

# MF20 Series

Intel® Elkhart Lake J6412 CPU, DDR4 up to 32GB, 2\* HDMI2.0b, 1\* M.2 (M-key), 1\* M.2 (E-key), 1\* M.2 (B-key) W/SIM card slot, 64GB eMMC (optional), 2\* 2.5GbE, 12~24V DC-in

## Features

1. Intel® Elkhart Lake SoC Processor
2. 1\* DDR4 3200MHz SO-DIMM up to 32GB
3. 2\* Intel i225V 2.5GbE
4. 2\* HDMI 2.0b, 1\* eDP (co-layout LVDS), 1\* LVDS w/Inverter
5. 6\* COM, 3\* USB3.1 (Gen.2), 7\* USB2.0
6. 1\* M.2 E-key 2230, 1\*M.2 B-key 3042 W/SIM card slot
7. 1\* M.2 M-key 2242/2280, 1\* SATAIII (6Gb/s)
8. Support 12~24V DC-in



intel. FC CE RoHS COMPLIANT

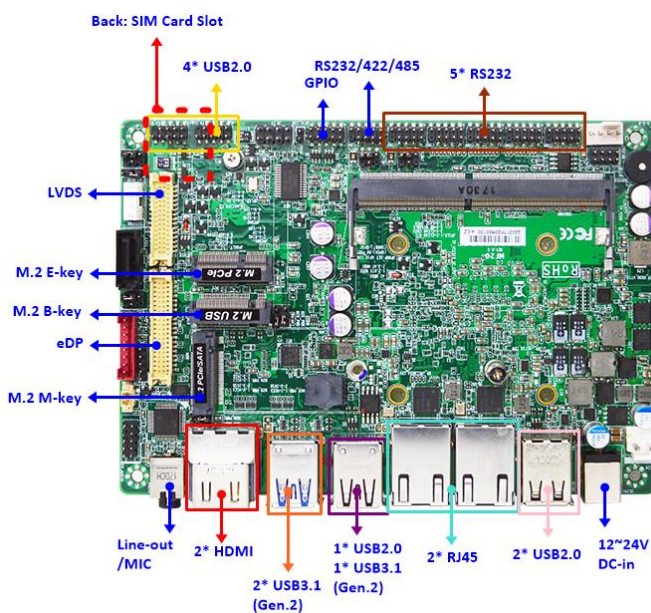
## Overview

The JETWAY MF20 Series is 3.5" form factor board adopts the Intel® Elkhart Lake J6412 SoC Processor. The board supports one SO-DIMM DDR4 3200MHz memory, up to 32GB. Featuring the integrated Intel® 2.5 Gigabit Ethernet controller, the MF20 Series offers two 10/100/1000/2500 Base-TX Ethernet device for network transmission. One SATAIII (6Gb/s) interface, one M.2 M-key and 64GB onboard eMMC (optional) offer storage devices. Three USB3.1 Gen.2 ports, seven USB2.0 ports and six COM ports provide versatile expansion. The M.2 B-key 3042 can support 3G/4G/LTE card. The MF20 Series offers two HDMI2.0b ports and one LVDS (co-layout eDP) with triple independent displays. Because of the above features, MF20 Series is suitable for Panel PC, IOT Solution, Edge computing applications.

