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AirBorn introduces a Micro-D, multi-gigabit, high-speed connector designed to meet the performance requirements of MIL-DTL-83513, where applicable. This rugged connector system is designed to handle LVDS serial bus signals like Ethernet, serial rapid IO, etc. This versatile product has a range from one to ten high-speed modules and up to fifty signal contacts making it ideal for most high-reliability applications.
MMHS – Cable I/O (Male)

MMHS cable connectors are used in cable applications where both signal and squa...

Sample Part Number Format: MMHS-02L4-11D-018-5000

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

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CONTACT CUSTOMER SERVICE
CALL 512-863-5585
x6400

MATERIALS and FINISHES

Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 µ" minimum
Shells: Aluminum alloy 6061-T6
Shell Finishes: Electroless nickel, electroless nickel-plated cadmium, or gold-plated
Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Embedment: Frey Eng. Co. compound CF3003-60 & L-Ii-49
Hardware: Corrosion-resistant steel
Interfacial Seal Gaskets: Fluorosilicone

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

PERFORMANCE

Contact Rating: 3 amperes maximum
Operating Temperature: -55° C to 125° C
Maximum Working Voltage: 600V, RMS, 60kHz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6.0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

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MMHSM-PNB-1F

4
**MMHS – Cable I/O (Female)**

MMHS cable connectors are used in cable applications where both signal and quadrax modules are desired. These connectors come with a variety of wiring and hardware options and all cable connectors are available in custom lengths.

---

### NOTES

1. All high-speed receptacles have fluoropolymer interfacial seals.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
4. Captivated hardware is factory-installed and non-removable.
5. **Refer to “Hardware Keying Options” on page 15.**

---

### MATERIALS and FINISHES

- **Socket Contact:** Brass
- **Pin Contacts:** BeCu alloy strip
- **Contact Finish:** Gold plate, 50 µ" minimum
- **Shells:** Aluminum alloy 6061-T6
- **Shell Finishes:** Electroless nickel, electrodeposited cadmium, or gold-plated
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP)
- **Embedment:** Frey Eng. Co. compound GF3003-80 & L-Li-49
- **Hardware:** Corrosion-resistant steel
- **Interfacial Seal Gaskets:** Fluorosilicone

---

### PERFORMANCE

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55° C to 125° C
- **Maximum Working Voltage:** 600V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 500 connector mating cycles
- **Contact Engaging Force:** 5.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

---

### Sample Part Number Format: MMHS-01R1-410-006-1810

- **SERIES**
  - Cable I/O (Female)
- **HIGH-SPEED MODULES**
  - 01 – 1 Module
  - 02 – 2 Modules
  - 03 – 3 Modules
  - 04 – 4 Modules
  - 05 – 5 Modules
  - 06 – 6 Modules
  - 07 – 7 Modules
  - 08 – 8 Modules
  - 09 – 9 Modules
  - 0A – 10 Modules
- **WIRE TYPE & GAUGE, QUADRAX**
  - X – See Quadrax Wire Codes on page 13
- **WIRE LENGTH**
  - XXX – Wire length in inches (minimum 3")
  - Example: 018 = 18"
- **BODY STYLE**
  - 2 – Receptacle
  - 4 – Receptacle with ground fingers (preferred)
- **BODY PLATING (LCP INSULATORS)**
  - 1 – Electroless nickel-plated aluminum shell
  - 2 – Electroless nickel-plated aluminum shell
  - 3 – Electrodeposited cadmium-plated aluminum shell
  - 5 – Gold-plated aluminum shell
  - 6 – Gold-plated aluminum shell
- **HARDWARE**
  - 000 – No hardware
  - 620 – Two fixed jacknuts, captivated
  - 810 – Turning jackscrews, captivated
  - NXX – Keying jacknuts
  - JXX – Keying jackscrews

---

### SIGNAL INTEGRITY PERFORMANCE (Connectors Only)

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Impedance, filtered to 70 ps (20-80%)</td>
<td>100 ohm +/- 10</td>
</tr>
<tr>
<td>2</td>
<td>Diff. Insertion Loss</td>
<td>4.0 GHz @ -3 dB</td>
</tr>
<tr>
<td>3</td>
<td>Diff. Return Loss</td>
<td>1.8 GHz @ -20 dB</td>
</tr>
<tr>
<td>4</td>
<td>Intra-Pair</td>
<td>15 ps</td>
</tr>
</tbody>
</table>

---

**www.airborn.com**
(512) 863-5585
MJHS – Jumper Cable

MJHS rugged metal cable assemblies are used in jumper applications where both signal and quadrax modules are desired. These connectors come with a variety of wiring and hardware options and all cable connectors are available in custom lengths.

Sample Part Number Format: MJHS-04R1-33D-022-5N41

**SERIES**
- Jumper Cable
  - 01 – 1 Module
  - 02 – 2 Modules
  - 03 – 3 Modules
  - 04 – 4 Modules
  - 05 – 5 Modules (max. sig. 40)
  - 06 – 6 Modules (max. sig. 30)
  - 07 – 7 Modules (max. sig. 20)
  - 08 – 8 Modules (max. sig. 10)
  - 09 – 9 Modules (max. sig. 10)
  - 0A – 10 Modules (no signals)

**HIGH-SPEED MODULES**
- Series No: 1 – 4
  - Module No: 0 – 4
  - Contact No: 0 – 50

**WIRE TYPE & GAUGE, QUADRAX**
- X – See Quadrax Wire Codes on page 13

**WIRE LENGTH**
- XXX – Wire length in inches (minimum 3’)
  - Example: 018 = 18”

**BODY STYLE**
- 1 – Male-to-Male
- 2 – Male-to-Female
- 3 – Male-to-Female, ground fingers
- 4 – Female-to-Female
- 5 – Female-to-Female (both with ground fingers)

**BODY PLATING**
- 1 – Electroless nickel-plated aluminum shell
- 2 – Electroless nickel-plated aluminum shell (both)
- 3 – Electrodeposited cadmium-plated aluminum shell
- 4 – Gold-plated aluminum shell
- 5 – Gold-plated aluminum shell (both)

**SIGNAL CONTACTS**
- L0 – Left-side key – No signal contacts
- L1 – Left-side key – 10 signal contacts
- L2 – Left-side key – 20 signal contacts
- L3 – Left-side key – 30 signal contacts
- L4 – Left-side key – 40 signal contacts
- L5 – Left-side key – 50 signal contacts
- R0 – Right-side key – No signal contacts
- R1 – Right-side key – 10 signal contacts
- R2 – Right-side key – 20 signal contacts
- R3 – Right-side key – 30 signal contacts
- R4 – Right-side key – 40 signal contacts
- R5 – Right-side key – 50 signal contacts

**MATERIALS and FINISHES**
- Socket Contact: Brass
- Pin Contacts: BeCu alloy strip
- Contact Finish: Gold plate, 50 µm minimum
- Shells: Aluminum alloy 6061-T6
- Molded Insulators: Glass-filled liquid crystal polymer (LCP)
- Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49
- Hardware: Corrosion-resistant stainless steel
- Interfacial Seal Gaskets: Fluorosilicone

**PERFORMANCE**
- Contact Rating: 3 amperes maximum
- Operating Temperature: -55° C to 125° C
- Maximum Working Voltage: 600V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6.0 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

www.airborn.com
(512) 863-5585
MJHS-PBN-1F

MJHS-PBN-1F

**NOTES**
1. All high-speed receptacles have fluoropolymer interfacial seals.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
4. Captivated hardware is factory-installed and non-removable.
5. Refer to “Hardware Keying Options” on page 15.

**DIMENSIONS**

**WIRE LENGTH**

**CONTACT CUSTOMER SERVICE**
CALL 512-863-5585
x6400
MKHS – Right Angle Surface Board-Mount (Male)

MKHS are rugged metal connectors used in applications where a right angle orientation and a surface board-mount termination style are desired.

MATERIALS and FINISHES

Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 µ" minimum
Shells: Aluminum alloy 6061-T6
Shell Finishes: Electroless nickel, electrodeposited cadmium, or gold-plated Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49
Hardware: Compression-resistant steel
Interfacial Seal Gaskets: Fluorosilicone

PERFORMANCE

Contact Rating: 3 amperes maximum
Operating Temperature: -55° C to 125° C
Maximum Working Voltage: 600V, RMS, 60Hz
Insulation Resistance: 5,000 megarhms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6.0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

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Micro Quad™

Sample Part Number Format: MKHS-06L3-100-175-3J45

MKHS - High-Speed Modules
MKHS - Body Style
MKHS - Termination Plating
MKHS - Hardware

SIGNAL CONTACTS
L0 – Left-side key – No signal contacts
L1 – Left-side key – 10 signal contacts
L2 – Left-side key – 20 signal contacts
L3 – Left-side key – 30 signal contacts
L4 – Left-side key – 40 signal contacts
L5 – Left-side key – 50 signal contacts
R0 – Right-side key – No signal contacts
R1 – Right-side key – 10 signal contacts
R2 – Right-side key – 20 signal contacts
R3 – Right-side key – 30 signal contacts
R4 – Right-side key – 40 signal contacts
R5 – Right-side key – 50 signal contacts

SIGNAL INTEGRITY PERFORMANCE (Connectors Only)
1. Diff. Impedance, filtered to 70 ps (20-80%): 100 ohm +/- 10
2. Diff. Insertion Loss: 4.0 GHz @ -3 dB
3. Diff. Return Loss: 1.8 GHz @ -20 dB
4. Intra-Pair: 15 ps

NOTES
- Option not RoHS-compliant.
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
- Captivated hardware is factory-installed and non-removable.
- Refer to Hardware Keying Options on page 15.

Mechanical model & drawing for PCB layout information available on AirBorn.com.

www.airborn.com
(512) 863-5585
MKHS – Right Angle Surface Board-Mount (Female)

MKHS are rugged metal connectors used in applications where a right angle orientation and a surface board-mount termination style are desired.

