

AD-PROCYON

Real-time simulator AD5445/46/47 Series

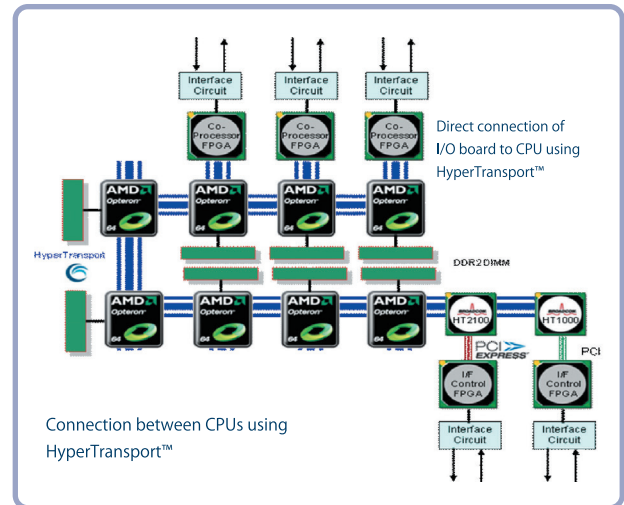
Real-time simulator (DSP system) capable of parallel processing with multi-core processors



Features of the AD5445/46/47 Series

The AD5445/46/47 Series are real-time simulators (DSP systems) capable of parallel processing with multi-core processors

- **Supports up to 32 cores**
With a capacity for up to 32 cores in local hosts, an optimal system can be provided in line with model size and control cycle, starting with the low end dual core model (AD5447B Series).
- **Supports 6U CompactPCI™ standard, PCI Express™ and HyperTransport™**
The 6U CompactPCI™ is the standard for this series. The I/O bus supports PCI Express™ and HyperTransport™.
- **Ultralow latency systems**
The AD-PROCYON™ is equipped with a high performance “Opteron™” CPU board for AMD-made servers, allowing expansions and add-ons to the CPU board with HyperTransport™. In addition, Intel Xeon and Intel Core I7 CPU Interface with the I/O board is possible via HyperTransport™, ensuring ultra-low latency.
- **Extremely versatile I/O board**
The expandability and flexibility of the system makes it easier to upgrade the I/O board.



Chassis Options



AD5445-L
AD5446-L
AD5447-L



AD5445-M



AD5446-M
AD5447-M



AD5447-S

Chassis Specifications

Performance	Slot Configuration	AD5447-S	AD5445-M/46-M/47-M	AD5445-L/46-L/47-L
		System Slot (Right End)	System Slots (AD5445-M: Left end / AD5446-M/47-M: Right end)	System Slot (Right End)
	Power Input	Peripheral slot x 4	Peripheral slot x 8	Peripheral slot x 19
		AC90 to 240V	AC90 to 264V	AC90 to 264V
		Input frequency range: 47Hz to 63Hz	Input frequency range: 47Hz to 63Hz	Input frequency range: 47Hz to 63Hz
		Current consumption: Max 2.9A (AC100V), 1.5A (AC200V)	Current consumption: AD5445-M: Max 15A (AC100V), 7A (AC200V) AD5446-M/47-M: Max 11.5A (AC100V), 5.8A (AC200V)	Current consumption: Max 15A (AC100V), 7A (AC200V)
	Slot I/F	ADPCX x 4 (32bits/33MHz: Slot2-5)	ADPCX x 8 (64bits/33MHz: Slot3-9, 64bits/66MHz: Slot2)	ADPCX x 19 (64bits/33MHz: Slot3-20, 64bits/66MHz: Slot2)
		ADPCle x 4 (2.5Gbps: Slot 2-5)	ADPCle x 7 (2.5Gbps) Except Slot2 (Only AD5446-M)	ADPCle x 7 (2.5Gbps) Except Slot2 (Only AD5446-L)
			AD5445-M: CompactHTX x 7 (Max 16Gbps) Set to 3.2 Gbps by hardware organization AD5446-M: CompactHTX x 2 (3.2 Gbps: 8bit / 400MHz)	CompactHTX x 2 (3.2 Gbps: 8bit / 400MHz) (Only AD5446-L) CompactHTX x 7 (Max 16Gbps) (Only AD5446-L) Set to 3.2 Gbps by hardware organization
	Crystal Oscillators on backplane chassis	OSC #1: 50MHz OSC #2: 10.24 MHz		OSC #1: 50MHz OSC #2: 10.24 MHz
	Chassis Cooling	DC FAN 120mm x 38mm (x1), 92mm x 25mm (x1)	AD5445-M: DC FAN 172mm x 51mm AD5446-M/47-M: DC Fan 120mm x 38mm (x1), 60mm x 25mm (x2)	DC FAN 120mm x 38mm (x3)
General Specifications	Chassis Size	132.48 (W) x 340 (H) x 315.5(D) mm	213.48 (W) x 425.5 (H) x 380(D) mm	441 (W) x 398.4 (H) x 405(D) mm
	Weight	About 5kg	About 12.5kg	About 20kg
	Operating Environment	Temperature range: 0 to 40°C	Temperature range: 0 to 40°C	Temperature range: 0 to 40°C
		Humidity range: 5 to 90%RH or less (non-condensing)	Humidity range: 5 to 90%RH or less (non-condensing)	Humidity range: 5 to 90%RH or less (non-condensing)
		Altitude: less than or equal to 2000m	Altitude: less than or equal to 2000m	Altitude: less than or equal to 2000m
		Degree of contamination: 2	Degree of contamination: 2	Degree of contamination: 2
		Overvoltage category II Indoor use	Overvoltage category II Indoor use	Overvoltage category II Indoor use
	Storage Environment	Temperature range: -20 to 70°C	Temperature range: -20 to 70°C	Temperature range: -20 to 70°C
	Accessories	Power cable, grounding adapter, Installation CD	Power cable, grounding adapter, Installation CD	Power cable, grounding adapter, Installation CD

