PXI
Products & Solutions

MARVIN TEST SOLUTIONS | A MARVIN GROUP COMPANY

We Make Test Easy™

TS-323

We Make Test Easy™

As a vertically-integrated test company, Marvin Test Solutions has delivered innovative, feature-rich test solutions for factory, depot, intermediate, and flight line applications since 1988. Our expertise tackling the demanding test needs for aerospace test systems carries through to our work in manufacturing applications, allowing us to quickly create and deliver test equipment that is modular, high-performance, low-power, and ultimately, easy for our customers to use and deploy.

A member of the Marvin Group, an award-winning organization with a 50-year history in the defense and commercial aerospace industries, Marvin Test Solutions has test systems and products deployed in support of most of the major defense aircraft and munitions in use around the world. Backed by unrivaled long-term customer support and a solution centric focus, customers can rely on our innovative systems and products to successfully address both current and future test needs – for flight line, depot, and manufacturing test.

This brochure provides an overview of our PXI systems, products and software offerings.

- PXI-based functional test platforms for manufacturing, depot, intermediate-level, and flightline test
- A family of PXI and PXI Express products including 3U and 6U chassis and instrumentation
- The highest-performing digital test instruments in the industry featuring test rates up to 200 MHz, 512 MB of onboard memory, multiple timing sets with 1ns edge-placement, and integrated per-pin parametric measurement units (PMUs) for semiconductor, board, and system level test applications
- The highest density switching subsystem available today with over 4500 interface test points and any-resource to any-pin architecture
- Test development and test executive software
- Instrument controllers
- Analog test instruments including DMMs, counters, Arbitrary Waveform Generators, DSOs, and more
- Switching modules including multiplexers, matrices, high-current, and RF switching configurations

For detailed information about the products described in this brochure, please visit our website at www.marvintest.com.

CONTENTS

MARVIN TEST
SOLUTIONS

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PXI Systems

TS-700
PRECONFIGURED BENCHTOP TEST PLATFORM

- Cost-effective, functional test solutions for analog, digital, mixed-signal and avionics applications
- Core system includes a high-density interface supporting card and box level products
- Compact platform—ideal for bench top rack mount configurations
- PXI architecture accommodates both 3U and 6U modules

The TS-700 platform is a preconfigured, modular test platform that addresses a range of analog, digital, mixed-signal, and avionics test needs. Based on the GX7102A PXI platform, the TS-700 series of testers offer test engineers a preconfigured, compact, 3U / 6U system which includes all of the required functionality to support the development of functional test applications including a system self-test and a high-pin count tester interface. The TS-700 platform is supplied with Marvin Test Solutions' ATEasy software.

TS-700 Models
- TS-705, Base test system
- TS-710, Core functional test system includes analog and digital test resources
- TS-720, Core functional test system with boundary scan
- TS-730, Mixed-signal functional test system
- TS-750, Digital test
- TS-770, Commercial avionics test system
- TS-775, Military avionics test system

TS-323 GENASYS
PRODUCTION/DEPOT TEST PLATFORM

- High performance digital subsystem
- Hybrid & multiplexed pin capability
- Comprehensive tools for migrating LASAR based programs
- Ideal for upgrading / replacing legacy Teradyne L200/L300, GenRad 2750 and VXI-based digital systems

The TS-323 GENASYS platform is a PXI based test system which is designed to address a broad range of mil-aero and mission-critical products that require performance functional testing. The core system includes the GX5960 digital subsystem which offers best-in-class performance digital test capabilities. Featuring a 50 MHz vector rate, programmable voltage levels per pin, timing per pin and multiple timesets, the GX5960 subsystem provides all of the features necessary for complex functional testing or for legacy test program migration. Additionally, the GX5960 subsystem provides access to an analog switching subsystem, allowing each digital channel to have hybrid signal capability providing any resource to any pin signal routing. For multiplexed pin configurations, the GENASYS can be configured with 2:16 multiplexer switch cards, providing over 4000 multiplexed pin connections to the UUT interface.

The TS-323 includes ATEasy, a test executive and test programming software suite as well as all of the necessary instrument drivers.

PXI SYSTEMS

TS-900
PXI SEMICONDUCTOR TEST PLATFORM

- PXI flexibility and performance with an integrated modular test interface
- Supports up to 512, 125 MHz digital I/O channels with a PMU per pin
- Includes ICEasy test software tools - simplifying test creation and device characterization
- Multiple configurations – benchtop, integrated cart, and integrated manipulator
- High voltage digital I/O option (TS-906)
- MEMS device test configuration for high channel count, parallel test capability (TS-920)

The TS-900 test system platform incorporates a custom-designed, performance test interface that supports the use of PCB DUT (Device Under Test) boards. The system can be configured with 64, 100 MHz digital I/O channels or with the advanced GX5296 digital subsystem (TS-960), which features timing per pin, 1 ns edge placement, and vector rates of up to 125 MHz. The system also includes 64 static digital I/O channels, a programmable user power supply, and a system self-test and fixture. System software includes ATEasy, DIOEasy, and ICEasy - a library of device test development tools; and all necessary instrument drivers. Digital vector conversion tools are also available which support ASCII, WGL, STIL, VCD and ATP vector formats.

MTS-207
RUGGEDIZED 14-SLOT PXI FIELD TEST SET

- Ultra-rugged and portable PXI platform for field and flight-line applications
- Meets MIL-STD-810E requirement for harsh environmental conditions
- Built-in, shock-mounted 14-slot PXI chassis (seven 3U and seven 6U slots)
- Optional touch-screen display (meets same environmental specifications)

The MTS-207 is a state-of-the-art portable PXI platform for field testing and data acquisition systems. Its architecture is based on the MTS-206, which has been qualified as a flight-line tester for the Maverick Missile system. It combines the capabilities of the versatile and powerful PXI architecture in a compact, ultra-rugged, flight-line qualified enclosure.

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GX7200
21-SLOT PXI EXPRESS *SMART* CHASSIS

- Flexible slot configuration offers (8) PXI-1, (8) Hybrid, and (4) PXIe slots
- 4x4 PXIe lane architecture
- Built-in hard disk drive for embedded controller configurations
- Integral Smart functions

The GX7200 Series can accommodate up to 20 instruments as well as a single-slot PXI Express controller. The backplane architecture supports Gen 2 PCI Express bus signalling and the use of both x1 or x4 system controllers.
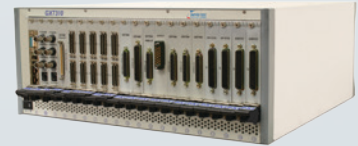
GX7300
20-SLOT PXI *SMART* CHASSIS

- 20 slots supporting a 3U PXI controller (embedded or remote) and 19 3U PXI or cPCI instruments
- Built-in peripherals (hard disk drive and a DVD-RW drive) for embedded controller configurations
- Integral Smart functions provide chassis monitoring / control

The GX7300 series is available in multiple models, including a slave chassis, integral hinged front panel, and a high power configuration.

