User Manual

FP650 Motherboard

Maxtang®

MAXIMIZING YOUR COMPUTING PRODUCTIVITY

Copyright

© 2023 Shenzhen Maxtang Computer Co., Ltd. All rights reserved. No part of this publication may be reproduced, copied, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, photocopying, or otherwise, without the prior written consent of Shenzhen Maxtang Computer Co., Ltd (hereinafter referred to as “Maxtang”).

Disclaimer

Maxtang reserves the right to make changes and improvements to the products described in this document without prior notice. Every effort has been made to ensure the information in the document is correct; however, Maxtang does not guarantee this document is error-free.

Maxtang assumes no liability for incidental or consequential damages arising from misapplication or inability to use the product or the information contained herein, nor for any infringements of rights of third parties, which may result from its use.

All specifications are subject to change without notice. Please check with your regional sales. Products may not be available in all markets.

Trademarks

All the trademarks, registrations, and brands mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

*The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress, and HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

FP650

User Manual

(Version 2.0)

Version:		
NO.	Description	Issue Date:
V0.5	Initial Version	2021/11/15
V2.0	1. Update TYPE C to full functioned, supports USB3.2 Gen2 and DP1.4 2. Update Audio interface to CTIA interface	2023/03/22

Contents

FP650 1
User Manual 1
(Version 2.0) 1
Chapter 1 Product Introduction 3
1.1 Brief Introduction 3
1.2 Parameters 3
1.3 Connector Diagram 4
1.4 I/O Interface 5
Chapter 2 Hardware 6
2.1 Installations 6
2.2 Jumper Setting 6
2.3 Memory Slots 6
2.4 Display Interfaces 6
2.5 Storage Interfaces (Screen Printing: SATA, M.2_N) 7
2.6 Expansion Slots (Screen Printing: M.2_E) 7
2.7 LAN 7
2.8 Audio Interface 7
2.9 CPU Fan (Screen printing: CPUFAN) 7
2.10 USB Interfaces 7
2.11 Type-C Interface 8
2.12 Power Button (Screen printing: PWON) 8
2.13 CMOS Clearance/Retention (Screen printing: CLR_CMOS) 8

Chapter 1 Product Introduction

1.1 Brief Introduction

The MTN-FP650 compact mini pc is a 4x4 small form factor pc based on AMD Ryzen ™ H series processor, built on the groundbreaking “Zen 3” core architecture with innovative technology and optimized high performance.

1.2 Parameters

AMD Ryzen Mobile Processors Processor:

- Ryzen 5 5600H --- 6 Cores/12 Threads, Base Freq. 3.3 GHz, Max Freq. 4.2GHz, TDP35-54W
- Ryzen 7 5800H --- 8 Cores/16 Threads, Base Freq. 3.2 GHz, Max Freq. 4.4GHz, TDP35-54W

Memory: 2x SO-DIMM DDR4-3200MHz Slots, support dual-channel, maximum capacity 64GB

GPU: Integrated Graphics based on CPU, Dual 4K displays via 2x HDMI2.0

Storage: 1x SATA3.0 interface, 1 x M.2 Key M 2280 slot for SSD (supports NVMe/SATA Protocol)

USB: 1x USB3.2 Gen 2(Screen printing: USB3_1), 1x USB3.2 Gen1 (Screen printing: USB3_2); 2x USB2.0

Type C: 1xUSB-C Full-functioned (supports USB3.0 Gen 2 upstream/Display Port 1.4 Alt Mode)

Ethernet: One RTL8111H Network Controller, Data Rate Per Port: 1.0Gbps

Audio: High-Definition Realtek Audio Codec,1xCTIA Audio Jack, supports Line-out+Mic-in.

