Elastix NLX4000
User Manual

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FCC warning statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help

WARNING:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Recycling / disposal
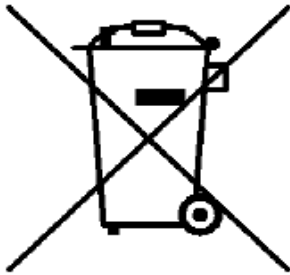
Do not discard electronic products in household trash!
All waste electronics equipment should be recycled according to local regulations.

Safety information

Electrical   safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation   safety

- Before installing devices into the system, carefully read all the documents that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet. Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

Lithium-Ion   Battery   Warning
CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufactererís instructions.

Chapter 1   System introduction

1.1   Welcome!

This chapter lists the system features, including introduction on the front and rear panel, and internal components, Thank you for choosing the elastix NLX4000.

The system motherboard supports the Intel Atom N2600XX/D2500XX series processors and combined with the Intel NM10 Chipset to set a new benchmark for an effective desktop platform solution.

The system supports up to 4GB of system memory using DDR3 1333MHZ SODIMMs, high-resolution graphics integrated graphics controller .serial ATA RAID, USB 2.0, and PCIe x4 solt.

1.2   Front panel

The front panel include LCD panel display and control buttons, power button .

1. Power button , press this button to turn the system on.
2. Lcd panel display, the Lcd panel can display various operating states of the system.
3. Lcd panel control buttons. Enter function.
4. Lcd panel control buttons. Down function.
5. Lcd panel control buttons. Exit function.
6. Lcd panel control buttons. Up function.

1.3   Rear panel

The system rear panel includes power connector and several I/O ports that allow convenient connection of devices.

1. Expansion slot covers. Remove these cover when installing expansion cards. Expansion card is replaceable.
2. VGA   port. This port connected with a VGA monitor.
3. LAN (RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.
4. LAN(RJ-45) port. This port allows Gigabit connection to a Local Area Network (LAN) through a network hub.
5. USB 2.0 ports 1 and 2. These 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices
6. Power   connector. This connector is used for the power cable and plug. (input AC100V_240V)

1.4   Internal components

The illustration below is the internal view of the system when you remove, the top cover and the power supply unit. The installed components are labeled for your reference.

1. Power supply unit
2. Hard disk power support
3. SATA connectors
4. GPIO connectors
5. USB connector
6. LCD panel display connectors
7. Motherboard power connector
8. Expansion slot
9. Power button connectors' cable

Chapter 2   System introduction

This chapter provides instructions on how to install components in the system step-by-step.

2.1   Preparation

Before you proceed, make sure that you have all the components you plan to install in the system.

Basic components to install
1.   Motherboard
2.   DDR Memory Module (SODIMM)
3.   Expansion solts
4.   Hard disk drive
5.   Optical drive

Tool
Phillips (cross) screw driver

2.2   Before you proceed
Take note of the following precautions before you install components into the system.
•   Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
•   Hold components by the edges to avoid touching the ICs on them.
•   Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component. The motherboard comes with an onboard standby power LED. This LED lights up to indicate that the system is ON, in sleep mode or in soft-off mode, and not powered OFF. Unplug the power cable from the power outlet and make sure that the standby power LED is OFF before installing any system component.

2.3   Installing a SODIMM
The system motherboard has a DDR3 Memory (SODIMM) sockets which supports up to 4GB Memory.
The following figure illustrates the location of the sockets
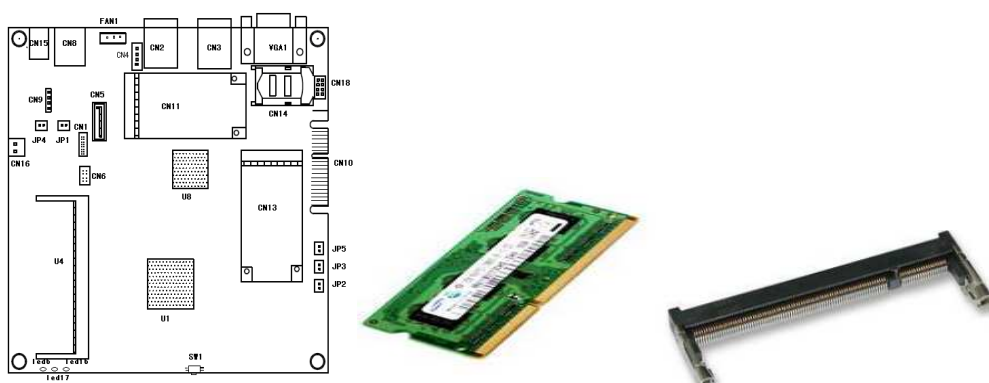
2.4   Expansion slots
Elastix NLX4000 Based on plug-in modular design.
It allows users to integrate up to 2 pieces of   PCI-E x1 telephony cards and supports to combine with analog, BRI, PRI, GSM .

