

FEATURES

General

- VITA 46 3U VPX
- VITA 48 VPX-REDI
- VITA 65 OPEN VPX

Chassis

- 1/2 ATR, 8 Slot
- Forced Air Conduction Cooled

Configuration Options

- Standard 3U VPX Backplane
- Connector I/O Transition Board
- Chassis Manager
- TSBCi7-300X Intel I7 SBC
- TGA-300X E4690 GP
- TSC-300X RAID Card
- TSM-300X SATA Mass Storage
- TIOC-300X I/O Carrier
- Software Defined Radio
- MIL-STD-1553 / ARINC 429
- ATDS
- High Speed Serial
- PC-Card Removable FLASH
- 1/2 ATR Mounting Tray
- Transition Cable Assemblies

Power Supply

- +28 VDC per MIL-STD-704E
- 50 msec drop-out @ 300 Watts
- 350 Watts (Max)

Environmental

- Operating Temperature: -40°to +71°C
- Storage Temperature: -55°to +105°C
- Humidity: 0 to 95% RH Non-Condensing
- Conformal Coat: Optional
- Shock: 40g Peak Sawtooth @ 11 mSec
- Vibration (Random): 1g2/Hz, 15Hz to 2KHz
- Vibration (Sine): 10g Peak, 15Hz to 2KHz

