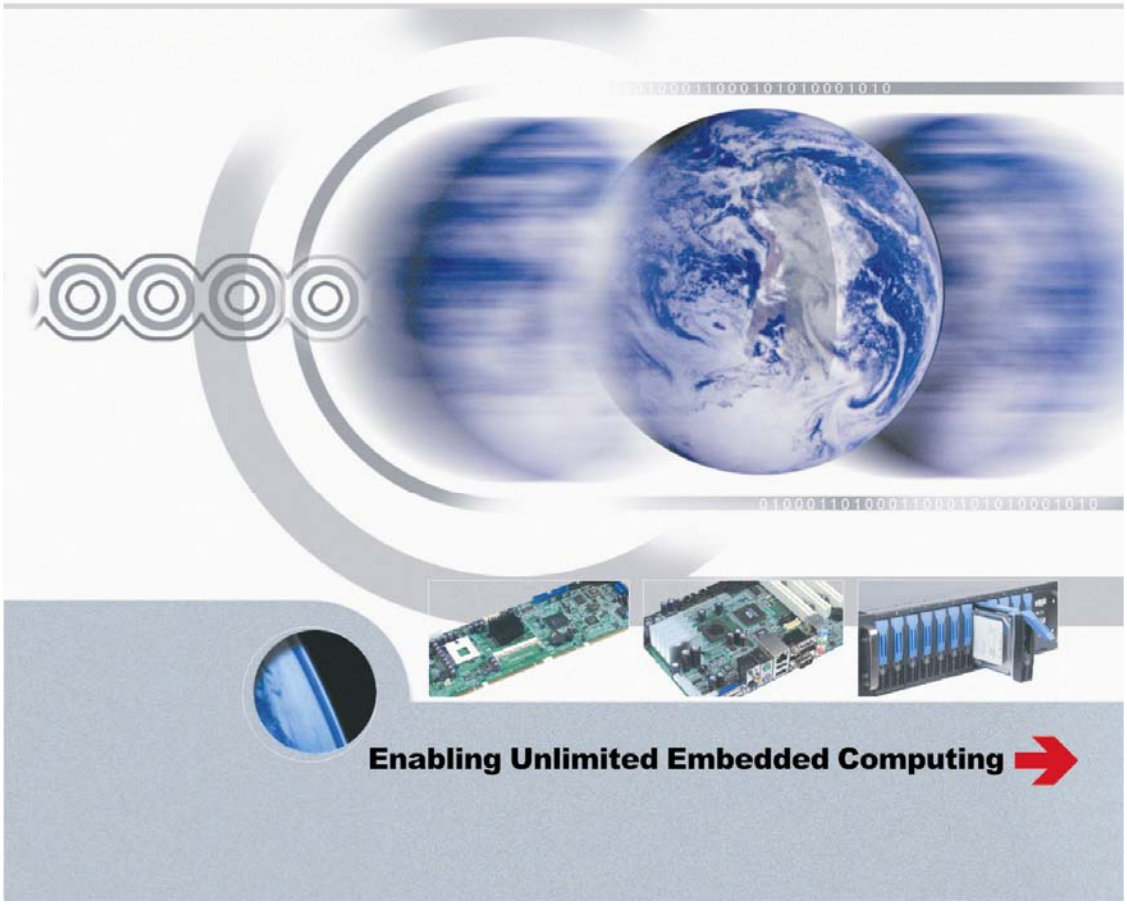
BIS-6380C

USER' Manual V1.0

USER's Manual



BIS-6380C

USER' Manual V1.0

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Declaration of conformity

CE 0168

NORCO Industrial Computer Technology Inc.

declares that the product

BIS-6380C ARM architecture-based Barebone

(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive)

☑ EN 55022	Limits and methods of measurements of radio disturbance Characteristics of information technology equipment
☑ EN 50081-1	Generic emission standard Part 1: Residential, commercial and light industry
☑ EN 50082-1	Generic immunity standard Part 1: Ressidential, commercial and light industry

European Representative:

Shenzhen NORCO Intelligent Technology Co.,Ltd.

