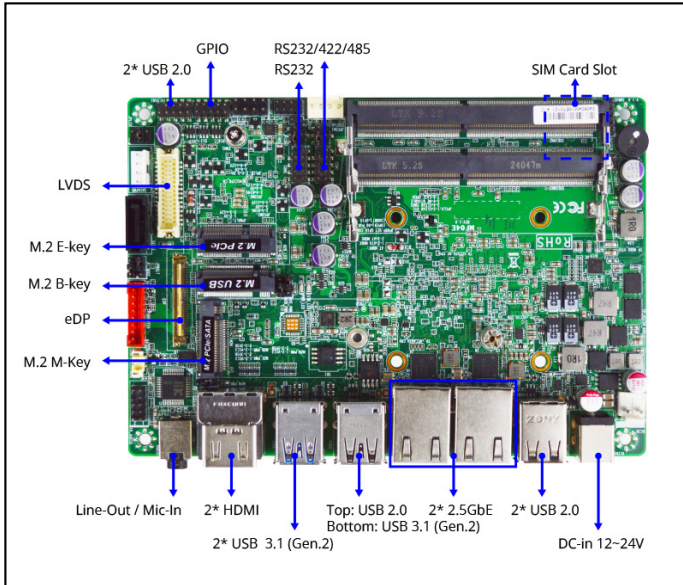


3.5" Motherboard with Intel® SoC Processor, Dual 2.5GbE LAN, Triple Display Support, 12-24V DC-in



Features

- Powered by Intel® J6412 SoC Processor (Elkhart Lake)
- Dual DDR4 3200MHz SO-DIMM: Maximize multitasking performance
- Dual 2.5GbE LAN: High-speed networking connection
- Triple Display Support: 2 x HDMI 2.0b, 1 x eDP/ LVDS for versatile multi-display setups
- Comprehensive I/O: 2 x COM, 3 x USB 3.1 Gen 2, 5 x USB 2.0 ports
- Flexible Expansion: 1 x M.2 E-key 2230, 1 x M.2 B-key 3042 w/SIM slot
- Storage Options: 1 x SATA3, Optional 64GB eMMC, 1 x M.2 M-key 2242/2280
- Reliable DC Input: 12V-24V range, ideal for industrial environments

