

Mini-ITX SBC with Socket G1 for Intel® mobile Core i7/i5/i3
and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE,
USB 2.0, Dual PCIe Mini, SATA II and Audio, RoHS

KINO-HM551

Quick Installation Guide

Version 1.0

Oct. 23 2014

Package Contents

KINO-HM551 package includes the following items:

- 1 x KINO-HM551 Single Board Computer
- 1 x Dual RS-232 cable with bracket
- 2 x SATA with power cable kit
- 1 x I/O shielding
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU: Socket G1 for Intel® mobile Core™ i7/ i5/ i3 and Celeron® processor (Socket 988A)
- System Chipset: Intel® HM55
- BIOS: AMI uEFI BIOS
- System Memory: 2 x 204-pin dual-channel DDR3 1066/800MHz SO-DIMMs SDRAM slot up to 8GB
- Ethernet: Dual Realtek RTL8111E PCIe GbE controllers with ASF 2.0 support (PCIe x1 Interface)
- I/O Interface:
 - 4 x RS-232
 - 2 x RS-232/422/485 with Auto Flow control
 - 8 x USB2.0 (4 on rear side, 4 by pin-header)
 - 4 x SATA II with 2pcs DC power connector
 - 1 x 6-pin header for KB/MS
- Super I/O: Fintek F81865
 - Digital I/O: 8-bit Digital I/O (4-bit input / 4-bit output)
- Display:
 - Analog CRT
 - VGA display output resolution up to 2048 x 1536 @75MHz
 - 18/24-bit Dual channel LVDS resolution up to 1600x1200
 - HDMI supports resolution up to 1080p
 - DVI-D resolution up to 1600x1200
- Audio:
 - Realtek ALC888 HD audio codec
- Watchdog timer: Software programmable 1-255 sec. by Super I/O: Fintek F81865
- Power supply: Single voltage 12V DC input
 - 1 x external DIN 4-pin DC jack
 - 1 x internal 2 x 2-pin power connector
- Power Consumption:
 - 12V@4.67A (2.66GHz Intel® Core i7 620M CPU with DDR3 1333MHz 4GB*2 DIMM)

- Operation Temperature: -10 ~ 60°C
- Operation Humidity: 5% ~ 95%, non-condensing
- FAN:
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin System fan connector
- Dimensions: 170mm X 170mm
- Weight GW/NW: 900g / 450g

Ordering Information

KINO-HM551-R10:

Mini-ITX SBC with Socket G1 for Intel® mobile Core i7/i5/i3 and Celeron® CPU, VGA/DVI/LVDS/HDMI, Dual PCIe GbE, USB 2.0, Dual PCIe Mini, SATA II and Audio, RoHS

CB-USB02-RS: Dual Ports USB cable with bracket

SAIDE-KIT01-R10: SATA to IDE/CF Converter board

19800-000110-RS: RS-232/422/485 cable with bracket

32000-023800-RS: KB/MS Y cable

SATA Power cable:

32102-000100-100-RS

32102-000100-200-RS

32102-000100-300-RS

CF-989A-RS-R11: CPU cooler for mobile socket-G processor

Jumpers setting

LABEL	FUNCTION
J_CMOS1	CMOS state setting
ME_RTC1	ME RTC registers
J_ATXCTL1	select ATX or AT mode
J_VLVDS1	Set The Panel Voltage
J_PID1	LVDS Panel Resolution Selection
JP2	COM4 Port Mode setting
JP3	COM6 Port Mode setting

- **J_CMOS1 : Clear CMOS Setup**

J_CMOS1 : Clear CMOS setting Jumper	
PIN	DESCRIPTION
1-2(Default)	Normal
2-3	Clear CMOS Data

- **ME_RTC1 : ME RTC registers**

ME_RTC1	DESCRIPTION
1-2(default)*	Save ME RTC registers (Normal Operation)
Short 2-3	Clear ME RTC registers

- **J_ATXCTL1 :select ATX or AT mode**

J_ATXCTL1	DESCRIPTION
1-2(default)*	ATX mode
Short 2-3	AT mode

- **J_VLVDS1 : Set The Panel Voltage**

J_LVDS1	DESCRIPTION
1-2(default)*	Set The Voltage Level Of Panel To VCC3
Short 2-3	Set The Voltage Level Of Panel To VCC

