VTI
Instruments
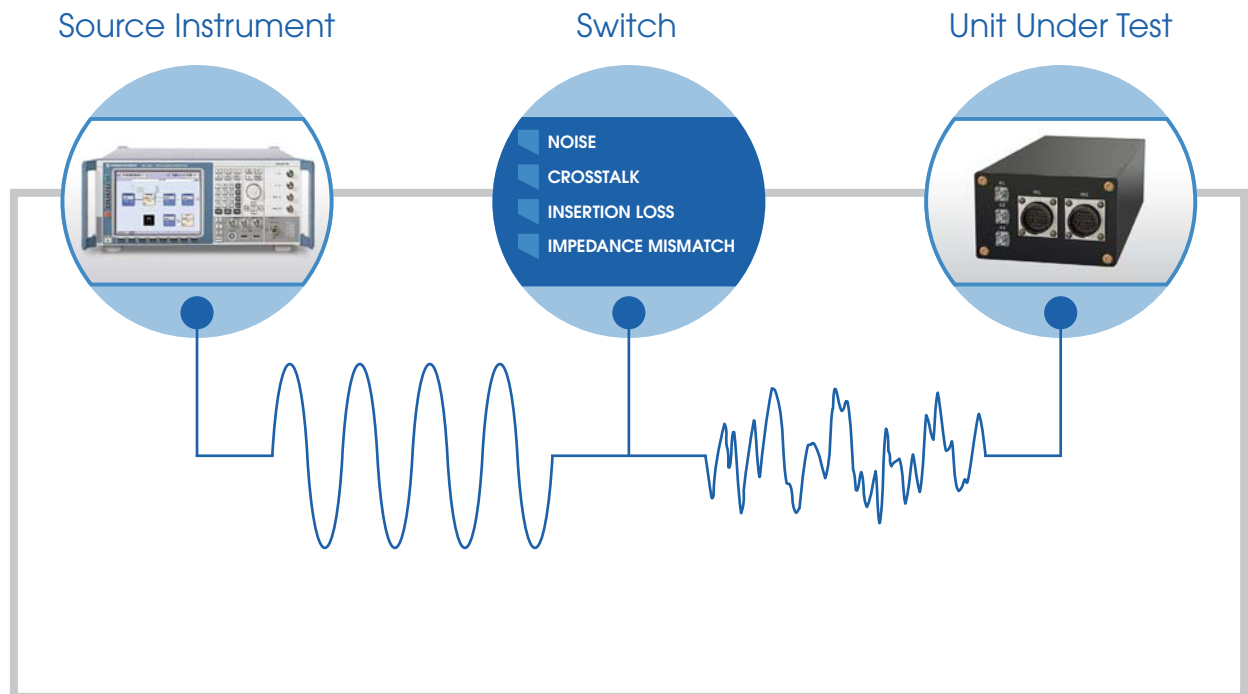
Precision Signal Switch/Measure
and Control Solutions

Why Spend Big Money on the Measurement Instrument… then have it Process Distorted Signals?

It happens. Expensive, high-accuracy instruments are placed in line with switch systems that induce distortion and destroy signal integrity. Many of today's switches claim performance characteristics that seem more than acceptable. However, the actual "in system" performance is inferior. The danger is in the hidden hazards, e.g., mismatched impedance, induced noise, crosstalk, poor signal isolation or limited bandwidth. VTI switching components are optimized for system transparency to minimize these unwanted effects.

Switch systems that lack signal transparency destroy signal integrity.

Source Instrument	Switch	Unit Under Test

NOISE

CROSSTALK

INSERTION LOSS

IMPEDANCE MISMATCH

VTI Signal Switch/Measure and Control Components
Cost-Effective Today, Scalable For Tomorrow

- Maximize System-Level Performance
- Occupy Less Factory Floor Space

Then

GPIB/ETHERNET	PXI
"LXI-LITE"	EXPENSIVE
BIG, FIXED SIZE	BIG & BULKY
LIMITED CAPABILITIES	OLD

Now
EX1200 Series

Full-Featured LXI Class A

Compact & Scalable

Preserves Signal Fidelity

EX1262

EX1266

Aircraft production test systems worldwide use VTI switch/measure systems.

VTI switching and I/O ensures flight accuracy and the safety of rocket flight control systems.

VTI is the industry leader in demanding mil/aero switch and I/O applications.

Scalable solutions cover a broad range of applications from DC to light.

VTI is committed to providing systems that outlive the products that they are designed to test.

Proven in Thousands of Demanding Applications

VTI's signal switch/measure and control components are employed worldwide in a broad spectrum of applications for aerospace, defense, telecommunications, test & measurement, contract manufacturing, automotive, medical and commercial functional test.

The Mil/Aero Switch and Instrumentation Leader for 20 Years

All major aerospace prime contractors and airframe manufacturers worldwide count on our signal routing and measurement expertise. Our switches and instruments are used in testing the most complex products in the world including avionics, missiles, transportation electronics, engines, satellites, launch vehicles, radar, and complex PCBs. From low to extremely high channel count systems, the selection of VTI for these applications validates both our technology and our dedication to the market.

