20 µA ... ±2 mA	<10 nF	
Slew rate	1 V/ms ... 1 500 V/ms	Software programmable

Current Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		Programmable output current
Range -100 ... +100 A	±(1.00% of value + 1.00% of full scale)	Only in pulse mode (Option ECR-H)
Range -8 ... +8 A	±(0.20% of value + 0.20% of full scale)	Only in 1 channel mode
Range -4 ... +4 A	±(0.10% of value + 0.10% of full scale)	Only in 1 and 2 channel mode
Range -2 ... +2 A	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -200 ... +200 mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -20 ... +20 mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -2 ... +2mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode (Option ECR-L)
Range -200 ... +200 µA	±(0.10% of value + 0.10% of full scale)	In 1, 2 and 4 channel mode (Option ECR-L)
Pulse length	100 µs ... DC	Pulse mode
Maximum capacitive load		
Ranges ±20 mA ... ±100 A	<100 nF	PCG mode
Ranges ±20 µA ... ±2 mA	<10 nF	PCG mode
Slew rate	10 µA/ms ... 600 A/ms	Software programmable in PCG mode; depends on current range

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

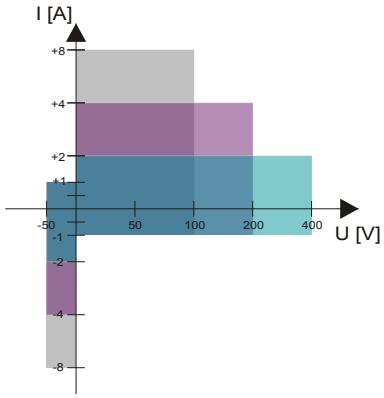
Voltage Measurement	Specification
Resolution	20 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 100 mV	±0.25 % of full scale
Range 1 V	±0.15 % of full scale
Range 10 V	±0.1 % of full scale
Range 100 V	±0.1 % of full scale
Range 400 V	±0.1 % of full scale additionally with option EXTVOLT

Current Measurement	Specification
Resolution	20 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1,2]	
Range 100 A	±1.0% of full scale
Range 8 A	±0.2% of full scale
Range 4 A	±0.1% of full scale
Range 2 A	±0.05% of full scale
Range 200 mA	±0.05% of full scale
Range 20 mA	±0.05% of full scale
Range 2 mA	±0.05% of full scale
Range 200 µA	±0.1% of full scale
Range 20 µA	±0.2% of full scale

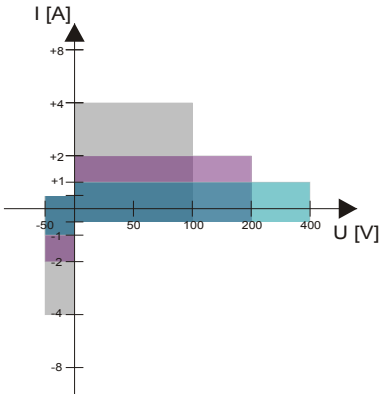
Mode[3]	Output 1	Output 2	Output 3	Output 4
1 channel	-50 ... 400 V / -2 ... 2 A -50 ... 200 V / -4 ... 4A -50 ... 100 V / -8 ... 8 A			
2 channel	-50 ... 400 V / -1 ... 1 A -50 ... 200 V / -2 ... 2 A -50 ... 100 V / -4 ... 4 A		-50 ... 400 V / -1 ... 1 A -50 ... 200 V / -2 ... 2 A -50 ... 100 V / -4 ... 4 A	
4 channel	-50 ... 400 V / -0.5 ... 0.5 A -50 ... 200 V / -1 ... 1 A -50 ... 100 V / -2 ... 2 A	-50 ... 400 V / -0.5 ... 0.5 A -50 ... 200 V / -1 ... 1 A -50 ... 100 V / -2 ... 2 A	-50 ... 400 V / -0.5 ... 0.5 A -50 ... 200 V / -1 ... 1 A -50 ... 100 V / -2 ... 2 A	-50 ... 400 V / -0.5 ... 0.5 A -50 ... 200 V / -1 ... 1 A -50 ... 100 V / -2 ... 2 A

1 With 100 Hz filter and 20 samples with an interval of 1 ms.
2 Current measurement range is equal to generator source range.
3 200 V and 400 V ranges wide.

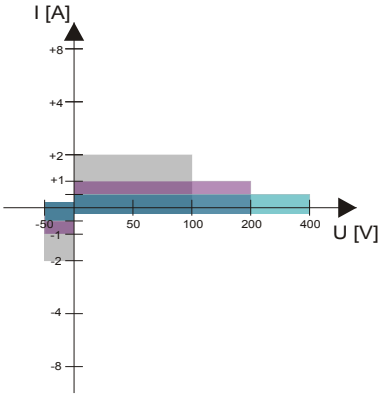
AXS8444/AXS8442 in 1 channel mode or AXS8441



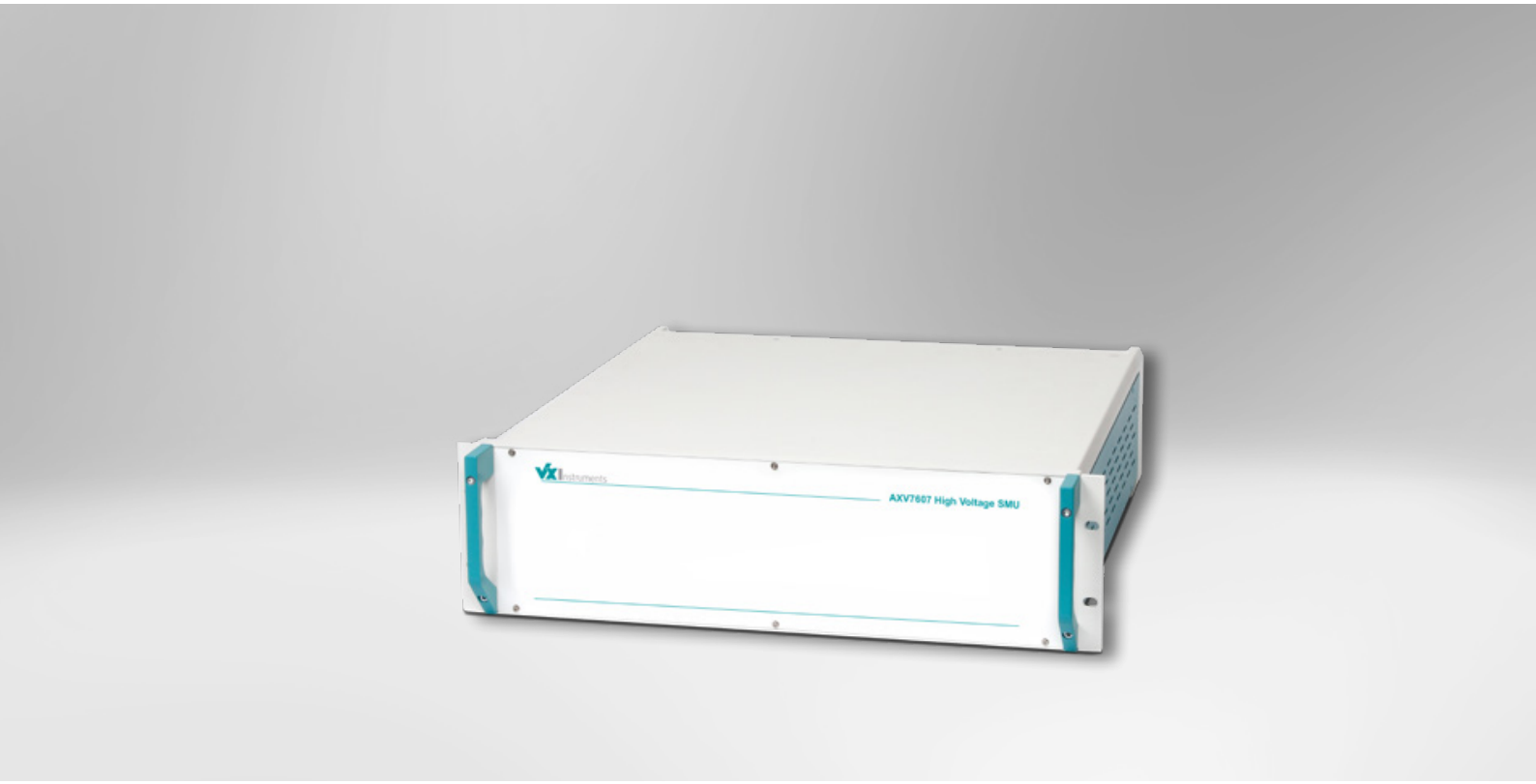
AXS8444 in 2 channel mode or AXS8442



AXS8444 in 4 channel mode



AXV7607
High Voltage SMU



PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Extremely low noise with linear output stage
- Output voltage from -1 500 V up to 2 500 V
- Very fast rise and fall times
- Output current in pulse mode max ±30 mA
- Output current in continuous mode maximum ±8 mA
- Integrated voltage measurement unit
- Integrated current measurement unit
- Integrated voltage monitor
- Integrated current monitor

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXV7607.pdf

Product Information

The AXV7607 high voltage SMU is developed for fast semiconductor and cable testing. The AXV7607 can be used as a voltage or current source.
To maximize the test throughput the AXV7607 provides a bipolar MOSFET power amplifier with a programmable slew rate of up to 1 000 V/ms.

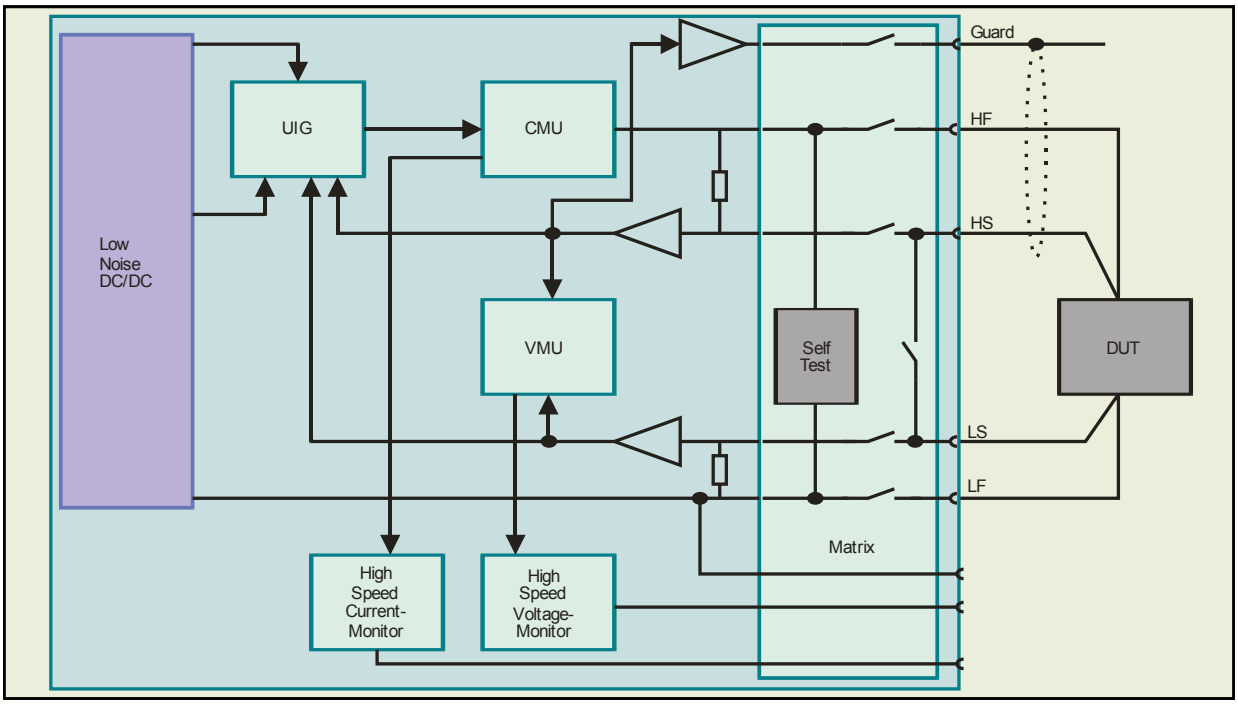
The AXV7607 provides five current ranges and is able to generate currents down to the nA range. In conjunction with the integrated Voltage Measurement Unit (VMU) all requirements of high voltage semiconductor testing can be met. The integrated guard amplifier can be used to drive the cable shielding and reduce the leakage current in the DUT cabling.

The integrated Current Measurement Unit (CMU) is extremely fast and is equipped with seven measurement ranges. This allows current measurement down to the pA range. With parallel trigger signals VMU and CMU can do synchronous measurements.

Monitoring of high output voltages with external equipment is a great safety problem. Therefore the AXV7607 is equipped with a fast voltage monitor, which provides a divided output voltage for save monitoring. Precise monitoring of very low currents down to pA with external equipment is usually very difficult and special equipment is needed. To simplify this task, the AXV7607 provides a fast current monitor.

In the integrated relay matrix all high voltage signals (FORCE, SENSE, GUARD) are connected via relays to the output. Additional relays and switchable resistors provide self test capabilities.

All AXV7607 high voltage outputs (FORCE, SENSE, GUARD) and the monitor outputs are short circuit protected.



General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<10 W	
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 3U x 555 mm	
Weight	≈15 kg	
Electrical safety	According EN61010-1	
Isolation output LF to PE	Direct connection of LF to PE	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	7	3 assembled, 4 arbitrary
DC accuracy Gain error Offset error	 ±0.05% of full scale ±0.05% of full scale	
Maximum capacitive load	20 nF	
Guard buffer	2 mA	
Slew rate	10 V/ms ...1 000 V/ms	Programmable range

Current Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	7	3 assembled, 4 arbitrary
Range 1 Gain error Offset error	-10 μA_{DC}... +10 μA_{DC} ±0.2% of value ±0.2% of full scale	Programmable range
Range 2 Gain error Offset error	-100 μA_{DC} ... +100 μA_{DC} ±0.1% of value ±0.1% of full scale	Programmable range
Range 3 Gain error Offset error	-1 mA_{DC} ... +1 mA_{DC} ±0.1% of value ±0.1% of full scale	Programmable range
Range 4 Gain error Offset error	-10 mA_{DC} ... +10 mA_{DC} ±0.1% of value ±0.1% of full scale	Programmable range
Range 5 Gain error Offset error	-30 mA_{DC} ... +30 mA_{DC} ±0.1% of value ±0.1% of full scale	Programmable range (maximum pulse lenght 10 ms[1])

[1] Cooling is designed for maximum pulse/pause ratio of 1:5!

Notes: All product data are specified for an ambient temperature of 23°C ± 5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Voltage Measurement Unit	Specification
Resolution	16 Bit
Maximum input voltage	2 500 V
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 1 V	±0.3% of full scale
Range 10 V	±0.1% of full scale
Range 100 V	±0.1% of full scale
Range 1 kV	±0.1% of full scale
Range 10 kV	±0.1% of full scale

Current Measurement Unit	Specification
Resolution	16 Bit
Overload protection	180 mA in all ranges
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 100 nA	±0.5% of full scale
Range 1 µA	±0.2% of full scale
Range 10 µA	±0.1% of full scale
Range 100 µA	±0.1% of full scale
Range 1 mA	±0.1% of full scale
Range 10 mA	±0.1% of full scale
Range 100 mA	±0.1% of full scale

Voltage Monitor	Specification
Output voltage	+5 V equivalent to +Full scale in each range
Internal resistance	10 k
Accuracy	±5% of full scale

Current Monitor	Specification
Output voltage	+5 V equivalent to +Full scale in each range
Internal resistance	10 k
Accuracy	±5% of full scale

Ordering Information	Comment
AXV7607-1500	Range: -1 500 V ... +1 500 V
AXV7607-2500	Range: -500 V ... +2 500 V
Option GPIB[2]	GPIB Interface
Option USB[2]	USB 2.0 Interface
Option LAN[2]	Ethernet Interface
Option FE[2]	Front panel display
Option RMK	19" rack mounting kit

[1] Specification takes effect with 100 Hz-filter-frequency and 20 consecutive measurement with an interval of 1 ms.
[2] One of the interface options or the front panel is mandatory.

PXS(e)840x
PXI Source and Measurement Unit Family

Coming in 2022

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Up to 25 W power output
- Supports current source and sink
- No external power source required
- Readback function for output voltage and output current (measurement functions)
- Six current ranges, two power ranges
- Available with PXI or PXI Express interface
- Very fast rise and fall times
- Four included configurable TTL digital I/Os
- Four included open drain outputs up to 60 V
- Sense inputs for superior load regulation
- Autosensing to reliably protect DUTs
- Digitizing and Arbitrary Waveform Generator option for voltage and current

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXS840x.pdf

Product Information

High speed source and measurement unit
The PXS(e)840x is a high precision, high speed source and measurement unit, which is designed for automated high throughput testing.

Programmable rise and fall times
The fast low noise linear bipolar power stage provides a full four-quadrant source and sink capability at very fast rise and fall times, even at high capacitive loads. In addition the rise and fall times are programmable.