**Sample Part Number Format: MKHS-04R1-400-275-2620**

- **SERIES**
  - Right Angle Surface Mount (Female)
- **HIGH-SPEED MODULES**
  - 01 – 1 Module
  - 02 – 2 Modules
  - 03 – 3 Modules
  - 04 – 4 Modules
  - 05 – 5 Modules (max. sig. 40)
  - 06 – 6 Modules (max. sig. 30)
  - 07 – 7 Modules (max. sig. 20)
  - 08 – 8 Modules (max. sig. 10)
  - 09 – 9 Modules (max. sig. 10)
  - 0A – 10 Modules (no signals)
- **BODY STYLE**
  - 200 – Female
  - 400 – Female with ground fingers (preferred)
- **TERMINATION PLATING**
  - 27 – Socket, horizontal surface-mount (SMT)
- **CONTACT TERMINATION**
  - 5 – 50 µ" Gold contact, SnPb alloy termination
  - 7 – 50 µ" Gold contact, SAC305-plated termination
- **BODY PLATING (LCP INSULATORS)**
  - 2 – Electrolese nickel-plated aluminum shell
  - 3 – Electroless nickel-plated cadmium-plated aluminum shell
  - 6 – Gold-plated aluminum shell
- **HARDWARE**
  - 000 – No hardware
  - 620 – Two fixed jacknuts, captivated
  - 810 – Turning jackscrews, captivated
  - NXX – Keying jacknuts***
  - JXX – Keying jackscrews***

**NOTES**

1. All high-speed receptacles have fluoropolymer interfacial seals.
   - Option not RoHS-compliant.
   - Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
   - Captivated hardware is factory-installed and non-removable.
   - Refer to Hardware Keying Options on page 15.

**MATERIALS and FINISHES**

- **Socket Contact:** Brass Pin Contacts: BeCu alloy strip Contact Finish: Gold plate, 50 µ" minimum Shells: Aluminum alloy 6061-T6 Shell Finishes: Electrolese nickel, electroless plated cadmium, or gold-plated Molded Insulators: Glass-filled liquid crystal polymer (LCP) Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49 Hardware: Corrosion-resistant steel Interfacial Seal Gaskets: Fluorosilicone

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55° C to 125° C
- **Maximum Working Voltage:** 600V RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

**SIGNAL INTEGRITY PERFORMANCE (Connectors Only)**

- **1** Diff. Impedance, filtered to 70 ps (20-80%): 100 ohm +/- 10
- **2** Diff. Insertion Loss: 4.0 GHz @ -3 dB
- **3** Diff. Return Loss: 1.8 GHz @ -20 dB
- **4** Intra-Pair: 15 ps
MLHS – Vertical Surface Board-Mount w/Fixed Hardware (Male)

MLHS are rugged metal connectors used in applications where a vertical orientation and a surface board-mount termination style are desired. These connectors have fixed hardware.
MLHS – Vertical Surface Board-Mount w/Fixed Hardware (Female)

MLHS are rugged metal connectors used in applications where a vertical orientation and a surface board-mount termination style are desired. These connectors have captivated fixed hardware.

Sample Part Number Format: MLHS-03R2-400-B77-3620

MLHS – Vertical Surface Board-Mount w/Fixed Hardware (Female)

NOTES

- Option not RoHS-compliant.
- All high-speed receptacles have fluoropolymer interfacial seals.
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
- Captivated hardware is factory-installed and non-removable.
- Refer to Hardware Keying Options on page 15.
- Mechanical model & drawing for PCB layout information available on AirBorn.com.

MATERIALS and FINISHES

- Socket Contact: Brass, BeCu alloy strip
- Contact Finish: Gold plate, 50 µm minimum
- Shells: Aluminum alloy 6061-T6
- Shell Finishes: Electroless nickel, electroless plated cadmium, or gold-plated
- Molded Insulators: Glass-filled liquid crystal polymer (LCP)
- Embedment: Frey Eng. Co. compound CF3003-60 & L-ii-49
- Hardware: Corrosion-resistant steel
- Interfacial Seal Gaskets: Frey Eng. Co. compound CF3003-60 & L-ii-49
- Fluorosilicone

PERFORMANCE

- Contact Rating: 3 amperes maximum
- Operating Temperature: -55°C to 125°C
- Maximum Working Voltage: 600V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6.0 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

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MLHSF-PNB-1E
MLHS – Vertical Surface Board-Mount w/Turning Hardware (Male)

MLHS are rugged metal connectors used in applications where a vertical orientation and a surface board-mount termination style are desired. These connectors have captive turning hardware.

**NOTES**
- Option not RoHS-compliant.
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
- Captivated hardware is factory-installed and non-removable.
- Refer to Hardware Keying Options on page 15.

Mechanical model & drawing for PCB layout information available on AirBorn.com.

**MATERIALS and FINISHES**

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

**PERFORMANCE**
- Contact Rating: 3 amperes maximum
- Operating Temperature: -65°C to 125°C
- Maximum Working Voltage: 600V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

**SIGNAL INTEGRITY PERFORMANCE (Connectors Only)**
- 1 Diff. Impedance, filtered to 70 ps (20-80%): 100 ohm +/- 10
- 2 Diff. Insertion Loss: 4.0 GHz @ -3 dB
- 3 Diff. Return Loss: 1.8 GHz @ -20 dB
- 4 Intra-Pair: 15 ps
MLHS – Vertical Surface Board-Mount w/Turning Hardware (Female)

MLHS are rugged metal connectors used in applications where a vertical orientation and a surface board-mount termination style are desired. These connectors have turning hardware.

**NOTES**
- Option not RoHS-compliant.
- All high-speed receptacles have fluoropolymer interfacial seals.
- Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. The key is the angled side of the interface.
- Captivated hardware is factory-installed and non-removable.
- Refer to Hardware Keying Options on page 15.

**MATERIALS and FINISHES**
- Socket Contact: Brass
- Pin Contacts: BeCu alloy strip
- Contact Finish: Gold plate, 50 µ" minimum
- Shells: Aluminum alloy 6061-T6
- Shell Finishes: Electroless nickel, electrodeposited cadmium, or gold-plated
- Molded Insulators: Glass-filled liquid crystal polymer (LCP)
- Embedment: Frey Eng. Co. compound CF3003-80 & LII-49
- Hardware: Corrosion-resistant steel
- Interfacial Seal Gaskets: Fluorosilicone

**PERFORMANCE**
- Contact Rating: 3 amperes maximum
- Operating Temperature: -55°C to 125°C
- Maximum Working Voltage: 600V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

**SIGNAL INTEGRITY PERFORMANCE (Connectors Only)**
1. Diff. Impedance, filtered to 70 ps (20-80%)
2. Diff. Insertion Loss 4.0 GHz @ -3 dB
3. Diff. Return Loss 1.8 GHz @ -20 dB
4. Intra-Pair 15 ps

**DIMENSIONS**

**CONTACT CUSTOMER SERVICE**
CALL 512-863-5585 x6400

Sample Part Number Format: MLHS-03L3-800-477-2J21

**MOUNT w/TURNING HARDWARE**

**SERIES**
- Vertical Surface-Mount (Female)

**HIGH-SPEED MODULES**
- 01 – 1 Module
- 02 – 2 Modules
- 03 – 3 Modules
- 04 – 4 Modules
- 05 – 5 Modules (max. sig. 40)
- 06 – 6 Modules (max. sig. 30)
- 07 – 7 Modules (max. sig. 20)
- 08 – 8 Modules (max. sig. 10)
- 09 – 9 Modules (max. sig. 10)
- 0A – 10 Modules (no signals)

**BODY STYLE**
- 600 – Female with mounting ears
- 800 – Female with ground fingers & mounting ears (preferred)

**CONTACT TERMINATION**
- 47 – Socket: vertical SMT, staggered leads - high-speed: single-sided leads - signals
- 67 – Socket: vertical SMT, staggered leads - high-speed: single-sided leads - signals
- 87 – Socket: vertical SMT, single-sided leads - signals
- 82 – Socket: high-speed: single-sided leads - signals

**BODY PLATING (LCP INSULATORS)**
- 2 – Electroless nickel-plated aluminum shell
- 3 – Electrodeposited cadmium-plated aluminum shell
- 6 – Gold-plated aluminum shell

**TERMINATION PLATING**
- 5 – 50 µ" Gold contact, Sn/Pb alloy termination
- 65 – 60 µ" Gold contact, SAC305-plated termination

**HARDWARE**
- 000 – No hardware
- 810 – Two Turning jackcrews, captivated***
- JXX – Keying jackcrews***

**SIGNAL CONTACTS**
- L0 – Left-side key – No signal contacts
- L1 – Left-side key – 10 signal contacts
- L2 – Left-side key – 20 signal contacts
- L3 – Left-side key – 30 signal contacts
- L4 – Left-side key – 40 signal contacts
- L5 – Left-side key – 50 signal contacts
- R0 – Right-side key – No signal contacts
- R1 – Right-side key – 10 signal contacts
- R2 – Right-side key – 20 signal contacts
- R3 – Right-side key – 30 signal contacts
- R4 – Right-side key – 40 signal contacts
- R5 – Right-side key – 50 signal contacts

**High-Reliability Contact MIL-83513**
QUADRAx CABLE CONSTRUCTION

Conductors: Silver-plated copper alloy
Insulation: FEP
Cable: Planetary twist with filler in core
Binder: PTFE tape
Outer Shield: Braided silver-plated copper (95% min. coverage)
Jacket: White FEP
Differential Pairs: Pair 1 - blue (position M1), orange (position M3)
Pair 2 - green (position M2), red (position M4)
Differential Impedance: 100 Ω ±10 Ω; 110 Ω ±6 Ω
Delay Skew within Pair: 5.0 ps/ft max.

QUADRAx WIRE CODES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 Ω 24 AWG</td>
</tr>
<tr>
<td>2</td>
<td>100 Ω 26 AWG</td>
</tr>
<tr>
<td>3</td>
<td>100 Ω 28 AWG</td>
</tr>
<tr>
<td>4</td>
<td>100 Ω 30 AWG</td>
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<td>110 Ω 24 AWG</td>
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<td>7</td>
<td>110 Ω 28 AWG</td>
</tr>
<tr>
<td>8</td>
<td>110 Ω 30 AWG</td>
</tr>
</tbody>
</table>

NOTES

1. Additional high-speed cable types are available as standard options (i.e., drain wire, TwinAx, shielded pairs, shielded pair quad, twisted pair quad, etc.). Contact AirBorn for construction specifications of alternate cable.

2. Additional wire types are available as standard options (i.e., twisted pair, shielded, braid, etc.).
### SIGNAL WIRE CODES

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ten repeating colors per M83513</td>
<td>SAE AS22759/11-24</td>
</tr>
<tr>
<td>B</td>
<td>Non-repeating colors per MIL-STD-681</td>
<td>SAE AS22759/11-24</td>
</tr>
<tr>
<td>C</td>
<td>White</td>
<td>SAE AS22759/11-24</td>
</tr>
<tr>
<td>D</td>
<td>Ten repeating colors per M83513</td>
<td>SAE AS22759/11-26</td>
</tr>
<tr>
<td>E</td>
<td>Non-repeating colors per MIL-STD-681</td>
<td>SAE AS22759/11-26</td>
</tr>
<tr>
<td>F</td>
<td>White</td>
<td>SAE AS22759/11-26</td>
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<tr>
<td>G</td>
<td>Ten repeating colors per M83513</td>
<td>SAE AS22759/11-28</td>
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<td>H</td>
<td>White</td>
<td>SAE AS22759/11-28</td>
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<td>SAE AS22759/33-24*</td>
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<td>White</td>
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<td>SAE AS22759/33-30*</td>
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<td>SAE AS22759/33-30*</td>
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<tr>
<td>S</td>
<td>24 AWG non-repeating colors per MIL-STD-681</td>
<td>NEMA HP3-EXBEB</td>
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<tr>
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<td>24 AWG white</td>
<td>NEMA HP3-EXBEB</td>
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<td>NEMA HP3-EXBBB</td>
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*Corrosion has been experienced on connectors that are pre-wired with M22759/33 and stored in sealed environments. Exercise caution in packaging and storing when using this wire.

