CM22301

Intel® Skylake Core M series CPU with low-power consumption computing module

- 6th Generation Intel® Core™ M series SOC Processors
- Up to 16GB Dual Channel DDR3L 1600MHz Memory Onboard
- Super Small Size, Credit-Card-Size
- TDP: 4.5W
- Comply with VITA 59 Standard, Type10
Overview
CM22301 uses Intel® sixth-generation Skylake platform and Core M low-power SoC processors, and integrates the full functions of CPU, GPU and South/North Bridge on a single chip. The processor provides powerful computing and display performance with dual-core and four threads configuration. Its turbo frequency can boost up to 3.1GHz and the display output resolution can be up to 4K. CM22301 has an amazing thermal design power consumption of only 4.5W (TDP) and can be used for a variety of high-performance fanless designs. CM22301 supports up to 16GB dual-channel low-voltage DDR3L memory populated onboard, and up to 64GB on-board solid state disk silicon, as benefit the development of ruggedized products for harsh environment applications.

As defined by VITA 59 specification, CM22301 provides up to 6 PCIe lanes, enabling flexible functionality expansions, such as NICs, DAQs, video capture and so on. Meanwhile, CM22301 also provides up to date computer interfaces like GbE, SATA3, USB3.0/2.0, HD Audio, etc. CM22301 uses the same 220pin board-to-board connector and Type10 pin out definition as COM Express.

CM22301 integrates Intel® HD Graphics 515 and GT2 series graphics display core with 24 EU. And the display memory can reach up to 1.7GB shared with system memory, and the maximum dynamic frequency of the GPU can be up to 1GHz. Its display interface supports eDP/DP/HDMI/DVI and the output resolution is up to 4K. The integrated GPU also supports DirectX 12, OpenGL 4.4 and OpenCL 2.1. Besides, a wide range of media processing capabilities are implemented by hardware acceleration, including both Encode and Decode of AVC/VC1/MPEG2/H.264/H.265/VP8/JPEG.

CM22301 fully complies with VITA 59 standard, as defines extra considerations to improve the cooling efficiency by using the entire PCB. In addition, CM22301 provides an effective guarantee for the anti-shock and anti-vibration design of various equipment and devices used in harsh environments.

Target applications:
✓ Hand-held and portable devices
✓ Wireless data transmission
✓ Vehicle-mounted and onboard navigation devices
✓ Video monitoring equipment
✓ Innovation and Service change our lives!

Technical Information

CPU
- 6th Generation Intel® Core™ M series SOC Processors
  - m3-6Y30 @900MHz (4M Cache, 4.5W TDP, up to 2.2GHz)
  - m5-6Y54 @1.1GHz (4M Cache, 4.5W TDP, up to 2.7GHz)
  - m5-6Y57 @1.1GHz (4M Cache, 4.5W TDP, up to 2.8GHz)
  - m7-6Y75 @1.2GHz (4M Cache, 4.5W TDP, up to 3.1GHz)

Memory
- Onboard Dual Channel DDR3L 1600MHz Memory, up to 16GB

Graphics
- 1x DDI
- 1x LVDS (eDP)

USB
- 2x USB 3.0
- 6x USB 2.0

Power Supply
- 4.75V ~ 20V DC

Temperature
- operating: -40°C ~ +85°C
- non-operating: -55°C ~ +85°C

Dimensions
- 84 x 55 mm (COM Express mini)
- 84 x 65 mm (VITA 59)

Bus
- x6 PCIe
- LPC
- I2C
- SMBus

Storage
- 2x SATA III
- Onboard SSD, up to 64GB (Optional)

Ethernet
- 10/100/1000 Mb Ethernet

Audio
- 1x HD Audio

Power Consumption
- 5 ~ 8W

Humidity
- operating: 10% ~ 90%
- non-operating: -5% ~ 95%

Operating System
- Windows 7/10, VxWorks (OpenGL), Linux
Block Diagram

Intel Core-M (Skylake-Y)
FCBGA1515
20mm X 16.5mm

CM22301

PICMG COM.0
R2.1 Type 10

Single 18/24BIT LVDS Or eDP
LVDS to LVDS
eDP to LVDS
DDI0

DP/HDMI/DVI
GIGABIT Ethernet
PCIe x1

GIGABIT Ethernet
PCle GEN3 (GPP) 2 x1

HD AUDIO Interface
PCle GEN3 (GPP) 1 x4
HD AUDIO I/F

USB 3.0 Ports
USB 2.0 Ports
USB3.0 x2
USB2.0 x6

SATA Ports
SATAIII x2

Serial Ports
2x Uart
LPC to Uart

I2C/SMBUS
LPC to Uart
SMBUS/I2C

LPC Interface
LPC I/F

SPI INTERFACE
SPI I/F
SPI ROM

Onboard SATA
Onboard SSD
LPC I/F
Hardware Monitor

USB 3.0 Ports
USB3.0 x2

Option SATA
Onboard SATA

LPC to Uart Serial Ports
2x Uart

CM22301
## Order Information

<table>
<thead>
<tr>
<th>Product</th>
<th>Part No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CM22301</td>
<td>10-0000-0821</td>
<td>Intel® Core™ m7-6Y75 Processor, 8GB DDR3L, 16GB onboard SSD, 1x DDI, 1x LVDS, 1x GbE, 6x USB2.0, 2x USB3.0, 2x SATA, 1x HD Audio, X6 PCIe, 2x UART, 1x LPC, 1x I2C, 1x SMBus, Operating Temperature: 0°C to +60°C. VITA59 compliant form factor.</td>
</tr>
<tr>
<td>CM22301</td>
<td>10-0000-0822</td>
<td>Intel® Core™ m7-6Y75 Processor, 8GB DDR3L, 16GB onboard SSD, 1x DDI, 1x LVDS, 1x GbE, 6x USB2.0, 2x USB3.0, 2x SATA, 1x HD Audio, X6 PCIe, 2x UART, 1x LPC, 1x I2C, 1x SMBus, Operating Temperature: -40°C to +85°C. VITA59 compliant form factor.</td>
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<tr>
<td>CM22301</td>
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<td>Intel® Core™ m7-6Y30 Processor, 8GB DDR3L, 16GB onboard SSD, 1x DDI, 1x LVDS, 1x GbE, 6x USB2.0, 2x USB3.0, 2x SATA, 1x HD Audio, X6 PCIe, 2x UART, 1x LPC, 1x I2C, 1x SMBus, Operating Temperature: -40°C to +85°C. VITA59 compliant form factor.</td>
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More optional configuration:

- CPU = m7-6Y75 (2x 1.2GHz), m3-6Y30 (2x 900MHz), m5-6Y54 (2x 1.1GHz), m5-6Y57 (2x 1.1GHz)
- Onboard Flash = 4GB, 8GB, 16GB, 32GB, 64GB
- Onboard Memory = 4GB, 8GB, 16GB
- Form Factor = VITA59, COM Express

Please contact LinkedHope® sales rep for more ordering information.

## Contact

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