Signature: _____ Place/Data: HONG KONG/2007

Printed Name: Anders Cheung Position/Title: President

Disclaimer

Except for the accessories attached to the product as specified herein, what is contained in this user manual does not represent the commitments of NORCO Company. NORCO Company reserves the right to revise this User Manual, without prior notice, and will not be held liable for any direct, indirect, intended or unintended losses and/or hidden dangers due to installation or improper operation.

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Safety Instructions

1. Please read the product manual carefully before using this product.

2. Put all the unused or uninstalled boards or electronic components in a static dissipative surface or static shielding bag.

3. Always ground yourself to remove any static discharge before touching the board, to place your hands on grounding metal object for a while or wear a anti-static wrist strap at all times.

4. When taking or fetching the boards or cards, please wear antistatic gloves and have the habit of holding the boards by its edges.

5. Make sure that your power supply is set to the correct voltage in your area. Incorrect voltage may cause personal injuries and damage the system.

6. To prevent electronic shock hazard or any damage to the product, please ensure that all power cables for the devices are unplugged when adding or removing any devices or reconfiguring the system.

7. To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

8. When adding or removing devices to or from the system, ensure that all the power cables for the devices are unplugged in advance.

9. To prevent any unnecessary damage to the products due to frequent power on/off, please wait at least 30 seconds to restart the unit after the shutdown.

10. If system goes wrong during the operation, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

11. This product is classified as Class A product, which may cause radio interference in our living environment. On this occasion, users need to take measures to handle the interference.

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Packing List

Thanks for purchasing NORCO products. Please check the accessories as per the packing list when you open its package. If you find any components/parts defected, damaged or lost, please contact your vendor ASAP.

■BIS-6380C	1pcs
■12V Power Adaptor	1pcs

Chapter 1. Product Introduction

Chapter 1 Product Introduction

1.1 Overview

This Compact system BIS-6380C uses the Freescale i.MX6 series CPU which is a power efficient implementation of the ARM Cortex™ A9 core which offers long lifecycle support. This processor features full HD 1080p playback as well as 1080p decoding and encoding using hardware acceleration and the ability of running dual independent displays through the VGA & HDMI & LVDS interfaces. This ARM architecture-based barebone is designed to operate on Android 4.0 or Linux natively.

The BIS-6380C is built to industrial standards so you can run it in a factory, but it's cost effective enough to run as a digital media streamer and can be used as a suitable solution for a wide range of applications including but not limited to digital control, digital signage, interactive client, media player, advertising, Large LCD screen Control, transportation, information control, education and banking.。

1.2 Specifications

Processor

●CPU: Onboard, Freescale Cortex™-A9 i.MX6 Series (Single Core, dual core, quad-core)

Memory

●Onboard Memory: default 1GB, DDRIII 800

Display

●Display Interface: VGA, LVDS, HDMI

●VGA: 1x VGA

●LVDS: 1x dual channel LVDS, 4Bit 1920×1200@60Hz

●HDMI: i.MX6 series CPU integrated, maximum resolution:1920x1080@60Hz

Ethernet

●LAN Controller: RJ45(10/100/1000Mbps) x 2

Storage

●Provide 1x standard 7Pin SATA Port

●SD: Micro SD

●FLASH : onboard 4GB INAND

AUDIO

●Adopt SGTL5000-XNAA3 audio controller chip

●Provide 1x MIC-in pin-header, 1x Line-in pin-header, 1x Line-out pin-header, 1x Headphone pin-header

I/O

●COM: 8x COM ports. COM2 supports RS232/RS422/RS485; COM1, COM3-8 supports RS232

●USB: 5x USB 2.0: 2x standard USB2.0, 3xUSB 2.0mm pin-header, 1x USB WIFI module.

