Mini-ITX SBC with Intel® D2550/N2600 Processor, DDR3, VGA, HDMI, Dual LVDS, Dual GbE, USB 3.0, mSATA, SATA 3Gb/s, Audio, RoHS

KINO-CV-D25501/N26001 Quick Installation Guide

Version 1.02
October 5, 2015

Package Contents

KINO-CV-D25501/N26001 package includes the following items:

- 1 x KINO-CV-D25501/N26001 single board computer
- 2 x SATA with 5V output cable Kit
- 1 x Dual-port USB cable
- 1 x I/O shielding
- 1 x Mini jumper pack
- 1 x Utility CD
- 1 x One Key Recovery CD
- 1 x QIG (Quick Installation Guide)

Specifications

- CPU:

  1.86GHz Intel® Atom™ D2550 dual-core processor

  1.6GHz Intel® Atom™ N2600 dual-core processor

  1.86GHz Intel® Atom™ N2800 dual-core processor (Optional)
- System Chipset: Intel® NM10
- BIOS: AMI UEFI BIOS
- System Memory:

  1 x 1066 MHz DDR3/DDR3L (1.35V) SO-DIMM up to 4 GB (D2550 and N2800)

  1 x 800 MHz DDR3/DDR3L (1.35V) SO-DIMM up to 2 GB (N2600)
- Ethernet: Dual GbE Realtek RTL8111E controllers with ASF2.0 support
- Display Interface:

  Support dual LVDS, VGA and HDMI for dual independent display

  1 x VGA

  1 x HDMI

  LVDS1 integrated in D2550/N2600/N2800

  Single-channel 24-bit LVDS by D2550, resolution support up to 1440x900

  Single-channel 18-bit LVDS by N2600 and N2800, resolution support up to 1366x768

  LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter
- I/O Interface:

  1 x 6-pin KB/MS

  2 x SATA 3Gb/s with 5/12V power connector

  5 x RS-232

  1 x RS-422/485

  1 x microSD slot (bootable)

  6 x USB 2.0

  2 x USB 3.0

- Expansion Slot:

  1 x PCIe Mini card compatible with mSATA SSD storage

  1 x PCI slot
- Audio: On-board Realtek ALC662 HD codec
- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- Super I/O: Fintek F81866
- Watchdog timer: Software programmable supports1~255 sec. system reset by super I/O
- Power Supply:

  Maximum input voltage range: 9 V ~ 28 V

  Recommended operating input voltage range: 12 V ~ 24 V

  1 x External 4-pin DIN DC jack

  1 x Internal 4-pin (2x2) power connector
- Power Consumption:

  12 V @ 2.8 A (2.13 GHz Intel® D2550 CPU with DDR3 1333 MHz 4 GB DIMM)

  12 V @ 2.4 A (1.6 GHz Intel® N2600 CPU with DDR3 1333 MHz 2 GB DIMM)
- Operating Humidity: 5% ~ 95%, non-condensing
- Temperature:

  -20°C ~ 60°C with free air, -20°C ~ 70°C with force air for D2550 processor

  -20°C ~ 70°C with free air, -20°C ~ 75°C with force air for N2600 and N2800 processor
- Dimensions: 170 mm x 170 mm
- Weight: GW: 600 g; NW: 250 g

Ordering Information

- **KINO-CV-D25501-R10**: Mini-ITX SBC with Intel® Atom™ D2550 1.86GHz, DDR3, VGA, HDMI, Dual LVDS, Dual GbE, USB 3.0, 9V~28V, SATA 3Gb/s, Audio, RoHS
- **KINO-CV-N26001-R10**: Mini-ITX SBC with Intel® Atom™ N2700 1.6GHz, DDR3, VGA, HDMI, Dual LVDS, Dual GbE, USB 3.0, 9V~28V, SATA 3Gb/s, Audio, RoHS
- **KINO-CV-N28001-R10**: Mini-ITX SBC with Intel® Atom™ N2800 1.86GHz, DDR3, VGA, HDMI, Dual LVDS, Dual GbE, USB 3.0, 9V~28V, SATA 3Gb/s, Audio, RoHS
- **32205-003800-100-RS:** RS-422/485 cable
- **32000-023800-RS:** KB/MS cable