GX7310
3U, 20-Slot Smart PXI Slave Chassis

GX7302/GX7312
GX7300 with a hinged front panel

GX7302-MP
GX7300 with a MAC Panel SCOUT receiver

GX7305/GX7315
20-Slot, high-power PXI Chassis offers 60 watts of system power per slot

GX7600
9-SLOT PXI EXPRESS *SMART* CHASSIS

- Supports a 3U PXI Express controller, 2 PXI Express hybrid slots, 5 PXI slots, and a PXI Express system timing slot
- Built-in peripherals (hard disk drive, and a DVD-RW drive)
- Integral Smart functions provide chassis monitoring / control

The GX7600 Series mainframes are compact, 9-slot PXI chassis that can accommodate up to 8 instruments as well as an embedded single slot PXI Express controller or a PXI Express external bus controller such as the x1 or x4 MXI - PXI Express interface.

GX7800
8-SLOT PXI CHASSIS

- Supports a 3U (embedded or remote) PXI controller (up to 3 slots)
- (6) PXI-1 peripheral slots and one system timing slot
- 450 W system power supply

The GX7800 is a compact, 8-slot PXI chassis that can accommodate up to 7 instruments as well as an embedded 3-slot PXI controller or an external bus controller such as a MXI interface.

GX7000
6U PXI SMART CHASSIS

- 20 slots supporting an embedded or remote PXI controller and 19 PXI or cPCI instruments (3U or 6U)
- Built-in peripherals (hard disk drive and a CD-RW drive) for embedded controller configurations
- Integral Smart functions provide chassis monitoring / control

The GX70xxB Series is a 20-slot, 6U PXI chassis that provides the necessary real estate to accommodate high-performance and high-density test instrumentation, while offering the flexibility to use 3U PXI and cPCI instruments as well.

GX7002/ GX7012
GX7000 with an integrated cable tray and a hinged front panel

GX7010
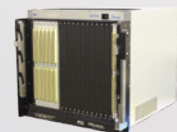*6U, 20-Slot PXI chassis for use with a PXI Bus Expander*

GX7002-MP
GX7000 with MAC Panel SCOUT receiver

GX7005/ GX7015
High-capacity cooling and Green Power enabled architecture for GX5055 and GX5960

GX7016
High performance, modular switching subsystem supports analog and digital resources with an integrated MAC Panel SCOUT receiver

GX7100
3U/6U COMBINATION PXI SMART CHASSIS

- Available in PXI-1 and PXI Express configurations
- Built-in peripherals (hard disk drive and a CD-RW drive) for embedded controller configurations
- Integral Smart functions provides chassis monitoring / control

The GX710x Series features a 14-slot combination PXI chassis which is available in both PXI-1 and Express configurations. The GX710x's unique format includes seven 3U slots and seven 3U/6U slots arranged horizontally with the chassis requiring only 4U of rack space.

GX7102/ GX7112
GX7100 with an integrated cable tray and a hinged front panel

GX7110
3U/6U, 14-slot PXI chassis for use with a PXI Bus Expander

GX7111
PXI Slave Combo Chassis with a 2" recessed instrument card cage

GX7100-HP1
Offers additional cooling capacity to accommodate GX5055 or GX5960 digital instruments.

GX7100e
Slot configuration: 3U: (2) PXI-1, (3) Hybrid, (1) PXIe, (1) controller 6U: (7) Hybrid

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CONTROLLERS

GX7936
3U QUAD-CORE INTEL CORE™ i7 CONTROLLER

- 2.1 GHz quad-core Intel Core™ i7 processor
- 4 GB RAM
- Onboard Gigabit Ethernet
- USB and COM ports

The GX7936 is a single-slot embedded cPCI 3U controller for use with the GX7300 PXI chassis and features a 2.1 GHz quad-core Intel Core™ i7 processor.

GX7937
3U INTEL CORE™ i7 CONTROLLER

- 2.3 GHz Intel Core™ i7 processor
- 4 GB RAM
- Onboard Gigabit Ethernet
- USB 2.0 ports

The GX7937 is a single-slot embedded cPCI 3U controller for use with the GX7300 PXI chassis and features a 2.3 GHz, 3rd generation quad-core Intel Core™ i7 processor.

GX7944
3U INTEL CORE™ 2 DUO EXPRESS CONTROLLER

- 2.16 GHz Intel Core™ 2 Duo processor
- 2 GB RAM
- Onboard Gigabit Ethernet & USB ports
- 4 x1 PCI Express bus configuration

The GX7944 controller supports multiple peripherals and I/O interfaces through either the controller's front panel or the rear I/O panel of the GX7600/GX7200 chassis. The controller's front panel I/O supports VGA, two USB 2.0 ports, and two Gigabit Ethernet ports.

GX7927
6U INTEL CORE™ i7 CONTROLLER

- 2.53 GHz Intel Core™ i7 processor
- 4 Gigabit Ethernet ports (2 front, 2 rear I/O)
- 5 USB ports (1 front, 4 rear)
- 4 GB RAM

When installed in a GX7000 or GX7100 chassis, the GX7927 supports all integrated chassis peripherals (hard drive, DVD, etc.) and provides a variety of I/O interfaces including USB, Gigabit Ethernet, RS232, and VGA.

MXI-4E & MXI-Express
PXI & PXI EXPRESS BUS EXPANDERS

- PCI or PCIe to PXI or PXI to PXI interface
- Up to 798 MB/sec transfer rates
- Supports 32 and 64-bit configurations
- PCMIA, ExpressCard, PCI and PCI Express configurations

The MXI-4e and MXI-Express bus expanders allow direct control of any PXI or PXI Express chassis from a desktop computer, laptop, or from another PXI chassis.

Marvin Test Solutions offers the highest performance, PXI digital test subsystems in the industry. Offering industry leading capabilities such as timing per pin, integrated PMU per pin capabilities, high channel count, and multiple time sets with 1 ns edge placement; MTS' digital instrumentation can address a wide range of applications for semiconductor, module, and system test.