Two power ranges
With its optional second power range one PXS(e)840x device covers a wide range of different loads.

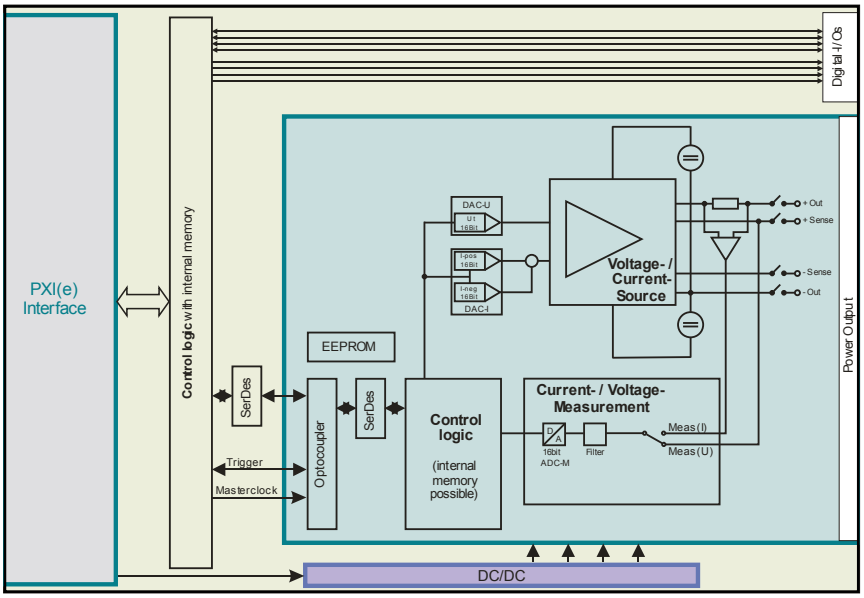
Autosensing protects devices under test
An autosensing feature is integrated as a security to protect devices under test.

Configurable digital inputs/outputs
The PXS(e)840x has four included free configurable digital TTL I/Os and four open drain outputs e. g. to drive relays or LEDs.

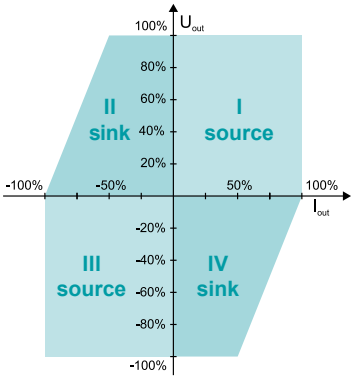
No external power supply required
The PXS(e)840x does not require an external DC source. The output power is drawn from the PXI backplane. All internal voltages are generated with extremely low noise DC/DC converters.

Waveform digitizing option
The integrated measurement unit provides digitizing features with sample rates up to 100 kS/s and a sample depth of up to 8 kS.

Arbitrary waveform generator option
The PXS(e)840x has an integrated waveform memory for up to 8 k waveform datapoints with an output rate up to 50 kS/s.



Full four-quadrant source + sink capability



General	Specification	Comment
Module size	2 slots, 3U	
Module weight	<0.7 kg	
Front connector type	25-pin, D-SUB female	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	60V CAT I, Pollution Degree 2	

Device Specifications	PXS(e)8401	PXS(e)8402	PXS(e)8403
Output ratings			
Output voltage[1]	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-30 V_{DC} ... 30 V_{DC}
Output current	-2.5 A_{DC} ... 2.5 A_{DC}	-1.25 A_{DC} ... 1.25 A_{DC}	-0.7 A_{DC} ... 0.7 A_{DC}
Current ranges (DC)	2.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	1.25 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.7 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA
Measurement Unit			
Voltage range	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-30 V_{DC} ... 30 V_{DC}
Current ranges (DC)	2.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	1.25 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.7 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA

Device Specifications	PXS(e)8404	PXS(e)8406
Output ratings		
Output voltage[1]	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Output current	-0.5 A_{DC} ... 0.5 A_{DC}	-0.3 A_{DC} ... 0.3 A_{DC}
Current ranges (DC)	0.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.3 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA
Measurement Unit		
Voltage range	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Current ranges (DC)	0.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.3 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA

[1] The sum of common mode and output voltage may not exceed 60 V.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Generator Specification	Specification	Comment
Number of outputs	1	
Output relays	Yes	On/off via software or trigger
Resolution	16 Bit	
Voltage accuracy	0.05% + 0.05%	±(of programmed value + of full range[2])
Current accuracy	0.1% + 0.1%	±(of programmed value + of full range)
Temperature drift		
Voltage	50 ppm/°C	
Current	150 ppm/°C	
Ripple/noise (20Hz...20MHz)		
Voltage	<12 mV_{RMS}, <60 mV_{pp}	RMS Normal Mode
Output settling time[1]		
Rise time	<250 µs	10% to 90% of full scale output setting
Fall time	<250 µs	90% to 10% of full scale output setting
Slew rate	1 ... 500 V/ms	Programmable range

Measurement Specification	Specification	Comment
Resolution	16 Bit	
Filters	100 Hz, 1 kHz, 10 kHz, 100 kHz	
Voltage accuracy		
Accuracy[3] (standard)	0.05% + 0.05%	±(of reading + of full range[2])
Accuracy with option LSM	<±10 mV even for very low signals	For signals <10% of full range[2]
Current accuracy		
Accuracy[2,3]	0.1% + 0.1%	±(of reading + of full range)
Accuracy with option LSM	0.1% + 0.1%	For signals <10% of selected range

1 Programmed voltage change at maximum current.
2 Full range means the highest possible output voltage of the used PXS(e)840x device.
3 For readings >10% of range.

Digitizer Acquisition	Specification	Comment
Maximum sample rate	100 kS/s	
Bandwidth	100 kHz	
Resolution	16 Bit	
Sampling times	10 µs, 20 µs, 50 µs, 100 µs, 200 µs, 500 µs, 1 ms, 2 ms, 5 ms, 10 ms, 20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s	Software selectable
Time base		
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	
Coupling	DC	
DC accuracy[1,2,3]	0.1% + 0.1%	±(of reading + of full range)
Filters	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
Waveform memory	16 kB, 8 kS	

Arbitrary Waveform	Specification	Comment
Resolution	16 Bit	
Maximum sample rate	50 kS/s	
DC accuracy		
DC offset	<0.1% of full scale	
DC gain	<0.1% of value	
AC accuracy		
f < 1 kHz	<0.5% of full scale	Sine wave into Hi-Z
f < 10 kHz	<1.0% of full scale	
Waveform memory	16 kB, 8 kS	

Trigger System	Specification	Comment
Input from		
Software		Via software command
Front trigger		Trigger input on device front connector
PXI trigger		Trigger 0 … 7 and star trigger at the PXI backplane
Output to		
PXI trigger		Trigger 0 … 7 at the PXI backplane
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger slope	Positive or negative	
Trigger hysteresis	0 … 100% of signal range	Programmable via software
Pre-trigger	0 … 100% of full record length	Trigger is armed after all pre-samples are captured. After trigger event, number of samples are captured defined by post-trigger
Post-trigger	0 … 100% of full record length	Number of samples captured after trigger event

1 For readings >10% of range.
2 Full range means the highest possible output voltage of the used PXS(e)840x device.
3 Current measurement range is equal to the selected current range of the voltage source.

Ordering Information	Comment
PXSe 840x	Device with PXIExpress interface
PXS 840x	Device with PXI interface
PXS(e)8401	Device PXS(e)8401 with ±10 V / ±2.5 A
PXS(e)8402	Device PXS(e)8402 with ±20 V / ±1.25 A
PXS(e)8403	Device PXS(e)8403 with ±30 V / ±0.7 A
PXS(e)8404	Device PXS(e)8404 with ±40 V / ±0.5 A
PXS(e)8406	Device PXS(e)8406 with ±60 V / ±0.3 A
Option DG	Digitizing option
Option ARB	Arbitrary waveform generator option
Option PR-20[1]	Second power range: ±20 V / ±1.25 A
Option PR-30[1]	Second power range: ±30 V / ±0.7 A
Option PR-40[1]	Second power range: ±40 V / ±0.5 A
Option PR-60[1]	Second power range: ±60 V / ±0.3 A
Option LSM[2]	Measurement for signals less than 10% of selected range with same precision

[1] The second power range output voltage has always to be higher than the basic device voltage.
[2] An x10 post-amplifier increases the precision of the measurement signal.

SOURCE & MEASUREMENT

AXS7720
Multichannel Source Measurement Unit

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extremely low noise with linear output stage
- Fully isolated design, isolated input and outputs
- Fast measurement of current in nA range
- Especially designed for automatic test equipment and high throughput testing
- Fast rise and fall times due to integrated sink capability
- Integrated matrix and digital I/Os
- Multiple interfaces available (LAN, USB, GPIB)
- Autosensing
- Digital calibration

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXS7720.pdf

Product Information

Multichannel source and measurement unit
The AXS7720 is a high precision, high speed multichannel source and measurement unit which is designed for automated high throughput testing.

Each function unit (VMU, CMU, generator) is fully isolated to avoid ground loops and common mode errors.

Programmable rise and fall times
The fast low noise linear bipolar power stage provides full four-quadrant source and sink capability at very fast rise and fall times even at high capacitive loads. The rise and fall times are programmable.

Two power ranges
With its two power ranges, 50 V/150 mA and 150 V/50 mA the AXS covers a wide range of different loads.

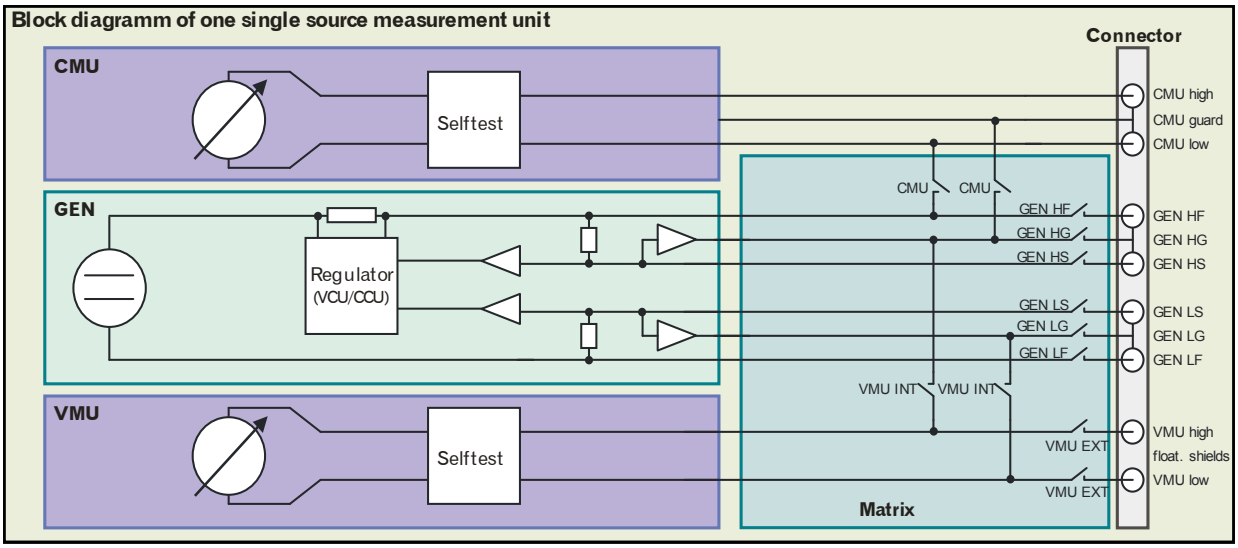
CMU and VMU with monitor outputs
The integrated monitor outputs makes debugging very easy. With the integrated filter stages high precise measurements can be done even in high noisy environment.

Integrated high flexible relay matrix
The integrated relay matrix is replaceable for fast service and allows high sophisticated measurements without external connections.

Autosensing protects devices under test

- Autosensing. If the sense line is not connected, the output terminals are automatically used as the sensing point.
- Broken sense line. The output voltage will be reduced automatically about the voltage drop across the load line.
- Shorted sense lines. The output voltage will be limited to about 5 V above the programmed value.

Multiple interfaces available
Interfaces for LAN and USB are included (Optional: GPIB) to offer an easy communication with most usual control devices.



Ordering Information	Comment
Option GPIB	IEEE 488 interface
Option RMK	19" Rack mounting Kit
Option FE (on request)	Front panel display

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<150 W	
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19" x 3U x 455 mm	
Weight	≈15 kg	
Electrical safety	According EN61010-1	
Isolation output to PE	230 V CAT I, Pollution Degree 2	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	4	
DC accuracy		
Gain error	±0.05% of full scale	
Offset error	±0.05% of maximum range (150 V)	
Output ratings		
Power range 1	±50 V / ±150 mA	Programmable range
Power range 2	±150 V / ±50 mA	Programmable range
Slew rate	1 ... 1 000 V/ms	Programmable range

Current Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	8 (2 x 4)	4 per positive/negative current controller
Range 1	-10 μA_{DC} ... +10 μA_{DC}	Programmable range
Gain error	±0.2% of value	
Offset error	±0.2% of full scale	
Range 2	-100 μA_{DC} ... +100 μA_{DC}	Programmable range
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Range 3	-1 mA_{DC} ... +1 mA_{DC}	Programmable range
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Range 4	-10 mA_{DC} ... +10 mA_{DC}	Programmable range
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Range 5	-150 mA_{DC} ... +150 mA_{DC}	Programmable range
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Voltage Measurement Unit	Specification
Resolution	16 Bit
Maximum input voltage	200 V
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 100 mV	±0.4% of full scale
Range 1 V	±0.2% of full scale
Range 10 V	±0.1% of full scale
Range 100 V	±0.1% of full scale
Range 1 kV	±0.1% of full scale

Current Measurement Unit	Specification
Resolution	16 Bit
Overload protection	180 mA in all ranges
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[1]	
Range 10 nA	±0.5 nA
Range 100 nA	±2.0 nA
Range 1 µA	±10.0 nA
Range 10 µA	±50.0 nA
Range 100 µA	±0.5 µA
Range 1 mA	±5.0 µA
Range 10 mA	±50.0 µA
Range 150 mA	±800.0 µA

Voltage Monitor	Specification
Output voltage (LF related)	+5 V equivalent to +full scale in each range
Internal resistance	10 k
Accuracy	±2% of full scale

Current Monitor	Specification
Output voltage (HF related)	+5 V equivalent to +full scale in each range
Internal resistance	10 k
Accuracy	±2% of full scale

Ordering Information	Comment
Option GPIB	GPIB Interface
Option FE	Front touch display
Option RMK	19″ rack mounting kit

[1] Specification takes effect with 100 Hz filter frequency and 20 consecutive measurement with an interval of 1 ms.

PX773x
PXI Source Measurement Unit Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Supports current source and sink (four-quadrant operation)
- No external power source required
- Isolated design
- Readback function for output voltage and current (measurement functions)
- Six current ranges, two power ranges
- Very fast rise and fall times
- Four included configurable TTL digital I/Os
- Four included open drain outputs up to 60 V
- Sense inputs for superior load control
- Autosensing to protect DUT reliably
- Digitizing and arbitrary waveform generator option for voltage and current

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PX773x.pdf

Product Information

High speed source and measurement unit
The PX773x is a high precision, high speed source and measurement unit, which is designed for automated high throughput testing.

Programmable rise and fall time
The fast low noise linear bipolar power stage provides a full four-quadrant source and sink capability with very fast and programmable rise and fall time, even at high capacitive loads.

Two power ranges
With its optional second power range (±20 V / ±0.5 A to ±60 V / ±0.2 A) one PX773x device covers a wide range of different loads.

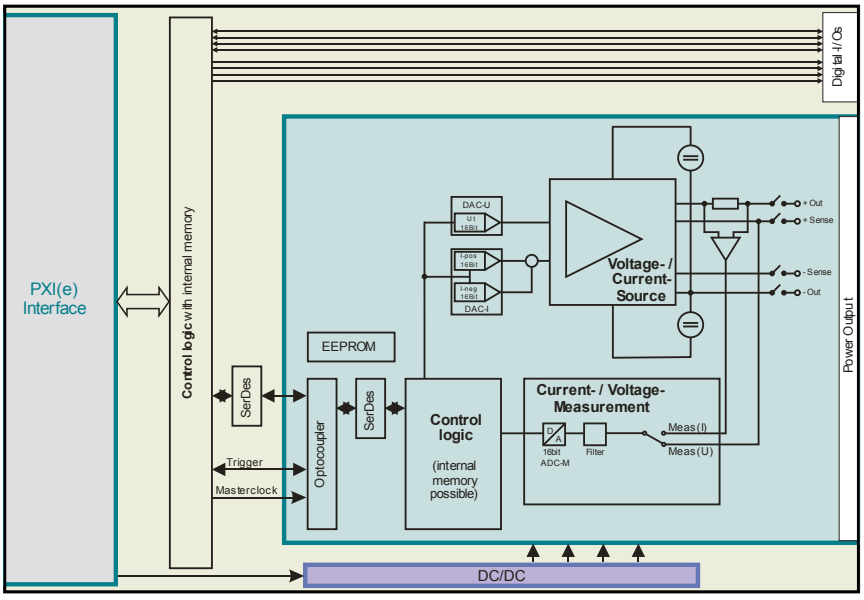
Autosensing protects devices under test
An autosensing feature is integrated as a security to protect devices under test.