*Option is not RoHS-compliant*
Select the appropriate two-digit number above and include as the last two digits of the hardware code in the part number. (Keying is factory-installed and non-removable.)

Example: MMHS-03L2-12D-197-2J11
MKHS-03R2-200-275-2N11
The AirBorn microSI product line is designed to meet requirements for high-speed/signal integrity applications while still delivering the reliability customers have come to expect from AirBorn. MicroSI delivers flexibility by design, offering vertical board-mount, right angle board-mount, and cable I/O configurations supporting 1X, 4X, and 8X 100 Ω and 85 Ω differential serial buses. Its balanced design limits skew within pairs. The MIL-DTL-83513 (Micro-D) qualified contact system and metal shells ensure ruggedness and durability.
MMSI – Cable I/O (Male)

MMSI cable connectors are used in cable applications where signal integrity is desired. The connector interface controls the polarization of the twinax contact style. Comes with a variety of wiring and hardware options. All cable connectors are available in custom lengths.

Sample Part Number Format: MMSI-01L-14B0-006-2810

NOTES
1. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 3 inches. If overall braid or Halar® is specified the minimum length is 6 inches.

Option not RoHS-compliant

* Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.

** Captivated hardware is factory-installed and non-removable.

*** Factory-installed and non-removable.

**** Refer to “Keying Hardware Options” on page 61.

MATERIALS and FINISHES

Socket Contact: Brass

Pin Contacts: BeCu alloy strip

Contact Finish: Gold plate, 50 µm minimum

Shells: Aluminum alloy 6061-T6

Shell Finishes: Electroless nickel or gold

Molded Insulators: Glass-filled liquid crystal polymer (LCP)

Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49

Hardware: Corrosion-resistant steel

Interfacial Seal Gaskets: Fluorosilicone

EMI Gaskets: Corrosion-resistant steel

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

PERFORMANCE

Contact Rating: 3 amperes maximum

Operating Temperature: -55°C to 125°C

Maximum Working Voltage: 200V, RMS, 60Hz

Insulation Resistance: 5,000 megohms minimum at 500 VDC

Durability: 500 connector mating cycles

Contact Engaging Force: 6.0 ounces maximum/contact

Contact Separating Force: 0.5 ounces minimum/contact

Mating and Unmating Force: 6.0 ounces maximum/contact

NOTE: Performance values are estimates at this time. Actual values will be determined when final product testing is complete.
**MMSI DIMENSIONS (PLUG)**

![ISOMETRIC VIEW](MMSI-DIM-1.png)

**MMSI–01L–1450–006–2810**
FOR REFERENCE ONLY

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<td>2.847</td>
<td>2.310</td>
<td>2.523</td>
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</table>

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MMSI DIMENSIONS with HALAR® SLEEVE (PLUG)

1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61

<table>
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</table>

Please consult the Airborn website for the latest revision of this document prior to beginning any design work.
MMSI – Cable I/O (Female)

MMSI cable connectors are used in cable applications where signal integrity is desired. The connector interface controls the polarization of the twinax contact style. Comes with a variety of wiring and hardware options. All cable connectors are available in custom lengths.

NOTES

1. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 3 inches. If overall braid or Halar® is specified the minimum length is 6 inches.
2. All microSI females have fluorosilicone interfacial seals installed.

* Option not RoHS-compliant
* Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
** Captivated hardware is factory-installed and non-removable.
*** Factory-installed and non-removable.

Sample Part Number Format: MMSI-01L-24B0-006-2810

NOTES

MMSIF-PNB-1D

www.airborn.com
(512) 863-5585
MMSI DIMENSIONS (RECEPTACLE)

![Diagram of receptacle dimensions]

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PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MMSI DIMENSIONS with HALAR® SLEEVE (RECEPTACLE)

ISOMETRIC VIEW OF RCPT END
MMSI-01L-24B3-006-2810
FOR REFERENCE ONLY

---

1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61

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<table>
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<td>3.106</td>
<td>2.847</td>
<td>2.310</td>
<td>2.523</td>
</tr>
</tbody>
</table>
MJSI – Cable Assembly

MJSI cable assemblies are used in jumper applications where signal integrity is desired. They have a wide range of styles, wiring options, and hardware options. All cable assemblies are available in custom lengths.

**NOTES**

1. All microSI females have fluorosilicone interfacial seals installed.
2. Overall braid and/or Halar® will be 1.0 ± 0.5 inches shorter than specified wire length. Minimum length without overall braid or Halar® is 6 inches.
3. Hardware is the same for both connectors unless otherwise noted.
   * Option not RoHS-compliant
   * Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
   ** Captivated hardware is factory-installed and non-removable.
   *** Refer to “Keying Hardware Options” on page 61.

**PERFORMANCE**

Contact Rating: 3 amperes maximum
Operating Temperature: -55°C to 125°C
Maximum Working Voltage: 200V, RMS, 60Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6.0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

**MATERIALS and FINISHES**

Socket Contact: BeCu alloy strip
Pin Contacts: Aluminum alloy 6061-T6
Shell: Glass-filled liquid crystal polymer (LCP)
Shell Finishes: Corrosion-resistant steel
Interfacial Seal Gaskets: Glass-filled liquid crystal polymer (LCP)
EMI Gaskets: Fluorosilicone
Call 512-863-5585 for additional information.

**CONTACT CUSTOMER SERVICE**

CALL 512-863-5585 x6400

AirBnD
1. See next page for cable with braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See “Polarized Interface Pinouts” on page 59
4. See “Keying Hardware Options” on page 61
MJSI DIMENSIONS with HALAR® SLEEVE

1. See previous page for cable without braid or Halar®
2. Plug to receptacle jumper shown. See Part Number Buildup for available options.
3. See "Polarized Interface Pinouts" on page 59
4. See "Keying Hardware Options" on page 61
MJSI MATING FACE ORIENTATION

MATING FACE ORIENTATION

PLUG TO RECEPTACLE

RECEPTACLE TO RECEPTACLE

LEFT POLARIZATION SHOWN
(SEE PART NUMBER BUILDUP NOTES FOR DETAILS)
MKSI – Right Angle (Male)

MKSI right angle board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

Please consult the AirBORN website for the latest revision of this document prior to beginning any design work.

Sample Part Number Format: MKSI-01R-1000-175-2810

**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.

**MATERIALS and FINISHES**

- **Socket Contact:** Brass
- **Pin Contacts:** BeCu alloy strip
- **Contact Finish:** Gold plate, 50 μ" minimum
- **Shells:** Aluminum alloy 6061-T6
- **Shell Finishes:** Electroless nickel or gold
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP)
- **Embedment:** Frey Eng. Co. compound CF3003-80 & L-II-49
- **Hardware:** Corrosion-resistant steel
- **Interfacial Seal Gaskets:** Fluorosilicone
- **EMI Gaskets:** Corrosion-resistant steel

**PERFORMANCE**

- **Contact Rating:** 3 amperes maximum
- **Operating Temperature:** -55°C to 125°C
- **Maximum Working Voltage:** 200V, RMS, 60Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 500 connector mating cycles
- **Contact Engaging Force:** 6.0 ounces maximum/contact
- **Contact Separating Force:** 0.5 ounces minimum/contact
- **Mating and Unmating Force:** 10 ounces maximum/contact

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

**SIGNAL INTEGRITY PERFORMANCE** (Connectors Only)

<p>| | | | | |</p>
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<td>1</td>
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<td>100 ohm</td>
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<tr>
<td>2</td>
<td>Diff. Insertion Loss</td>
<td>10 GHz @ -3 dB</td>
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<td>3</td>
<td>Diff. Return Loss</td>
<td>7.5 GHz @ -10 dB</td>
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<tr>
<td>4</td>
<td>Intra-Pair</td>
<td>&lt; 2 ps</td>
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1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Left Polarization

(0.028) TYP
(0.038) TYP
(0.120) TYP

(0.081)
(0.35) REF
(0.140)

2X (0.200)
2X Ø0.125 THRU

2X (0.030)
2X (0.030)
2X (0.201)
2X (0.429)

(0.063) OPTIONAL ANCHOR VIAS
CHASSIS GROUND FREE OF SOLDER MASK

(0.040) TYP
(0.046)

(0.070) PAD TO PAD TYP

1.330 REF
(0.930)

(0.35) REF
(0.140)

1.330 REF
(0.930)

2X Ø0.0630 THRU DO NOT PLATE HOLES

2X Ø0.0630 THRU DO NOT PLATE HOLES

(30°)

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Right Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
5. See "Keying Hardware Options" on page 61.
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

4X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

www.airborn.com
(512) 863-5585
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI – Right Angle (Female)

MKSI right angle board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

Sample Part Number Format: MKSI-01L-2000-275-2620

MKSI

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<tr>
<th>SERIES</th>
<th>SIZE &amp; INTERFACE POLARIZATION*</th>
<th>STYEl</th>
<th>SOCKET TERMINATION (50 μ“ Au Contact)</th>
<th>BODY PLATING</th>
<th>HARDWARE</th>
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<tr>
<td>Right Angle</td>
<td>Right Angle (Female)</td>
<td>2000</td>
<td>275 – Sn/Pb alloy 0°</td>
<td>2 – Electroless nickel</td>
<td>620 – Fixed jacknut</td>
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<tr>
<td>1.78 mm</td>
<td>01L – 1X Left (23 pins, 4 DP +9SB)</td>
<td>01R – 1X Right (23 pins, 4 DP +9SB)</td>
<td>278 – SAC305</td>
<td>6 – Gold</td>
<td>810 – Turning jackscrews, captivated**</td>
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<tr>
<td></td>
<td>04L – 4X Left (41 pins, 10 DP +9SB)</td>
<td>04R – 4X Right (41 pins, 10 DP +9SB)</td>
<td></td>
<td></td>
<td>NXX – Keying jacknuts***</td>
</tr>
<tr>
<td></td>
<td>08L – 8X Left (65 pins, 18 DP +9SB)</td>
<td>08R – 8X Right (65 pins, 18 DP +9SB)</td>
<td></td>
<td></td>
<td>JXX – Keying jackscrews***</td>
</tr>
</tbody>
</table>