- **J_PID1 : LVDS Panel Resolution Selection**

JP1	DESCRIPTION
Open	800 X 600 (18bit)
1-2	1024 X 768 (18bit)
3-4(Default)	1024 X 768 (24bit)
1-2 & 3-4	1280 X 800 (18bit)
5-6	1280 X 1024 (48bit)
1-2 & 5-6	1366 X 768 (18bit)
3-4 & 5-6	1400 X 1050 (48bit)
1-2 & 3-4 & 5-6	1440X 900 (48bit)
7-8	1600 X 900 (48bit)
1-2 & 7-8	1600 X 1200 (48bit)
3-4 & 7-8	1680X 1050 (48bit)
1-2 & 3-4 & 7-8	1920 X 1080 (48bit)
5-6 & 7-8	1920 X 1200 (48bit)
1-2 & 5-6 & 7-8	2048 X 1536 (48bit)

- **JP2 : configure COM4 Mode**

JP2	DESCRIPTION
Short 1-2 (default)	RS - 232
Short 3-4	RS - 422
Short 5-6	RS - 485
Short 7-8	RS485 with RTS Control

- **JP3 : configure COM4 Mode**

JP3	DESCRIPTION
Short 1-2 (default)	RS - 232
Short 3-4	RS - 422
Short 5-6	RS - 485
Short 7-8	RS485 with RTS Control

Connectors

LABEL	FUNCTION
LAN1_USB1 LAN2_USB2	RJ45 LAN and USB Connector
USB1、USB2	Internal USB Connectors
KB_MS1	PS/2 MOUSE & KEYBOARD Connector
VIDEO1	VGA 15-pin Female Connector & DVI CONNECTOR
COM1	External 1 Port Serial Port DB-9 Connectors
HDMI1	HDMI connector
COM2、 COM3、COM5	Internal Serial Port Connector
COM4、COM6	Internal Serial Port and R422 or R485 Connector
FRONT-PANEL1	EXTEND AUDIO MODULE CONNECTOR
AUDIO_CV1	AUDIO INPUT AND OUTPUT CONNECTOR
SPDIF1	SPDIF CONNECTOR
S_ATA1 S_ATA2 S_ATA5 S_ATA6	SERIAL ATA CONNECTORS
CN5、CN6	SERIAL ATA POWER CONNECTORS
IR1	IRDA INFRAED INTERFACE PORT
CN3	PCIE-MINI CARD
CN4	Half PCIE-MINI CARD
TPM1	TPM1 CONNECTOR
INVERTER1	LVDS Panel Connector
F_PANEL1	PWR & RST Buttons and Indicators
SYS_FAN1	Fan Connector
CPU_FAN1	Fan Connector
DIO1	Digital I/O Connector
F_PANEL1	PWR & RST BUTTONS AND INDICATORS
PWR1	ADAPTER DC12V POWER IN
PWR2	Power Supply DC12V Power IN
JSPI1	SPI flash connector

LAN1_USB1 and LAN2_USB2: RJ45 LAN and USB Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
P1	VCC	P6	LAN_MDIP2
P2	LAN_MDIP0	P7	LAN_MDIN2
P3	LAN_MDIN0	P8	LAN_MDIP3
P4	LAN_MDIP1	P9	LAN_MDIN3
P5	LAN_MDIN1	P10	GND
1	VCC	2	DATA-
3	DATA+	4	GND

USB1 and USB2: External USB Connector	
PIN	DESCRIPTION
1	VCC (+5V)
2	DATA-
3	DATA+
4	GND

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

KB_MS1: 6-pin Wafer Keyboard Connector	
PIN	DESCRIPTION
1	VCC5_KBMS
2	MSDATA
3	MSCLK
4	KBDATA
5	KBCLK
6	KBGND

VIDEO1: 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		

VIDEO1: DVI 24-pin Female Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DVI signal differential pair (2-)	2	DVI signal differential pair (2+)
3	GND	4	DVI signal differential pair (4-)
5	DVI signal differential pair (4+)	6	DDCLCK
7	DDCDATA	8	N/C
9	DVI signal differential pair (1-)	10	DVI signal differential pair (1+)
11	GND	12	DVI signal differential pair (3-)
13	DVI signal differential pair (3+)	14	5V supply
15	GND	16	Hot plug detect
17	DVI signal differential pair (0-)	18	DVI signal differential pair (0+)
19	GND	20	DVI signal differential pair (5-)
21	DVI signal differential pair (5+)	22	GND
23	DVI CLK(+)	24	DVI CLK(-)

COM1: External 1 Port Serial Port DB-9 Connectors			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND1	6	DSR1
7	RTS1	8	CTS1
9	RI1		

