SCALEXIO

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I/O Overview

		Channel type	Failure Insertion Unit integrated	Number of channels	I/O Function: In: Current In	Triggered Current In	Voltage In	Multi Bit In	Trigger In	Digital Pulse Capture	PWM/PFM In	Current Signal Capture	Voltage Signal Capture	Digital Incremental Encoder In	Sine Encoder In	Hall Encoder In	Resolver In	EnDat Master	SSI Master	Injection/Ignition Current In	Extension[1]	Injection/Ignition Voltage In	Extension[1]	SENT In	Out: Current Sink	Voltage Out	Multi Bit Out	Digital Pulse Out	Potentiometer Out	Resistance Out	PWM/PFM Out	Multi-Channel PWM Out	Block Commutated PWM Out	Wavetable Current Sink	Wavetable Digital Out	Wavetable Voltage Out	Angular Wavetable Digital Out	Angular Wavetable Voltage Out	Digital Incremental Encoder Out	Wheelspeed Out	Waveform Current Sink	Waveform Voltage Out	Waveform Digital Out	Crank/Cam Current Sink	Crank/Cam Digital Out	Crank/Cam Voltage Out	Knock Signal Out	Lambda DCR[3]	Lambda NCCR[3]	SENT Out
I/O Channels	DS6101 Multi-I/O Board	Analog In 4		10			✓						✓										✓																											
		Analog In 5		1			✓																																										✓	
		Digital In 3		12				✓	✓	✓	✓													✓																											
		Flexible In 3		10			✓	✓	✓	✓	✓		✓									✓	✓	✓																											
		Analog Out 6		8																						✓									✓		✓					✓					✓				
		Analog Out 7		1																						✓											✓					✓					✓	✓	
		Analog Out 8		3																															✓		✓					✓				✓	✓		
		Analog Out 9		4																					✓	✓								✓		✓		✓		✓	✓	✓		✓			✓			
		Digital Out 3		14																							✓	✓			✓				✓		✓		✓				✓		✓					✓
		Resistance Out 2		6																									✓	✓																		✓	✓	
	DS6121 Multi-I/O Board	Analog In 16		6			✓						✓																																					
		Resolver In 2		1													✓																																	
		Flexible In/Out 1		6										✓	✓	✓		✓	✓																															
		Digital In/Out 9		4				✓	✓		✓			✓		✓			✓								✓	✓			✓	✓																			
		Digital Out 8		12																							✓	✓			✓	✓	✓																	
	DS6201 Digital I/O Board	Digital In/Out 3		96				✓			✓																✓				✓																			
	DS6202 Digital I/O Board[2]	Digital In/Out 5		32				✓	✓	✓	✓			✓										✓			✓	✓			✓	✓			✓		✓		✓				✓						✓
	DS6221 A/D Board	Analog In 6		16			✓						✓																																					
		Trigger In 1		8					✓																																									
	DS6241 D/A Board	Analog Out 10		20																						✓									✓		✓					✓								
		Trigger In 2		4					✓																																								
	DS2655 FPGA Base Board DS6601 FPGA Base Board DS6602 FPGA Base Board				DS2655M1 I/O Module: 5 A/D channels, 5 D/A channels, 10 digital I/O channels DS2655M2 I/O Module: 32 digital I/O channels (RS232 or RS485 communication) DS6651 Multi-I/O Module: 6 A/D channels, 6 D/A channels, 16 digital I/O channels																																												
	DS2601 Signal Measurement Board	Flexible In 1	✓	10	✓	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓	✓	✓	✓																											
	DS2621 Signal Generation Board	Flexible Out 1	✓	10																					✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
	DS2642 FIU & Power Switch Board			10	Power Switch, Central FIU																																													
	DS2680 I/O Unit	Analog In 1		20			✓						✓									✓		✓																											
		Analog In 2		2			✓																																										✓	
		Digital In 1		30				✓	✓	✓	✓													✓																											
		Flexible In 2		18	✓	✓		✓	✓	✓	✓	✓								✓	✓	✓	✓	✓																											
		Analog Out 1	✓	15																						✓									✓		✓					✓					✓				
		Analog Out 2		2																						✓																	✓					✓	✓	
		Analog Out 3		7																															✓		✓					✓				✓	✓		
		Analog Out 4		8																					✓	✓								✓		✓		✓	✓	✓	✓	✓		✓			✓			
		Digital Out 1		28																							✓	✓			✓				✓		✓		✓				✓		✓					✓
		Resistance Out 1		12																									✓	✓																		✓	✓	
				6	Power Switch, Central FIU																																														
	DS2690 Digital I/O Board	Digital In 2		10				✓			✓																																							
		Digital Out 2	✓	10																							✓				✓																			
		Digital In/Out 1		10				✓			✓																✓				✓																			