Accurate Data Demands Precision Switching

Signal switching is at the heart of every automated test system. It is responsible for routing signals of interest between test system instruments and the device under test. The purpose of the testing is to improve product quality. The switch distributes instrument I/O, which can reduce overall system cost. Since switching is effectively an extension of the instrument, it should be transparent to the overall system. VTI switching products employ extensive signal shielding and high-quality relays to ensure that the test system is "minimally aware" of the switch's presence.

Cost-Effective Solutions

In today's zero-base budgeting world, the ability to reuse capital investments from development through production is key to maintaining costs. Our solutions are scalable, modular designs that can be used in small channel count applications typically found in R&D environments. They are easily migrated to larger channel counts once a product reaches manufacturing. We are also the industry leader in delivering performance-based solutions on open architecture platforms. As a result, VTI switching and instrumentation systems offer the lowest total cost of ownership.

Open Architecture Solutions – The Freedom to Choose

Open Hardware –
Maximize Performance, Minimize Risk

VTI co-founded LXI*, an industry standard for Ethernet-based test instrumentation, and is also the industry leader in VXI and VME-based switching and instrumentation modules. VTI solutions incorporate LXI Class A technology, the superset of the LXI specification that delivers backplane-like performance in the footprint of a box. Why buy "LXI-lite" (Class B or C) products when you can have it all?

- Distributed switching and measurement systems over LAN

- Synchronized measurement data to IEEE-1588 precision

- Highly deterministic hardware-based triggering using the LXI trigger bus

- Protection against PC bus obsolescence

- Assurance of multi-vendor instrument interoperability

- Scalable solutions that optimize rack space

Class A PERFORMANCE
Class B TIME SYNCHRONIZATION
Class C INTEROPERABILITY
LAN CONVENIENCE

LXI Class Definitions

Open Software –
Expedite System Readiness

The most significant investment of any automated test project resides in the system software. VTI's commitment to delivering open architecture solutions extends to software utilities and tools that reduce development time while maximizing the flexibility to choose the application development environment.

- An API that conforms to the industry standard IVI specification

- Transportable front panels that monitor and control instruments from anywhere, on any web-enabled device

- OS independence with drivers that work seamlessly in Linux and Windows

- C++ LabView™, LabWindows™/CVI, Visual Basic driver support

- Auto-instrument discovery using NI-MAX and Agilent Connection Expert
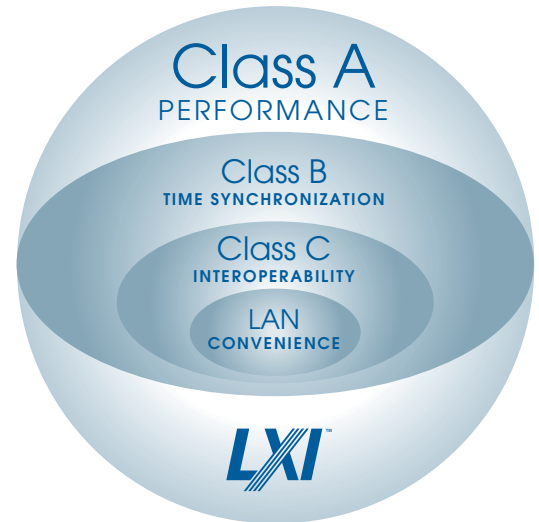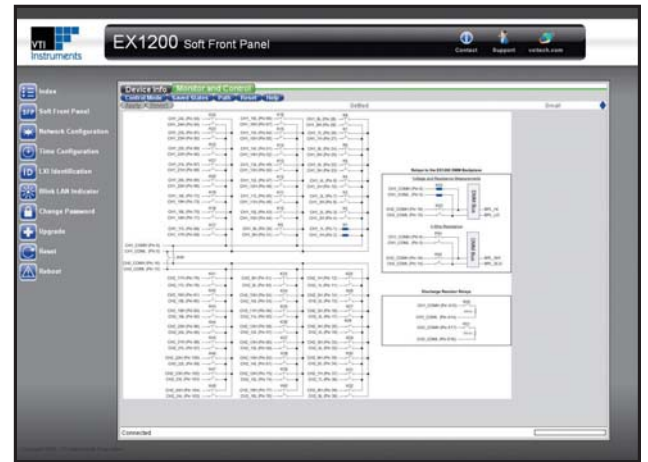
Interactive control over the Web

Scalable Solutions from DC to Light

Switch/Measure and Control Applications

EX1200 Series

Without compromising performance, this extremely cost-effective and compact switching solution scales from low to high channel counts to meet exact requirements. The EX1200 series is available in half and full rack 1U and 3U mainframes that can accommodate from 2 to 16 plug-ins. Therefore, it is an ideal common core solution that can be used in R&D through production.

Options include a full-featured 6.5 digit DMM as well as a 16-line differential analog bus that can be used to easily construct large high-performance matrices. Analog and digital plug-ins are also available for applications that require control of external devices.

EX1266

Modular Broadband Switching Platform

THE EX7000 Series

The industry's first family of scalable broadband subsystems is built on an open architecture, LXI Class A platform. These innovative products simplify the development of custom RFIU requirements while maintaining the familiarity of standard COTS solutions.
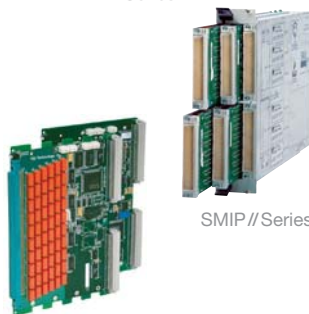
The series includes high-density modular switch slices and mainframes that can be customized to satisfy the most demanding applications to deliver a common corporate-wide solution.