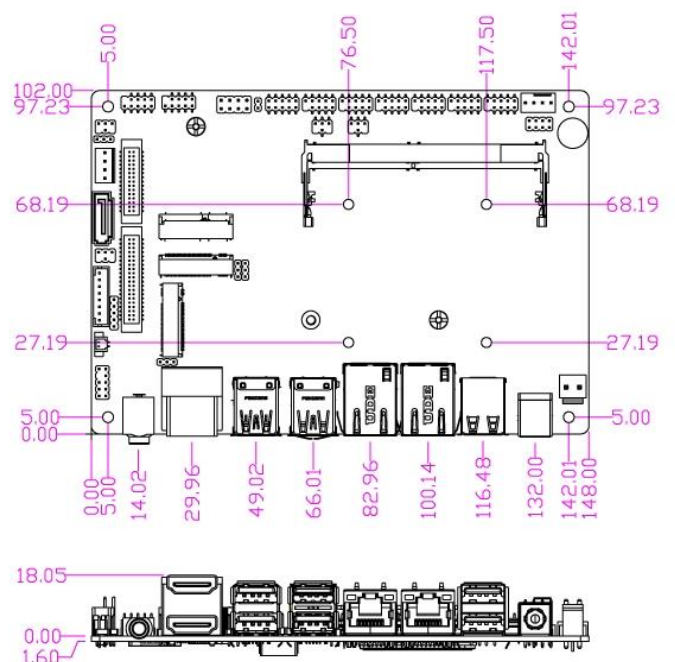
## Application

Panel PC / IOT Solution / Edge computing

## I/O Diagram



## Mechanical Drawings (Unit=mm)



## Specifications

<b>Model</b> <ul style="list-style-type: none"><li>MF20-00 (J6412 CPU_10W)</li><li>MF20-02 (J6412 CPU_10W, TPM2.0)</li><li>MF20-04 (J6412 CPU_10W, 64GB eMMC)</li><li>MF20-08 (J6412 CPU_10W, 64GB eMMC, TPM2.0)</li></ul>	<b>Form Factor</b> <p>3.5" (5.8-in * 4.0-in, 148 * 102mm)</p>
<b>Processor System</b> <ul style="list-style-type: none"><li>Intel® Elkhart Lake J6412 SoC Processor (TDP 10W)</li><li>AMI Flash ROM BIOS</li></ul>	<b>Memory</b> <p>1* DDR4 3200MHz SO-DIMM up to 32GB</p>
<b>Storage</b> <ul style="list-style-type: none"><li>1* SATAIII (6 Gb/s)</li><li>1* M.2 M-key (2242/2280) PCIe Gen.3 x2/SATA interface, support NVME</li><li>64GB eMMC on board (MF20-04 &amp; MF20-08)</li></ul>	<b>Expansion</b> <ul style="list-style-type: none"><li>1* M.2 E-key (2230) support USB2.0/PCIe Gen.3 x1 interface</li><li>1* M.2 B-key (3042) support USB3.1/USB2.0 interface W/SIM card slot</li></ul>
<b>Ethernet</b> <p>2* Intel® i225V 2.5GbE</p>	<b>Graphics</b> <ul style="list-style-type: none"><li>Intel® HD Graphics, shared memory</li><li>1* eDP (Max Resolution: 4096x2160@60Hz)</li><li>1* LVDS (Max Resolution: 1920x1080@60Hz)</li><li>2* HDMI 2.0b (Max Resolution: 4096x2160@60Hz)</li><li>Support Triple Displays</li></ul>
<b>Audio</b> <p>2 Channel HD audio: Realtek ALC888S</p>	<b>Watchdog Timer</b> <ul style="list-style-type: none"><li>From Super I/O to drag RESETCON#</li><li>256 segments (10sec ~ 255min)</li></ul>
<b>Internal I/O</b> <ul style="list-style-type: none"><li>4* USB2.0</li><li>1* eDP (co-layout LVDS)</li><li>1* LVDS w/Inverter</li><li>5* RS232</li><li>1* RS232/422/485</li><li>1* SATAIII</li><li>1 * 64GB eMMC (MF20-04/MF20-08) (If use Win 10 OS, we recommend the eMMC is use for OS boot up purpose.)</li><li>1* SIM card slot (along with M.2 B-key)</li><li>1* GPIO (8 bit)</li><li>1* CPU FAN</li><li>1* Audio Header</li><li>1* SMBUS</li><li>1* AT mode</li><li>1* TPM2.0 onboard (MF20-02/MF20-08)</li></ul>	<b>External I/O</b> <ul style="list-style-type: none"><li>3* USB3.1 (Gen.2)</li><li>3* USB2.0</li><li>2* HDMI</li><li>2* RJ45</li><li>1* Line-out/MIC combo jack</li><li>12~24V DC-in jack</li></ul>
<b>Power</b> <p>12V~24V DC-in PWR - AT: Directly PWR on as Power input ready - ATX: Press Button to PWR on after Power input ready</p>	<b>Compliance</b> <p>CE, FCC, LVD, RoHS, REACH</p>
<b>Temperature</b> <ul style="list-style-type: none"><li>Operating Temperature: 0 ~ 60° C</li><li>Storage Temperature: -20 ~ 85° C</li><li>Humidity: 10% ~ 90% RH @40°C (non-condensing)</li></ul>	<b>OS Support</b> <p>UEFI Win10 64-bit, Win 10 IoT Enterprise 64-bit LTSC 2019, CentOS (Version 9), Debian (Version 11.3), Fedora-LXDE (Version 36-1.5), Fedora Workstation (Version 36-1.5), Fedora Server (Version 36-1.5), Open SUSE (Version 15.4), Ubuntu Standard / LTS (Version 22.04), Ubuntu Server (Version 22.04), pfSense (Version 2.6.0), TrueNAS (FreeNAS) (Version 13.0), RedHat Enterprise (Version 9.0), OPNSense (Version 22.1.2)</p>
<b>Warranty</b> <p>2 Years limited warranty</p> <p>* Specifications subject to change without notice, not responsible for typographical errors. Does not include HDD or OS.</p>	

## Standard Accessories

Part Number	Description
MF20 Series	MF20 Series M/B
G01-COM-H2M22-1F	2* COM Cable
G01-PW4PS-2S-322F	1* SATA PWR cable
G01-SATA3-BL-1F	1* SATA cable
HCS3XXMHT03S-1F	1* Flat type Heatsink