Ideal for audio and HiL applications!

16 bit D/A part, up to 500 kS/s

Output voltage range: ±10 V

Up to 8 isolated analog outputs

8 isolated trigger inputs

8 TTL digital I/Os

…with 4 D/A channels

CompactPCI®

PCI EXPRESS® (in preparation)

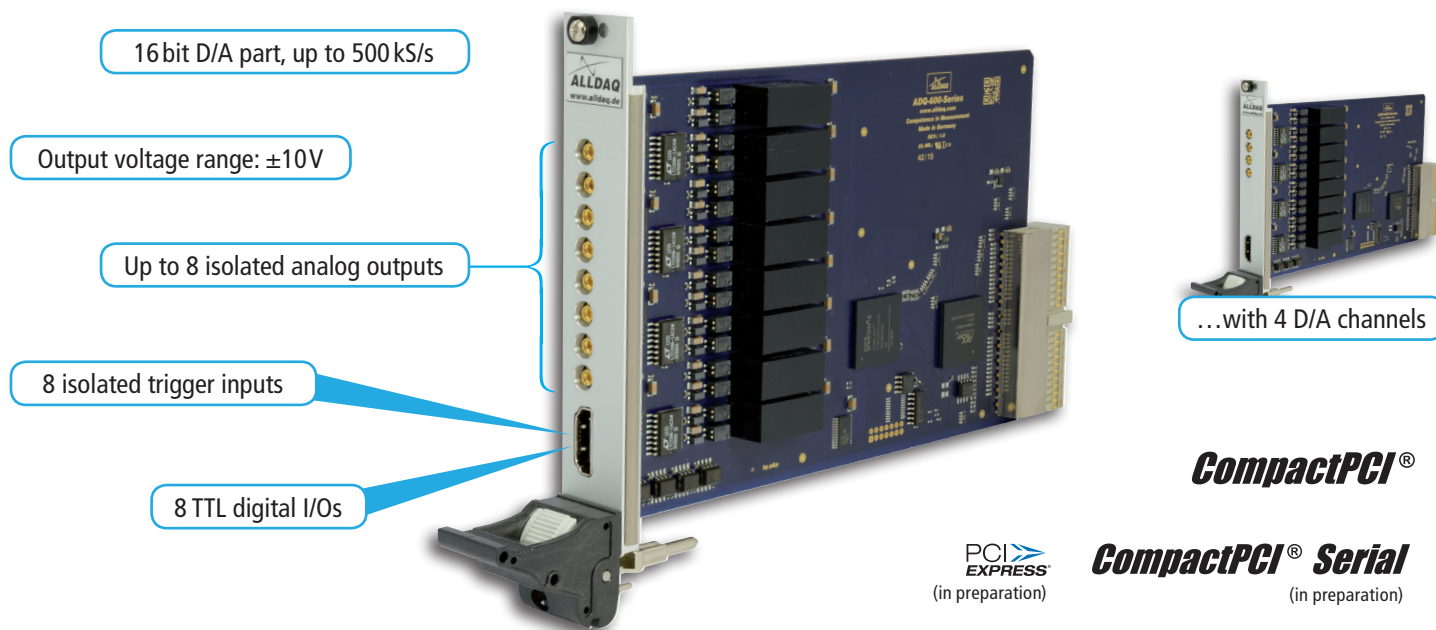*CompactPCI*® *Serial* (in preparation)

ADQ-610 Series

Isolated 8 channel voltage output board, 16 bit D/A conversion up to 500 kS/s, 8 digital I/Os

Ideal as audio signal generator and for Hardware-in-the-Loop (HiL) simulations

The D/A converter boards of the ALLDAQ ADQ-610 series are for high-precise voltage output, e. g. for testing of embedded systems in the context of hardware in the loop (HiL) simulations or for generating audio signals. Models for CompactPCI, CompactPCI Serial (in preparation) and PCI-Express (in preparation) are available.

Depending on the version 4 or 8 analog outputs are assembled, which are electrically isolated up to 700 V_{RMS} between each other and towards PC ground. Each channel is equipped with a 500 kHz 16 bit D/A converter. The output voltage range covers ±10 V and outputs a 0 V level after power-up automatically. By cascading of up to 8 output channels you can precisely output up to 80 V on demand.

