

用户手册

USER' Manual



BIS-6332A

USER' Manual V1.0

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Date: 2014

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 grounding 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-6332A	1unit
■WIFI Antenna	1pcs



Chapter 1. Product Introduction

Chapter 1 Product Introduction

1.1 Overview

BIS-6332A is a new computing module that complies with Intel's Open Pluggable Specification (OPS) for digital signs. Designed to slot into the back of a signage display, uses the Freescale i.MX6 processor which is a power efficient implementation of the ARM Cortex™-A9 that offers long lifecycle support. This processor features full HD 1080p playback and the ability of running multiple independent displays through the HDMI+LVDS interfaces. This system is designed to operate on Android and accepts up to 1GB/2GB memory and 4GB/8GB iNAND flash. The compact system the size of as notebook not only offers cloud computing but redundant connectivity via USB- WIFI & 3G module. These combined features make this board ideal for a range of applications ranging from digital signage, advertising, LCD Large screen, point of sale, vehicle telematics, and information control to intelligent connected appliances.

1.2 Specification

Processor

- CPU: Freescale Cortex™-A9 , support i.MX6 series CPU(Single-core/dual-core/ Quad Core CPUs)

Memory

- Onboard Memory: default 1GB (support up to 2GB) , DDRIII 800MHz

Display

- Display ports: 2x HDMI
- HDMI1: SiI9022A, maximum resolution: 1920x1080@60Hz
- HDMI2: IMX6 OPS connector provided, maximum resolution: 1920x1080@60Hz

Ethernet

- LAN Controller: RGMII PHY chip AR8033
- Rate: 10/100/1000Mbps

Storage

- Provide 1x standard 7+15Pin SATA (only supported by Quad Core CPU)
- SD: Micro SD
- FLASH: onboard 4GB (up to 8GB) INAND

AUDIO

- SGTL5000-XNAA3 audio controller chip
- 1x MIC-in, 1x Headphone
- 1x Line-in, 1x Line-out

I/O

- COM: 2x serial ports. COM1 supports RS232, COM5 is provided by OPS connector to support TTL level.
- 8x USB 2.0: 2x standard USB2.0, 1x mini USB OTG, 3x USB2.0 provided by OPS connector, 1x USB_MINI PCIE, 1x USB_WIFI.
- Support 2x CAN BUS (optional)

Expansions

- 1x MINI PCie supports WiFi/3G module
- Onboard SIM card socket supports 3G network, co-working with MINI PCie 3G module.

Power Supply

- +9~24V single supply

Watchdog

- Support system reset function

Working Environment

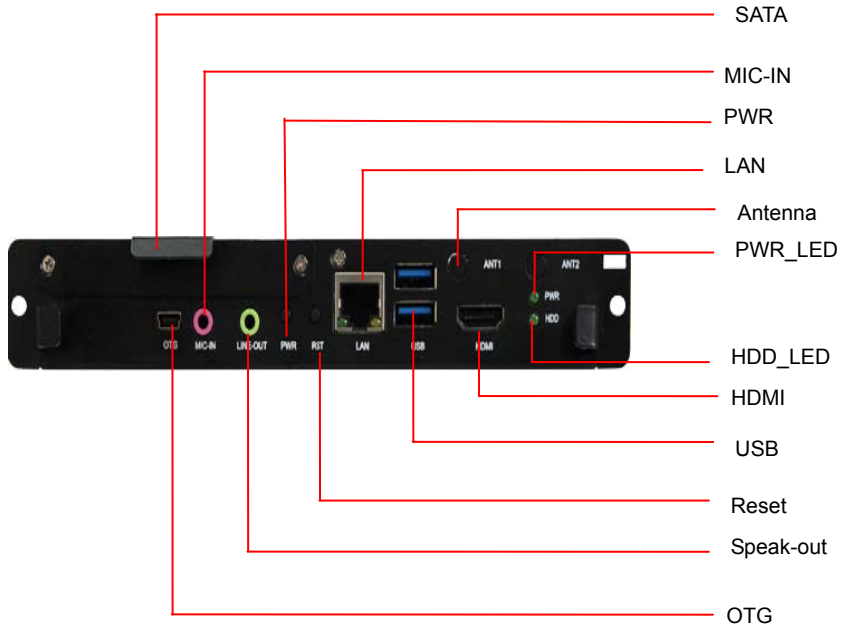
- Operating Temperature: 0°C~60°C
- Operating Humidity: 5%~95%, non-condensing



