The AirBorn stackable compliant connector family is one of AirBorn’s solutions for high-density, board-to-board stacking applications. This connector family is available in 0.075” contact spacing and 100 Ω and 85 Ω differential serial buses.

- Wide variety of standard pin/tail lengths accommodate any board-to-board spacing
- 0.075” contact spacing
- Reliable “eye of the needle”-compliant section design eliminates soldering
- BeCu contacts (special high-conductivity, high-temperature alloy)
- Very robust socket contact (low-stress design)
- Individually repairable contacts
RC324 - 3-Row Bottom-of-Stack Board Mount Connector with SI

Contact spacing: 0.075” (1.91 mm)

A full bodied high-density press-fit connector with a 3-row aligned contact field for improved signal integrity. Use at the bottom of an RCII board stack application.

Sample Part Number Format: RC324-050-101-3000

MATED HEIGHT
The connector body height is 0.300” and, when used with the -20 or -30 (0.270”) contact, the mounting is flush (board-bottom mounted to connector top). This board-bottom to connector top spacing can be modified based on the contact selected by approximately the difference in pin length. See Table 2.

Materials and Finishes
Contact: BeCu per ASTM-B768 (BeCu C17410 brush alloy 174)
Contact Finish: Gold per MIL-G-45204 over nickel per JAW QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM-A582, passivated per MIL-M-24519
Guide Pin/Socket: BeCu per ASTM-B196/197, nickel-plated per QQ-N-290

Performance
Contact Rating: 3.0 amperes
Operating Temperature: -65°C to +125°C
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Resistance: 3 to 5 milliohms (contact length dependent)
Contact Engagement Force: 4.0 oz. (113 g.) max. w/0.0246” dia. test pin
Contact Separation Force: 0.5 oz. (14 g.) min. w/0.0226” dia. test pin
Compliant Insertion Force: 22.5 lb. (10.21 Kg.) max. per contact
Compliant Removal Force: 4.5 lb. (2.04 Kg.) min. per contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
RC324 - 3-Row Mid/Top-of-Stack Connector with SI

Contact spacing: 0.075” (1.91 mm)

A full bodied high-density press-fit connector with a 4-row aligned contact field for improved signal integrity. Use in RCII board-to-board stacking applications and/or at the top of the board stack.

Sample Part Number Format: RC324-050-201-3900

MATED HEIGHT

The connector body height is 0.300” and, when used with the -20 or -30 (0.270”) contact, the mounting is flush (board-bottom mounted to connector top). This board-bottom to connector top spacing can be modified based on the contact selected by approximately the difference in pin length. See Table 2.

SI DATA – Differential 100 Ohm

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.0 GHz @ -3 dB</td>
</tr>
<tr>
<td>2</td>
<td>4.6 GHz @ -20 dB</td>
</tr>
<tr>
<td>3</td>
<td>4.0 GHz @ -50 dB</td>
</tr>
<tr>
<td>4</td>
<td>4.0 GHz @ -48 dB</td>
</tr>
</tbody>
</table>

MATERIALS and FINISHES

Contact: BeCu per ASTM-B768 (BeCu C17410 brush alloy 174)
Contact Finish: Gold per MIL-G-45204 over nickel per IAW QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM-A582, passivated per ASTM-A697
Guide Pin/Socket: BeCu per ASTM-B196/197, nickel-plated per QQ-N-290

PERFORMANCE

Contact Rating: 3 amperes
Operating Temperature: -65 °C to +125 °C
Insulation Resistance: 5,000 megohms minimum at 500 VDC
Durability: 500 connector mating cycles
Contact Resistance: 3 to 5 milliohms (contact length dependent)
Contact Engagement Force: 4.0 oz. (113 g.) max.
Contact Separation Force: 0.5 oz. (14 g.) min.
Compliant Insertion Force: 4.0 lb. (18.14 Kg.) max.
Compliant Removal Force: 4.5 lb. (2.04 Kg.) min.

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
RC424 - 4-Row Bottom-of-Stack Board Mount Connector with SI

Contact spacing: 0.075” (1.91 mm)

A full bodied high-density press-fit connector with a 4-row aligned contact field for improved signal integrity. Use at the bottom of an RCII board stack application.

MATERIALS and FINISHES

Contact: BeCu per ASTM-B768 (BeCu C17410 brush alloy 174)
Contact Finish: Gold per MIL-G-45204 over nickel per IAW QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM-A582, passivated per ASTM-A967
Guide Pin/Socket: BeCu per ASTM-B196/197, nickel-plated per QQ-N-290

NOTE: AirBorn can manufacture special configurations to your exact specifications.

