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# PBC-900J

## COM Express Type 6 Carrier board

### Quick Installation Guide

Version 1.1

<b>Form Factor</b> <i>COM Express Type 6 Carrier Board</i>	<b>Video</b> <i>LVDS/ Analog RGB/ Display Port Interface</i>	<b>Audio</b> <i>Realtek ALC662 HD Audio Codec, Mic-in/ Line-in/ Line-out</i>
<b>I/O</b> <i>DIO/ SATA/ USB/ COM/ PCIe Mini-card/ mSATA/ Parallel Port/ PCI-104</i>	<b>Ethernet</b> <i>Intel i210AT GbE Ethernet controller</i>	

### ◆ 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-technology.com>

E-mail: [info@arbor.com.tw](mailto: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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## COM Express Module Type Summary Features

COM Express supports seven pin-out Type apply to Basic and Extended form factors:  
Module Type 1 and 10 supports single connector with two rows of pins (220 pins)  
Module Type 2, 3, 4, 5 and 6 support two connectors with four rows of pins (440 pins)  
Connector placement and most mounting holes have transparency between Form Factors.

The differences amount the Module Types are summarized in table below:

Module Type	1	10	2	3	4	5	6
Connectors	1	1	2	2	2	2	2
Connector Rows	A, B	A, B	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D	A, B, C, D
PCIe Lanes (max)	6	4	22	22	32	32	24
PCI Bus	No	No	Yes	Yes	No	No	No
PATA - IDE	No	No	Yes	No	Yes	No	No
LAN (Max)	1	1	1	3	1	3	1
Serial Ports	No	0 / 2	No	No	No	No	0 / 2
Muxed SDVO	No	No	0 / 2	0 / 2	0 / 2	0 / 2	No
Digital Display I/F	No	No	No	No	No	No	0 / 3
USB 3.0 Ports	No	No	No	No	No	No	0 / 4