Processor Options

Platform	SBC	Unit	Maximum core number	Enclosure CPU communication		I/O bus			Principal use			
				PCI Express Gen3	HyperTransport	HyperTransport	PCI Express	CompactPCI	control cycle			
AD7005	NEW AD7005 Xeon E3-1275v3 3.5GHz 4Core	AD5445-L	Up to 8	—	—	—	Up to 3	Up to 19	General purpose measurement controller Small scale HILS 20kHz			
		AD5446-L						Up to 8				
		AD5445-M						Up to 8				
		AD5446-M					—	Up to 19				
		AD5447-L						Up to 8				
		AD5447-M						Up to 4				
		AD5447-S						Up to 4				
AD7003	AD7003-83VS Opteron 2.8GHz 4Core	AD5445-L	Up to 16	—	○	Up to 3	Up to 3	Up to 19	Large scale system level HILS 100kHz			
		AD5445-M	Up to 32					Up to 8				
	AD7003-83QS Opteron 2.4GHz 4Core	AD5445-L	Up to 4					Up to 2		Up to 19		
		AD5445-M								Up to 8		
	AD7003-13QS Opteron 2.4GHz 4Core	AD5446-L				—	—	Up to 19				
		AD5446-M						Up to 8				
		AD5447-L	Up to 19									
	AD7004	NEW AD7004C Core i7 2.53GHz 2Core	AD5446-L			Up to 2	—	—	—	Up to 3	Up to 19	General purpose measurement controller Small scale HILS 20kHz
			AD5446-M								Up to 8	
AD5447-L			—	Up to 19								
AD5447-M				Up to 8								
AD5447-S			Up to 4	Up to 4								
AD7004A Core i7 2.53GHz 2Core		AD5447-L	—	Up to 19								
		AD5447-M	—	Up to 8								
		AD5447-S	Up to 4	Up to 4								

I/O Board List

Part #	Description
AD5440-01	Procyon A/D Board 32ch, 16bit, 100 KHz, max 8 boards per chassis
AD5440-02	Procyon D/A Board 32ch, 16bit, 80 KHz, max 8 boards per chassis
AD5440-03	Procyon Digital I/O Board 64ch, 5 KHz, max 4 boards per chassis
AD5440-06	Procyon Multi I/O Board 12ch AI 16bit, 12ch AO 16bit, 16ch DI, 16ch DO, max 8 boards per channels
AD5440-10A	Procyon SYNC Board 2ch Input (Sync IN A / Sync IN B), 8ch Output (out1 to out8) max 1 board per chassis
AD5440-13A	Pulse /Encoder Board 16ch PWM Input, 16ch PWM Output, 9ch Encoder Input (3 phases , 3 axis), 8ch Pulse Output (2 phases, 4 axis) max 4 boards per chassis
AD5440-17	Procyon Automotive Network Board, 4ch Serial, 4ch CAN, 4ch LIN, 1ch K-Line max 4 boards per chassis
AD5440-20	High speed AD input (250kHz) Board 16ch, 16bit max 16 boards per chassis
AD5440-30	RAM Monitor LVDS1, LVDS2 (Low Voltage Differential Signal) max 2 boards per chassis
AD5440-32	Remotely controls the signal conditioner and relay control in the AD7912 unit, relay control in the AD7912-90 load unit, max 1 board per chassis
AD5440-33	Engine HILS Board 16ch, 12bit with PCI Express, max 4 boards per chassis
AD5440-34	CAN FD Board 2ch (max 4ch), max 2 boards per chassis
AD5440-76	Sine Wave Output Board 8ch, 12bit (Sine Wave, Rectangle Wave, Pulse Modulation Wave, DC Level Output Function), max 1 board per chassis
AD5440-77	SENTout Board (SENT Sensor Simulation) 8ch, max 2 boards per chassis, CMOS Output (5V), max 2 boards per chassis
AD5440-78	Pattern I/O Board 8ch Pattern Data Output, 8ch Pulse Capture Input, max 2 boards per chassis
SST-PB3-PCU	Extended PCI bus unit if necessary
AD7003-01-83QS	External CPU 4 core 2.4 Ghz
AD7003-02-83VS	External CPU 4 core 2.8Ghz

