

EmCORE-i2702

3.5" Miniboard

Quick Installation Guide

Version 1.1

Form Factor 3.5" MiniBoard	CPU Soldered onboard Intel® Atom™ N270 1.6GHz CPU	Chipset Intel® 945GSE Intel® ICH7M
VGA Dual Channels 18-bit LVDS/ Analog RGB/ TV-out	LAN 2 x Realtek 8111C PCIe Gigabit Ethernet	Audio Realtek ALC655 AC97 Audio Codec, Line-in/ Line- out/ Mic-in
I/O Mini-PCI/ SATA/ USB/ COM/ LPT		

◆ Technical Support

If you have any technical difficulties, please consult the user's manual first at:
<ftp://ftp.arbor.com.tw/pub/manual>

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

<http://www.arbor.com.tw>

E-mail: info@arbor.com.tw

Declaration of Conformity

FCC Class A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



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4041270200110P

Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:



1 x EmCORE-i2702 3.5" Compact Board



1 x Driver CD
1 x Quick Installation Guide

Ordering Information

EmCORE-i2702	Intel® N270 3.5" Compact Board
CBK-08-2702-00	Cable Kit 1 x USB Cable 1 x Ethernet Cable 1 x Audio Cable 1 x COM Cable 1 x IDE Cable 1 x LPT Cable 1 x KB/MS Y-Cable 1 x SATA Cable

The Installation Paths of CD Driver

Windows 2000 & XP

Driver	Path
CHIPSET	\CHIPSET\INF 9.2.0.1021
VGA	\GRAPHICS\INTEL_2K_XP_32\1432
LAN	\ETHERNET\REALTEK\8111_WINXP_5764
AUDIO	\AUDIO\REALTEK_AC97\Win2K_XP_A406

