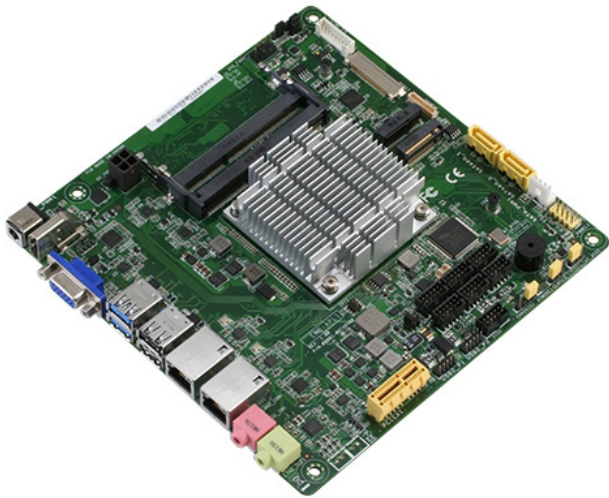


Industrial Motherboards for OEM/ODM

ONYX EMB-APL1

Mini-ITX Embedded Motherboard with Intel® N3350(DC)/N4200(QC)/E3930(DC) Processor



Features

- DDR3L 1333/1600/1867 MHz SODIMM x 2, Up to 8 GB
- Three Independent Display: VGA x 1, HDMI x 1, LVDS/eDP x 1
- Realtek 8111G, Gigabit Ethernet x 2
- COM Port x 6 (RS-232 x 5, RS-232/422/485 x 1)
- M.2 Slot(M-key) x 1, M.2 Slot(E-key) x 1, PCIe2.0 [x1] x 1
- 12~24V DC Wide Range Voltage Power Input
- Low Profile



Specifications

System

Processor	N4200, (4C @ 2.50GHz CPU [Burst Mode], 750MHz GFX [Turbo], ~6W TDP) N3350, (2C @ 2.40GHz CPU [Burst Mode], 650MHz GFX [Turbo], ~6W TDP) E3930, (2C @ 1.80GHz CPU [Burst Mode], 550MHz GFX [Turbo], ~6.5W TDP)
Chipset	Integrated into SoC
Memory	DDR3L 1333/1600/1867MHz SODIMM x 2, max. 8GB, non-ECC, un-buffered memory
I/O Chipset	NCT6116D
Ethernet	Realtek PCIe Gb LAN 8111G x 2
Audio	Realtek® ALC3236-CG
TPM	Nuvoton NPCT652ABCYX TPM2.0 (default: No)
Expansion Slots	PCIe2.0 [x1] x 1 M.2 M key (22 x 42mm) x 1, for SATA M.2 E Key (22 x 30mm) x 1, for PCIe
BIOS	128Mbit Flash ROM x 1, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	Chassis Fan (Fanless)
Wake on LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5

Graphics

Graphics Chipset	5th Generation Intel® Core™ i series ULT Processor SoC
Graphics Multi Display	Triple independent Displays VGA, LVDS, DP, LVDS (Optional), eDP (Optional)
VGA	Max. 12V
DVI	5th Generation Intel® Core™ i series ULT Processor SoC
HDMI	Triple independent Displays VGA, LVDS, DP, LVDS (Optional), eDP (Optional)
Display Port	Max. 12V
LVDS	5th Generation Intel® Core™ i series ULT Processor SoC
eDP	Triple independent Displays VGA, LVDS, DP, LVDS (Optional), eDP (Optional)
Backlight Control	Max. 12V

Environment / Power / ME

Battery	Lithium battery
Power Requirement	V~24V wide-range voltage input back panel DC jack x 1; 4-pin ATX Power connector x 1
Operation Temp.	32°F ~ 140°F (0°C ~ 60°C)
Storage Temp.	-40°F ~ 185°F (-40°C ~ 85°C)
Operation Humidity	0% ~ 90% RH, non-condensing
Certificate	CE & FCC Class A
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5 Kg)
MTBF (Hours)	263,080

Rear Panel I/O Ports

USB	USB 3.0 x 2, USB 2.0 x 2
Display I/O	HDMI x 1, VGA x 1
Audio I/O	Mic-in, Line-out
LAN I/O	RJ-45 x 2
Serial Port	—
PS/2 Port	—
Others	DC power jack x 1

Internal I/O Connectors

Storage	SATA 6.0Gb/s x 2(1 colay with M.2 M-key), M.2 M-key (22 x 42mm) x 1
USB	USB 2.0 headers support additional 3 USB ports (2*5-pin, p=2.00mm) x 2
Display I/O	40-pin LVDS/eDP connector x 1 (default LVDS)
Audio I/O	—
Serial Port	RS-232/422/485 x 1, RS-232 x 5
PS/2 Port	—
Parallel Port	—
DIO	8-bit x 1 (In/Out programmable)
FAN	4-pin Chassis Fan x 1
Power	—
Others	Front panel header x 1, Clear CMOS jumper x 1, AT/ATX mode select jumper (optional) x 1, SATA power connector x 1, M.2 E key (22 x 30mm) for PCIe x 11
OS Support	Windows® 10 64bit, Ubuntu16.04.02/Kernel4.8.0