Configurable digital inputs/outputs
The PX773x has 4 free configurable TTL digital I/Os and 4 open drain outputs e. g. to drive relays or LEDs.

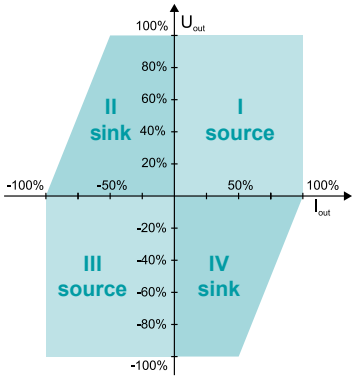
No external power supply required
The PX773x does not require an external DC source. The output power is drawn from the PXI backplane. All internal voltages are generated with extremely low noise DC/DC converters.

Waveform digitizing option
The integrated measurement unit provides digitizing features with sample rates up to 100 kS/s and a sample depth of up to 8 kS.

Arbitrary waveform generator option
The PX773x has an integrated waveform memory for up to 8 k waveform datapoints with an output rate up to 50 kS/s.



Full four-quadrant source + sink capability



General	Specification	Comment
Module size	2 slot, 3U	
Module weight	<0.6 kg	
Front connector type	25-pin, D-SUB female	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	60V CAT I, Pollution Degree 2	

Device Specifications	PX7731	PX7732	PX7733
Output ratings			
Output voltage[1]	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-30 V_{DC} ... 30 V_{DC}
Output current	-1.0 A_{DC} ... .1.0 A_{DC}	-0.5 A_{DC} ... 0.5 A_{DC}	-0.4 A_{DC} ... 0.4 A_{DC}
Current ranges (DC)	1.0 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.4 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA
Measurement Unit			
Voltage range	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-30 V_{DC} ... 30 V_{DC}
Current ranges (DC)	1.0 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.5 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.4 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA

Device Specifications	PX7734	PX7736
Output ratings		
Output voltage[1]	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Output current	-0.25 A_{DC} ... 0.25 A_{DC}	-0.2 A_{DC} ... 0.2 A_{DC}
Current ranges (DC)	0.25 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.2 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA
Measurement Unit		
Voltage range	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Current ranges (DC)	0.25 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA	0.2 A, 0.1 A, 10 mA, 1 mA, 100 µA, 10 µA

[1] The sum of common mode and output voltage may not exceed 60 V.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Generator Specification	Specification	Comment
Number of outputs	1	
Output relays	Yes	On/off via software or trigger
Resolution	16 Bit	
Voltage accuracy	0.05% + 0.05%	±(of programmed value + of full range[2])
Current accuracy		
Accuracy in highest range	0.1% + 0.1%	±(of programmed value + of full range)
Accuracy all other ranges	0.05% + 0.05%	±(of programmed value + of full range)
Temperature drift		
Voltage	50 ppm/°C	
Current	150 ppm/°C	
Ripple/noise (20Hz...20MHz)		
Voltage (highest I-range)	<12 mV_{RMS}, <60 mV_{pp}	RMS Normal Mode
Voltage (all other I-ranges)	<10 mV_{RMS}, <40 mV_{pp}	RMS Normal Mode
Output settling time[1]		
Rise time	<250 µs	10% to 90% of full scale output setting
Fall time	<250 µs	90% to 10% of full scale output setting
Slew rate	1 ... 500 V/ms	Programmable range

Measurement Specification	Specification	Comment
Resolution	16 Bit	
Filters	100 Hz, 1 kHz, 10 kHz, 100 kHz	
Voltage accuracy		
Accuracy[3] (standard)	0.05% + 0.05%	±(of reading + of full range[2])
Accuracy with option LSM	<±10 mV even for very low signals	For signals <10% of full range[2]
Current accuracy		
Accuracy in highest range[3,4]	0.1% + 0.1%	±(of reading + of full range)
Accuracy all other ranges[3,4]	0.05% + 0.05%	±(of reading + of full range)
Accuracy with option LSM	0.1% + 0.1%	For signals <10% of selected range

1 Programmed voltage change at maximum current.
2 Full range means the highest possible output voltage of the used PX773x device.
3 For readings >10% of range.
4 Current measurement range is equal to the selected current range of the generator.

Digitizer Acquisition	Specification	Comment
Maximum sample rate	100 kS/s	
Bandwidth	100 kHz	
Resolution	16 Bit	
Sampling times	10 µs, 20 µs, 50 µs, 100 µs, 200 µs, 500 µs, 1 ms, 2 ms, 5 ms, 10 ms, 20 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s	Software selectable
Time base		
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	
Coupling	DC	
DC accuracy[1,2,3]	0.1% + 0.1%	±(of reading + of full range)
Filters	100 Hz, 1 kHz, 10 kHz, 100 kHz	Software selectable
Waveform memory	16 kB, 8 kS	

Arbitrary Waveform	Specification	Comment
Resolution	16 Bit	
Sample rate	100 S/s ... 50 kS/s	
DC accuracy		
DC offset	±0.1% of full scale	
DC gain	±0.1% of value	
AC accuracy		
f <1 kHz	±0.5% of full scale	Sine wave into Hi-Z
f <10 kHz	±1.0% of full scale	
Waveform memory	16 kB, 8 kS	

Trigger System	Specification	Comment
Input from		
Software		Via software command
Front trigger		Trigger input on device front connector
PXI trigger		Trigger 0 ... 7 and star trigger at the PXI backplane
Output to		
PXI trigger		Trigger 0 ... 7 at the PXI backplane
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured. After trigger event, number of samples are captured defined by post-trigger
Post-trigger	0 ... 100% of full record length	Number of samples captured after trigger event

1 For readings >10% of range.
2 Full range means the highest possible output voltage of the used PX773x device.
3 Current measurement range is equal to the selected current range of the voltage source.

Ordering Information	Comment
PX7731	Device PX7731 with ±10 V / ±1.00 A
PX7732	Device PX7732 with ±20 V / ±0.50 A
PX7733	Device PX7733 with ±30 V / ±0.40 A
PX7734	Device PX7734 with ±40 V / ±0.25 A
PX7736	Device PX7736 with ±60 V / ±0.20 A
Option DG	Digitizing option
Option ARB	Arbitrary waveform generator option
Option PR-20[1]	Second power range: ±20 V / ±0.50 A
Option PR-30[1]	Second power range: ±30 V / ±0.40 A
Option PR-40[1]	Second power range: ±40 V / ±0.25 A
Option PR-60[1]	Second power range: ±60 V / ±0.20 A
Option LSM[2]	Measurement for signals less than 10% of selected range with same precision

[1] The second power range output voltage has always to be higher than the basic device voltage.
[2] An x10 post-amplifier increases the precision of the measurement signal.

VX6620
cPCI System Power Supply

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- CompactPCI system power supply, single output (±10 V/±1 A, ±20 V/±500 mA, ±40 V/±250 mA and ±60 V/±200 mA)
- Supports current source and sink
- No external power source required
- Dual mode, provides two power ranges
- Readback function for output voltage and current (measurement functions)
- Very fast rise and fall times
- Sense inputs for superior load regulation
- Autosensing to protect DUTs reliably
- Digital calibration via system interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/VX6620.pdf

Product Information

The VX6620 is a 2 slot 3U register based cPCI source and measurement unit with a single programmable output. The output is isolated. The power supply is specially designed for Automated Test Equipment (ATE). An auto-sensing feature is integrated as a built-in security to protect Devices Under Test (DUT).

The programmable output voltage and current is available in various ranges (±10 V/±1 A, ±20 V/±500 mA, ±40 V/±250 mA and ±60 V/±200 mA). The VX6620 supports current source and sink in all 4 quadrants.

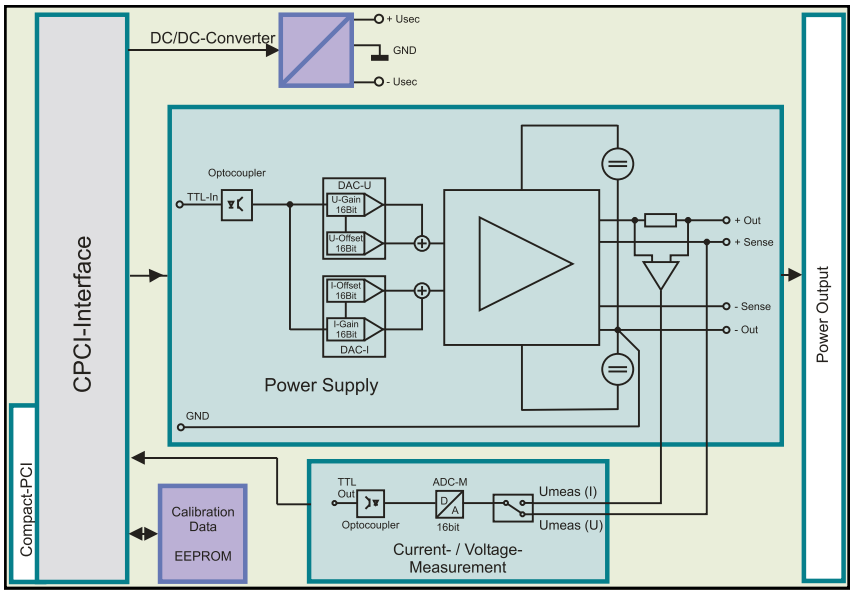
Optionally the VX6620 can be configured with an integrated readback function for output voltage and current. The dual mode option combines two output ranges in one module (±10 V/±1 A and ±20 V/±500 mA, or ±20 V/±500 mA and ±40 V/±250 mA, or ±30 V/±400 mA and ±60 V/±200 mA).

The VX6620 does not require an external DC source. The supplied power at the PXI backplane will be used to generate the output power. All required internal voltages are generated with special designed DC/DC converters with extremely low noise.

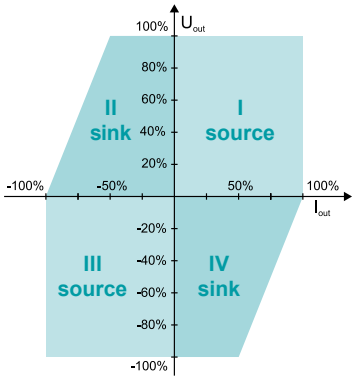
For safety reasons the VX6620 does support the following built-in security features required in automatic testing:

- Autosensing. If the sense line is not connected the output will be used as the sense point automatically.
- Broken sense line. The output voltage will be reduced about the voltage drop across the load line automatically.
- Shorted sense line. The output voltage will be limited to 3V above programmed value.

The instrument calibration is done digital and fully automatic. The calibration data are stored in on-board EEPROM.



Full four-quadrant source + sink capability



General	Specification	Comment
Module size	2 cPCI slots, 3U	
Module weight	<0.6 kg	
Front connector type	25pol. D-SUB female	
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation output to PE	60V CAT I, Pollution Degree 2	

Specifications	VX 6620-10	VX 6620-20	VX 6620-40	VX 6620-60
Output ratings				
Output voltage[1]	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Output current	±1 A_{DC}	±500 mA_{DC}	±250 mA_{DC}	±200 mA_{DC}
Output ranges (DC)	1.0 A, 100 mA, 10 mA	500 mA, 100 mA, 10 mA	250 mA, 100 mA, 10 mA	200 mA, 100 mA, 10 mA
Measurement Unit				
Voltage range	-10 V_{DC} ... 10 V_{DC}	-20 V_{DC} ... 20 V_{DC}	-40 V_{DC} ... 40 V_{DC}	-60 V_{DC} ... 60 V_{DC}
Current ranges (DC)	1 A, 100 mA, 10 mA	1 A, 100 mA, 10 mA	1 A, 100 mA, 10 mA	1 A, 100 mA, 10 mA

Generator Specification	Specification	Comment
Number of outputs	1	
Output Relays	Yes	On/off via software
Resolution	16 Bit	
Voltage accuracy	0.05% + 0.05%	±(of programmed value + of full range)
Current accuracy		
Accuracy in highest range	0.1% + 0.1%	±(of programmed value + of full range)
Accuracy all other ranges	0.05% + 0.05%	±(of programmed value + of full range)
Temperature drift		
Voltage	50 ppm/°C	
Current	150 ppm/°C	
Ripple and noise (20 Hz ... 20 MHz)		
Voltage (highest I-range)	<2.0 mV_{RMS}; <60 mV_{pp}	Standard Device; RMS Normal Mode
Voltage (all other I-ranges)	<1.0 mV_{RMS}; <20 mV_{pp}	Standard Device; RMS Normal Mode
Voltage (highest I-range)	<0.7 mV_{RMS}; <20 mV_{pp}	Low Noise Option; RMS Normal Mode
Voltage (all other I-ranges)	<0.5 mV_{RMS}; < 7 mV_{pp}	Low Noise Option; RMS Normal Mode
Output Settling Time[2]		
Rise Time	<250 µs	10% to 90% of full scale output setting
Fall Time	<250 µs	90% to 10% of full scale output setting

[1] The sum of common mode and output voltage may not exceed 60 V.
[2] Programmed voltage change at maximum current.

Notes: All product data are specified for an ambient temperature of 23°C ± 5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Measurement Specification	Specification	Comment
Resolution	16 Bit	
Measurement modes	Single, Statistic, Array	
Voltage accuracy[1]	0.05% + 0.05%	±(of reading + of full range)
Current accuracy[1,2]		
Accuracy in highest range	0.1% + 0.1%	±(of reading + of full range)
Accuracy all other ranges	0.05% + 0.05%	±(of reading + of full range)

Ordering Information	Comment
VX 6620-10[3]	Output power: ±10 V/±1 A
VX 6620-20	Output power: ±20 V/±0.5 A
VX 6620-40	Output power: ±40 V/±0.25 A
VX 6620-60	Output power: ±60 V/±0.20 A
Option A[4]	Measurement unit for voltage and current
Option B[4]	Dual mode, provides a second power range with half voltage and higher current
Option C	Low noise option
Option PBF	All components RoHS compliant

1 For readings >5% of range.
2 Current measurement range is equal to the selected current range of the voltage source.
3 Dual Mode not available.
4 Always included.

VX6625
Quad System Power Supply

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- CompactPCI quad system power supply, 10 V, 250 mA each channel
- Readback function of all voltages and currents
- Specially designed for testing battery powered modules
- Very fast rise and fall times
- Sense inputs for superior load control
- Autosensing to protect DUTs
- Digital calibration via system interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/VX6625.pdf

Product Information

The VX6625 is a four-output programmable power supply with an integrated compactPCI interface.

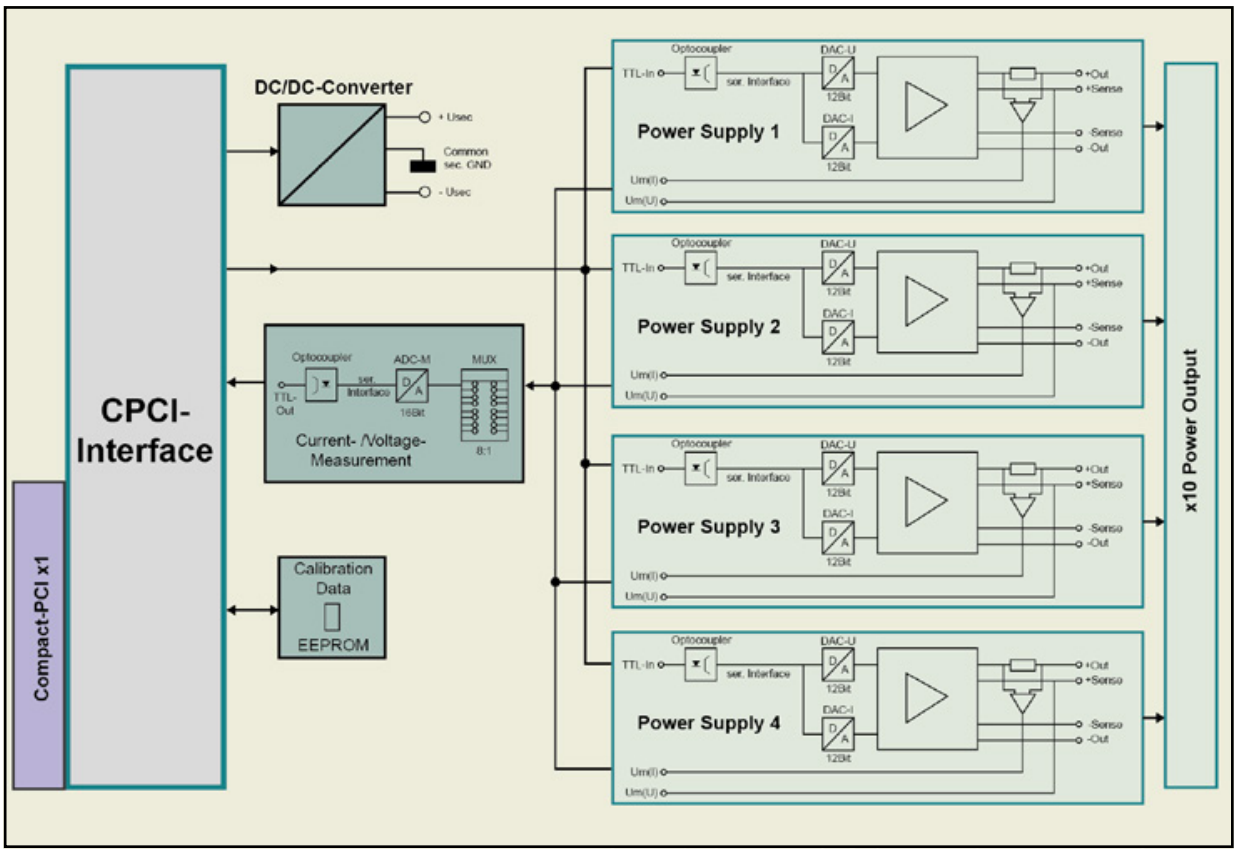
The VX6625, 3U double slot compactPCI module, is designed for testing battery powered devices.