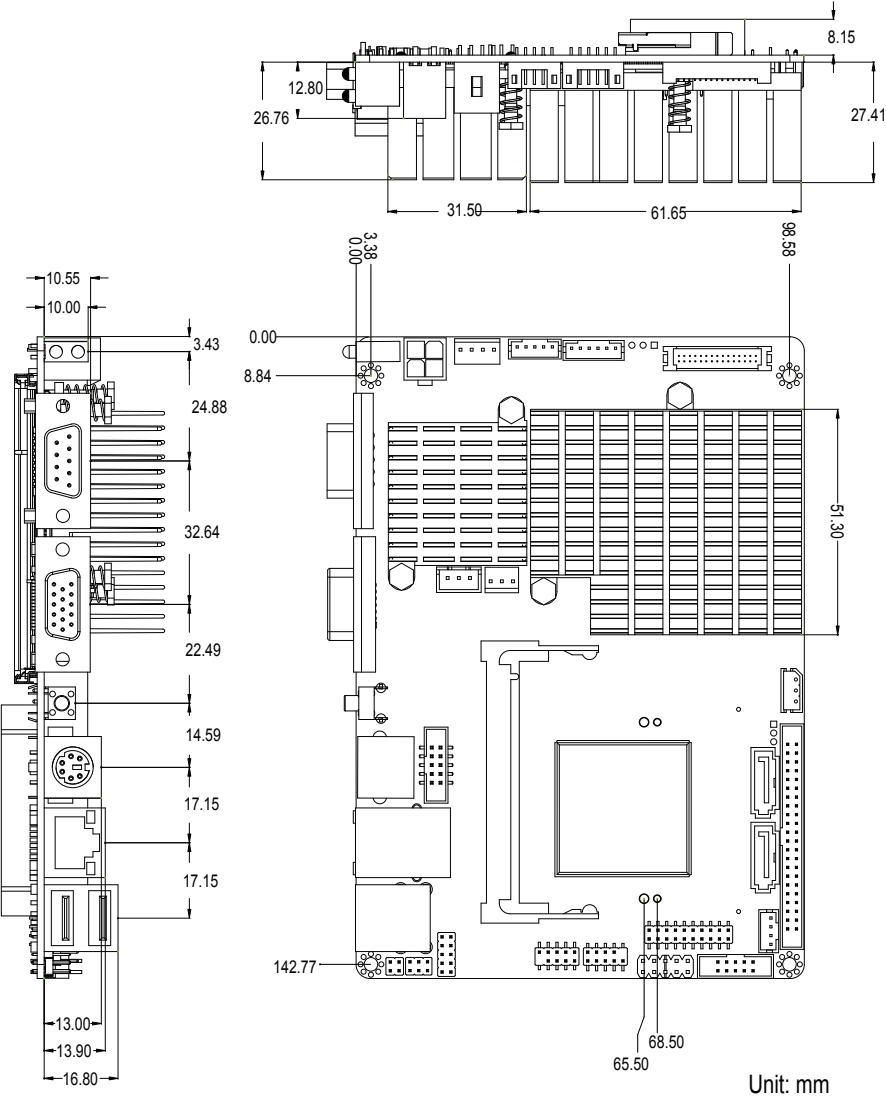
Windows 7

Driver	Path
CHIPSET	\CHIPSET\INF 9.2.0.1021
VGA	\GRAPHICS\INTEL_WIN7_32\1930
LAN	Windows 7 built-in LAN driver
AUDIO	\AUDIO\REALTEK_AC97\Win7_32_64_6305

Specifications

Form Factor	3.5" Compact Board
CPU	Intel® Atom™ N270 CPU 1.6GHz w/ 533MHz FSB
Chipset	Intel® 945GSE + Intel® ICH7M
System Memory	1 x 200-pin DDR2 SO-DIMM Socket supporting 533MHz SDRAM up to 2GB (Optional soldered onboard 1GB DDR2 SDRAM)
Display	Integrated Intel® Graphics Media Accelerator 950, Dual Channels 18-bit LVDS/ Analog RGB
Ethernet	2 x Realtek 8111C Gigabit Ethernet
I/O Chips	ITE 8718F
BIOS	Phonix-Award PnP Flash BIOS
Audio	Realtek ALC655 AC97 Audio CODEC, MIC-in/Line-In/Line-Out
Storage	1 x Ultra ATA, support 2 IDE devices 2 x Serial ATA ports with 150MB/s HDD transfer rate 1 x CompactFlash Type II Socket (Shared with IDE1)
Serial Port	2 x COM ports (COM1: RS-232, COM2: RS-232/422/485 selectable)
Parallel Port	1 x LPT Port (SPP/EPP/ECP mode selectable)
KBMS	6-pin Mini-DIN connector for PS/2 standard Keyboard and Mouse via Y-cable
Universal Serial Bus	4 x USB 2.0 ports
Expansion Interface	1 x Mini-PCI Socket
Operation Temp.	0°C ~ 60°C (32°F ~ 140°F)
Watchdog Timer	1~255 levels Reset
Dimension (L x W)	146 x 102 mm (5.7" x 4.0")

