TS-700 SERIES

PRECONFIGURED FUNCTIONAL TEST PLATFORM

- Preconfigured, 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 test configurations
- PXI architecture accommodates both 3U and 6U modules
- Customizable test solutions without the custom price and delivery time
- 3U/6U PXI Instrument

DESCRIPTION

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 offers test engineers a preconfigured, compact, 3U/6U system which includes all of the required functionality needed to support the development of a functional test application including a system self-test and a high pin count tester interface. When you receive your TS-700 system, it is "application ready" from day one - allowing you to focus on developing your application rather than developing the test system which means you will spend less time developing and deploying your application. Each TS-700 model can be customized for your specific application by incorporating over 10 different standard analog, digital, and communication test resources. The TS-700 platform is supplied ATEasy software, which provides an integrated and complete test executive and test development environment, allowing users to quickly develop and easily maintain test applications.

THE TS-700 CORE SYSTEM

The core system includes the following test resources and capabilities:

- GX7102A 14-slot, PXI chassis with (6) 6U and (7) 3U peripheral slots
- 960 pin, high density, zero insertion force, iCON style UUT interface providing access to all core and optional system resources
- Embedded controller with a Windows OS
- Analog / Digital PMC module offering 8 general purpose differential analog inputs, 4 analog outputs, and 8 general purpose digital I/O lines which can be used as adapter ID inputs or for other static digital applications

TS-700 DIGITAL OPTIONS

Both static and dynamic digital test instrumentation is supported by the TS-700 platform. Digital instrumentation options include:

- GX5280 or GX5290 series digital cards, supporting vector rates up to 200 MHz and up to 96 channels
- GX5733 - a high density, static I/O card, supporting up to 128 digital I/O channels

TS-700 ANALOG AND SWITCHING OPTIONS

Analog source, measure, and switching options for the TS-700 system include:

- GX1110 Arbitrary Waveform Function Generator
- GX2472 Dual Channel Digitizer
- GTX2200 series Counter / Timer
- GX1838 precision multi-channel DC source
- GX7400A dual output, programmable power supply
- GX6616 high density matrix card
- Gx6315 high current relay card
- GX6384 switch matrix (replaces GX6377)

Each instrument or switch option includes a receiver / module cable as well as any necessary cables within the self test adapter to support the system self test. In addition, each instrument is supplied with plug & play drivers as well as an interactive UI for programming and control of each instrument.

TS-700 SERIES

TEST SYSTEM INTERFACE

The GX-700 test system interface employs a unique design approach which allows customization of the system using any of the platform's standard instrument options, without incurring the cost and design time typically associated with a customized functional test system. Each instrument option includes a receiver / module mating cable which makes it easy to configure or change the test system's module configuration. The resulting benefit for the end user is a test system that is cost effective and easily configured for a specific application(s), using using off-the-shelf components and modules. In addition, an optional iCON interface connector can be installed, providing additional interconnects to other system resources within the PXI chassis or to external resources such as GPIB instrumentation. This connector can be configured for power, signal or coaxial connections - providing the user with a range of options for supporting additional types of instrumentation.

SYSTEM SELF-TEST

Each TS-700 system is delivered with a system self test which includes an interactive self-test software procedure as well as a self-test adapter. The self-test verifies functional integrity of the system and resource connections to the test system interface.

TS-700 CONFIGURATIONS

A range of TS-700 models are available with each model easily customized for a specific application by incorporating one or more of the standard TS-700 instrument options. Additionally, the platform can be futher customized by incorporating 3U or 6U PXI / cPCI modules.