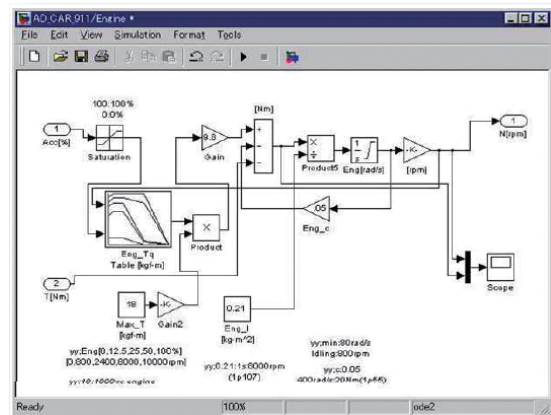
Software

▼Products	▼ Contents
Standard	
AD-XPRTS for AD5445/46/47	Development environment for model creation
VirtualDSPConsole	Creating a GUI
IOConfigurator	Configuration of I/O
MoniBus	Monitoring of CAN data
Extra	
AD-XPRTS LocalStorePack	Output of model data to file
AD-XPRTS TCP/IPBlockset	TCP/IP communication
ASAMBlocksetXCPonCAN	XCP communication on CAN bus
ASAMPack	Support for ASAP1, ASAP2 and ASAP3
CANPack	Extension of functions of CAN communication (Corresponding to CANdb)
HilsOutPatternTool	Pattern creation tool for AD5440 - 33 Engine HILS board
UDPPack	UDP communication
VirtualAnalysisPack	Calculation by using 2D data area
VirtualDSPStudio	Management of projects, I/O and monitoring
VirtualDSPTesting	Automatic test environment
PatternToolPack	SENTout S - Function blocks for AD5440 - 78 board
EtherCAT Blockset	EtherCAT Communication

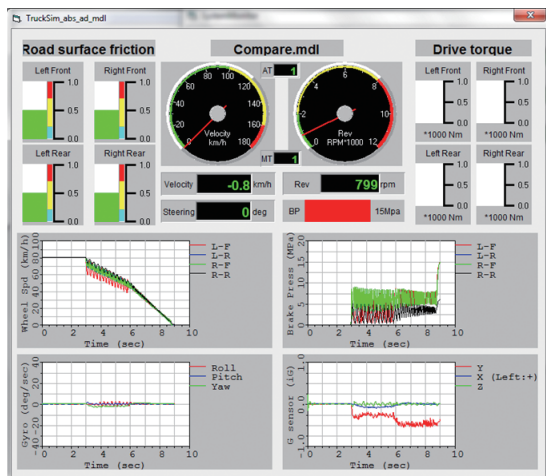
Model-Based Design

The AD-PROCYON measurement/control/simulation system provides model-based design capabilities in a user-friendly environment using MATLAB, Simulink, and Stateflow. By building models in block diagram format and using automatic code generation, the development time and cost are significantly reduced.

In the Simulink Library Browser, the AD-PROCYON System Blockset is offered to users in S-Function format in addition to the other AD-PROCYON system functions and various I/O functions. By combining these with the logic developed in MATLAB and Simulink, modeling and control functions can be easily designed.