[1] Extension for using extended signal analysis. Additional channels are required. [2] The number of function instances is limited for selected functions. [3] Several channel types are required for this function.

Bus Overview

		Channel type	Failure Insertion Unit integrated	Number of channels	Buses and Networks: CAN/CAN FD	LIN	FlexRay	RS-232	RS-422 / RS-485	SOME/IP	Number of Ethernet Ports excl. Host interface	Integrated Ethernet Switch[1]	SCALEXIO LabBox / SCALEXIO AutoBox	SCALEXIO Processing Unit	SCALEXIO Rack System
	DS6301 CAN/LIN Board	CAN 2		4	✓								✓		✓
		LIN 2		4		✓									
	DS6311 FlexRay Board	FlexRay 2		4			✓						✓		✓
	DS6321 UART Board	UART 1		4				✓	✓				✓		✓
	DS6331-PE Ethernet Board	Ethernet Adapter 1		4						✓	■ 4x 10/100/1000BASE-T	✓		✓	
	DS6333-CS Automotive Ethernet Board	Ethernet Adapter 2		5[1]						✓	■ 1x 10/100/1000BASE-T Available modules (2 per board) ■ DS6330M1: 2x 100/1000BASE-T1 ■ DS6330M2: 2x 10/100/1000BASE-T ■ DS6330M3: 2x 10BASE-T1S ■ DS6330M4: 2x 100/1000BASE-T1 incl. MACsec	✓[1]	✓[2]		
	DS6333-PE Automotive Ethernet Board	Ethernet Adapter 2		5[1]						✓	■ 1x 10/100/1000BASE-T Available modules (2 per board) ■ DS6330M1: 2x 100/1000BASE-T1 ■ DS6330M2: 2x 10/100/1000BASE-T ■ DS6330M3: 2x 10BASE-T1S ■ DS6330M4: 2x 100/1000BASE-T1 incl. MACsec	✓[1]		✓	
	DS6334-PE Ethernet Board	Ethernet Adapter 1		4						✓	■ 4x 10/100/1000BASE-T	✓		✓	
	DS6335-CS Ethernet Board	Ethernet Adapter 2		5[1]							■ 1x 10/100/1000BASE-T Available modules (2 per board) ■ DS6330M1: 2x 100/1000BASE-T1 ■ DS6330M2: 2x 10/100/1000BASE-T ■ DS6330M3: 2x 10BASE-T1S ■ DS6330M4: 2x 100/1000BASE-T1 incl. MACsec	✓[1]	✓[2]		
	DS6336-CS Ethernet Board	Ethernet Adapter 1		2						✓	■ 2x 100/1000BASE-T/2.5/5/10GBASE-T		✓[2]		
	DS6336-PE Ethernet Board	Ethernet Adapter 1		2						✓	■ 2x 100/1000BASE-T/2.5/5/10GBASE-T			✓	
	DS6341 CAN Board	CAN 2		4	✓								✓		✓
	DS6342 CAN Board	CAN 2		8	✓								✓		✓
	DS6344 CAN Board	CAN 8		4	✓								✓		✓
	DS6351 LIN Board	LIN 2		8		✓							✓		✓
	DS2671 Bus Board	Bus 1	✓	4	✓	✓	✓	✓	✓						✓
	DS2672 Bus Module (Add-on for DS2680)	CAN 1		2	✓										
		LIN 1	✓	2		✓									✓
		FlexRay 1		2			✓								

