

# Clove - Processor Module (SoM)

Product Brochure



**Clove** Processor Module (SoM) is a low power, industrial grade hardware board in Ittiam's Clove family of system solutions. It can be leveraged to build low-power, differentiated & cost-effective video networking solutions. Clove SoM is designed on Texas Instrument's **Sitara™ AM57x** processor with single/dual ARM Cortex™-A15 and C66x™ DSP(s), and supports Full-HD encoding, decoding and transcoding.

## HIGHLIGHTS

- Multiple processor options (Sitara™ AM5728, AM5718, AM5726 or AM5716)
- H.264 video encode or decode (up to 1x 1080p60), HEVC decode (1x 1080p30)
- Ideal for Transcoder, Media Player, Network Video Recorder, Low Latency Decoder when used stand-alone, and for Streaming Server, Digital Video Recorder, Low Latency Encoder and Mixer/Switcher when interfaced with Nova I/O Boards (Nova x4/x7)
- Suitable for Surveillance, Enterprise, Broadcast applications, Medical, Defense & Industrial applications



### Processing Power

Sitara™ AM57x - Up to 1.5 GHz Single / Dual ARM Cortex™-A15  
 - Up to 750 MHz Single / Dual C66x™ DSP

### Memory Capacity

1 GByte (Optional 2 GByte) DDR3L SDRAM  
 1 MByte SPI Flash  
 256 MByte QSPI Flash  
 4 GByte eMMC

### Data/Communication Interface

1x Gigabit Ethernet

### AV Output

1x HDMI® Up to 1080p60 + 4x Stereo Audio

### Expansion Interfaces

240-pin BTB Conn - Digital Audio/Video, Ethernet, SPI signals  
 120-pin BTB Conn - PCIe 2.0 x2, GPIO signals  
 60-pin BTB Conn - 1x SATA, 1x USB 2.0 signals

### Storage Interfaces

1x SDXC Slot (up to 1 TBytes)  
 1x USB 3.0 (Host mode)

### Other Features

Raw, Full-HD video capture support via USB port  
 Wi-Fi support via USB port  
 RTC with power back up (up to 1 day with SuperCap)  
 Temperature Sensor, Reset Switch, Power and Status LEDs

### Power Input

+5V DC - Screw Terminal or via 120/60-pin BTB Conn

### Power Consumption

6W (Typical)

### Dimensions

4.5" x 5.5" x 0.79" (114.3 x 140 x 20 mm)

### Temperature Range

-30°C to +75°C (Operating)  
 -40°C to +85°C (Storage)

## Nova x4 I/O Board Specifications

### AV/Stream Inputs

- 1x 3G-SDI Up to 1080p60 + 4x Stereo Audio
- 1x HDMI® Up to 1080p60 + 4x Stereo Audio Loop-through output
- 1x ASI Transport stream

### AV/Stream Outputs

- 1x 3G-SDI Up to 1080p60 + 4x Stereo Audio
- 1x ASI Transport stream

### Data/Communication Interfaces

- 1x RS-232/RS-422/RS-485
- 1x Gigabit Ethernet
- 1x CAN

### Expansion Interfaces

- 1x PCIe 2.0 x2
- 1x Expansion Header (GPIOs, SPI etc.)

### Storage Interfaces

- 1x SATA, 1x USB 2.0

### Other Features

RTC with power back up (up to 7 years with Battery). Status LEDs

### Power Input

+12V DC / +5V DC (Optional) - Terminal Block

### Power Consumption

4W (Typical)

### Dimensions

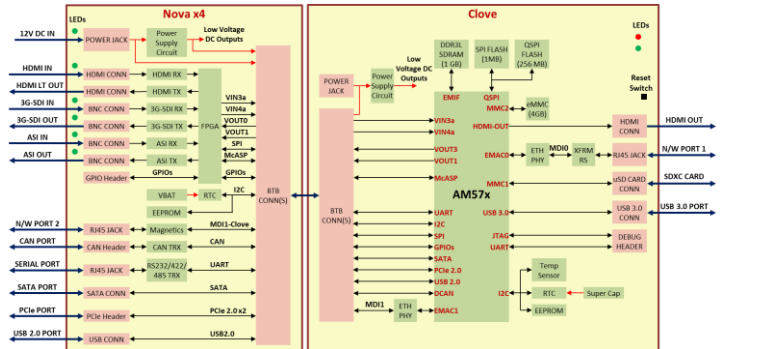
5.5" x 5.5" x 0.91" (140 x 140 x 23.0 mm)  
 5.5" x 5.5" x 1.66" (140 x 140 x 42 mm) <sup>①</sup>  
<sup>①</sup> with Clove SoM, without/with Processor Heatsink

### Temperature Range

-20°C to +75°C (Operating)  
 -40°C to +85°C (Storage)



Clove SoM with Nova x4



## Nova x7 I/O Board Specifications

### AV/Stream Inputs

- 2x 3G-SDI Up to 1080p60 + 4x Stereo Audio

### AV/Stream Outputs

- 1x 3G-SDI Up to 1080p60 + 4x Stereo Audio

### Data/Communication Interfaces

- 1x RS-232/422/485

### GenLock Support

- 1x GenLock Input with LT output

### Expansion Interfaces

- 1x Expansion Header (GPIOs, SPI etc.)

### Storage Interfaces

- 1x SATA, 1x USB 2.0

### Other Features

RTC with power back up (up to 7 years with Battery). Status LEDs

### Power Input

+12V DC

### Power Consumption

6W (Typical)

### Dimensions

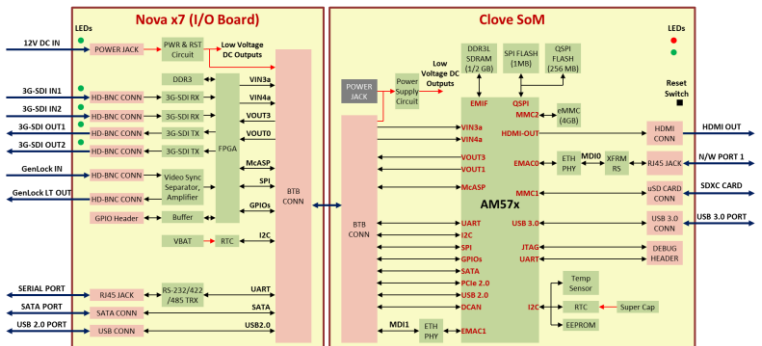
5.5" x 4.5" x 0.71" (140 x 114.3 x 18.1 mm)  
 5.5" x 4.5" x 1.37" (140 x 114.3 x 34.7 mm) <sup>①</sup>  
<sup>①</sup> with Clove SoM, without/with Processor Heatsink

### Temperature Range

-20°C to +75°C (Operating)  
 -40°C to +85°C (Storage)



Clove SoM with Nova x7



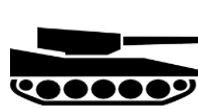
MEDICAL



BROADCAST



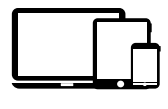
AVIONICS & IFE



DEFENSE



SURVEILLANCE



ENTERPRISE

For more details, write to [ids-mkt@ittiam.com](mailto:ids-mkt@ittiam.com) or visit [www.ittiam.com/product/clove](http://www.ittiam.com/product/clove)

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