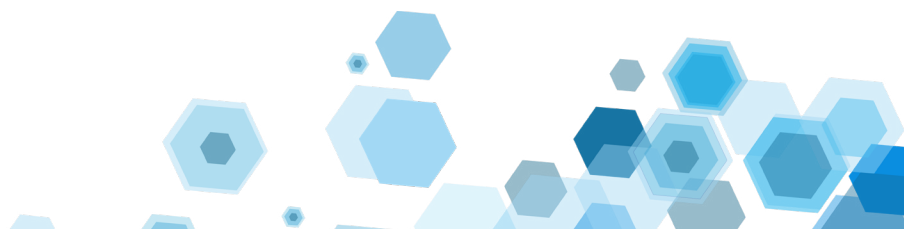
GUI Development Tools



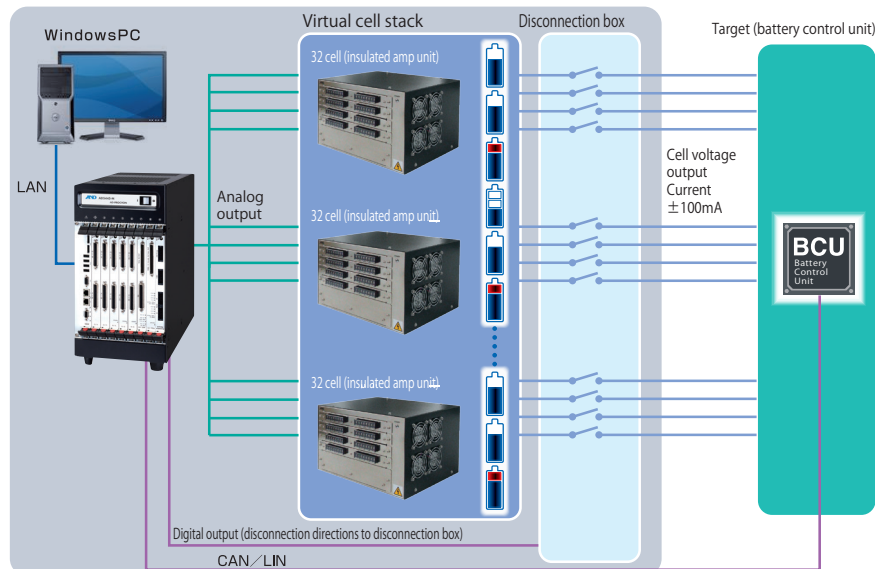
By combining models developed in MATLAB, Simulink and Stateflow with the GUIs developed using VirtualDSPConsole, it is possible to easily develop applications for measurement and control. All that is needed for GUI development is to drag and drop the control components into the panels and associate them with signals and parameters. A wide range of setting options are available, such as setting commands to button controls, graph display of signals, and increasing a parameter value by predetermined step, etc. These provide a flexible, easy-to-use GUI development tool.

Supported Third-Party Products

Engine/Vehicle Simulation	Component Simulation	Vehicle Body Simulation
 GT  GT-SUITE / GT-POWER Car design on a computer, allowing evaluation of factors such as consumption, noise under random driving conditions, as well as cooling systems, etc.	 AMESim AMESim is software for mechatronic design, analysis and simulation at the component level	 carSIM CARSim is next generation vehicle movement simulation software which allows users to analyze and evaluate vehicle dynamic behavior in a variety of driving and environmental conditions
 enDYNA enDYNA is a virtual engine model supporting both online and real-time simulation	 veDYNA veDYNA is a software tool for vehicle behavior simulation considering the motion characteristics of steering, suspension, tires, drive train, etc.	