[1] The integrated switch is connected to the modules (DS6330M1 - DS6330M4), one standard Ethernet port, and four internal Ethernet controllers. For more information, please refer to the dSPACE user documentation (access may require registration). www.dspace.com/go/ethernet-board-configuration

[2] Can only be used in combination with DS6001 Processor Board.

Processing Hardware

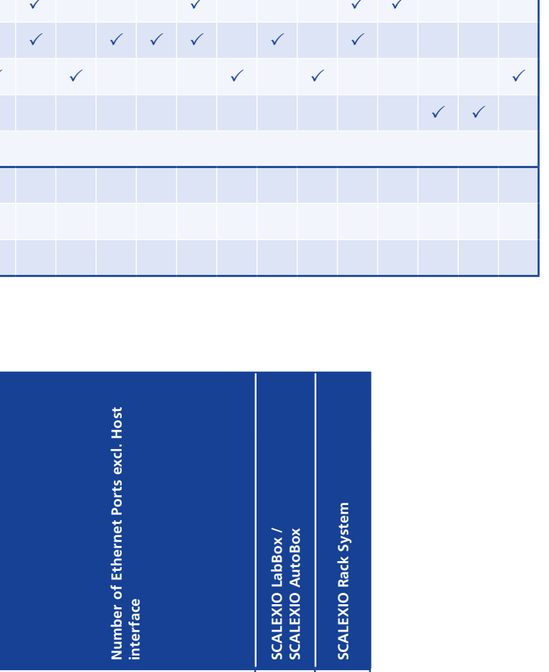
		Channel type	RS-232	SOME/IP	Number of Ethernet Ports excl. Host interface	SCALEXIO LabBox / SCALEXIO AutoBox	SCALEXIO Rack System
SCALEXIO Bus Boards	SCALEXIO Processing Unit HCP P01, P02, P03	Ethernet Adapter 1		✓	■ 1x 10/100/1000BASE-T		✓
		UART 5	✓				
	SCALEXIO Processing Unit HCP P04	Ethernet Adapter 1		✓	■ 1x 10/100/1000BASE-T ■ 1x 100/1000BASE-T/2.5GBASE-T		✓
		UART 5	✓				
	SCALEXIO Processing Unit HPP P01	Ethernet Adapter 1		✓	■ 1x 10/100/1000BASE-T		✓
		UART 5	✓				
	SCALEXIO Processing Unit HPP P02	Ethernet Adapter 1		✓	■ 2x 10/100/1000BASE-T ■ 1x 1000BASE-T/10GBASE-T		✓
		UART 5	✓				
	DS6001 Processor Board	Ethernet Adapter 1		✓	■ 1x 10/100/1000BASE-T	✓	
		UART 6	✓				

SCALEXIO Aerospace Solutions

- SCALEXIO Interface Solution for ARINC 429
- SCALEXIO Interface Solution for ARINC 664 and AFDX® (AFDX® is a registered trademark of AIRBUS)
- SCALEXIO Interface Solution for MIL-STD-1553

Additional SCALEXIO Solutions

- SCALEXIO Fieldbus Solution for PROFIBUS and EtherCAT, Modbus and TRDP
- SCALEXIO Serial Interface Solution for Serial Peripheral Interface (SPI) and Inter-Integrated Circuit (I^2C)
- SCALEXIO EMH Solution for Electric Drives Simulation
- SCALEXIO TWINsync Solution
- PSI5 Master/Slave Solution
- SCALEXIO Battery HIL Solution
- SCALEXIO Hypervisor Extension



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