

# FP-20

## AMD® Ryzen™ Quad Core Processor V1605B based Mini ITX



### Features

- CPU: Ryzen™ V1605B Quad Core Processor
- Memory: Dual channel SO-DIMM DDR4 up to 32 GB
- Display: Display via 2xHDMI2.0,1xDVI-D,1xVGA
- Ethernet: 10/100/1000Mbps
- Storage: SATA3.0, M.2 2242/2280 SSD NVME(SATA Optional)
- Expansion: 1xM.2 2230 for WiFi
- Power: 12V/19V DC input



## Introduction

The Maxtang FP20 mini-ITX embedded motherboard is based on the AMD Ryzen™ V1605B (quad-core) and provides a complete PC platform with high performance. Coming from the embedded V1000 processor family and mobile processor family, these CPUs combine the incredible performance of the pioneering “Zen” architecture and “Vega” GPU in a single chip with thermal design power (TDP) as low as 12W/15W. It supports four independent 4K displays, in addition to dual-channel SO-DIMM DDR4 memory.

Features dual 1-Gigabit Ethernet controllers, and M.2 expansion for Wi-Fi and SSD modules. Rich interfaces as 8 x USB2.0, 3 x USB3.2, 1 x Mic-in, 1 x Line-out and Line-in, catering to most requirements in the market. The FP20 is an ideal solution for applications requiring a high-speed communication front-end like a mini-server or high-resolution display products like electronic gaming machines, medical imaging, interactive digital signage, thin clients, or PDS terminals.