The maximum output voltage is 10 V at an current limit of up to 250 mA for each power supply output. The VX6625 has an integrated readback function for output voltage and current. The current measurement capability (µA-Range) allows testing of low power devices (e. g. battery powered).

For safety reasons the VX6625 supports the following built-in security features required in automatic testing:

- Autosensing. If the sense line is not connected the output is used as the sense point automatically.
- Broken sense line. The output voltage is reduced by the voltage drop across the load line automatically.
- Shorted sense line. The output voltage is limited to 3 V above programmed value.

The instrument calibration is done digitally and fully automatical. The calibration data are stored in on-board EEPORM.



General	Specification	Comment
Module size	2 cPCI slots, 3U	
Number of outputs	4	Common ground, isolated against PE
Module weight	<0.5 kg	
Front connector type	25pol. D-SUB female	
Storage temperature range	-25 ... 70°C	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Electrical safety	According EN61010-1	
Isolation output to PE	250 V CAT I, Pollution Degree 2	

Power Supply Output 1 to 4	Specification	Comment
Output voltage		
Range	0 ... 10 V	Programmable voltage range
Resolution	12 Bit (2.5 mV)	
Accuracy	0.5% +10 mV	± (of programmed value + offset)
Output current range 1		
Range	0 ... 250 mA	Programmable current load
Resolution	12 Bit (100 µA)	
Accuracy	1% + 2 mA	± (of programmed value + offset)
Current limit	10 ... 250 mA	Programmable current limit
Output current range 2		
Range	0 ... 250 µA	Programmable current load
Resolution	12 Bit (10 µA)	
Current limit	250 µA	Fixed value for current limit

Measurement Unit 1 to 4	Specification	Comment
Voltage		
Range	0 ... 10 V	
Resolution	16 Bit (<250 µV)	
Accuracy	0.2% + 5 mV	± (of measured value + offset)
Current range 1[1]		
Range	0 ... 250 mA	
Resolution	16 Bit (5 µA)	
Accuracy	0.5% + 1 mA	± (of measured value + offset)
Current range 2[1]		
Range	0 ... 250 µA	
Resolution	16 Bit (5 nA)	
Accuracy	1% + 3 µA	± (of measured value + offset)
Current limit	250 µA	Fixed value for current limit

[1] Current measurement range is equal to current range of selected power supply.

Notes: All product data are specified for an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

SOURCE ONLY

AXB5721
Dual Precision Power Amplifier

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Two galvanically isolated power amplifiers with bipolar driver stage in a 19“ cabinet
- Operation as precision amplifier or as programmable DC source
- High impedance voltage control input
- Programming via galvanically isolated IEEE488 interface
- Maximum output current can be set using an external voltage or be programmed via IEEE488
- Ideally suitable for test systems
- Digital calibration via system interface
- Sensing lines for the compensation of voltage drops on load lines
- Stable control loop for long load lines

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXB5721.pdf

Product Information

Modes of operation

The AXB5721 contains two completely independent bipolar precision power amplifiers in one cabinet.

The AXB5721 features two different operating modes:

- Programmable bipolar DC voltage source with current limiting
- Voltage controlled amplifier, based on an external signal, with current limiting that is also controlled by another external signal

Programmable DC voltage source with current limiting

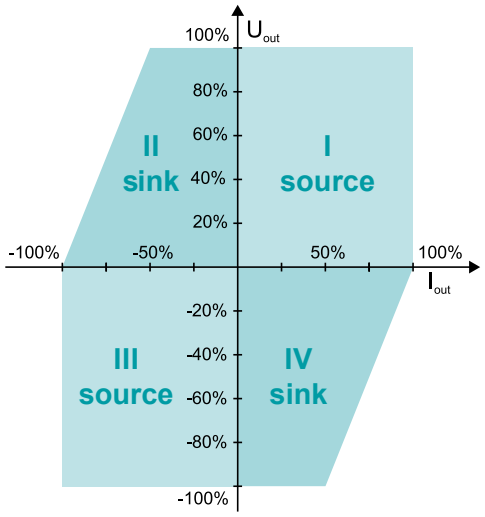
In this operating mode, the AXB5721 works as a high precision four-quadrant DC voltage source. The AXB5721 output voltage can be programmed in the range of -20 V to +20 V.

Current limiting may be programmed from 0.25 A to 5.0 A. This value applies both for the positive and negative current limits.

Voltage controlled amplifier with current limiting

In this operating mode the AXB5721 can be used both as a high precision bipolar DC voltage source and as a broadband AC precision amplifier (depending on the input signal). The AXB5721 output voltage is controlled by an external DC or AC voltage (V reference). The current reference input (I reference) accepts a DC signal (no AC signal). The output voltage follows the V reference independently of load resistance. The output current is limited as soon as it reaches the value set by the I reference.

Full four-quadrant source and sink capability



General	Specification	Comment
Input voltage	230 V_{AC} ±10%, 47 Hz ... 63 Hz	
Operating temperature	0 ... 50°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Test voltage output to case	500 V_{DC}	
Mechanical dimensions	19", 3U, D=460 mm	
Input resistance V control input I control input	 10 kΩ 10 kΩ	
Permitted backlash voltage at the output	±30 V	
Maximum reverse current	-1.5 A	At +20 V
Maximum reverse current	+1.5 A	At -20 V

DC Voltage	Specification	Comment
Output voltage	-20 V ... +20 V	
Nominal gain Vo/Vi	+2.0	
Voltage error	±40 mV	
Temperature coefficient	±100 ppm/°C	
Sensing	±3 V	
Decline period	<300 µs	For a 20% -> 80% load step
Mains deviation control	±2.5 mV	
Load deviation control	±1.5 mV	
Noise voltage	3 mV_{eff} 30 mV_{pp} (20 Hz ... 10 MHz)	

DC Current Limiting	Specification	Comment
Current limit setting range	0.25 A ... 5.0 A	Set value applies both to the positive and negative current limit
Nominal gain Vo/Vi	+0.5 A/V	
Current error	±28 mA	
Temperature coefficient	±150 ppm/°C	
Load deviation control	±1 mA	
Noise current	1.5 mA_{eff}, 15 mA_{pp} (20 Hz ... 10 MHz)	

Notes: All product data are specified for an ambient temperature of 23°C ± 5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

VX4616
Dual Precision Power Amplifier

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Frequency bandwidth of 70 kHz (150 kHz optional)
- Two galvanically isolated bipolar output channels
- Outputs are operating as inverting precision power amplifier
- Outputs are operating as programmable DC source (voltage or current)
- Outputs are programmable or adjustable via an external analog source
- Autosensing
- Pulse moduleation with extremely high slew rate

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/VX4616.pdf

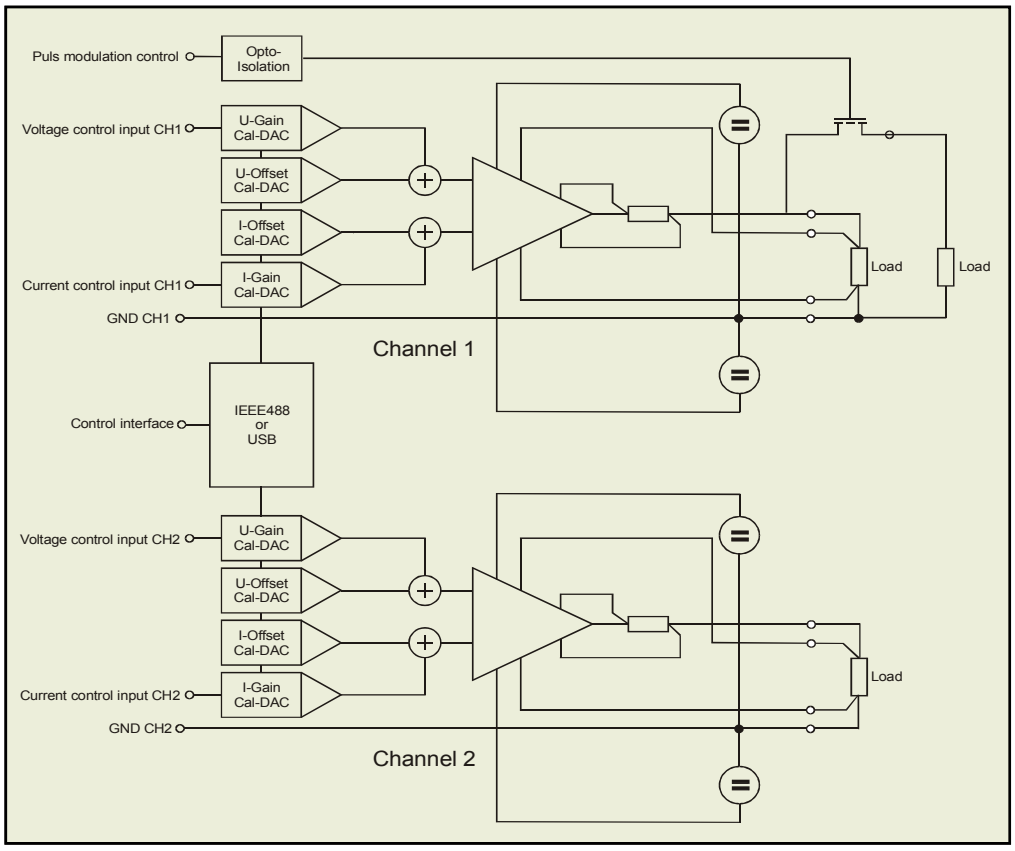
Product Information

The VX4616 is a two output high precision four-quadrant power amplifier and can be used either as an inverting amplifier or as a programmable DC source. Both power stages are separated galvanically.

Typically the VX4616 is used as a voltage source with current limiting.

Together with option A and D the VX4616 can be used as a voltage controlled current source for AC signals of up to 70 kHz (150 kHz option B).

This function can be used to generate a constant magnetic field in coils even with changing frequencies and inductance.



Mode: Voltage-Control/Current-Limit

DC Output Voltage	Specification	Comment
Programming range	-50 V ... +50 V	Programmable current limit ±0.1 A ... ±1.6 A
Resolution	16 Bit, 1.6 mV	
Bandwidth	70 kHz (3 dB)	Extended bandwidth available (Option B)
Distortion	4 mV_{RMS}	At 1 kHz and R_{Load} = 35 Ω
Nominal gain	+5	Gain factor U_{out}/U_{in}
Gain error	0.015%	
Gain drift	20 ppm/°C	
Offset voltage	±5 mV	Offset voltage at U_{out} = 0 V
Offset drift	200 µV/°C	
Input impedance	10 kΩ	Input impedance of analog control input
Maximum sensing voltage	±3 V	
Pulse moduleation[1,2]		Option C
Rise time	<50 ns	U_{Out} = 10 V; R_{Load} = 200 Ω
Fall time	<100 ns	U_{Out} = 10 V; R_{Load} = 200 Ω
Minimum pulse width	1 µs	

DC Output Current	Specification	Comment
Programming range	-1.6 A ... +1.6 A	Positive and negative limit set to same value
Nominal gain	0.16 A/V	Gain factor I_{out}/U_{in}
Gain error	0.5%	
Gain drift	100 ppm/°C	
Offset current	15 mA	
Input impedance	10 kΩ	Input impedance of analog control input

[1] Positive output voltage only.
[2] Channel 1 only.

Notes: All product data are specified for an ambient temperature of 23°C ± 5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

VX4620
Dual High Speed Power Supply

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Dual high speed power supply with a low noise linear 200 V_{pp}/1 A output stage
- Programmable bipolar voltage and positive/negative current limits
- Autosensing
- Stable control loop even on long load lines
- Programmable slew rate
- Programmable over GPIB, USB or RS232
- Specially designed for automatic test equipment and high troughput testing
- Fast rise and fall times due to integrated sink capability

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/VX4620.pdf

Product Information

Fully isolated outputs to avoid ground loops
Each VX4620 device has two outputs which are galvanically isolated. The regulation loops for programmable output voltage, positive output current and negative output current are independent. This fact allows different positive and negative current limits.

Autosensing protects devices under test
An autosensing feature is integrated as a built-in security to protect Devices Under Test.

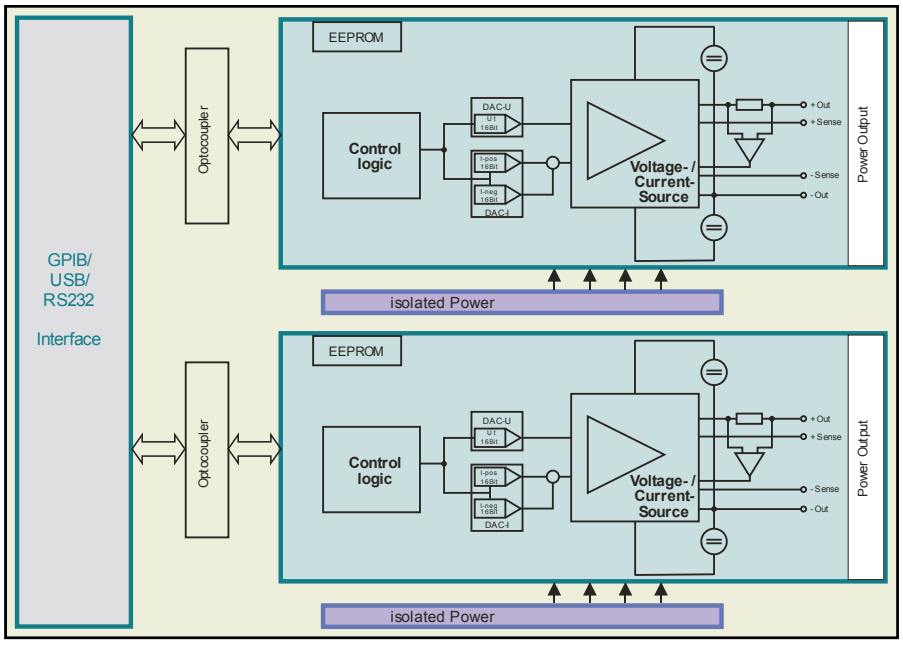
Autosensing
Sense output terminals can be left open; sensing on force output terminals is guaranteed automatically.

Remote sensing
Up to 3 V can be dropped in each load lead. The drop in the load leads subtracts from the voltage available for the load.

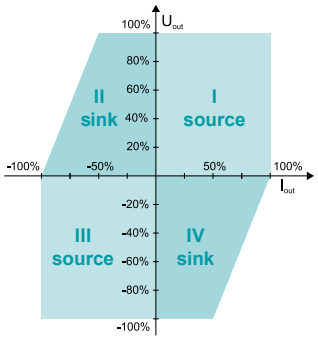
Four-quadrant source and sink
The programmable output voltage can be programmed up to ±100 V at an output current of up to 1 A. The maximum power dissipation of 80 W per channel may not be exceeded. The VX4620 supports current source and sink. This fact allows very fast fall times even with high capacity of the Devices Under Test.

Stable control loop
The integrated control loop is able to handle inductive loads. This results in a stable output control even with long lines from source to load.

Output programming response time
The fastest rise and fall time (1% ... 99% and 99% ... 1%) of the output voltage is less than 1 ms. The output voltage change settles within 0.1% of the full scale in less than 5 ms.