Jumpers setting and Connectors

LABEL	FUNCTION
JP1	LVDS2 Voltage Selection
JP2	AT/ATX Power Mode Setting
JP3	Clear CMOS
JP4	LVDS1 Voltage Selection
SW1	LVDS2 Panel Type Selection
MSATA_SW1	mSATA/PCIe Mini Selection
F_PANEL1	Power and Reset Buttons and Indicators
VGA1	VGA 15-pin Female Connector
LAN1_USB1	RJ-45 LAN and USB 3.0 Connector
LAN2_USB2	RJ-45 LAN and USB 2.0 Connector
KB_MS1	Keyboard and Mouse Connector
USB2~3	USB 2.0 Connectors (Internal Pin-header)
COM1~6	Serial Port Connectors
AUDIO1	HD Audio Connector
FRONT-PANEL1	Audio Expansion Module Connector
SATA1~2	Serial ATA Connectors
SATA_PWR1~2	SATA Power Connectors
CPU_FAN1	CPU Fan Connector
LVDS1~2	LVDS1 and LVDS2 Panel Connector
INV1~2	LVDS1 and LVDS2 Panel Backlight +12V Power Source
DIO1	Digital I/O Connector
CN3	Wide Range Power Input Connector

M_PCIE1	PCIe Mini Slot
CN7	microSD Connector
HDMI1,	HDMI Connector
SPDIF1	SPDIF Connector
SPI1	Flash SPI ROM

JP1: LVDS2 Voltage Selection	
PIN NO.	**DESCRIPTION**
Short 1-2	**+3.3V LVDS(default)**
Short 2-3	**+5V LVDS**

JP2: AT/ATX Power Mode setting	
PIN NO.	**DESCRIPTION**
Short 1-2	**ATX Power(default)**
OFF	**AT Power**

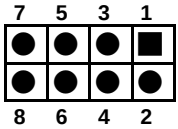
JP3: Clear CMOS Setup	
PIN NO.	**DESCRIPTION**
Short 1-2	**Keep CMOS Setup (default)**
OFF	**Clear CMOS Setup**

JP4: LVDS1 Voltage Selection	
PIN NO.	**DESCRIPTION**
Short 1-2	**+3.3V LVDS(default)**
Short 2-3	**+5V LVDS**

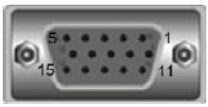
SW1：LVDS2 Panel Type Selection			
	EDID Resolution	**Color Depth**	**Channel**
0000	800 x 600 @ 60Hz	18-bit	Single
0001	1024 x 768 @ 60Hz	18-bit	Single
0010	1024 x 768 @ 60Hz	24-bit	Single
0011	1280 x 768 @ 60Hz	18-bit	Single
0100	1280 x 800 @ 60Hz	18-bit	Single
0101	1280 x 960 @ 60Hz	18-bit	Single
0110	1280 x 1024 @ 60Hz	24-bit	Dual
0111	1366 x 768 @ 60Hz	18-bit	Single
1000	1366 x 768 @ 60Hz	24-bit	Single
1001	1440 x 900 @ 60Hz	24-bit	Dual
1010	1440 x 1050 @ 60Hz	24-bit	Dual
1011	1600 x 900 @ 60Hz	24-bit	Dual
1100	1680 x 1050 @ 60Hz	24-bit	Dual
1101	1600 x 1200 @ 60Hz	24-bit	Dual
1110	1920 x 1080 @ 60Hz	24-bit	Dual
1111	1920 x 1200 @ 60Hz	24-bit	Dual

