

EX7204

Modular Microwave Switching
& Signal Conditioning Platform

The EX7204 is the industry's first solution which modularizes both switching and signal conditioning into one flexible family of COTS products.

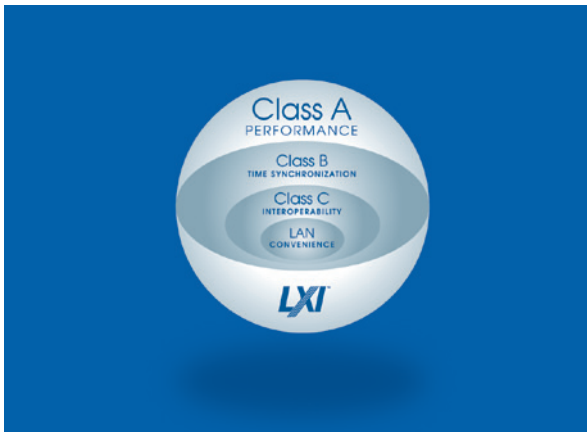
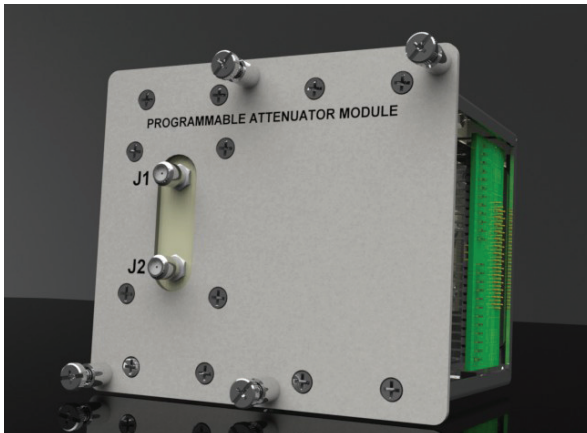
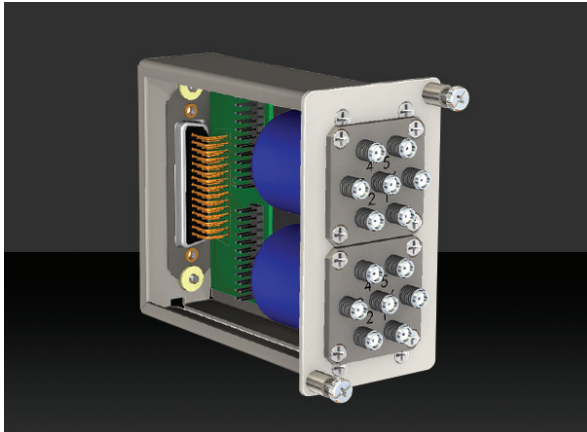


A wide variety of switch building blocks can be combined with commonly used microwave signal conditioning modules to provide for a complete solution from signal source to measurement. The re-configurability of the platform makes it ideal for environments where test topologies and requirements need to be changed frequently and with minimal down time. With a wide variety of switch architectures, operating ranges, and signal conditioning options, the EX7204 is well suited to address the following applications spaces:

- Wireless Communication
- GPS
- Radar
- RFID

Excellent Switch Performance in Flexible and Compact Footprints

The EX7204 offers a wide variety of switch modules that maximize density and provide exceptional RF performance. Any combination of up to 16 switch modules can be integrated into 2U of rack space. Switch configurations include SPDT, SP4T, and SP6T with flexible operating ranges up to 26.5 GHz. EX7204 switches are rated for a minimum of 5,000,000 cycles and have built in health monitoring through relay odometers which can be proactively monitored as a preventative maintenance.



Combine Signal Switching with Conditioning Modules for a Complete Solution

The EX7204 offers a variety of modules that allow for quick design of re-configurable systems that include both signal conditioning as well as signal distribution. Programmable attenuators allow users to precisely modulate input signals. With a wide dynamic range users can select attenuation levels from 0-110 dB in 1 dB steps. Taking advantage of the EX7204's ability to save and load configurations either programmatically or at power up, calibration settings through the programmable attenuators are easily re-called.

A universal filter module allows users to define up to 5 low pass, band pass, or high pass filters to be included in a single plug-in module. Used in combination with the dual SP6T switch module, a switchable 5 stage filter can be quickly configured.