## Packing List

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



1 x PBC-900J COM Express Type 6 carrier board



1 x Quick Installation Guide

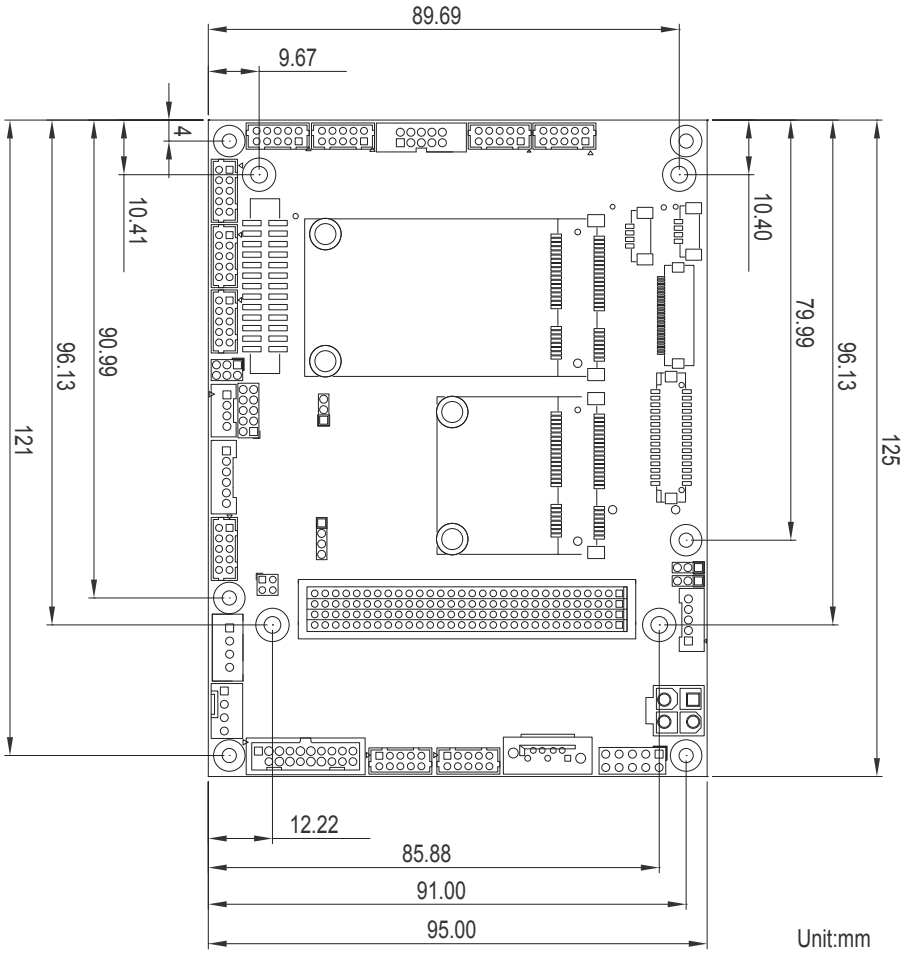
## Specifications

<b>Form Factor</b>	COM Express Type 6 Carrier Board
<b>I/O Chips</b>	Fintek F81866
<b>Audio</b>	Realtek ALC662 HD Audio Codec, Mic-in/Line-in/Line-out
<b>Storage</b>	1 x Serial ATA connector 1 x mSATA Full size Mini-card socket
<b>Serial Port</b>	4 x COM ports COM1,COM3,COM4: RS-232 COM2: RS-232/422/485 selectable & RS-485 auto flow supported
<b>KBMS</b>	1 x KB/MS
<b>Universal Serial Bus</b>	2 x USB 2.0 ports 2 x USB 2.0/3.0 ports
<b>VGA / Display Port</b>	24-bit dual channel LVDS / DisplayPort connector / Analog RGB
<b>DIO</b>	16-bit programmable digital Input/Output
<b>LPT</b>	1 x LPT port
<b>Expansion Bus</b>	1 x PCIe Mini-card socket (half size) 1 x PCI-104 Slot (support 4 PCI Master devices)
<b>Operation Temp.</b>	-40°C~85°C (-40°F~185°F)
<b>Power Connector</b>	4pin ATX 12V connector
<b>Dimension (L x W)</b>	125 x 95 mm (4.9" x 3.6")

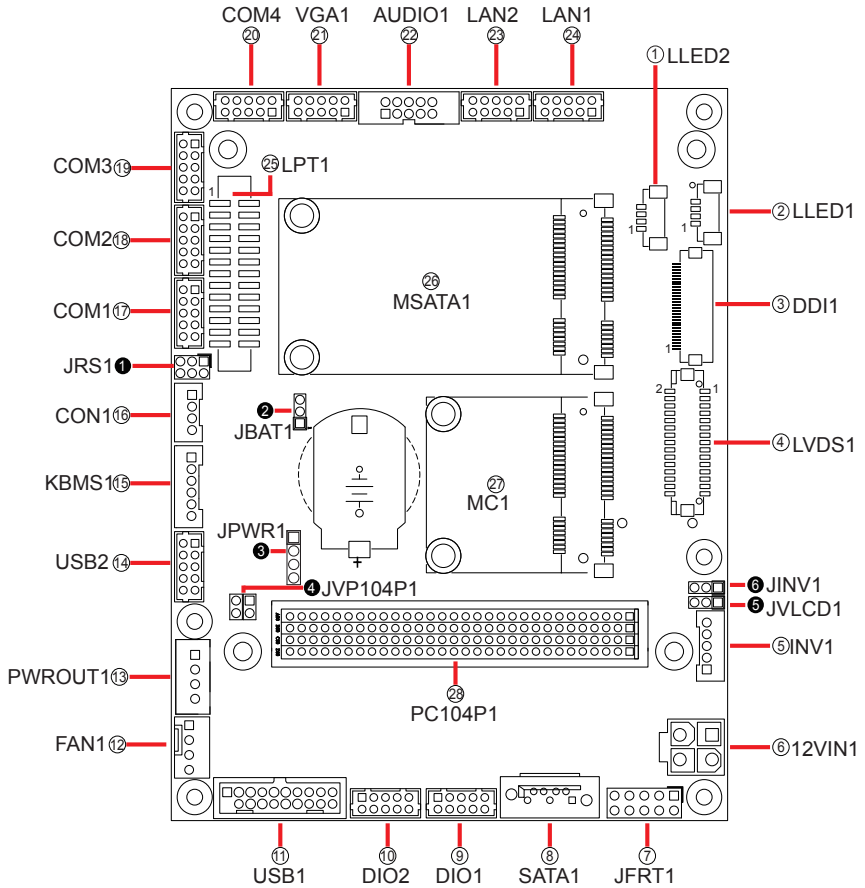
## Ordering Information

<b>PBC-900J</b>	COM Express Type 6 carrier board
<b>CBK-13-900J-00</b>	Cable kit 1 x SATA cable 1 x SATA Power cables 4 x COM cables 1 x PS/2 KB/MS cable 1 x USB 2.0 cable 1 x AUDIO cable 1 x USB 3.0 cable 1 x VGA cable 2 x LAN cables

# Board dimensions



# Jumpers & Connectors



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## Jumpers/ Connectors Quick Reference

### Jumpers

Label	Description
JRS1	COM2 RS232/422/485 Mode Selection
JBAT1	Clear CMOS Setting
JPWR1	AT/ATX Power Mode Selection
JVP104P1	PCI-104 VIO Voltage
JVLCD1	LCD Panel Voltage Selection
JINV1	LCD Inverter Voltage Selection