EX7000 Family

VXI and VME-Based Switching and Instrumentation

SMIP*/l*™, VMIP™ and SVM Series

The time-tested VXI SMIP*/l*™ series of signal switching and the VMIP*/l*™ series of instruments are the standard of numerous mil/aero program testers worldwide. A wide selection of switch modules covers nearly any requirement extending to 1000 V, 30 A, 40 GHz, and fiber optics. Test instruments include function generators, counter/timers, isolated DACs and DMMs among others.

Up to 36 switch and instrument modules can be housed in a 13-slot VXI mainframe. The platform's 1.2" center spacing allows for more robust connectors in higher density applications when compared to similar PXI configurations.

VMIP Series

SMIP*//*Series

The SVM series of VME-based modules offers all the features and benefits of our VXI line, along with an expanded operating range that extends from -20 to +65 degrees C. All modules are hermetically sealed to withstand harsh environments and are designed to maintain signal integrity for DC, power, signal or RF applications.

SVM Series

Intelligent Switching

Developing the optimal switching solution is part science, part art. VTI switching products have an industry-wide reputation for maintaining signal integrity while minimizing the time and expense required for test system integration. A rich, on-board feature set provides system engineers with the tools needed to meet project requirements — on time and within budget.

Features

Confidence Checking

Internal feedback provides assurance of relay closures.

Extensive Triggering

Extensive hardware and LAN-based handshaking with other system devices increases test throughput by limiting communication with the host PC.

Automatic Scanning

Predefined channel lists can be stored on-board to simplify programming setup and reduce test execution time.

Safety Interrupt

This fail-safe feature forces all relays to a default state in the event of a fault condition. This allows hazardous voltages to be automatically removed from interface panels.

Programmable Timing Delays

Delays can be programmed into the modules to account for settling of other system devices. When used with triggers and scan lists, a highly deterministic measurement system can be easily configured.

Path-Level Programming

System-level I/O can be logically named such that an entire path consisting of multiple relays can be connected with a single function call. On-board intelligence ensures that there are no conflicts with shared resources.

Relay Odometers

The number of times a relay has been closed can be tracked to predict routine maintenance.

Broad Product Range

From DC to light, systems and support can be consolidated into a single vendor.

**Easy Setup
Modular
Performance-Grade**

**High-Density
Scalable
Cost-Effective**

EX1262

EX1266

EX1268

EX1200 Series
High-Density Switch and Measure/Control Systems

Applications

- General purpose signal switching
- RF signal routing
- Power supply switching
- Temperature monitoring (RTD, thermocouple, thermistor)
- Automotive ECM testing
- Process monitor
- Data logging applications
- Cable/harness testing
- Battery test

High-Density Switch and Measure/Control Systems

The EX1200 series is the highest density switch and measure/control subsystem on the market today with the capacity to switch up to 576 channels of voltage or temperature in a single rack U mainframe. Mix and match a variety of modules to build a comprehensive signal switching subsystem that performs data logging, level detection and control.

Optimized Performance and Scalability

The EX1200 series is designed to leverage capital investments in one common hardware and software platform that can be used in development, manufacturing and field service. A compact 1U design provides granularity to address small channel requirements while a high-density 3U mainframe can be used in large channel count applications. Multiple EX1200 series mainframes and other VTI instrumentation, such as EX1000A and EX1629 precision temperature and strain devices, can be easily connected with the LXI communications interface to create a highly synchronized, distributed measurement system.

Scalable "A"– Class Technology

Internal 5-wire bus routes directly to DMM

1/2 rack, 1U with 2 slots

EX1262 Front View

19" rackmount options

Robust connectors provide durable interface

EX1206-Front View

Full-featured 6.5 digit DMM

Full rack, 1U with 6 slots

Modules plug in from the front –
Minimizes system wiring

Optional benchtop protective mounts

EX1266-Front View

Analog bus extension

Digital alarm outputs

LAN/LXI status LEDs

Standard LAN connectivity

8-line LXI Class A trigger bus –
Precision hardware handshaking

EX1266-Rear View

Screw terminal block with internal CJC

EX1200-TB104

Full rack, 3U with 16 slots

EX1268-Front View

Embedded Web Interface

DAC Express

Powerful Software Options, Designed for Ease of Use

Easy-to-Use Graphical Control

VTI delivers a variety of software utilities and options that reduce the time it takes to begin using the EX1200 family of products. The series is delivered with an embedded web interface that provides virtual monitoring and control of all switches and instruments without the need for third-party software.
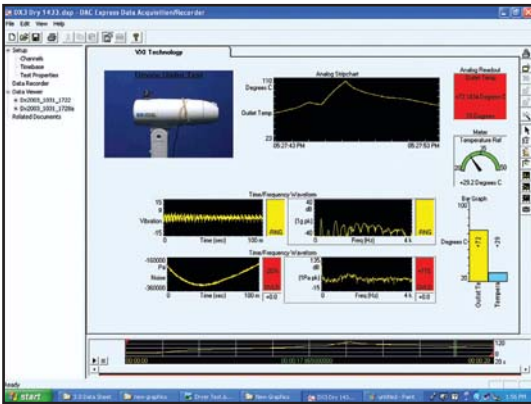
Built-in Test Sequencing

A powerful embedded application dedicated to scanning measurement and control is provided. Each measurement channel can be configured independently with pass/fail limits that can be evaluated on the fly. Stimulus and switch settings can be modified as part of the test sequence, and input channels can be measured to verify how they respond to these changes. This robust utility minimizes processor overhead and test execution time.

