

EmCORE-i65M3

3.5" Compact Board Quick Installation Guide

Version 1.1

| Form Factor |
|---------------------------|
| 3.5" Compact Board |

| CPU |
|---------------------------------------|
| Intel® Celeron™ 827E Processor |

| Chipset |
|------------------------|
| Intel® PCH HM65 |

| Video |
|---|
| Dual Channels 24-bit LVDS/ DVI-I |

| LAN |
|--|
| 2 x Intel® 82583V PCIe Gigabit Ethernet |

| Audio |
|---|
| Realtek ALC662 HD Audio CODEC, Line-in/ Line-out/ Mic-in |

| I/O |
|--|
| CFast/ SATA/ USB/ COM/ Mini-card/ LPC |

◆ 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

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.

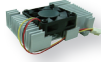


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Packing List

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



1 x EmCORE-i65M3 3.5" Compact Board with heatsink



1 x Driver CD



1 x Quick Installation Guide

If any of the above items is damaged or missing, contact your vendor immediately.

Ordering Information

| | |
|-------------------|---|
| EmCORE-i65M3-827E | Intel® Celeron™ 827E 3.5" Compact Board |
| FCDB-1293 | 4 x COM ports, 8-bit digital I/O daughterboard |
| FCDB-349R | 16-bit Digital I/O board |
| CBK-06-65M3-00 | Cable kit 2 x SATA cables 2 x USB dual port cables 1 x Audio Cable 1 x COM port cable |

The Installation Paths of CD Driver

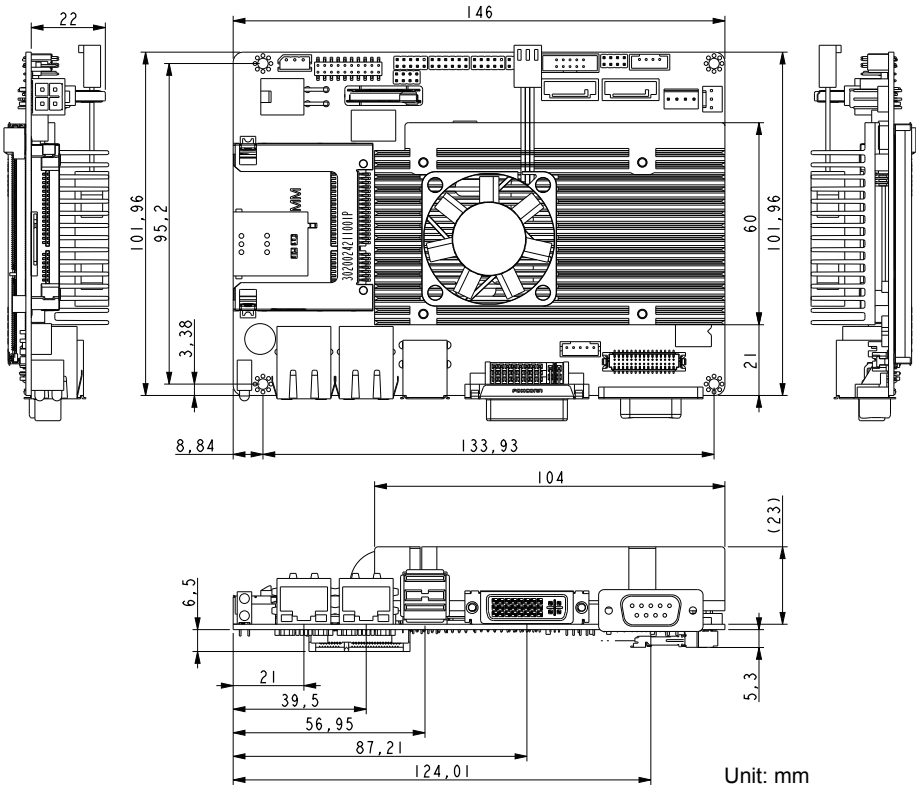
Windows XP

| Driver | Path |
|---------------|------------------------|
| CHIPSET | \CHIPSET |
| VGA | \GRAPHICS\WinXP |
| AUDIO | \AUDIO\WinXP_ALC662 |
| LAN | \ETHERNET\WinXP_82583V |
| Framework | \NET Framework |

Windows 7

| Driver | Path |
|---------------|-----------------------|
| CHIPSET | \CHIPSET |
| VGA | \GRAPHICS\Win7 |
| AUDIO | \AUDIO\Win7_ALC662 |
| LAN | \ETHERNET\Win7_82583V |
| Intel Turbo | \CPU_utility |