All channels can be started independently or synchronously by software or an external trigger signal. The values can be output individually or timer-controlled. Each analog channel has its corresponding external digital trigger input, which is isolated towards PC ground and to the analog channels.
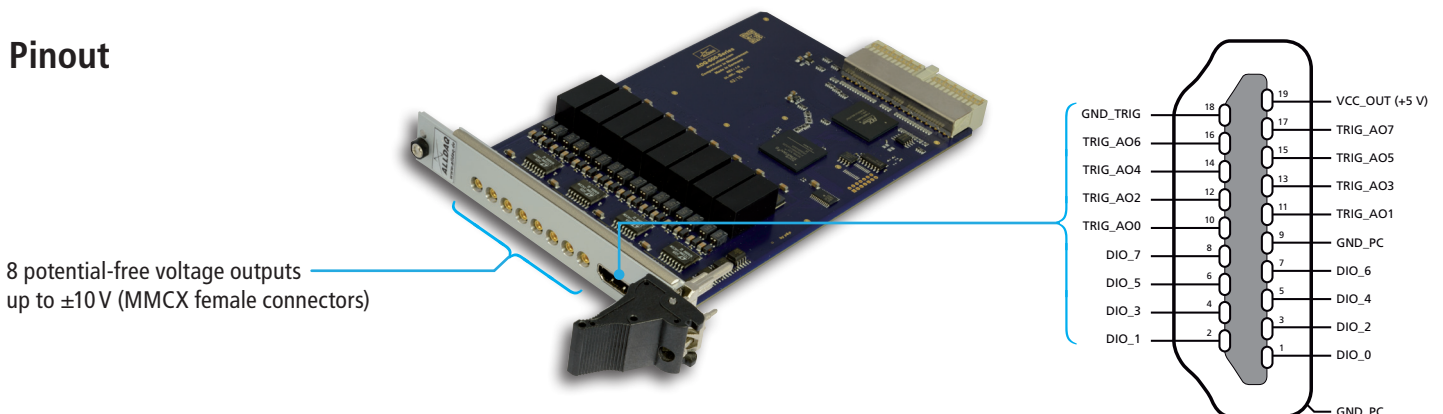
The bi-directional 8 bit digital I/O port and the 8 trigger inputs can be attached by the HDMI connector at the front panel. If the digital port is configured as input the inputs can be monitored on bit-pattern change and can generate an interrupt.

Specifications

Element	Specifications		
PC interface (depending on model)	cPCI versions: 32 bit, 33 MHz CompactPCI Rev. 2.2 cPCIS versions: CompactPCI Serial Rev. 1.0a (in preparation) PCIe versions: PCI-Express x1 Rev. 1.0a (in preparation)		
Analog outputs		**ADQ-614**	**ADQ-618**
	Channels	4 voltage outputs	8 voltage outputs
	Resolution	16 bit	
	Output rate	500 kS/s	
	Total Harmonic Distortion (THD)	at $10V_{pp}$, $f = 100$ kHz (sine): -96 dB	
	Settling time	0.9 µs	
	Output voltage	±10V	
	Output current	±15 mA each output	
	Capacitive load	max. 1 nF	
	Total accuracy	±2 LSB	
	Synchronous output of all channels using separate D/A converters Output rate: up to ~65 s, adjustable in steps of 15.15 ns Start/Stop trigger: software, timer, ext. digital trigger (rising/falling edge) Isolation up to 700 VDC/VA$_{RMS}$ (channel to channel and towards PC ground)		
Trigger inputs for D/A part isolated	8 external trigger inputs via HDMI connector, which can be equally used for starting or stopping the output; trigger clock: corresponds with the max. output rate of the board Input level: U_{IL} at $V_{CC} = 5V$: max. 0.8 V; U_{IH} at $V_{CC} = 5V$: min. 2.2 V Isolation up to 500 VDC (signal to PC ground)		
TTL digital I/Os	One bi-directional 8 bit TTL port via HDMI connector (direction programmable by port) Input level: U_{IL} at $V_{CC} = 5V$: max. 0.8 V; U_{IH} at $V_{CC} = 5V$: min. 2.0V Output level: U_{OL} at 24 mA: max. 0.5V; U_{OH} at -24 mA: min. 2.4 V		
Operating temperature	0..70 °C (reasonable air circulation must be guaranteed)		
Power consumption board	cPCI/PCIe models: +3.3 V: max. 170 mA; +5V: max. 1.3A; +12V: max. 1.5 A		
Dimensions	cPCI models: 3 U high / 4 HP wide; cPCI Serial models: 3 U high / 4 HP wide; PCIe models: 158 mm x 111.15 mm (W x H)		
Connectors	8 MMCX coaxial female connectors for analog outputs HDMI male connector (type HEC) for digital I/Os and trigger inputs		
Certifications	EMC directive 2004/108/EG, emission EN 55022, noise immunity EN 50082-2, RoHS		
Manufacturer warranty	36 months		

* The effective transfer rate depends largely on the performance of your computer, the number of installed boards and the number of channels used.