Expansions

●1x MINI PCIe supports WiFi, 3G module

●Onboard SIM card socket co-working with MINI PCIe 3G module , to support 3G network.

●Support 40bit GPIO.

Power Supply

●12V single supply

Watchdog

●Support system reset function

OS

●Operating Temperature: 0℃~60℃

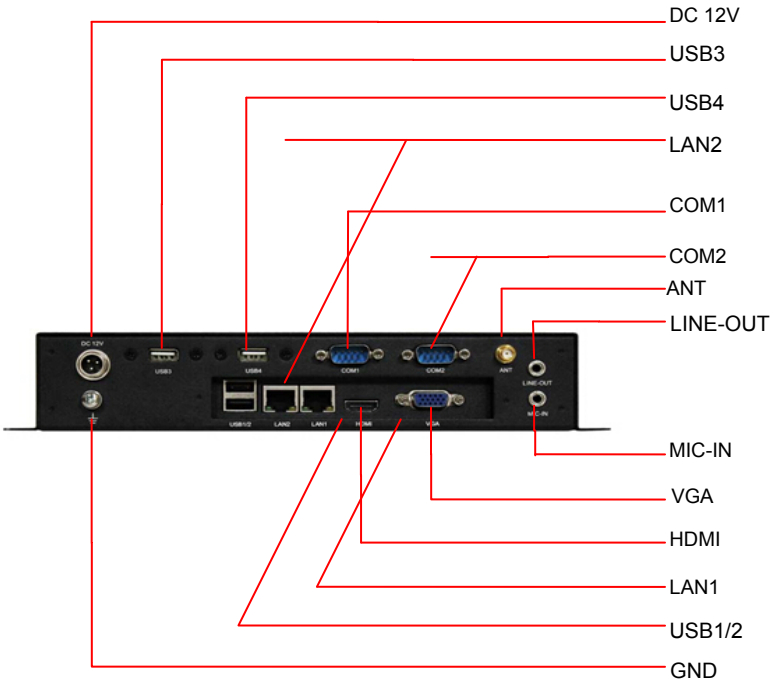
●Operating Humidity: 5%~95%, non-condensing

Chapter 2. Hardware Introduction

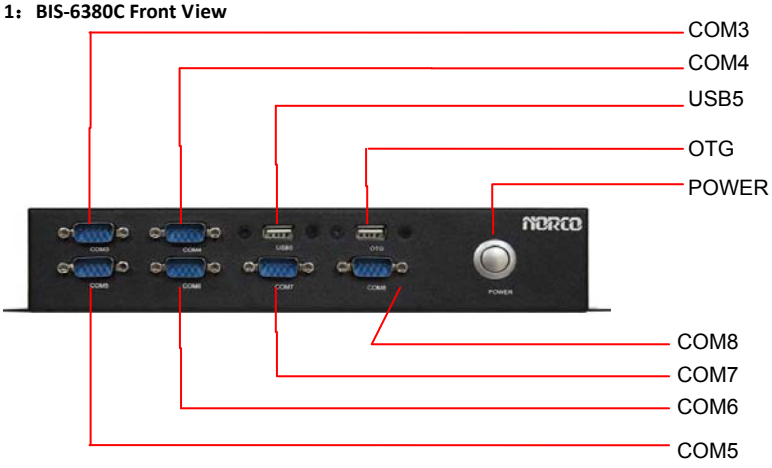
Chapter 2 Hardware Introduction

2.1 External Interfaces Location

1：BIS-6380C Rear View



1：BIS-6380C Front View



Chapter 3. Installation Instructions

Chapter 3 Installation Instruction

Before installing the computer accessories:

Follow the instructions below will help to prevent your computer from being damaged, and also ensuring your personal safety.

1．Please make sure your computer is disconnected from the power supply.

2．Please always wear anti-static wrist strap or gloves to operate the board in case that you may touch the integrated circuit components, such as RAM.