DAC Express - Set Up and Run

The EX1200 series is supported by the popular DAC Express turnkey software package. The DAC Express intuitive GUI significantly shortens time-consuming test setup and configuration. Test engineers can begin monitoring, recording and analyzing data within minutes.

With DAC Express and an EX1200 mainframe, engineers can design a mixed-signal distributed measurement system that includes voltage, thermocouple, RTD, and digital inputs. A wide range of graphical displays are available to generate customized views of multiple channels simultaneously. DAC Express systems save time and reduce the frustration normally associated with software development efforts.

Flexible Application Programming Options

Every EX1200 series module is delivered with an application programming interface (API) that conforms to industry standard IVI specifications. The IVI drivers can be used directly in the most common application development environments such as LabView™, LabWindows™/CVI, C++ and Visual Basic. The EX1200 driver allows a programmer to:

- Achieve faster development time through path-level programming
- Plan routine maintenance by automatically tracking relay closures
- Precisely synchronize distributed measurements through IEEE-1588
- Use the LXI Class A trigger bus for highly deterministic hardware handshaking

Operating System Independence

VTI's innovative approach to driver development provides system developers with true OS independence without sacrificing the convenience that instrument drivers deliver. An IVI-like API can be imported into Linux and other operating systems. The intuitive APIs simplify programming. Therefore, low-level coding is not required to access the full capability of the instrument.
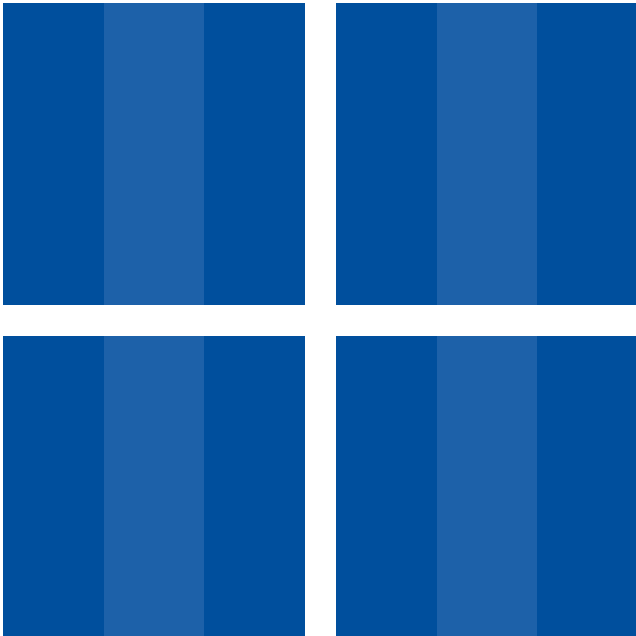
EX1200 Series Quick Reference

Mainframes

Model	Slots	DMM	Size	LAN Specification	Backplane Extension Lines
EX1266	6	6.5 digits	Full rack, 1U	LXI Class A 10/100T	5
EX1206	6	No	Full rack, 1U	LXI Class A 10/100T	5
EX1262	2	6.5 digits	1/2 rack, 1U	LXI Class A 10/100T	5
EX1202	2	No	1/2 rack, 1U	LXI Class A 10/100T	5
EX1268	16	6.5 digits	Full rack, 3U	LXI Class A 10/100T	5
EX1267	12-M	6.5 digits	Full rack, 3U	LXI Class A 10/100T	16 Matrix
EX1269	8/6-M	6.5 digits	Full rack, 3U	LXI Class A 10/100T	5/16 Matrix

Switches

Model	Channels	Configuration	Volts/Amps (max)	Switched Power (max)	Bandwidth -3dB
EX1200-2001	20	SPST (form A)	125 V/16 amp	480 W DC, 2000 VA	10 MHz
EX1200-2002	12	SPDT (form C)	125 V/16 amp	480 W DC, 2000 VA	10 MHz
EX1200-2007A	24	2/4-wire multiplexer	1000 V/1 amp	25 W DC	15 MHz
EX1200-3001	72	(8) 1x8 multiplexer	300 V/2 amp	60 W DC, 125 VA	50 MHz
EX1200-3048	48	2/4-wire multiplexer	300 V/2 amp	60 W DC, 125 VA	40 MHz
EX1200-3048S	48	2/4-wire FET multiplexer	60 V/0.1 amp	6 W DC, 4 VA	15 MHz
EX1200-3072	72	2/4-wire multiplexer	300 V/2 amp	60 W DC, 125 VA	40 MHz
EX1200-3096	96	2/4-wire multiplexer	100 V/0.5 amp	30 W DC	15 MHz
EX1200-4003	128	Dual 4 x 16 matrix	300 V/2 amp	60 W DC, 125 VA	45 MHz
EX1200-5001	80	SPST (form A)	300 V/2 amp	60 W DC, 125 VA	30 MHz
EX1200-5002	30	SPDT (form C)	300 V/2 amp	60 W DC., 125 VA	30 MHz
EX1200-5006	40	SPST (form A)	300 V/2 amp	60 W DC, 125 VA	50 MHz
EX1200-5007	12	SPDT (form C)	300 V/2 amp	60 W DC, 125 VA	50 MHz
EX1200-6101	10	SP4T coaxial trees	100 V/0.5 amp	10 W	1.3 GHz
EX1200-6102	17	SPDT	100 V/0.5 amp	10 W	1.3 GHz
EX1200-6301	4	SP4T coaxial trees	30 V/0.5 amp	10 W	3 GHz