Chapter 2. Hardware Introduction

Chapter 2 Hardware Introduction

1: BIS-6332A Front View



2: BIS-6332A Rear View



2.2 Front Panel I/O Connector

2.2.1 Audio (Speak-out, Mic-in)

BIS-6332A adopts SGTL5000 audio controller chip. The green port is speak-out; the pink port is Mic-in.

2.2.2 LED

The upper LED is PWR_LED, the lower LED is HDD_LED.

2.2.3 USB (USB1/2)

BIS-6332A provides 2x USB2.0, 1xUSB OTG, plug and play.

Pin	Signal Name
1、 2	+5V
3、 4	USB DATA-
5、 6	USB DATA+
7、 8	GND

2.2.4 Ethernet (LAN)

BIS-6332A provides 1x RJ-45 Gigabit Ethernet port. LILED and ACTLED are the two LED indicator Lamps on the two sides of the RJ-45 Interface. The two lamps indicate LAN status:

RJ45 LAN LED Status:

LILED (Green)	Function	ACTLED (Yellow)	Function
Flash	Effective Link	On	Data transfer
Off	No link/Close	Off	No data

2.2.5 HDMI (HDMI1)

BIS-6332A provides 1x HDMI ports to transmit non-compressed audio signal and HD video signal.

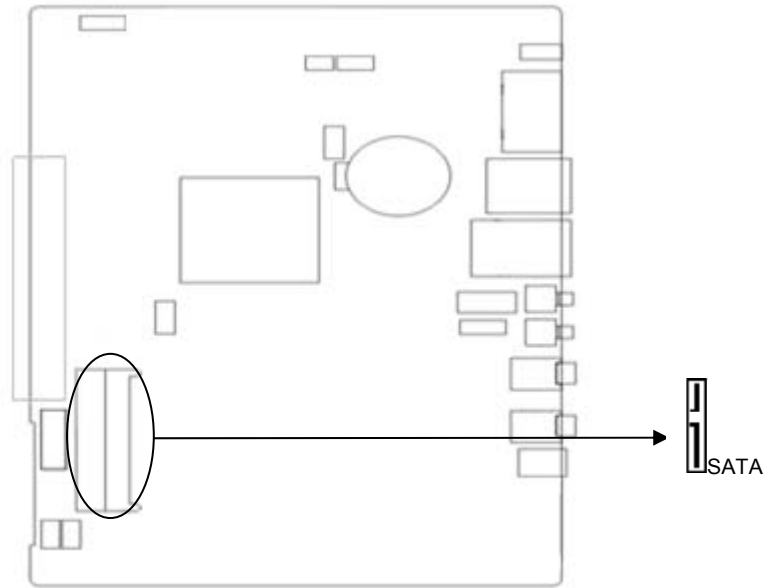
Signal Name	Pin		Signal Name
D2+	1	2	D2 Shield
D2-	3	4	D1+
D1 Shield	5	6	D1-
D0+	7	8	D0 Shield
D0-	9	10	CK+
CK Shield	11	12	CK-
CE Remote	13	14	NC
DDC CLK	15	16	DDC DATA
GND	17	18	+5V
HP DET	19	20	SHELL0
SHELL1	21	22	SHELL2
SHELL3	23	24	SHELL4

SHELL5	25	26	SHELL6
SHELL7	27	28	SHELL8
SHELL9	29	30	SHELL10
SHELL11	31		

2.3 Inner Interfaces

2.3.1 SATA (SATA)

BIS-6332A provides 1x standard 7+15Pin SATA port.