High-Reliability Contact
MIL-DTL-83513

NOTES

1. All microSI females have fluorosilicone interfacial seals installed.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
4. Captivated hardware is factory-installed and non-removable.
5. Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

MATERIALS and FINISHES

- Socket Contact: Brass
- Pin Contacts: BeCu alloy strip
- Contact Finish: Gold plate, 50 μ“ minimum
- Shells: Aluminum alloy 6061-T6
- Shell Finish: Electroless nickel or gold
- Molded Insulators: Glass-filled liquid crystal polymer (LCP)
- Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49
- Hardware: Corrosion-resistant steel
- Interfacial Seal Gaskets: Fluorosilicone
- EMI Gaskets: Corrosion-resistant steel

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

PERFORMANCE

- Contact Rating: 3 amperes maximum
- Operating Temperature: 55° C to 125° C
- Maximum Working Voltage: 200V, RMS, 60Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 500 connector mating cycles
- Contact Engaging Force: 6.0 ounces maximum/contact
- Contact Separating Force: 0.5 ounces minimum/contact
- Mating and Unmating Force: 10 ounces maximum/contact

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

www.airborn.com
(512) 863-5585
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

1X Sample with Left Polarization

**NOTE:** ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

1X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

4X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

4X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

8X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MKSI RECOMMENDED PC BOARD LAYOUT (RECEPTACLE)

8X Sample with Right Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

PLEASE CONSULT THE AIRBORNE WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MLSI – Vertical (Male)
MLSI vertical board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

Sample Part Number Format: MLSI-08L-1000-378-2810

SIZE & INTERFACE POLARIZATION*
01L – 1X Left (23 pins, 4 DP +9SB)
01R – 1X Right (23 pins, 4 DP +9SB)
04L – 4X Left (41 pins, 10 DP +9SB)
04R – 4X Right (41 pins, 10 DP +9SB)
08L – 8X Left (65 pins, 18 DP +9SB)
08R – 8X Right (65 pins, 18 DP +9SB)

PIN TERMINATION (50 μ" Au Contact)
375 – Sn/Pb alloy
378 – SAC305

BODY PLATING
2 – Electroless nickel
6 – Gold

HARDWARE
620 – Fixed jacknut
810 – Turning jackscrews, captivated**
NXX – Keying jacknuts***
JXX – Keying jackscrews***

NOTES
* Option not RoHS-compliant.
** Captivated hardware is factory-installed and non-removable.
*** Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

MATERIALS and FINISHES
Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 μ" minimum
Shells: Aluminum alloy 6061-T6
Shell Finish: Electroless nickel or gold
Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Embedment: Frey Eng. Co. compound CF3003-80 & L-II-49
Hardware: Corrosion-resistant steel
Interfacial Seal Gaskets: Fluorosilicone
EMI Gaskets: Corrosion-resistant steel

PERFORMANCE
Contact Rating: 3 amperes maximum
Operating Temperature: -55° C to 125° C
Maximum Working Voltage: 200V, RMS, 60Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6.0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

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

MLSIM-PNB-1D
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
1X Sample with Left Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

1X Sample with Right Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

4X Sample with Left Polarization

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.

MLSI RECOMMENDED PC BOARD LAYOUT (PLUG)

8X Sample with Left Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
ALEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
MLSI – Vertical (Female)

MLSI vertical board surface mount connectors are used in applications where signal integrity is desired. The connector interface controls the polarization of the connector. Comes with a variety of hardware options.

**NOTES**

1. All microSI females have fluorosilicone interfacial seals installed.
2. Option not RoHS-compliant.
3. Left or right polarization is determined by looking at the male interface with the LONG SIDE downward. Polarization matches the angled side. Sidebands are on the non-angled side.
4. Captivated hardware is factory-installed and non-removable.
5. Factory-installed and non-removable. Refer to “Keying Hardware Options” on page 61.

**MATERIALS and FINISHES**

Socket Contact: Brass
Pin Contacts: BeCu alloy strip
Contact Finish: Gold plate, 50 μ" minimum
Shells: Aluminum alloy 6061-T6
Shell Finishes: Electroless nickel or gold
Molded Insulators: Glass-filled liquid crystal polymer (LCP)
Hardware: Corrosion-resistant steel
Interfacial Seal Gaskets: Fluorosilicone
EMI Gaskets: Corrosion-resistant steel

**PERFORMANCE**

Contact Rating: 3 amperes maximum
Operating Temperature: -55°C to 125°C
Maximum Working Voltage: 200V, RMS, 60Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 500 connector mating cycles
Contact Engaging Force: 6.0 ounces maximum/contact
Contact Separating Force: 0.5 ounces minimum/contact
Mating and Unmating Force: 10 ounces maximum/contact

**SIGNAL INTEGRITY PERFORMANCE (Connectors Only)**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Impedance, filtered to 79 ps (20-80%)</td>
<td>100 ohm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Diff. Insertion Loss</td>
<td>10 GHz @ -3 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diff. Return Loss</td>
<td>7.5 GHz @ -10 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Intra-Pair</td>
<td>&lt; 2 ps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample Part Number Format**: MLSI-04L-2000-478-2810

**PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.**
MLSI DIMENSIONS (RECEPTACLE)

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
5. See "Keying Hardware Options" on page 61.

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK
1X Sample with Right Polarization

NOTE: ALL PADS MUST BE FREE OF SOLDER MASK

1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See "Polarized Interface Pinouts" on page 59
5. See "Keying Hardware Options" on page 61
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. See “Polarized Interface Pinouts” on page 59.
5. See “Keying Hardware Options” on page 61.
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
4. “Polarized Interface Pinouts” on page 59
5. See “Keying Hardware Options” on page 61
Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Polarization Mating:
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
INTERFACE PINOUT, RIGHT POLARIZATION

Plug

Receptacle

Polarization Mating:
1. A LEFT plug mates with a LEFT receptacle.
2. A RIGHT plug mates with a RIGHT receptacle.
3. Left-polarization connectors will not mate with right-polarization connectors.
Select the appropriate two-digit number and include as the last two digits of the hardware code in the part number. Keying hardware is factory-installed and non-removable.
POLARIZED KEYING HARDWARE OPTIONS (RECEPTACLE)

Select the appropriate two-digit number and include as the last two digits of the hardware code in the part number. Keying hardware is factory-installed and non-removable.

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POLARIZED KEYING HARDWARE OPTIONS (RECEPTACLE)

11 MAJOR SIX

12 MAJOR SIX

13 MAJOR SIX

14 MAJOR SIX

15 MAJOR SIX

16 MAJOR SIX

21 MAJOR SIX

22 MAJOR SIX

23 MAJOR SIX

24 MAJOR SIX

25 MAJOR SIX

26 MAJOR SIX

31 MAJOR SIX

32 MAJOR SIX

33 MAJOR SIX

34 MAJOR SIX

35 MAJOR SIX

36 MAJOR SIX

41 MAJOR SIX

42 MAJOR SIX

43 MAJOR SIX

44 MAJOR SIX

45 MAJOR SIX

46 MAJOR SIX

51 MAJOR SIX

52 MAJOR SIX

53 MAJOR SIX

54 MAJOR SIX

55 MAJOR SIX

56 MAJOR SIX

61 MAJOR SIX

62 MAJOR SIX

63 MAJOR SIX

64 MAJOR SIX

65 MAJOR SIX

66 MAJOR SIX

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
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
RC422 - Full Profile Board-to-Board Stackable Connector

Contact spacing: 0.075” (1.91 mm)

A full bodied high-density press-fit connector. Uses a patented female/compliant/male stacking contact system. Used in board-to-board stacking applications.

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 in top window).

SI DATA – Differential 100 Ohm

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diff. Insertion Loss</td>
<td>5.0 GHz @ -3 dB</td>
<td>2.0 GHz @ -8 dB</td>
<td>4.0 GHz @ -25 dB</td>
</tr>
</tbody>
</table>

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Contact: 300 – 4 Rows/75 Columns
252 – 4 Rows/63 Columns
152 – 4 Rows/38 Columns
128 – 4 Rows/32 Columns
100 – 4 Rows/25 Columns
076 – 4 Rows/19 Columns
052 – 4 Rows/13 Columns
028 – 4 Rows/7 Columns

Material: BeCu per ASTM B196/197, nickel-plated per QQ-N-290
Plating: Gold per MIL-G-45204 over nickel per IAW QQ-N-290

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

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

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(512) 863-5585
RC422 - Bottom-of-Stack Board Mount Connector

Contact spacing: 0.075" (1.91 mm)

A full bodied high-density press-fit connector. Uses a patented female/compliant/male stacking contact system. Used at the bottom of the stack in board-to-board stacking applications.

**MATERIALS and FINISHES**

Contact: BeCu per ASTM B768 (BeCu C17410 brush alloy 174)

Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519

Hardware: Stainless steel per ASTM A582, passivated per ASTM 967

**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

**CONTACT**

10 - 0.095" Long

FT - Female thread

**VARIATION**

Blank - None

XXX - Consult factory

**SI DATA – Differential 100 Ohm**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Insertion Loss</td>
<td>5.0 GHz @ -3 dB</td>
</tr>
<tr>
<td>2</td>
<td>Diff. Return Loss</td>
<td>2.0 GHz @ -8 dB</td>
</tr>
<tr>
<td>3</td>
<td>NEXT</td>
<td>4.0 GHz @ -25 dB</td>
</tr>
<tr>
<td>4</td>
<td>FEXT</td>
<td>4.0 GHz @ -35 dB</td>
</tr>
</tbody>
</table>

**SAMPLE PART NUMBER FORMAT:** RC422-052-101-3000

**DIMENSIONS**

**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 in top window).

**CONTACT**

10 - 0.095" Long

**HARDWARE**

30 - 0.195" Long (use with #10 contact)

**CONFIGURATION**

028 – 4 Rows/7 Columns

052 – 4 Rows/13 Columns

076 – 4 Rows/19 Columns

100 – 4 Rows/25 Columns

128 – 4 Rows/32 Columns

152 – 4 Rows/38 Columns

200 – 4 Rows/50 Columns

252 – 4 Rows/63 Columns

300 – 4 Rows/75 Columns

**PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.**
RC442 - Low Profile Board-to-Board Stackable Connector

Contact spacing: 0.075” (1.91 mm)

A low profile bodied, high-density press-fit connector. Uses a patented female/compliant/male stacking contact system. Used in board-to-board stacking applications.

**Use with body style 442 or 422 only.

MATED HEIGHT

The connector body height is 0.150” but the functional spacing (the bottom surface of the board, on which the connector is mounted, to the top of the connector below it) can be modified based on the contact/pin length selected (see Table 2 in top window).