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## Connectors

Label	Function
LLED1,LLED2	LED connectors
DDI1	DDI connector
LVDS1	LVDS connector
INV1	LVDS Inverter connector
12VIN1	DC Power In
JFRT1	Front-panel switches and LED indicators connector
SATA1	SATA connector
DIO1,2	DIO connectors
USB1	USB 3.0 connector
FAN1	Fan connector
PWROUT1	SATA Power connector
USB2	USB 2.0 connector
KBMS1	KB/MS connector
CON1	RS-422/485 connector
COM1,2,3,4	Serial Port1~4 connectors
VGA1	Analog RGB connector
AUDIO1	Audio connector
LAN1,LAN2	Ethernet connectors
LPT1	Parallel Port connector
MSATA1	mSATA socket
MC1	Mini-card socket
PC104P1	PCI-104 slot

## Jumpers

### ① JRS1: COM2 RS232/422/485 Mode Selection

Connector type: 2.00mm pitch 2×3-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

### ② JBAT1: CMOS Setting

Connector type: 2.00mm pitch 1×3 pin header

Pin	Description	
1-2	Keeps CMOS (Default)	
2-3	Clears CMOS	

### ③ JPWR1: AT/ATX Power Mode Selection

Connector type: 2.00mm pitch 1×4-pin header

Pin	Description	
1-2	ATX mode (Default)	
2-3	AT Mode	

### ④ JVP104P1 : PCI-104 VIO Voltage

Connector type: 2.00mm pitch 2x2-pin headers

Pin	Description	
1-2	3.3V	
3-4	5V	
2-4	N/C (Default)	

### ⑤ JVLCD1: LCD Panel Voltage Selection

Connector type: 2.00mm pitch 1×3 pin header

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

### ⑥ JINV1: LCD Inverter Voltage Selection

Connector type: 2.00mm pitch 1×3 pin header

Pin	Description	
1-2	+12V	
2-3	+5V (Default)	



## Connectors

### ①② LLED1,2: LED Connectors

Connector type: 1.25mm pitch 1x4 pin wafer connector

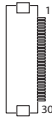
Pin	Description
1	ACT#
2	3V
3	Link100#
4	Link1000#



### ③ DDI1: DDI Connector

Connector type: FH12-30S-0.5SH (Hirose)

Pin	Description	Pin	Description
1	GND	16	N/C
2	GND	17	N/C
3	GND	18	GND
4	GND	19	TXP3
5	+5VS	20	TXN3
6	+5VS	21	GND
7	+5VS	22	TXP2
8	+5VS	23	TXN2
9	HPDET#	24	GND
10	DDC_AUX_SEL	25	TXP1
11	N/C	26	TXN1
12	GND	27	GND
13	CTLDATA_AUXN	28	TXP0
14	CTLCLK_AUXP	29	TXN0
15	GND	30	GND

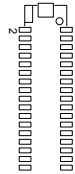


### ④ LVDS1: LVDS Connector

The connector supports up to 24-bit dual channel.

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

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	TX2D3+	27	TX1D3+
30	TX2D3-	29	TX1D3-



### ⑤ INV1: LVDS Inverter Connector

Connector type: Onboard 2.0 pitch 1x5-pin box header

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



### ⑥ 12VIN1: ATX DC Power In

Connector type: Standard 4-pin power connector

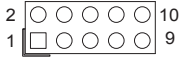
Pin	Desc.	Pin	Desc.
1	GND	3	+12V
2	GND	4	+12V



## ⑦ JFRT1: Front Panel Switches and Indicators Connector

It's a connector for system indicators that provide computer activities' light indication and for switches to change the computer status.

Connector type: 2.54mm pitch 2x5-pin headers

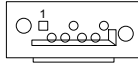


Pin	Desc.	Pin	Desc.
1	RESET+	2	RESET-
3	POWER_LED+	4	POWER_LED-
5	HDD_LED+	6	HDD_LED-
7	SPEAKER+	8	SPEAKER-
9	PS_ON+	10	PS_ON-

## ⑧ SATA1: SATA Connector

Connector type: Standard 7-pin SATA Connector.

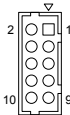
The pin assignments conform to the industry standard.