Chapter 3   Motherboard info

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

3.1   Specification

➢ CPU: Intel Atom N2600_1.6Ghz/D2500_1.86Ghz/D2550_1.86Ghz

➢ DRAM: Slot Onboard, up to 4GB DDR3 1333 SDRAM (Atom N2600 only support 2GB)

➢ Chipset: Intel NM10 Express Chipset

➢ Southbridge: Intel NM10

➢ Storage: 1 SATA slot, 1 mSATA Socket

➢ Three front panel LEDs, for 3 programmable GPO status indicator

➢ Push button: for mode setting switch, accessing a programmable GPI, active low means switch is pressed

➢ PCIe Interface : PCIe x4 Golden Finger

➢ Expansion: 1 Mini PCIe slot

➢ Connectivity: Up to 2 Ethernet channels (10/100/1000Mbps speed)

　　　　　　　　　　2 PCIe Ethernet controllers

　　　　　　　　　　Support PXE (for remote booting)

➢ I/O: 1*DB15 VGA port, 5*USB 2.0 port

➢ Board size: 6 x 6" (152.4 x 152.4 mm)

➢ Temperature: 0°C to 60°C (contact factory for more temp. options)

➢ Firmware: AMI_UEFI BIOS

➢ PCB layer: 4

➢ Power dissipation: ~7.8W (Minimum Power Dissipation)

3.2   Motherboard layout
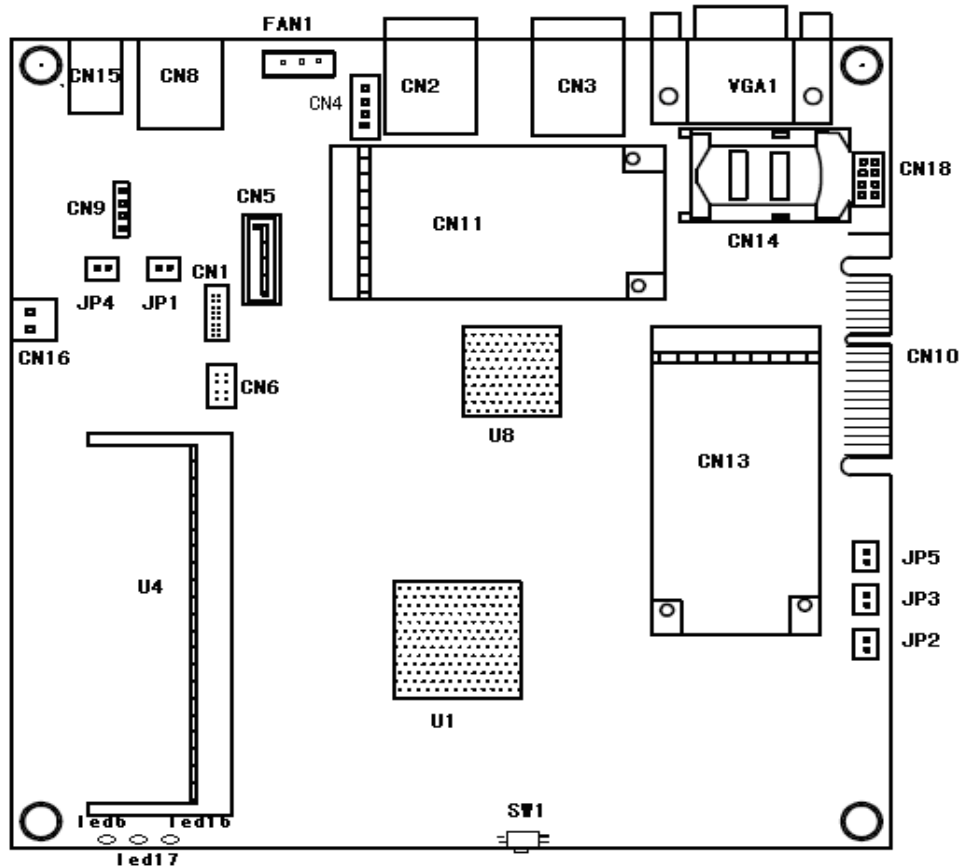
3.3   Connector and Jumper List

Name	Function
VGA1	VGA display output
CN10	PCIe x4 Golden Finger
JP1	Clear CMOS
CN15	Main Power in Jacket
CN16	Power Supply Jacket
U4	DDR3 Memory Slot
CN11	mSATA Slot
CN13	Mini PCIe Slot
CN2	Ethernet 1
CN3	Ethernet 2
CN5	SATA Interface
CN4	SATA power supply
CN8	USB Port
CN1	LPC interface

