

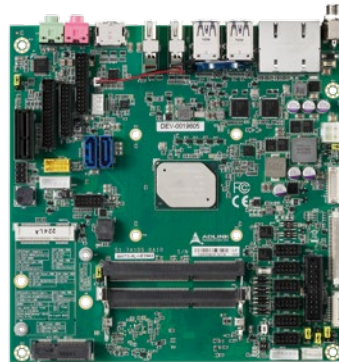
AmITX-AL-I

Thin Mini-ITX Embedded board with Intel® Atom™ E3900 Series, Pentium®, and Celeron® SoC

Features

- Low-profile Thin Mini-ITX Embedded board
- Intel® VT-x/VT-d supported
- Up to 16GB non-ECC DDR3L memory at 1867/1600MHz in dual stacked SODIMM socket
- Intel® Gen9 Low Power graphics, up to 4k resolution and H.265 codec
- DisplayPort, HDMI, dual channel 18/24-bit LVDS (eDP by build option), supports three independent displays
- Supports Smart Embedded Management Agent (SEMA®) functions and SEMA Cloud®
- Extreme Rugged operating temperature: -40°C to +85°C (build option for selected SKUs)

New



Specifications

Processor & System

CPU

Next Generation Intel® Atom™/Pentium®/Celeron® SoC on 14nm process
 Atom™ E3950 1.6/2.0GHz (Turbo), 12W (4C/1866)
 Atom™ E3940 1.6/1.8GHz (Turbo), 9W (4C/1866)
 Atom™ E3930 1.3/1.8GHz (Turbo), 6W (2C/1866)
 Pentium® N4200 1.1/2.5GHz (Turbo), 6W (4C/1866)
 Celeron® N3350 1.1/2.3GHz (Turbo), 6W (2C/1866)
 Supports: Intel® VT, Intel® VT-d, Intel® TXT, Intel® SSE4.2, Intel® 64 Architecture, IA 32-bit, Intel® AES-NI, dual or quad Out-of-Order Execution (OOE) processor cores, PCLMULQDQ Instruction DRNG

BIOS

AMI EFI in 16MB SPI BIOS

Debug Interface

40-pin multipurpose flat cable connector for use in combination with DB-40 debug module to provide BIOS POST code display, BMC access, SPI BIOS flashing, Power Testpoints, Debug LEDs

Memory

Dual channel non-ECC 1867/1600 MHz DDR3L memory up to 16GB in dual stacked SODIMM sockets

SEMA® Support

Supports: Voltage/Current monitoring, Power sequence debug support, AT/ATX mode control, Logistics and Forensic information, Flat Panel Control, General Purpose I²C, Failsafe BIOS (dual BIOS), Watchdog Timer and Fan Control

I/O Interfaces

Expansion Slots

1x PCIe x1 slot
 1x Mini PCIe (half size) with USB
 1x mSATA (full size)
 SIM card slot (build option)
 microSD card slot (build option)

Serial ATA

2x SATA 6 Gbps ports (one shared with mSATA)

USB

4x USB 3.0 on rear I/O
 1x USB 2.0 on front panel header
 2x USB 2.0 on standard header
 1x USB 2.0 on Mini PCIe

KB/MS

1x PS/2 internal header

Serial Ports

2x RS-232/422/485 via onboard headers (5V/12V support)
 4x RS-232 via onboard headers

Digital IO

10x GPIO on internal feature connector

TPM

TPM header (supports TPM 2.0)

Specifications

- **Audio**

Audio Codec

Realtek® ALC888S

Interfaces

Line-out, Mic-in on rear I/O

7.1 channel signals and S/PDIF output on internal header

- **Display**

Graphics Core

Intel® Generation 9 Low Power Graphics Core Architecture supporting 3 independent and simultaneous display combinations of DisplayPort, HDMI, LVDS or eDP outputs

Hardware encode/transcode (including HEVC)

DirectX 12, DirectX 11.3, DirectX 10, DirectX 9.3 support

OpenGL 4.3 and ES 3.0 support

OpenCL 2.0 support

DisplayPort

1x DisplayPort (2x DisplayPort is build option, one is in place of HDMI)

HDMI

1x HDMI (co-lay with DP)

LVDS

Single/Dual channel 18/24-bit (build option, in place of eDP)

eDP

4 lane support (build option, in place of LVDS)

- **Ethernet**

Triple display: DP + HDMI + LVDS (or eDP), 2x DP + LVDS (or eDP)

Controller: 2x Intel® Ethernet controller i211 (MAC/PHY)

Note: Intel® Ethernet i210 (build option) is supported for -40°C to +85°C SKU

Interface: 10/100/1000 GbE connection

Wake-on-LAN: Yes

- **Power**

Standard Input: 12V ±5% from internal 4-pin power connector or external DC jack

Peripherals Output: Onboard headers for fan and SATA power

- **Mechanical and Environmental**

Form Factor: Thin Mini-ITX

Dimensions: 170 mm x 170 mm (L x W)

Operating Temp.