Board Dimensions



Jumpers/ Connectors Quick Reference

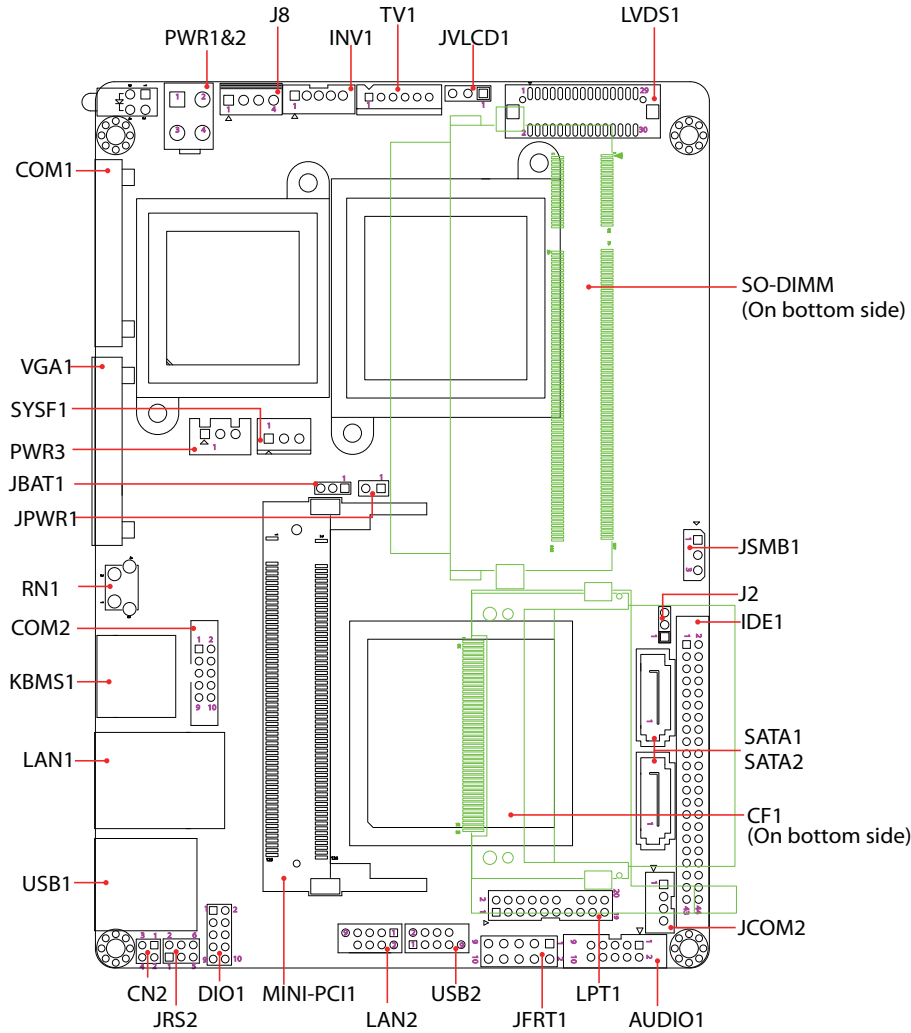
Connectors

Label	Function		
PWR1&2	DC 12V Power Input	KBMS1	Keyboard & Mouse Connector
AUDIO1	Audio Connector	LAN1, LAN2	Ethernet Connectors
COM1~2	Serial Port Connectors	LPT1	Parallel Port Connector
DIO1	Digital I/O Connector	LVDS1	LVDS Connector
SYSF1	Fan Connector	MINI-PCI1	Mini-PCI Socket
IDE1	IDE Connector	PWR3	ATX Feature Connector
INV1	LCD Inverter Connector	SATA1~2	Serial ATA Connectors
J8	SATA Power Connector	TV1	TV-out Connector
JCOM2	COM2 RS-422/485 Selection	USB1	USB Type A Connectors
JFRT1	Switches and Indicators	USB2	USB Ports Pin Headers
JSMB1	External SMBus Connector	VGA1	Analog RGB Connector
CN2	LAN2 LED Indicator		
RN1	Reset Button		
CF1	Compact Flash TypeII Socket		
SO-DIMM	DDR2 SO-DIMM Socket (bottom Side)		

Jumpers

Label	Function
JRS2	COM2 RS-232/422/485 Selection
JBAT1	Clear CMOS Setting
JPWR1	AT/ATX Power Mode Selection
JVLCD1	LCD Voltage Selection
J2	CF Master/ Slave Selection

Jumpers & Connectors Location



Jumpers

JPWR1: AT/ATX Power Mode Selection

Connector type: 2.54mm pitch 1x2-pin headers.

Pin	Mode	
Short	AT mode	
Open	ATX Mode (Default)	

JRS2: COM2 RS-232/ 422/ 485 Selection

Connector type: 2.00mm pitch 2x3-pin headers.

Mode	RS-232 (Default)	RS-422	RS-485
1-2	Short	Open	Open
3-4	Open	Short	Open
5-6	Open	Open	Short



JVLCD1: LCD Panel Voltage Selection

The voltage of LCD panel could be selected by JVLCD1 in +5V or +3.3V.

Connector type: 2.54mm pitch 1x3-pin headers.

Pin	Voltage	
1-2	+5V	
2-3	+3.3V (Default)	

J2: CF IDE1 Mode Selection

Connector type: 2.00mm pitch 1x3-pin headers.

Pin	Mode	
1-2	Slave (Default)	
2-3	Master	

JBAT1: Clear CMOS Setting

Connector type: 2.00mm pitch 1x3-pin headers.

Pin	Mode	
1-2	Keep CMOS (Default)	
2-3	Clear CMOS	

Connectors

PWR1&2: ATX +12V Connector

PRW1&2 supplies the CPU operation ATX +12V (Vcore).

