



### GENERAL

- ▶ 3U VPX per VITA 46
- ▶ VPX-REDI per VITA 48
- ▶ 1" Pitch, conduction cooled
- ▶ Intel 3rd generation Core i7 (Ivy Bridge) CPU
- ▶ Panther Point HM76 PCH Chipset
- ▶ Up to 16 GB DDR3 + ECC SDRAM
- ▶ Up to 64 GB User FLASH
- ▶ 8 MB SPI FLASH
- ▶ Pin Compatible with TSBCi7-300X SBC
- ▶ iSCSI boot

### FIXED REAR I/O

- ▶ 16x PCI Express 3.0 Lanes on P1
- ▶ 1x Hi Resolution VGA and DVI-D
- ▶ 2x IEEE-1588 GigE Ports
- ▶ 4x USB 2.0
- ▶ 1x SATA II
- ▶ 1x I<sup>2</sup>C Bus Slave Interface

### OPTIONAL REAR I/O\*

- ▶ Up to 2x RS-232/422/485
- ▶ Up to 1x RS-232 with handshake
- ▶ Up to 1x Audio In/Out
- ▶ Up to 6x GPIO with 4x interrupts
- ▶ Up to 2x MIL-STD-1553 RT/BC/BM

### OPTIONAL FRONT I/O\*

- ▶ 1x X1 PCIe 1.0
- ▶ 1x SATA I
- ▶ 1x USB 2.0
- ▶ 1x USB 3.0

### CPU OPTIONS

- ▶ Core i7-3612QE

### POWER

- ▶ 50 Watts (typical)

### ENVIRONMENTAL

- ▶ Conduction Cooled
- ▶ Operating Temperature: -40° to +85°C
- ▶ Storage Temperature: -55° to +105°C
- ▶ Humidity: 0 to 95% RH non-condensing
- ▶ Optional Conformal Coating
- ▶ Shock: 40g peak
- ▶ Sawtooth @ 11 mSec
- ▶ Vibration (Random): 1g<sup>2</sup>/Hz, 15Hz to 2KHz
- ▶ Vibration (Sine): 10g Peak, 15Hz to 2KHz

\* Optional Front and Rear I/O may vary with configuration



## TSBCi7-340X

### Single Board Computer (SBC)

The TSBCi7-340X Single Board Computer (SBC) employs Intel® 3rd Generation Core™ i7 Quad Core processors and the highly integrated Panther Point HM76 Platform Controller Hub (PCH) Chipset to provide high performance in rugged applications.

The superior performance of the TSBCi7-340X is enhanced through the CPU's use of Intel® Turbo Boost and Intel hyper-threading technologies. Due to the advanced design of the HM76 PCH chipset, these technologies maximize performance to match processor workload and enable the efficient use of high speed mass storage and buffering.

The TSBCi7-340X computer features a full compliment of PCIe buses that are configurable as X4, X8 and X16 interfaces. All common serial interfaces are supported, including USB, RS-232, RS-422 and RS-485. An optional MIL-STD-1553 interface is available for military applications. The standard, high resolution video graphics interface enables VGA and DVI-D displays.

The TSBCi7-340X is an ideal upgrade processor for C4ISR, mission computer, display processor, payload controller, sensor management, EW and SIGINT applications, and high speed data storage units. Drivers and board support packages are available for Linux® and/ or Windows®. Please contact Themis for information about using Real Time Operating Systems such as VxWorks®, Integrity® and LynxOS®.