MSATA_SW1: mSATA Setting	
PIN NO.	**DESCRIPTION**
Short 1-2	**Mini-PCIE (default)**
Short 2-3	**M-SATA**

F_PANEL1: PWR & RST Buttons and Indicators Panel					
	PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**	
PWRBTN	1	PWRBTSW-	2	VCC	Power LED
	3	GROUND	4	GROUND	
HDD LED	5	VCC	6	SYSRST-	RESET
	7	-HDLED	8	Ground	



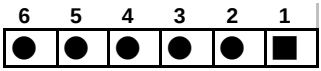
VGA1: VGA 15-pin Female Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC / NC	10	GND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		



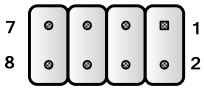
LAN1_USB1: RJ-45 LAN and USB 3.0 Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

LAN2_USB2: RJ-45 LAN and USB 2.0 Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

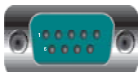
KB_MS1: 6-pin header Keyboard/Mouse Connector	
PIN	**DESCRIPTION**
1	VCC
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	GND



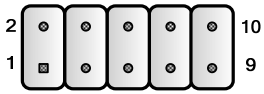
USB1, USB2: Internal USB Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC



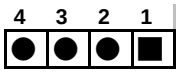
COM1 COM2: External Serial Port Connector		
PIN	**DESCRIPTION**	
1	DATA CARRIER DETECT	(DCD1)
2	RECEIVE DATA	(RXD1)
3	TRANSMIT DATA	(TXD1)
4	DATA TERMINAL READY	(DTR1)
5	GND	(GND1)
6	DATA SET READY	(DSR1)
7	REQUEST TO SEND	(RTS1)
8	CLEAR TO SEND	(CTS1)
9	RING INDICATOR	(RI1)



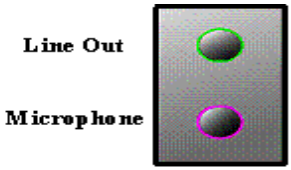
COM3, COM5, COM6: Internal Serial Port Connector		
PIN	**DESCRIPTION**	
1	DATA CARRIER DETECT	(DCD)
2	DATA SET READY	(DSR)
3	RECEIVE DATA	(RXD)
4	REQUEST TO SEND	(RTS)
5	TRANSMIT DATA	(TXD)
6	CLEAR TO SEND	(CTS)
7	DATA TERMINAL READY	(DTR)
8	RING INDICATOR	(RI)
9	GND	(GND)
10	GND	(GND)



COM4: Internal Serial Port Connector	
PIN	**DESCRIPTION**
1	RXD485#
2	RXD485+
3	TXD485+
4	TXD485#



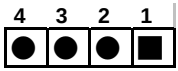
AUDIO1：HD Audio Connector	
PIN	**DESCRIPTION**
Line-out	Connect this port to headphone or speaker
Microphone	Connect this port to microphone



FRONT-PANEL1：Audio Expansion Module Connector			
PIN	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	MIC_L	2	GND
3	MIC_R	4	Audio Detect
5	LINE2-R	6	GND
7	Jack Detection	8	N/C
9	LINE2-L	10	GND

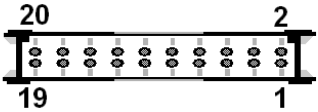
SATA1, SATA2: Serial ATA Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	8	N/C

SATA_PWR1：SATA Power Connector	
PIN	**DESCRIPTION**
1	12V
2	GND
3	GND
4	5V



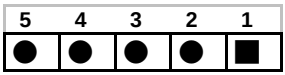
CPU_FAN1: CPU Fan Connector	
PIN	**DESCRIPTION**
1	FANIO
2	+12V (PWM)
3	Ground

