

# HC-3120

## Linux-Ready Cortex-A8 Industrial 12" HMI Computing

### (Hardware) User Guide



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## Document Amendment History

Revision	Date	Remark
V 1.0	2017 July	Initial

## Table of Contents

<b>1.</b>	<b>Introduction .....</b>	<b>5</b>
1.1	Features.....	5
1.2	Specification (Hardware).....	5
1.3	Specification (Software).....	7
1.4	Packing List.....	7
<b>2.</b>	<b>Layout.....</b>	<b>8</b>
<b>3.</b>	<b>Dimension (unit:mm) .....</b>	<b>9</b>
<b>4.</b>	<b>Panel Mounting (unit:mm) .....</b>	<b>10</b>
<b>5.</b>	<b>Pin Assignment and Definitions.....</b>	<b>11</b>
5.1	Power Connector .....	11
5.2	CAN Bus .....	11

## 1. Introduction

HC-3120 HMI Computing suits for visualization tasks directly on the machine or in the plant. The all-in-one Panel PC devices integrate an ARM\_based Linux-ready computing and a capacity touch panel. It convinces through its robustness, performance, and a brilliant display. Various device families fulfill a wide range of requirements in manufacturing and process automation.

### 1.1 Features

- Fanless / Rugged Design HMI Computing
- 12" TFT LED backlight LCD display with Projective Capacity Touch
- TI AM3354 Sitara ARM Cortex-A8 32-Bit RISC Processor
- Onboard 256MB DDR3 SDRAM
- Onboard storage eMMC 512MB NAND Flash
- IP65 compliant front panel, resistant to water and dust
- Rich I/O with RS-232, USB, CAN bus and Gigabit LAN
- Easily Panel-mounting, no screw hole needed
- Low power consumption
- +18~+30Vdc wide range input

### 1.2 Specification (Hardware)

#### CPU / Memory

- CPU: TI AM3354 Sitara ARM Cortex-A8 32-Bit RISC Processor
- Frequency: 800MHz
- SDRAM: 256MB DDR3, up to 512MB
- Onboard eMMC 512MB NAND Flash

#### Graphic

- SGX530 3D Graphics Engine
- Industry Standard API Support of Direct3D Mobile, OGL-ES 1.1 / 2.0, OpenVG 1.0, and OpenMax

#### LCD Display

- Display Size: 12" TFT LCD, 16.2M colors
- Resolution: 800 x 600
- Viewing Angle (H/V°): 89°/89°
- Luminance (cd/m2): 600
- Contrast Ratio: 1500:1
- Backlight: LED
- Life: 50000hrs

**Touchscreen**

- Touch Type: Projective Capacity Touch
- Light Transparency: >85% at 550nm wavelength
- Controller: USB
- Explosion-proof

**CAN Bus Ports**

- Type: 1 x CAN bus 2.0 A/B compliant ports (second is option)
- Speed: Up to 1Mbps

**USB 2.0 Host Interface**

- Host Ports: 2
- Supports 480Mbps hi-speed mode
- Type A USB connector

**SD Slot**

- SD 2.0 compliant, supports SDHC
- 1 x microSD socket
- Storage capacity : Support Up to 64G

**Network**

- 2 x Gigabit Ethernet (10/100/1000Mbps)
- Connector : RJ45

**Power Requirement**

- 1 x phoenix male 2-pin terminal block
- Input Voltage: +24VDC typical (+18Vdc~+30Vdc)
- Cable Length Suggestion: 3m (Typical), 12m (Max.)
- Power Consumption: 14.4W (+24V/0.6A)

**General**

- Material: Die-casting aluminum (Front bezel), Metal (Case)
- Dimensions (W x H x D): 339 x 270 x 53mm (13.35" x 10.63" x 2.09")
- Net Weight: 2.92kg (6.4lb)
- Installation: Panel mount, VESA mount
- Operating Temperature: 0~50°C (32~122°F)
- Operating Humidity: 25~85% @ 40°C, non-condensing

### 1.3 Specification (Software)

#### Operation System Support

- Linux kernel 4.9.x
- Supports bootup from eMMC or SD card
- Boot Loader : Barebox
- File System : EXT4
- QT5 library, support 2D / 3D graphics accelerator