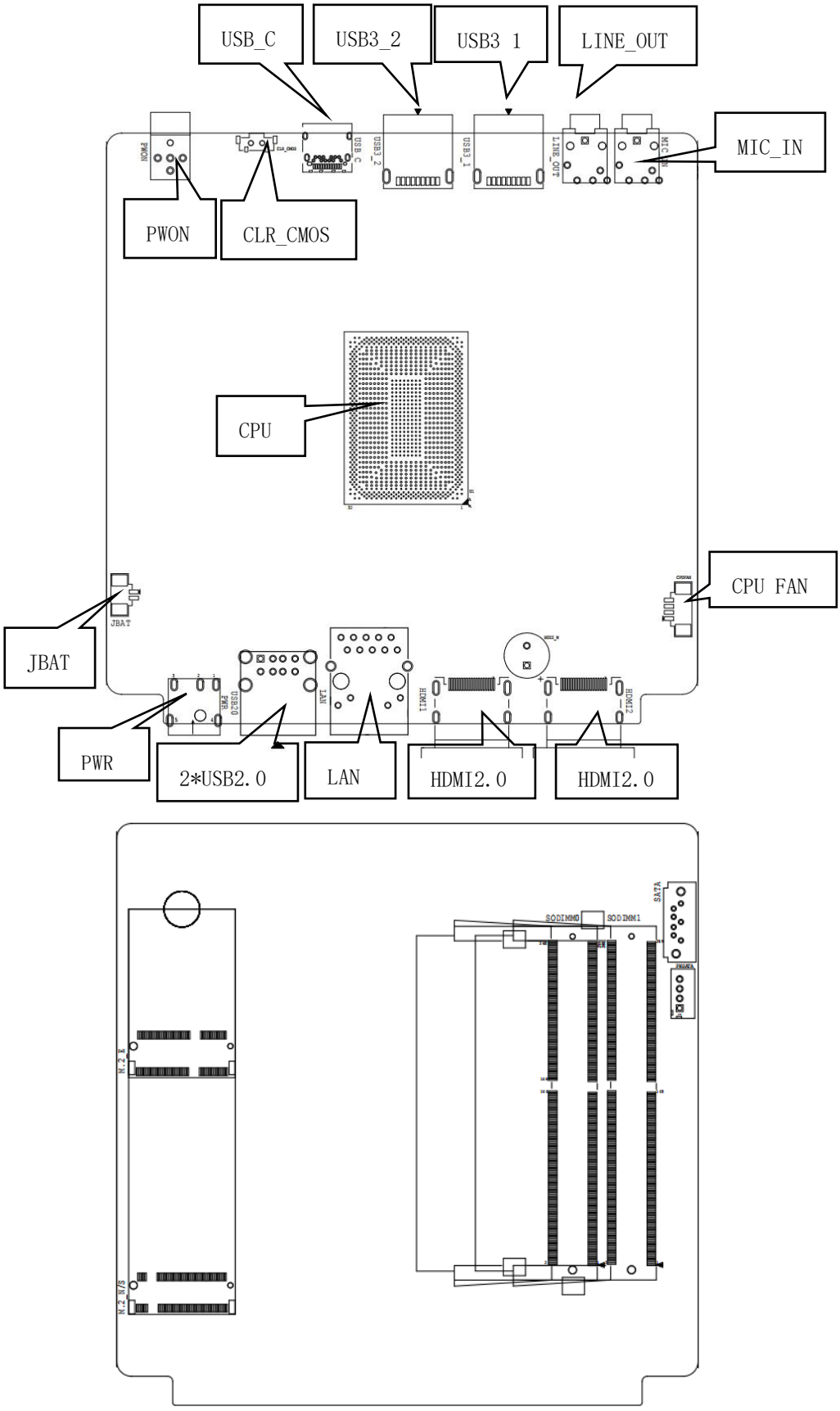
Expansion: 1x M.2_Key E Slot type 2230 for Wi-Fi and Bluetooth

Other I/O: 1x Power button (PWON)

