VXInstruments

the test solutions provider

PXI

PXI

PXI

PXI

VXInstruments

PXA7224 ArbGen

M1

CAT I ⚠

CH1
<60V

P/B Run   Pwr

FlexCPP

M2

CAT I ⚠

CH2
<60V

P/B Run   Pwr

FlexCP Platform

- **Outputs up to 30V**

- **100MS/sec, 16 Bit bip.**

- **Floating design**

PXA722x Arbitrary Generator Family

Features

▸ Based on VX Instruments FlexCPP

▸ Output voltages up to +30V or ±15V

▸ 100MS/sec. with 16 Bit resolution

▸ Floating option available

▸ Complex waveform sequencing possible

▸ On the fly amplitude and offset changing

▸ Additional marker output

▸ Wide range of sample rates due to programmable internal PLL

▸ High Bandwidth

Product information:

Flexible configurable PXI Platform

This family of Arbitrary Function Generators is based on the "Flexible configurable PXI Platform" (FlexCPP). This platform allows many variants of customer configured Arbitrary Function Generators.

High speed, high res. arbitrary waveform generator

The PXA722x ArbGen-Family features up to two simultaneously working channels with 100 MS/sec., 16-bit resolution and an output voltage up to +30V or ±15V.

Every ArbGen channel has its own 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 device for 1 or 2 slots.

Built-in waveform functions

Predefined waveforms (DC, sine, square, triangle, sawtooth) can be configured via software driver. Furthermore is possible to load a 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 complete independently. A great amount of trigger capabilities results in multiple sophisticated instrument and channel synchronisation possibilities.

Complex waveforms without memory reloading

Arbitrary waveforms will be loaded via data files into the on-board memories for waveform data (1MS) and sequence data (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.

High output voltages allows easy stimulation

The standard output voltage is ±15V (30Vpp). With an optional extension the output stage can be switched to achieve output voltages up to +30V into high impedance load. This allows high voltage waveform stimulation without additional signal conditioning.
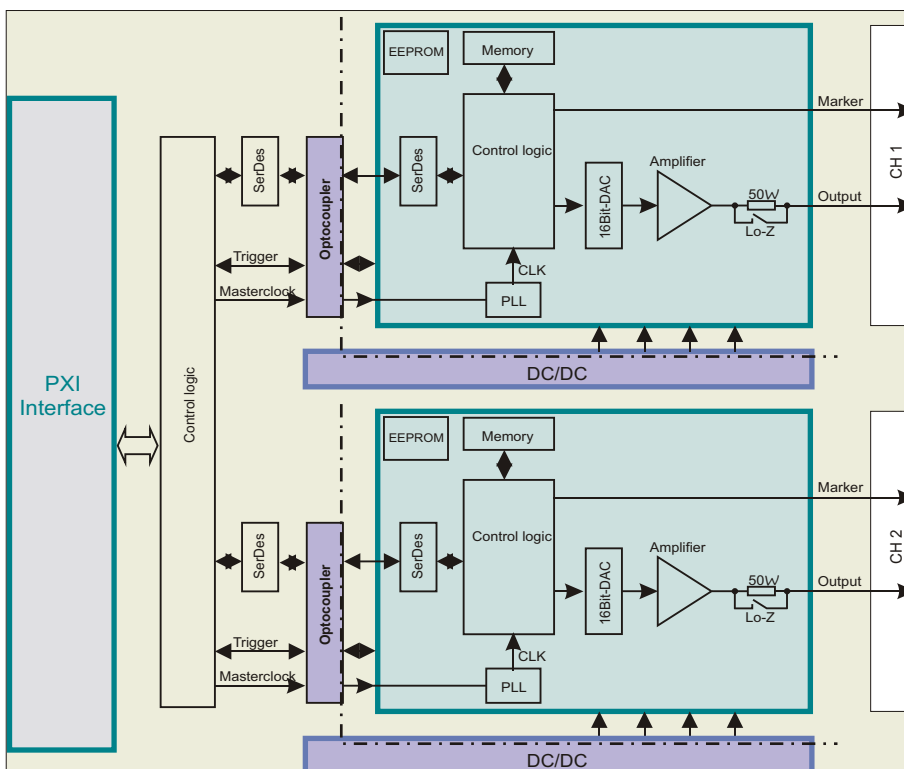
Ordering Option	Comment
EXTVOLT	Extended output voltage range
TCXO	TCXO Oscillator

All product data[1] are specified for an ambient temperature of 23°C ±5°C, after 1 hour warm-up time!