H/W Monitor



Watchdog

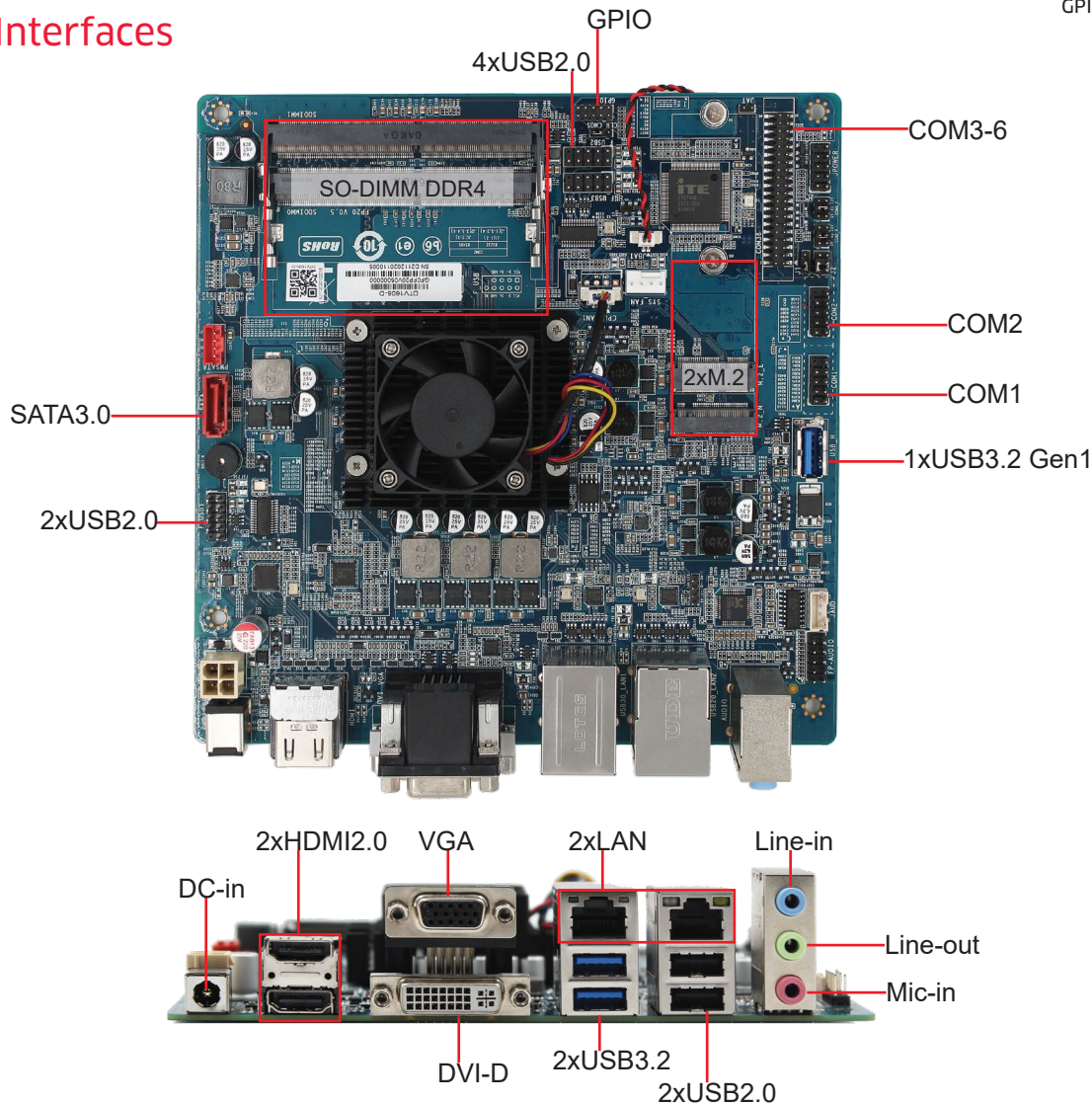


GPIO



Brightness

## I/O Interfaces

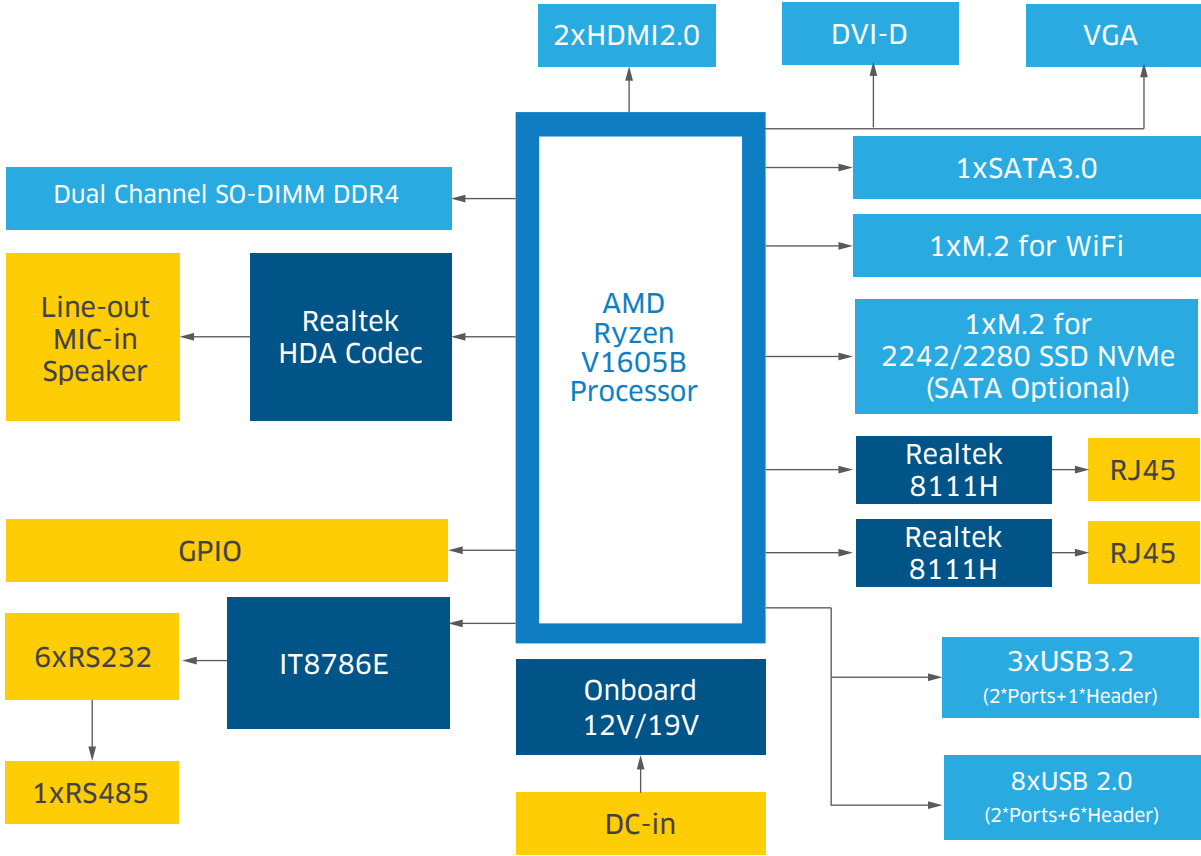


## Technical Specifications

|                       |                 |  |                 |
|-----------------------|-----------------|--|-----------------|
| Processor             | CPU             | V1605B (Quad-Core)                                 |                 |
|                       | Max Boost clock | 3.6 GHz  |                 |
|                       | Base Clock      | 2.0 GHz  |                 |
|                       | Cache           | 2MB L2   |                 |
|                       | BIOS            | AMI SPI BIOS                                       |                 |
| Memory                | Type            | Dual Channel SO-DIMM DDR4                          |                 |
|                       | Max. Capacity   | 32GB   |                 |
| Display               | GPU             | AMD Radeon Vega 8 Graphics                         |                 |
|                       | Display via     | HDMI2.0, DVI-D, VGA                                |                 |
| Ethernet              | Speed           | 10/100/1000 Mbps                                   |                 |
|                       | Controller      | RTL8111H   |                 |
|                       | Interface       | 2xRJ 45  |                 |
| Audio                 | Audio codec     | Realtek HD (Line-in, Line-out, Mic-in,)            |                 |
|                       | Interface       | Line-out, Mic-in, Audio header, Amplifier header   |                 |
| Hardware              |                 | CPU system temperature, onboard voltage, watchdog  |                 |
| Wireless connectivity | M.2             | 1xM.2_Key E for Wi-Fi                              |                 |
| Storage               | M.2             | 1xM.2_Key M for 2242/2280 SSD NVMe (SATA Optional) |                 |