Full four-quadrant source + sink capability



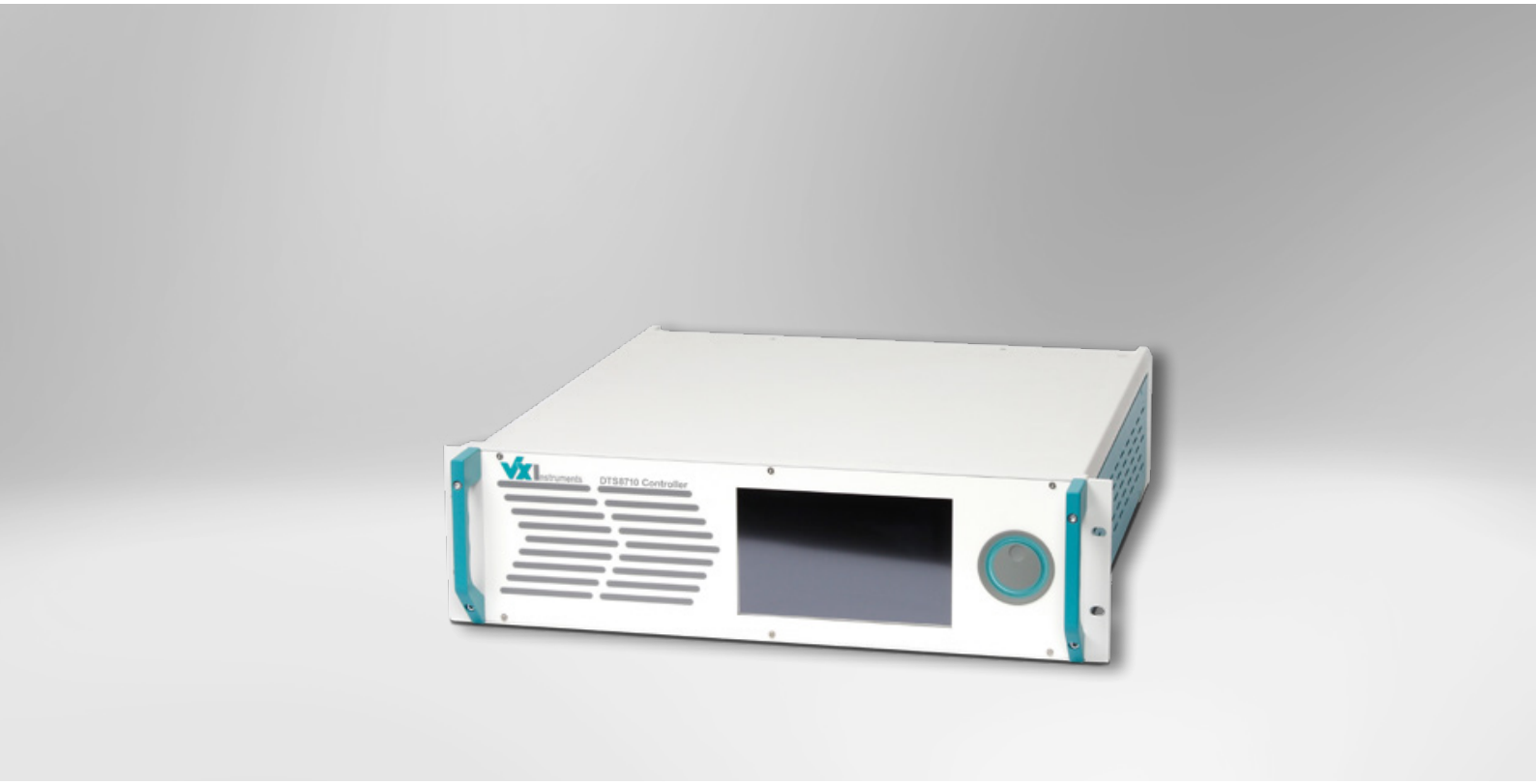
Voltage Control Unit	Specification	Comment
Resolution	16 Bit (5 mV)	
Output ratings	±100 V / ±1 A_{max}	Programmable range
DC accuracy		
Gain error	±0.05% of full scale	
Offset error	±0.05% of full range	
Line + Load regulation	±5 mV + 5 mV	
Slew rate		
Range	50 ... 50 000 V/s	Programmable range
Accuracy	±5%	Within 10% ... 90% of full scale

Current Control Unit	Specification for each Channel	Comment
Range 1		
Positive current	0 mA ... +100 mA	$\|I_{limit,\,pos}\|$- $\|I_{limit,\,neg}\|$ > 5 mA
Negative current	0 mA ... -100 mA	$\|I_{limit,\,pos}\|$- $\|I_{limit,\,neg}\|$ > 5 mA
Resolution	16 Bit (2 µA)	
Gain error	±0.05% of value	
Offset error	±0.05% of full scale	
Range 2		
Positive current	0.0 A ... +1.0 A	$\|I_{limit,\,pos}\|$- $\|I_{limit,\,neg}\|$ > 50 mA
Negative current	0.0 A ... -1.0 A	$\|I_{limit,\,pos}\|$- $\|I_{limit,\,neg}\|$ > 50 mA
Resolution	16 Bit (20 µA)	
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	

Notes: All product data are specified for an ambient temperature of 23°C ± 5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

MEASUREMENT & OTHERS

DTS8710
UIS Controller



PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external PCIe

Features

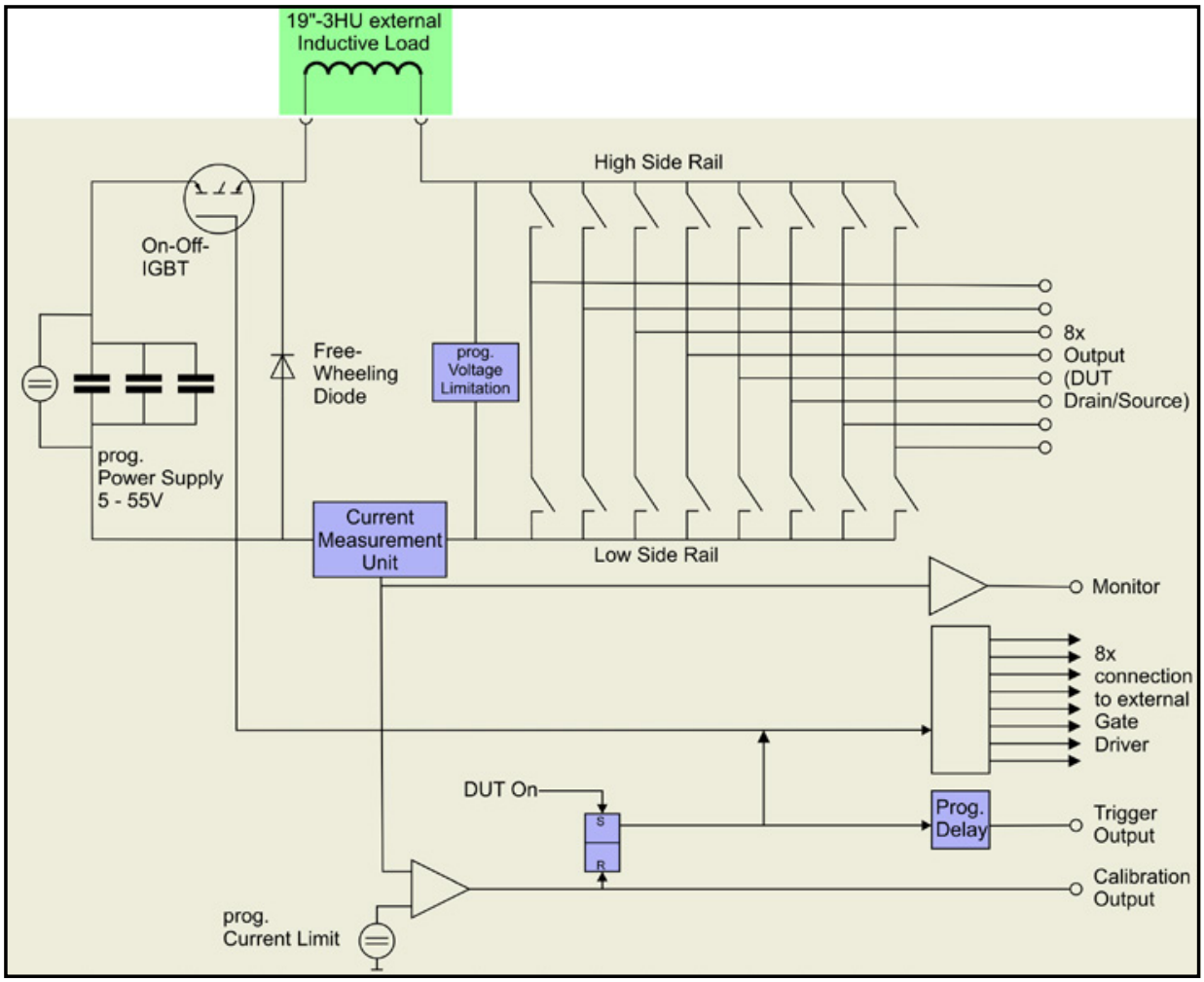
- Programmable pulse energy supply
- Peak current up to 400 A
- Maximum output energy 4 000 mJ
- Trigger output with programmable delay
- Gate control signals for up to 8 DUTs
- Integrated 2 x 8 matrix allows flexible DUT connection
- Internal programmable power supply
- Programmable voltage limitation up to 160 V
- Integrated current monitor
- Controller for flex inductive load AXL8702

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/DTS8710.pdf

Product Information

The DTS8710 in combination with AXL8702 allows to supply a precisely programmable energy which will be discharged by the DUT during the avalanche effect.

A programmable supply voltage allows the control of the current slew rate during the charging phase.



- The paths for the DUT current are designed for a peak current of 400 A and 78 A effective.
- The overvoltage across the inductor is limited to approximately 100/120/140/160 V.
- The DTS8710 generates a user-programmable hardware trigger signal.
- This trigger signal reflects the duration of driving the gate of the DUT. It can be timeshifted by a delay in the range from 0 to 20 ms with a resolution of 50 ns.
- The internal IGBT can operate either in the mode "GATED", or in the mode "CONT":
  1) In the mode "GATED" the IGBT is driven simultaneously to the gate of the DUT.
  2) In "CONT", the IGBT is switched on until timeout expires.
- The timeout is programmable within 0 to 100 ms (default: 30 ms) with a resolution of 50 ns.

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%, 47 Hz ... 53 Hz	
Power consumption	<500 W	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Size	19", 3U, depth ≈770 mm[1]	
Weight	≈19 kg	

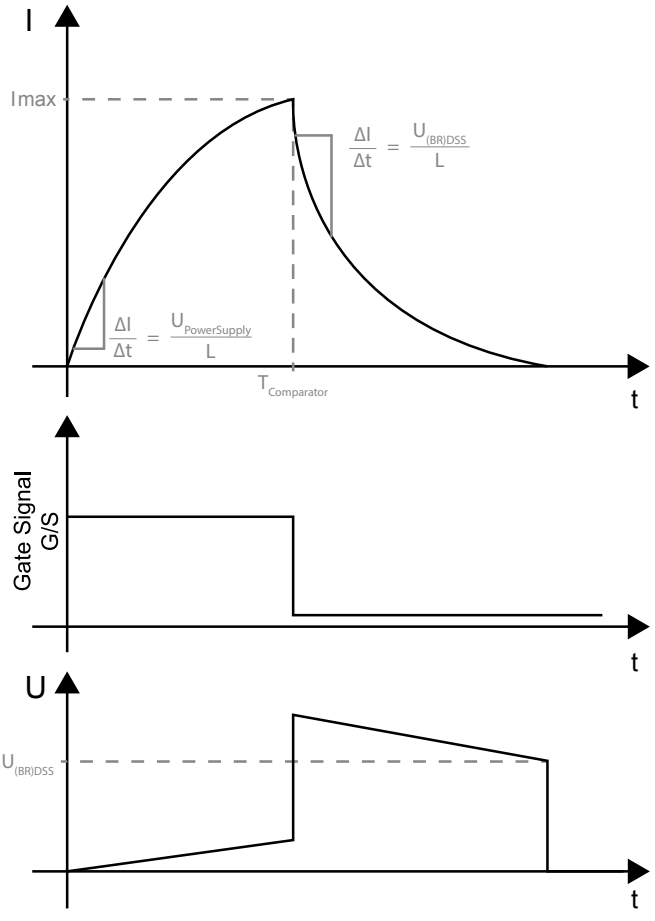
[1] Including cabling.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

What is unclamped inductive switching?

"Whenever current through an inductance is quickly turned off, the magnetic field induces a counter electromagnetic force (EMF) that can build up surprisingly high potentials across the switch. Mechanical switches often have spark-suppression circuits to reduce these harmful effects that result when current is suddenly interrupted. However, when transistors are used as the switches, the full buildup of this induced potential may far exceed the rated breakdown ($V(BR)_{DSS}$) of the transistor."

— Vishay AN601



DUT Control	Value	Comment
Gate signal I_{SOURCE} [1]	-2.8 A	
Gate signal I_{SINK} [1]	4.3 A	
Trigger signal HI-Level [2]	TTL	I_{max} = 24 mA
Trigger signal LO-Level [2]	TTL	I_{max} = 24 mA
Calibration signal HI-Level [3]	TTL	I_{max} = 24 mA
Calibration signal LO-Level [2,3]	TTL	I_{max} = 24 mA

DUT Power	Value	Comment
Maximum voltage	160 V	Selectable limits: 100/120/140/160 V
Maximum current	400 A	Depends on the selected inductance
Maximum system energy	4 000 mJ	

Current Monitor	Value	Comment
Full range (400 A)	5 V	

Internal Power Supply	Value	Comment
Voltage range	5 ... 55 V	
Maximum current	7 A	
Maximum power	336 W	

Measurement Unit	Value	Comment
Range	10 A ... 400 A	
Accuracy	±1% of range ±2 A offset	

Ordering Information	Comment
Option FE [4]	Front panel display
Option GPIB [4]	IEEE488 interface
Option USB [4]	USB 2.0 interface
Option LAN [4]	Ethernet interface
Option EPCIE [4]	External PCIe interface
Option RS232 [4]	Serial interface
Option Trigger	External trigger I/O
Option RMK	19" Rack mounting Kit

1 Gate signal is active until the test current reaches the programmed current limit, but only until timeout (30 ms).
2 The trigger signal reflects the duration of driving the gate of the DUT. It can be timeshifted by a delay in the range from 0 to 20 ms with a resolution of 50 ns. The trigger signal is active high by default. The command "TRIG_INVERT" can activate an inversion to low active.
3 Comparator signal is high when the DUT power output current exceeds the programmed current limit.
4 One option is mandatory.

AXL8702
Flex Inductive Load

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Programmable wide inductance range from 10 µH to 500 µH
- Saturation current of up to 400 A
- Very low resistance up to 30 mΩ at 500 µH
- Calibration via system interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXL8702.pdf

Product Information

The AXL8702 Flex Inductive Load ist designed for operation with the DTS8710 controllers. The inductance can be configured on the fly through the system interface of the controller between 10 µH and 500 µH. No additional power supply is required.

General	Specification	Comment
Operating temperature	0 ... 40°C	
Storage temperature	-25 ... 70°C	
Weight	≈25 kg	
Dimensions	19", 3U (W: 482mm, H: 134mm, D: 530mm)	

Saturation Current

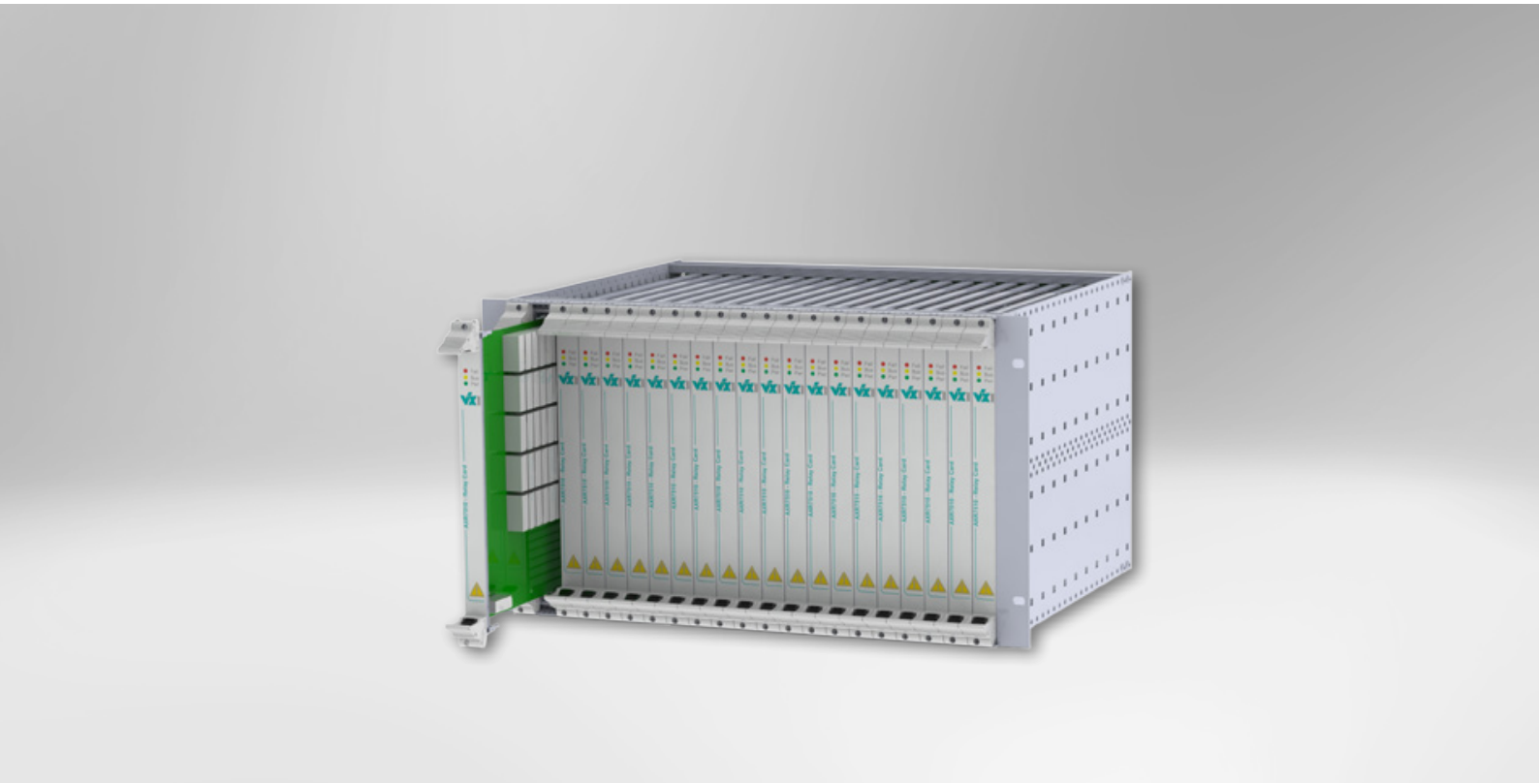
The saturation current depends on the selected inductance. The AXL8702 is designed to support a maximum system energy of 4 000 mJ.