Board Dimensions



Specifications

| | |
|----------------------|--|
| Form Factor | 3.5" Compact Board |
| CPU | Soldered onboard Intel® Sandy Bridge Celeron™ 827E 1.4GHz processor |
| Chipset | Intel® PCH HM65 |
| System Memory | 1 x 204-pin DDR3 SO-DIMM socket supporting 1066/800MHz SDRAM up to 4GB |
| Graphics | Integrated Intel® HD Graphics 3000 supporting 24-bit dual channels LVDS and DVI-I |
| Ethernet | 2 x Intel® 82583V PCIe Gigabit Ethernet controllers |
| I/O Chips | Fintek F71869ED |
| BIOS | AMI PnP Flash BIOS |
| Audio | Realtek ALC662 5.1 Channel HD Audio CODEC, Mic-in/ Line-in/ Line-out |
| Storage | 2 x Serial ATA ports with 600MB/s HDD transfer rate |
| | 1 x CFAST socket |
| Serial Port | 2 x COM ports (COM1: RS-232, COM2: RS-232/422/485 selectable, RS-485 auto flow control) Extra 4 x COM ports via FCDB-1293 |
| Keyboard & Mouse | USB interface for Keyboard and Mouse |
| Universal Serial Bus | 6 x USB 2.0 ports |
| Digital IO | 16-bit programmable Digital Input/Output via FCDB-349R |
| Expansion Bus | 1 x Mini-card socket |
| | 1 x SIM socket |
| | LPC interface |
| Power Requirement | +12V DC |
| Power Consumption | 3.4A/12V (Typical) |
| Operation Temp. | -20°C ~ 70°C (-4°F ~ 158°F) |
| Operating Humidity | 0 ~ 90% (non-condensing) |
| Watchdog Timer | 1~255 levels reset |
| Dimension (L x W) | 146 x 102 mm (5.7" x 4.0") |

Jumpers/ Connectors Quick Reference

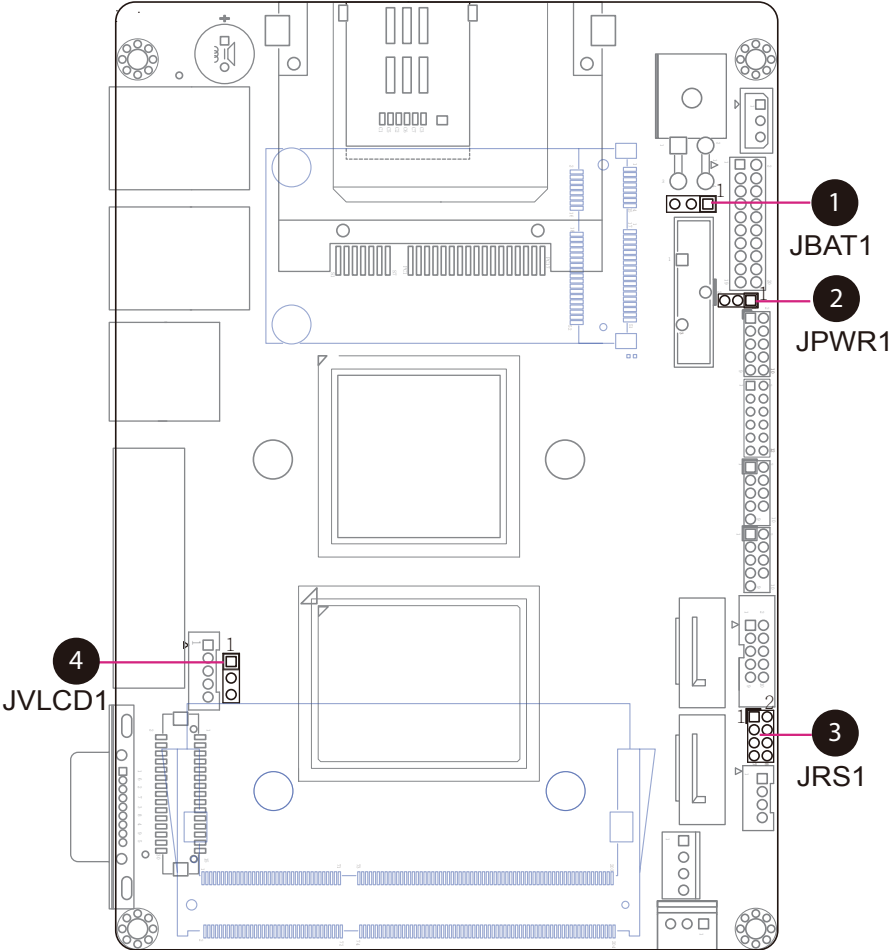
Jumpers

| Label | Function |
|--------|-------------------------------|
| JBAT1 | Clear CMOS Setting |
| JPWR1 | AT/ATX Power Mode Selection |
| JRS1 | COM2 RS-232/422/485 Selection |
| JVLCD1 | LVDS1 LCD Voltage Selection |

