

# GAOLIN ELECTRONICS

## CPCI 6U14SLOTS BACKPLANE

### Technology Specification

CB61140B0-300

Issue Date: 2013-05-18

## CPCI+POWER SOCKET 6U14SLOTS BACKPLANE Technology Specification

### DESIGN ACCORDING TO:

- CPCI Specification PICMG 2.0 R3.0 (October 1, 1999)
- CPCI Hot Swap Specification PICMG 2.1 R1.0 (August 3, 1998)
- CPCI System Management Specification PICMG 2.9 R1.0 (February 2, 2000)
- Keying of CPCI Boards and Backplanes PICMG 2.10 R1.0 (October 1, 1999)
- CPCI Power Interface Specification PICMG 2.11 R1.0 (October 1, 1999)

### BUS STRUCTURES:

|      |                              |            |   |   |   |   |   |   |   |    |    |    |    |  |  |
|------|------------------------------|------------|---|---|---|---|---|---|---|----|----|----|----|--|--|
| P5   | I/O                          |            |   |   |   |   |   |   |   |    |    |    |    | R<br>e<br>c<br>e<br>p<br>t<br>a<br>c<br>l<br>e |  |
| P4   | I/O                          |            |   |   |   |   |   |   |   |    |    |    |    |  |  |
| P3   | I/O                          |            |   |   |   |   |   |   |   |    |    |    |    |  |  |
| P2   | 64bit/33MHz CPCI with Bridge |            |   |   |   |   |   |   |   |    |    |    |    |  |  |
| P1   |                              |            |   |   |   |   |   |   |   |    |    |    |    |  |  |
| Slot | 1                            | 2          | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14   |  |
| SPEC | System                       | Peripheral |   |   |   |   |   |   |   |    |    |    |    |  |  |

### TECHNICAL DATA:

- 14 Slots: 1 System Slot +13Peripheral slots
- All Peripheral slots support 64bit/33Mhz CPCI bus
- Mechanical dimension: 304.8×262.05×3.8mm (width× height ×thickness), support 6U card.
- PCB Type: 10 layers
- Power connector: Two ATX Receptacle for Redundant PSU
- Maximum voltage drop on backplane power: <20mV
- V(I/O): +3.3V / +5V selectable
- Impedance: 65ohm ± 10% for trace
- Operating temperature: -40℃ ~ +85℃
- Storage temperature: -55℃ ~ +85℃
- MTBF: 700,000h

**PIN ASSIGNMENT:**

See following tables.

**P1 of Slot1, 8**

|            |                 |          |          |          |          |          |          |
|------------|-----------------|----------|----------|----------|----------|----------|----------|
| 25         | GND             | 5V       | REQ64#   | ENUM#    | 3.3V     | 5V       | GND      |
| 24         | GND             | AD1      | 5V       | V(I/O)   | AD0      | ACK64#   | GND      |
| 23         | GND             | 3.3V     | AD4      | AD3      | 5V       | AD2      | GND      |
| 22         | GND             | AD7      | GND      | 3.3V     | AD6      | AD5      | GND      |
| 21         | GND             | 3.3V     | AD9      | AD8      | GND      | C/BE0#   | GND      |
| 20         | GND             | AD12     | GND      | V(I/O)   | AD11     | AD10     | GND      |
| 19         | GND             | 3.3V     | AD15     | AD14     | GND      | AD13     | GND      |
| 18         | GND             | SERR#    | GND      | 3.3V     | PAR      | C/BE1#   | GND      |
| 17         | GND             | 3.3V     | IPMB_SCL | IPMB_SDA | GND      | PERR#    | GND      |
| 16         | GND             | DEVSEL#  | GND      | V(I/O)   | STOP#    | LOCK#    | GND      |
| 15         | GND             | 3.3V     | FRAME#   | IRDY#    | BD_SEL#  | TRDY#    | GND      |
| 14         | <b>KEY AREA</b> |          |          |          |          |          |          |
| 13         |                 |          |          |          |          |          |          |
| 12         |                 |          |          |          |          |          |          |
| 11         | GND             | AD18     | AD17     | AD16     | GND      | C/BE2#   | GND      |
| 10         | GND             | AD21     | GND      | 3.3V     | AD20     | AD19     | GND      |
| 9          | GND             | C/BE3#   | GND      | AD23     | GND      | AD22     | GND      |
| 8          | GND             | AD26     | GND      | V(I/O)   | AD25     | AD24     | GND      |
| 7          | GND             | AD30     | AD29     | AD28     | GND      | AD27     | GND      |
| 6          | GND             | REQO#    | GND      | 3.3V     | CLK0     | AD31     | GND      |
| 5          | GND             | BRSVPA15 | BRSVP1B5 | RST#     | GND      | GNT0#    | GND      |
| 4          | GND             | IPMB_PWR | HEALTHY# | V(I/O)   | INTP     | INTS     | GND      |
| 3          | GND             | INTA#    | INTB#    | INTC#    | 5V       | INTD#    | GND      |
| 2          | GND             | TCK      | 5V       | TMS      | TDO      | TDI      | GND      |
| 1          | GND             | 5V       | -12V     | TRST#    | +12V     | 5V       | GND      |
| <b>Pin</b> | <b>Z</b>        | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |

**P1 of Slot2~7,9~14**

|            |          |          |          |          |          |          |          |
|------------|----------|----------|----------|----------|----------|----------|----------|
| 25         | GND      | 5V       | REQ64#   | ENUM#    | 3.3V     | 5V       | GND      |
| 24         | GND      | AD1      | 5V       | V(I/O)   | AD0      | ACK64#   | GND      |
| 23         | GND      | 3.3V     | AD4      | AD3      | 5V       | AD2      | GND      |
| 22         | GND      | AD7      | GND      | 3.3V     | AD6      | AD5      | GND      |
| 21         | GND      | 3.3V     | AD9      | AD8      | M66EN    | C/BE0#   | GND      |
| 20         | GND      | AD12     | GND      | V(I/O)   | AD11     | AD10     | GND      |
| 19         | GND      | 3.3V     | AD15     | AD14     | GND      | AD13     | GND      |
| 18         | GND      | SERR#    | GND      | 3.3V     | PAR      | C/BE1#   | GND      |
| 17         | GND      | 3.3V     | IPMB_SCL | IPMB_SDA | GND      | PERR#    | GND      |
| 16         | GND      | DEVSEL#  | GND      | V(I/O)   | STOP#    | LOCK#    | GND      |
| 15         | GND      | 3.3V     | FRAME#   | IRDY#    | BD_SEL#  | TRDY#    | GND      |
| 14         | KEY AREA |          |          |          |          |          |          |
| 13         |          |          |          |          |          |          |          |
| 12         |          |          |          |          |          |          |          |
| 11         | GND      | AD18     | AD17     | AD16     | GND      | C/BE2#   | GND      |
| 10         | GND      | AD21     | GND      | 3.3V     | AD20     | AD19     | GND      |
| 9          | GND      | C/BE3#   | GND      | AD23     | GND      | AD22     | GND      |
| 8          | GND      | AD26     | GND      | V(I/O)   | AD25     | AD24     | GND      |
| 7          | GND      | AD30     | AD29     | AD28     | GND      | AD27     | GND      |
| 6          | GND      | REQ#     | GND      | 3.3V     | CLK      | AD31     | GND      |
| 5          | GND      | BRSVPA15 | BRSVP1B5 | RST#     | GND      | GNT#     | GND      |
| 4          | GND      | IPMB_PWR | HEALTHY# | V(I/O)   | INTP     | INTS     | GND      |
| 3          | GND      | INTA#    | INTB#    | INTC#    | 5V       | INTD#    | GND      |
| 2          | GND      | TCK      | 5V       | TMS      | TDO      | TDI      | GND      |
| 1          | GND      | 5V       | -12V     | TRST#    | +12V     | 5V       | GND      |
| <b>Pin</b> | <b>Z</b> | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |

**P2 of Slot1, 8**

|            |          |           |           |           |          |           |          |
|------------|----------|-----------|-----------|-----------|----------|-----------|----------|
| 22         | GND      | GA4       | GA3       | GA2       | GA1      | GA0       | GND      |
| 21         | GND      | CLK6      | GND       | RSV       | RSV      | RSV       | GND      |
| 20         | GND      | CLK5      | GND       | RSV       | GND      | RSV       | GND      |
| 19         | GND      | GND       | GND       | SMB_SDA   | SMB_SCL  | SMB_ALERT | GND      |
| 18         | GND      | BRSVP2A18 | BRSVP2B18 | BRSVP2C18 | GND      | BRSVP2E18 | GND      |
| 17         | GND      | BRSVP2A17 | GND       | PRST#     | REQ6#    | GNT6#     | GND      |
| 16         | GND      | BRSVP2A16 | BRSVP2B16 | DEG#      | GND      | BRSVP2E16 | GND      |
| 15         | GND      | BRSVP2A15 | GND       | FAL#      | REQ5#    | GNT5#     | GND      |
| 14         | GND      | AD35      | AD34      | AD33      | GND      | AD32      | GND      |
| 13         | GND      | AD38      | GND       | V(I/O)    | AD37     | AD36      | GND      |
| 12         | GND      | AD42      | AD41      | AD40      | GND      | AD39      | GND      |
| 11         | GND      | AD45      | GND       | V(I/O)    | AD44     | AD43      | GND      |
| 10         | GND      | AD49      | AD48      | AD47      | GND      | AD46      | GND      |
| 9          | GND      | AD52      | GND       | V(I/O)    | AD51     | AD50      | GND      |
| 8          | GND      | AD56      | AD55      | AD54      | GND      | AD53      | GND      |
| 7          | GND      | AD59      | GND       | V(I/O)    | AD58     | AD57      | GND      |
| 6          | GND      | AD63      | AD62      | AD61      | GND      | AD60      | GND      |
| 5          | GND      | C/BE5#    | GND       | V(I/O)    | C/BE4#   | PAR64     | GND      |
| 4          | GND      | V(I/O)    | BRSVP2B4  | C/BE7#    | GND      | C/BE6#    | GND      |
| 3          | GND      | CLK4      | GND       | GNT3#     | REQ4#    | GNT4#     | GND      |
| 2          | GND      | CLK2      | CLK3      | GND       | GNT2#    | REQ3#     | GND      |
| 1          | GND      | CLK1      | GND       | REQ1#     | GNT1#    | REQ2#     | GND      |
| <b>Pin</b> | <b>Z</b> | <b>A</b>  | <b>B</b>  | <b>C</b>  | <b>D</b> | <b>E</b>  | <b>F</b> |

**P2 of Slot2~7, 9~14**

|            |          |           |           |           |          |           |          |
|------------|----------|-----------|-----------|-----------|----------|-----------|----------|
| 22         | GND      | GA4       | GA3       | GA2       | GA1      | GA0       | GND      |
| 21         | GND      |           |           |           |          |           | GND      |
| 20         | GND      |           |           |           | GND      |           | GND      |
| 19         | GND      |           |           |           |          |           | GND      |
| 18         | GND      | BRSVP2A18 | BRSVP2B18 | BRSVP2C18 | GND      | BRSVP2E18 | GND      |
| 17         | GND      | BRSVP2A17 | GND       |           |          |           | GND      |
| 16         | GND      | BRSVP2A16 | BRSVP2B16 |           | GND      | BRSVP2E16 | GND      |
| 15         | GND      | BRSVP2A15 | GND       |           |          |           | GND      |
| 14         | GND      | AD35      | AD34      | AD33      | GND      | AD32      | GND      |
| 13         | GND      | AD38      | GND       | V(I/O)    | AD37     | AD36      | GND      |
| 12         | GND      | AD42      | AD41      | AD40      | GND      | AD39      | GND      |
| 11         | GND      | AD45      | GND       | V(I/O)    | AD44     | AD43      | GND      |
| 10         | GND      | AD49      | AD48      | AD47      | GND      | AD46      | GND      |
| 9          | GND      | AD52      | GND       | V(I/O)    | AD51     | AD50      | GND      |
| 8          | GND      | AD56      | AD55      | AD54      | GND      | AD53      | GND      |
| 7          | GND      | AD59      | GND       | V(I/O)    | AD58     | AD57      | GND      |
| 6          | GND      | AD63      | AD62      | AD61      | GND      | AD60      | GND      |
| 5          | GND      | C/BE5#    | GND       | V(I/O)    | C/BE4#   | PAR64     | GND      |
| 4          | GND      | V(I/O)    | BRSVP2B4  | C/BE7#    | GND      | C/BE6#    | GND      |
| 3          | GND      |           | GND       |           |          |           | GND      |
| 2          | GND      |           |           |           |          |           | GND      |
| 1          | GND      |           | GND       |           |          |           | GND      |
| <b>Pin</b> | <b>Z</b> | <b>A</b>  | <b>B</b>  | <b>C</b>  | <b>D</b> | <b>E</b>  | <b>F</b> |