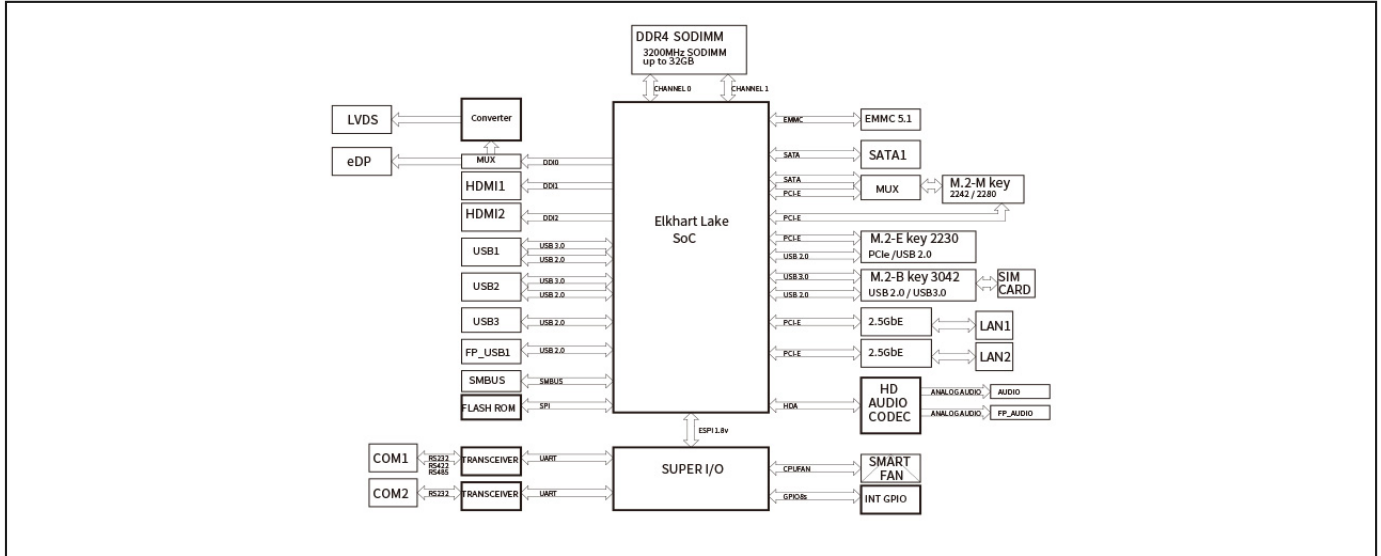
Packing List

PART NUMBER	DESCRIPTION	QTY
MF04E	MF04E	1
HCS3XXMHT03S-1F	Flat Heatsink (assembled)	1
G01-COM-H2M22-1F	COM cable	2
G01-SATA3-BL-1F	SATA cable	1
G01-PW4PS-2S-322F	SATA Power Y cable	1