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#		

COM2. COM3. COM5: Internal Serial Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD	2	DSR
3	SIN	4	RTS
5	SOUT	6	CTS
7	DTR	8	XRI
9	GND	10	GND

COM4. COM6: Internal Serial Port and R422 or R485 Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD)	6	CTS
7	DTR	8	RI
9	GND	10	GND
11	TXD485+	13	TXD485#
13	RXD485+	14	RXD485#

FRONT-PANEL1 : Audio Source Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	MIC-L	2	ANALOG GND
3	MIC-R	4	PRESENCE#
5	LINE-R	6	MIC-JD
7	FRONT-IO	8	NC
9	LINE-L	10	INE-JD

AUDIO_CV1: AUDIO INPUT AND OUTPUT CONNECTOR	
PIN	DESCRIPTION
Line-out	Connect this port to headphone or speaker
Microphone	Connect this port to microphone

SPDIF1: SPDIF CONNECTOR	
PIN	DESCRIPTION
1	5V
2	NC
3	SPDIFOUT
4	GND
5	SPDIFIN

S_ATA1、S_ATA2、S_ATA5、S_ATA6 : Serial ATA Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	8	N/C

CN3: PCI-E Mini Card Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	N/C	8	N/C
9	GND	10	N/C
11	CLK-	12	N/C
13	CLK+	14	N/C
15	GND	16	N/C
17	PCIRST#	18	GND
19	N/C	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	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	N/C
45	N/C	46	N/C

47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

CN4: Half PCI-E Mini 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	N/C	8	N/C
9	GND	10	N/C
11	CLK-	12	N/C
13	CLK+	14	N/C
15	GND	16	N/C
17	PCIRST#	18	GND
19	N/C	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	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	N/C
45	N/C	46	N/C
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

IR1: IrDA connector

PIN	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	GND

**CN5.CN6:
SATA Power CONNECTOR**

PIN	DESCRIPTION
1	5V(support 1A)
2	GND
3	GND
4	12V(support 1A)

TPM1: TPM Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	LCLK	2	GND
3	LFRAME#	4	KEY
5	LRERST#	6	+5V
7	LAD3	8	LAD2
9	+3V	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDA
15	SB3V	16	SERIRQ
17	GND	18	GLKRUN#
19	LPCPD#	20	LDRQ#

INVERTER1: Panel Power Supply	
PIN	DESCRIPTION
1	BRIGHTNESS
2	GND1
3	12V
4	GND2
5	BL_EN

LVDS1: LVDS Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	GND
3	A_Y0	4	A_Y0#
5	A_Y1	6	A_Y1#
7	A_Y2	8	A_Y2#
9	A_CK	10	A_CK#
11	A_Y3	12	A_Y3#
13	GND	14	GND
15	B_Y0	16	B_Y0#
17	B_Y1	18	B_Y1#
19	B_Y2	20	B_Y2#
21	B_CK	22	B_CK#
23	B_Y3	24	B_Y3#
25	GND	26	GND
27	VCC/VCC3	28	VCC/VCC3
29	VCC/VCC3	30	VCC/VCC3

SYS_FAN1: System FAN CONNECTOR	
PIN	DESCRIPTION
1	Rotation Signal
2	+12V
3	GND

CPU_FAN1: CPU FAN CONNECTOR	
PIN	DESCRIPTION
1	GND
2	+12V
3	Rotation Signal
4	PWM Control Signal

DIO1 : Digital Input / Output Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	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

F_PANEL1 : External Switches and Indicators panel					
Function	PIN	DESCRIPTION	Function	DESCRIPTION	PIN
	1	NC			
PWR_BTN	2	PWR_BTN+	PWR_LED	PWR_LED+	6
	3	PWR_BTN-		PWR_LED+	7
HDD_LED	4	HDD_LED+	RESET	PWR_LED-	8
	5	HDD_LED-		RESET+	9
				RESET-	10

PWR1: ADAPTER DC12V POWER IN	
PIN	DESCRIPTION
1	12V
2	GND
3	12V
4	GND
5	GND

PWR2: Power Supply DC12V Power IN	
PIN	DESCRIPTION
1	GND
2	GND
3	+12V
4	+12V

JSPI1 : SPI flash connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	SPI VCC	2	GND
3	SPI CS#	4	SPI CLOCK
5	SPI SO	6	SPI SI
7	NC	8	NC

Board Layout: Jumper and Connector Locations

