

FEATURES

General

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

Chassis

- ½ ATR “Short-Short”, 5 Slot
- Convection Cooled

Configuration Options

- Standard 3U VPX Backplane
- Connector I/O Transition Board
- TSBCi7-300X Intel I7 SBC
- TGA-300X E4690 GPU
- 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
- ½ ATR “Short-Short” Mounting Tray
- Transition Cable Assemblies

Power Supply

- +28 VDC per MIL-STD-704E
- 50 msec drop-out @ 150 Watts
- 150 Watts (Max)

Environmenta

- Conduction Cooled
- 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

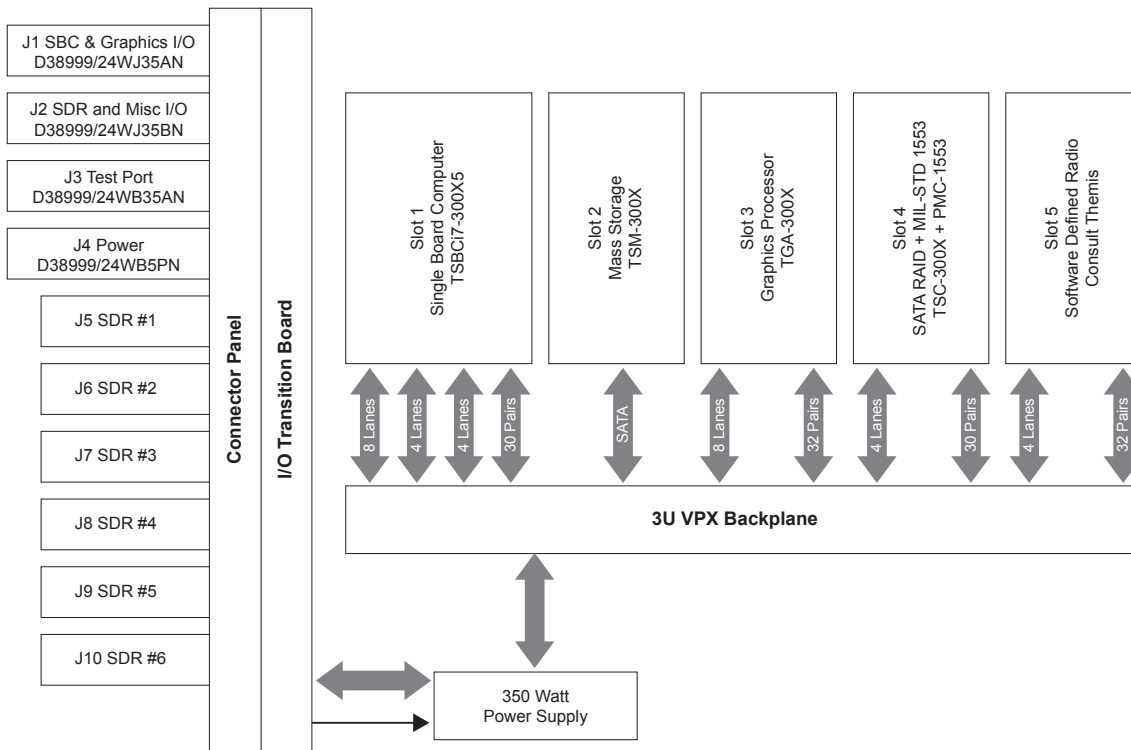


TSY-305X 3U VPX 3U VPX, 5-SLOT, ½ ATR PRE-CONFIGURED SYSTEM

The TSY-300X™ series of pre-configured Commercial Off The Shelf (COTS) systems can be used for a wide variety of customer applications, including Mission Computer, Display Processor, Digital Map, Payload Controller, SIGINT and EW, Communications Processor, Network Storage. The TSY-305X 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-305X Chassis System uses conduction cooled cards, cooled by natural convection. The compartment housing all internal electronics is sealed from the elements and no outside air flows across the cards. The chassis is cooled by efficient vertical fins, as well as fins on the top. The TSY-305X chassis can be mounted by quantity six footpads for baseplate mounting to either a coldplate or to the vehicle structure. Alternatively, the TSY-305X fits in a standard width ½ ATR tray, made shorter to accommodate the “short-short” footprint of the chassis.

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-305X 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	Conduction cooled chassis cooled by natural convection (fins) or attachment to cold plate	Consult Themis for other cooling options.
Chassis Mount	Standard width 1/2 ATR Tray Mounting or footpads are standard. Mounting Tray is available from Themis upon request	Consult Themis for other mounting options.
Front Panel	Front Panel with 1x Power Connector, 1x Test Connector, 2x 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	5 Slot backplane Backplane as defined herein	Backplane may be modified for specific customer application by request.
External Mass Storage	none	Consult Themis for external storage.
High Top for Front I/O, RF, or Optical Calbes	Normal Rear Panel delivered unless SDR is specified. Extended Rear Cover available for Front I/O, RF Cables or Fiber Optics. (optional)	Consult Themis for cable options.

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

	POSITION 1	POSITION 2	POSITION 3	POSITION 4	POSITION 5	OPTIONS
Digital Map	TSBC	TSM	TGA	TIOC1553		
Display Processor	TSBC		TGA	TIOC1553		
Avionics Bus Data Recorder	TSBC	TSM		TSC1553		
SIGINT SDR Data Recorder	TSBC	TSM			SDR	ECOV
SIGINT Console	TSBC	TSM		TSC1553	SDR	ECOV
Mission Computer	TSBC			TSC1553		

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 our customers to optimize computing solutions that are easy to integrate,

inexpensive to own and operate. Our solutions achieve the right 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



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