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.

PERFORMANCE

Contact Rating: 3 amperes
Operating Temperature: -65°C to +125°C
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Resistance: 3 to 5 milliohms (contact length dependent)
Contact Engagement Force: 4.0 oz. (113 g.) max. w/0.0246” dia. test pin
Contact Separation Force: 0.5 oz. (14 g.) min. w/0.0226” dia. test pin
Compliant Insertion Force: 22.5 lb. (10.21 Kg.) max. per contact
Compliant Removal Force: 4.5 lb. (2.04 Kg.) min. per contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.

Sample Part Number Format: RC424-060-101-3000

CONTACT [10 – 0.095” Long]
HARDWARE [30 – 0.195” Long (use with #10 contact)]

Plating: 1 – 50 µ” Au

CONNECTOR [RC424] - [Configuration] - [Plating] - [Type] - [Variation]

SI DATA

1 Diff. Insertion Loss 6.0 GHz @ -3 dB
2 Diff. Return Loss 4.6 GHz @ -20 dB
3 NEXT 4.0 GHz @ -50 dB
4 FEXT 4.0 GHz @ -48 dB

MATED HEIGHT

The connector body height is 0.300” and, when used with the -20 or -30 (0.270”) contact, the mounting is flush (board-bottom mounted to connector top). This board-bottom to connector top spacing can be modified based on the contact selected by approximately the difference in pin length. See Table 2.

Contact spacing: 0.075” (1.91 mm)
A full bodied high-density press-fit connector with a 4-row aligned contact field for improved signal integrity. Use at the bottom of an RCII board stack application.
RC424 - 4-Row Mid/Top-of-Stack Connector with SI

Contact spacing: 0.075" (1.91 mm)

A full bodied high-density press-fit connector with a 4-row aligned contact field for improved signal integrity. Use in RCII board-to-board stacking applications and/or at the top of the board stack.

MATED HEIGHT

The connector body height is 0.300" and, when used with the -20 or -30 (0.270") contact, the mounting is flush (board-bottom mounted to connector top). This board-bottom to connector top spacing can be modified based on the contact selected by approximately the difference in pin length. See Table 2.

SI DATA

<table>
<thead>
<tr>
<th></th>
<th>Diff. Insertion Loss</th>
<th>6.0 GHz @ -3 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Diff. Return Loss</td>
<td>4.6 GHz @ -20 dB</td>
</tr>
<tr>
<td>3</td>
<td>NEXT</td>
<td>4.0 GHz @ -50 dB</td>
</tr>
<tr>
<td>4</td>
<td>FEXT</td>
<td>4.0 GHz @ -48 dB</td>
</tr>
</tbody>
</table>

MATERIALS and FINISHES

Contact: BeCu per ASTM-B768 (BeCu C17410 brush alloy 174)
Contact Finish: Gold per MIL-G-45204 over nickel per IAW QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM-A582, passivated per ASTM-A667
Guide Pin/Socket: BeCu per ASTM-B196/197, nickel-plated per QQ-N-290

NOTE: AirBorn can manufacture special configurations to your exact specifications.

PERFORMANCE

Contact Rating: 3 amperes
Operating Temperature: -65° C to +125° C
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Resistance: 3 to 5 milliohms (contact length dependent)
Contact Engagement Force: 4.0 oz. (113 g.) max. w/0.0246" dia. test pin
Contact Separation Force: 0.5 oz. (14 g.) min. w/0.0226" dia. test pin
Compliant Insertion Force: 22.5 lb. (10.21 Kg.) max. per contact
Compliant Removal Force: 4.5 lb. (2.04 Kg.) min. per contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
RCII 3-ROW DIMENSIONS

PWB-PLATED THRU-HOLE RECOMMENDATIONS:

- Board material: FR-4 (or equivalent) with 1.0 oz. copper
- Board thickness: 0.058" minimum
- Drilled hole: Ø 0.033"
- Copper plating thickness: 0.0020"
- Tin-lead plating thickness: 0.0005"
- Finished hold diameter: Ø 0.028" (Ø 0.028" ±0.002" required)
RCII 3-ROW DIMENSIONS