Digital I/O

Model	Channels	Sample Rate	Memory	Type	Iout max (sink)	Vout max
EX1200-7500	(8) 8-bit ports	2 MHz	2 MB	Open collector/TTL	< 300 mA	60 V

Comparator/Edge Detector

Model	Channels	Voltage Range	Min Pulse Width	Memory
EX1200-7416	16 DE or SE	±10/100 V	1 us	1 M event

Analog Output/Control

Model	Channels	Voltage Range	Current Range	Max Isolation	Sample Rate	Memory
EX1200-3604	4 V/I, 16-bit	±0.1/1/10/20 V	±20 mA	100 V DC/100 V AC peak	400 kSa/s	1 Msample
EX1200-3608	8 V/I, 16-bit	±0.1/1/10/20 V	±20 mA	100 V DC/100 V AC peak	400 kSa/s	1 Msample

Terminal Blocks (with internal CJC)

Model	Connector Compatibility
EX1200-TB104	104p HD Dsub
EX1200-TB160	160p ERNI
EX1200-TB200	200p HD SCSI
EX1200-TBR	6-position terminal block receiver (1 U)

*Contact factory for latest module releases. All information and specifications subject to change without notice.

EX7000 Series LXI Class A Broadband Switching

The EX7000 series is the industry's first scalable microwave switching platform that is certified to meet the Ethernet-based LXI Class A standard. All products in this family include innovative software utilities that reduce development time by 30-60% and are designed to bring COTS familiarity to custom designs.

EX71HD

EX71HD
High-Density, Modular DC-26.5 GHz Microwave Switch

The EX71HD is the highest density microwave switching platform available and is used in applications that require fail-safe relays with an operating range through 26.5 GHz. Up to 12 switch modules can be accommodated in a 1U mainframe. A single unit can be used to construct dual 1 x 16 multiplexers, a 6 x 6 matrix, or any other configuration that can be built using SPDT, SP4T, SP6T, and transfer switch building blocks.

Features

- LXI Class A compliant
- Front "pluggable" relays facilitate field maintenance
- Embedded web interface for interactive monitoring and control
- Flexible API supports Windows and Linux operating systems
- Up to 128 configuration states can be stored
- Relay odometers help predict maintenance schedules

EX71HD Ordering Information

Model	Description
EX71HD	1U LXI Class A mainframe (up to 12 building blocks)
7100	Pass-through adapter, 6 drive lines
7102	Dual SPDT, 26.5 GHz
7104	SP4T, 26.5 GHz
7106	SP6T, 26.5 GHz
7122	Transfer, 26.5 GHz

EX72SF

High-Performance, Modular DC-40 GHz Microwave Switch

The EX72SF is a high-density switching platform for applications that demand superior performance and flexible design options in an operating range that extends to 40 GHz. Up to 6 multi-throw and 6 SPDT relays can be housed in a compact 2U footprint. Relays employ a patented design that ensures industry-leading repeatability, resulting in a high degree of measurement accuracy. The EX72SF is the industry's choice for microwave switching when the integrity of test data cannot be questioned.

EX72SF

Features

- LXI Class A compliant
- Extended life relay options reduce system downtime
- Self-terminating options
- Flexible API supports Windows and Linux operating systems
- Latching relays reduce power consumption and improve thermal stability
- Relay odometers help predict maintenance

EX72SF Ordering Information

Model	Description
EX72SF	2U LXI Class A mainframe (up to 12 building blocks)
7200	Pass-through adapter, 6 drive lines
7202-xxyzz[1]	Dual SPDT
7204-xxyzz	SP4T
7206-xxyzz	SP6T
7222-xxyzz	Transfer

Options[1]

xx = Operating range	y = Termination	zz = Operating life
20 : DC-20 GHz	Blank : Unterminated	Blank : 2M cycles
26 : DC-26.5 GHz	T = Self-termination	EL* = 5M cycles
40 : DC-40 GHz		

*Must be ordered with option "T"

EX7000-OEM
LXI Class A Universal Relay Driver and I/O

VTI integrates the EX7000-OEM relay driver and LXI Class A communications interface into all EX7000 series products in support of our commitment to open system platforms. The EX7000-OEM is an ideal solution for engineers who want the familiarity of a COTS solution for internal custom requirements that can also be used for future application needs. This eliminates the need for a proprietary communications interface while providing an industry standard API.

