

Industrial Motherboards for OEM/ODM

ONYX MIX-KLUW1

Mini-ITX, 14nm, FCBGA1356 7th Gen Intel® Core™ processor family, 15~25W TDP



Features

- DDR4 SODIMM x 2, Up to 32GB
- Three Independent Display: eDP x 1, LVDS x 1, VGA (Default) or HDMI
- Intel® LAN i211AT x 1, 219LM for iAMT 12.0 x 1
- M.2 Slot (M-key) x 1
- M.2 Slot (E-key) x 1
- PCIe3.0 [x1] x 1
- 12-19V DC wide range voltage power input
- USB 3.2 Gen 1x 4, USB2.0 x 4



Specifications

System

Processor	14nm 7th Gen. Intel® Core™ (formerly Kaby Lake-U), FCBGA1356 Core i7-7600U, 2C/4C, 2.8/3.9(turbo)GHz, 4M, 300MHz/1.15GHz (Turbo) GFX, ~15W TDP (Optional) Core i5-7300U, 2C/4C, 2.6/3.5(turbo)GHz, 3M, 300MHz/1.10GHz (Turbo) GFX, ~15W TDP (Optional) Core i3-7100U, 2C/4C, 2.4GHz, 3M, 300MHz/1.00GHz (Turbo) GFX, ~15W TDP Celeron 3965U, 2C, 2.2GHz, 2M, 300MHz/900MHz (Turbo) GFX, ~15W TDP
Memory	SODIMM x 2, max. 32GB, DDR4-2133 non-ECC, unbuffered memory
I/O Chipset	NCT6793D
Ethernet	Intel® PCIe Gb LAN 219LM for vPro (i7-7600U/i5-7300U) x 1 Intel® PCIe Gb LAN 211AT x 1
Audio	Realtek® ALC887
TPM	Nuvoton NPCT650ABBYX TPM2.0 onboard (default: No)
Expansion Slots	PCIe 3.0 [x1] x 1 M.2 M key (22 x 80mm) x 1, SATA & PCIe [x4] M.2 E key (22 x 30mm) x 1 for Wireless-wifi module (PCIe+USB)
BIOS	128Mbit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/System, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/ Chassis Fan
Wake on LAN/ PXE	Yes (WOL / PXE)
Power State	S3, S4, S5

Graphics

Graphics Chipset	Intel® HD Graphics
Graphics Multi Display	Supports three display of LVDS+eDP+VGA or LVDS+eDP+HDMI (by SKU selection)
VGA	Up to 1920 x 1200 @60 Hz colay with HDMI (default: VGA)
HDMI	HDMI 1.4 up to 4096 x 2340 @24Hz colay with VGA (default: VGA)
LVDS	LVDS Up to 1920 x 1200 @60Hz, dual-channel 18/24 bit (via CH7511)
eDP	eDP UP to 4096 x 2304 @ 60Hz
Backlight Control	Voltage/PWM; Max 1A

Environment / Power / ME

Battery	Lithium battery
Power Requirement	12(-5%)~19V(+5%) DC
Operation Temp.	32°F ~ 131°F (0°C ~ 55°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)	275,650

Rear Panel I/O Ports

USB	USB 3.2 Gen 1 (5 Gbps) x 4
Display I/O	VGA x 1, HDMI Colay (default: VGA x 1)
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2
Serial Port	—
PS/2 Port	—
Others	DC Power Jack x 1

Internal I/O Connectors

Storage	M.2 M key (22 x 80mm) for PCIe [x4]/SATA storage x 1, SATA 6.0Gb/s x 2, 4-pin SATA power x 1
USB	USB 2.0 pin header x 2 support additional 4 USB ports
Display I/O	40-pin LVDS connector x 1, 40-pin eDP connector x 1, LCD backlight connector(inverter) x 1
Audio I/O	Speaker for 2W@4Ω x 1, AAFP follow ASUS pin out x 1
Serial Port	Boxer header x 2 for COM (COM1: RS-232/422/485 supports 5V/12V/RI)
PS/2 Port	—
Parallel Port	—
DIO	8-bit programmable (4-in/4-out) x 1
FAN	4-pin CPU Fan connector x 1, 4-pin Chassis Fan connector x 1
Power	2 x 2 Pin DC-in 12~19V(-5%~+5%) x 1
Others	Clear CMOS jumper x 1, AT/ATX mode select jumper x 1
OS Support	Windows 10 64 bit, Ubuntu 16.04.LTS