Dynamic Digital I/O Card Features

Model	Vector Rate	Channels	Logic Levels	Per pin PMU	Per Pin Edge Placement	Vector Depth	Formatting	Direction Control	Real Time Compare
6U PXI									
GX5961 / GX5964	50 MHz	16 / 32	Programmable per pin, dual-level drive and sense; -14V to +25V	Yes	Yes	256Kb/ Ch	Yes	Dynamic, per Ch	Yes
GX5055	50 MHz	32	Programmable per pin, dual-level drive and sense; -14V to +25V	Yes	No	512Kb / Ch	Yes	Dynamic, per Ch	No
GX5050	50 MHz	32	TTL, PECL, LVDS, & programmable (0-9 V)	No	No	256K / Ch 1Mb / Ch (opt.)	No	Dynamic, per Byte	No
3U PXI									
GX5296	125 MHz	32 + 4 Aux	Programmable per-pin, dual-level drive and sense; -2V to +7V range	Yes	Yes	64Mb / Ch	Yes	Dynamic, per Ch	Yes
GX5295	100 MHz	32 + 4 Aux	Programmable per-pin, dual-level drive and sense; -2V to +7V range	Yes	No	64Mb / Ch	No	Dynamic, per Ch	Yes
GX5293	200 MHz	16	LVTTL/CMOS/LVCMOS LVDS/LVDM/M-LVDS 1.4 to 3.6, prog. output level	No	No	128 Mb / Ch	No	Dynamic, per Ch	Yes
GX5292 GX5292e	100 MHz	32	LVTTL/CMOS/LVCMOS LVDS/LVDM/M-LVDS 1.4 to 3.6, prog. output level	No	No	64 Mb / Ch	No	Dynamic, per Ch	Yes
GX5291-50 GX5291-100	50 / 100 MHz	32 (not expandable)	TTL/LVTTL/CMOS/LVCMOS 1.4 to 3.6 prog. output level	No	No	32 Mb/ Ch	No	Dynamic, per Ch	Yes
GX5283	200 MHz	32	TTL/L VTTL/CMOS/LVCMOS LVDS/LVDM/M-LVDS 1.4 to 3.6 prog. output level	No	No	128 Mb / Ch	No	Static, per Byte	No
GX5282	100 MHz	32	TTL/LVTTL/CMOS/LVCMOS LVDS/LVDM/M-LVDS 1.4 to 3.6 prog. output level	No	No	64 Mb / Ch	No	Static, per Byte	No
GX5281	50 MHz	32	TTL/LVTTL/CMOS/LVCMOS 1.4 to 3.6 prog. output level	No	No	32 Mb / Ch	No	Static, per Byte	No

MARVIN TEST SOLUTIONS

3U DIGITAL I/O

GX5296
3U PXI HIGH-PERFORMANCE DYNAMIC DIGITAL I/O & PMU

- Timing per pin, multiple time sets and flexible sequencer
- 32 input / output, 125 MHz channels with PMU per pin
- 4 control / timing channels with programmable levels & PMU
- 64 Mb / channel vector memory
- Per channel drive / sense voltage range of -2 V to +7 V

The GX5296 offers the most advanced performance and features of any 3U PXI, dynamic digital I/O board on the market today. Featuring dynamic timing per pin, multiple time sets, data formatting, and an advanced sequencer, the GX5296 offers users the capability to emulate and test complex digital busses for system, board or device test applications. And with 1 ns edge placement resolution per pin and a PMU per pin, the GX5296 has the ability to perform both DC and AC parametric testing.

GX5295
3U PXI HIGH-PERFORMANCE DYNAMIC DIGITAL I/O & PMU

- 32 input / output, 100 MHz channels, dynamically configurable on a per-channel basis
- 4 control / timing channels with programmable levels
- 256 MB of onboard vector memory
- Drive / sense voltage range of -2 V to + 7 V

Featuring both performance digital and analog test capabilities, the GX5295 provides a cost-effective, tester per-pin architecture. Each digital channel can be individually programmed for a drive hi, drive lo, sense hi, sense lo, and load value (with commutation voltage level). In addition, each channel offers a parametric measurement unit (PMU) providing users with the capability to perform DC measurements on the DUT (device under test).

GX5293
3U PXI HIGH-SPEED DYNAMIC DIGITAL I/O CARD

- 16 input / output, 200 MHz channels
- 256 MB of onboard vector memory
- Supports 1.5 V, 1.8 V, 2.5 V, and 3.3 V LVTTL & LVDS interfaces
- 32 input / output channels for vector rates < 100 MHz

The GX5293 is a high-performance, cost-effective 3U PXI dynamic digital I/O boards offering 16 input or output channels with dynamic direction control. The single board design supports both master and slave functionality without the use of add-on modules.

GX5292 / GX5292e
HIGH-PERFORMANCE DYNAMIC DIGITAL I/O

- 32 input or output, 100 MHz channels
- 256 MB of onboard vector memory
- Selectable inputs and programmable outputs support all TTL/LVTTL & LVDS families
- PXI (GX5292) and PXI Express (GX5292e) configurations

The GX5292 and GX5292e are high-performance, cost-effective 3U PXI dynamic digital I/O boards offering 32 TTL or LVDS input or output channels with dynamic direction control. The GX5292e offers increased PXI bus performance via its PXI Express interface.

GX5292e

GX5292

GX5291-50 / GX5291-100
32 CHANNEL DYNAMIC DIGITAL I/O

- 32 input or output channels
- 128 MB of onboard vector memory
- 50 or 100 MHz vector rate
- Cost-effective digital I/O for low-channel count applications

The GX5291 boards share the same digital features as other members of the GX5290 series although they are not expandable beyond 32 channels and offer no LVDS logic I/O support.

GX5280 Series
50 MHZ / 100 MHZ / 200 MHZ DYNAMIC DIGITAL I/O

- Industry-leading 512 MB of onboard vector memory (GX5283)
- Selectable inputs and programmable outputs support all TTL/LVTTL families
- Supports LVDS, M-LVDS, LVDM interfaces (GX5282 and GX5283)
- Vector rates up to 200 MHz (GX5283)

The GX5280 Series offers high-performance, cost-effective 3U PXI dynamic digital I/O with 32 TTL input or output channels and 32 LVDS input or output channels. The single board design supports both master and slave functionality.

