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Find the *Aitech Defense Systems EV178* at our website: *Click HERE*

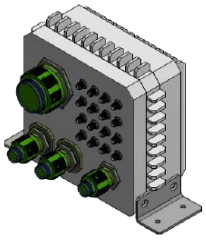
EV178

Development System for A178 Thunder

Aitech
Embedded Computing *without* Compromise







The EV178 evaluation system is based on the NVIDIA Jetson Xavier System on Module, with 512 CUDA cores reaching 11 TFLOPS at a remarkable level of energy efficiency.

HD-SDI and Composite frame grabbers are available. The EV178 comes with software pre-installed (Linux OS, drivers, and test applications) and with a set of included accessories (cables and external power supply).

Develop your application on the EV178, and run it right away on Aitech's A178 Thunder – Rugged GPGPU Fanless AI Supercomputer.

Rugged GPGPU is Aitech

- **NVIDIA® Jetson™ Xavier System on Module**
  - Volta™ Architecture GPU w/512 CUDA® cores
  - 8-core ARM v8.2 64-bit CPU
  - 11 TFLOPS [FP16] / 22 TOPS [INT8]
  - H.264/H.265 HW Encoder
  - Best Available Performance per Watt – 366 GFLOPS/W [FP16] / 733 GOPS/W [INT8]
- **16 GB LPDDR4x**
- **Low Power Consumption**
- **Video Capture**
  - SDI (SD/HD), 4 channels available simultaneously
  - Composite (RS-170A [NTSC]/PAL), 8 channels available simultaneously
- **I/O**
  - Gigabit Ethernet
  - USB 3.0
  - Discretes
  - HDMI Output
  - UART Serial
- **CUDA®, OpenGL, OpenGL ES, EGL**



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System Architecture

System on Module	NVIDIA Jetson Xavier
GPU	• NVIDIA Volta GPU Architecture • 512-Core GPU • 11 TFLOPS [Tera Floating Point Operations per Second, FP16] / 22 TOPS [Tera Operations Per Second, INT8] • CUDA • OpenGL • OpenGL ES
CPU	ARMv8.2 (64-bit) heterogeneous multi-processing (HMP) CPU • 4 x dual-core CPU clusters (8 total NVIDIA Carmel processor cores) • 128 KB L1 instruction cache and 64 KB L1 data cache per core, 2 MB L2 cache per cluster, 4 MB L3 cache shared by all clusters • Operates at up to 2.26 GHz (depends on power mode)
System Resources	• Multi-standard Video/JPEG Decoder/Encoder, HW Encoding for H.264/H.265 • Dynamic voltage and frequency scaling • Temperature sensors

Memory Resources

RAM	16 GB LPDDR4x @ up to 2133 MHz (depends on power mode), 256-bit interface
eMMC	32 GB eMMC 5.1 (boot source)
MicroSD Interface	MicroSD Card Slot
NVMe Interface	NVMe SSD connector interface (contact an Aitech representative for information on NVMe SSD options)
eSATA Interface	eSATA connector interface for connecting to external disk

I/O

PCIe	PCIe x8 Gen4
USB	2 (USB-C supporting USB 3.1, DisplayPort)
Gigabit Ethernet (10/100/1000Base-T)	1
UART Serial	2 (1 x TTL UART, 1 x Micro USB debug UART)
Discrete I/O (Single-Ended)	4
HDMI Output	1
Composite Input (RS-170A [NTSC]/PAL)	8, all channels available simultaneously (optional, see *Ordering Information* below)
SDI Input (SD & HD resolutions)	4, all channels available simultaneously (optional, see *Ordering Information* below)

Software

- Linux OS pre-installed – L4T (Linux for Tegra), a lightly modified Ubuntu-based distribution
- Video capture drivers and sample applications pre-installed, in variants equipped with optional frame grabber(s)

Power

Power Supply	9 to 20 V_{DC} input power, 19 V_{DC} wall adaptor included (100-240 V_{AC}, 50/60 Hz input)
Power Consumption	10/15/30 W software configurable power modes

EV178

Development System for A178 Thunder

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The EV178 is an evaluation system based on NVIDIA's Jetson Xavier developer kit, with Aitech's HW and SW customizations. The comparison table below provides a summary of EV178 and A178 Thunder feature compatibility.

Aitech EV178 Evaluation System	Aitech A178 Thunder	
NVIDIA Jetson Xavier SoM	NVIDIA Jetson Xavier SoM	✓
MicroSD Card Slot	Removable SD Card	✓
1 x Gigabit Ethernet	1 x Gigabit Ethernet + 2 x 10G Ethernet	✓
2 x UART	2 x UART	✓
4 x Discretes	4 x Discretes	✓
HDMI OUT	HDMI OUT	✓
8 x Composite IN (RS-170A [NTSC]/PAL)	8 x Composite IN (RS-170A [NTSC]/PAL)	✓
4 x SD-SDI/HD-SDI IN	4 x SD-SDI/HD-SDI IN	✓
NVMe SSD Interface	NVMe SSD	✓
CUDA, OpenGL, OpenGL ES, EGL	CUDA, OpenGL, OpenGL ES, EGL	✓

Ordering Information

EV178 - [0] [ ] - [ ] [ ]

Reserved

Frame Grabber
0 = None
1 = Composite
2 = SDI
3 = Composite and SDI (not simultaneously)

Configuration No.
To be assigned by Aitech

Example: EV178-02-00

Rugged GPGPU is Aitech

Contact Aitech

Contact your Aitech sales representative for additional product information, and for inquiries regarding customized configurations of the EV178 and additional software support.



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