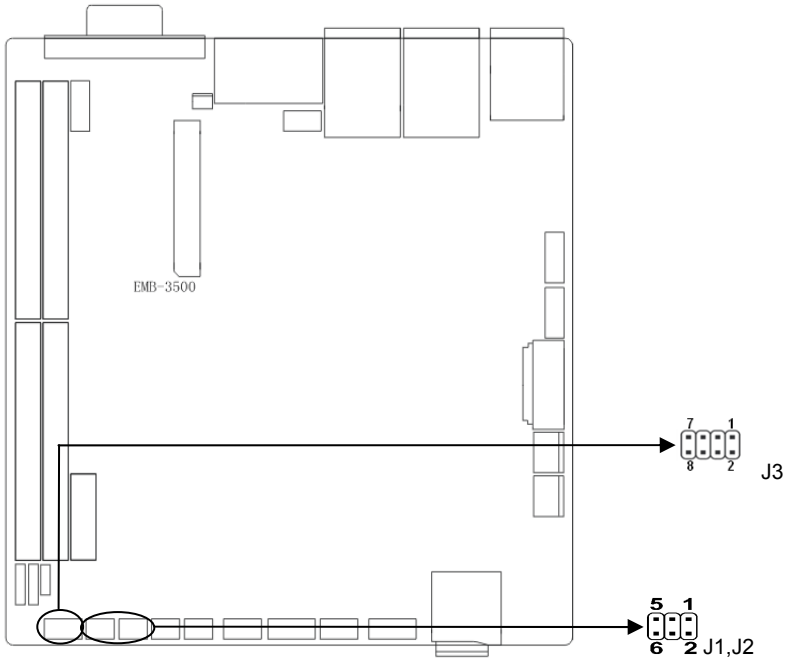
3.1 Jumper Setting

Please refer to following instructions to setup jumpers before installing your hardware devices.

Remark: How to identify the PIN1 of all jumpers and interfaces: Please observe the word mark on the side of the plug socket, which will be a “1” or bold line or triangular symbol; And please look at the back of PCB, each with a square shape will be the PIN 1; and all the jumpers’ PIN1 have a white arrow on the side.

3.3.1 COM2 Jumper Setting（J1, J2, J3）

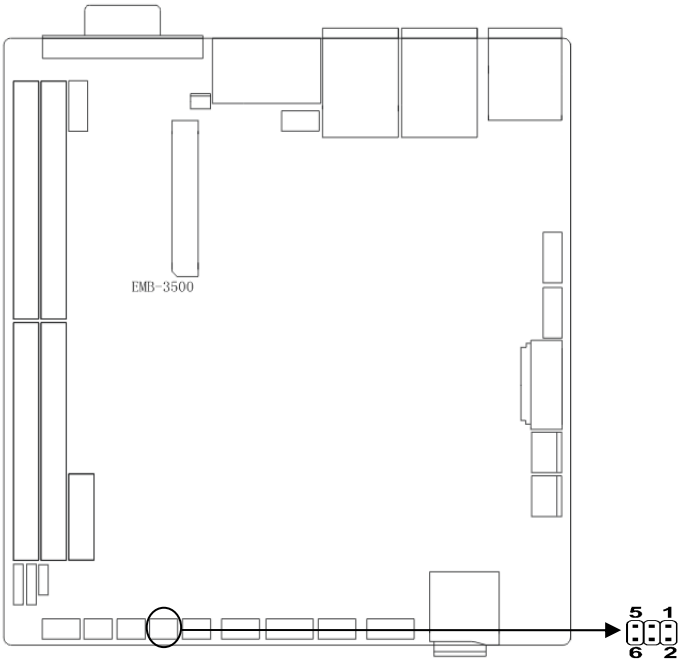
(J1，J2,J3) jumpers are used to setup COM2 transmission mode. COM2 supports RS232, RS422 RS485. System default [RS232].