SI DATA – Differential 100 Ohm

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Insertion Loss</td>
</tr>
<tr>
<td>2</td>
<td>Diff. Return Loss</td>
</tr>
<tr>
<td>3</td>
<td>NEXT</td>
</tr>
<tr>
<td>4</td>
<td>FEXT</td>
</tr>
</tbody>
</table>

5.0 GHz @ -3 dB
2.0 GHz @ -8 dB
4.0 GHz @ -25 dB
4.0 GHz @ -35 dB

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 967
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
Duraability: 500 connector mating cycles
Contact Resistance: 3 to 5 milliohms (contact length dependent)
Contact Engagement Force: 4.0 oz (113 g) min. w/0.0246” dia. test pin
Contact Separation Force: 22.5 lb (10.21 Kg) max. per contact
Compliant Insertion Force: 22.5 lb (10.21 Kg) min. per contact
Compliant Removal Force: 4.5 lb (2.04 Kg) min. per contact

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.
RC4B2 - Bottom-of-Stack Cable Mating Connector (Female)

Contact spacing: 0.075" (1.91 mm)
A full profile bodied female cable connector for use at the bottom of an RC board stack application.

Sample Part Number Format: RC4B2-052-281-62ED

MATED HEIGHT
Connector body height is 0.475" and is designed to mount flush to the board bottom of the mating connector.

NOTES
1. The RC4B2 connector is designed to mate with an RC422 connector using contact option -21 (0.270" long) and -39MT hardware. This contact length and hardware combination assures proper connector mating when using boards having a thickness of 0.058"–0.125".
2. When guide hardware is required on the RC4B2 connector, use hardware option -3900 on the mating connector.
3. When jacksocket hardware is required on the RC4B2 connector, use hardware option -39MT on the mating connector.

MATERIALS and FINISHES
Contact: BeCu per ASTM B196 or B197 (BeCu alloy 172 or 173)
Contact Finish: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM A484/A484M and ASTM A582/A582M, passivated per SAE AMS-2700

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

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(512) 863-5585
MATERIALS and FINISHES
Contact: BeCu per ASTM B196 or B197 (BeCu alloy 172 or 173)
Contact Finish: Gold per MIL-G-45204 over nickel per QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM A484/A484M and ASTM A552/A552M, passivated per SAE AMS-2700

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
RC4C2 - Top-of-Stack Flex Circuit Mating Connector (Male)

Contact spacing: 0.075” (1.91 mm)

A full profile bodied flex-circuit-ready male connector for use at the top of an RC board stack application.

Sample Part Number Format: RC4C2-052-151-5700

- RC4C2
- Configuration
  028 – 4 Rows/7 Columns
  052 – 4 Rows/13 Columns
  076 – 4 Rows/19 Columns
  100 – 4 Rows/25 Columns
  128 – 4 Rows/32 Columns
  152 – 4 Rows/38 Columns
- Plating
  1 – 50 µ" Au
- Contact
  15 – Pin, flex circuit
- Type
  00 – None
- Hardware
  57 – Guide pin, non-polarized
  61 – Jackscrew, hex, turning
- Variation
  Blank – None
  XXX – Consult factory

Mated Height
Connector body height is 0.325” and is designed to mount flush to the mating connector.

Dimensions

MATERIALS and FINISHES
Contact: BeCu per ASTM B196 or B197 (BeCu alloy 172 or 173)
Contact Finish: Gold per MIL-G-45204 over nickel per QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM A484/A484M and ASTM A582/A582M, passivated per SAE AMS-2700

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

Notes
* To use the -61 jackscrew hardware option, the fixed jacknut hardware (-XXFT) must be in place on the mating board connector.
RC4C2 - Top-of-Stack Solder Cup
Cable Mating Connector (Male)

Contact spacing: 0.075” (1.91 mm)
A full profile bodied male wire-ready connector for use at the top of an RC board stack application.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Sample Part Number Format: RC4C2-052-111-6100

- RC4C2
- [SERIES]
  - Stackable
  - Compliant
  - Full-Profile
  - 4 Rows
  - 0.075” Spacing
  - Top-of-Stack
  - Cable Mate
- [CONFIGURATION]
  - 028 – 4 Rows/7 Columns
  - 052 – 4 Rows/13 Columns
  - 076 – 4 Rows/19 Columns
  - 100 – 4 Rows/25 Columns
  - 128 – 4 Rows/32 Columns
  - 152 – 4 Rows/38 Columns
- [PLATING]
  - 1 – 50 µ” Au
- [CONTACT]
  - 11 – Pin, solder cup
- [HARDWARE]
  - 00 – None
  - 57 – Guide pin, non-polarized
  - 61 – Jackscrew, hex, turning*
- [TYPE]
  - 00 – None
- [VARIATION]
  - Blank – None
  - XXX – Consult factory

MATED HEIGHT
Connector body height is 0.325” and is designed to mount flush to the mating connector.

MATERIALS and FINISHES
Contact: BeCu per ASTM B186 or B197 (BeCu alloy 172 or 173)
Contact Finish: Gold per MIL-G-45204 over nickel per QQ-N-290
Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
Hardware: Stainless steel per ASTM A484/A484M and ASTM A582/A582M, passivated per SAE AMS-2700

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

NOTES
* To use the -61 jackscrew hardware option, the fixed jacknut hardware (-XXFT) must be in place on the mating board connector.

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(512) 863-5585

RC4C2S-PNB-1G
RC 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)

Table 1

<table>
<thead>
<tr>
<th>CONTACT TERMINATION</th>
<th>CONTACT D</th>
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<tr>
<td>201, 301</td>
<td>0.270</td>
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<tr>
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RC 4-ROW DRAWINGS

Board Footprint and Dimensions

<table>
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<tr>
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<th>SIZE</th>
<th>CONTACT ID</th>
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<td>99 98 97</td>
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**DIMENSIONS**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>28</td>
<td>1.014</td>
<td>0.784</td>
<td>0.450</td>
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<td>52</td>
<td>1.464</td>
<td>1.234</td>
<td>0.590</td>
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<td>1.914</td>
<td>1.684</td>
<td>1.350</td>
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<td>2.364</td>
<td>2.134</td>
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<tr>
<td>128</td>
<td>2.889</td>
<td>2.659</td>
<td>2.325</td>
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<tr>
<td>152</td>
<td>3.339</td>
<td>3.109</td>
<td>2.775</td>
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<td>200</td>
<td>4.239</td>
<td>4.009</td>
<td>3.675</td>
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<td>252</td>
<td>5.214</td>
<td>4.984</td>
<td>4.650</td>
</tr>
<tr>
<td>300</td>
<td>6.114</td>
<td>5.884</td>
<td>5.500</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)
PWB-PLATED THRU-HOLE RECOMMENDATIONS:

- **Board material**: FR-4 (or equivalent) with 1.0 oz. copper
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- **Finished hold diameter**: Ø 0.028” (Ø 0.028” ±0.002” required)

---

**Determining the Required Termination Lead Length**

To calculate the required termination lead length, use the example below. Measurements listed are in inches.

- Dimension A = 0.720
  - 0.720 – 0.300 (insulator height) = 0.420
  - 0.420 + 0.114 (minimum pin engagement) = 0.534
  - 0.420 + 0.214 (maximum pin engagement) = 0.634

In this example, the termination option to choose is **0.600 lead length**.

The contact termination option will be a length that falls between the calculated numbers resulting from using the minimum and maximum pin engagement.
Stacking Detail

ACCESS TO CONTACT THROUGH INSULATOR TOP FOR TESTING

INSULATOR WITH REDUCED HEIGHT AT TOP OF STACK

SIGNAL ROUTING OR TERMINATIONS CAN BE ACCOMPLISHED USING THE NAIL HEAD OR STUB CONTACT

Internal Pin Detail

ROUND TERMINATION BECOMES MATING PIN

LARGE, ROBUST GUIDE HARDWARE TO PROVIDE ALIGNMENT DURING BLIND MATES

A WIDE RANGE OF BOARD THICKNESSES OR SPACING BETWEEN BOARDS CAN BE ACCOMPLISHED BY USING A VARIETY OF CONTACT/HARDWARE LENGTHS

PWB-PLATED THRU-HOLE RECOMMENDATIONS:

Board material: FR-4 (or equivalent) with 1.0 oz. copper
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RC 4-ROW, BOTTOM-COMPLIANT DIMENSIONS

**DIMENSIONS**

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</tr>
<tr>
<td>200</td>
<td>4.239</td>
<td>4.009</td>
<td>3.675</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
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RC 4-ROW, BOTTOM-COMPLIANT DRAWINGS

PLUG CONNECTOR REQUIRES "MT-TYPE" HARDWARE TO MATE WITH THE JACKING HARDWARE

RECEPTACLE CONNECTOR WITH TURNING JACKSOCKET

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)
RC 4-ROW, TOP-COMPLIANT 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)
PWB-PLATED THRU-HOLE RECOMMENDATIONS:

<table>
<thead>
<tr>
<th>Board material: FR-4 (or equivalent) with 1.0 oz. copper</th>
<th>Copper plating thickness: 0.0020&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board thickness: 0.058&quot; minimum</td>
<td>Tin-lead plating thickness: 0.0005&quot;</td>
</tr>
<tr>
<td>Drilled hole: Ø 0.033&quot;</td>
<td>Finished hold diameter: Ø 0.028&quot; (Ø 0.028&quot; ±0.002&quot; required)</td>
</tr>
</tbody>
</table>
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.

**Dimensions**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>1.215</td>
<td>1.065</td>
<td>0.675</td>
</tr>
<tr>
<td>50</td>
<td>2.010</td>
<td>1.780</td>
<td>1.482</td>
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<tr>
<td>75</td>
<td>2.785</td>
<td>2.555</td>
<td>2.225</td>
</tr>
<tr>
<td>100</td>
<td>3.540</td>
<td>3.330</td>
<td>3.000</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°F to +125°F
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

**Contact**

10 – 0.095” Long (use with #10 contact)

**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.

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

**Limited Edition**

www.airborn.com
(512) 863-5585
x6400

CONTACT CUSTOMER SERVICE
CALL 512-863-5585
x6400

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

- RC324 - SERIES
  Stackable
  Compliant
  Full-Profile
  3 Rows
  0.075” Spacing

- CONFIGURATION
  025 – 3 Rows/1 Bay
  050 – 3 Rows/2 Bays
  075 – 3 Rows/3 Bays
  100 – 3 Rows/4 Bays

- PLATING
  1 – 50 µ” Au

- CONTACT
  10 – 0.095” Long
  20 – 0.270” Long
  21 – 0.300” Long
  22 – 0.400” Long
  23 – 0.500” Long
  24 – 0.700” Long
  25 – 0.800” Long
  26 – 0.900” Long
  27 – 0.600” Long
  28 – 1.000” Long

- HARDWARE
  30 – 0.195” Long (use with #10 contact)
  39 – 0.370” Long (use with #20 contact)
  40 – 0.400” Long (use with #21 contact)
  41 – 0.500” Long (use with #22 contact)
  42 – 0.600” Long (use with #23 contact)
  43 – 0.800” Long (use with #24 contact)
  44 – 0.900” Long (use with #25 contact)
  45 – 1.000” Long (use with #26 contact)
  46 – 0.700” Long (use with #27 contact)
  47 – 1.100” Long (use with #28 contact)

- TYPE
  00 – None

- VARIATION
  Blank – None
  XXX – Consult factory

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-A687
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.
**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.