Battery HILS configuration example

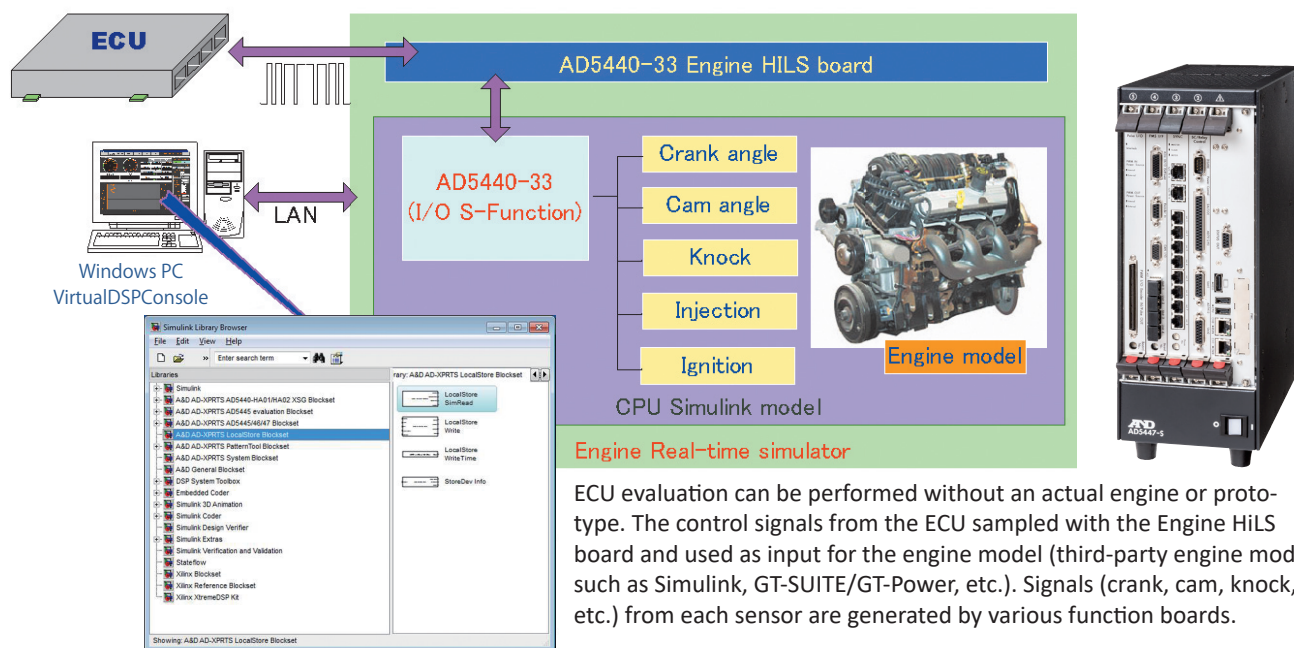


Configuration example for HILS simulating the battery pack of an electric car

- BCU development and logic verification without actual battery
- Each cell voltage can be controlled independently
- Model-based development environment from MATLAB/Simulink

Application	Unit	Hardware configuration examples	
Battery HILS	AD5446-M	AD7004A AD5440-02	AD5440-03 AD5440-17

Engine HILS configuration example

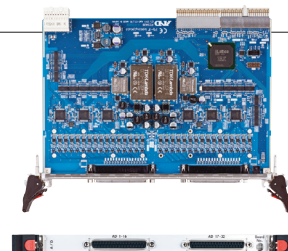


Application	Unit	Hardware configuration examples		
Engine HILS	AD5447-S	AD7004C AD5440-06	AD5440-13 AD5440-17	AD5440-33

I/O Boards

AD5440-01 Analog Input Board

Number of channels	Single ended 32 channels
A/D resolution	16bit
Input range	$\pm 10V$
Sampling rate	Synchronized with model cycle or MAX100kHz (FIFO function installed) Simultaneous sampling on all channels

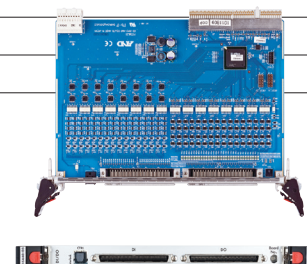


AD5440-02 Analog Output Board

Number of channels	Single ended 32 channels
D/A resolution	16bit
Output range	$\pm 10V$
Sampling rate	Simultaneous sampling on all channels
Other	Interlock function

AD5440-03 Digital Input/Output Board

Input unit	
Input format	Photocoupler input (accepts current sink output)
Number of channels	64ch (1 common earth for a 16 channel unit)
Behavior input power-supply voltage level	DC+5V to +36V
Minimum response time	200 μ sec
Output unit	
Output format	Open collector output (current sink type)
Number of channels	64ch (1 common earth for a 16 channel unit)
Output level	DC+6V to +36V
Minimum response time	200 μ sec



AD5440-06

Multi-Function Board

Common

Sampling rate	Synchronized to model cycle
	Simultaneous sampling on all channels
Other	Interlock function

A/D

Number of channels	Single ended 12 channels
A/D resolution	16bit
Input range	$\pm 10V$, $\pm 5V$, $\pm 1V$ Set every 6 channels with S-Function software
Input impedance	$1\text{ M}\Omega \pm 5\%$ or less

D/A

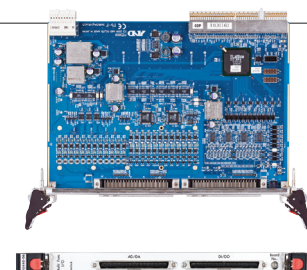
Number of channels	Single ended 12 channels
D/A resolution	16bit
Output range	$\pm 10V$, $\pm 2V$ Set every channel with S-Function software
Output impedance	$1.5\Omega \pm 5\%$ or less

DI

Input format	Logic judgment by hysteresis comparator of the partial pressure value of the input signal
	Switching function between pull up/pull down ($100\text{k}\Omega$)
	Set every 8 channels with S-Function software
Number of channels	16ch (1 common ground)
Behavior input power-supply voltage level	DC+5V to +36V
Minimum response time	$10\mu\text{sec}$ (when 5V input)
Input resistance	$70\text{k}\Omega$ (combined resistance value of pull up/pull down resistance and partial pressure resistance)