Acquisition	Specification	Comment
Maximum current	400 A	
Selectable preset values (µH)	10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 320, 340, 360, 380, 400, 420, 440, 460, 480, 500	Software selectable
Resistance	10 µH ... 500 µH <15 mΩ + 0.025 mΩ/(µH)	

Value	Accuracy	Value Increment
At 10 µH ... 30 µH	±1 µH ±1%	2 µH
At 35 µH ... 100 µH	±2.5 µH ±1%	5 µH
At 110 µH ... 300 µH	±5 µH ±1%	10 µH
At 320 µH ... 500 µH	±10 µH ±1%	20 µH

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

AXR7510
Relay Switching Unit



PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Flexible relay switching unit allows powerful and flexible signal routing
- Currents up to 2 000 A (pulse)
- Voltages up to 3 000 V
- High density cards with up to 96 relays
- Various interfaces available (LAN, USB, GPIB)
- Highly reliable operation due to optical data interface

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/AXR7510.pdf

Product Information

The AXR7510 is a powerful switching unit. It allows flexible signal routing from any instrument pin to any DUT pin.

The AXR7510 Relay Switching Unit consists of two separate parts. The first unit (interface) is for communication via GPIB, USB or LAN.

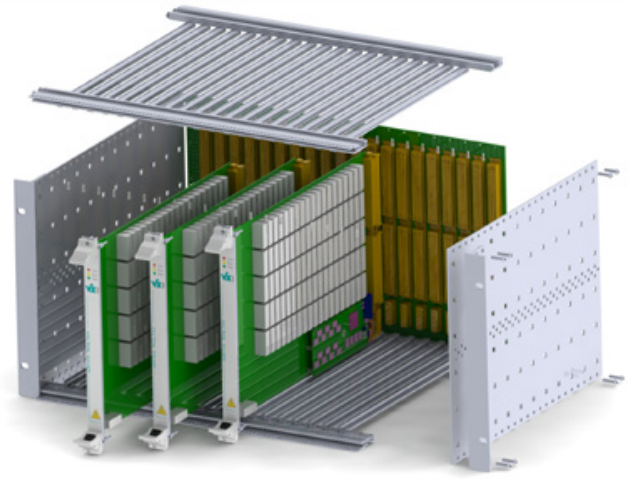
The second part contains the matrix cards and is connected to the interface unit via fiber. This guarantees a high data transfer security even on high pulse currents within the matrix.

High Current Relay Cards (up to 10 cards each up to 18 relays)	**Specification**	**Comment**
Maximum current per card Number of parallelized cards	200 A 10	With duty cycle D ≤1/50 and t_{PULSE} ≤10 ms
Maximum standoff voltage	2 500 V	
Maximum switching voltage	250 V	
Typical path resistance	20 mΩ	

High Voltage Relay Cards (up to 10 cards each up to 48 relays)	**Specification**	**Comment**
Maximum current per path	1 A	
Maximum standoff voltage	3 000 V	
Maximum switching voltage	1 000 V	
Typical input capacitance	200 pF	

General Relay Cards (up to 20 cards each up to 96 relays)	**Specification**	**Comment**
Maximum current per path	5 A	
Maximum standoff voltage	2 500 V	
Maximum switching voltage	250 V	

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.



PXI520x
Bit-Pattern Generator Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Based on VX Instruments FlexCPP for easy custom design
- Up to 2 independent modules with 4 simultaneously working channels
- 6.6 MS/s with 8 Bit pattern width
- High configurable trigger engine
- Multiple instrument and channel synchronization possibilities
- Additional reference clock output
- Wide range of sample rates due to programmable internal PLL

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXI520x.pdf

Product Information

Flexible configurable PXI Platform
This family of bit-pattern generators is based on the "Flexible Configurable PXI Platform" (FlexCPP). This platform allows a couple of customer configured bit-pattern generators.

Bit-Pattern Generator
The PXI520x Bit-Pattern Generator family features up to 8 simultaneously working channels divided into 2 modules with 4 channels. Every channel provides a 8 Bit TTL digital output. Each module is equipped with an on-board memory holding the arbitrary Bit-Pattern for up to 4 channels.

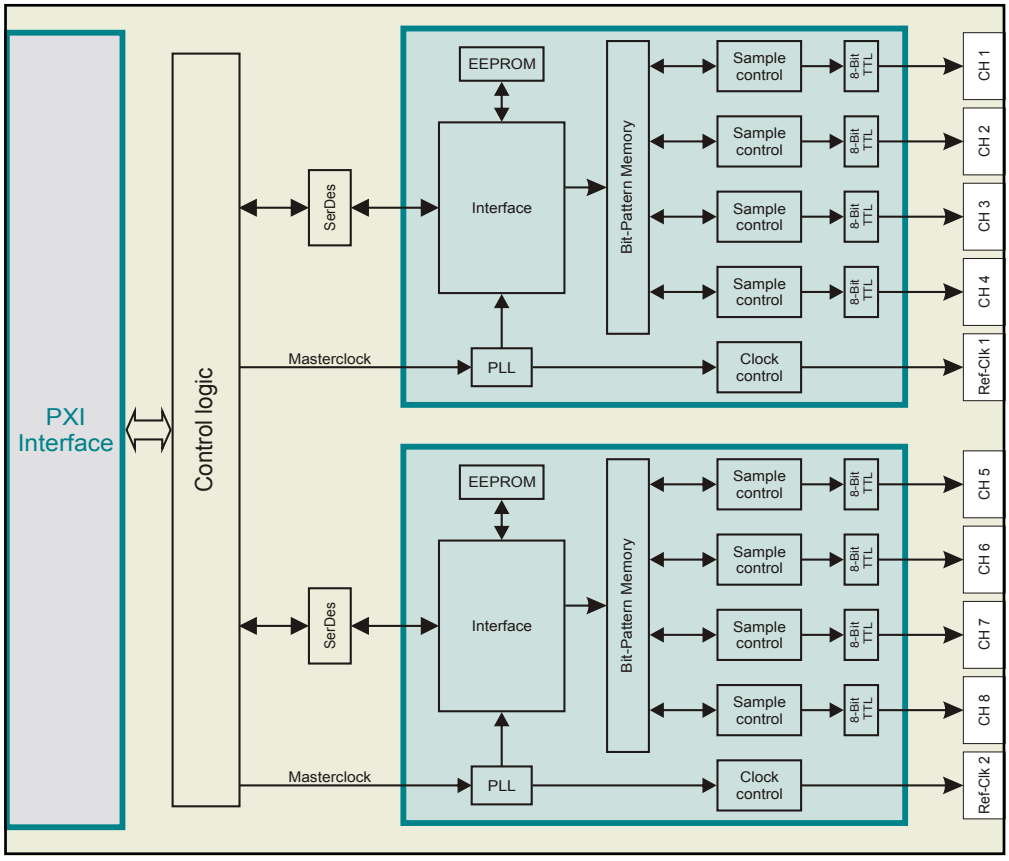
Sample clock
The sample clock of the PXI520x Bit-Pattern Generator is derived from a programmable master clock provided by the internal PLL. This allows a highly accurate setting of the sample clock. A post divider offers an additional integer division of the master clock frequency for output generation.

Reference clock output
The PXI520x Bit-Pattern Generator provides a reference clock signal for every generator module on the output connector. This signal can be used for synchronization purpose of a following signal chain.

Digital output
Every channel of the PXI520x Bit-Pattern Generator is equipped with an 8 Bit digital bus driver. So digital output signals compliant to TTL standard are provided to the user. All digital output ports are referenced to a common ground.

User specific daughter board
The PXI520x Bit-Pattern Generator devices feature a connector interface to a user specific daughter board. For fixture of the board various mounting studs are available. So the whole placement area of the right adjacent slot within a PXI chassis is provided to the user.

In addition to the digital outputs and the reference clock signal the connector interface contains two supply voltages (+3.3 V and +12 V) with their according common ground. This features the user a solid base for his circuit design.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	

Bit-Pattern	Specification	Comment
Width	8 Bit	
Memory	2 MB, 2 MS	For one module (4 channels)

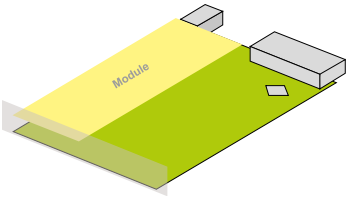
Connector Interface	Specification	Comment
Power supply		
+12 V	<200 mA	
+3.3 V	<400 mA	
Digital output	TTL	I_{max} = 24 mA

Time Base	Specification	Comment
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	
Sampling frequency	0.10 S/s ... 6.6 MS/s	
Reference clock	3.4 MHz ... 6.6 MHz	
Output frequency resolution	100 ppm	Of programmed value (frequency)

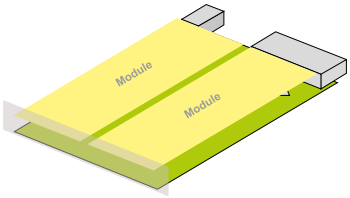
Trigger System	Specification	Comment
Input from		
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
PXI trigger	Trigger 0 ... 7	To the PXI backplane

PXI Capabilities	Specification	Comment
PXI trigger usage	Supported	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Supported	Input only

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.



PXI5204
4 channel Bit-Pattern Generator



PXI5208
8 channel Bit-Pattern Generator

PXI530x
Bit-Pattern Receiver Family

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Based on VX Instruments FlexCPP for easy custom design
- Up to 2 independent modules with 4 simultaneously working channels
- Up to 6.6 MS/s with 7 Bit pattern width
- High configurable trigger engine
- Multiple instrument and channel synchronization possibilities
- Independent sample clock input for every channel

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXI530x.pdf

Product Information

Flexible configurable PXI Platform
The family of bit-pattern receivers is based on the "Flexible configurable PXI Platform" (FlexCPP). This platform features a variety customer configurable bit-pattern receivers.

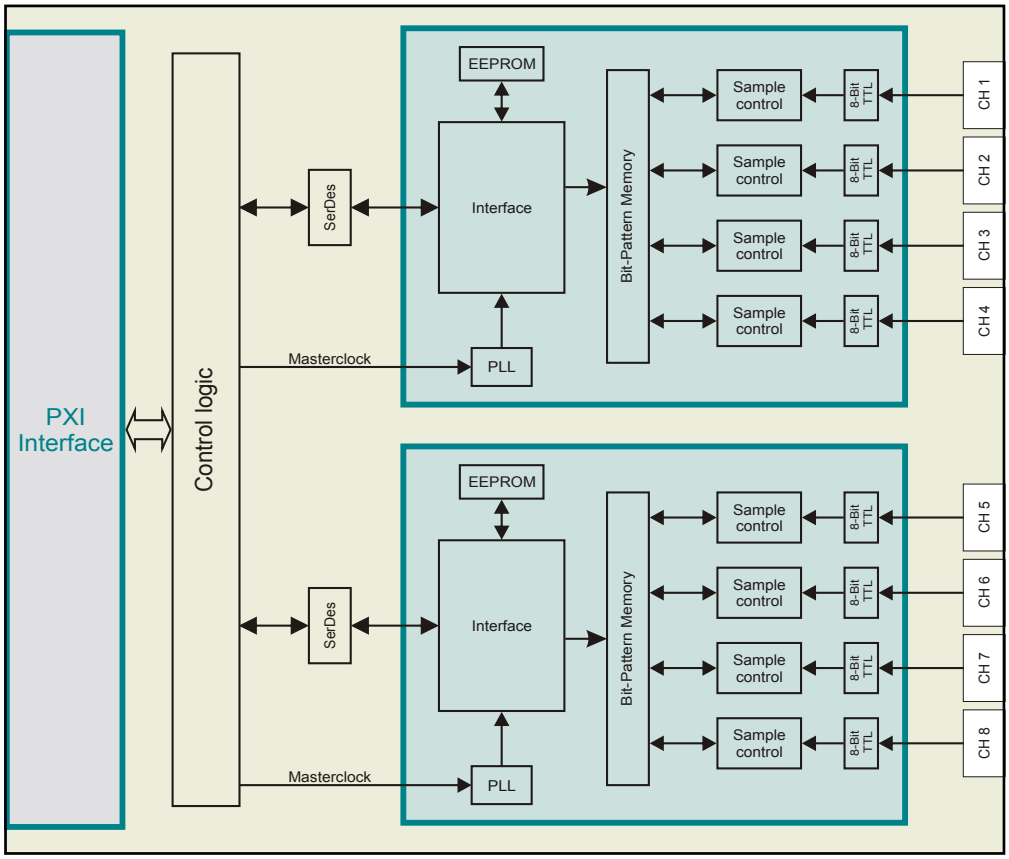
Bit-pattern receiver
The PXI530x Bit-Pattern Receiver family features up to 8 simultaneously working channels divided into 2 modules with 4 channels. Every channel provides a 8 Bit TTL digital input. Each module is equipped with an on-board memory where the acquired bit-pattern from its 4 channels is stored.

Sample clock
The sample clock of every PXI530x receiver channel is derived from its input port signal Px. 7. In addition with a post divider for a integer division of the clock source signal the user gets a high flexibility in data acquisition.

Digital input
Every channel of the PXI530x Bit-Pattern Receiver is equipped with an 8 Bit digital bus driver. So digital inputs compliant to TTL standard are provided to the user. All digital input ports are referenced to a common ground.

User specific daughter board
The PXI530x Bit-Pattern Receiver devices feature a connector interface to a user specific daughter board. For fixture of the board various mounting studs are available. So the whole placement area of the right adjacent slot within a PXI chassis is provided to the user.

In addition to the digital inputs the connector interface contains two supply voltages (+3.3 V and +12 V) with their according common ground. This features the user a solid base for his circuit design.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	

Bit-Pattern	Specification	Comment
Width	8 Bit	
Memory	2 MB, 2 MS	For one module (4 channels)

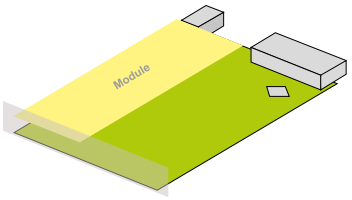
Connector Interface	Specification	Comment
Power supply		
+12 V	<200 mA	
+3.3 V	<400 mA	
Digital input	TTL	

Time Base	Specification	Comment
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	
Sampling frequency	<6.6 MS/s	

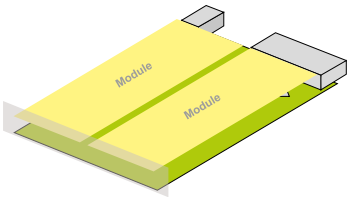
Trigger System	Specification	Comment
Input from		
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
PXI trigger	Trigger 0 ... 7	To the PXI backplane

PXI Capabilities	Specification	Comment
PXI trigger usage	Supported	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Supported	Input only

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.



PXI5304
4 channel Bit-Pattern Receiver



PXI5308
8 channel Bit-Pattern Receiver

PXT(e)1741
Trigger Module

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- Easy linkage of various external modules to the PXI(e) trigger bus
- High configurable trigger matrix
- 12 independent configurable trigger lines
- Available with PXI or PXI Express interface
- Inputs/Outputs compatible with 5 V TTL standard
- Software controlled triggering of any target device

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXT1741.pdf

Product Information

Easy linkage of various external modules

The PXT(e)1741 Trigger Module ist designed to build up a connection between trigger signals from any external trigger source (5 V TTL Standard) and the PXI(e) trigger bus. Therefore the device is equipped with four SMA front connectors (T1 to T4).