**MATED HEIGHT**

The connector body height is 0.300” and, when used with the -20 or -30 (0.276”) 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**

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<tr>
<td>1</td>
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<td>6.0 GHz @ -3 dB</td>
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<tr>
<td>2</td>
<td>Diff. Return Loss</td>
<td>4.6 GHz @ -20 dB</td>
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<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>
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</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-A967

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 @ 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:** AirBorn can manufacture special configurations to your exact specifications.

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

**CONTACT CUSTOMER SERVICE**

**CALL 512-863-5585**

x6400

AirBorn

www.airborn.com

(512) 863-5585

RC424-PNB-1F
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.

**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 Guided 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 @ 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.

**CONTACT CUSTOMER SERVICE**
CALL 512-863-5585 x6400
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**

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</tr>
<tr>
<td>101</td>
<td>0.095</td>
<td>0.195</td>
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**BODY STYLE 344**
Optional insulator for top connector with termination options 301, 311, 321, 331, 341, 351, 361, 371 and 381 (w/circuit test point).

**BODY STYLE 324**
Contact/hardware option 101 (terminates circuit)

**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

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</tr>
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<td>50</td>
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<tr>
<td>100</td>
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DIMENSIONS

<table>
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<tr>
<th>SIZE/BANKS</th>
<th>A</th>
<th>B</th>
<th>C</th>
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<tr>
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<td>1.005</td>
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<td>1.780</td>
<td>1.450</td>
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<tr>
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<td>2.785</td>
<td>2.555</td>
<td>2.225</td>
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<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
- 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)

www.airborn.com
(512) 863-5585

RC324-PCB-1A
RCII 4-ROW DIMENSIONS

**DIMENSIONS**

<table>
<thead>
<tr>
<th>SIZE/BANKS</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
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<td>30/1</td>
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RCII 4-ROW DIMENSIONS

Hardware Options

**TABLE 1**

<table>
<thead>
<tr>
<th>CONTACT TERMINATION</th>
<th>CONTACT D</th>
<th>HARDWARE E</th>
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</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>
</tr>
<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>
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<tr>
<td>271, 371</td>
<td>0.600</td>
<td>0.700</td>
</tr>
<tr>
<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:**

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- **Board thickness:** 0.058” minimum
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- Tin-lead plating thickness: 0.0005"
- Finished hold diameter: Ø 0.028" (Ø 0.028" ±0.002" required)
The RZ family of high-density, board-to-board or flex circuit stacking applications is unique, offering users a reliable one-piece contact system. Its solder-less interconnect is compressed or “sandwiched” under pressure between parallel printed wiring boards or between a printed wiring board and other electronic components such as an IC or multichip module.

- 0.050” staggered grid array
- Up to 400 contacts per square inch
- BeCu contacts for reliable mating
- Standard heights from 0.100” to 0.350”
- Custom configurations available to meet your specific design needs.
Vertical Compression (Z-axis),
Open-Pin Field

Contact spacing: 0.050" (1.27 mm)
A high-density, open-field, vertically-compressed connector utilizing a patented z-axis contact system configured for between-board (board-to-board) compression applications.

### Sample Part Number Format: RZ250-320-115-1000

- **SERIES**
  - Vertical (Z-Axis)
  - Compression
  - Multi-Rows
  - 0.050" Spacing
  - Open-Field

- **HEIGHT**
  - 100 – 0.100"
  - 150 – 0.150"
  - 200 – 0.200"
  - 250 – 0.250"
  - 300 – 0.300"
  - 350 – 0.350"

- **COLUMNS**
  - 10 – 10 Columns
  - 15 – 15 Columns
  - 20 – 20 Columns
  - 25 – 25 Columns

- **ROWS**
  - 2 – 2 Rows
  - 3 – 3 Rows
  - 4 – 4 Rows
  - 5 – 5 Rows
  - 6 – 6 Rows
  - 7 – 7 Rows

- **PLATING**
  - 5 – 50 µ" Au
  - 3 – 30 µ" Au

- **CONTACT**
  - 11 – Double compression

- **HARDWARE**
  - 10 – Ø .090" Thru-hole
  - 20 – Ø .050" Guide pin

- **TYPE**
  - 00 – No polarization

- **VARIATION**
  - Blank – None
  - XXX – Consult factory

### MATERIALS and FINISHES

- Contact: BeCu C17200 per ASTM B194 (brush alloy 190)
- Contact Finish: Gold per ASTM B488 over nickel per SAE AMS-QQ-N-290
- Molded Insulator: Glass-filled polyphenylene sulfide (PPS) per MIL-M-24519
- Hardware: Stainless steel per ASTM A582/582M, passivated per SAE AMS-2700

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

### PERFORMANCE

- Contact Compression: 0.010 inches per side (nominal) for 0.100" and 0.150" connector heights; 0.015" per side (nominal) for 0.200", 0.250", 0.300" and 0.350" connector heights
- Compression Force: 25-40 grams per contact having a 0.010" deflection
- Contact Wipe: +0.04" for 0.100" and 0.150" connector heights
- Current Rating: 0.5 amperes (height-dependent)
- Operating Temperature: -65°C to +125°C
- Insulation Resistance: 5,000 megohms minimum @ 100 VDC
- Durability: 50 connector mating cycles
- Dielectric Withstanding: 250 VDC @ sea level, 100 VDC @ altitude

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

### CONTACT SPACING: 0.050" (1.27 mm)

<table>
<thead>
<tr>
<th>CONTACT</th>
<th>SI DATA – Differential 100 Ohm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diff. Insertion Loss</td>
</tr>
<tr>
<td>2</td>
<td>Diff. Return Loss</td>
</tr>
<tr>
<td>3</td>
<td>NEXT</td>
</tr>
<tr>
<td>4</td>
<td>FEXT</td>
</tr>
</tbody>
</table>

**PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.**
**PWB-PLATED PAD RECOMMENDATIONS:**

Board to be made in accordance with ANSI/EIA-616

Laminate material per MIL-P-13949, Type GF

Copper foil thickness: 1 oz per square foot

Plate all surface features with 50 µ", minimum, electrolytic hard gold over 50-150 µ" nickel.

(Optionally, plate all surface features with 50 µ", minimum, electrolytic hard gold over 5-10 µ" of electrolytic soft gold over 100 µ", minimum, nickel.)
**RZ DIMENSIONS**

**Thru-Hole Hardware Option**

**PWB Layout (Recommended)**

**PWB-PLATED PAD RECOMMENDATIONS:**

Board to be made in accordance with ANSI/EIA-616

Laminate material per MIL-P-13949, Type GF

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---

**Dimensions Table**

<table>
<thead>
<tr>
<th>Size</th>
<th>Rows/Col</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<tbody>
<tr>
<td>20</td>
<td>2</td>
<td>0.952</td>
<td>0.742</td>
<td>0.450</td>
<td>0.210</td>
<td>0.105</td>
<td>0.050</td>
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<tr>
<td>30</td>
<td>2</td>
<td>1.202</td>
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<td>0.105</td>
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<tr>
<td>40</td>
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<tr>
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<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Hardware &quot;G&quot;</th>
<th>Contact &quot;H&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.100+/-0.002</td>
<td>0.120+/-0.006</td>
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</tr>
<tr>
<td>0.150+/-0.002</td>
<td>0.170+/-0.010</td>
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</tr>
<tr>
<td>0.200+/-0.002</td>
<td>0.230+/-0.010</td>
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<td>0.250+/-0.002</td>
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</tr>
<tr>
<td>0.350+/-0.002</td>
<td>0.380+/-0.010</td>
<td></td>
</tr>
</tbody>
</table>

*Note: All dimensions are in inches.*
### PWB-Plated Pad Recommendations:

- Board to be made in accordance with ANSI/EIA-616
- Laminate material per MIL-P-13949, Type GF
- Copper foil thickness: 1 oz per square foot
- Plate all surface features with 50 µ", minimum, electrolytic hard gold over 50-150 µ" nickel.
- (Optionally, plate all surface features with 50 µ", minimum, electrolytic hard gold over 5-10 µ" of electrolytic soft gold over 100 µ", minimum, nickel.)

### Board Footprint

<table>
<thead>
<tr>
<th>CONTACT ID</th>
<th>10</th>
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</tr>
<tr>
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</tr>
<tr>
<td>7</td>
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</tr>
</tbody>
</table>
The AirBorn verSI (versatile connectors with high-speed signal integrity) open-pin field product line is designed to meet the requirements for high-speed/high-density/signal integrity 100 Ω and 85 Ω differential serial bus applications while still delivering the reliability customers have come to expect from AirBorn.
VSM – Vertical (Male)

Pitch: 1.27 mm

VSM signal-integrity connectors are used in vertical, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

Contact Rating: 2 amperes maximum
Operating Temperature: -55° C to 125° C
Min Contact Wipe: 1.27 mm (0.050”)
Contact Normal Force: 35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megaohms minimum @ 500 VDC
Durability: 2500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)

**FEATURES**

versi board-mount connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

**MATERIALS and FINISHES**

Pin Contacts: Phos bronze per ASTM B103 or BeCu per ASTM B768 (press-fit contact)
Contact Finish: Localized gold finish per ASTM B488 over nickel per ASTM B688 Type I, 50 µin min
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co. insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
Solder Paste: Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

**PERFORMANCE**

Contact Rating: 2 amperes maximum
Operating Temperature: -55° C to 125° C
Min. Contact Wipe: 1.27 mm (0.050”)
Contact Normal Force: 35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megaohms minimum @ 500 VDC
Durability: 2500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)

**CONTACT CUSTOMER SERVICE**

CALL 512-863-5585 x6400

www.airborn.com

(512) 863-5585

VSM-PNB-1R
VSF – Vertical (Female)

Pitch: 1.27 mm

VSF signal-integrity connectors are used in vertical, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.

FEATURES

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

MATERIALS and FINISHES

Sockel Contacts: BeCu per ASTM B194
Contact Finish: Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I, 50 µin min
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co. insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, or ASTM A582/A582M, or ASTM A320 passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
Solder Paste: Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

PERFORMANCE

Contact Rating: 2 amperes maximum
Operating Temperature: -55°C to 125°C
Min. Contact Wipe: 1.27 mm (0.050”)
Contact Normal Force: 35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 2,500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-2B, condition IV)
Shock: 50 g (EIA-364-27, condition E)

NOTES

Connector potting is standard.