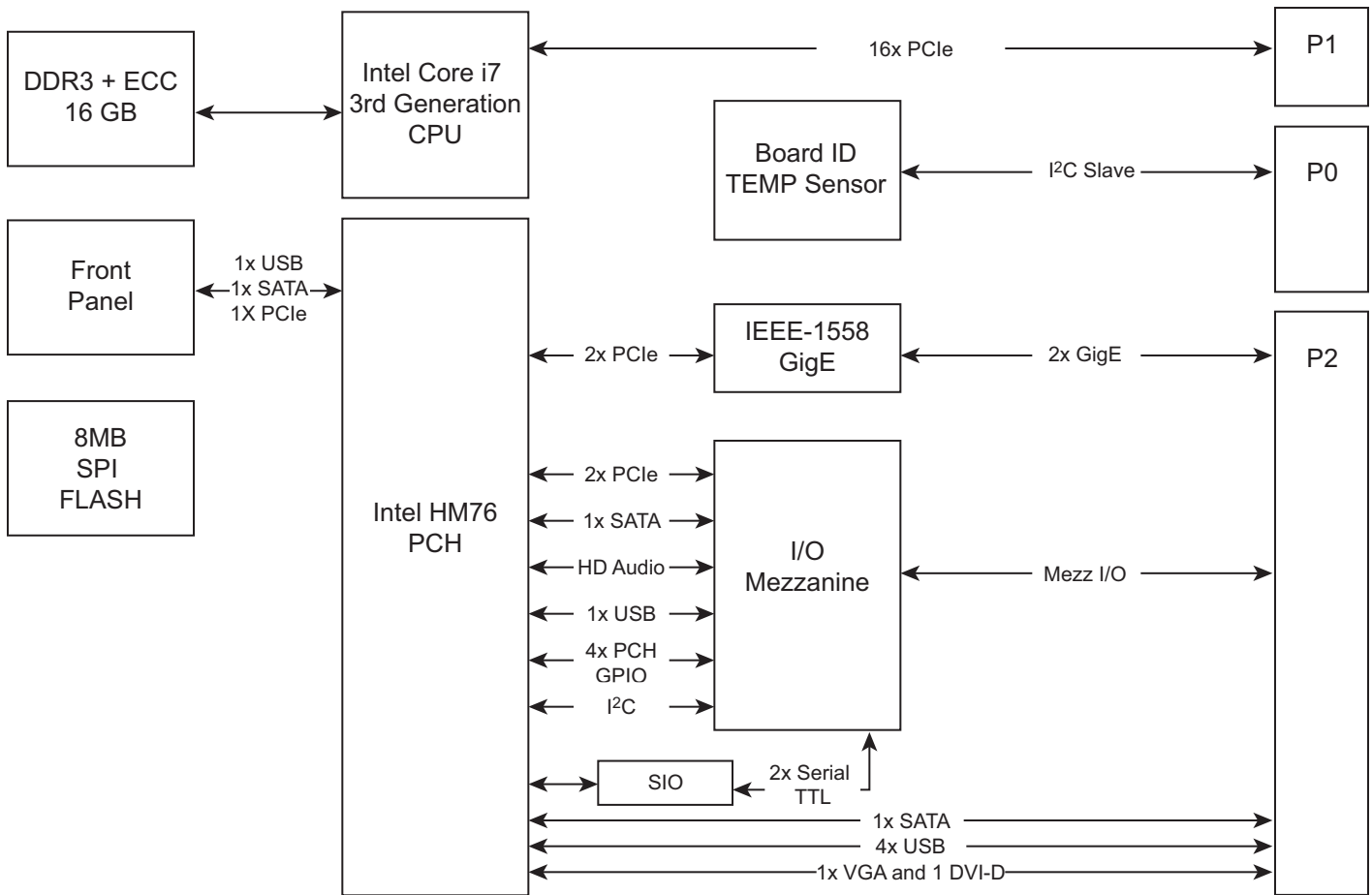


Figure 1: TSBCi7-340X Single Board Computer Block Diagram

The TSBCi7-340X Single Board Computer (SBC) is available with other card pitches and ruggedization grade options that include commercial air cooled to full MIL conduction cooled. Consult Themis for further information.

### I/O MEZZANINE BOARD OPTIONS

The I/O Mezzanine boards have several pre-defined optional configurations that provide various combinations of the following components:

- ▶ User FLASH
- ▶ 256 KB EEPROM
- ▶ RS-232 serial interfaces with handshaking
- ▶ RS-232/422/485 serial interfaces without handshaking
- ▶ High definition audio IN and OUT
- ▶ GPIO with interrupts
- ▶ MIL-STD 1553 data, address, and parity

The I/O mezzanine board is a personality module that shuffles the mezzanine I/O among the existing 19 available I/O pins on VPX connector P2. Themis defines several standard personality module configurations.

For questions regarding additional personality module and specific I/O requirements, consult Themis factory. Custom SBC I/O requirements can be added without redesigning the entire SBC due to the I/O mezzanine board.



Figure 2: TSBCi7-340X Single Board Computer

## TSBCI7-340X PRE-CONFIGURED PERSONALITY MODULE OPTIONS

### PM CONFIGURATION A

- ▶ 1553 primary and secondary data buses, transformer coupled

### PM CONFIGURATION B

- ▶ Audio line inputs, left and right
- ▶ Audio line outputs, left and right
- ▶ 6x discrete I/O with interrupts
- ▶ RS-232
- ▶ RS422
- ▶ Hash storage (write protection)
- ▶ EEPROM

For questions regarding additional personality module

configurations, consult Themis factory.

## COMPLIANCE SPECIFICATIONS

The TSBCi7-340X Single Board Computer is designed to meet CE Emissions specification EN 55022, CE Immunity specification EN 50082-2 and FCC 47 CFR, Part 15, Class A when tested in a shielded enclosure.

## THEMIS SBC SOLUTIONS

Themis single board computers are designed to provide the highest levels of configuration flexibility, performance and reliability. Themis engineers use their expertise in the design of embedded systems solutions to reduce the risk, and costs, of failure caused by demanding environmental conditions that include extreme temperature or vibration. From rugged to unique processor module/heat sink designs, Themis provides the high level of system integrity that demanding applications require. Themis computers provide increased resiliency to all environmental extremes - including shock, vibration, and temperatures, that cause many other embedded systems to fail.

## 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, and that achieve the right balance between standard commercial technology, rugged environments, and optimize space, weight, and performance.



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