Pin	Desc.	Pin	Desc.
2	GND	1	GND
4	+12V	3	+12V



PWR3: ATX Feature Connector

Connector: onboard 3-pin power connector

Pin	Desc.
1	PS-ON
2	GND
3	5S_VB



J8: Small 4P Power Connector

Connector type: 2.54mm pitch 1x4-pin wafer one wall 90D connector

Pin	Description
1	+5V
2	GND
3	GND
4	+12V



INV1: LCD Inverter Connector

Connector type: 2.00mm pitch 1x5 box wafer connector.

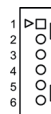
Pin	Description
1	+12V
2	GND
3	Backlight on/off
4	Brightness control
5	GND



TV1: TV-out Connector

Connector type: 2.00mm pitch 1x6-pin box wafer connector

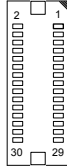
Composite Video			
1	CVBS	2	GND
3	Unused	4	GND
5	Unused	6	GND
S-Video			
1	Unused	2	GND
3	Luminance	4	GND
5	Chrominance	6	GND



LVDS1: LVDS Connector

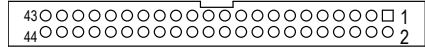
Connector type: DF-13-30DP-1.25V connector.

Pin	Desc.	Pin	Desc.
2	VDD	1	VDD
4	TX2CLK+	3	TX1CLK+
6	TX2CLK-	5	TX1CLK-
8	GND	7	GND
10	TX2D0+	9	TX1D0+
12	TX2D0-	11	TX1D0-
14	GND	13	GND
16	TX2D1+	15	TX1D1+
18	TX2D1-	17	TX1D1-
20	GND	19	GND
22	TX2D2+	21	TX1D2+
24	TX2D2-	23	TX1D2-
26	GND	25	GND
28	N/C	27	N/C
30	LVDS_DATA	29	LVDS_CLK



IDE1: Primary IDE Connector

Connector type: 2.00mm pitch 2x22-pin box headers.



Pin	Description	Pin	Description
1	RESET#	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N/C
21	DREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IRDY	28	IDSEL
29	ACK#	30	GND
31	IRQ	32	N/C
33	AD1	34	ATA66 DETECT
35	AD0	36	AD2
37	CS0#	38	CS1# (HD SELECT1#)
39	ACT#	40	GND
41	+5V	42	+5V
43	GND	44	N/C

JSMB1: External SMBUS Connector

Connector type: 2.54mm pitch 1x3 box-pin wafer connector.

Pin	Description
1	SMB_Data
2	SMB_Clock
3	SMB_Alert#



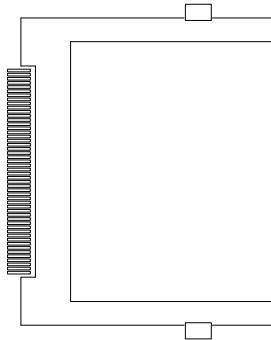
SATA1~2: Serial ATA Connectors

Connector type: lockable SATA connectors with housing. Support 150MB/s HDD transfer rate.

Pin	Description
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



CF1: Compact Flash Type II Socket



Pin	Description	Pin	Description
1	GND	26	GND
2	PDD3	27	PDD11
3	PDD4	28	PDD12
4	PDD5	29	PDD13
5	PDD6	30	PDD14
6	PDD7	31	PDD15
7	PDCS1#	32	PDCS3#
8	GND	33	GND
9	GND	34	PDIOR#
10	GND	35	PDIOW#
11	GND	36	+5V
12	GND	37	PIDEIRQ
13	+5V	38	+5V
14	GND	39	CSEL#
15	GND	40	N/C
16	GND	41	IDERST#
17	GND	42	PIORDY
18	PDA2	43	PDDREQ
19	PDA1	44	PDDACK#
20	PDA0	45	HD_LED1#
21	PDD0	46	PDIAG#
22	PDD1	47	PDD8
23	PDD2	48	PDD9
24	N/C	49	PDD10
25	N/C	50	GND

JCOM2: RS-422/485 Output Connector

Connector type: 2.00mm pitch 1x4-pin box wafer connector.

Pin	RS-422	RS-485
1	TX+	DATA+
2	TX-	DATA-
3	RX+	N/C
4	RX-	N/C



AUDIO1: AUDIO Connector

Connector type: 2.00mm pitch 2x5-pin box headers.

