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                        50X0-TEX
              OpiThin Embedded x86 AMD 64-bit
                     Hardware Guide

                       [image1]

50X0-TEX OpiThin Embedded x86
   Strong. Compact. Affordable
   High-performance embeddable PC
   Windows 10 IoT, Linux/Ubuntu Core, and Linux/OpenWRT

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                                            50X0-TEX Hardware Guide
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Operation is subject to the following two conditions:
1. This device may not cause interference and
2. This device must accept any interference. Including interference that may cause
undesired operation of the device.

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Safety information

ATTENTION: Before Connecting the device to DC power input, make sure the DC power source voltage is stable.

ATTENTION: This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.

This Metal surface can be very hot when operating in high temperature. To avoid injure, please do not touch the metal surface.

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                              Document Amendment History
Revision   Date   Remark
V 0.1   2020 Nov.   Initial Doc

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1. Introduction

50X0-TEX OpiThin Embedded x86
Powerful, compact, highly efficient quad core.
The Opiware 50X0 x86 series is a highly efficient and powerful embeddable PC platform for wide range of dedicated applications and virtual desktop environments. It is available with Windows 10 IoT, Linux/Ubuntu Core, and Linux/OpenWRT. With its extremely compact size and high performance, it's a versatile embedded device.

1.1 Features
* Strong. Compact. Affordable.
* High-performance multimedia.
* Highly scalable, easy to operate and manage.
* Environmentally conscious computing.

1.2 Specifications (Hardware)

Model Name

Operating system
  Windows 10 IoT
  Linux/Ubuntu Core
  Linux/OpenWRT

CPU
5010-TE1
  AMD G-Series T48E Dual Core 1.4GHz
5020-TE2
  Quad-core AMD G-Series SoC 1.5 GHz

Memory
  32GB SSD Flash / 4GB, 2GB RAM DDR3
  16GB SSD Flash / 4GB, 2GB RAM DDR3
  Higher SSD storage also supported

Graphics
5010-TE1
  Radeon HD 6250 graphics (integrated with APU)
5020-TE2
  AMD Radeon HD 8330E graphics (integrated with APU)

Networking
  10/100/1000 Gigabit Ethernet
  Optional dual band 802.11 a/b/g/n wireless
  Optional SFP Module support for Fiber NIC network connectivity
  Optional Bluetooth connectivity

I/O peripheral support
5010-TE1
  1 x DisplayPort. (Optional DisplayPort to DVI-I adapter available)
  1 x One DVI-I port. DVI to VGA (DB-15) adapter included
  4 x USB 2.0 ports (two front, two rear)
5020-TE2
  1 x DisplayPort. (Optional DisplayPort to DVI-I adapter available)
  1 x One DVI-I port. DVI to VGA (DB-15) adapter included
  4 x USB 2.0 ports (two front, two rear)
  2 x SuperSpeed USB 3.0 ports on rear (backwards compatible with USB 2.0)

Resolution
  VESA monitor support with Display Data Control (DDC) for automatic setting
  of resolution and refresh rate
  DisplayPort: 2560 x 1600 at 32bpp / DVI-I: 1920 x 1200 at 32bpp
  Dual display: 1920 x 1200 at 32bpp / Supports dual digital high-resolution
displays

Audio
  Composite audio jack: 1/8-inch mini, 16-bit stereo / Internal mono speaker

Dimensions
  Height: 6.7 inches (170 mm) / Width: 1.6 inches (40 mm) /Depth: 7.3 inches (185

  mm)

 Weight
   2.05 lbs. (0.93 kg)

 Mountings
   Vertical feet, standard
   Optional VESA mounting bracket for mounting to flat surfaces, such as walls
   Please note: 50X0 series cannot mount directly to the backs of monitors
   Optional Ergotron mounting stand for mounting with monitors

 Device security
 5010-TE1
   Built-in Kensington security slot (cable sold separately)
 5020-TE2
   Data: WE8S and Win10 IoT Trusted Platform Module (TPM) 1.2
   Device: Builtand -in Kensington security slot (cable sold separately)

 Power
   Worldwide auto-sensing 100-240 VAC, 50/60 Hz 65W, 19V DC
   Energy Star V.5.2 Phase V external and EuP compliant power adapter

 Temperature range
   Operating, vertical position: 32° to 104° F (10° to 40° C)
   Storage: 14° to 140° F (-10° to 60° C)

 Humidity
   20% to 80% condensing. 10% to 95% non-condensing

 Safety certifications
 5010-TE1
   Ergonomics: German EKI-ITB 2000, ISO 9241-3/-8
   Safety: cULus 60950, TÜV-GS, EN 60950
   RF Interference: FCC Class B, CE, VCCI, C-Tick
   Environmental: WEEE, RoHS Compliant
   Energy Star®, EPEAT Silver listed
 5020-TE2
   Ergonomics: German EKI-ITB 2000, ISO 9241-3/-8
   Safety: cULus 60950, TÜV-GS, EN 60950
   RF Interference: FCC Class B, CE, VCCI, C-Tick
   Environmental: WEEE, RoHS Compliant

 Warranty
   One-year hardware warranty

 1.3 Specifications (Linux/Ubuntu Core Software)

 Operation Systems
 • Linux/Ubuntu Core
 • Supports bootup from SSD
 • Support Backup/Restore USB
 • Boot Loader : GRUB/LILO
 • File System : ETX4

Software Development
- Toolchain: gcc + glibc/uclibc/musl
- Supports remote C/C++ compilation

Package Management
- Package repository: Opiware self-maintained repository
- Command: Standard apt, apt-get

Popular Packages
- Web server: Apache/Lighttpd
- Database: MySQL/SQLite3
- Scripting: PHP/Node.JS/Node-RED
- Text editor: vim/nano/sed
- Administration: OpiWebUI

Software Documentation and Utility
Please refer to "50X0-TEX" repository for software documentation and utility at following: http://www.github.com/Opiware/

1.4 Ordering Information

- 5010-TE1
OpiThin Embedded x86 AMD 64-bit, Dual Core
with 32GB, 16GB SSD Flash / 4GB, 2GB RAM DDR3

- 5020-TE2
OpiThin Embedded x86 AMD 64-bit, Quad Core
with 32GB, 16GB SSD Flash / 4GB, 2GB RAM DDR3