† Used for PC board thickness up to 0.125"
‡ Used for PC board thickness 0.125” up to 0.250”
† Surface Mount Termination only available on 4 Row vertical connectors.
‡ No hardware supplied with blank hardware option connectors.
AirBorn can manufacture other configurations to your exact specifications.
RoHS Compliant (except for termination option 10); certificate of conformance available upon request with each shipment

Si DATA – Simulated (Connectors Only)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.25 dB @ 5 GHz</td>
<td>-20 dB @ 5 GHz</td>
<td>100 ohm ±10% @ 50 ps rise time</td>
<td>&lt; 2 psec</td>
</tr>
<tr>
<td>2</td>
<td>-3dB @ 16 GHz</td>
<td>-6 dB @ 14 GHz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample Part Number Format: VSF-04-10-50-02

VSF Pitch: 1.27 mm

VSF signal-integrity connectors are used in vertical, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole, plated thru-hole, and surface-mount.
VRM – Vertical Rugged (Male)

Pitch: 1.27 mm

VRM signal-integrity connectors are ruggedized versions of the standard VSM male connectors. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

FEATURES

verSI board-mount connectors feature low mating force / high-reliability contact system with reliability and continuous performance.

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Guide hardware is optional.

Single-ended, differential pair, power, and ground are all available in one connector design.

FEATURES

- Single-ended, differential pair, power, and ground are all available in one connector design.
- Guide hardware is optional.

NOTES

- Connector potting is standard.
- Blank – No hardware
- G – Guide socket
- G1 – Guide socket
- J – Turning jackscrew
- J1 – Turning jackscrew
- L – Locking screw
- L1 – Locking screw
- N – Fixed jacknut
- N1 – Fixed jacknut
- E – No hardware/EMI gasket
- GE – Guide socket/EMI gasket
- G1E – Guide socket/EMI gasket
- JE – Turning jackscrew/EMI gasket
- J1E – Turning jackscrew/EMI gasket
- LE – Locking screw/EMI gasket
- L1E – Locking screw/EMI gasket
- NE – Fixed jacknut/EMI gasket
- NTE – Fixed jacknut/EMI gasket
- TERMINATION
- CONTACT PLATING
- CONTACT PLATING
- OPTIONS

- Sheet: Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T651 per QQ-A-200/8
- Finish: Electroless nickel per SAE AMS-2404, Class 3; 500 µIN min
- Socket Contact: BeCu per ASTM B194
- Contact Finish: Localized gold finish per ASTM B689 over nickel per ASTM B689 Type I, 50 µIN min
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: Frey Eng. Co. insulating compound CF3003-80
- Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- Washers: Stainless steel per NASM5333 (ASTM A240), passivated per NASM5333 (SAE AMS-2700)
- EMI Gasket (GE, G1E, NE and N1E options only): Conductive Elastomer per MIL-DTL-83528 Type D
- Solder Paste: Sn63Pb37 (PN WS483) and 42Sn/57.6Bi/0.4Ag (PN ALPHA CVP-520)

PERFORMANCE

- Contact Rating: 2 amperes maximum
- Operating Temperature: -55°C to 125°C
- Min. Contact Wipe: 1.27 mm (0.050")
- Contact Normal Force: 35–40 grams
- Max Recommended Voltage: 200 V, RMS, 60 Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 2500 connector mating cycles
- Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
- Shock: 50 g (EIA-364-27, condition E)
VSRAM – Right Angle (Male)

Pitch: 1.27 mm

VSRAM signal-integrity connectors are used in right angle, PCB-mount applications where a male interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

FEATURES
vesi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

MATERIALS and FINISHES
Pin Contacts (Mating Face): Phos bronze per ASTM B103
Pin Contacts (Termination): CuBe per ASTM B769 (press-fit contact) or brass alloy per ASTM B36 (PIH or PTH)

Contact Finish (Termination): Localized gold finish per ASTM B498, Type II, Code C over nickel per ASTM B689 Type I, 50 µIN min

Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138


Washers: Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700)
Guide hardware is optional—Single-ended, differential pair, power, and ground are all available in one connector design—four points of contact. The open-pin field design allows for flexibility in termination schemes.

**VERSI** board-mount connectors feature low mating force / high-reliability contact system with reliability and continuous performance. These connectors can be used in extreme environmental conditions while maintaining high integrity versions of the standard VSRAM male connectors.

**VRRAM** signal-integrity connectors are ruggedized Pitch: 1.27 mm

**FEATURES**
- verSI board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes.
- Single-ended, differential pair, power, and ground are all available in one connector design.
- Guide hardware is optional.

**MATERIALS and FINISHES**
- **Shell:** Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T651 per QQ-A-2008
- **Pin Contacts (Mating Face):** Electroless nickel per SAE AMS-2404, Class 3, 500 µm min
- **Pin Contacts (Termination):** Phos bronze per ASTM B103
- **Finish:** Localized gold finish per ASTM B488, Type II, Code C, 50 µm over nickel per ASTM B698 Type I, 50 µm min over nickel per ASTM B698 Type I, 50 µm min (Press Fit) or Localized Gold per ASTM B488, Type I, Code A or C, 10-25 µm over nickel per ASTM B698 Type I, 50 µm min (PIH or PTH)
- **Molded Insulators:** Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- **Potting Compound:** Frey Eng. Co. insulating compound CF3003-80
- **Hardware (except washers):** Stainless steel per ASTM A484/A484M, A582/A582M, or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- **Washers:** Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700).

**PERFORMANCE**
- **Contact Rating:** 2 amperes maximum
- **Operating Temperature:** -45°C to 70°C
- **Min. Contact Wipe:** 0.18 mm (0.007")
- **Contact Normal Force:** 4.0 – 4.5 grams
- **Max Recommended Voltage:** 200 V, RMS, 60 Hz
- **Insulation Resistance:** 5,000 megohms minimum @ 500 VDC
- **Durability:** 2500 connector mating cycles
- **Sinusoidal Vibration:** 20 g (EIA-364-28, condition IV)
- **Shock:** 50 g (EIA-364-27, condition E)

**NOTES**
1. Shells & hardware supplied uninstalled.
2. Connectors come pre-assembled with shells & hardware.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Complaint; certificate of conformance available upon request with each shipment.

**SI DATA – Simulated (Connectors Only)**

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<th>Item</th>
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<tr>
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<tr>
<td>3</td>
<td>Diff. Impedance</td>
</tr>
<tr>
<td>4</td>
<td>Diff. Skew</td>
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</table>

**DIMENSIONS**

**Sample Part Number Format:** VRRAM-04-10-50-02-N

**SERIES**
- **Rugged Right Angle (Male):** 1.27 mm

**ROWS**
- 04 – 4 Rows
- 05 – 5 Rows
- 06 – 6 Rows
- 08 – 8 Rows
- 10 – 10 Rows

**COLUMNS**
- 10 – 10 Columns
- 20 – 20 Columns
- 30 – 30 Columns
- 40 – 40 Columns
- 50 – 50 Columns

**CONTACT PLATING**
- 50 – 50 μ" Au

**TERMINATION**
- 00 – Press-fit
- 01 – Paste-in-hole
- 02 – PTH 0.078"
- 03 – PTH 0.109"
- 04 – PTH 0.140"
- 05 – PTH 0.156"
- 06 – PTH 0.172"

**OPTIONS**
- Blank
- Guide pin
- Fixed jacknut
- Turning jack screw
- Locking screw
- Standard/EMI gasket
- Guide pin/EMI gasket
- Fixed jack nut/EMI gasket
- Turning jack screw/EMI gasket
- Locking screw/EMI gasket

**DEALER CONTACT**
Contact AirBorn Sales at 1-866-242-2797 or sales@airborn.com

**CUSTOMER SERVICE**
Contact AirBorn Customer Service at 1-512-863-5585 x6400
www.airborn.com
**VSRAF – Right Angle (Female)**

**Pitch:** 1.27 mm

VSRAF signal-integrity connectors are used in right angle, PCB-mount applications where a female interface is required. Termination styles include press-fit, paste-in-hole or plated thru-hole.

**Sample Part Number Format:** VSRAF-04-10-50-02-N

**NOTES**

Connector potting is standard.

1 No hardware supplied with blank hardware option connectors.

AirBorn can manufacture other configurations to your exact specifications.

RoHS Complaint; certificate of conformance available upon request with each shipment.

**FEATURES**

versi board-mount connectors feature low mating force / high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

**FEATURES**

**SI DATA – Simulated (Connectors Only)**

1 Diff. Insertion Loss  -0.25 dB @ 5 GHz  -3dB @ 16 GHz
2 Diff. Return Loss  -20 dB @ 5 GHz  -6 dB @ 14 GHz
3 Diff. Impedance  100 ohm ±10% @ 50 ps rise time
4 Diff. Skew  < 2 psec

**MATERIALS and FINISHES**

Socket Contact (Mating Face): BeCu per ASTM B194
Socket Contact (Termination): Brass alloy per ASTM B36 (PIH or PTH) or BeCu per ASTM B768 (press-fit contact)
Contact Finish (Mating Face): Localized gold finish per ASTM B488, Type II, Code C over nickel per ASTM B689 Type I, 50 µin min
Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 µin min over nickel per ASTM B689 Type I, 50 µin min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 µin over nickel per ASTM B689 Type I, 50 µin min (PIH or PTH)
Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
Potting Compound: Frey Eng. Co. insulating compound CF3003-80
Hardware (except washers): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
Washers: Stainless steel per NASM35333 (ASTM A240), passivated per NASM35333 (SAE AMS-2700).

**PERFORMANCE**

Contact Rating: 2 amperes maximum
Operating Temperature: -55° C to 125° C
Min. Contact Wipe: 1.27 mm (0.050")
Contact Normal Force: 150 grams
Max Recommended Voltage: 200 V RMS, 60 Hz
Insulation Resistance: 5,000 megohms minimum @ 500 VDC
Durability: 2500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)
Guide hardware is optional. Single-ended, differential pair, power, and ground are all available in one connector design—four points of contact. The open-pin field design allows for flexibility in termination schemes.

VERSI board-mount connectors feature low mating force/high-reliability contact system with reliability and continuous performance. These connectors can be used in extreme environmental conditions while maintaining high reliability and continuous performance.

VRRAM signal-integrity connectors are ruggedized versions of the standard VSRAF female connectors.

**FEATURES**
- verSI board-mount connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes.
- Single-ended, differential pair, power, and ground are all available in one connector design. Guide hardware is optional.