DO

Output format	Insulated type push-pull format output (compatible with both source and sink)
Number of channels	16ch (1 common ground)
Output level	DC+6V to +36V
Maximum rating for output current	50mA/Ch
Output settings	Sink/Source/High impedance/Push-pull
	Set every channel with S-Function software
Minimum response time	$20\mu\text{sec}$ (when no load)



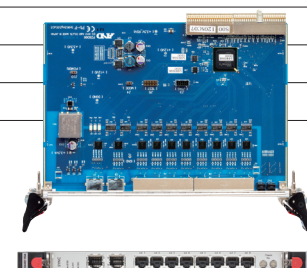
AD5440-10A

Simultaneous board between units

Synchronization of model execution start and model step (sampling) possible

A maximum of 8 units can be synchronized

Synchronization with AD5435/AD5436 (AD5430-21) possible



PWMIn

Input format	Insulated type input (compatible with both pull up and pull down) Magnetic isolator, insulation by photocoupler
Number of channels	16ch (1 common earth for an 8 channel unit)
Source power supply	Switching between external, internal (every common earth)
Behavior input power-supply voltage level	DC+5V to +36V
Response speed	334 μ s or less (Thigh, Tlow)
Input frequency range	0.1Hz to 3kHz
Minimum measurement pulse width	167 (μ s)

PWMOut

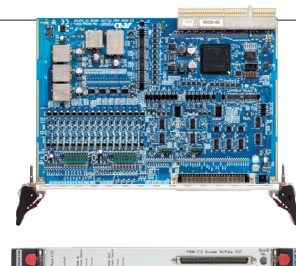
Output format	Push-pull format output (compatible with both source and sink) Magnetic isolator, insulation by photocoupler
Number of channels	16ch (1 common earth for an 8 channel unit)
Output level	DC+5V(TTL) or DC+6V--+36V (external voltage)
Maximum rating of output current	100 mA/ch (5 mA/ch at time of TTL)
Output settings	Sink/Source/High impedance
Output carrier frequency range	Apporox. 0.012 (1/85) Hz to 100kHz
Minimum Duty settings	0.1%@300Hz (when external power supply), 0.1%@5kHz (if DC+5V)
H Bridge function (when using external power supply)	2 pairs (1,2ch pair, 9,10ch pair) No drive circuit. Dead band time: 1 μ s or higher

Encoder input

Input format	Differential line receiver
Number of channels	9ch (3 phase $\times$ 3 axes)
Maximum number of counts	- 2,147,483,648 to 2,147,483,647
Measurement frequency range	0.1Hz to 1.25MHz (MAX) Frequency for 1 multiplication (5Mz when 4 multiplications)
Measurement time resolution	20nsec
Pulse detection	Possible to choose from 1 multiplication / 2 multiplications / 4 multiplications

Pulse train output

Output format	Output format Differential line driver
Number of channels	8ch (2 phase $\times$ 4 axes)
Output level	Difference 2V or higher
Output pulse mode	A: pulse/CW output/A phase B: Concurrence/CCW output/B phase
Time resolution	20nsec
Speed range	0 to 2MHz
Normal/reverse rotation switch time	1 to 20971.5 μ sec (resolution: 0.02)
Pattern output function	Data length: Max 4kbit/ch Pattern data is csv text format



AD5440-17

Automotive Network Board

Common

Socket	Made by WeidMuller B2L 3.5/14F, B2L 3.5/16F(sold separately)
--------	--

COM

Number of channels	4ch
Transmission system	Asynchronous format
Transceiver	LTC1387
	RS-232C, RS-422, RS-485, TTL Software (S-Function) set at each channel
Two-way communication	Two-way communication Full duplex, half duplex
	For RS422 or RS485, software (S-Function) is set at each channel
Controller	ST16C654 equivalent
Baud rate	5Baud to 1Mbaud
	Software (S-Function) set at each channel Range varies depending on transceiver

CAN

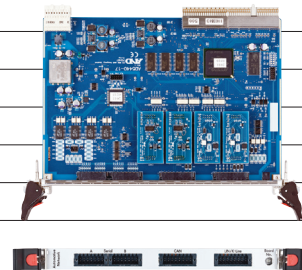
Number of channels	Maximum 4ch (standard 2)
Number of messages	Sending 128 + receipt 128 (transmission for each 1ch)
Transceiver	TJA1041 (CAN2.0B)
Time stamp resolution	10 μ sec or below
Controller	Philips SJA1000
Baud rate	1M/500k/250k/125k/100k/66.67k/50k/33.33k/20k/10k baud

LIN

Number of channels	Maximum 4ch (standard 2)
Transceiver	MCZ33661 or equivalent product
Master/Slave	Supports both master/slave
Baud rate	2400baud, 9600baud, 19,200baud