|                       | SATA3.0         | 1  |                 |
| I/O Interface         | LAN             | 2  |                 |
|                       | COM             | 6xRS232 (COM2 can be change to RS485, optional)    |                 |
|                       | USB3.2          | 3 (2*Port + 1*header)                              |                 |
|                       | USB2.0          | 8 (2*Port + 6*header)                              |                 |
|                       | HDMI2.0         | 2  |                 |
|                       | DVI-D           | 1  |                 |
|                       | VGA             | 1  |                 |
|                       | Audio           | 1 x Line-in + 1 x Line-out + 1 x Mic-in            |                 |
|                       | GPIO            | 8 (One Group)                                      |                 |
|                       | Dimension       | Size   | 170 mm x 170 mm |
|                       |                 | Board Type   | Mini ITX        |
| Power                 | Standard Port   | 12V/19V DC-in                                      |                 |
| Temperature           | Operating Temp. | - 20°C — 60°C                                      |                 |
|                       | Storage Temp.   | - 40°C — 80°C                                      |                 |
| Operating System      |                 | Windows 10 64bit, Linux 64bit                      |                 |

\* All specifications and photos are subject to change without notice.

# Functional Block Diagram



Copyright © 2018 Maxtang Technology Co. Ltd. All rights reserved. All data is for information purposes only and not guaranteed for legal purposes. Information has been carefully checked and is believed to be accurate however, no responsibility is assumed for inaccuracies. Maxtang and the Maxtang logo and all other trademarks or registered trademarks are the property of their respective owners and are recognized.