COM2 AS RS232 PORT		COM2 AS RS422 PORT		COM2 AS RS485 PORT	
J1	1-3,2-4	J1	3-5,4-6	J1	3-5,4-6
J2	1-3,2-4	J2	3-5,4-6	J2	3-5,4-6
J3	1-2	J3	3-4	J3	5-6,7-8

3.3.2 Jumper J16

J16 jumper is used to shift between the normal boot mode and the burn-in mode. Default (Pin2-4 is the Normal Boot Mode). Shift to burn-in mode, just connect Pin 4-6，Connected to the computer via OTG cable.

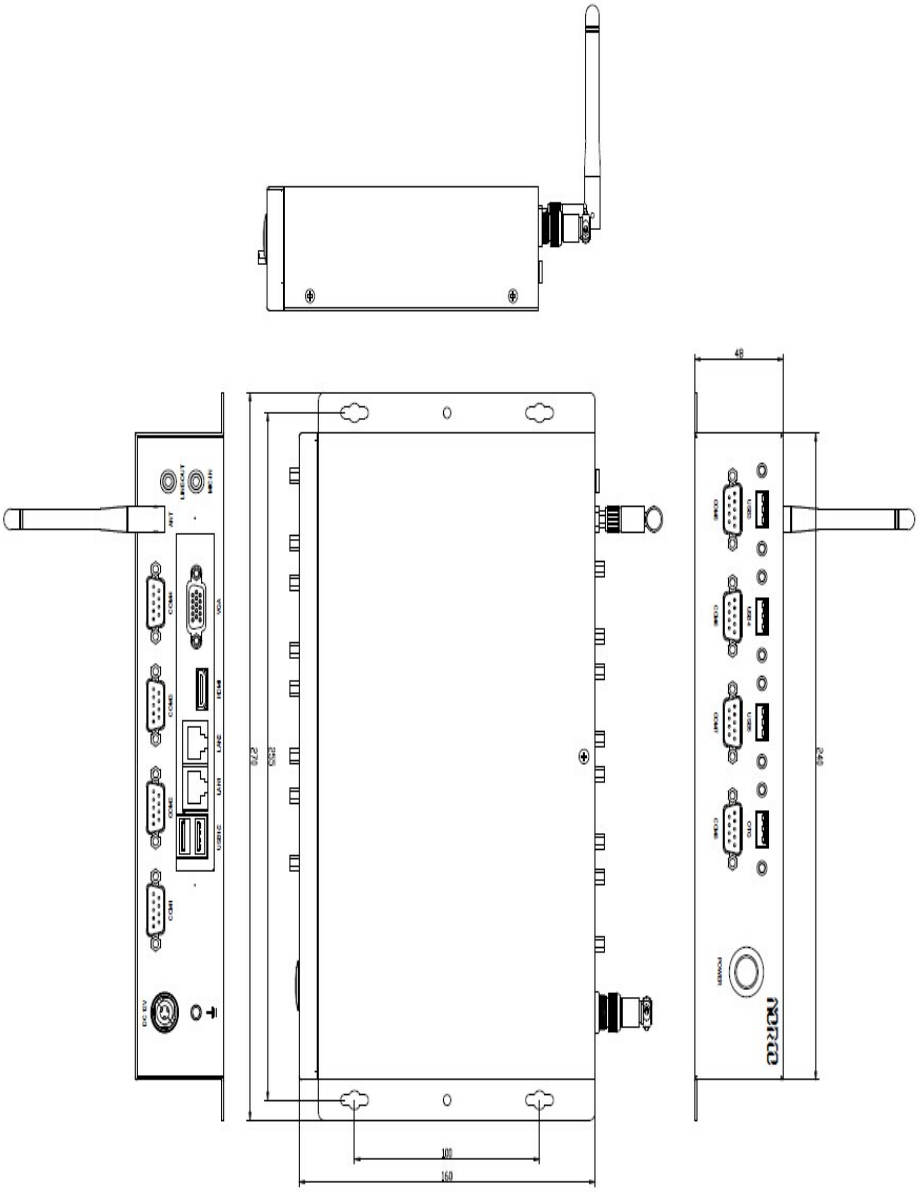


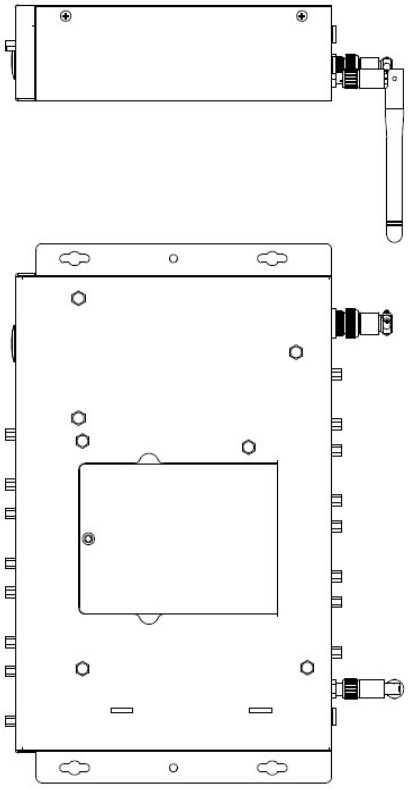
3.2 Hard Disk Installation

BIS-6380C provides one 2.5'SATA hard disk. Please follow the instructions below to install your hard disk:：

1. Shut off the power supply
2. Use screwdriver to unscrew the drive and the screws on the front panel.
3. Dismount the 2.5" hard disk drive.
4. Select matching 2.5" hard disk and fix it on the hard disk drive.
5. Finally, install the hard disk drive with the hard disk into the chassis.

3.3Product Dimensions





Chapter 4. Software

Chapter 4 Software

4.1 Android

4.1.1 VGA

Support VGA output.

Direction for Use: System default support VGA+HDMI dual display. Use VGA cable connect motherboard to the monitor, you will see the Android interface after system startup.

4.1.2 HDMI

Support HDMI output

Direction for Use: System default support VGA+HDMI dual display. Use HDMI cable connect motherboard to the monitor, you will see the Android interface after system startup.

4.1.3 LCD

Support LVDS LCD output; Driver is customized as per customers' LCD screen.

4.1.4 USB

U-Disk auto mount directory:/mnt/udisk/

Direction for Use: Insert U-Disk into USB port onboard, open the file browser and go to the directory /mnt/udisk/ and check the files in the U disk.