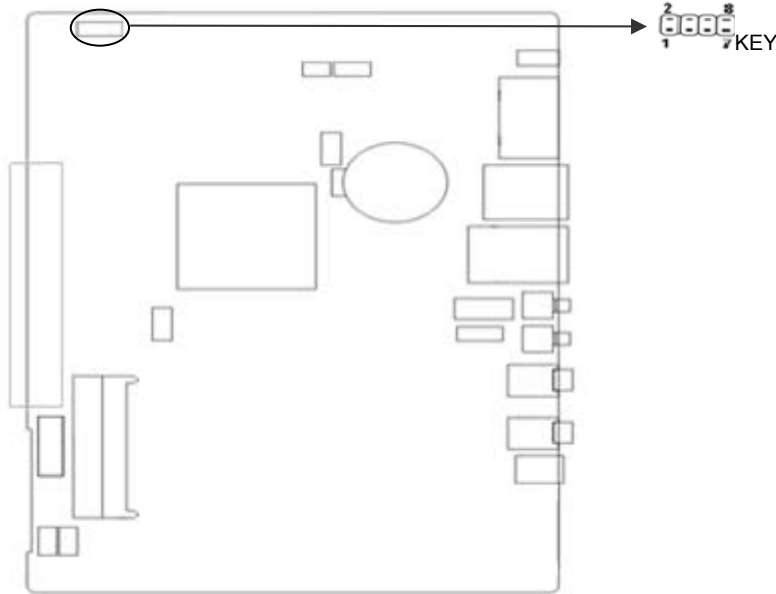
SATA:

Pin	Signal Name	Pin	Signal Name
1、2	GND	P4	GND
S1	GND	P5	GND
S2	TX+	P6	GND
S3	TX-	P7	VCC
S4	GND	P8	VCC
S5	RX-	P9	VCC
S6	RX+	P10	GND

S7	GND	P11	GND
P1	+3.3V	P12	GND
P2	+3.3V	P13、P14	NC
P3	+3.3V	P15	NC

2.3.2 KEY (3x3)

BIS-6332A provides one 2x4Pin 3x3 key matrix to expand external keys.

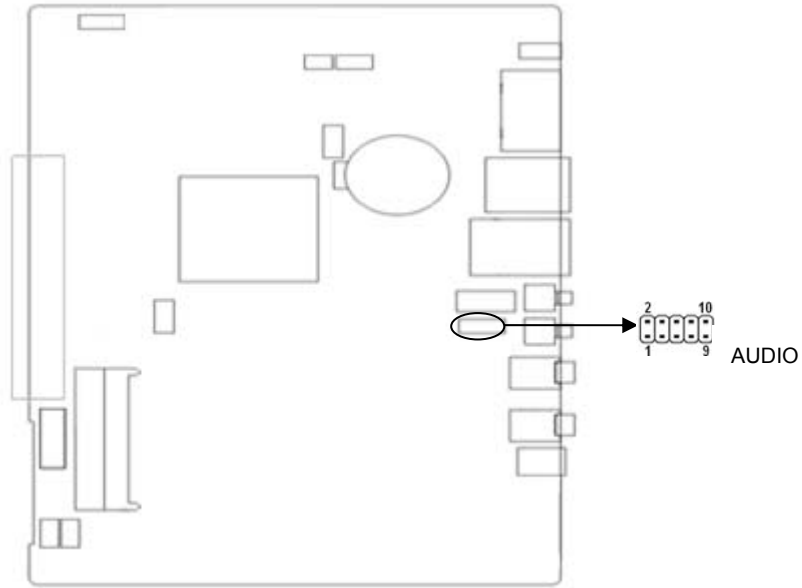


KEY:

Signal Name	Pin		Signal Name
GND	1	2	3.3V
KEY_COL2	3	4	KEY_ROW2
KEY_COL7	5	6	KEY_ROW7
KEY_COL6	7	8	KEY_ROW6