Pinout

8 potential-free voltage outputs
up to ±10 V (MMCX female connectors)

GND_TRIG	18	19	VCC_OUT (+5 V)
TRIG_AO6	16	17	TRIG_AO7
TRIG_AO4	14	15	TRIG_AO5
TRIG_AO2	12	13	TRIG_AO3
TRIG_AO0	10	11	TRIG_AO1
DIO_7	8	9	GND_PC
DIO_5	6	7	DIO_6
DIO_3	4	5	DIO_4
DIO_1	2	3	DIO_2
		1	DIO_0
			GND_PC

ALLDAQ - Your partner for measurement and automation.

Calibration Certificate

Calibration certificate required?

We collaborate with independent test laboratories accredited by the Deutsche Akkreditierungsstelle GmbH (DAkkS). Contact us!
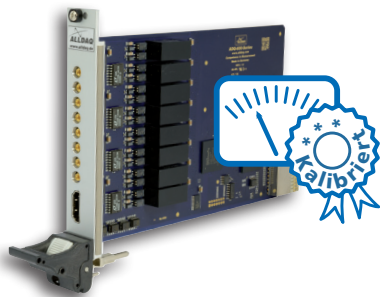
Block Diagram
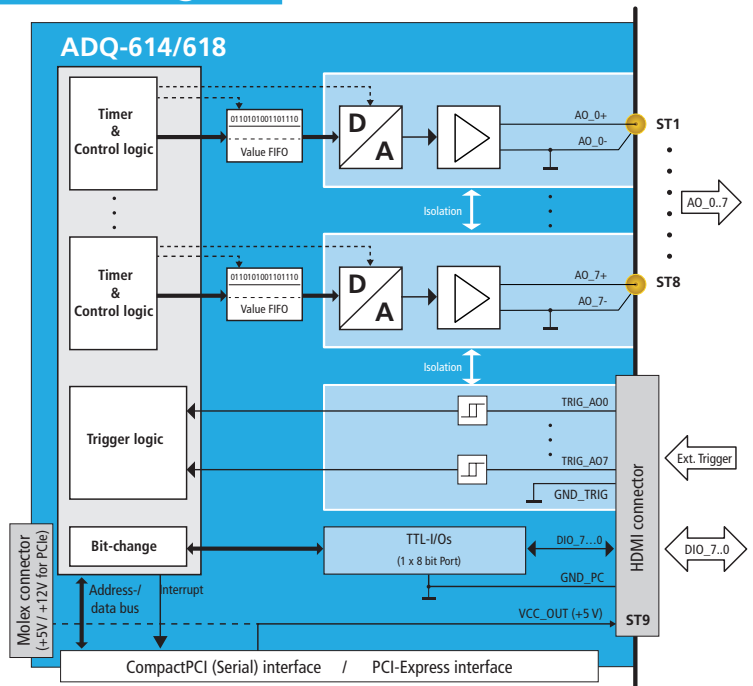
Software Support

- Drivers for Windows 10 / 8.1 / 8 / 7 / Vista SP2 (32 and 64 bit)

- API with a unique programming logic

- Programming support (SDK) with examples for C++, C#, Visual Basic, Delphi/Pascal and Python included

- ALLDAQ Manager - Utility software offers a quick overview of parameters of the ALLDAQ driver system and offers a central access to the SDK, software tools and help files

▸ Do you need further software support - also for third-party manufacturer? Our software specialists like to advice you!

ALLDAQ Manager

- Informations on the installed ALLDAQ hardware in overview

- XML export of the driver configuration for archiving and support

- Tool for interactive illustration of the pin-assignment with the possibility to generate a PDF file

- Tool for user calibration

- Convenient access to the software developer kit (SDK) for high-level language programming with examples and simple test programs as well as to the help files

Remote Access via Ethernet NEW!

The newest extension of the ADQ driver system enables the easy access to your ALLDAQ hardware via the local network (LAN). The programming is done as usual by the standard-API functions.