JP5	Manual Reset In
CN6	External LEDs and GPIO
CN18/CN9	USB connector
CN14	SIM Socket
FAN1	FAN power supply
SW1	GPI switch

3.4 Specification

- CPU: Intel Atom N2600_1.6Ghz/D2500_1.86Ghz/D2550_1.86Ghz
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- Temperature: 0°C to 60°C (contact factory for more temp. options)
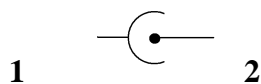- Firmware: AMI_UEFI BIOS
- PCB layer: 4

Power dissipation: ~7.8W (Minimum Power Dissipation)

3.5 Connector and Jumper Description

JP1 clear CMOS

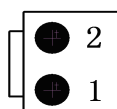| **Setting**	**Function**
Close 1-2	Clear CMOS
Open 1-2 (default)	Normal

CN15 Main Power Jacket   DC in @12V

Pin	Name
1	Gnd
2	Vin

CN16 Power Supply Jacket   DC out @12V

Pin	Name
1	Vin
2	Gnd

U4 DDR3 Memory Slot
- 1.5V
- DDR3
- ATOM   N2600 CPU Support Max Memory Size 2GB of DRAM
- ATOM   D2550 CPU Support Max Memory Size 4GB of DRAM

CN13 Mini PCIe Slot

Attach 3G SIM card to CN14, and attach Mini PCIe 3G module to CN13，implement 3G function for NLX4000.

MiniCard Pinout

Pin #	Signal Name	Pin #	Signal Name
51	Reserved	52	+3.3V
49	Reserved	50	GND
47	Reserved	48	+1.5V
45	Reserved	46	LED_WPAN#
43	Reserved	44	LED_WLAN#
41	Reserved	42	LED_WWAN#
39	Reserved	40	GND
37	Reserved	38	USB_D+
35	GND	36	USB_D-
33	PETp0	34	GND
31	PETn0	32	SMB_DATA
29	GND	30	SMB_CLK
27	GND	28	+1.5V
25	PERp0	26	GND
23	PERn0	24	+3.3Vaux
21	GND	22	PERST#
19	Reserved (UIM_C4)	20	Reserved
17	Reserved (UIM_C8)	18	GND
Mechanical Key			
15	GND	16	UIM_VPP
13	REFCLK+	14	UIM_RESET
11	REFCLK-	12	UIM_CLK
9	GND	10	UIM_DATA
7	CLKREQ#	8	UIM_PWR
5	Reserved	6	1.5V
3	Reserved	4	GND
1	WAKE#	2	3.3V

CN2/CN3   Giga Ethernet   Port
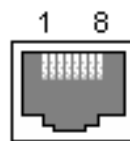
Pin	Name
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-

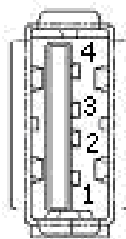| 7	BI_DD+
8	BI_DD-

CN5 SATA Interface

Pin	Name
1	Ground
2	Transmit +
3	Transmit -
4	Ground
5	Receive -
6	Receive +
7	Ground

CN4 SATA Power Supply

Pin	Name
1	5v
2	Ground
3	Ground
4	12v

CN8 USB Port

2 USB2.0 ports. 500 mA Continuous Current per Channel. Short-Circuit and Thermal Protection with Overcurrent Logic.

Pin	Name	Pin	Name
1	5v	5	5v
2	Data-	6	Data-
3	Data+	7	Data+
4	Ground	8	Ground

CN9 USB connector

Pin	Name
1	5v
2	Data-
3	Data+
4	Ground

CN18 USB connector

Pin	Name	Pin	Name
1	5v	2	Ground
3	Data-	4	Data+
5	Data+	6	Data-
7	Ground	8	5v

CN1 LPC Interface

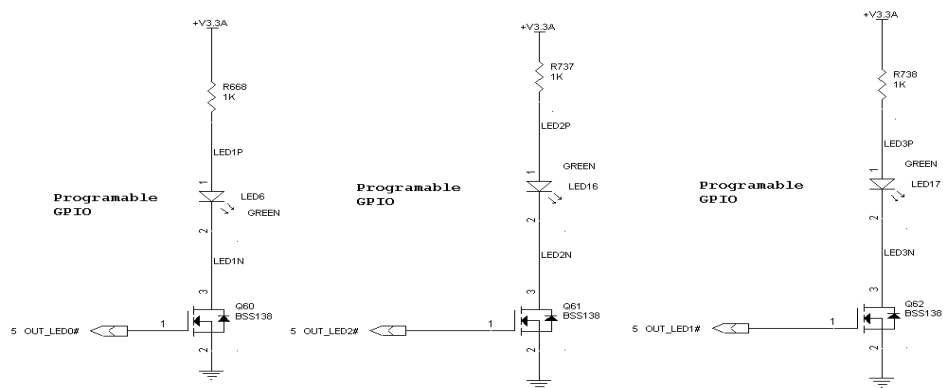| Pin	Name	Pin	Name
1	LPC_CLK	9	AD3
2	SERIRQ	10	+3.3V
3	AD0	11	FRAME#
4	NC	12	GND
5	AD1	13	GND
6	GND	14	NC
7	AD2	15	48MHz_CLK
8	+5V	16	NC