2.3.3 Audio (AUDIO)

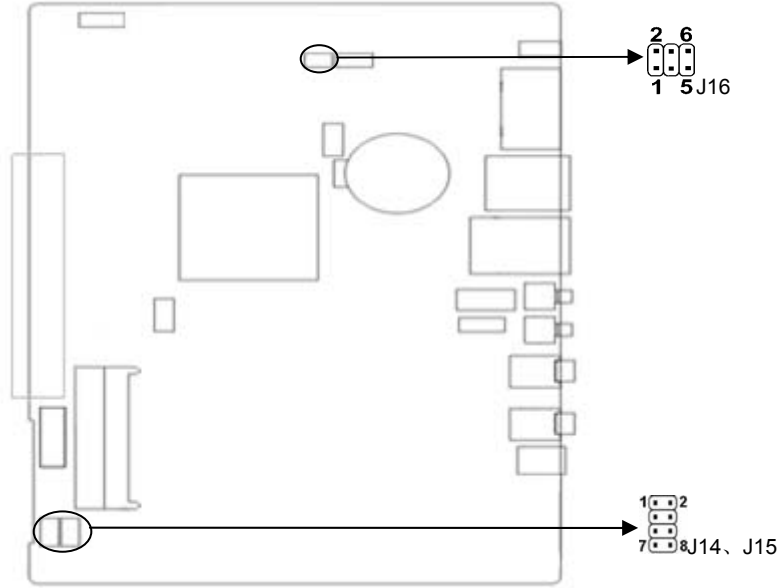
EMB-4500 adopts SGTL5000-XNAA3 audio controller chip. Except for external audio output interface (Headphone) and microphone (MIC-in), board also provides one Pin audio interface.



AUDIO:

Signal Name	Pin		Signal Name
NC	1	2	MIC1*P
LIN_L	3	4	LIN_R
GND	5	6	GND
GND	7	8	GND
LINE_OUT_L	9	10	LINE_OUT_R

2.3.4 J14, J15, J16



J16 bit definable GPIO signal

Signal Name	Pin		Signal Name
SD1_CMD	1	2	EIM_CS0
SD1_CLK	3	4	EIM_D23
SD1_DAT0	5	6	EIM_BCLK

J14, J15: TF card and INAND boot option configuration Pins

Pin	Signal Name
J14(3-4)	SD3 TF boot
J15(3-4)	SD3 TF boot
J15(5-6)	SD3 TF boot
J14(3-4)	SD4 INAND boot
J14(5-6)	SD4 INAND boot
J15(1-2)	SD4 INAND boot
J15(7-8)	SD4 INAND boot
J15(5-6)	SD4 INAND boot

J16: boot and burn mode configure Pin

Pin	Signal Name
J16(2-4)	NORMAL BOOT
J16(4-6)	DOWNLOADER

2.3.5 MINI PCIe

Board provides 1x MINI PCIe socket to expand Mini PCIe devices based on actual needs.



Chapter 3. Installation Instructions

Chapter 3 Installation Instructions

Before installing the computer accessories:

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

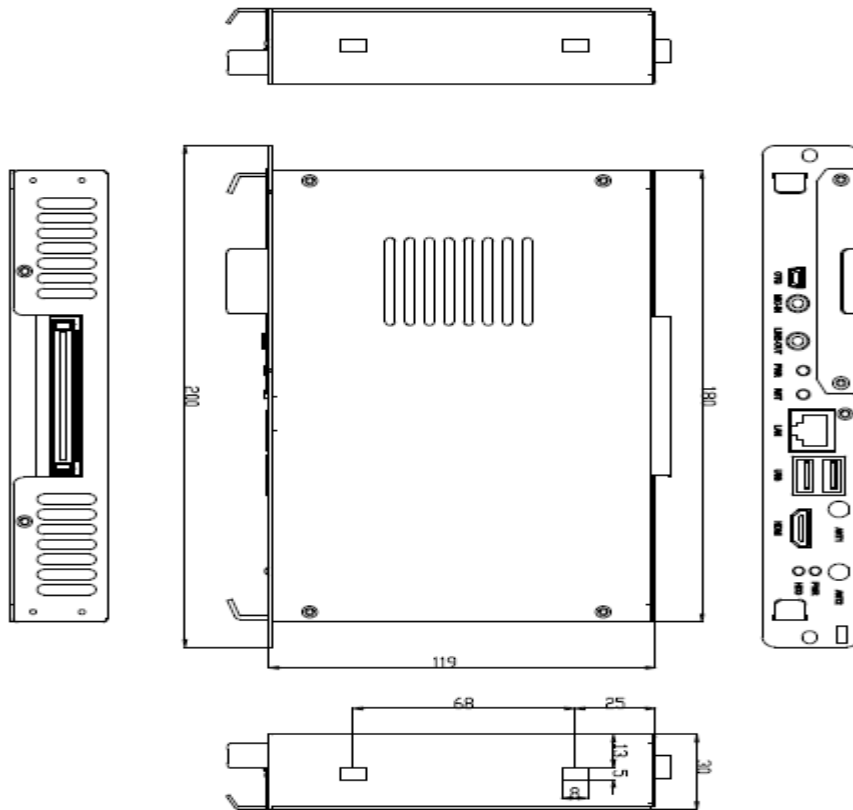
1. Please make sure your computer is disconnected from the power supply.
2. Please always wear anti-static wrist strap or gloves to operate the board in case that you may touch the integrated circuit components, such as RAM.

3.1 Install Hard Disk

BIS-6332A provides one 2.5'SATA hard disk drive bay. 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.

3.2 Structure Diagram (Dimension)





Chapter 4. Software Functions

Chapter 4 Software Functions

4.1 Android

4.1.1 VGA

Non-support VGA out temporarily

4.1.2 HDMI

2x HDMI output by changing u-boot environment variables

Setting instructions:

1.Set HDMI2 out. Input following command when system is entering the u-boot command line interface:

```
setenv bootargs console=ttyMXC0,115200 androidboot.console=ttyMXC0 vmlloc=400M  
init=/init video=mxcfb0:dev=hdmi,1920x1080M@60 video=mxcfb1:off video=mxcfb2:off  
fbmem=28M;saveenv;
```

2.Set HDMI1 out. Input following command when system starts up and is entering the u-boot command line interface:

```
setenv bootargs console=ttyMXC0,115200 androidboot.console=ttyMXC0 vmlloc=400M  
init=/init video=mxcfb0:dev=sii902x_hdmi,1920x1080M@60 video=mxcfb1:off  
video=mxcfb2:off fbmem=28M;saveenv;
```

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/

4.1.5 COM

Serial port operation node: /dev/ttyMXC0~/dev/ttyMXC4

4.1.6 CAN

No test

4.1.7 SD Card

No test

4.1.8 TF Card

TF Card auto mount directory: /dev/extsd/

4.1.9 SATA

Mount directory is customized as per customers' demand

4.1.10 WIFI

Support, how to operate, please refer to android interface

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

4.1.13 Audio Card

Support, Android OS realizes switch to local audio card output

4.2 Linux

4.2.1 VGA

Non-support VGA out temporarily

4.2.2 HDMI

2x HDMI output by changing u-boot environment variables.

Setting instructions:

1.1. Input following command when system is entering the u-boot command line interface:

```
setenv bootargs_mmc 'setenv bootargs ${bootargs} root=/dev/mmcbk0p1 rootwait rw
video=mxcfb0:dev=sii902x_hdmi,1920x1080M@60 video=mxcfb1:hdmi,1920x1080M@60
video=mxcfb2:off fbmem=28M,28M';saveenv;
```


4.2.3 LCD

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

4.2.4 USB

Support

4.2.5 COM

Serial port operation node:/dev/ttymx0~/dev/ttymx4

4.2.6 CAN

No Test

4.2.7 SD Card

Non-support

4.2.8 TF Card

Support, need to mount for testing

4.2.9 SATA

Support, need to mount for testing

4.2.10 WIFI

Support, need iwlist iwconfig for testing

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

4.2.13 Audio Card

Support, need tool alsa-untis for testing



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.



敬请参阅

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