Complex concatenation of various trigger sources

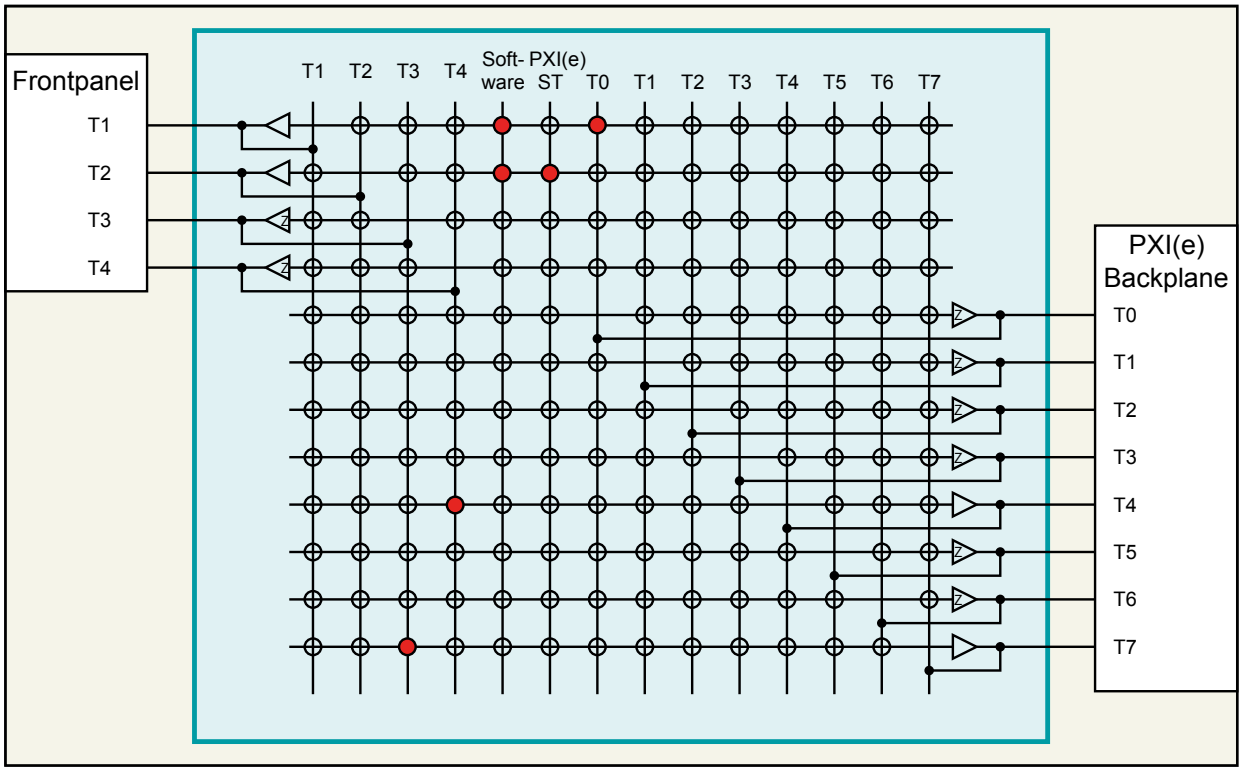
Each trigger output signal can be a combination of all available trigger sources except the trigger line itself.

Independent configurable trigger lines

The PXT(e)1741 Trigger Module provides 12 independent configurable trigger lines, where each of them can be used as trigger source or trigger output and two additional trigger sources (PXI(e) star trigger and software trigger).

Software controlled triggering

With the additional software trigger, each with the PXT(e)1741 Trigger Module linked device can be triggered at any time with a simple software command.



= Connection Example

General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.3 kg	
Front connector type	SMA	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	

Trigger	Specification	Comment
Front trigger I/Os	4	
PXI(e) trigger lines	8	PXI(e) trigger line 0 ... 7
I/O voltage level	5 V TTL	
Output current	20 mA	
Trigger sources	12 configurable trigger lines, 1 PXI(e) star trigger, software trigger	

Ordering Information	Comment
PXT1741	Device with PXI interface
PXTe1741	Device with PXI Express interface

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

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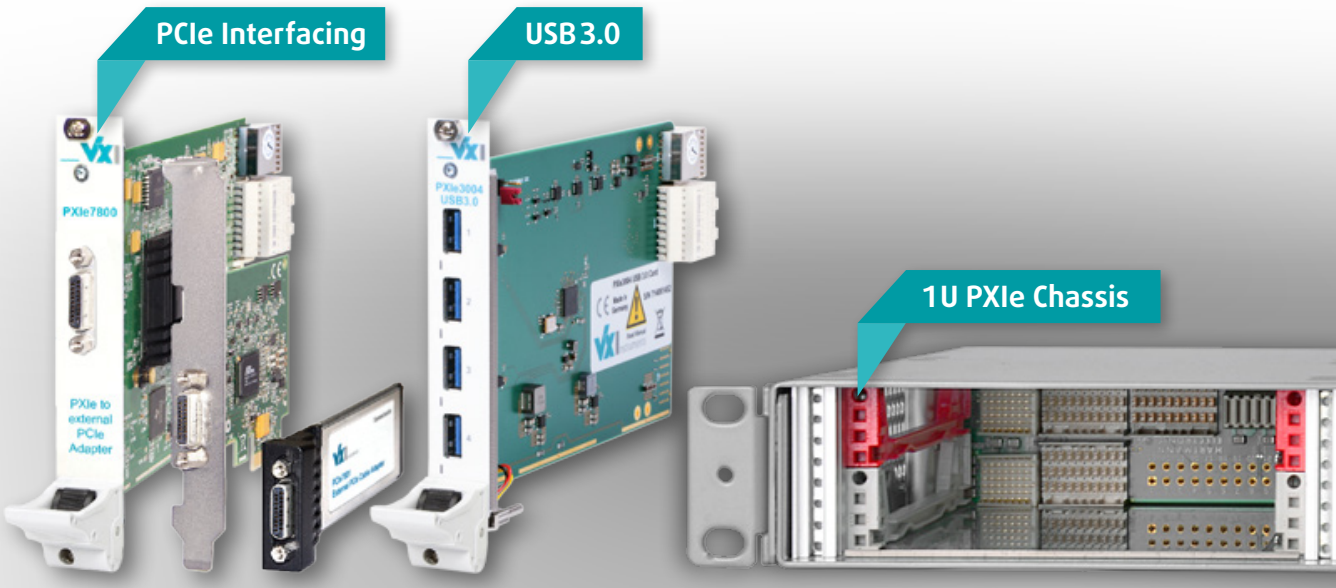


PXIe3110
PXI Express Embedded Controller

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external PCIe

Features

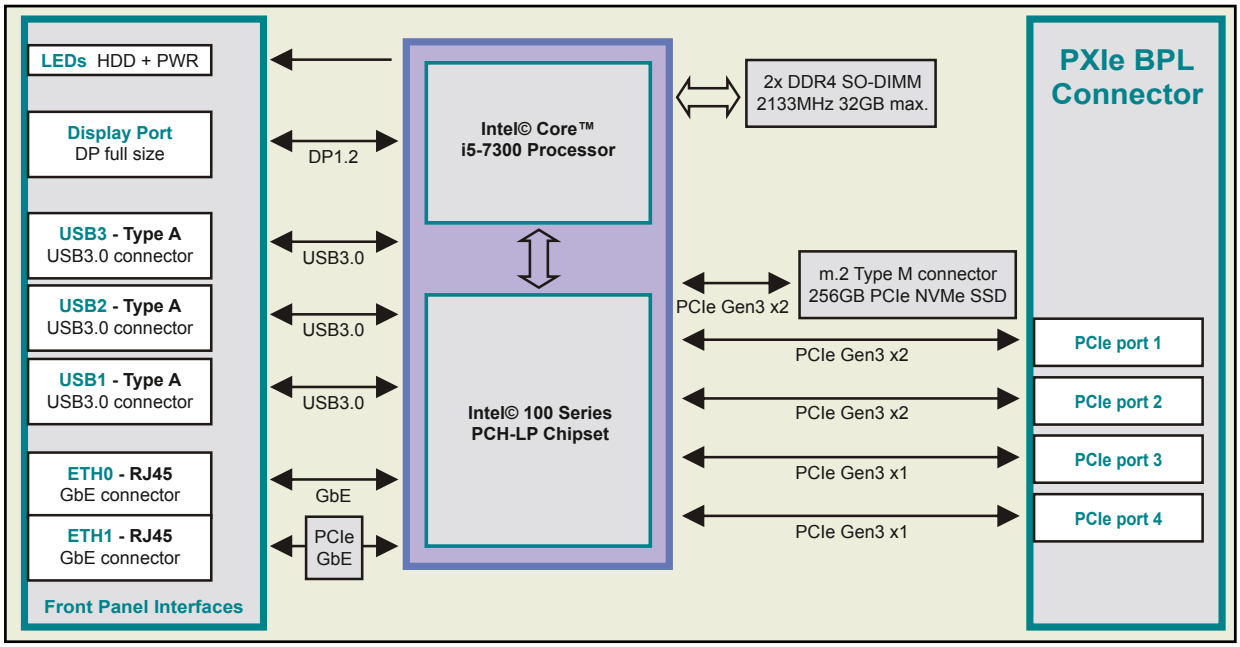
- Most compact PXIe Embedded Controller on market
- PXI-5 PXI Express hardware spec. Rev.2.0 compliant
- Integrated m.2 NVMe PCIe Gen3 storage
- Maximum system throughput 6 GB/s (1 Four-Link mode PCIe Gen3 x2 - x2 - x1 - x1)
- 7th Intel® Core™ generation with Hyper-Threading

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXIe3110.pdf

Product Information

The PXIe3110 is the most compact and powerful 3U one-slot embedded controller for the PXI Express and CPCIexp platform. With its huge and future-ready interface capabilities, it runs perfectly with most test and measurement applications.

The Controller is driven by a 7th generation Intel® Core™ processor combined with up to 32 GB DDR4 memory and easily supports high bandwidth applications with its PCIe Gen3 system and storage interconnectivity.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.4 kg	
Operating temperature	0 ... 60°C	
Relative humidity	10 ... 90%	Non-condensing
Storage temperature range	-40 ... 85°C	

Controller Capabilities	Specification	Comment
CPU	Intel® Core™ i5-7300U 2.6 GHz dual-core	
Chipset	Integrated Intel™ 100 Series PCH-LP	
DRAM	1x 16 GB 2 133 MHz DDR4 (2x 16 GB optional)	
Graphics	Intel® Gen9 HD Graphics 620	
Storage	m.2 NVMe SSD Samsung 960 EVO 250 GB	
I/O Ports	2x GBE, 3x USB 3.0 TypeA, DisplayPort 1.2	
Power	Peak: 40 W, Typical: 18 W	

Notes: Product specification and description in this document are subject to change without notice.

PXIe3004
USB 3.0 Card

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- PXI Express peripheral slot card
- Texas Instruments PCI Express to quad-port USB 3.0 controller TUSB7340
- PCI Express x1 Gen2 interface for optimum performance
- USB 3.0 xHCI (eXtensible host controller interface) SuperSpeed supported
- USB 2.0 High-Speed, Full-Speed, Low-Speed supported
- 4x front panel Type A USB 3.0 host connectors

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXIe3004.pdf

Product Information

The PXIe3004 is a peripheral slot board for PXI Express systems, equipped with a quad port USB 3.0 compliant host controller. All four USB connectors are available from the front panel for attachment of external USB devices.

For optimum performance the board requires a 5 Gbps PCI Express Gen2 connection.

The front panel USB 3.0 host connectors can deliver up to 1.5 A V_{BUS} (+5 V) each.

A maximum total current of 3 A for one PXIe3004 is possible.

When connected to USB 2.0 compliant devices, only the classic four contacts (data pair, +5 V V_{BUS} and GND) are in use. USB 3.0 devices in addition communicate via the SuperSpeed differential transmit and receive signal pairs, available across another five contact pins.

General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.2 kg	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	

Interface	Specification	Comment
Front connector type	4x USB 3.0	
Maximum current	1.5 A each	In total maximum 3 A

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

PXIe7800/PCIe7800/PCIe7801
External PCIe Cable Adapter

Coming in 2022

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Control of ePCIe devices via PC, Laptop or PXIe
- High speed PCI Express x1 interface
- Extension length up to 7 meters
- Compliant with PCI Express base specification, Rev. 1.0a
- Compliant with PCI Local Bus specification, Rev. 3.0

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXIe7800.pdf

Product Information

The external cable adapter family supplies a high speed PXI Express x1 interface. Due to the low latency and high data transfer rate it is pefectly suitable for multi-channel systems with high data volumes and high speed test environments.

General	Specification	Comment
Module size PCIe7800 PCIe7801 PXIe7800	 1 PCIe slot ExpressCard/34 1 slot, 3U	
Module weight	<0.4 kg	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	

Interface	Specification	Comment
Connection	External PCIe x1	1.27 mm TDP PXIe x1 18-pin, female
Trigger	PXI trigger lines	Only for PXIe7800

Accessories	Ordering Information
ePCIe cable 1 m	ZK1103-0
ePCIe cable 2 m	ZK1104-0
ePCIe cable 3 m	ZK1105-0
ePCIe cable 7 m	ZK1106-0

Suitable Devices

Device	Specification
AXV7607 High Voltage SMU	<3 000 V at <30 mA; DC; linear output stage
AXC7603 High Current SMU	<±100 A at <50 V; DC; linear output stage
AXS84xx 4 channel SMU	<±100 A at <400 V; 100 µs up to DC; <800 W continuous

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

PXCe4006
6-slot PXIe Chassis

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232
485
external
PCIe

Features

- 6-slot PXI Express chassis
- 1 system slot, 1 PXI Express slot and 4 PXI/PXI Express full hybrid peripheral slots
- Optional: complex FPGA trigger controller with 8 freely configurable trigger IOs on the rear side
- Very compact 1U 19" design
- Four link PXI Express chassis
- Easily replacable fan unit

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXCe4006.pdf

Product Information

To reduce space in modern test systems the PXCe4006 features a very compact 1U 19" design.

The following slots are available:

- 1 PXI Express System Controller Slot,
- 1 PXI Express Peripheral Slot,
- 4 PXI/PXI Express Hybrid Peripheral Slots.

This provides the user the highest flexibility to configure his test system with PXI and PXI Express devices.

Optionally available is an internal complex FPGA trigger controller board, which provides 8 freely configurable trigger IOs on the rear side (SMB connector).

Also available is the PXIe3110 PXI Express Embedded Controller. Equipped with a modern Intel® Core™ i5 CPU and a big variety of interfaces, the controller is a perfect addition to the chassis. For detailed specifications, please check the data sheet of the PXIe3110.

General	Specification	Comment
Device size	≈445 mm x 312 mm x 44 mm (w x d x h)	
Device weight	≈6 kg	
Operating temperature	0 ... 55°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-20 ... 70°C	

Power	Specification	Comment
AC Input		
Input voltage range	90 ... 264 V_{AC}	Active PFC
Input voltage frequency	47 ... 63 Hz	
DC Output[1]		
+5 V	14.0 A	
+12 V	15.5 A	
+3.3 V	12.0 A	
-12 V	0.5 A	
+5 V AUX	3.0 A	
Usable power	<200 W	
Modes	Auto power on mode	Selectable on the backpanel
	Auto fan mode	Selectable on the backpanel

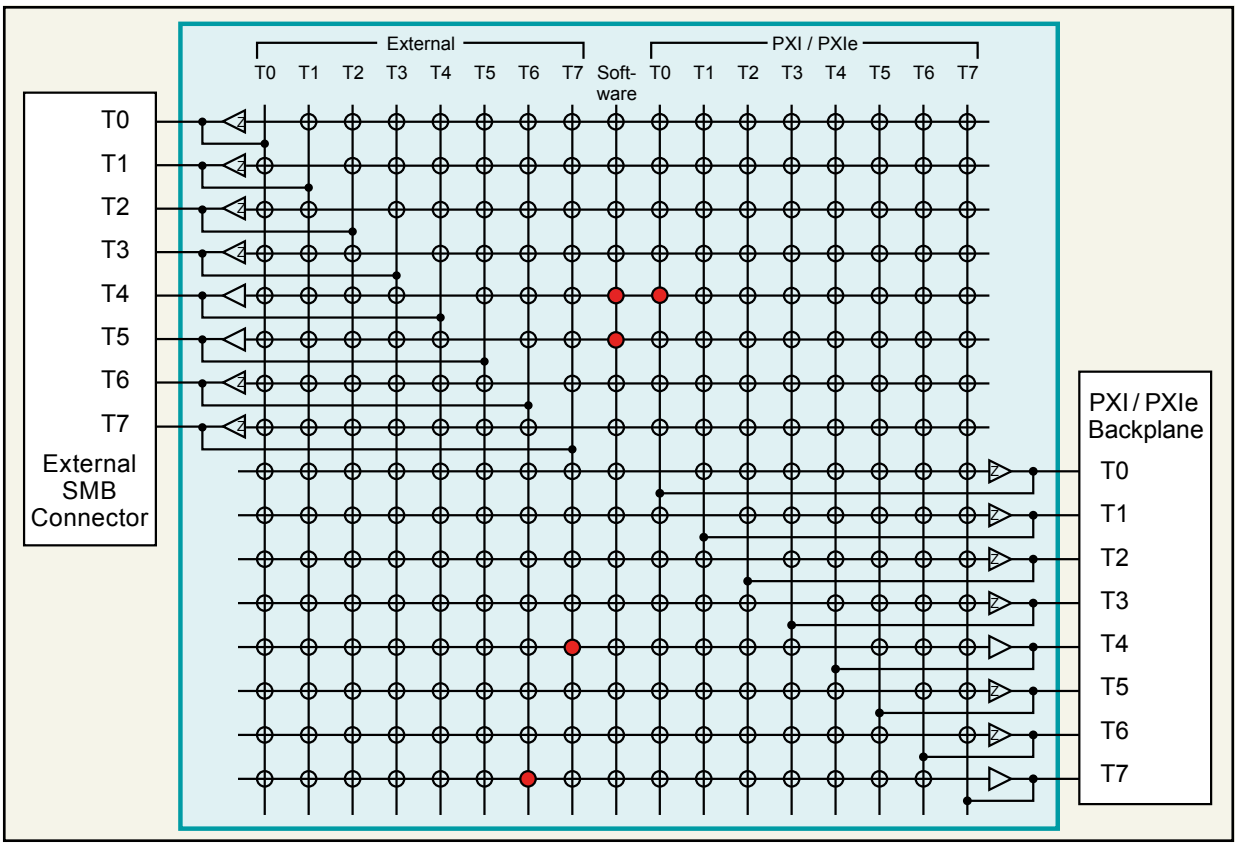
Chassis Cooling	Specification	Comment
Cooling capacity	30 W per Slot	
Cooling principle	4x cooling fans, horizontal cooling	

Interface	Specification	Comment
System bandwidth	PCIe Gen 2 X1	

[1] Maximum ripple and noise: ±12 V: 120 mV, other: 50 mV; Load regulation: 5% (@ -12 V: ±10%).