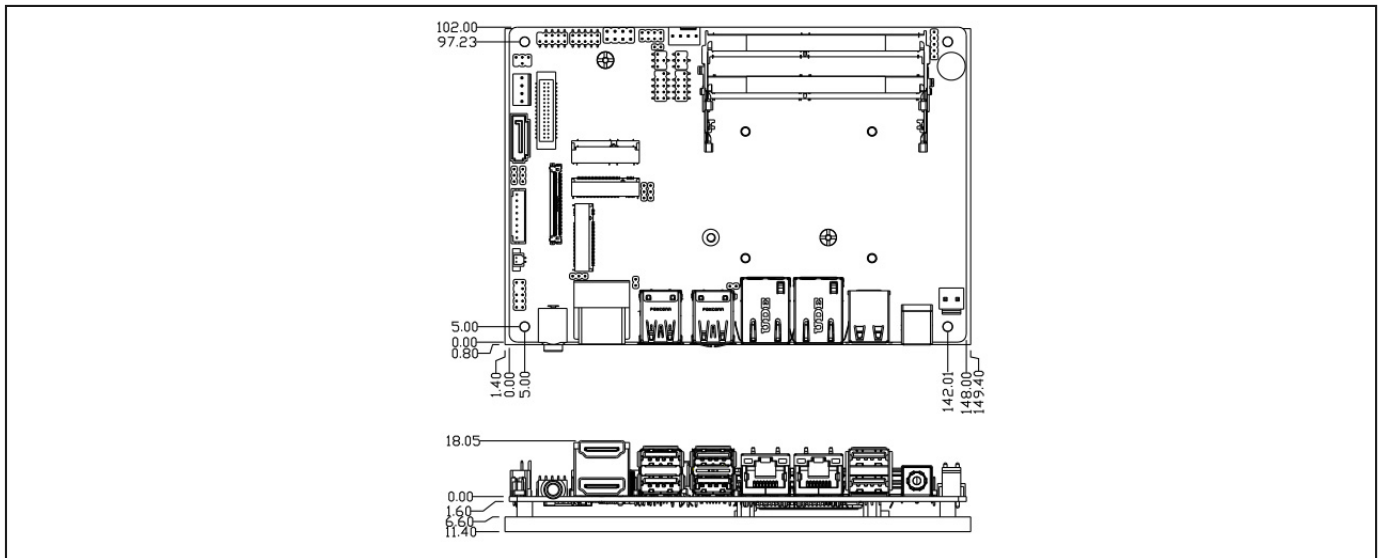
Specifications

SYSTEM	
MB FORM FACTOR	3.5"
CPU	Onboard Intel® Celeron® Processor J6412 (Formerly Elkhart Lake, TDP 10W)
CHIPSET	Intel® SoC
MEMORY	2 x DDR4 3200MHz, Dual Channel SO-DIMM, up to 32GB
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM2.0 (dTPM, Optional)
RTC BATTERY	Lithium Battery
DIMENSION (W X D)	148.0 (W) x 102.0 (D) mm (5.8" x 4.0")
OS SUPPORT	Windows® 11 (64bit) Windows® 10 (64bit) Linux
POWER	
POWER REQUIREMENT	DC-in 12-24V
POWER ON MODE	AT / ATX (Default) Mode
CONNECTOR	DC Jack Internal 2-pin Header
DISPLAY	
GPU	Intel® UHD Graphics
LVDS	1 x 24-bit Dual Channel LVDS (Max. Resolution: 1920 x 1200 @60Hz, Co-lay eDP)
eDP	1 x eDP (Max Resolution: 4096 x 2160@60Hz)
HDMI	2 x HDMI 2.0b (Max Resolution: 4096 x 2160@60Hz)
MULTIPLE DISPLAY	Support 3 Displays
AUDIO	
CODEC	Realtek Audio Codec
COMBO	1 x Combo Audio Jack for Line-Out / Mic-In
LAN	
ETHERNET	2 x RJ45 for Intel® I226-V 2.5GbE
USB PORT	
USB	Internal Header for 2 x USB 2.0 3 x USB 3.1 3 x USB 2.0
SERIAL PORT	
COM	Internal Header for 1 x RS-232/422/485 Internal Header for 1 x RS-232
INTERNAL I/O	
GPIO	8-Bit
SMBUS	Yes
FAN	1 x 4-pin Connector for CPU Fan (PWM Mode)
FRONT PANEL	HDD Active LED Power LED Power On/Off Reset
ADDITIONAL	1 x Chassis intrusion 1 x AT/ATX Mode Selection
STORAGE	
SATA	1 x SATA III 1 x SATA Power Connector
eMMC	Onboard 64GB eMMC 5.1 (optional)
EXPANSION	
M.2	1 x M-Key 2242/2280 (SATA III/PCIe 3.0 x2) Support NVMe 1 x E-Key 2230 (USB 2.0/PCIe 3.0 x1) 1 x B-key 3042 (USB2.0/USB3.1)
SIM	1 x SIM Card Slot
ENVIRONMENT & CERTIFICATION	
OPERATING TEMPERATURE	0°C ~ 60°C (32°F ~ 140°F)
STORAGE TEMPERATURE	-20°C ~ 85°C (-4°F ~ 185°F)
OPERATING HUMIDITY	10 ~ 90% relative humidity, non-condensing
CERTIFICATION	CE/FCC Class A

Block Diagram



Dimension Unit: mm



Ordering Information

PART NUMBER	MF04E00	MF04E02	MF04E08
CPU	Intel® Celeron® J6412	Intel® Celeron® J6412	Intel® Celeron® J6412
SECURITY		TPM2.0 (dTPM)	TPM2.0 (dTPM)
POWER REQUIREMENT	DC-in 12-24V	DC-in 12-24V	DC-in 12-24V
GPU	Intel® UHD Graphics	Intel® UHD Graphics	Intel® UHD Graphics
LVDS	1 x LVDS/eDP	1 x LVDS/eDP	1 x LVDS/eDP
HDMI	2 x HDMI	2 x HDMI	2 x HDMI
MULTIPLE DISPLAY	Support 3 Displays	Support 3 Displays	Support 3 Displays
ETHERNET	2 x 2.5GbE	2 x 2.5GbE	2 x 2.5GbE
USB	3 x USB 3.1	3 x USB 3.1	3 x USB 3.1
USB	5 x USB 2.0	5 x USB 2.0	5 x USB 2.0
COM	1 x RS-232	1 x RS-232	1 x RS-232
COM	1 x RS-232/422/485	1 x RS-232/422/485	1 x RS-232/422/485
SATA	1 x SATA III	1 x SATA III	1 x SATA III
eMMC			eMMC 64GB
M.2	1 x M-Key 2242/2280	1 x M-Key 2242/2280	1 x M-Key 2242/2280
M.2	1 x E-key 2230	1 x E-key 2230	1 x E-key 2230
M.2	1 x B-Key 3042	1 x B-Key 3042	1 x B-Key 3042