

System module **SM AXIe-1**



The module is designed to operate as part of measuring systems created on the basis of the AXIe-1 trunk. The module acts as a system module of the AXIe-1 standard chassis.

The module is intended for use as part of an AXIe-1 standard chassis with no more than 14 seats (slots).

The module complies with the AXIe standard for system modules of the AXIe-1 trunk

Specifications

Maximum number of serviced tool modules up to 13	
Base interface (LAN) for interaction with instrumental modules of the chassis, the manager of the chassis, an external PC, the system module of other chassis AXIe	
The interface of interaction with instrumental modules through the built-in Ethernet Switch - Ethernet 13 ports 10/100/1000 Base-T. Connectors for connecting the module to the chassis backplane - J23 ROW 6-10, J24	The interface of interaction with the chassis manager through the built-in Ethernet Switch (ShMC port) - Ethernet single port 10/100/1000 Base-T. Socket for connecting the module to the chassis backplane - J23 Row 5
The interface of interaction with an external PC, a system module of other AXIe chassis through the built-in Ethernet Switch - Ethernet two 10/100/1000 Base-T ports. Type of connector RJ45. Location - front panel of the module	Presence of the web-interface of the module for switching, generating, recording all trigger events
Fabric interface (PCI express) for interaction with instrumental modules of the chassis, external PC, system module of other chassis AXIe	
Instrument module interface via integrated PCI express switch <ul style="list-style-type: none"> GEN3 PCIe x4 for each instrument slot. The number of ports is up to 13 (13 instrumental modules are functioning). Support for transmission and reception speeds on a single PCIe line 2.5 GT / s (GEN 1), 5 GT / s (GEN 2), 8 GT / s (GEN 3). Support for the configuration mode of the number of PCIe lanes of the instrument module - x1, x2, x4. The maximum possible information flow in one direction to one instrument module is 32 Gb/s Sockets for connecting the module to the chassis backplane - J23 ROW 4-1, J22, J21, J20 ROW 10-9 	<p>The interface of interaction with an external PC via the built-in PCI express Switch</p> <ul style="list-style-type: none"> GEN3 PCIe x8. Compliant with PCI Express External Cabling Specification. The maximum possible flow of information in one direction is 64 Gb / s. Connection socket - Upstream I-Pass PCIe x8 connector (68 pin) port on the front panel of the module <p>Interface to interact with the system module of other AXIe chassis via the integrated PCI express switch</p> <ul style="list-style-type: none"> GEN3 PCIe x8. Compliant with PCI Express External Cabling Specification. The maximum possible flow of information in one direction is 64 Gb / s. Connection socket - Downstream I-Pass PCIe x8 connector (68 pin) port on the front panel of the module
Sync interface	
CLK100 signal (module output signal) <ul style="list-style-type: none"> One channel of the LVDS level signal to all instrument modules. Software-controlled mode for selecting a frequency source of 100 MHz <ul style="list-style-type: none"> from the module's internal clock; from an external source of a clock frequency of 10 MHz connected to the connector CLK10 IN of the module Socket for connecting the module to the chassis backplane - J20 	FCLK signal (module output signal) <ul style="list-style-type: none"> One channel of 100 MHz reference frequency for the functioning of the PCIe interface with instrumental modules. Signal levels in the BLVDS standard. Socket for connecting the module to the chassis backplane - J20
CLK10 IN signal (module input signal) <ul style="list-style-type: none"> An input channel of 10 MHz reference frequency for generating the CLK100 signal to the AXIe instrument modules of the chassis in order to ensure their synchronous operation. Signal levels in the TTL standard. Connection connector - CLK10 IN connector on the front panel of the module. Type of connector - SMB 	CLK10 OUT signal (module output signal) <ul style="list-style-type: none"> An output channel of 10 MHz reference frequency to ensure synchronous operation of instrumental modules located in various chassis. Signal levels in the TTL standard. Connecting connector - CLK10 OUT connector on the front panel of the module. Type of connector - SMB

Trigger Bus	
TRIG signals [0:11] (module input / output) <ul style="list-style-type: none"> • 12 channels of MLVDS type2 level signals to all instrument modules. • Software control with the ability to invert signals. • Socket for connecting the module to the chassis backplane - J20 	Signals STRIG [2:14] (module input / output) <ul style="list-style-type: none"> • 13 channels of BLVDS level signals per instrument modules [2:14] (one instrument for each instrument module). • Software control with the ability to invert signals. • Socket for connecting the module to the chassis backplane - J20
SYNC signal (module output signal) <ul style="list-style-type: none"> • One channel of the LVDS level signal to all instrument modules. • Software control with the ability to invert signals. • Software control of synchronization of SYNC and CLK100 signals. • Socket for connecting the module to the chassis backplane - J20 	TRIGIN signal (module input signal) <ul style="list-style-type: none"> • The input signal of the trigger event of the AXIe chassis to ensure the synchronous operation of the instrumental modules of different chassis. • Signal levels in the TTL standard. • Software control with the ability to invert the signal. • Connection socket - TRIGIN connector on the front panel of the module. Type of connector - SMB
TRIGOUT signal (module output signal) <ul style="list-style-type: none"> • The output signal of the trigger event of the AXIe chassis to ensure the synchronous operation of the instrumental modules of different chassis. • Signal levels in the TTL standard. • Software control with the ability to invert the signal. • Connection socket - TRIGOUT connector on the front panel of the module. Type of connector - SMB 	The presence of a built-in software-controlled switchboard for the trigger signal bus, which allows switching signals between different lines of trigger events
	Ensuring the formation of a trigger event on any output line of the trigger signal bus
	Providing registration of the presence of a trigger event on any input line of the trigger signal bus
Intelligent Platform Management Bus IPMB	
The presence of an integrated IPMC controller	Module power <ul style="list-style-type: none"> • -48 V; • Zona 1 module connector in accordance with AXIe standard