GX5281/GX5282/GX5283

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3U DIGITAL I/O

GX5641 / GX5642
BI-DIRECTIONAL DIFFERENTIAL TTL/LVDS I/O CARDS

- 64 bi-directional conversion channels or 128 digital I/O channels
- Bi-directional TTL or 3.3V TTL I/O and RS422 differential I/O ports per channel (GX5641)
- Bi-directional TTL I/O and LVDS I/O ports per channel (GX5642)
- Compatible with the NI PXI 7811R Intelligent DAQ FPGA module

The GX5641/GX5642 are 3U PXI instrument cards that can be used for logic level conversion or static control. Each channel has two ports (TTL and differential) and can be individually set to operate in either conversion or static I/O modes.

GX5733
128 CHANNEL DIGITAL I/O CARD

- Three 32-bit LVTTL ports for a total of 96 LVTTL input or output channels
- One 32-bit configurable port accepting one GX57xx I/O module for customized input or output levels
- Compatible with PXI Express hybrid peripheral slots

The GX5733 is a 3U modular digital I/O card that offers up to 128 I/O channels. Designed for ATE, data acquisition, or process control systems, the GX5733 offers the highest channel density and flexibility in the industry for a single slot, 3U PXI board.

3U FPGA

GX3500
FLEX DIO FPGA CARD

- User-configurable, onboard Altera Cyclone III FPGA device
- No proprietary FPGA design tools required
- Compatible with Altera's free web-based Quartas II design tools
- Accommodates optional standard and custom expansion boards

Standard Expansion Boards
- GX3501 – 80 channel TTL buffer interface
- GX3509 – 80 channel differential TTL interface
- GX3510 – 80 channel differential mLVDS interface
- GX3540 – 40 channel MECL interface

Note: All of these interfaces require the GX3500 board and can be ordered as GX36xx assemblies

The GX3500 is a user configurable FPGA 3U PXI card that offers 160 digital I/O signals for specific application needs. The card employs the Altera Cyclone III FPGA which can support clock rates up to 150 MHz and features over 55,000 logic elements and 2.34 Mb of memory. The GX3500 can also accept an expansion card assembly which can be used to customize the interface to the UUT—eliminating the need for additional external boards which are cumbersome and physically difficult to integrate into a test system.

3U FPGA

GX3700 / GX3700e
HIGH-PERFORMANCE FLEX DIO FPGA CARD

- User configurable, onboard Altera Stratix III FPGA
- Compatible with Altera's free, web-based Quartus II design tools
- x4 PXI Express interface & integral DMA controller supports data streaming rates of more than 800 MB/s (GX3700e)
- Compatible I/O with NI 7811/7813 (GX3702)

The GX3700 and GX3700e are high-performance, user configurable, FPGA-based, 3U PXI and PXI Express cards which offer 160 single ended digital I/O signals or 42 differential signal interfaces. The GX3700 / GX3700e is supplied with an integral expansion board providing access to the FPGA's 160 I/Os or users can design their own custom expansion cards for specific applications.

GX3788
HIGH-PERFORMANCE, FPGA MULTI-FUNCTION CARD

- 96 digital I/O signals
- 8, 16-bit differential, 250 KS/s A/D inputs
- 8, 16-bit, 1 MS/s D/A outputs
- User configurable, on-board Altera Stratix III FPGA

The GX3788 is based on the GX3700 FPGA card and includes an integral daughter board which provides (8) differential input, 16-bit, 250 KS/s A to D converters and (8), 16-bit, 1 MS/s, D to A converters. The module's FPGA is pre-programmed, providing access to all digital and analog functions.
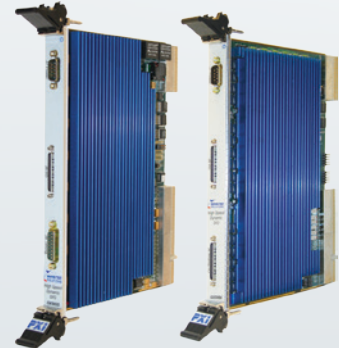
6U DIGITAL I/O

GX5960
HIGH-PERFORMANCE 50 MHZ DYNAMIC DIGITAL I/O SUBSYSTEM

- High-voltage pin electronics with per-channel programmability & PMU per pin
- Green Power enabled architecture minimizes power dissipation
- Analog bus access for each I/O channel
- 256 timing sets with 4 phases and 4 windows, 1 ns edge resolution

Offering high-performance pin electronics and a timing generator / sequencer in a compact, 6U PXI form factor, the GX5960 series consists of one GX5961 Clock generator board with 16 driver / sensor channels and the GX5964 driver / sensor board which supports 32 bi-directional I/O channels. Up to 528 digital I/O channels can be supported by the GX5960 digital subsystem. Each digital channel features a wide drive / sense voltage range of -14 V to +25V (maximum swing of 25 volts) which can be individually programmed for drive and sense voltage levels.

GX5961/GX5964

GX5055
HIGH-PERFORMANCE 50 MHZ DYNAMIC DIGITAL I/O

- Dual level drive / sense, programmable load and PMU on a per-pin basis
- Adjustable slew rate from .1 to 1 V/ns
- Wide drive / sense voltage range: -14 V to +25 V, 25 Vp-p (max)
- 32 bi-directional I/O pins

The GX5055 offers high-performance pin electronics and an enhanced timing generator in a compact, 6U PXI form factor. Each card can function as a stand-alone digital subsystem or if required, multiple cards can be interconnected, providing a single domain and supporting up to 576 bi-directional pins.

GX5050
HIGH-SPEED 50 MHZ DYNAMIC DIGITAL I/O

- 32 bi-directional I/O pins (expandable to 512 pins)
- 3 MB or 12 MB of total onboard memory
- Dynamically controlled sequencer using opcodes and conditional logic for branching, looping, & subroutines
- Multiple I/O options include TTL, PECL, LVDS, and programmable levels

Options
- GX5910 – TTL I/O Module
- GX5930 – Programmable Level (0-9V) I/O Module
- GX5940 – PECL I/O Module
- GX5960 – LVDS I/O Module

6U DIGITAL I/O

GX5731
224 CHANNEL DIGITAL I/O CARD

- Four 32-bit TTL modules provide a total of 128 TTL input or output channels
- Three 32-bit ports accept GX57xx I/O modules for customized input or output levels (96 customizable I/O channels)
- I/O modules support Summation digital I/O product (DIL, DOL, and DPO) features