4.1.5 COM

Serial port operation node:/dev/ttymxc0~/dev/ttymxc4

Direction for Use:

connect COM2-5 to circuit

busybox cp -rf com_arm/ /data/

cd /data/com_arm/

Input ./c_android.sh

Input the baud rate and test time as per the program prompts

Test result will display after the program completed.

4.1.6 CAN

Support 2x CANBUS

4.1.7 SD Card

Non-support

4.1.8 TF Card

TF Card auto mount directory: /dev/extsd/

Direction for Use: Insert TF card into the TF card socket, then open file brower and go to directory /mnt/extsd to check the files in TF card.

4.1.9 SATA

Mount directory is customized as per customers' demand

Direction for Use: Under Power off status, insert SATA Hard Disk into the SATA port, then open file browser and go to /mnt/satadisk to check the files in SATA Disk.

4.1.10 WIFI

Support, how to operate, please refer to android interface

Direction for Use: Open "Settings" menu in system->Wireless and Network->Wi-Fi, open WiFi and the wireless router SSID will be listed under the search result on the right, select one to connect. If the router has a password, you need to input the password.

4.1.11 3G

Customize driver as per the 3G module that customers utilize

4.1.12 Ethernet

Support, how to operate, please refer to android interface

Direction for Use: Open "Settings" menu in system->Wireless and Network->check the option "Ethernet Configuration"->click "Ethernet Configuration, Ethernet Devices"->Select eth0 for LAN Card1, Select eth1 for LAN Card 2->Connection Type (select HDCP or Static IP based on actual needs).