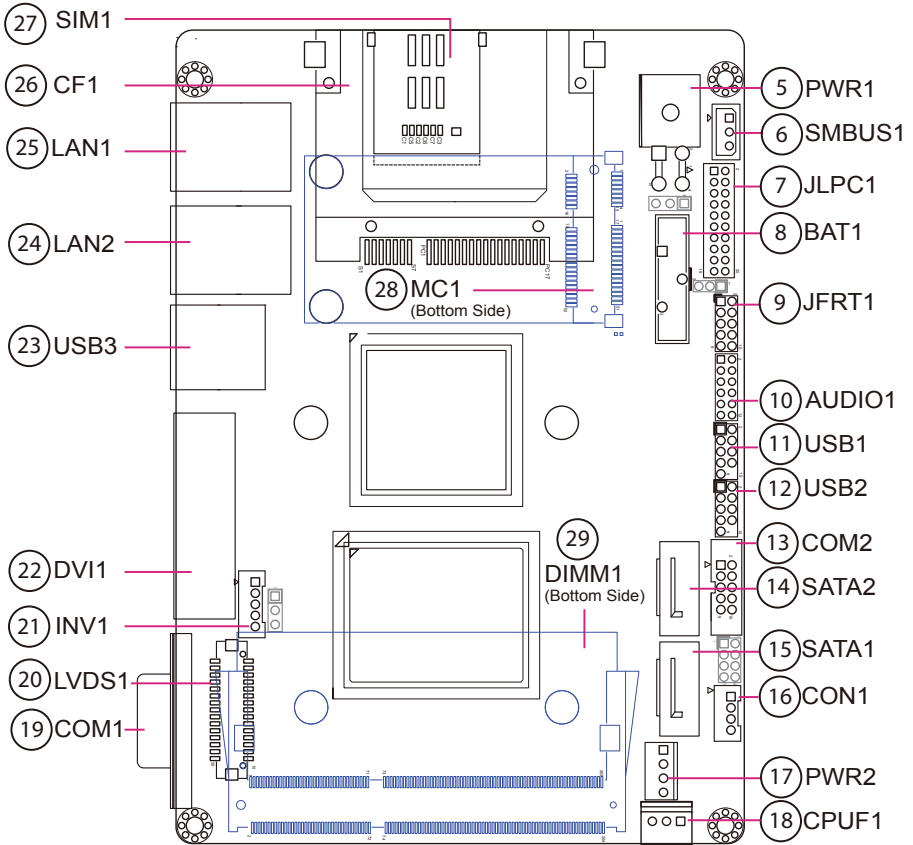
Connectors

| Label | Function |
|----------|---------------------------------------|
| PWR1 | 4-pin ATX +12V Power Connector |
| SMBUS1 | External SMBus Connector |
| JLPC1 | External LPC Connector |
| BAT1 | Battery Holder |
| JFRT1 | Front Panel (Switches and Indicators) |
| AUDIO1 | Audio Connector |
| USB1-3 | USB Port Connectors |
| COM1, 2 | Serial Port Connectors |
| SATA1, 2 | Serial ATA Connectors |
| CON1 | RS-422/485 Output Connector |
| PWR2 | SATA Power Connector |
| CPUF1 | CPU Fan Connector |
| LVDS1 | LVDS LCD Panel Connector |
| INV1 | LCD Inverter Connector |
| DVI1 | DVI-I Display Connector |
| LAN1, 2 | Gigabit Ethernet Connectors |
| CF1 | CFast Socket |
| SIM1 | SIM Card Socket |
| MC1 | Mini-card Socket |
| DIMM1 | 204-pin DDR3 SODIMM Socket |

Jumpers Location





Connectors Location



Jumpers



JBAT1: Clear CMOS Setting (1)

Connector type: 2.54mm pitch 1x3-pin header

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

JPWR1: AT/ATX Power Mode Selection (2)

Connector type: 2.54mm pitch 1x3-pin header

| Pin | Power Mode Selection | |
|-----|----------------------|---|
| 1-2 | ATX Mode |  |
| 2-3 | AT Mode (Default) |  |