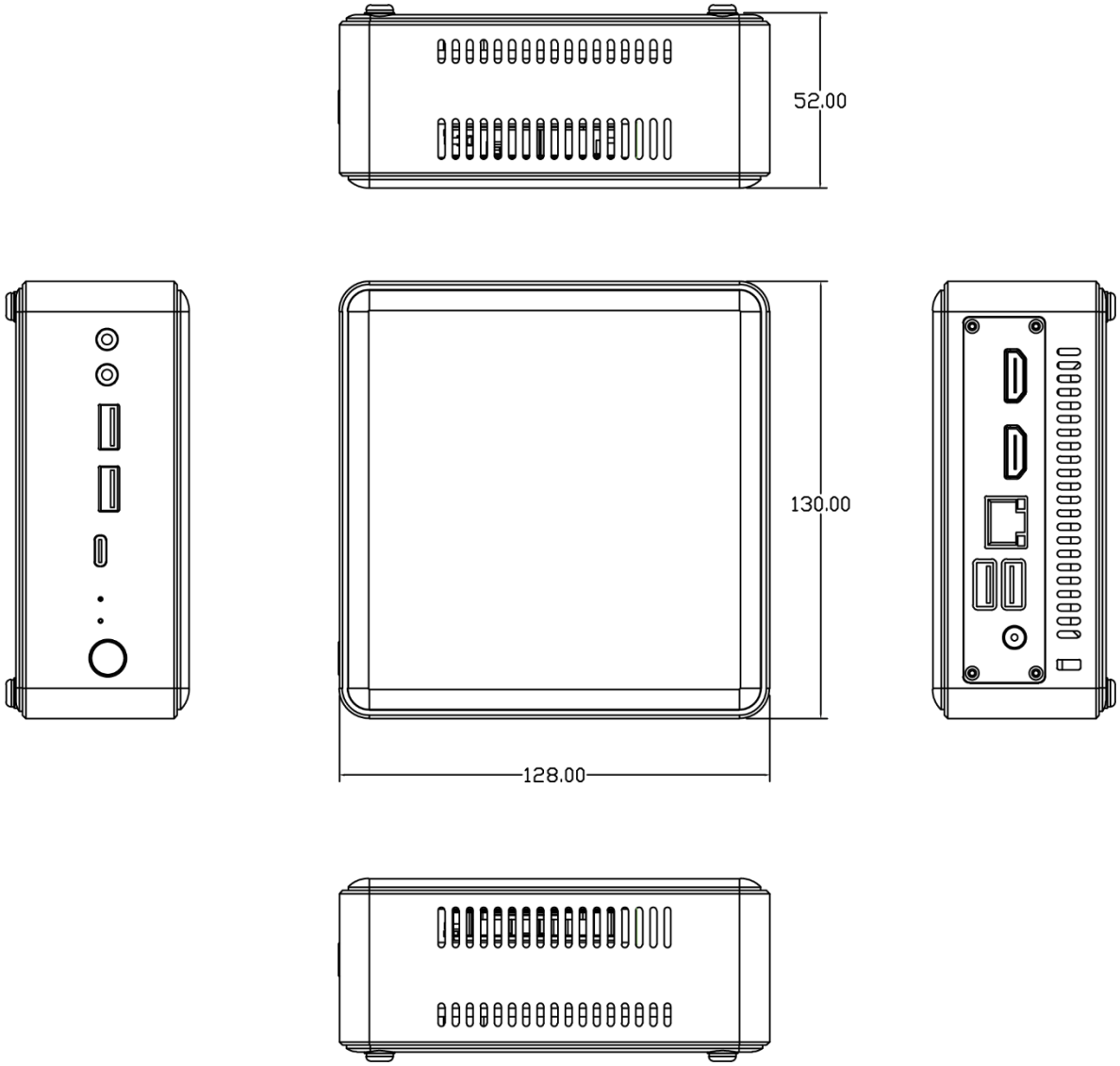
Power: 12V/19V DC-in

Working Temperature: 0℃~50℃

1.3 Connector Diagram



1.4 I/O Interface



Chapter 2 Hardware

2.1 Installations

Please refer to the following steps for installations:

1. Read the user manual carefully to make sure all the adjustments on the FP650 are correct.
2. Installing the Memory:
   - Press the ejector tab of the memory slot outwards with your fingertips.
   - Hold the memory module and align the key to the module with that on the memory slot.
   - Gently push the module into the slot until the ejector levers return completely to the closed position, holding the module in place when the module touches the bottom of the slot. To remove the module, press the ejector levers outwards to unseat the module.
3. Installing the expansion cards:
   - Locate the expansion slots and remove the screw, insert the cards into the slot at a 45-degree angle then attach the screw to the expansion cards, gently press down on it then install the screw back.
4. Connect all signal wires, cables, panel control wiring, and power supplies.
5. Start the computer and complete the setup of the BIOS program.