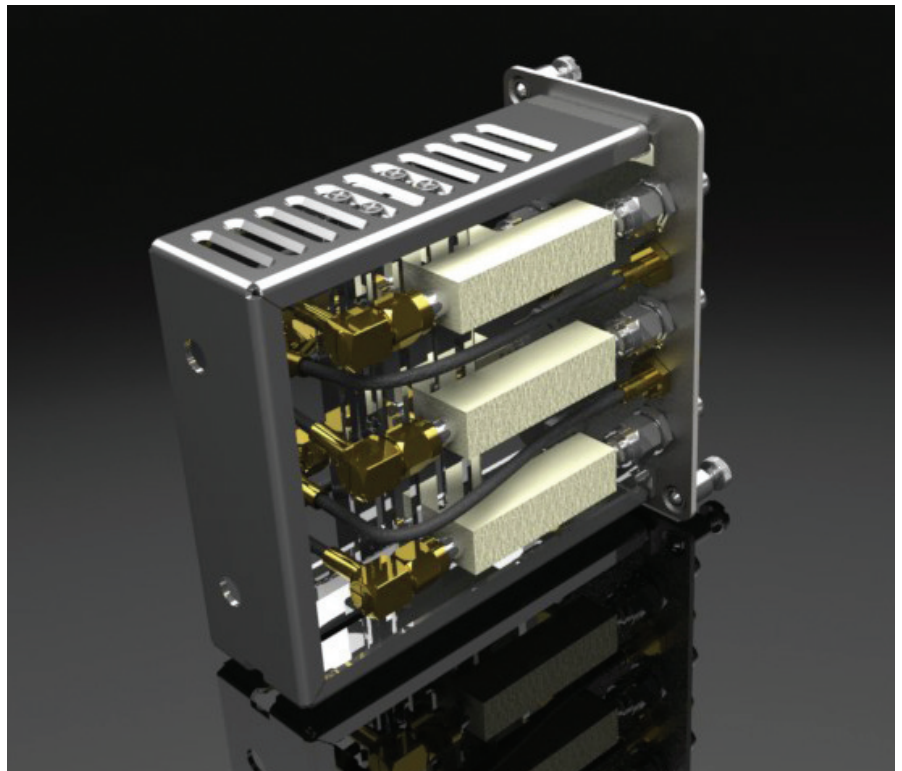
Configuration Software for System Level Programming & Control

VTI offers patented configuration SW with all microwave switching & signal conditioning products. The "Broadband Integration Wizard" provides a Java based utility that allows users to specify how measurement paths are wired together in a test system. The result is a platform that user's control from a system perspective:

- Embedded web based GUI capable of closing/opening configured end-to-end paths
- Path Level Programming in LabVIEW or Visual Studio simplifies application development
- Load different configurations as test topologies change for instant re-configuration

Intuitive Command & Control

The EX7204's software and hardware architecture allow easy integration with other GPIB, PXI, LXI, or USB instruments. LXI Class A technology provides for ease of use through an embedded web based GUI, and guarantees interoperability by definition of the LXI standard. Instrument drivers are based on the IVI industry standard and can be used with virtually any of the most commonly used development environments.



Features

- Combine up to 32 SPDT or 16 multiport high-performance relays in 2U footprint
- Embedded web interface provides interactive utility to monitor and control relays from anywhere in the world
- Web interface automatically updates as modules are swapped out or moved
- Programmable attenuators capable of 0-110 dB in 1 dB steps
- Universals filter module holds up to 5 low-pass, band-pass, or high-pass filters
- Flexible IVI based instrument drivers integrate easily into LabVIEW, Visual Studio, and VEE Pro
- Direct Word Serial Communication (SCPI Control)
- LXI Class A trigger event implementation provides seamless test synchronization with external devices
- Store up to 128 relay configurations for quick recall, including automatic power up state
- Define exclude lists to avoid setting an undesirable configuration
- Relay odometers tracks closures to facilitate preventative maintenance
- Dual LXI/USB communication control
- External power supply included (100-240V AC, 50/60Hz)
- Dimensions: 88.2mm (3.5") H x 218.7mm (8.6") W x 368.3mm (14.5") D

Mainframes

Model Number	Description
EX7204A	Half-Rack 2U, LXI Class A-USB, 4 Slot Mainframe for Non-Latching Modules
EX7204L	Half-Rack 2U, LXI Class A-USB, 4 Slot Mainframe for Latching Modules