JRS1: COM2 RS-232/422/485 Selection (3)

Connector type: 2.00mm pitch 2x4-pin header

| Mode | RS-232 (Default) | RS-422 | RS-485 |
|------|------------------|--------|--------|
| 1-2 | Short | Open | Open |
| 3-4 | Open | Short | Open |
| 5-6 | Open | Open | Short |
| 7-8 | Short | Open | Open |



JRS1: COM2 RS-485 Auto-Flow Selection (3)

Connector type: 2.00mm pitch 2x4-pin headers.



| Mode | Enable | Disable |
|------|--------|---------|
| 7-8 | Short | Open |



JVLCD1: LVDS1 LCD Voltage Selection (4)

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

Connector type: 2.54mm pitch 1x3-pin header


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

Connectors

PWR1: 4-pin ATX +12V Power Connector (5)


PWR1 supplies ATX +12V (Vcore).

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 2 | GND | 4 | +12V |
| 1 | GND | 3 | +12V |



SMBUS1: External SMBus Connector (6)


Connector type: 2.50mm pitch 1x3-pin box wafer connector

| Pin | Description | |
|-----|-------------|---|
| 1 | Data |  |
| 2 | Clock | |
| 3 | GND | |

JLPC1: External LPC Connector (7)

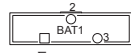
Connector type: 2.00mm pitch 2x10-pin header

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | 5V | 2 | 5V |
| 3 | LPC_LDRQ# | 4 | LPC_FRAME# |
| 5 | INT_SERIRQ | 6 | GND |
| 7 | LPC_AD2 | 8 | LPC_AD3 |
| 9 | LPC_AD0 | 10 | LPC_AD1 |
| 11 | PLT_RST# | 12 | GND |
| 13 | SMB DATA | 14 | CLK 33MHz |
| 15 | GND | 16 | SMB CLK |
| 17 | CLK 48MHz | 18 | PME# |
| 19 | 3V | 20 | 3V |



BAT1: Battery Holder (8)

| Pin | Description |
|-----|---------------|
| 1 | Battery power |
| 2 | GND |
| 3 | Battery power |

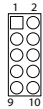


JFRT1: Front Panel (Switches and Indicators) (9)

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

Connector type: 2.00mm pitch 2x5-pin header

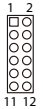
| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | RESET+ | 2 | RESET- |
| 3 | PLED+ | 4 | PLED- |
| 5 | HLED+ | 6 | HLED- |
| 7 | SPEAK+ | 8 | SPEAK- |
| 9 | PSON+ | 10 | PSON- |



AUDIO1: Audio Connector (10)

Connector type: 2.00mm pitch 2x6-pin header

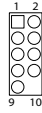
| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | LINE-L | 2 | LINE-R |
| 3 | LINE_JD | 4 | AGND |
| 5 | MIC1L | 6 | MIC1R |
| 7 | MIC1_JD | 8 | AGND |
| 9 | LOUT-L | 10 | LOUT-R |
| 11 | LOUT_JD | 12 | AGND |



USB1, 2: USB Port Connectors (11, 12)

Connector type: 2.00mm pitch 2x5-pin header

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | 5V | 2 | 5V |
| 3 | USB2/4- | 4 | USB3/5- |
| 5 | USB2/4+ | 6 | USB3/5+ |
| 7 | GND | 8 | GND |
| 9 | N/C | 10 | N/C |



CPUF1: CPU Fan Connector (18)

CPUF1 is a 3-pin headers for the CPU fan. The fan must be a +12V fan.

| Pin | Description |
|-----|-------------|
| 1 | GND |
| 2 | +12V |
| 3 | FAN_Detect |



COM2: Serial Port Connector (13)

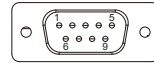
Connector type: 2.00mm pitch 2x5-pin box header

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 1 | DCD#2 | 2 | RXD2 |
| 3 | TXD2 | 4 | DTR#2 |
| 5 | GND | 6 | DSR#2 |
| 7 | RTS#2 | 8 | CTS#2 |
| 9 | RI2 | 10 | N/C |



COM1: Serial Port Connector (19)

Connector type: external 9-pin D-sub male connector



LVDS1: LVDS LCD Panel Connector (20)

Connector type: ACES 1.25mm 87209-3040-06 connector and supports 24-bit dual channels.