EX7000-OEM

Features

- Reduces corporate-wide software overhead and time to production
- Provides a common interface for all internal microwave and power switch projects
- Ensures interoperability with other test hardware through a design based on industry standards (LXI Class A and IVI drivers)
- Automatically creates customized web-based command and control for any design
- Enables scalable designs in increments of 72 drive and 32 TTL lines
- Auto-generated monitor/control web interface

EX7000-OEM Ordering Information

Model	Description
EX7000-OEM	LXI Class A communications interface, 72 drive/32 TTL lines
EX7000-72	72 drive/32 TTL line expansion board
Option 20IDC	Six 2-ft relay driver mating cables, unterminated user end
Option 40IDC-x	Comms-driver board interface cable (x = number of drive boards)

EX7300-EX7600

LXI Class A Custom Enclosures

The EX7300 (3U) through EX7600 (6U) enclosures include a 150 W power supply, the EX7000-OEM LXI Class A compliant digital interface and driver card, fans for cooling, and a removable tray for mounting components and cables. A Java-driven graphical configuration utility automatically generates a customized web interface that can monitor and control component states.
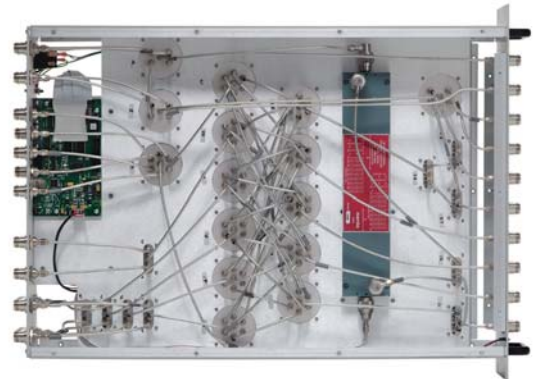
The component tray allows I/O connectors to be mounted on either the rear or front panels. This provides the flexibility to keep external cable lengths (and signal loss) between the enclosure and other test hardware to a minimum, regardless of their orientation in the system.

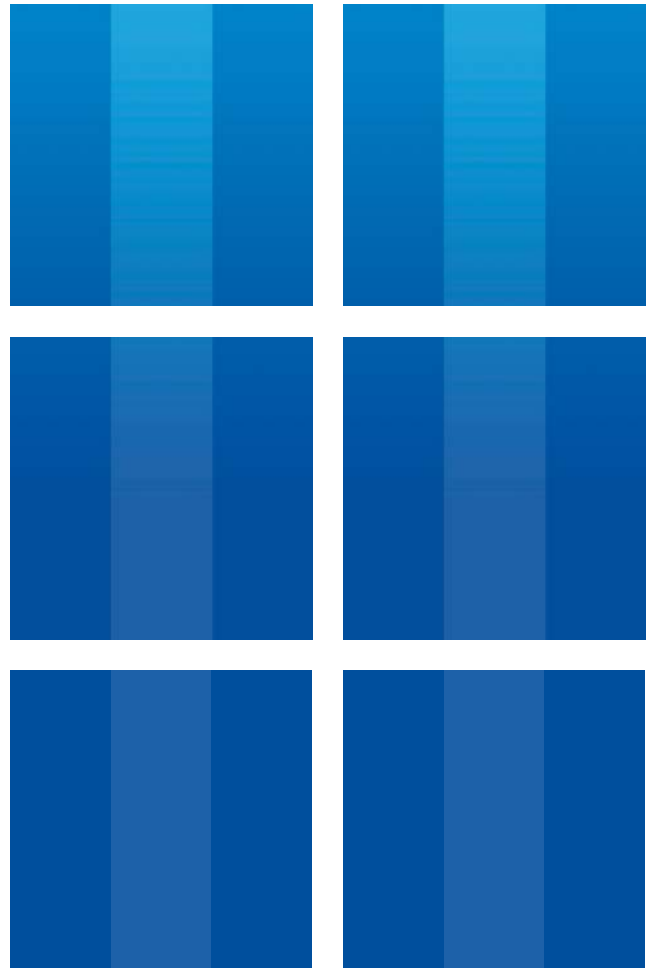EX7300 – top cover removed

Features

- LXI Class A communications interface for ease of integration with other LXI devices

- 72 drive channels, expandable to 576

- Industry standard IVI drivers

- Graphical utility quickly generates custom software tools

- 150 W power supply for the most complex designs

- Auto-generated monitor/control web interface

EX7300-7600 Ordering Information

Model	Description
EX7300	3U Mainframe includes EX7000-OEM
EX7400	4U Mainframe includes EX7000-OEM
EX7500	5U Mainframe includes EX7000-OEM
EX7600	6U Mainframe includes EX7000-OEM

VXIbus Switching and Instrumentation
Proven Performance in Mil/Aero Applications

SMIP//™ plug-ins

SMIP//™
DC to RF Signal Switching

VTI's SMIP//™ series of signal switching is the de facto standard for military and avionics test applications. Their reliability and ease of use have resulted in successful application within with following programs: the F-35 Joint Strike Fighter LM-STAR, the Navy's RTCASS, USAF VDATS, ADTS (B1B) and F-22 flightline test systems. Whether the product is a critical engine control module or a missile guidance system, performance is essential. VTI's signal switching solutions deliver accurate test results — every time.

Switch modules can be mixed and matched to create a flexible switching subsystem in a small footprint that provides superior performance and density at a lower cost when compared to equivalent PXI-based systems.