The GX5731 is a 6U modular digital I/O card with 224 I/O channels. Of the 224 channels, 128 have TTL levels, with the direction of each group of eight channels programmable as an input or output. The remaining 96 channels can be customized using GX57xx series I/O modules.
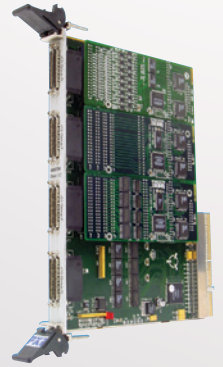
I/O Module Options

- GX5701 – 32 channel digital input latch module with programmable threshold, handshaking, and 16 KB of vector memory
- GX5702 – 32 channel digital output latch module with handshaking and 16 KB of vector memory

- GX5704 – Digital power output latch module, 32 optically isolated, OC outputs with handshaking and 16 KB of vector memory
- GX5709 – 32 channel RS-422 I/O module
- GX5711 – 16 channel LVDS to TTL bi-directional converter
- GX5712 – 16 channel RS-422 to TTL bi-directional converter

GX5732
224 CHANNEL TTL DIGITAL I/O CARD

- Seven 32-bit ports for a total of 224 input or output channels
- TTL Levels
- Four 8-bit, 50 MHz counters

The GX5732 is a 6U PXI static digital I/O card with 224 I/O channels. In addition, the GX5732 has four 8-bit, count up / count down, 50 MHz counters. Eight I/O pins on the counter port can be used as an input or output to any of the counters. The counters may be daisy chained to create two 16-bit counters, or one 32-bit counter.

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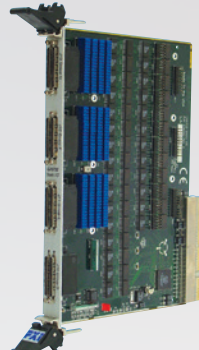
3U ANALOG

GX2472 / GX2475
DUAL-CHANNEL, 70 MS/S DIGITIZER

- Two channel, 14 bit digitizer
- Differential or single ended inputs
- 1V to 20 Vpp full scale (GX2472)
- Hi voltage option: 75 V to 600 Vpp full scale (GX2475)

The GX2472 and GX2475 are high-performance, dual differential channel, 14-bit digitizers offering high-dynamic range and excellent SFDR. The module's differential inputs and wide input voltage range makes it an ideal instrument for analyzing high-performance, high-voltage or low-level analog signals. Each channel offers 3 selectable low-pass filters, a 14 bit, 70 MS/s ADC, and 512K of memory.

GX1034
STANDARDS MODULE

- Voltage, frequency, and resistance standards
- Onboard EEROM ensures standards traceability and accuracy
- Built in current source and DC measurement resources for system self-test support
- Built-in self test

The GX1034 offers PXI system designers the capability to develop a system re-certification strategy that employs only internal system resources. By incorporating the GX1034 as part of a system configuration, a test system's source and measure baseband instrumentation can be rectified, simplifying support / maintenance logistics and improving system availability.
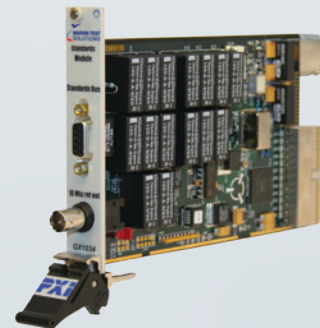
GX2065
PERFORMANCE 6½ DIGIT MULTIMETER

- DC / AC volts and current. 2-wire and 4-wire ohms
- 3 MHz digitizing function
- AC True RMS measurements, 10 Hz to 300 KHz
- Measure 1 uV to 300 V

The GX2065 features 6½ digit resolution, 0.005% basic DCV reading accuracy and up to 3,500 reading per second (rps), assuring you of measurements that are accurate, fast and repeatable. All measurement functions including digitizing functions are isolated from the PXI bus—providing the ability to make true differential, floating measurements.
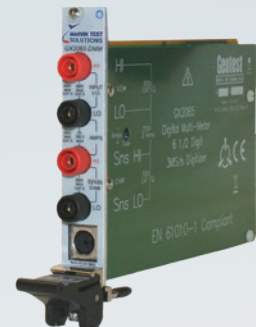
GX1164 Series
PROGRAMMABLE RESISTOR CARDS

- 1 Ω to 64K Ω resistance, 1 Ω resolution (GX1164)
- 2 Ω to 128K Ω resistance, 2 Ω resolution (GX1164-2)
- 4 Ω to 256K Ω resistance, 4 Ω resolution (GX1164-4)
- 8 Ω to 512K Ω resistance, 8 Ω resolution (GX1164-8)

The GX1164 series are 3U PXI programmable resistor cards with 8 programmable channels. Optionally, the cards can be configured for four channels, which will simulate resistances from 1 Ω to 64K Ω with 1 Ω resolution (GX1164 model). The GX1164 includes an onboard EEPROM that contains calibration data.

14

GTX2200 Series
TIME INTERVAL COUNTERS

- 14 measurement functions
- DC to 225 MHz (GTX2210), DC to 1.3 GHz (GTX2220), DC to 2.0 GHz (GTX2230)
- 100 ps resolution without averaging (GTX2220 and GTX2230 only)
- Fast measurement mode: 2300 readings/sec

The GTX2200 series of PXI universal time interval counters offers many of the measurement and timing functions of high-end stand-alone frequency counters, including accumulate, auto ratio, frequency, fast frequency (GTX2220 and GTX2230 only), period, ratio, single period, test clock, time interval, time interval delay, totalize, totalize gated, totalize gated once, and width.

GTX2210/GTX2220/GTX2230

GX1642 / GX1648
ANALOG OUTPUT CARD

- 64 individually-controlled analog outputs
- 12-bit resolution
- Output range: -10 V to +10 V (GX1648), -20 to +20 V (GX1642)
- Output current: +/-10 mA per channel

The GX1642 and GX1648 are 3U PXI digital to analog output boards designed specifically for applications where multiple analog outputs are required. The GX1642 and GX1648 are organized into groups of eight channels. Each group is programmed and triggered independently of the others.
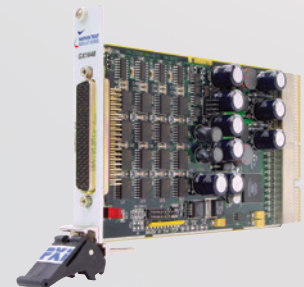
GX1649 / GX1649-1
64 CHANNEL ARBITRARY WAVEFORM GENERATOR

- 16-bit resolution
- Output range: -15 V to +15 V
- 625 KS/s sample rate (64 channel configuration)
- 8 digital I/O lines
- Streaming capability (GX1649-1)

The GX1649 is organized into four groups of sixteen channels, providing up to 64 channels of AWG or DC source capability. For DC operation, each group can be programmed and triggered independently. All groups can be updated simultaneously and each channel within a group can be programmed to a unique voltage. When used as a waveform generator, 256 K of sample memory is allocated to each group of sixteen channels with the user being able to allocate the memory for one or all channels.