K-Line

Number of channels	1ch
Transceiver	E-L9637
VB input voltage range	+6 to +36V
Controller	UART (compatible with 16550)
Baud rate	5Baud to 10.4kbaud
Protocol	Protocol such as KWP2000 is installed in the model



AD5440-17-01/-02/-03/-11

Automotive Network Board Transceiver Options

CAN

AD5440-17-01 High Speed CAN , AD5440-17-02 Low Speed CAN

Number of optional modules	Maximum 2
Transceiver	TJA1054
Baud rate	Maximum 125kbaud
Terminating resistance	510 Ω installed

Single Wire

AD5440-17-03

Transceiver	AU5790
Baud rate	33.33 kbaud
Load resistance	9.1k Ω installed

LIN

AD5440-17-11

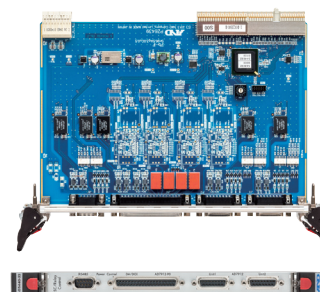
Number of optional modules	Maximum 2
----------------------------	-----------

AD5440-32

Signal conditioner relay control board

RS485 acts as a remote control board for the signal conditioner or relay control in the AD7912 (signal conditioner relay control unit), relay control in the AD7912-90 (ground fault/short circuit release relay control unit) and the GENESYS CVCC programmable power supply unit from TDK Lambda. It comes with DI for checking the status of the AD7912-90 and DO for control of the DC external power supply relay.

▼Target devices	▼Support number
AD7912	Maximum 2
AD7912-90	Maximum 8
GENESYS	Maximum 4



AD5440-33

Engine HILS Board

- Sensor simulation, such as pick up coils, is possible (analog signal output)
- Simulation of ignition confirmation signal output from engine is possible (digital signal output)
- Configuration of the phase is possible in relation to the output pattern (variable valve timing mechanism simulation)
- Offset and coefficient conversion are possible in relation to the output pattern
- Simulation possible from the rotator or engine stopping
- You can now create up to 7 signal patterns can be created.
- Signal patterns can be changed at specific crank angles (maximum 32 points)(Noise pattern insertion simulation)
- Number of revolutions can be changed to specific angles (maximum 32 points) (rotation variation simulation)
- Measurement of ignition signal and fuel injection signal from the engine ECU

Analog Pulse Output (crank angle, cam angle sensor, pattern signal output)

Input format	Analog signal output (combination of single-ended DC)
Number of channels	17ch Crank angle sensor signal output × 1ch
	Cam angle sensor signal output (synchronized with crank signal) × 8ch
	Pattern signal output (output rate is independent from crank signal) × 8ch
Output level	±10V
D/A resolution	12bit
Number of crank revolutions	Designation possible for the equivalent of -30000~30000RPM (angular resolution is 0.05°), pattern output rate: 3.6MHz at fastest)
Pattern length	3600 to 72000 points
Angular range	360/720/1080/1440°

Digital Pulse Output (ignition confirmation signal output)

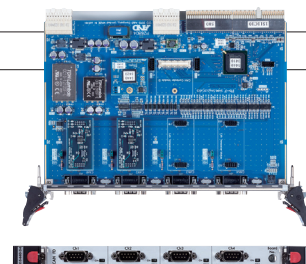
Input format	Push-pull format output (compatible with both source and sink), magnetic isolator, insulation by photocoupler
Number of channels	8 c h
Source power supply	Switching between internal, external (every 4 channels)
Output level	DC+5V (TTL) or DC+6V~+36V (external voltage)

Digital Pulse Input (ignition signal and fuel injection signal input)

Input format	Insulated-type input (compatible with both pull up and pull down), magnetic isolator, insulation by photocoupler
Number of channels	16 c h
Source power supply	Switching between internal, external (every 8 channels)
Behavior input power-supply voltage level	DC+5V to +36V
Input frequency range	0.1Hz to 100kHz
Measurement items (for 1 model cycle)	Input pulse edge 16 points (8 pulse divisions) (time and angle information)
Phase measurement resolution	Time resolution: 10nsec
	Angular resolution: depends on pattern length and angular range
Threshold	+1 to +20V (every 4ch)
Hysteresis	+0.02 to +1.95V (every 4ch) (8 bit resolution)

AD5440-34 CAN FD board

Number of channels	2 c h (maximum 4ch)
Protocol	ISO 11898 - 1:2015(CAN FD, Classical CAN)
Baudrate	CAN FD maximum 4Mbps Classical CAN maximum 1Mbps