Hardware Options

**TABLE 1**

<table>
<thead>
<tr>
<th>CONTACT TERMINATION</th>
<th>CONTACT D</th>
<th>HARDWARE E</th>
</tr>
</thead>
<tbody>
<tr>
<td>201, 301</td>
<td>0.270</td>
<td>0.370</td>
</tr>
<tr>
<td>211, 311</td>
<td>0.300</td>
<td>0.400</td>
</tr>
<tr>
<td>221, 321</td>
<td>0.400</td>
<td>0.500</td>
</tr>
<tr>
<td>231, 331</td>
<td>0.500</td>
<td>0.600</td>
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<tr>
<td>241, 341</td>
<td>0.700</td>
<td>0.800</td>
</tr>
<tr>
<td>251, 351</td>
<td>0.800</td>
<td>0.900</td>
</tr>
<tr>
<td>261, 361</td>
<td>0.900</td>
<td>1.000</td>
</tr>
<tr>
<td>271, 371</td>
<td>0.600</td>
<td>0.700</td>
</tr>
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<td>281, 381</td>
<td>1.000</td>
<td>1.100</td>
</tr>
<tr>
<td>101</td>
<td>0.095</td>
<td>0.195</td>
</tr>
</tbody>
</table>

**PWB-PLATED THRU-HOLE RECOMMENDATIONS:**

- Board material: FR-4 (or equivalent) with 1.0 oz. copper
- Board thickness: 0.058" minimum
- Drilled hole: Ø 0.033"
- Copper plating thickness: 0.0020"
- Tin-lead plating thickness: 0.0005"
- Finished hold diameter: Ø 0.028" (Ø 0.028" ±0.002" required)
**RCII 3-ROW DRAWINGS**

**Board Footprint and Dimensions**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>CONTACT ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>10 9 8 7 6 5 4 3 2 1 15 14 13 12 11 25 24 23 22 21 20 19 18 17 16</td>
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<tr>
<td>50</td>
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<td>75</td>
<td>30 29 22 21 20 19 12 11 10 9 2 1 45 41 40 36 35 31</td>
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<tr>
<td>100</td>
<td>40 39 32 31 30 29 22 21 20 19 12 11 10 9 2 1 60 56 55 51 50 46 45 41</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>SIZE/BANKS</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>30/1</td>
<td>1.235</td>
<td>1.005</td>
<td>0.675</td>
</tr>
<tr>
<td>60/2</td>
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<td>1.780</td>
<td>1.450</td>
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<tr>
<td>90/3</td>
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</tr>
<tr>
<td>120/4</td>
<td>3.560</td>
<td>3.330</td>
<td>3.000</td>
</tr>
</tbody>
</table>

**PWB-Plated Thru-Hole Recommendations:**

- Board material: FR-4 (or equivalent) with 1.0 oz. copper
- Copper plating thickness: 0.0020”
- Board thickness: 0.058” minimum
- Tin-lead plating thickness: 0.0005”
- Drilled hole: Ø 0.033”
- Finished hold diameter: Ø 0.028” (Ø 0.028” ±0.002” required)
- Ø 0.028” ±0.002” TYP
- Ø 0.046 Annular Ring TYP
- Ø 0.136 ±0.003 (Unplated)
RCII 4-ROW DIMENSIONS

Board material: FR-4 (or equivalent) with 1.0 oz. copper
Board thickness: 0.058" minimum
Drilled hole: Ø 0.033"

Copper plating thickness: 0.0020"
Tin-lead plating thickness: 0.0005"
Finished hold diameter: Ø 0.028" (Ø 0.028" ±0.002" required)
RCII 4-ROW DIMENSIONS

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PWB-PLATED THRU-HOLE RECOMMENDATIONS:

- Board material: FR-4 (or equivalent) with 1.0 oz. copper
- Board thickness: 0.058" minimum
- Drilled hole: Ø 0.033"
- Copper plating thickness: 0.0020"
- Tin-lead plating thickness: 0.0005"
- Finished hold diameter: Ø 0.028" (Ø 0.028" ±0.002" required)
Board Footprint and Dimensions

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<td>60</td>
<td>20 19 12 11 10 9 2 1 30 29 28 27 26 25 24 23 22 21 40 39 38 37 36 35 31</td>
</tr>
<tr>
<td>70</td>
<td>30 29 22 21 20 19 12 11 10 9 2 1 45 44 43 42 41 55 54 53 52 51 50 46 47</td>
</tr>
<tr>
<td>120</td>
<td>40 39 32 31 30 29 22 21 20 19 12 11 10 9 2 1 80 79 78 77 76 75 71 70 66 65 61 60</td>
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DIMENSIONS

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PWB-PLATED THRU-HOLE RECOMMENDATIONS:

- Board material: FR-4 (or equivalent) with 1.0 oz. copper
- Board thickness: 0.058" minimum
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