## ⑨ DIO1: DIO Connector

Connector type: 2.0 mm pitch 2x5-pin box headers

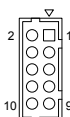
Pin	Desc.	Pin	Desc.
2	GPO1	1	GPO0
4	GPO3	3	GPO2
6	GPIO5	5	GPIO4
8	GPIO7	7	GPIO6
10	GND	9	VCC_DIO1



## ⑩ DIO2: DIO Connector

Connector type: 2.0 mm pitch 2x5-pin lockable box headers

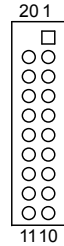
Pin	Desc.	Pin	Desc.
2	DIO8	1	DIO9
4	DIO10	3	DIO11
6	DIO12	5	DIO13
8	DIO14	7	DIO15
10	GND	9	VCC_DIO2



## ⑪ USB1: USB3.0 Connector

Connector type: 2.0 mm pitch 2x10-pin box headers

Pin	Desc.
1	Vbus
2	IntA_P1_SSRX-
3	IntA_P1_SSRX+
4	GND
5	IntA_P1_SSTX-
6	IntA_P1_SSTX+
7	GND GND
8	IntA_P1_D-
9	IntA_P1_D+
10	N/C
11	IntA_P2_D+ U
12	IntA_P2_D- U
13	GND
14	IntA_P2_SSTX+
15	IntA_P2_SSTX-
16	GND
17	IntA_P2_SSRX+
18	IntA_P2_SSRX-
19	Vbus
20	N/C



## ⑫ FAN1: FAN Connector

Connector type: 2.54mm pitch 1x4-pin wafer connector

Pin	Description
1	GND
2	+12V
3	FAN_Detect
4	Control



## ⑬ PWROUT1: SATA Power Connector

Connector type: 2.54mm pitch 1x4-pin box connector

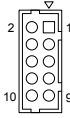
Pin	Description
1	VCC 5V
2	GND
3	GND
4	VCC 12V



## ⑭ USB2: USB 2.0 Connector

Connector type: 2.0 mm pitch 2x5-pin lockable box headers

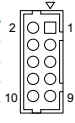
Pin	Desc.	Pin	Desc.
2	+5V-	1	+5V
4	USBP1-	3	USBP0-
6	USBP1+	5	USBP0+
8	GND	7	GND
10	GND	9	GND



## ⑰ VGA1: Analog VGA Connector

Connector type: 2.0 mm pitch 2x5-pin lockable box headers

Pin	Desc.	Pin	Desc.
2	GND	1	CRT_R
4	GND	3	CRT_G
6	GND	5	CRT_B
8	CRT_H_SYNC	7	CRT_DDC_DATAN
10	CRT_V_SYNC	9	CRT_DDC_CLKN



## ⑮ KBMS1:KB/MS Connector

Connector type: 2.0mm pitch 1x6-pin wafer connector

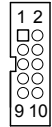
Pin	Description
1	KB_DATA
2	GND
3	MS_DATA
4	KB_CLK
5	KB_VCC
6	MS_CLK



## ⑯ AUDIO1: Audio Connector

Connector type: 2.0mm pitch 2x5-pin box headers

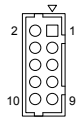
Pin	Desc.	Pin	Desc.
1	Line Left In	2	Line Right In
3	GND	4	GND
5	MIC	6	GND
7	GND	8	GND
9	Line-out Left	10	Line-out Right



## ⑰⑱ LAN1,2: Ethernet Connectors

Connector type: 2.0 mm pitch 2x5-pin lockable box headers

Pin	Desc.	Pin	Desc.
2	TX_MDIO-	1	TX_MDIO+
4	MDI2+	3	RX_MDII+
6	RX_MDII-	5	MDI2-
8	MDI3-	7	MDI3+
10	N/C	9	N/C



## ⑰ CON1: RS-422/485 Connector

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

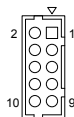
Pin	RS-422 JRS1(3-4)	RS-485 JRS1(4-6)
1	TX+	DATA+
2	TX-	DATA-
3	RX+	
4	RX-	



## ⑰⑱⑲⑳ COM1~4: Serial Port1~4 Connectors

Connector type: 2.0 mm pitch 2x5-pin lockable box headers

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

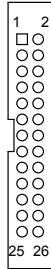


## ②⑤ LPT1: Parallel Port Connector

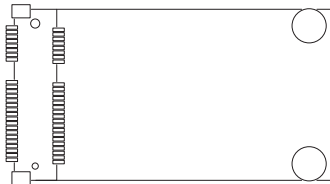
Connector type: 2.00mm pitch 2x13-pin box headers

### Pin Description Pin Description

1	STB#	2	AFD#
3	PD0	4	ERR#
5	PD1	6	INIT#
7	PD2	8	SLIN#
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK#	20	GND
21	BUSY#	22	GND
23	PE	24	GND
25	SLCT	26	GND



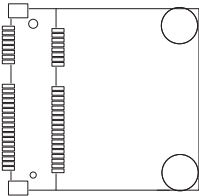
## ②⑥ MSATA1: mSATA Socket



The pin assignments conform to the industry standard.

## ②⑦ MC1: Mini-card Socket

Connector type: Onboard 0.8mm-pitch 52-pin edge card connector



## ②⑧ PC104P1: PCI-104 Slot

The pin assignments conform to the industry standard.