Standard Operating Temperature: 0°C to 60°C

Extreme Rugged Operating Temperature: -40°C + 85°C (build option for selected SKUs)

Humidity

10-90% RH operating, non-condensing

5-95% RH storage

Shock and Vibration

IEC 60068-2-64 and IEC-60068-2-27

MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D

Relative Humidity

10% to 90%, non-condensing

HALT

Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

Certification: CE, FCC, Class B

- **Operating Systems**

Standard Support

Windows 10 64-bit, Linux 64-bit

Extended Support (BSP)

Linux 64-bit, VxWorks 64-bit (TBD)

- **Intelligent Middleware**

SEMA®



Local management, control of embedded computer systems

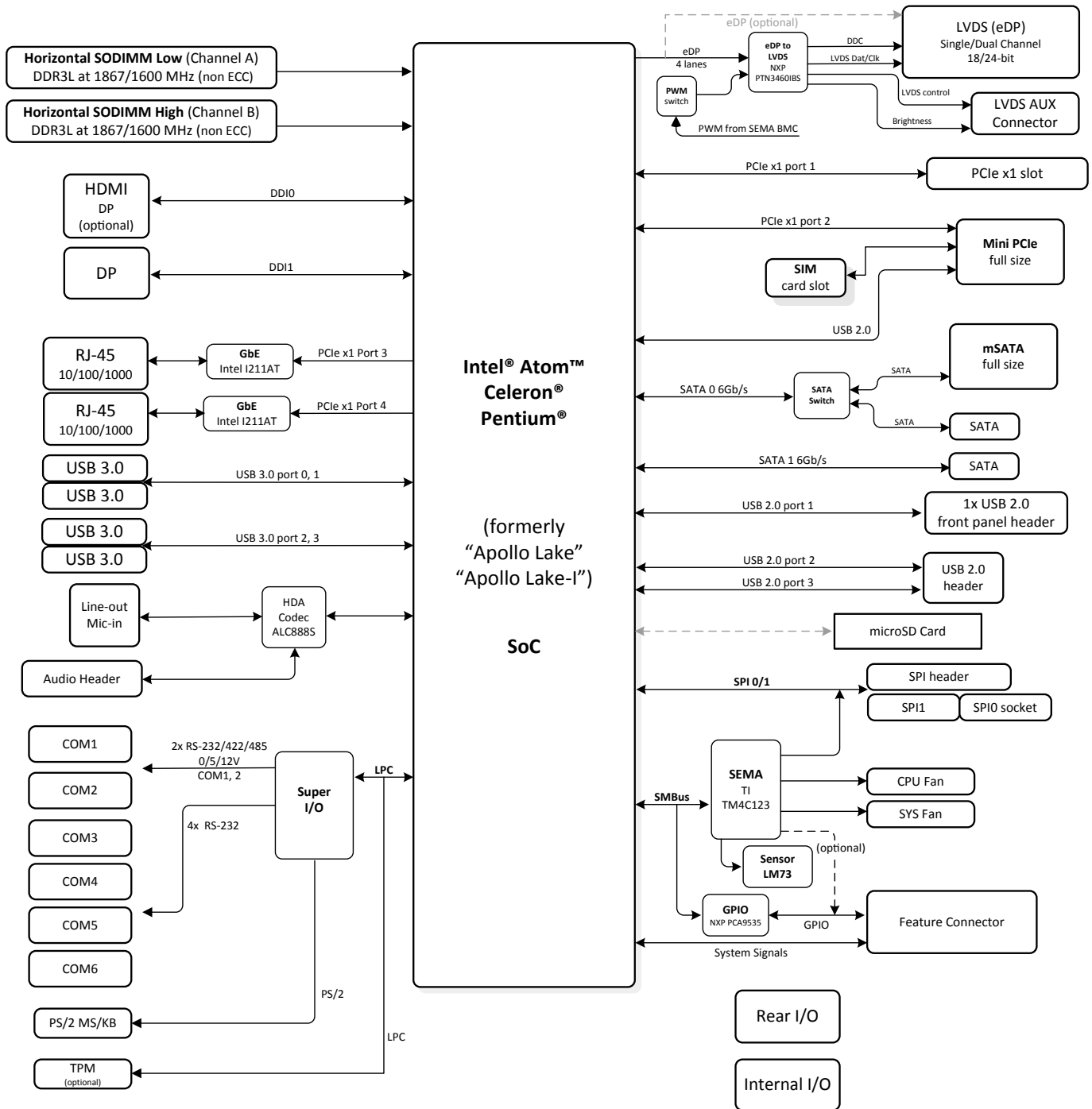
Extended EAPI for monitoring, control and analytics applications

Multiple OS support across platforms (x86, ARM)

Note: "build option" indicates an alternative BOM configuration to support additional or alternative functions that are not available on the standard product.

Be aware that these "build option" part numbers will need to be newly created and this will result in production lead times.

Functional Diagram



Ordering Information

- **AmITX-AL-I-E3950**
Thin Mini-ITX motherboard with Intel® Atom™ E3950 1.6/2.0GHz (Turbo), 12W (4C/1866)
- **AmITX-AL-I-E3940**
Thin Mini-ITX motherboard with Intel® Atom™ E3940 1.6/1.8GHz (Turbo), 9W (4C/1866)
- **AmITX-AL-I-E3930**
Thin Mini-ITX motherboard with Intel® Atom™ E3930 1.3/1.8GHz (Turbo), 6W (2C/1866)
- **AmITX-AL-I-N4200**
Thin Mini-ITX motherboard with Intel® Pentium® N4200 1.1/2.5GHz (Turbo), 6W (4C/1866)
- **AmITX-AL-I-N3350**
Thin Mini-ITX motherboard with Intel® Celeron® N3350 1.1/2.3GHz (Turbo), 6W (2C/1866)

Packing List

- **30-20875-0000**
SATA dual power cable
- **30-10057-0600**
SATA cable

Optional Accessories

- **30-20876-0000**
COM port cable (1 port, 25cm)
- **30-20873-0000**
PS/2 KB/MS cable (40cm)
- **30-20874-1000**
USB 2.0 cable (2 ports, 20cm)