Relay Module Specifications

Model Number	Module Size	Relay	Quantity	Frequency Range	Life Expectancy	Connectors	Internal Termination	Insertion Loss	Isolation	VSWR	Repeatability	
EX7204A-2121S	Single Slot	SPDT Failsafe	2	DC - 18 GHz	5 Million Cycles	SMA	No Termination	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204A-3121S	Single Slot	SPDT Failsafe	3	DC - 18 GHz	5 Million Cycles	SMA	No Termination	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204A-4121S	Single Slot	SPDT Failsafe	4	DC - 18 GHz	5 Million Cycles	SMA	No Termination	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204L-0202T	Single Slot	SPDT Latching	2	DC - 18 GHz	5 Million Cycles	SMA	Terminated (50 ohm)	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204L-0402T	Single Slot	SPDT Latching	4	DC - 18 GHz	5 Million Cycles	SMA	Terminated (50 ohm)	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204L-0602T	Double Slot	SPDT Latching	6	DC - 18 GHz	5 Million Cycles	SMA	Terminated (50 ohm)	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204A-1141S	Single Slot	SP4T Normally Open	1	DC - 18 GHz	5 Million Cycles	SMA	No Termination	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204A-2142S	Single Slot	SP4T Normally Open	2	DC - 26.5 GHz	10 Million Cycles	SMA	No Termination	DC - 3 GHz	0.20 dB	80.0 dB	1.20:1	
								3 - 8 GHz	0.30 dB	70.0 dB	1.30:1	
								8 - 12.4 GHz	0.40 dB	60.0 dB	1.40:1	
								12.4 - 18 GHz	0.50 dB	60.0 dB	1.50:1	
								18 - 26.5 GHz	0.60 dB	55.0 dB	1.60:1	
EX7204A-1161S	Single Slot	SP6T Normally Open	1	DC - 18 GHz	5 Million Cycles	SMA	No Termination	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
EX7204A-2162S	Single Slot	SP6T Normally Open	2	DC - 26.5 GHz	10 Million Cycles	SMA	No Termination	DC - 3 GHz	0.20 dB	80.0 dB	1.20:1	
								3 - 8 GHz	0.30 dB	70.0 dB	1.30:1	
								8 - 12.4 GHz	0.40 dB	60.0 dB	1.40:1	
								12.4 - 18 GHz	0.50 dB	60.0 dB	1.50:1	
								18 - 26.5 GHz	0.60 dB	55.0 dB	1.60:1	
EX7204L-0202T/0106T	Double Slot	SPDT Latching	2	DC - 18 GHz	5 Million Cycles	SMA	Terminated (50 ohm)	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB
		SP6T Latching	1	DC - 18 GHz	5 Million Cycles	SMA	Terminated (50 ohm)	DC - 6 GHz	0.20 dB	70.0 dB	1.25:1	0.05 dB
								6 - 12 GHz	0.40 dB	60.0 dB	1.40:1	0.10 dB
								12 - 18 GHz	0.50 dB	60.0 dB	1.50:1	0.10 dB

Programmable Attenuator Specifications

Model Number	Module Size	Frequency Range	Attenuation Range	Step Size		Insertion Loss	VSWR	Life Expectancy	Connectors
EX7204-ATT-06103	Double Slot	DC - 6.0 GHz	0 - 103 dB	1	DC - 3 GHz 3 - 6 GHz	3.4 dB 5.0 dB	1.30:1 1.45:1	5 Million Cycles	SMA
EX204A-ATT-18011	Double Slot	DC - 18.0 GHz	0 - 11 dB	1	DC - 4 GHz 4 - 18 GHz	0.90 dB 2.20 dB	1.50:1 1.90:1	5 Million Cycles	SMA
EX7204-ATT-18110	Double Slot	DC - 18.0 GHz	0 - 110 dB	10	DC - 4 GHz 4 - 18 GHz	0.90 dB 2.20 dB	1.50:1 1.90:1	5 Million Cycles	SMA

Universal Filter Module

Model Number	Description
EX7204-FILT	Single slot module capable of accommodating 5 low-pass, band-pass, or high-pass filters. Please refer to website or call your local VTI representative for details on specifying and ordering filter modules.