JP5 Manual Reset In

Setting	Function
Close 1-2	Reset System
Open 1-2 (default)	Normal

CN6 External LEDs and GPIO
   2*4*2.0mm header
   3.3V   200mA max CMOS output

Pin	Name	Pin	Name
1	LED1P (3.3V)	2	LED1N
3	LED2P(3.3V)	4	LED2N
5	LED3P(3.3V)	6	LED3N
7	GPIO	8	GND

3.6 System Status LEDs Indicator & SW1

How to use the status indicator LEDs and Micro switch SW1?

After system completed boot, enter I/O space based address 500H and change some register value as follow:

LED16
1. Set 5000H+0CH, bit7
2. the LED will light
3. clear the 500H+0CH, bit7
4. the LED will dark

LED17
1. Set 500H+0CH, bit6
2. the LED will light
3. clear the 500H+0CH, bit6
4. the LED will dark

LED6
1. Set 500H+0FH, bit28
2. the LED will light
3. clear the 500H+0FH, bit28
4. the LED will dark

SW1
1. Set 500H+0DH, bit13 ,means direction is input
2. press SW1 ,then 500H+0DH ,bit13 will be changed to 0
3. when SW1 release, 500H+0DH ,bit13 will be changed to 1 (default)

CN6 7-8pin GPIO

As output

1. Clear 500H+0DH, bit13, means direction is output
2. Set 500H+0DH, bit13 ,CN6 7pin will be changed to 1 (High level)
3. Clear 500H+0DH, bit13 ,CN6 7pinwill be changed to 0 (low level)

As input

1. Set 500H+0DH, bit13, means direction is input
2. CN6 7Pin input 1 (High level), then 500H+0DH, bit13 will be changed to 1
3. CN6 7pin input 0 (Low level), then 500H+0DH, bit13 will be changed to 0

Chapter 4 BIOS Setup Guide
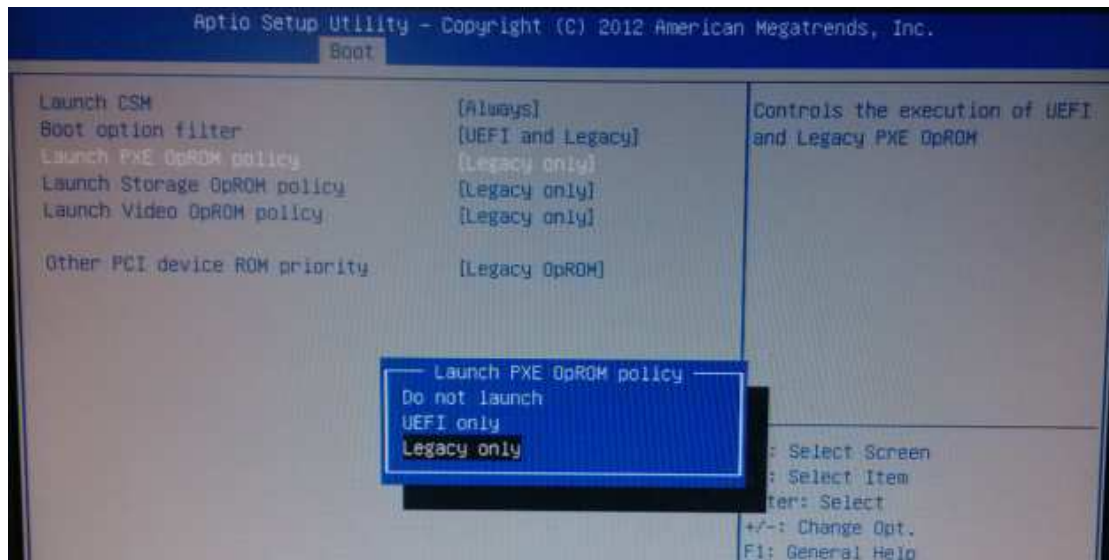
PXE remote boot function setup
Press the "del" key, Enter the BIOS, system will display information as following:
PXE remote boot function setup

    a. Enter Boot menu – >CSM Parameters Options

    b. Highlight PXE OpROM control, press enter key, system will prompt as following:

Legacy only Options enable PXE, Other options disable.

c. Enter "exit" menu, then highlight "save changes and exit" item, answer ok to confirm the latest

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