**P3 of Slot1~14**

|            |          |          |          |          |          |          |          |
|------------|----------|----------|----------|----------|----------|----------|----------|
| 19         | GND      |          |          |          |          |          | GND      |
| 18         | GND      |          |          |          |          |          | GND      |
| 17         | GND      |          |          |          |          |          | GND      |
| 16         | GND      |          |          |          |          |          | GND      |
| 15         | GND      |          |          |          |          |          | GND      |
| 14         | GND      |          |          |          |          |          | GND      |
| 13         | GND      |          |          |          |          |          | GND      |
| 12         | GND      |          |          |          |          |          | GND      |
| 11         | GND      |          |          |          |          |          | GND      |
| 10         | GND      |          |          |          |          |          | GND      |
| 9          | GND      |          |          |          |          |          | GND      |
| 8          | GND      |          |          |          |          |          | GND      |
| 7          | GND      |          |          |          |          |          | GND      |
| 6          | GND      |          |          |          |          |          | GND      |
| 5          | GND      |          |          |          |          |          | GND      |
| 4          | GND      |          |          |          |          |          | GND      |
| 3          | GND      |          |          |          |          |          | GND      |
| 2          | GND      |          |          |          |          |          | GND      |
| 1          | GND      |          |          |          |          |          | GND      |
| <b>Pin</b> | <b>Z</b> | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |

**P4 of Slot1~14**

|            |                 |          |          |          |          |          |          |
|------------|-----------------|----------|----------|----------|----------|----------|----------|
| 25         | GND             |          |          |          |          |          | GND      |
| 24         | GND             |          |          |          |          |          | GND      |
| 23         | GND             |          |          |          |          |          | GND      |
| 22         | GND             |          |          |          |          |          | GND      |
| 21         | GND             |          |          |          |          |          | GND      |
| 20         | GND             |          |          |          |          |          | GND      |
| 19         | GND             |          |          |          |          |          | GND      |
| 18         | GND             |          |          |          |          |          | GND      |
| 17         | GND             |          |          |          |          |          | GND      |
| 16         | GND             |          |          |          |          |          | GND      |
| 15         | GND             |          |          |          |          |          | GND      |
| 14         | <b>KEY AREA</b> |          |          |          |          |          |          |
| 13         |                 |          |          |          |          |          |          |
| 12         |                 |          |          |          |          |          |          |
| 11         | GND             |          |          |          |          |          | GND      |
| 10         | GND             |          |          |          |          |          | GND      |
| 9          | GND             |          |          |          |          |          | GND      |
| 8          | GND             |          |          |          |          |          | GND      |
| 7          | GND             |          |          |          |          |          | GND      |
| 6          | GND             |          |          |          |          |          | GND      |
| 5          | GND             |          |          |          |          |          | GND      |
| 4          | GND             |          |          |          |          |          | GND      |
| 3          | GND             |          |          |          |          |          | GND      |
| 2          | GND             |          |          |          |          |          | GND      |
| 1          | GND             |          |          |          |          |          | GND      |
| <b>Pin</b> | <b>Z</b>        | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |



**P5 of Slot1~14**

|            |          |          |          |          |          |          |          |
|------------|----------|----------|----------|----------|----------|----------|----------|
| 22         | GND      |          |          |          |          |          | GND      |
| 21         | GND      |          |          |          |          |          | GND      |
| 20         | GND      |          |          |          |          |          | GND      |
| 19         | GND      |          |          |          |          |          | GND      |
| 18         | GND      |          |          |          |          |          | GND      |
| 17         | GND      |          |          |          |          |          | GND      |
| 16         | GND      |          |          |          |          |          | GND      |
| 15         | GND      |          |          |          |          |          | GND      |
| 14         | GND      |          |          |          |          |          | GND      |
| 13         | GND      |          |          |          |          |          | GND      |
| 12         | GND      |          |          |          |          |          | GND      |
| 11         | GND      |          |          |          |          |          | GND      |
| 10         | GND      |          |          |          |          |          | GND      |
| 9          | GND      |          |          |          |          |          | GND      |
| 8          | GND      |          |          |          |          |          | GND      |
| 7          | GND      |          |          |          |          |          | GND      |
| 6          | GND      |          |          |          |          |          | GND      |
| 5          | GND      |          |          |          |          |          | GND      |
| 4          | GND      |          |          |          |          |          | GND      |
| 3          | GND      |          |          |          |          |          | GND      |
| 2          | GND      |          |          |          |          |          | GND      |
| 1          | GND      |          |          |          |          |          | GND      |
| <b>Pin</b> | <b>Z</b> | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> |

## Backplane Connector Description

### Optional VI/O Taps (JP1、JP2):

设置 CPCI 总线的 VI/O 电压: +3.3V / +5V selectable, 出厂默认+5V.

### Optional Power Taps :

The optional power taps are for +5V, 3.3V, +12V, GND.

### PWR\_ON:

如果使用前置开关要把电阻 RA, RB 去掉。

### RESET:

硬件系统复位按钮。

### 供电方式:

出厂默认 ATX 供电, 如用标准 CPCI 电源供电要把电阻 RA, RB 去掉。

### IPMB:

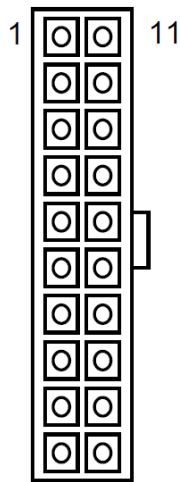
System Management.

| Pin | Signal   | Pin | Signal    |
|-----|----------|-----|-----------|
| 1   | IPMB_PWR | 2   | SMB_ALERT |
| 3   | IPMB_SDA | 4   | SMB_SDA   |
| 5   | IPMB_SCL | 6   | SMB_SCL   |
| 7   | GND      | 8   | GND       |
| 9   | GND      | 10  | GND       |

### Volt:

All the alarm signals and various power supply are connected to it. It is used to connect external monitor module.

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | -12V   | 2   | PRST#  |
| 3   | +12V   | 4   | DEG#   |
| 5   | 3.3V   | 6   | FAL#   |
| 7   | 5V     | 8   | GND    |
| 9   | INH#   | 10  | GND    |

**XP1&XP2: ATX Power Connector**

| Pin | Signal     | Pin | Signal  |
|-----|------------|-----|---------|
| 1   | +3.3V      | 11  | +3.3V   |
| 2   | +3.3V      | 12  | -12V    |
| 3   | GND        | 13  | GND     |
| 4   | +5V        | 14  | PS_ON_L |
| 5   | GND        | 15  | GND     |
| 6   | +5V        | 16  | GND     |
| 7   | GND        | 17  | GND     |
| 8   | POWER GOOD | 18  | -5V     |
| 9   | 5V STB     | 19  | +5V     |
| 10  | +12V       | 20  | +5V     |

注意:

- 1, 从第 5 槽到第 8 槽位置背部 J1, J2 位置连接器被桥接模块占用, 所以不支持后 I/O

BACKPLANE TOP VIEW