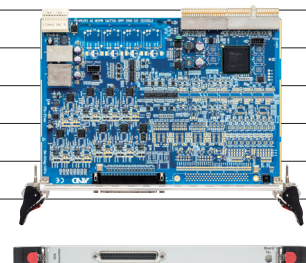


AD5440 - 34 - 01 CAN FD board extra 2ch option

Possible to use by mounting to AD5440 - 34 board

AD5440-76 Sine Wave Output Board

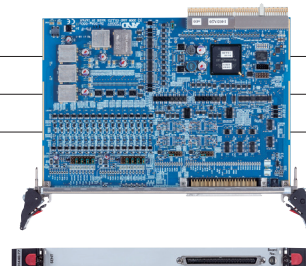
Output format	Analog signal output Single ended DC combination
Number of channels	8ch
Output level	$\pm 10V$
D/A resolution	12bit
D/A update rate	1MHz



AD5440 - 77 SENTout board

The SENTout board is used to simulate SAE J2716 SENT (Single Edge Nibble Transmission) I/F sensor. SENT is a single unidirectional (Sensor -> ECU) point-to-point serial communication protocol used for low-cost automobile sensors in high noise environment. Conversion of raw sensor data into a standardized format requires a Simulink model. S-Functions are provided to perform conversion of data nibbles and creation of CRC, Serial Message ID, and creation of Status Nibble etc. There is also function to simulate an A/D converter inside the SENT sensor. Protocol errors can be created as well.

Output format	CMOS output (5V)
Number of channels	8ch
Response speed	1 μ sec
EMC filter	None
J2716 SENT Revision	J2716_JAN2010 2010 - 01 - 27 Rev3.0
	J2716_FEB2008 2008 - 02 - 26 Rev2.0
	J2716_APR2007 2007 - 04 - 10 Rev1.0



AD5440 - 78

Pattern I/O board

●Pattern data output

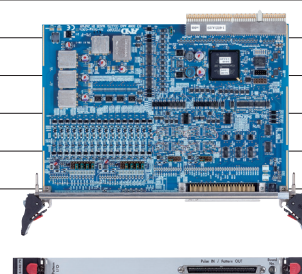
Various waveforms can be generated from signal pattern data. Sensor simulation, sensor failure, and various communication failures can be performed. When used in combination with the SAE J2716 SENT S-Function from the optional Pattern Tool Pack, output of false SENT sensor signals can also be performed.

Output format	CMOS output (5V)
Number of channels	8ch
Response speed	1 μ sec
FIFO memory size	maximum 4,095 data / ch

●Pulse capture input

Capture and measurement of the time axis of High/Low or Low/High

Input format	Voltage input
Number of channels	8ch
Input impedance	1M Ω
High level	2.7V (Min)
Low level	1.5V (Max)
Response speed	1 μ sec
FIFO memory size	maximum 4,095 data / ch



AD7003 - 01 - 83QS

External 4 core 2.4GHz CPU board

- Possible to calculate at high speed by increasing the number of CPU cores
- Possible to use up to maximum of 32 cores with AD7003 - 83QS

AD7003 - 02 - 83VS

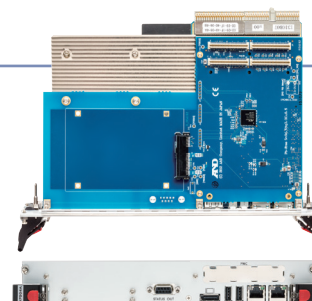
External 4 core 2.8GHz CPU board

- Possible to calculate at high speed by increasing the number of CPU cores
- Possible to use up to maximum of 16 cores with AD7003 - 83VS
- Occupies 2 slots

AD7004A-01

Statusout – SATA I/F – PMC I/F board

AD7004A option board equipped with Statusout function for external output of the status of the DSP (running the model), the SATA I/F for mounting the AD7004-02, and the PMC I/F for supporting the Profibus board, etc.



Accessories

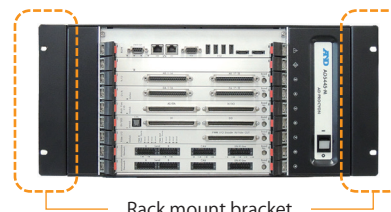
■DSCN0207 connector

- Serial communication socket for AD5440-17
Model number: AX-B2L3.5/14F-1
- Socket for CAN communication use for AD5440-17
Model number: AX-B2L3.5/16F-1
- Socket for LIN/K-LINE use for AD5440-17
Model number: AX-B2L3.5/16F-2



■Rack mount bracket

- Model number:
AX-5445-M-BRK



Rack mount bracket