LVDS1: LVDS Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	GND	2	GND
3	LVDS_DATA0	4	LVDS_DATA0#
5	LVDS_DATA1	6	LVDS_DATA1#
7	LVDS_DATA2	8	LVDS_DATA2#
9	LVDS_CLK	10	LVDS_CLK#
11	NC	12	NC
13	GND	14	GND
15	LDDC_DATA	16	LDDC_CLK
17	VCC_LCD	18	VCC_LCD
19	VCC_LCD	20	VCC_LCD

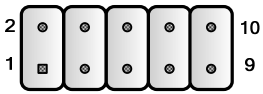


LVDS2: LVDS Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	GND	2	GND
3	LVDS_DATA0	4	LVDS_DATA0#
5	LVDS_DATA1	6	LVDS_DATA1#
7	LVDS_DATA2	8	LVDS_DATA2#
9	LVDS_CLK1	10	LVDS_CLK1#
11	LVDS_DATA3	12	LVDS_DATA3#
13	GND	14	GND
15	LVDS_DATA4	16	LVDS_DATA4#
17	LVDS_DATA5	18	LVDS_DATA5#
19	LVDS_DATA6	20	LVDS_DATA6#
21	LVDS_CLK2	22	LVDS_CLK2#
23	LVDS_DATA7	24	LVDS_DATA7#
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

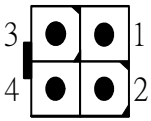
INV1, INV2: 5-pin Header Inverter Connector	
PIN	**DESCRIPTION**
1	LCD_BKLTCTL
2	GROUND
3	+12V
4	GROUND
5	BACKLIGHT ENABLE



DIO1: Digital Input / Output Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	Ground	2	VCC
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0



CN3: +12V Power Connector	
PIN	**DESCRIPTION**
1	GND
2	GND
3	PWR
4	PWR

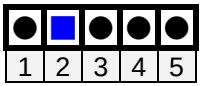


M_PCIE1: PCIe Mini/mSATA Card Connector			
PIN NO.	**DESCRIPTION**	**PIN NO.**	**DESCRIPTION**
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	CLKREQ#	8	LFRAME#
9	GND	10	LAD3
11	CLK-	12	LAD2
13	CLK+	14	LAD1
15	GND	16	LAD0
17	PCIRST#	18	GND
19	LPC	20	VCC3
21	GND	22	PCIRST#
23	PERN2	24	3VDual
25	PERP2	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PETN2	32	SMBDATA
33	PETP2	34	GND
35	GND	36	USBD-
37	N/C	38	USBD+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	RF_LINK#
45	N/C	46	BLUELED#
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

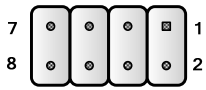
CN7: microSD Connector	
PIN	**DESCRIPTION**
1	DAT2
2	DAT3
3	CMD
4	VDD
5	CLK
6	VSS1
7	DAT0
8	DAT1

HDMI1: HDMI Connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	HDMI_DATA2	13	N/C
2	GND	14	N/C
3	HDMI_DATA2#	15	HDMI_SCL
4	HDMI_DATA1	16	HDMI_SDA
5	GND	17	GND
6	HDMI_DATA1#	18	+5V
7	HDMI_DATA0	19	HDMI_HPD
8	GND	20	HDMI_GND
9	HDMI_DATA0#	21	HDMI_GND
10	HDMI_CLK	22	HDMI_GND
11	GND	23	HDMI_GND
12	HDMI_CLK#		

SPDIF1: SPDIF Connector	
PIN	**DESCRIPTION**
1	+V5S
2	NC
3	SPDIFOUT
4	GND
5	SPDIFIN



SPI1: Program SPI connector			
PIN	**DESCRIPTION**	**PIN**	**DESCRIPTION**
1	SPI_VCC	2	GND
3	SPI_CS	4	SPI_CLK
5	SPI_SO	6	SPI_SI
7	NC	8	NC



Board Layout: Jumper and Connector Locations