Features

- Modular high-density building blocks save mainframe space
- Two modules per single slot in SMP1100 carrier
- Six modules per double slot in SMP1200 carrier
- Front "pluggable" modules facilitate field maintenance
- Hardware triggering options increase test throughput
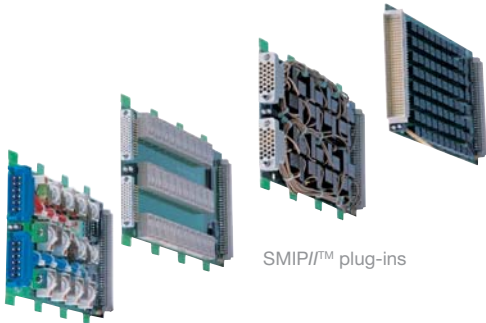- Extensive use of shield planes maintains signal integrity

VMIP™
Modular, High-Density Instrumentation

The award-winning VXI Modular Instrumentation Platform (VMIP™), delivers a level of modularity for instruments that is unmatched in the industry. It allows a single VXIbus slot three time more powerful than single device designs. Each VMIP instrument can be mixed and matched with other VMIP devices for added flexibility and overall reduction in system footprints.

Features

- Modular high-density design saves mainframe space
- Mix and match up to three modules in a single-slot VM9000 carrier
- Each module is an independent device with a unique logical address
- Access to TTL Trigger bus facilitates hardware handshaking with other VXI devices
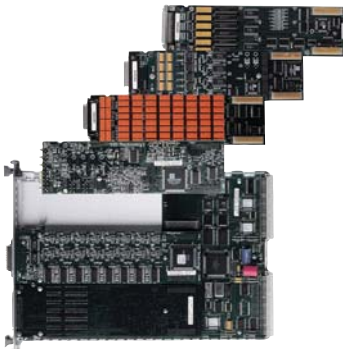
VM9000 and modules

SMIP*I*™ Ordering Information*

Model	Description
Base Units	
SMP1100	Single-slot base unit (holds up to two modules)
SMP1200	Double-slot base unit (holds up to six modules)
Power and Load	
SMP2001A	20 SPST, 16 amp power switch
SMP2002A	12 SPDT, 16 amp power switch
SMP2003	8 SPDT, 20 amp power switch (SMP1100 only)
SMP2004	12 SPST, 20 amp power switch (SMP1100 only)
SMP2005	3 SPDT/3 SP4T, 20 amp power switch (SMP1100 only)
SMP2007A	48 channel 1000 V multiplexer
SMP2012	10 SPST 30 amp switch
SMP2104	10 channel solid state 20 amp switch
SMP2300-93	24 SPST 500 V switch (93 ohm)
SMP7600A	5W programmable load
General Purpose Multiplexers	
SMP3001	64 channel 2-wire 300 V/2 amp mux
SMP3002	16 (1 x 8) 1-wire 300 V/2 amp mux
General Purpose and Digital I/O	
SMP5001	80 SPST, 300 V/2 amp switch
SMP5002	50 SPDT, 300 V/2 amp switch
SMP5004	30 SPDT, 5 amp switch
SMP5005	48 SPST, 5 amp switch
SMP7500	96 channel open-collector I/O
High-Density Matrices	
SMP4001	9 (4 x 4) 2-wire 300 V/2 amp matrix
SMP4002	1 (4 x 36) 2-wire 300 V/2 amp matrix
SMP4005	1 (12 x 12) 2-wire 300 V/2 amp matrix
SMP4028	8 (2 x 8) 50 ohm coaxial matrix
SMP4044	1 (8 x 20) 50 ohm coaxial matrix
SMP4064	1 (2 x 64) 2-wire matrix
RF/Coaxial	
SMP6004	3 (1 x 8) and 3 (1 x 2) coaxial star switches, 500 MHz
SMP6005	8 (1 x 4) coaxial star switch, 500 MHz
SMP6101	10 SP4T coaxial trees, > 1.3 GHz
SMP6102	17 SPDT coaxial switches, > 1.3 GHz
SMP6201	10 SP4T, 75 ohm coaxial trees, > 500 MHz
SMP6202	17 SPDT, 75 ohm coaxial switches, > 500 MHz
SMP6301	4 SP4T coaxial trees, self-terminated, > 1.8 GHz
Breadboard	
SMP7000-x	SMIP*I*™ developer's module "x" = Front panel I/O count (15, 25, 44, 62, 160)

VMIP™ Ordering Information

Model	Description
Carrier	
VM9000	VMIP Instrument Carrier (holds three modules)
Digital I/O	
VM1548	48 channel TTL I/O
VM1548C	48 channel open collector I/O
Counter/Event Recorders	
VM1602	32 Channel Time Stamp Recorder
VM2164	200 MHz Dual Channel Counter/Timer
Digitizers	
VM2601	80 MSa/s, 14-bit Digitizer/IF Receiver
VM2602	40 MSa/s 14-bit Digitizer
VM2603	20 MSa/s, 14-bit Digitizer
VM2608	8 channel, 16-bit 100 kSa/s digitizer
VM2616	16 channel, 16-bit, 100 kSa/s Digitizer
DAC and Signal Generators	
VM3608A	8-channel 16-bit 100 kSa/s digitizer
VM3616A	16 channel, 16-bit, 100 kSa/s AWG
VM3618	8 channel, 16-bit Isolated DAC
VM3640A	50 MSa/s AWG/Function Generator
Mulitmeters/Voltmeters	
VM2710A	6.5 Digit Digital Multimeter
VM2716	16-channel scanning voltmeter
Comparator/Threshold Detector	
VM4016	16 channel, 8-bit Analog Comparator/Interrupter, 100 V
VM4018	16 channel, 12-bit Analog Comparator/Interrupter, 250V
Communications	
VM6068	4 channel High-Performance Serial Interface
Programmable Resistor	
VM7004	4-channel Programmable Resistor, 0 - 16 MOhm

Standard VXIbus Instruments (non-VMIP)

Model	Description
VT1564	4-channel 800 kSa/s Digitizer, 256 V
VT1802	120 Channel High-Current Discrete I/O
VT7064	Prototype/Breadboard Module
CSM-S-11056	Trigger/Clock Distribution Module
VT6065-8	8-channel Serial Interface, RS232/422/485

*Partial list. A complete listing is available online.