#### Desktop Environment

- LXDE (abbreviation for Lightweight X11 Desktop Environment)
- Support for Firefox / Chromium browser + virtual keyboard

#### Software Development

- Toolchain: gcc 6.2.0 + glibc 2.24
- Supports in-place C/C++ code compilation

#### Package Management

- Support Debian packages (deb format)
- Support standard apt-get command

#### Pre-installed Packages

- SSH terminal server, iptables
- Web server (Nginx)
- PHP / Perl / Python / NodeJS
- FSQlite3
- Busybox / vim / nano / sed
- Webmin
- udev

### 1.4 Packing List

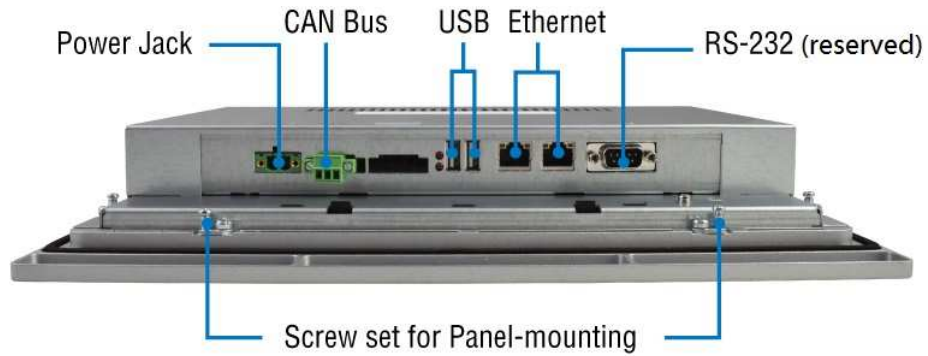
- HC-3120: Linux-ready ARM-based 12" HMI Computing

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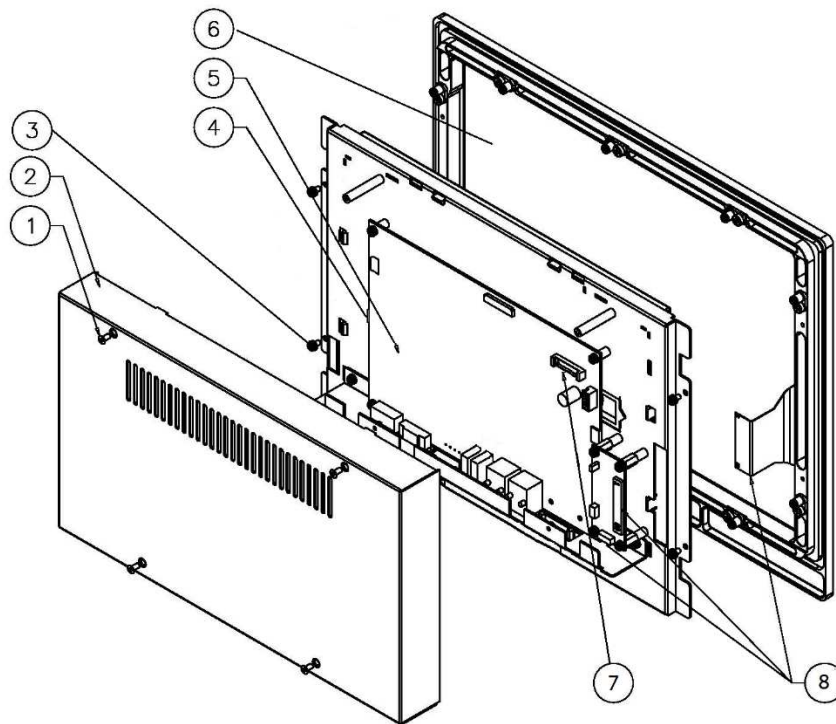
\* Artila generally suggests our customers to purchase this item from original manufacturer directly.