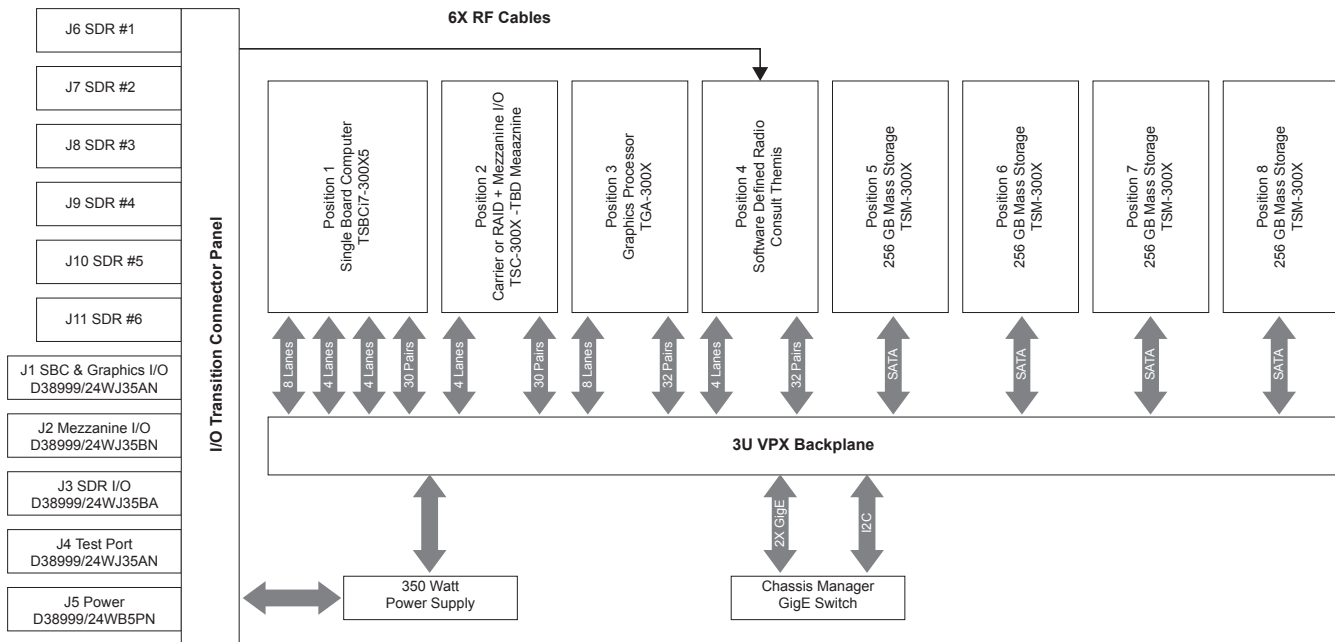
TSY-300X 3U VPX

3U VPX, 8-SLOT, PRECONFIGURED SYSTEM

The TSY-300X™ series of pre-configured Commercial Off The Shelf (COTS) systems can be used for a wide variety of customer applications that include mission computers, display processors, digital maps, payload controllers, SIGINT and EW, communications processors, and network attached storage. The TSY-300X uses a predefined Backplane and I/O Printed Wiring Board (PWB). The 3U VPX backplane uses standard 1.0” pitch card spacing, and the Chassis I/O PWB uses standard D38999 Series Connectors for SBC and Graphics I/O, System I/O, Test/Software Load Signals, and Power Mains Input. 6 SMA connectors are provided for RF/IF input and output signals to a software defined radio card.

The TSY-300X chassis system utilizes forced air conduction cooling. Ambient temperature air is pulled into front panel intakes, down finned sidewall heat exchangers, and out a rear-mounted fan plenum. The compartment housing all internal electronics is sealed from the elements and no outside air flows across the cards. The plenum contains 4x variable speed fans, providing uninterrupted non-degraded operation in the event of a single fan failure. A Chassis Manager (CM) reads system temperature and continuously adjusts fan speed accordingly, providing quiet operation, while providing optimum thermal performance and maximum system reliability. On SM failure, fans revert to full-speed operation.

Drivers and Board Support Packages are available for Linux® and Windows®. Please contact Themis for information on using other Real Time Operating Systems such as VxWorks®, Integrity® and LynxOS®.



Block Diagram

ENVIRONMENTAL SPECIFICATIONS

The TSY-300X baseline system is designed in accordance with MIL-STD-810F and MIL-STD-461E. Test reports for the baseline configuration are available for the tests in the following table. Specification compliance for other than the tested baseline configuration is not guaranteed

by Themis until the specific configuration has been tested with all modules installed and operating. Full Environmental Qualification Testing (EQT) is available.

	SPECIFICATIONS	OPERATING ¹	NON-OPERATING
Shock	Method 516.5 and DO-160D	40g @ 11 ms, half sine	40g @ 11 ms, half sine
Vibration	Method 514.5	.1g2/Hz, 5 to 2000 Hz 10g Peak, 15 Hz to 2 KHz	.1g2/Hz, 5 to 2000 Hz 10g Peak, 15 Hz to 2 KHz
Altitude	Method 500.4	65000 feet	85000 feet
Temperature	Method 501.4 and 502.4	-40C to +71C	-55C to +105C
Humidity	Method 507.4	5% to 95% @ 40C Non-condensing	5% to 95% @ 40C Non-condensing

Notes

- 1. Without optional PC-Card External FLASH Mass Storage Device.

COMPLIANCE SPECIFICATIONS

The Themis TSY-300X Pre-Configured COTS System is designed to meet CE Emissions specification EN 55022, CE

Immunity specification EN 50082-2 and FCC 47 CFR, Part 15, Class A.

Common Chassis and System Options

FUNCTION	STANDARD SYSTEM CONFIGURATION	APPLICATION SPECIFIC (CUSTOM) CONFIGURATION
Chassis Cooling	Forced Air Conduction Cooled	Cold Plate Mounting, Convection Cooled (Fins Only), Liquid Cooled (Heat exchangers available by request)
Chassis Mount	Standard ½ ATR Tray Mounting is standard. Mounting Tray is available from Themis upon request	Chassis may be equipped with foot pads for mounting to cold plate or vehicle structure. Other custom mounting schemes available by request
Front Panel	Front Panel with 1x Power Connector, 1x Test Connector, 3x I/O Connectors, and 6x SMA RF Connectors. Standard slot/pin driven connector and pin assignments	Customer specified connector types and pin assignments by request
Backplane	8 Slot backplane as defined herein. Position 4 and 8 may be equipped with I/O Carrier and PMC/XMC Site	Backplane may be modified for specific customer application by request
External Mass Storage	Top Mounted PC-Card or Data Cartridge FLASH Drive Receptacle (Optional)	Top or Side Mounted Drive Receptacle. Drives may be PC-Card or other form factor by request
High Top for Front I/O, RF, or Optical Cables	Normal Low Top delivered unless SDR External Mass Storage configuration is specified. High Top available for Front I/O, RF Cables or Fiber Optics. (Optional)	Normal Low Top delivered unless SDR or External Mass Storage configuration is specified. High Top available for Front I/O, RF Cables or Fiber Optics.

TSY-300X Series Pre-Configured Rugged Computer Module Configuration Options (Use with Legend Below)

	POSITION 1	POSITION 2	POSITION 3	POSITION 4	POSITION 5	POSITION 6	POSITION 7	POSITION 8	OPTIONS
Digital Map	TSBC	TIOC1553	TGA		TSM				
Display Processor	TSBC	TIOC1553	TGA		TSM				
Avionics Bus Data Recorder	TSBC	TSC1553			TSM	TSM	TSM	TSM	
SIGINT SDR Data Recorder	TSBC	TSC		SDR	TSM	TSM	TSM	TSM	ETOP
SIGINT Console	TSBC	TSC1553	TGA	SDR	TSM	TSM	TSM	TSM	ETOP RPCC
Mission Computer	TSBC	TIOC1553		TIOC HSS	TSM				

Standard System Module Legend¹

MODULE	MODULE TYPE
TSBC	Single Board Computer
TGA	Graphics Processing Assembly
TIOC	I/O Carrier and PMC/XMC Site
TSC	Mass Storage RAID Controller and PMC/XMC Site
TSM	Mass Storage Module (FLASH or HDD)
SDR	Software Defined Radio
1553	MIL-STD-1553 PMC Module
1553/429	Combo MIL-STD-1553 / ARINC 429 PMC Module
HSS	High Speed Serial PMC Module
ATDS	ATDS Data Bus
ETOP	Extended Height Top for Cables
RPCC	Removable PC-Card FLASH
GPS	Global Positioning System Receiver

Notes

1. Contact Themis for module availability.

THEMIS VALUE

Themis provides systems manufacturers and end-users with the most modern, best-of-breed computing resources available. Package and performance scale from small form factor embedded servers to bladed servers. We listen, understand, and work closely with customers to optimize computing solutions that are easy to integrate,

inexpensive to own and operate. Our solutions achieve the optimal balance between standard commercial technology and requirements for rugged environments, and optimize space, weight, and performance.

MODULE INFORMATION

For module part numbers and availability, please contact Themis Computer.

Module Name	Standard ½ ATR Conduction Cooled System Configurations
TSY-310X5	Digital Map with 2 Video Outputs and 1x MIL-STD-1553
TSY-320X5	Display Processor for 2 Displays, 1x MIL-STD-1553
TSY-330X5	Avionics Bus Data Recorder with 4x MIL-STD-1553, RAID, 1 TB FLASH
TSY-340X5	SIGINT SDR Recorder with SDR, RAID, 1 TB FLASH
TSY-350X5	SIGINT Console for 2 Displays, 2x MIL-STD-1553, RAID, 1 TB FLASH
TSY-360X5	Mission Computer with 2x MIL-STD-1553, 4x High Speed Serial CCDL, 256 GB FLASH



Corporate Headquarters
47200 Bayside Parkway
Fremont, CA 94538
Tel: 510-252-0870
Fax: 510-490-5529
www.themis.com

European Sales Office
5 rue Irène Joliot-Curie
38320 Eybens, France
Tel: +33.476.14.77.86
Fax: +33.476.14.77.89

For More Information
Please visit www.themis.com
or contact Themis sales at
510-252-0870

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