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXA7221, PXA7222, PXA7223 PXA7224
Module weight	< 0.7kg	
Front connector type	SMA	
Operating temperature	0...40°C	
Operating altitude	up to 2000 m	
Humidity	to 90% relative humidity below 30°C to 45% relative humidity up to 50°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 voltage resolution	16Bit	
Output impedance	50Ω or Lo-Z (~10Ω)	R_{out}; software selectable
Output voltage ranges range 1 range 2 range 3 range 4 range 5 range 6 range 7	 +/-2,5V +/-5,0V +/-10,0V +/-15,0V 0...10V 0...20V 0...30V	software selectable additionally with option EXTVOLT additionally with option EXTVOLT additionally with option EXTVOLT
Max. output current range 1 - 3 all other ranges	 100mAp 30mAp	
AC-Bandwidth[2] range 1 + 2 all other ranges	 40MHz (3dB) 10MHz (3dB)	 $R_{load} = 50Ω$; $R_{out} = 50Ω$ or Lo-Z $R_{load} = 1kΩ$
Slewrate	>200V/usec	for all ranges; into Hi-Z
DC-Accuracy DC-Offset DC-Gain	 <0,2% of full scale <0,2% of value	for all ranges; into Hi-Z
Waveform memory	2MB, 1MS	

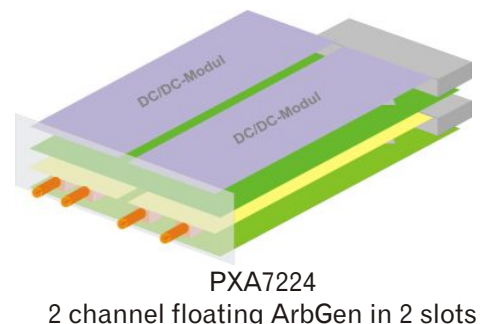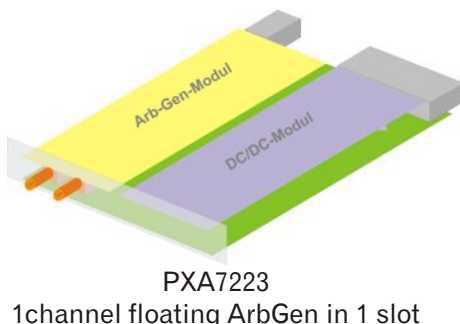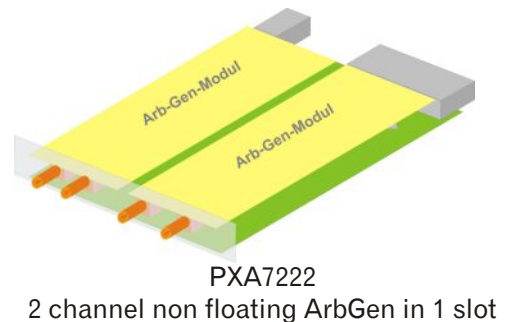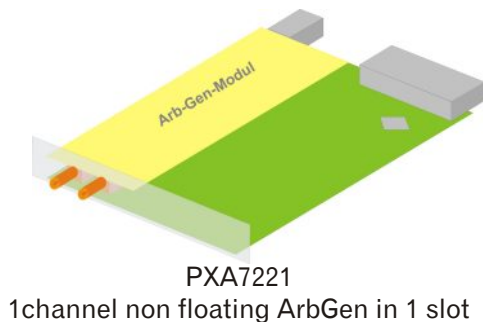| Time Base	Specification	Comment
Accuracy	50ppm, 1ppm with option TCXO	in operating temperature range
Aging per year	5ppm, 1ppm with option TCXO	
Sampling frequency	0,10S/sec ... 100MS/sec.	
Output frequency resolution	100ppm	of programmed value (frequency)

[1] Product specification and description in this document are subject to change without notice!

[2] At 50% amplitude of chosen range

Trigger System	Specification	Comment
Input for each module from		
Internal function module	one function module can trigger the other one via software command	for example trigger on marker-bit
Software		
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 of each func. modules trigger source to the trigger lines of PXI backplane	
System Delay	1 sample clock + 120ns	trigger to waveform output

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

PXI Capabilities	Specification	Comment
PXI 10MHz usage	supported	then time base accuracy depends on PXI rack
PXI TTL/trigger usage	supported	PXI trigger 0...7; input and output
PXI star-trigger usage	supported	input only

PXA7221
1channel non floating ArbGen in 1 slot

PXA7222
2 channel non floating ArbGen in 1 slot

PXA7223
1channel floating ArbGen in 1 slot

PXA7224
2 channel floating ArbGen in 2 slots