Trigger (Only with Option PXTe5408 embedded)

Trigger System	Specification	Comment
Input from		
Internal function module	Module can trigger itself	
Software	Via software command	
SMB connector	Trigger input (5 V TTL level) 0 ... 7	50 Ω mode selectable
PXI trigger	Trigger 0 ... 7	From the PXI backplane
Output to		
Internal function module	Module can trigger itself	
SMB connector	Trigger output (5 V TTL level) 0 ... 7	50 Ω mode selectable
PXI trigger	Trigger 0 ... 7	To the PXI backplane
Trigger delay	0 ... 200 s	Programmable delay, 100 ns resolution
Trigger slope	Positive or negative	
Trigger Mode	Asynchronous, synchronous level, synchronous slope	



● = Connection Example

Slot Assignment

Ordering Options

Accessories	Ordering Information
PXI Express Embedded Controller	PXIe3110
PCIe ExpressCard34 (Laptop)	PCIe7801
ePCIe cable 1 m	ZK1103-0
ePCIe cable 2 m	ZK1104-0
ePCIe cable 3 m	ZK1105-0
ePCIe cable 7 m	ZK1106-0

Ordering Options	Comment
PXTe5408 embedded	8 ch. internal trigger controller

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

FOR YOUR NOTES

PXCe4012
12-slot PXIe Chassis

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- 12-slot PXI Express chassis
- 1 system slot, 7 PXI Express slots and 4 PXI/PXI Express hybrid peripheral slots
- Very compact 2U 19" design
- Four link PXI Express chassis
- Easily replacable fan unit

Download the complete datasheet here:
http://www.vxinstruments.com/catalog/PXCe4012.pdf

Product Information

To reduce space in modern test systems the PXCe4012 features a very compact 2U 19" design.

The following slots are available:

- 1 PXI Express system controller slot
- 7 PXI Express peripheral slots
- 4 PXI/PXI Express hybrid peripheral sots

This provides the user the highest flexibility to configure his test system with PXI and PXI Express devices.

Also available is the PXIe3110 PXI Express Embedded Controller. Equipped with a modern Intel® Core™ i5 CPU and a big variety of interfaces, the controller is a perfect addition to the chassis. For detailed specifications, please check the data sheet of the PXIe3110.

General	Specification	Comment
Device size	484 mm x 370 mm x 88.9 mm (w x d x h)	
Device weight	≈9 kg	
Operating temperature	0 ... 55°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-20 ... 70°C	

Power	Specification	Comment
AC Input		
Input voltage range	90 ... 264 V_{AC}	Active PFC
Input voltage frequency	47 ... 63 Hz	
DC Output		
+3.3 V	80 A	
+5 V	36 A	
+12 V	40 A	
-12 V	12 A	
+5 V AUX	2 A	
Modes	Auto power on mode	Selectable on the backpanel
	Auto fan mode	Selectable on the backpanel

Chassis Cooling	Specification	Comment
Cooling capacity	30 W per Slot	
Cooling principle	2x PWM 12 V cooling fans	Integrated dust filter

Notes: Product specification and description in this document are subject to change without notice.

Slot Assignment

Ordering Information

Accessories	Ordering Information
PXI Express Embedded Controller	PXIe3110
PCIe ExpressCard34 (Laptop)	PCIe7801
ePCIe cable 1 m	ZK1103-0
ePCIe cable 2 m	ZK1104-0
ePCIe cable 3 m	ZK1105-0
ePCIe cable 7 m	ZK1106-0

LONG-TERM-SUPPORT

For further information and details on our VXI products, ask our technical sales team:
sales@vxinstruments.com
or visit:
www.vxinstruments.com/vxi

VX2022 HIGH PERFORMANCE DIGITIZER

Features

- High performance upgrade for HPE1429A
- Two channels with 20 MS/s and 12 Bit resolution
- Fast register based single slot VXI-C-size module
- Each channel is isolated to PE
- Channel 1 is isolated from channel 2
- Each channel has its own internal analog trigger
- Each channel has an external trigger input
- Sample count for pre- and post-trigger programmable
- High common mode rejection

VX2026 ARBITRARY WAVEFORM GENERATOR

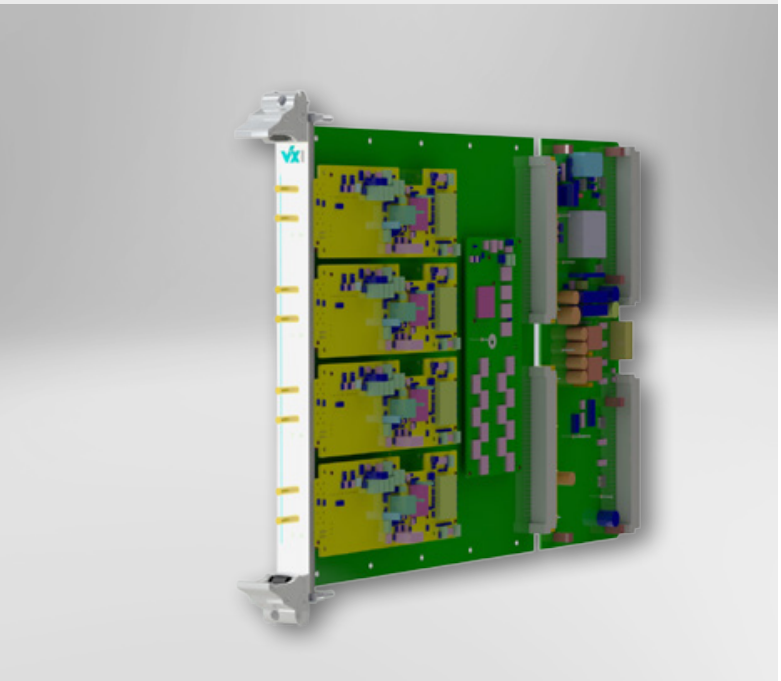
Features

- High performance 40 MS/s, 14 Bit, 2 channel Arbitrary Waveform Generator
- Output voltages up to ±20 V (40 V_{PP})
- Output channels operating independently
- Fully isolated outputs
- Wide range of sample rates due to programmable internal PLL
- High bandwidth
- Additional marker output
- Designed for high throughput testing

VX3701 SYNCHRO/ RESOLVER MODULE

Features

- Synchro/Resolver to Digital Converter (SDC)
- Digital to Synchro/Resolver Converter (DSC)
- SDC and DSC combined in one Instrument
- SDC and DSC simultaneous operating mode
- SDC and DSC independently programmable
- DSC output can be switched to SDC input
- Fully isolated inputs and outputs
- Internal reference allows self-testing capabilities



FLEXIBLE CONFIGURABLE VXI PLATFORM (FLEX CVP)

Features

- Custom design for individual specifications
- Up to 4 function modules in 1 VXI slot
- Isolated functionality with DC/DC modules

TECHNICAL TERMS

Digitizer
Digitizers are devices for the recording of signals using an internal memory which are similar to digital storage oscilloscopes, but without an integrated display. The signal analysis is carried out at the computer via a fast interface such as PCI, PXI, PXIe or external PCIe. As additional bus systems for the transfer of data, older bus systems such as VME or VXI are also supported.

Common Mode Rejection Ratio (CMRR)
The common mode rejection ratio of a differential or floating measurement instrument indicates the extent of the influence of a parasitic common mode voltage. The smaller the common mode rejection is, the greater the effect of the common mode voltage is on the measurement result. In an ideal case, the common mode voltage does not have any effect on the actual measurement value.

Arbitrary Waveform Generator (ArbGen)
Arbitrary waveform generators are devices for the generation of any types of waveforms. They have the basic functionality of a waveform generator, but in addition they are able to output any types of waveforms which can be freely programmed by the user (e. g. from a CSV file). Moreover, they are often able to create freely definable sequences from a variety of different waveforms.

Source and Measurement Unit (SMU)
A SMU is a precise power supply with measurement capabilities. Those devices are able to measure their own output current and voltage. In some cases the measurement units are completely separated from the source, so that they can also be used for external measurements. Our source and measurement units are very fast power supplies (mostly four-quadrant sources) with accurate measurement units with high resolution.

High Power (HP)
Semiconductors are currently growing extremely in their package size and electrical specifications. Applications like hybrid vehicles, electric motors and solar power require semiconductors with higher voltage and current values.
Like all parts these high power components have to be tested. Therefore VX Instruments delivers devices which are capable to source and measure up to 1 000 A or 3 000 V_{pp}.

External PCIe (ePCIe)
External PCIe is designed to connect external devices to the standard PCIe bus. The connection between external unit and PC is carried out with a standard PCIe card in the PC, an ePCIe cable and an ePCIe controller in the device. The connected external device therefore behaves like an internal PCIe card.
External PCIe is applicable especially for high volume production testing, quality assurance and laboratory applications. Due to the low latency and high data transfer rate it is perfectly suitable for multichannel systems with high data volumes and high speed test environments.

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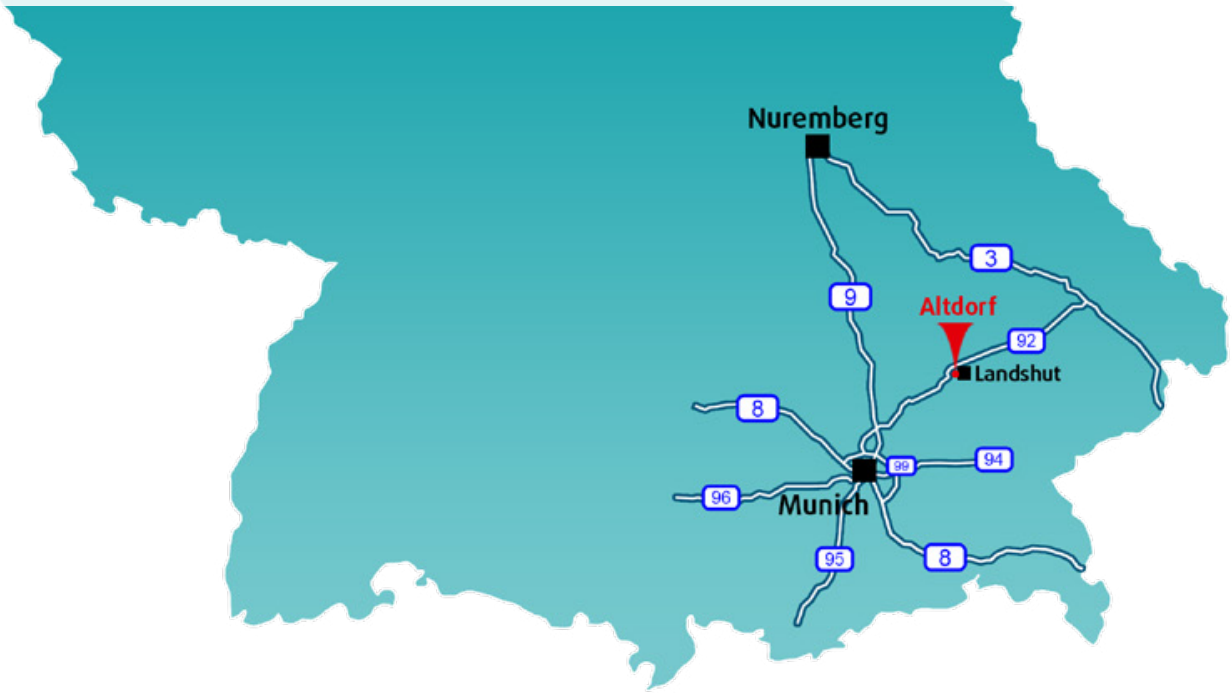

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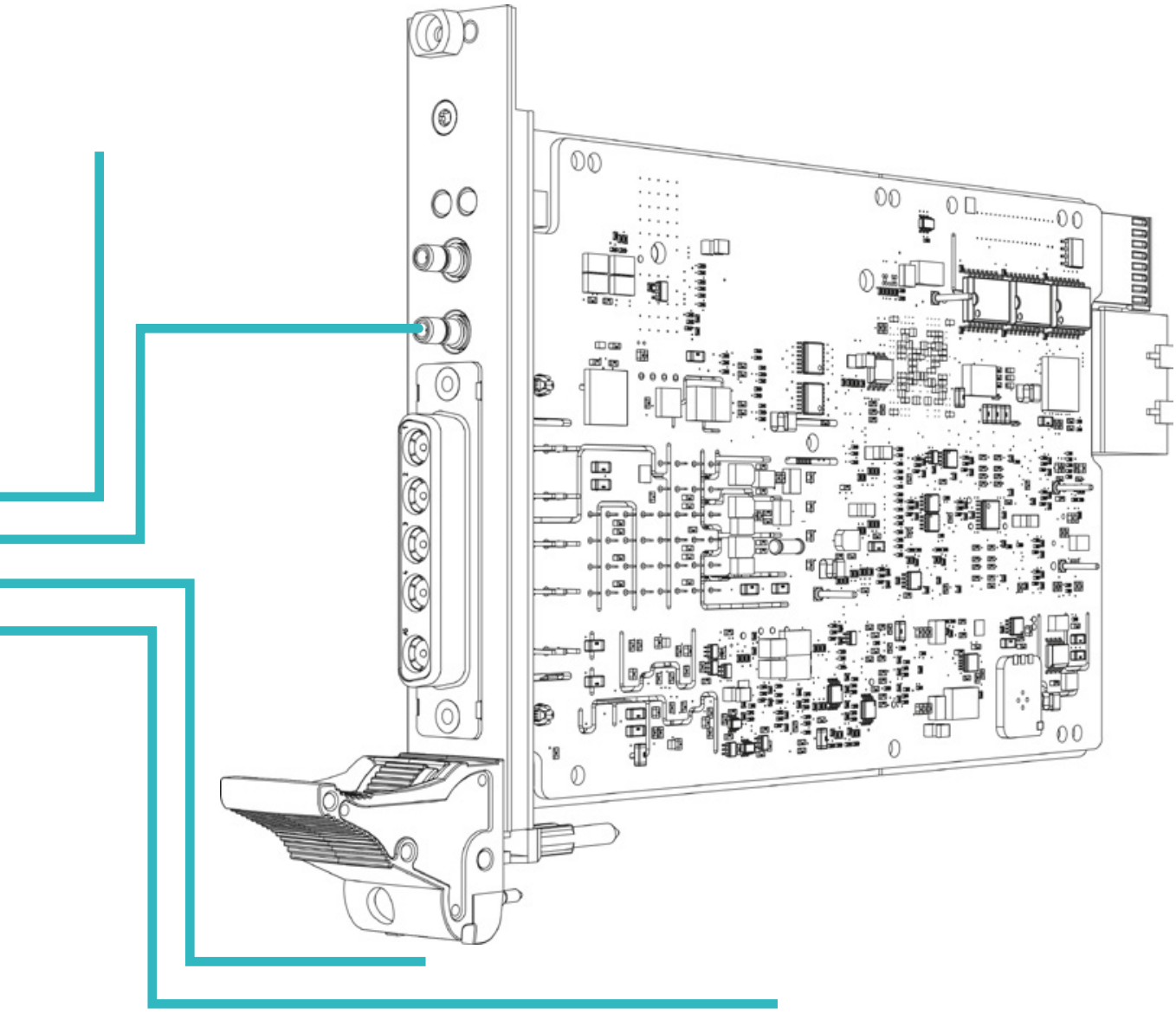
Made in Germany



VX Instruments
the test solutions provider