Test System Model	Applications
Basic Core System TS-705	Base system which can be fully customized for specific applications
Basic Functional Test Platform TS-710	Low cost, basic analog / digital functional test applications.
Functional Test Platform with Boundary Scan TS-720	Basic functional and structural test applications. CPLD and flash programming
Mixed-Signal Test Platform TS-730	Performance analog and digital test capabilities
Digital Test Platform TS-750	Performance digital test, supports up to 128 channels, 200 MHz vector rate
Commercial Avionics Test Platform TS-770	Analog and digital test support for LRU / SRU assemblies. ARINC 429 support.
Military Avionics Test Platform TS-775	Analog and digital test support for LRU / SRU assemblies. MIL-STD 1553A / B support

AWARDS

BEST IN TEST FINALIST 2010

MANUFACTURING

MARVIN TEST SOLUTIONS

TS-700 SERIES

SPECIFICATIONS

MAINFRAME ELECTRICAL AND MECHANICAL

Mainframe	GX7102A 6U/3U PXI chassis (6) 6U & (7) 3U peripheral slots
System CPU (Embedded)	Windows - based CPU - single slot 6U controller
CPU Memory	4 GB (min)
System Hard Disk	320 GB (min)
CPU Interfaces	RS-232, USB, Ethernet, VGA
UUT Interface	Virginia Panel iCON, 960 pin interface Additional 220 pin interface available (optional)
Input Power	120 / 240 VAC, 20 A, 50 / 60 Hz
Weight	36 lbs
Size	6U - 10.5" H x 17.6" W x 23" D

ANALOG / DIGITAL PMC RESOURCE MODULE

General Purpose Analog Inputs	8, differential inputs, 16 bit resolution
	Input impedance: 1 MΩ
	±2.5 V, ±5 V, or ±10 V full scale
	Aggregate conversion rate: 300 kS/s (max)
	DC accuracy:
	   ±4.2 mV, 10 V range
	   ±2.8 mV, 5 V range
	   ±2.0 mV, 2.5 V range

General Purpose Analog Outputs	4, single ended, 16 bit resolution
	±2.5 V, ±5 V, or ±10 V full scale
	Load: 3 mA (max) per channel
	Generate arbitrary and function waveforms
	Sample rate: 400 S/s to 300 kS/s per channel
	DC accuracy:
	   ±3.0 mV, 10 V range
	   ±2.2 mV, 5 V range
	   ±1.7 mV, 2.5 V range

Digital I/O (Can be Used for Fixture ID Functionality)	8 bit, TTL compatible Configurable as inputs or outputs (bytewise) Sink / source: 20 mA per line

TS-705 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6377, multi-function relay card. Includes dual 16x2 relay matrix, (5) 10 amp Form A relays, (4) 2 amp Form A relays, and (4) 2 amp Form C relays. Note: The iCON interface limits current capacity to 6 A for the GX6377 relay card.

TS-710 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6377, multi-function relay card. Includes dual 16x2 relay matrix, (5) 10 amp Form A relays, (4) 2 amp Form A relays, and (4) 2 amp Form C relays.
User Power	GX7404, power interface and prototype card. Four switched, DC power outputs: +3.3 V, +5 V, +12 V, -12 V. On-board prototyping area for custom circuitry.
Digital I/O	GX5733, 128 channel digital I/O card. 96 LVTTL digital channels. 32 bit configurable port accepts one GX5733 I/O module for customized input / output levels.

TS-720 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6377, multi-function relay card. Includes dual 16x2 relay matrix, (5) 10 amp Form A relays, (4) 2 amp Form A relays, and (4) 2 amp Form C relays.
User Power	GX7404, power interface and prototype card. Four switched, DC power outputs: +3.3 V, +5 V, +12 V, -12 V. On-board prototyping area for custom circuitry.
Digital I/O	GX5733, 128 channel digital I/O card. 96 LVTTL digital channels. 32 bit configurable port accepts one GX5733 I/O module for customized input / output levels.
Boundary Scan Interface	JT 3717 PXI controller. Includes JT 2147 QuadPOD, four-port JT 2148 transceiver and four JT 2149 TAP PODs. Controller resides in the TS-720 and the QuadPOD assembly is located external to the test system. Maximum data rate is 40 MHz.