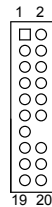
Pin	Desc.	Pin	Desc.
1	Line_In_Left	2	Line_In_Right
3	GND	4	GND
5	MIC	6	MIC2
7	GND	8	GND
9	Speaker Left	10	Speaker Right



LPT1: Parallel Port Connector

Connector type: 2.00mm pitch 2x10-pin headers.

Pin	Description	Pin	Description
1	STB#	2	AFD#
3	PTD0	4	ERROR#
5	PTD1	6	INIT#
7	PTD2	8	SLIN#
9	PTD3	10	GND
11	PTD4	12	GND
13	PTD5	14	N/C (Key)
15	PTD6	16	BUSY
17	PTD7	18	PE
19	ACK#	20	SELECT



JFRT1: Switches and Indicators

It provides connectors for system indicators that provides light indication of the computer activities and switches to change the computer status.

Connector type: 2.54mm pitch 2x5-pin headers.

Pin	Description	Pin	Description
1	RESET+	2	RESET-
3	POWER_LED+	4	POWER_LED-
5	HDD_LED+	6	HDD_LED-
7	SPEAKER+	8	SPEAKER-
9	PSON+	10	PSON-



USB2: USB Connector

Connector type: 2.00mm pitch 2x5-pin headers.

Pin	Desc.	Pin	Desc.
1	+5V	2	+5V
3	USBD-	4	USBD-
5	USBD+	6	USBD+
7	GND	8	GND
9	N/C (Key)	10	N/C



LAN2: Ethernet Connector

Connector type: 2.00mm pitch 2x5-pin headers

Pin	Description	Pin	Description
1	TXMDIO+	2	TXMDIO-
3	RXMDI1+	4	MDI2+
5	MDI2-	6	RSMID1-
7	MDI3+	8	MDI3-
9	N/A	10	N/C (Key)



MINI-PCI1: MINI-PCI Socket

DIO1: Digital I/O Connector

DIO1 is a 8-bit DIO connector w/ onboard 2x5-pin headers, support 4-bit In/ 4-bit Out.

Connector type: 2.00 mm pitch 2x5-pin headers

Pin	Description	Pin	Description
1	DIO1	2	DIO2
3	DIO3	4	DIO4
5	DIO5	6	DIO6
7	DIO7	8	DIO8
9	+5V	10	GND



CN2: LAN2 LED Indicator

Connector type: 2.54mm pitch 2x2-pin headers.

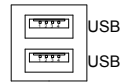
Pin	Description	Pin	Description
1	LED_Y-	2	LED_Y+
3	LED_G-	4	LED_G+



USB1: Double Stacked USB type A

Connectors

Connector type: double stacked USB type A connector.



LAN1: GbE RJ-45 Connector

LAN1 supports 10/100/1000 Mbps Fast Ethernet

Connector type: RJ-45



KBM1: Keyboard & Mouse

Mini-Din Keyboard & Mouse connector

Pin	Description
1	KB Data
2	MS Data
3	GND
4	+5V
5	KB Clock
6	MS Clock



COM2: RS-232 Connector

Connector type: 2.00mm pitch 2x5-pin box headers.

Pin	Desc.	Pin	Desc.
1	DCD#	2	RXD
3	TXD	4	DTR#
5	GND	6	DSR#
7	RTS#	8	CTS#
9	R#	10	N/C



SYSF1: Fan Connector

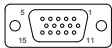
SYSF1 is a 3-pin headers for the system fan. The fan must be a +12V fan.

Pin	Description
1	GND
2	+12V
3	FAN_Detect



VGA1: Analog RGB Connector

Connector type: VGA: D-Sub 15-pin female

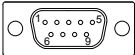


Pin	Desc.	Pin	Desc.	Pin	Desc.
1	RED	6	GND	11	N/C
2	GREEN	7	GND	12	VDDAT
3	BLUE	8	GND	13	HSYNC
4	N/C	9	+5V	14	VSYNC
5	GND	10	GND	15	VDCLK

COM1: RS-232 Connector

Connector type: D-Sub 9-pin male.

Pin	Desc.	Pin	Desc.
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND		



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