VXIbus Broadband Switching

Proven Performance in Mil/Aero Applications

SM7000

SM8000 modules

SM7000/SM8000
Microwave and Optical

The SM7000 and SM8000 series modules extend the range of the SMIP*II*™ series into the microwave and optical application domains. The SM7000 family is the industry's highest density modular microwave switch platform with the ability to cover requirements from DC to 40 GHz. The SM7000 base unit can be configured with a variety of building blocks that include SPDT, SP4T, SP6T and transfer switches, with self-terminating and latching options also available. Relays can be easily removed from the front of the base unit to enable simplified maintenance and sparing.

The SM8000 optical series provides a modular switch architecture as well as diffraction-limited collimating lenses for applications that require a high degree of thermal stability and repeatable test data. Multiplexers as large as 1 x 17 or 2 x 8 can be accommodated within a single VXIbus module. Multiple wavelength ranges, fiber types and connectors are also available for maximum design flexibility.

SM7000 Ordering Information

Model	Description
SM7000D	Single-slot base unit (holds up to six building blocks)
7100	Pass-through adapter, 6 drive lines
7102	Dual SPDT, 18 GHz
7104	SP4T, 18 GHz
7106	SP6T. 18 GHz
7122	Transfer, 18 GHz
SM7001A	Double-slot base unit, self-terminated relays, 18 GHz
SM7374	SP6T, 18 GHz, self-terminated
SM7002-1	1 SP6T 40 GHz switch, double-slot
SM7002-2	2 SP6T 40 GHz switch, double-slot
SM7002-3	3 SP6T 40 GHz switch, double-slot
SM7002-4	4 SP6T 40 GHz switch, double-slot

SM8000 Ordering Information

Model	Description
SM8001	Single-slot multi-channel base (max 16 I/O)
SM8002	Double-slot multi-channel base (max 32 I/O)
SM8003	Single-slot prism switch base (max 16 I/O)
1 x N	Specify "N"
2 x N	Specify "N"

*Contact factory for other configurations and options.

*Contact factory for wavelength range, fiber and connector types.

VME-Based Switching and Instrumentation

SVM2001/2/3/4
VME-Based Signal Switching

The VME-based SVM series of switch modules provides all the intelligent features of our VXIbus line. Programmable timing delays, confidence checking and safety interrupts are implemented in the hardware to considerably reduce software overhead. These units are hermetically sealed and ideal for use in harsh environments. They have an operating range spanning from -20 to +60 degrees C. These modules are at the core of F-16 flightline rugged testers.


SVM2001

SVM2608

SVM2608
VME-Based Multifunction Measurement Module

The SVM2608 includes four independent channels of 100 kSa/s analog-to-digital converters with the option to add two 20 MSa/s channels. The board is equipped with a microprocessor that provides built-in measurement functions and has input ranges that extend from 2 Vp to 100 Vp. This module is hermetically sealed and ideal for use in harsh environments. It has an operating range spanning from -20 to +60 degrees C and is at the core of F-16 flightline rugged testers.

SVM Series Ordering Information

Model	Description
SVM2001	60 SPDT, 300 V/2 amp
SVM2002	26 SPST, opto-isolated 5 amp solid-state switches
SVM2003	100 SPST, opto-isolated 1 amp solid-state switches
SVM2004	4 SPST, opto-isolated 10 amp, 20 SPDT 5 amp, 2 SPST 10 amp switches
SVM2608	Four independent 100 kSa/s A/D Converters
Option 01	Add two independent 20 MSa/s A/D Converters
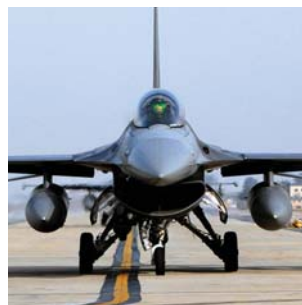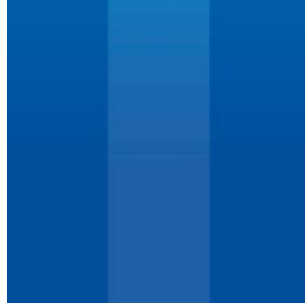
About VTI Instruments Corporation

VTI Instruments is the market leader in functional test and data acquisition systems. ISO9001:2000 registered, the company serves the aerospace, automotive, avionics, defense, industrial automation, medical, satellite communications, and telecom markets. The company engineers and produces over 200 components and subsystems to build both custom and standard test systems. With plants in the U.S., Europe and Asia, worldwide product support is provided through a network of VTI-certified engineering representatives. VTI is a sponsor member of the VXI Consortium and a strategic/founding member of the LXI Consortium.

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