| Pin | Description | Pin | Description |
|-----|-------------|-----|-------------|
| 2 | VDD | 1 | VDD |
| 4 | TX2_CLK+ | 3 | TX1_CLK+ |
| 6 | TX2_CLK- | 5 | TX1_CLK- |
| 8 | GND | 7 | GND |
| 10 | TX2_D0+ | 9 | TX1_D0+ |
| 12 | TX2_D0- | 11 | TX1_D0- |
| 14 | GND | 13 | GND |
| 16 | TX2_D1+ | 15 | TX1_D1+ |
| 18 | TX2_D1- | 17 | TX1_D1- |
| 20 | GND | 19 | GND |
| 22 | TX2_D2+ | 21 | TX1_D2+ |
| 24 | TX2_D2- | 23 | TX1_D2- |
| 26 | GND | 25 | GND |
| 28 | TX2_D3+ | 27 | TX1_D3+ |
| 30 | TX2_D3- | 29 | TX1_D3- |



SATA1, 2: Serial ATA Connectors (15, 14)

High speed transfer rates (600MB/s).

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



CON1: RS-422/485 Output Connector (16)

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

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



INV1: LCD Inverter Connector (21)

Connector type: 2.00mm pitch 1x5-pin box wafer connector

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



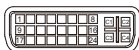
PWR2: SATA Power Connector (17)

Connector type: 1x4-pin 2.54mm power connector

| Pin | Description |
|-----|-------------|
| 1 | 5V |
| 2 | GND |
| 3 | GND |
| 4 | 12V |



DVI1: DVI-I Display Connector (22)



Pin Description

| Pin | Description | Pin | Description | Pin | Description |
|-----|--------------------|-----|--------------------|-----|--------------------|
| 1 | DATA2- | 9 | DATA1- | 17 | DATA0- |
| 2 | DATA2+ | 10 | DATA1+ | 18 | DATA0+ |
| 3 | DATA2/4 SHIELD | 11 | DATA 1/3 SHIELD | 19 | DATA 0/5 SHIELD |
| 4 | DATA4-(LINK 1, NC) | 12 | DATA3-(LINK 1, NC) | 20 | DATA5-(LINK 1, NC) |
| 5 | DATA4+(LINK 1, NC) | 13 | DATA3+(LINK 1, NC) | 21 | DATA5+(LINK 1, NC) |
| 6 | DDC_CLK | 14 | +5V | 22 | Clock_SHIELD |
| 7 | DDC_DATA | 15 | GND (for +5V) | 23 | Clock+ |
| 8 | VGA_V_Sync | 16 | Not Plug Detect | 24 | Clock- |
| C1 | VGA Red | | | | |
| C2 | VGA Green | | | | |
| C3 | VGA Blue | | | | |
| C4 | VGA_H_Sync | | | | |
| C5 | VGA_R,G,B_Return | | | | |

USB3: USB Port Connectors (23)

Connector type: double stack USB type A connector



LAN1, 2: Gigabit Ethernet Connectors (25, 24)

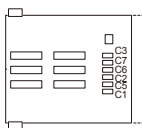
These connectors support Gigabit Ethernet.



SIM1: SIM Card Socket (27)

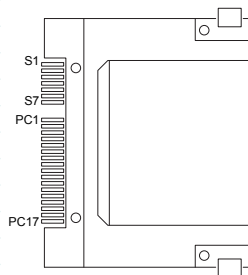
Connector type: Foxconn WL618E2-U05-7F CX1 socket

| Pin | Description |
|-----|-------------|
| C1 | VCC |
| C2 | RST |
| C3 | CLK |
| C5 | GND |
| C6 | VPP |
| C7 | I/O |



CF1: CFast Socket (26) (On Bottom Side)

| Pin | Description |
|------|-------------|
| S1 | SGND1 |
| S2 | TXP |
| S3 | TXN |
| S4 | SGND2 |
| S5 | RXN |
| S6 | RXP |
| S7 | SGND |
| PC1 | CDI |
| PC2 | GND |
| PC3 | TBD |
| PC4 | TBD |
| PC5 | TBD |
| PC6 | TBD |
| PC7 | GND |
| PC8 | LED1 |
| PC9 | LED2 |
| PC10 | IO1 |
| PC11 | IO2 |
| PC12 | IO3 |
| PC13 | 3.3V |
| PC14 | 3.3V |
| PC15 | GND |
| PC16 | GND |
| PC17 | CD0 |



MC1: Mini-card Socket (28) (On Bottom Side)



DIMM1: DDR3 SO-DIMM Socket (29) (On Bottom Side)



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