MARVIN TEST SOLUTIONS

GX1120
TWO-CHANNEL ARBITRARY/FUNCTION GENERATOR

- Arbitrary waveform generator and direct digital synthesis modes
- 250 MS/s sample rate per channel, 400 MS/s sample rate combined channel mode
- 16-bit vertical resolution
- Programmable from 50 mV to 10 V p-p, full scale

The GX1120 is a high-performance, two-channel waveform generator that offers function generator and arbitrary waveform generator functionality within one instrument. The GX1120 comes standard with 32 M samples of waveform memory.

GX1110
ARBITRARY/FUNCTION GENERATOR

- Arbitrary waveform generator and direct digital synthesis modes
- 100 MS/s sample rate
- 12-bit vertical resolution
- 2 M sample memory

The GX1110 is a high-performance, single-channel waveform generator that offers function generator and arbitrary waveform generator. Built-in waveforms include Sine, Triangle, Ramp, Noise, Gaussian pulse and Sinx/x.

GX1200 Series
ARBITRARY WAVEFORM GENERATORS

- 50 MS/sec (GX1200) and 100 MS/sec (GX1201) sample rates
- Programmable 10-digit sample clock with a frequency resolution of 1 µHz
- 14-bit vertical resolution
- 2 MS memory depth

The GX1200 and GX1201 are high-performance, single-channel PXI arbitrary waveform generators that combine a function generator, arbitrary waveform synthesizer, programmable sequencer, pulse generator, and modulation generator in one instrument.

GX1200 / GX1201

GX1222
WIDEBAND AMPLIFIER

- DC to 20 MHz Bandwidth
- 40Vp-p maximum output voltage into open circuit
- 20Vp-p maximum output voltage into 50 Ω load
- Isolated input & output

The GX1222 is a single-slot, PXI-based wideband power amplifier used for signal amplification purposes. Offering unprecedented signal purity, the GX1222 amplifies signals from DC to over 20 MHz with a fixed gain of x10. Custom gains are also available without jeopardizing signal purity and amplifier performance.

DC SOURCE & USER POWER

GX7404
POWER INTERFACE & PROTOTYPE CARD

- Four fixed DC power outputs: +3.3 V, +5 V, +12 V, and -12 V
- Software controlled on/off switching
- Output voltage and current readback
- Onboard prototyping area for custom circuitry

The GX7404 power interface card offers a low-cost method to provide controlled power to a UUT or test target interface circuitry. The GX7404 offers special features, including external output inhibit, UUT discharge, and a prototype area.

GX1838 Series
PRECISION MULTI-CHANNEL DC SOURCE

- Eight discrete output channels
- Three programmable voltage rails
- Two output configurations: -10V to +32 (GX1838) or -20V to +20V (GX1838-20)
- 500 mA maximum current output

The GX1838 provides eight output channels that can be isolated, connected to any of the three voltage rails, or connected to one of three external sources. Each of the three voltage rails can be programmed to output -10 VDC to +32 VDC or -20VDC to +20 VDC with 14-bit resolution.

GX1838 / GX1838-20

GX3348-1 / GX3348-2
MULTI-CHANNEL ANALOG I/O CARD

- Three programmable DC outputs, -20 to +32 VDC
- 4 x 48 / 4 x 64 matrix provides access to the DC sources or ground
- External source input with switchable amplifier

The GX3348 provides (3) programmable sources, and a 4 x 48 or 4 x 64 matrix which allows the user route the 3 sources, or ground to any of the matrix I/O channels. Each I/O channel can also be connected to a 12-bit A to D converter.

GX7400A
DUAL OUTPUT USER POWER SUPPLY

- Two programmable, isolated 150W output supplies
- Read-back voltage and current at output
- Over-voltage and over-current protection
- Remote inhibit via front panel connector

The GX7400A is a dual-output, programmable DC power supply. AC power is provided via a front-panel receptacle. The power supplies are fully isolated and can be externally connected in series to provide higher voltage.

Power Supply Module Options
- GX7415 – 0-15V @10A programmable power supply
- GX7430 – 0-30V @5A programmable power supply module
- GX7460 – 0-60V @2.5A programmable power supply module

3U Multifunction

GX3216
18 CHANNEL, 1 MS/S ANALOG INPUT / OUTPUT CPCI MODULE

- 16 differential, 16-bit, analog inputs
- 2 analog outputs, simultaneous 1 MSPS 16-bit DACs
- +/- 10V, +/- 5V, +/- 2.5V input / output ranges
- 256K sample input and output FIFO data buffers

The GX3216 is a multi-channel analog input and output cPCI module, supporting 16 differential input channels and two analog output channels. Dedicated 1 MS/s D to As and A to Ds allow simultaneous acquisition and generation of analog signals.
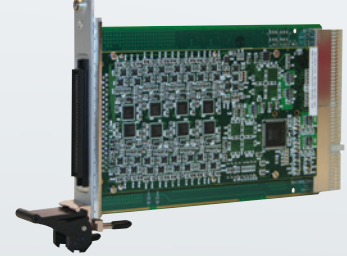
GX3232
32 CHANNEL, INPUT / OUTPUT CPCI MODULE

- 32 single-ended or 16 differential, 16-bit, scanned analog inputs
- 300 KS per second aggregate analog input sampling rate
- 4 analog outputs, 300 KS per second analog output clocking rate per channel
- 60 V input range option (GX3232-60V)

The GX3232 is a multi-channel 16-bit, analog input and output cPCI module, supporting 32 single-ended or 16 differential input channels and four analog output channels. A 16-bit digital I/O port is also provided, which supports 16 bidirectional data lines.
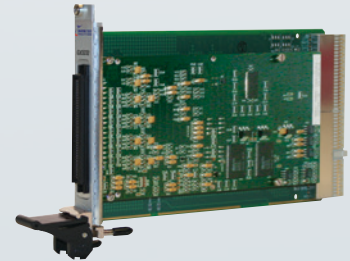
Switching Subsystem