The board's components are integrated circuits and can easily be damaged by Electrostatic Discharge or ESD; therefore, please follow the instructions:

- Hold the board's edge when handing, and do not touch onboard pins, components, or plug sockets.
- When touching integrated circuit components (such as CPU, RAM, etc.), please wear an anti-static wrist strap/glove to avoid electrostatic discharge damage to the board or other sensitive components.
- Before installing the integrated circuits/sensitive components, place the sensitive components in anti-static bags to keep them safe from ESD.
- Please make sure the power switch is OFF before plugging the power plug.

2.2 Jumper Setting

Please configure the jumpers according to your requirements before installing the hardware.

How to identify the first header of jumpers and pins: Observe the mark beside the jumper or pins and find the header marked by “1” or bold line or triangular symbol. Or observe the rear panel and the header with a square solder pad is the first header.

2.3 Memory Slots

The board provides 2x SO-DIMM DDR4-3200 for memory up to 64GB and supports dual channels.

Notes: Make sure to hold the memory module and align the key to the module with that on the memory slot. While choosing a memory module, please make sure the module matches the board’s specifications.

2.4 Display Interfaces

The board features 2xHDMI2.0 standard interfaces, and supports dual 4K displays.

2.5 Storage Interfaces (Screen Printing: SATA, M.2_N)

The board provides 1 x M.2 Key M slot, supports 2280 NVMe/SATA SSD, 1x SATA3.0 interface and a 4PIN disk power supply.

PWSATA (Screen Printing: PWSATA)

Pin	Signal
1	+5V
2	GND
3	GND
4	+5V

2.6 Expansion Slots (Screen Printing: M.2_E)

Screen Printing M.2_E: 1x M.2_Key E type 2230 for Wi-Fi Module and Bluetooth.

2.7 LAN

The board features 1xRJ45 LAN interfaces with high-speed RTL8111H network controllers, and the data rate per port: 1.0Gbps. The ethernet interface supports network wake-up (Magic packet wake-up) and UEFI PXE network boot.

LED Status Indicators:

LI_LED Status (Green)	Function	ACT_LED Status (Orange)	Function
Always on	Network Connected	Flashing	Data transmission

2.8 Audio Interface

The board features a Realtek ALC662 High-Definition Audio Codec, the audio interface colored green is the Line-out and the audio interface colored pink is the Mic-in.

2.9 CPU Fan (Screen printing: CPUFAN)

The board features one CPU cooling fan socket for better heat dissipation.

CPUFAN (Screen Printing: CPUFAN)

Pin	Signal
1	GND
2	+5V
3	TAC
4	CTL

2.10 USB Interfaces

The board provides 1x USB3.2 Gen 2(Screen printing: USB3_1), 1x USB3.2 Gen1 (Screen printing: USB3_2) and 2x USB2.0 interfaces.

2.11 Type-C Interface

The board features a Type-C(USB-C) Full-functioned interface, the interface also supports USB3.2 Gen 1 upstream/Display Port 1.4 Alt Mode functions.

2.12 Power Button (Screen printing: PWON)

The board features a power button (PWON); to power off under non-Windows/Linux OS, press and hold for at least 4 seconds to turn it off.

2.13 CMOS Clearance/Retention (Screen printing: CLR_CMOS)

CMOS is powered by onboard button batteries. Clearing CMOS will permanently remove the previous system settings and restore the board system to original settings (factory settings).

Step 1: Turn off the PC and disconnect the power.

Step 2: Press CLR_CMOS for 10 seconds then disconnect.

Step 3: Restart the device, press the <DEL> button to enter the BIOS, load the optimal default value.

Step 4: Save, and exit the settings.

CMOS (Screen Printing: CLR_CMOS)

⚠ Please do not clear COMS when the PC is connected to power in case board damages.