

# Analog I/O

Intelligent E series

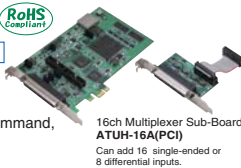
## PCI Express

37-pin D-SUB Analog Input 16ch Analog Output 1ch Digital I/O 4/4 Counter 1ch E series High Precision High Speed Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### 11MS/s 16-bit Multi-function Analog I/O AIO-161601UE3-PE **NEW**

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function



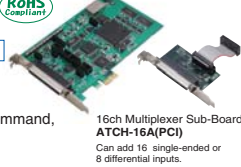
## PCI Express

37-pin D-SUB Analog Input 16ch Analog Output 1ch Digital I/O 4/4 Counter 1ch E series High Precision High Speed Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### 100kS/s 16-bit Multi-function Analog I/O AIO-161601E3-PE **NEW**

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function



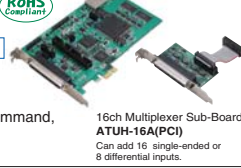
## PCI Express

37-pin D-SUB Analog Input 16ch Analog Output 1ch Digital I/O 4/4 Counter 1ch E series High Precision High Speed Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### 1MS/s 12-bit Multi-function Analog I/O AIO-121601UE3-PE **NEW**

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function



## PCI Express

37-pin D-SUB Analog Input 16ch Analog Output 1ch Digital I/O 4/4 Counter 1ch E series High Precision High Speed Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### 100kS/s 12-bit Multi-function Analog I/O AIO-121601E3-PE **NEW**

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function



Model	AIO-161601UE3-PE	AIO-161601E3-PE	AIO-121601UE3-PE	AIO-121601E3-PE
Input channels	16 single-ended, 8 differential (Supports up to 32 single-ended, 16 differential input with channel multiplexer sub board)			
Output channels	1ch			
Resolution	16bit		12bit	
Range	Bipolar: ±10V, ±5V; Unipolar: 0→+10V, 0→+5V (jumper selectable)	Bipolar: ±10V, ±5V, ±2.5V; Unipolar: 0→+10V, 0→+5V, 0→+2.5V, 0→+1.25V (jumper or software selectable)	Bipolar: ±10V, ±5V; Unipolar: 0→+10V, 0→+5V, 0→+2.5V, 0→+1.25V (jumper or software selectable)	Bipolar: ±10V, ±5V, ±2.5V, ±1.25V; Unipolar: 0→+10V, 0→+5V, 0→+2.5V, 0→+1.25V (jumper or software selectable)
Analog Input	Gain: - Conversion Speed: 1µsec/ch (Max.) Conversion Accuracy: ±5LSB *3	Gain: - Conversion Speed: 10µsec/ch (Max.) Conversion Accuracy: ±5LSB *3	Gain: - Conversion Speed: 1µsec/ch (Max.) Conversion Accuracy: ±3LSB	Gain: - Conversion Speed: 10µsec/ch (Max.) Conversion Accuracy: ±2LSB (at ±10V, ±5V, 0→+10V, 0→+5V Input), ±4LSB (at ±2.5V, ±1.25V, 0→+2.5V, 0→+1.25V input)
Analog Output	Impedance: 1MΩ or more Range: Bipolar: ±10V; Unipolar: 0→+10V (jumper selectable) Rating: ±5mA	Impedance: 1MΩ or more Range: Bipolar: ±10V; Unipolar: 0→+10V (jumper selectable) Rating: ±5mA	Impedance: 1MΩ or more Range: Bipolar: ±10V, ±5V; Unipolar: 0→+10V (jumper selectable) Rating: ±5mA	Impedance: 1MΩ or more Range: Bipolar: ±10V, ±5V; Unipolar: 0→+10V (jumper selectable) Rating: ±5mA
Digital I/O	Input: 4 Non-isolated TTL-level input (positive logic) Output: 4 Non-isolated TTL-level output (positive logic)			
Counter	Channels: 1ch Counting: 32-bit Up count Max. count: 32-bit (binary data)			
Interrupts	1 level			
I/O Address	Occupies 32 ports			
Power Consumption (Max.) *4	+3.3V/2000mA	+3.3V/1500mA	+3.3V/1200mA	+3.3V/1500mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)x110.18(H)			
Connector	37-pin female D-type Screw Lock #4-40UNC, DCLC-J37SAF-20L9E [JAE] or equivalent 16-pin Pin Header connector, PS-16SEN-D4P1-1C [JAE] or equivalent			
Options	Software: ACX-PAC(W32) Accessories: DTP-3A*5, DTP-4A*5, ATP-16E*5, ATBA-16E*5, FTP-15*5, EPD-37A*5*7, EPD-37*5, ATSS-16A*5*8, ATII-8A*5, ATCH-16A(PCI)*5, ATUH-16A(PCI)*5, DICT-37*5, DICT-37F*5 Cables/Connectors: PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCC16PS-1.5/3, PCD8PS-1.5/3, PCA15P*5, PCB15P*5*10, DTE1, DTE2, CNS-D37M			

