

Industrial Motherboards for OEM/ODM

ONYX EMB-H81A

Mini-ITX with LGA1150 Socket for 4th Generation Intel® Core™ i Series Processor



Features

- LGA1150 Socket for 4th Generation Intel® Core™ i Series Processor
- Dual Independent Display: VGA, DVI-I, LVDS
- Gigabit Ethernet x 2
- SATA 6.0 Gb/s x 2
- USB 3.2 Gen 1 x 2, USB 2.0 x 7
- PCI-E2.0 [x4] x 1, Full-size Mini-Card (PCI-E + USB) with mSATA (Optional) x 1



Specifications

System

Processor	4th Generation Intel® Core™ i Series 22nm LGA1150 socket Processor, Max. 65W, TDPs
Chipset	Intel® H81
Memory	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)
I/O Chipset	NCT6791D, NCT5104D
Ethernet	Realtek® PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC887
TPM	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x4] x 1, Full-size Mini-Card (PCIe+USB default) (mSATA Default) x 1
BIOS	64 M bit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Chassis Fan (Fanless)
Wake on LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5

Graphics

Graphics Chipset	Intel® HD Graphics
Graphics Multi Display	VGA + LVDS, VGA + DVI-I, LVDS + DVI-I
VGA	Up to 1920 x 1200 @ 60 Hz
DVI	Up to 1920 x 1200 @60 Hz
HDMI	—
Display Port	—
LVDS	Up to 1920 x 1200 @60 Hz, dual-channel 18/24-bit Supports LVDS
eDP	—
Backlight Control	Voltage/PWM

Environment / Power / ME

Battery	Lithium battery
Power Requirement	4-pin ATX connector x 1, 4pin ATX 12V 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
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5 Kg)
MTBF (Hours)	288,500

Rear Panel I/O Ports

USB	USB 3.2 Gen 1 x 2, USB 2.0 x 4
Display I/O	VGA x 1, DVI-I x 1
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2
Serial Port	COM (RS-232/422/485) x 1, COM (RS-232) x 2
PS/2 Port	—
Others	—

Internal I/O Connectors

Storage	SATA3 (6.0Gb/s) x 2, SATA2 (3.0Gb/s) x 2 (1 colay with mainboard), Full/Half Size Mini-Card slot x 1
USB	USB 2.0 connectors support additional 2 USB ports (2.54mm) x 1, USB 2.0 connectors support additional 1 USB ports (2.00mm) x 1
Display I/O	LVDS connector x 1, LCD Inverter connector x 1
Audio I/O	AAFP x 1
Serial Port	Box header for COM (RS-232) x 4
PS/2 Port	—
Parallel Port	SPP/EPP/ECP Mode
DIO	Digital I/O header x 1
FAN	CPU Fan connector x 1, Chassis Fan connector x 1
Power	12V AUX Power Connector x 1, 24-pin EATX Power connector x 1
Others	Front Panel connector x 1
OS Support	Windows® 10 64-bit, Windows® 7 32/64-bit, Windows® 8 32/64-bit, Linux Fedora