GX7016
GENASYS SWITCHING SUBSYSTEM

- 6U PXI chassis with integrated MAC Panel SCOUT receiver
- 20 slot 6U PXI chassis supports GENASYS switching subsystem modules
- Supports over 4000 multiplexed, hybrid pin connections
- Supports up to 288 digital channels when integrated with a digital subsystem

The GX7016 is a 20-slot 6U PXI chassis that can accommodate up to 19 switching or instrument cards as well as a remote PXI bus interface such as the MXI-4. In addition to supporting all of the PXI-1 resources, the GX7016's PXI backplane provides an internal, high performance, 16 wire, analog bus via the backplane's P5 connectors.
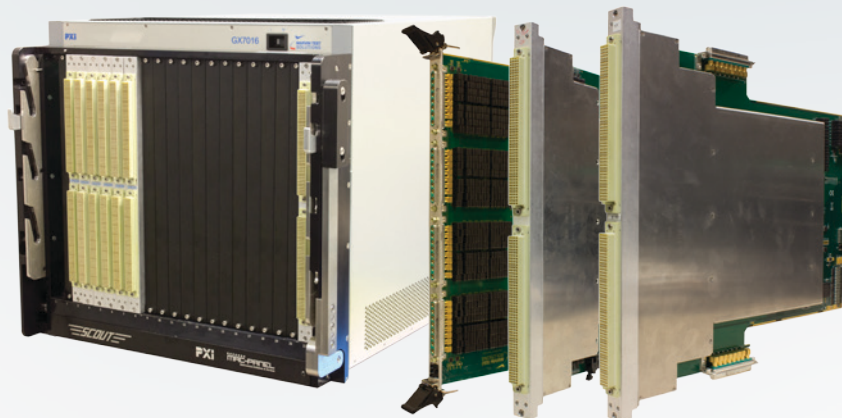
GX6115
HIGH-CURRENT RELAY CARD

- 15 individual high-current single-pole, double-throw (SPDT) Form C relays
- 7A @ 30 VDC contact rating per channel
- 3 additional relay drivers for external relays or other devices

The GX6115 offers 15 high-current relays with a 7A @ 30 VDC current rating for each channel. The GX6115 also provides three transistor-driven channels for external relays. A 50-pin D type connector routes all signals to the front panel.
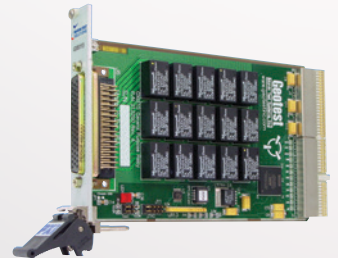
GX6125
GENERAL PURPOSE SWITCHING CARD

- 25 channels of single-pole, double-throw (SPDT) Form C relays
- 2 A contact rating per channel
- Available with 75 2A channels in a 6U form factor
- Compatible with PXI Express hybrid peripheral slots

The GX6125 is a high-density switching card with 25 SPDT Form C relays capable of switching 2 A at 220 VDC. The GX6125 is suitable for all test applications requiring general-purpose, low-level switching.

GX6138
HIGH-DENSITY SWITCHING CARD

- 38 channels of single-pole, single-throw (SPST) Form A relays
- 0.5 A contact rating per channel
- Available with 114 channels in a 6U form factor
- Compatible with PXI Express hybrid peripheral slots

The GX6138 is low-cost switching card with 38 individual low level SPST Form A relays capable of switching 0.5 A at 200 VDC. The GX6138 is ideal for applications requiring high-density switching.

GX6021
20-CHANNEL RF MULTIPLEXER

- Four groups of 1x4 multiplexer scanners
- Groups may be daisy-chained
- >500 MHz bandwidth within each group
- >300 MHz bandwidth between groups

The GX6021 is a configurable RF multiplexer. Within each multiplexer group, each channel can be connected to any of the other four channels in its group. Additional relays connect adjacent groups. Using these additional relays, larger groups can be formed such as 2x1:9 or 1x1:19.

MARVIN TEST SOLUTIONS

GX6377
MULTIFUNCTION RELAY CARD

- Five 10 amp, single pole Form A relays
- Four 2 amp, single pole Form A relays
- Four 2 amp, single pole Form C relays
- Dual 16x2, configurable relay matrix

The GX6377 card features multiple channels of high-current switching capability for 10 amp and 2 amp applications as well as two 16x2 switch matrix groups, which can also be configured as a 32x2 or 16x4 matrix.

GX6384 Series
HIGH-DENSITY SWITCH MATRICES

- Supports up to 384 switch cross-points
- Available in three configurations: dual 32x2, dual, 32x4, & dual 32x6
- Can be configured in software as a 64x2, 64x4, or 64x6 switch matrix
- User friendly 78 pin sub-D type interface connector

The GX6384 is available in three different configurations, supporting 32x2, 32x4, or 32x6 switch matrix configurations. The GX6384 can also be configured as a single matrix supporting 64x2, 64x4, or 64x6 configurations.
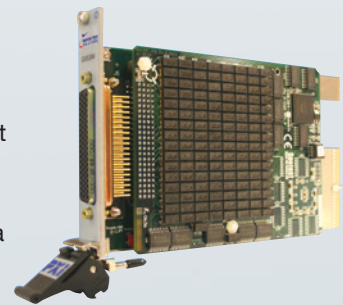
GX6062
RF SWITCHING CARD

- Multiple switching configurations
- 200 MHz bandwidth
- 12 groups of 1x4 switches

The GX6062 is a high-density 6U, single-slot PXI RF switching card that provides an overall bandwidth of 200 MHz and multiple switching configurations. Each 1x4 switch has a bandwidth of 300 MHz. The GX6062 has 12 groups of 1x4 differential, non-terminated RF multiplexers.

GX6264I/C
PXI SCANNER / MULTIPLEXER CARD

- High-density multiplexer configurable as 128 single-ended or 64 differential channels
- Eight scan groups configurable as 16 single-ended or eight differential channels each
- 250VDC or 220VAC switching voltage per channel (GX6264I)
- 100VDC or 150VAC switching voltage per channel (GX6264C)

The GX6264 provides either differential or single-ended switching capability and is configurable via software commands or DIP switches. Typical configurations include: 1:128 single ended, 1:64 differential, 2x1:64 single ended, and 2x1:32 differential.
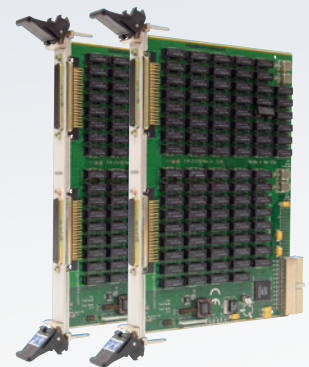
GX6315
HIGH-CURRENT RELAY CARD

- 45 individual high-current, single-pole, double-throw (SPDT) Form C relays
- 7A contact rating per channel
- Nine additional relay drivers for external relays or other devices

The GX6315 is a 45 channel, high-current relay board that plugs directly into any 6U PXI slot. The GX6315 also provides nine transistor-driven channels for external relays. These outputs may be used to drive external loads, such as heavier duty relays, lamps, solenoids, or other devices.