MANUFACTURING

MARVIN TEST SOLUTIONS

TS-700 SERIES

TS-730 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6616, high density, differential and single-ended matrix switch
User Power	GX7400A, dual channel, 300 W power supply. (2) 0 - 30 V independent supplies
Digital I/O	GX5292, 100 MHz, 32 channel digital I/O card. Optionally add up to 3 more cards. GX5733, 96 LVTTL static digital channels, 32 bit configurable port accepts one GX5733 I/O module for customized input / output levels.
Analog Source	GX1110, 100 MS/s arbitrary waveform function generator
Analog Measurement	GX2472, 2 - channel, 70 MS/s, 14-bit digitizer with differential inputs GX2210, 2 – channel, 225 MHz counter / timer

TS-750 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6377, multi-function relay card. Includes dual 16x2 relay matrix, (5) 10 amp Form A relays, (4) 2 amp Form A relays, and (4) 2 amp Form C relays.
User Power	GX7400A, dual channel, 300 W power supply. (2) 0 - 15 V independent supplies
Digital I/O	(2) GX5292, 100 MHz, 32 channel digital I/O cardS. Optionally add up to 2 more cards. GX5733, 96 LVTTL static digital channels, 32 bit configurable port accepts one GX5733 I/O module for customized input / output levels.

TS-770 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6616, high density, differential and single-ended matrix switch card GX6315, high current (7 A) relay card
User Power	GX7400, dual channel, 300 W power supply. Options: 0 - 15 V, 0 - 30 V, 0 - 60 V
Programmable Source	GX1838, 3 - channel, -10 V to +32 V source Option: -20 V to +20 V
ARINC 429 Interface	RAR 429, 16 Tx / Rx ARINC - 429 channels

TS-775 CONFIGURATION

Digital Multimeter	GX2065, 6.5 digit DMM
Switching	GX6616, high density, differential and single-ended matrix switch card GX6315, high current (7 A) relay card
User Power	GX7400, dual channel, 300 W power supply Options: 0 - 15 V, 0 - 30 V, 0 - 60 V
Programmable Source	GX1838, 3 - channel, -10 V to +32 V source Option: -20 V to +20 V
MIL-STD 1553 Interface	QCP-1553M-1M, dual redundant, single channel 1553 interface - full function (BC, Monitor, RT) Options: Single function and multiple channel (up to 4)

GBATS INSTRUMENT OPTIONS

Digital

GX5733	128 static digital channels
GX528x / GX529x	Up to 128 dynamic digital channels, 200 MHz vector rate
JTAGT 3717	Boundary scan control module

Analog Source

GX1110	Arbitrary waveform generator
GX1838	3-channel, -10 V to 32 V programmable source

Analog Measurement

GX2065	6½ digit DMM
GX2472	2 channel 70 MS/s digitizer, differential inputs
GX22xx	Counter / Timer, up to 2 GHz frequency measurement

User Power

GX7404	Basic user power, ±12 V, +5 V, +3.3 V
GX7400	300 W, two channel, programmable supply, 15 V, 30 V, and 60 V modules

Avionics

QCP-1553	MIL-STD 1553 interface, supports up to 4 dual redundant interfaces
RAR-429	ARINC 429 interface, supports up to 16 channels
NA75DS1	Synchro / Resolver, 2 or 4 channel configurations

Switching

GX6384	Dual 32 x 2 matrix
GX6377	Multifunction, matrix relay card (includes discrete relays & [2] 16 x 2 matrices). Note: the iCON interface limits current capacity to 6 A for the GX6377
GX6616	2 x 92 configurable matrix card
GX6315	High current relay card

MARVIN TEST SOLUTIONS

TS-700 SERIES

ENVIRONMENTAL	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +60 °C
Relative Humidity (Non-Condensing)	90%
Altitude	30,000 ft

Note: Specifications are subject to change without notice

ORDERING INFORMATION

TS-705	GBATS Basic Functional Test System
TS-705s	GBATS Basic Functional Test System (Slave Configuration)
TS-710	GBATS Core Functional Test System
TS-720	GBATS Core Functional Test System with JTAG Boundary Scan
TS-730	GBATS Mixed-Signal Test System
TS-750	GBATS Digital Test System
TS-770	GBATS Commercial Avionics Test System
TS-775	GBATS Military Avionics Test System

MANUFACTURING

THIS PAGE INTENTIONALLY LEFT BLANK

MANUFACTURING

Revision D   •   Updated Jan 6, 2016