**MATERIALS and FINISHES**
- Shell: Aluminum alloy 6061-T6 per SAE AMS 4027 or 6061-T6511 per QQ-A-200/8
- Socket Contact (Termination): Electroless nickel per AMS-2404, Class 3; 500 µm min
- Contact Finish (Mating Face): Stainless steel per ASTM A484/A484M, A582/A582M or ASTM A320; passivated per SAE AMS-2700, Method 1, Type 2
- Contact Finish (Termination): Brass alloy per ASTM B36 (PIH or PTH) or BeCu per ASTM B768 (press-fit contact)
- Contact Finish (Mating Face): Localized gold finish per ASTM B488, Type II, Code C, 50 µm min over nickel per ASTM B689, Type I, 50 µm min
- Contact Finish (Termination): Localized gold finish per ASTM B488, Type II, Code C, 50 µm min over nickel per ASTM B689, Type I, 50 µm min (Press Fit) or localized gold per ASTM B488, Type 1, Code A or C, 10-25 µm over nickel per ASTM B689 Type I, 50 µm min (PIH or PTH)
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Potting Compound: Frey Eng Co insulating compound CF3003-80
- EMI Gasket (GE and NE options only): Conductive Elastomer per MIL-STD-83528 Type D
- Washers: Stainless steel & passivated per NASM35333

**PERFORMANCE**
- Contact Rating: 2 amperes maximum
- Operating Temperature: -55°C to 125°C
- Contact Normal Force: 35–40 grams
- Max Recommended Voltage: 200 V, RMS, 60 Hz
- Insulation Resistance: 5,000 megohms minimum @ 500 VDC
- Durability: 2500 connector mating cycles
- Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
- Shock: 50 g (EIA-364-27, condition E)

**NOTES**
- Shells & hardware supplied uninstalled.
- Connectors come pre-assembled with shells & hardware.
- AirBorn can manufacture other configurations to your exact specifications.
- RoHS Complaint; certificate of conformance available upon request with each shipment.

**SHELL DIMENSIONS**

**CONTACT PLATING**
- 50 – 50 µ" Au

**PERFORMANCE**

**SI DATA – Simulated (Connectors Only)**

| 1 | Diff. Insertion Loss | -0.25 dB @ 5 GHz | -3dB @ 16 GHz |
| 2 | Diff. Return Loss    | -20 dB @ 5 GHz   | -6 dB @ 14 GHz |
| 3 | Diff. Impedance      | 100 ohm ±10% @ 50 ps rise time |
| 4 | Diff. Skew           | < 2 psec         |
VRD – Differential Pair Twinax

Cable Assembly

Pitch: 1.27 mm

VRD cable assemblies are designed for twinax applications. These cable assemblies come in standard lengths but custom lengths and configurations can also be requested. Ruggedized hoods are standard.

Contact Rating: 2 amperes maximum

Operating Temperature: -55° C to 125° C

Min. Contact Wipe: 1.27 mm (0.050”)

Contact Normal Force: 35–40 grams

Max Recommended Voltage: 200 V, RMS, 60 Hz

Insulation Resistance: 5,000 megaohms minimum @ 500 VDC

Durability: 2500 connector mating cycles

Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)

Shock: 50 g (EIA-364-27, condition E)

Sample Part Number Format: VRD-04-10-50-01-03-060

NOTES

* Other cable lengths and configurations available. AirBorn can manufacture other configurations to your exact specifications.

FEATURES

Versi connectors feature low mating force/high-reliability contact system with four points of contact. The open-pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

MATERIALS and FINISHES

Shell: Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8

Socket Contact: Electroless nickel per SAE AMS-C-26074, Grade B, Class 3

Pin Contacts: Phos bronze per ASTM B103

Socket Contacts: Localized gold finish per ASTM B488 over nickel per ASTM B669 Type I

Wire: 30 AWG*; 19/42 silver-plated copper

Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138

Hardware: Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700


NOTES

1 Diff. Insertion Loss -0.25 dB @ 5 GHz -3dB @ 16 GHz

2 Diff. Return Loss -20 dB @ 5 GHz -6 dB @ 14 GHz

3 Diff. Impedance 100 ohm ±10% @ 50 ps rise time

4 Diff. Skew < 2 psec

SI DATA – Simulated (Connectors Only)

www.airborn.com

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(512) 863-5585

VRD-PNB-1H
VRW – Discrete Wire Cable Assembly with Internal Solder Connection

Pitch: 1.27 mm

VRW cable assemblies come in standard wire and lengths but custom wire and length options are available. Ruggedized shells are standard.

**MATERIALS and FINISHES**

- Shell: Aluminum alloy 6061-T6 per QQ-A-250/11 or 6061-T6511 per QQ-A-200/8
- Finish: Electroless nickel per SAE AMS-2404, Class 3; 500 µ", min.
- Pin Contacts: BeCu per ASTM B194
- Contact Finish: Localized gold finish per ASTM B488 over nickel per ASTM B689 Type I
- Molded Insulators: Glass-filled liquid crystal polymer (LCP) per ASTM D5138
- Hardware: Stainless steel per ASTM A582/A582M or ASTM A320; passivated per SAE AMS-2700

**FEATURES**

VerSI connectors feature low mating force/high reliability contact system with four points of contact. The open pin field design allows for flexibility in termination schemes. Single-ended, differential pair, power, and ground are all available in one connector design.

**NOTES**

All VRW part numbers are non-RoHS-compliant.

Wire colors per M83513 are ten (10) solid colors, repeating.

Per M83513, corrosion has been experienced on connectors that are pre-wired with 22759/33 and stored in sealed environments. Caution should be exercised when using this wire.

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

---

**CONTACT**

**PLATING**

- **WIRE CODES**
  - **COLOR** (per 83513) and **GAGE**
  - **LENGTH**
  - NEMI HP3 EX86B (24 AWG) – Multicolored
    - White: 0.80, 2.625
    - Gold: 0.96, 2.553
  - NEMI HP3 EX80B (26 AWG) – Multicolored
    - White: 1.00, 3.281
    - Gold: 1.15, 4.012
  - NEMI HP3 EX80B (30 AWG) – Multicolored
    - White: 1.60, 5.122
    - Gold: 1.96, 6.562
  - NEMI HP3 EX80B (33-30 AWG) – Multicolored
    - White: 3.00, 8.843
    - Gold: 3.00, 9.843

*AirBorn can manufacture special configurations to your exact specifications.*
VRW DIMENSIONS

Male (Connector 1)

(Dimensional drawings shown with turning hardware)

(Connector with guide pin hardware)

Female (Connector 2)

(Dimensional drawings shown with turning hardware)

(Connector with guide socket hardware)

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</table>

Tolerances (unless otherwise specified): ±0.010"
**VRW PINOUTS**

1-TO-1 WIRE CHART FOR JUMPER ASSEMBLIES

(Table illustrates connections for a 4-row, 10-column connector)

<table>
<thead>
<tr>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Connector 1</th>
<th>Connector 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 — BLK</td>
<td>A1</td>
<td>B1 — BLK</td>
<td>B1</td>
<td>C1 — BLK</td>
<td>C1</td>
<td>D1 — BLK</td>
<td>D1</td>
</tr>
<tr>
<td>A3 — RED</td>
<td>A3</td>
<td>B3 — RED</td>
<td>B3</td>
<td>C3 — RED</td>
<td>C3</td>
<td>D3 — RED</td>
<td>D3</td>
</tr>
<tr>
<td>A4 — ORN</td>
<td>A4</td>
<td>B4 — ORN</td>
<td>B4</td>
<td>C4 — ORN</td>
<td>C4</td>
<td>D4 — ORN</td>
<td>D4</td>
</tr>
<tr>
<td>A5 — YEL</td>
<td>A5</td>
<td>B5 — YEL</td>
<td>B5</td>
<td>C5 — YEL</td>
<td>C5</td>
<td>D5 — YEL</td>
<td>D5</td>
</tr>
<tr>
<td>A6 — GRN</td>
<td>A6</td>
<td>B6 — GRN</td>
<td>B6</td>
<td>C6 — GRN</td>
<td>C6</td>
<td>D6 — GRN</td>
<td>D6</td>
</tr>
<tr>
<td>A7 — BLU</td>
<td>A7</td>
<td>B7 — BLU</td>
<td>B7</td>
<td>C7 — BLU</td>
<td>C7</td>
<td>D7 — BLU</td>
<td>D7</td>
</tr>
<tr>
<td>A8 — VIO</td>
<td>A8</td>
<td>B8 — VIO</td>
<td>B8</td>
<td>C8 — VIO</td>
<td>C8</td>
<td>D8 — VIO</td>
<td>D8</td>
</tr>
<tr>
<td>A9 — GRY</td>
<td>A9</td>
<td>B9 — GRY</td>
<td>B9</td>
<td>C9 — GRY</td>
<td>C9</td>
<td>D9 — GRY</td>
<td>D9</td>
</tr>
<tr>
<td>A10 — WHT</td>
<td>A10</td>
<td>B10 — WHT</td>
<td>B10</td>
<td>C10 — WHT</td>
<td>C10</td>
<td>D10 — WHT</td>
<td>D10</td>
</tr>
</tbody>
</table>

Wire colors per M83513 are ten (10) solid colors, repeating when there are more than 10 columns.

**Sample part number:**
VRW-04-10-30-01G-03G-A030

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**PLEASE CONSULT THE AIRBORN WEBSITE FOR THE LATEST REVISION OF THIS DOCUMENT PRIOR TO BEGINNING ANY DESIGN WORK.**
VSX – Flexible Circuit Jumper Assembly

Pitch: 1.27 mm

VSX flexible circuit jumpers come in standard lengths and wiring configurations, but custom specifications can be requested.

Contact Rating: 2 amperes maximum
Operating Temperature: -55°C to 125°C
Min. Contact Wipe: 1.27 mm (0.050”)
Contact Normal Force: 35–40 grams
Max Recommended Voltage: 200 V, RMS, 60 Hz
Insulation Resistance: 5,000 megaohms minimum @ 500 VDC
Durability: 2500 connector mating cycles
Sinusoidal Vibration: 20 g (EIA-364-28, condition IV)
Shock: 50 g (EIA-364-27, condition E)
In-House Engineering Services

Engineering Expertise

AirBorn’s engineering group specializes in new product design & development for OEMs across the globe. Our team of 50+ degreed engineers are the most innovative and committed working in the electronics manufacturing industry today.

Customers can leverage our design & manufacturing expertise throughout the entire product development process. From conceptual design, prototyping, pilot-runs through to mass production, our team will work to get your project completed fast, elegantly and ahead of the competition.

Our global sales presence coupled with our choice of strategic global distribution partners means greater responsiveness when procuring AirBorn’s products, no matter where you do business.
Global Interconnect Solutions for Mission-Critical Applications