

Industrial Motherboards for OEM/ODM

# ONYX EMB-QM87A

Embedded Motherboard with Onboard 4th Generation Intel® BGA 1364 Processor



## Features

- Onboard 4th Generation Intel® BGA 1364 Processor
- 204-pin DDR3L 1600/1333 MHz SDRAM x 2, Up to 16 GB
- HDMI x 3, VGA, 24-bit Dual-Channel LVDS
- Audio Jack x 3 with BTX Type (Mic-in, Line-in, Line-out)
- LAN 1: Intel® I217-LM Gigabit Ethernet  
LAN 2: Realtek® RTL 8111E Gigabit Ethernet
- SATA 6.0 Gb/s x 4, SATA 3.0 Gb/s x 2, Supports RAID 0,1,5,10
- PCI-E[x16] x 1, Mini-PCIe x 1, COM x 5
- iAMT Support



## Specifications

### System

Processor	Onboard 4th generation Intel® BGA 1364 Processor
Chipset	Intel® QM87
Memory	Dual-channel with 204-pin SDRAM x 2, DDR3L 1600/1333, up to 16GB
I/O Chipset	Fintek F81866D-I
Ethernet	Fintek F81866D-I
Audio	Realtek® ALC892/886/662
TPM	Infineon SLB9635TT 1.2(Optional)
Expansion Slots	PCIe [x16] x 1, Mini-PCIe x 1
BIOS	AMI BIOS - 128MB ROM
H/W Monitor	Supports system temperature, voltage, and cooling fan status monitoring
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/ Chassis Fan
Wake on LAN/ PXE	Yes
Power State	S3, S4, S5

### Graphics

Graphics Chipset	Intel® Core™ i7/i5/i3 + QM87
Graphics Multi Display	HDMIx3, HDMIx2+VGA, HDMIx2+LVDS, HDMI+VGA+LVDS
VGA	1
DVI	—
HDMI	1
Display Port	—
LVDS	1
eDP	—
Backlight Control	Voltage/PWM

### Environment / Power / ME

Battery	Lithium battery
Power Requirement	12V DC
Operation Temp.	32°F ~ 140°F (0°C ~ 60°C)
Storage Temp.	-40°F ~ 176°F (-40°C ~ 80°C)
Operation Humidity	0% ~ 90% RH, non-condensing
Certificate	CE & FCC
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.32 lb (0.6 Kg)
MTBF (Hours)	106,000

## Rear Panel I/O Ports

USB	USB 3.2 Gen 1 x 4
Display I/O	DMI x 3, VGA x 1
Audio I/O	Line-in, Mic-in, Line-out
LAN I/O	LAN (RJ-45) port x 2
Serial Port	RS-232/422/485 x 1
PS/2 Port	Mini-Din PS/2 K/B and Mouse x 1
Others	—

## Internal I/O Connectors

Storage	SATA 6.0 Gb/s x 4, SATA 3.0 Gb/s x 2, Supports RAID 0,1,5,10
USB	USB 3.2 Gen 1 x 2, USB 2.0 x 4
Display I/O	LVDSx 1
Audio I/O	—
Serial Port	RS-232 x 4
PS/2 Port	—
Parallel Port	—
DIO	8-bit programmable (4-in/4-out)
FAN	CPU Fan connector(s) (4-pin) x 1, Chassis Fan connector(s) (4-pin) x 1
Power	8-pin connector x 1
Others	—
OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Linux Fedora