Coming soon!

192.168.1.1

Remote PC (measuring system)   Host PC
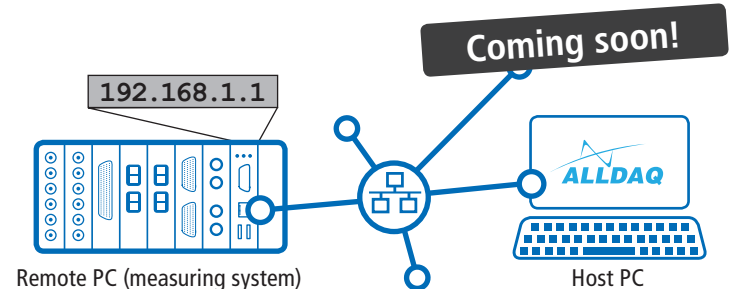
LabVIEW™ VIs

For LabVIEW™ users we provide a library with virtual instruments (VIs) for easy access to your ALLDAQ hardware.

MATLAB® Support

An adapted MATLAB® interface for the ALLDAQ hardware with examples and a help file is included with the ALLDAQ SDK.

Complete Solutions

Everything from one source.

Complete systems for measurement and control in a compact desktop housing or for mounting in a 19" rack. Alternatively with a bus extension or with an independent slot CPU.

TOP!

Bundle Offerings
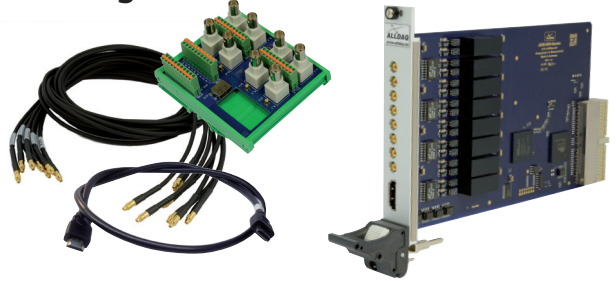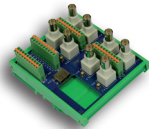
Contact us for our attractive bundle offerings!

Figure:
ADQ-618-cPCI including special terminal block, 8 connection cables from MMCX male connector to MMCX male connector (1 m) and a HDMI cable (1 m).

Ordering Info

CompactPCI board of the ADQ-610 series

Special terminal block for ADQ-610 series (ADQ-TB-COAX-HDMI-HUT)

8 coaxial cables from MMCX male connector to MMCX male connector or BNC male connector, length: 1 m

HDMI cable to connect the digital-I/Os and trigger signals with the terminal block (ADQ-HDMI-MM-1m)

Documentation and driver software are provided by download under: www.alldaq.com/downloads.

Name	Art. No.	Description
ADQ-614-cPCI	127288	CompactPCI analog output board with 4 potential-free voltage outputs, range: ±10 V, 16 bit DAC up to 500 kS/s, ext. trigger, 8 digital-I/Os
ADQ-618-cPCI	127289	CompactPCI analog output board with 8 potential-free voltage outputs, range: ±10 V, 16 bit DAC up to 500 kS/s, ext. trigger, 8 digital-I/Os
Bundle Offerings		
ADQ-618-cPCI Bundle	128687	ADQ-618-cPCI Bundle, including: ADQ-618-cPCI D/A board (127289), special terminal block (127389), 8 x coaxial cable from MMCX male connector to MMCX male connector (1 m) (122585) and HDMI cable (all lines 1:1 fed through), black, shielded, gold-plated contacts (1 m) (127015)
Suitable accessory		
ADQ-TB-COAX-HDMI-HUT	127389	Special terminal block for ADQ-250 series and ADQ-610 series, analog inputs can be either connected via 8 BNC female connectors or Phoenix type clamps, digital I/Os, trigger inputs and auxiliary power via 10-pin Phoenix type clamps
ADQ-CR-MMCXM-MMCXM-8x-1m	122585	8 x Coaxial cable from MMCX male connector to MMCX male connector (1 m)
ADQ-CR-MMCXM-BNCM-8x-1m	122586	8 x Coaxial cable from MMCX male connector to BNC male connector (1 m)
ADQ-HDMI-MM-1m	127015	HDMI cable (all lines 1:1 fed through), black, shielded, gold-plated contacts (1 m)

Do you need an individual offer? Contact our sales team under: +49 (0)89-894 222 474 or per email: sales@alldaq.com.

alldaq.com