GX6325
GENERAL PURPOSE SWITCHING CARD

- 75 channels of single pole double throw (SPDT) Form C relays
- 2A contact rating per channel

The GX6325 is 6U switching card with 75 SPDT Form C relays capable of switching 2A at 220VDC. The GX6325 is suitable for all test applications requiring general-purpose, low-level switching. The GX6325 consists of three groups: A, B, and C. Each group has 25 high-current relays and a 78-pin, D-type connector.
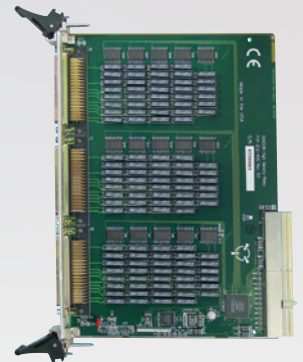
GX6338
HIGH-DENSITY SWITCHING CARD

- 114 channels of single pole single throw (SPST) Form A relays
- 0.5 A contact rating per channel

The GX6338 is a low-cost 6U switching card with 114 individual low-level SPST Form A relays capable of switching 0.5A at 200VDC. The GX6338 consists of three groups: A, B, and C. Each group has 38 individual relays and a 78-pin, D type connector.

GX6616
HIGH-DENSITY SWITCH MATRIX CARD

- Six switching groups allow multiple configurations up to 2x96
- Fast switching time with 0.5 A contact rating
- Single-ended or differential switching capability
- Optional built-in test adapter simplifies maintenance and support

The GX6616 is a switch matrix board that provides either differential or single-ended multiplexing capability via six 2x16 matrix groups that may be used in various configurations. Typical configurations include: 6x2:16, 3x4:16, 3x2:26, and 1x2:96.
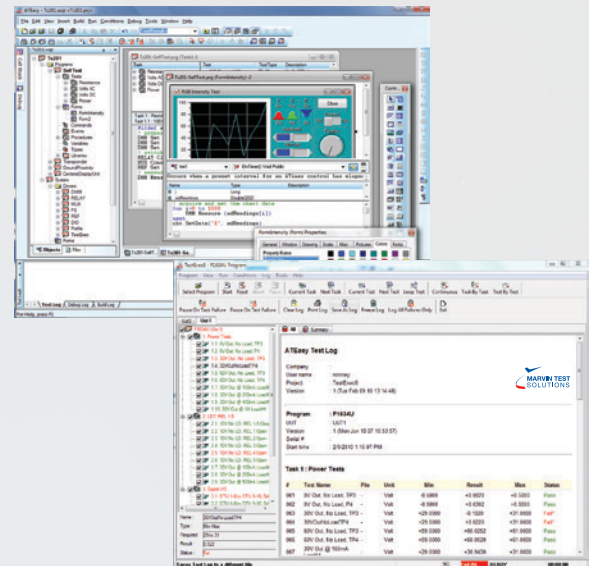
MARVIN TEST SOLUTIONS

ATEasy®
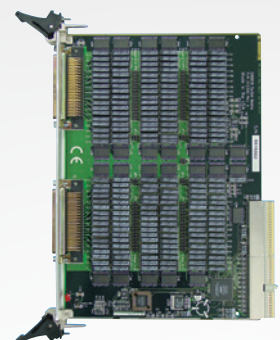
SOFTWARE

Test Executive And Development Studio

## Integrated Test Executive and Programming Development Environment

- Full-featured customizable test executive for execution, sequencing, debugging and fault analysis of tests
- Supports testing of multiple UUTs in sequential, parallel, or mixed mode
- Visual Basic-like Form Editor generates graphical user interfaces, menus, and controls
- Built-in Application Builder generates royalty-free run-time executables (EXE files), and libraries (DLL files)
- Simulation mode supports execution of test programs without test hardware or UUT

Test Development and Support Tools

Marvin Test Solutions offers a full range of software tools for supporting the creation of test programs and for maintaining MTS products. These tools include:

- DIOEasy – A full featured digital waveform edit and display tool set which can also import / convert ASCII, STIL, VCD, eVCD and WGL test vectors
- DtifEasy – A complete software tool set that can import, convert and execute IEEE 1445 files (.tap) using MTS digital instrumentation
- ICEasy – A comprehensive test library for supporting the creation of DC tests for semiconductor test applications
- WaveEasy – An analog waveform tool set that can be used with MTS' ARBs for creating periodic or arbitrary waveforms
- CalEasy – CalEasy supports the verification and re-calibration of MTS' PXI products. With the appropriate external instrumentation, CalEasy automates the complete verification / calibration process.
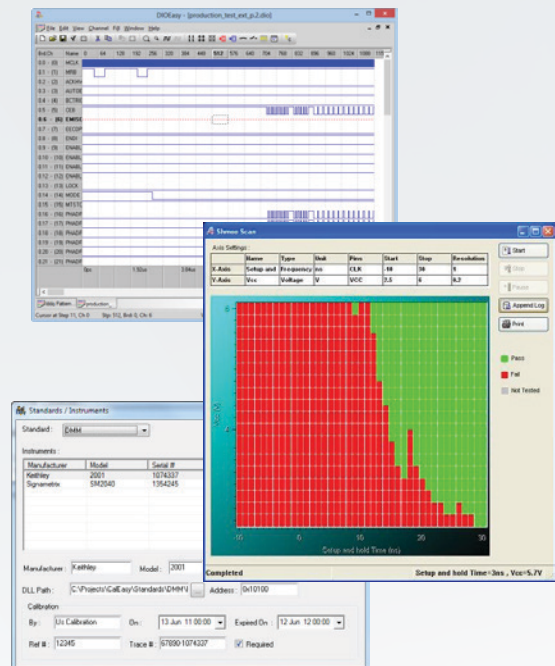
MARVIN TEST SOLUTIONS

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