\*1: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur.  
\*2: When using a signal source with a high-speed built-in operational amplifier.  
\*3: An error of about 0.02% of the maximum range value may occur when ±5V bipolar or 0→+5V unipolar input was selected.  
\*4: The power consumption of the board will exceed if an external device requires supplying of +5VDC from the CN1 or CN2 connectors.  
\*5: Requires optional cable PCB37P\*5. (0.5m is recommended). \*6: Requires optional cables DT-E3 and PCB15P  
\*7: The screw-up terminal block is used, whose screw does not falling off. \*8: External power supply is required.  
\*9: Requires optional cables DT/E2  
\*10: PCB15P is a cable for FTP-15 terminal panel.  
\*11: Only for AIO-161601E3-PE, AIO-121601E3-PE  
\*12: Only for AIO-161601UE3-PE, AIO-121601UE3-PE.

Attention: Because the user application cannot access I/O directly, please use the included driver library or the optional support software.  
As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

# Analog I/O

Low-cost Multi-function L series

## PCI Express

50-pin Mini-Ribbon Analog Input 8ch Analog Output 2ch Digital I/O 4/4 Counter 1ch L series High Precision Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### Bus Isolated 16-bit Multi-function Analog I/O AIO-160802LI-PE **NEW**

- Isolation between PC signal and external analog / digital signals
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Can set the output voltage to 0V at power-on forcibly
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board ADA16-8/2(LPCI)L



## PCI Express

50-pin Mini-Ribbon Analog Input 16ch Analog Output - Digital I/O 4/4 Counter 1ch L series High Precision Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### Bus Isolated 16-bit Analog Input AI-1616LI-PE **NEW**

- Isolation between PC signal and external analog / digital signals
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board ADI16-16(LPCI)L



## PCI Express

Low Profile 68-pin 0.8mm Pitch Analog Input 64ch Analog Output - Digital I/O 4/4 Counter 1ch L series High Precision Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

### Multi-channel 16-bit Analog Input AI-1664LA-LPE **NEW**

- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board AD16-64(LPCI)LA
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)



Model	AIO-160802LI-PE	AI-1616LI-PE	AI-1664LA-LPE
Channels	8 single-ended	16 single-ended	64 single-ended, 32 differential
Range	Bipolar: ±10V		
Impedance	1MΩ or more		
Resolution	16bit		
Conversion Speed	10µsec/ch (Max.)		
Conversion Accuracy**	±16LSB		±5LSB
Buffer Memory	1K word		
Analog Output	Channels: 2ch Range: Bipolar: ±10V Impedance: 1Ω or less Resolution: 16bit Conversion Speed: 10µsec (Max.) Conversion Accuracy: ±5LSB Buffer Memory: 1K word		
Digital I/O	Input: 4 Non-isolated TTL-level input (positive logic) Output: 4 Non-isolated TTL-level output (positive logic)		
Counter	Channels: 1ch Counting: 32-bit Up count Max. count: 32-bit (binary data)		
Interrupts	1 level		
I/O Address	Occupies 64 ports		
Power Consumption (Max.)	3.3VDC 820mA	3.3VDC 580mA	3.3VDC 620mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)x110.18(H)		PCI Express Base Specification Rev. 1.0a x1 / 121.68(L)x67.50(H)
Connector	10250-52A2JL [3M] or equivalent		HDBA-E88W1LFD1-SL [HONDA] or equivalent
Options	Software: ACX-PAC(W32) Accessories: EPD-50A*3*8, ATBA-8L*3*4*5*6, ATBA-16L*3*4*5, ATP-8L*3*7, DICT-50S*3, DICT-50F*3 Cables/Connectors: GPCB50PS [PCB50PS]-0.5P/1.5P, PCA50PS-0.5P/1.5P		DTP-64(PC)*11, EPD-68*8*10*11, EPD-96A*9*11, EPD-96*9*11, ATP-32*9*11, ATP-8*9*11*12, GPCAB68PS [PCAB68PS]-0.5P/1.5P, PCB68PS-0.5P/1.5P, ADC-68M/96F

\*1: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur.  
\*2: When using a signal source with a high-speed built-in operational amplifier  
\*3: Requires optional cable PCB50PS-0.5P or PCB50PS-1.5P.  
\*4: Only for AIO-160802LI-PE, AI-1616LI-PE.  
\*5: Optional AC adapter "PCA200-20" is required.  
\*6: Maximum of 8 analog input channels are available for AI-1616LI-PE.  
\*7: Maximum of 8 analog input channels and 2 analog output channels available.  
\*8: The screw-up terminal block is used, whose screw does not falling off.  
\*9: Requires optional cable ADC-68M/96F.  
\*10: Requires optional cable PCB68PS-0.5P or PCB68PS-1.5P.  
\*11: When using both CN1 and CN2 connectors simultaneously, 2 cables and 2 accessory panels are required.  
\*12: It can be used among CNA channel 0-7 or CNB channel 32-39.

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