4.1.13 Audio Card

Support, Android OS realizes switch to local audio card output.

Direction for Use: HDMI audio/video files. Use earphone or other stereo equipment to test audio output. Local Audio Card: alsa_aplay xx.wav.

4.2 Linux

4.2.1 VGA

Support

Direction for Use: System default support VGA+HDMI dual display. Use VGA cable connect motherboard to the monitor, you will see the Linux interface after system startup.

4.2.2 HDMI

Support

Direction for Use: System default support VGA+HDMI dual display. Use HDMI cable connect motherboard to the monitor, you will see the Linux interface after system startup.

4.2.3 LCD

Support LVDS LCD output; Driver is customized as per customers' LCD screen.

4.2.4 USB

Support

Direction for Use: Insert U disk into onboard USB port, check the U-device : fdisk –l

Mount U disk to /dev/sdX1 /mnt (sdX1 represents the name of the U device)

Open U disk and check the files in it: cd /mnt.

4.2.5 COM

Device node:/dev/ttymxc0~/dev/ttymxc4

Direction for Use:

connect COM2-5 to circuit

busybox cp -rf com_arm/ /data/

cd /data/com_arm/

Input ./c_linux.sh

Input the baud rate and test time as per the program prompts

Test result will display after the program completed.

4.2.6 CAN

No test

4.2.7 SD Card

Non-support

4.2.8 TF Card

Support, need to mount for testing

Direction for Use: Insert TF card into the board USB port and check U-device: fdisk –l

Mount TF card to system /dev/mmcblk1p1 /mnt

Enter TF card directory and check the files in it : cd /mnt.

4.2.9 SATA

Support, need to mount for testing

Direction for Use: Insert U disk into board USB port and check U-device: fdisk –l

Mount SATA to system mount /dev/sdX1 /mnt (sdX1 represents the name of the SATA disk device)

Enter SATA Hard Disk directory and check the files in it : cd /mnt.

4.2.10 WIFI

Support, need iwlist iwconfig for testing

Direction for Use:

Available AP list check: iwlist wlan0 scan

Connect WiFi AP: iwconfig wlan0 essid xxxx

Setup wlan0 IP address: iwconfig wlan0 xx.xx.xx.xx

Ping Route: ping xx.xx.xx.xx

4.2.11 3G

Customize driver as per the 3G module that customers utilize.

4.2.12 Ethernet

Support, need tool “ifconfig dhcp ping” for testing

Direction for Use:

Check Lan-card: ifconfig -a

Allocate Lan-card static IP address: ifconfig ethX X.X.X.X or use dynamic allocation:

dhclient ethX

Ping Route: ping xx.xx.xx.xx

4.2.13 Audio Card

Support, need tool alsa-untis for testing

Direction for Use :

Check Audio Card : aplay -l

Run alsamixer to adjust Headphone and PCM to the maximum and play audio file : aplay XX.wav

Specify to use HDMI audio output : aplay -D hw:2,0 XX.wav

Appendix

Appendix

Appendix 1: Glossary

COM

Computer-Output Microfilmer. A universal serial communication interface, usually adopts normative DB 9 connector.

LAN

Network interface. Network grouped by correlative computers in a small area, generally in a company or a building. Local area network is buildup by sever, workstation, some communications links. Terminals can access data and devices anywhere through cables, which enables users to share costly devices and resource.

USB

It is the Universal Serial Bus for short. A hardware interface adapts to low speed peripherals, and is always used to connect keyboard, mouse etc. One PC can connect maximum 127 USB devices, providing 12Mbit/s transmit bandwidth USB supports hot swap and multi- data stream, namely, you can plug USB devices while system is running, system can auto-detect and makes it work on.

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