## 2. Layout

(I/O ports)



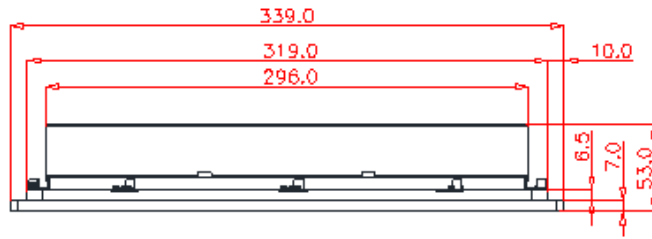
(Key Parts )



ITEM	DESCRIPTION
1	SCREW M3x6
2	Rear side cover
3	Screw Set M3x6
4	SD Card Socket
5	Main control board
6	Touch / LCD module
7	LCD Cable
8	Touch Controller & Cable

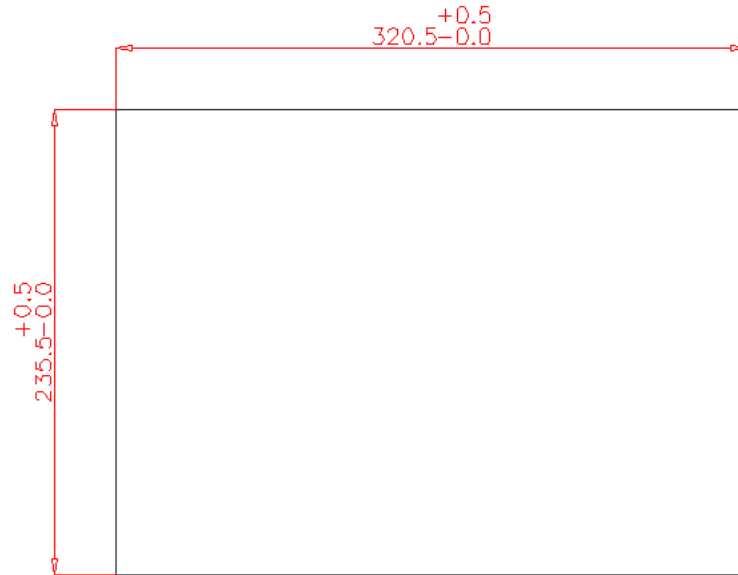


### 3. Dimension (unit:mm)

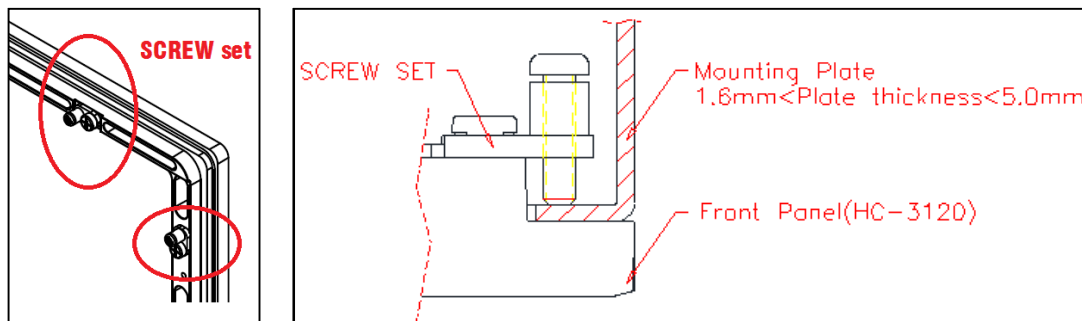


#### 4. Panel Mounting (unit:mm)

Please reserve Panel Mounting Portiforium Dimension: 320.5mm x 235.5mm  
(12.62in x 9.27in) for HC-3120



Mount HC-3120 by Screw sets that already fixed on the back of panel



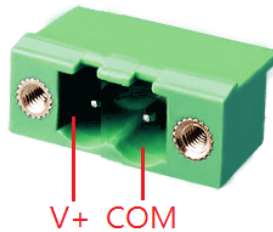
by releasing thumb-screw and turn 90deg, then tighten toward the mounting panel.



## 5. Pin Assignment and Definitions

### 5.1 Power Connector

Connecting +18~+30VDC power line to the Power in terminal block. Typical input voltage is +24Vdc. If the power is properly supplied, the Power LED will keep solid green color and a beep will be heard.



### 5.2 CAN Bus

One CAN bus interface provides by HC-3120. Following describes the pin definition:

