PC Card and Wireless Products

Engineered for life
A Historical Achievement of Technology Leadership

Defining and Championing Innovation

Showcasing a portfolio of creativity, ITT’s “Engineered For Life” execution embraces products which have become ubiquitous in a broad collection of markets including: Military/Aerospace, Civil Aircraft, Industrial Instrumentation, Medical, Oil & Gas, Energy, Transportation, Telecom/Handset, Computer, Consumer, and Automotive.

ITT’s rich interconnect history embraces contributions to both technological breakthroughs and social movements. With one of the industry’s broadest product offerings, ITT’s interconnect products have supported:

- Every Free World space mission, bringing the universe to our doorstep.
- Motion picture, radio, and television equipment, serving laughter and entertainment to millions.
- Commercial and military communications systems, linking the voices of the world.
- Computerized tools, reshaping the information highway.
- Aircraft, rapid transit, and automobiles, mobilizing our expanding society.
- Oil and natural gas production, powering the world’s economies.
- Agricultural equipment, attacking the roots of world hunger.
ITT Interconnect Solutions

ITT Interconnect Solutions is a division of the multinational ITT Corporation, a $11.6 billion dollar global enterprise representing the brands Cannon, VEAM, and BIW. Our connector portfolio remains the most extensive in the industry offering the most reliable and cost effective range of interconnect solutions. These innovations have enabled ITT to provide products and technologies to such markets as:

- Automotive
- Computer/Consumer
- Industrial/Instrumentation
- Military/Aerospace
- Oil Fields
- Telecom/Handset
- Transportation

When you specify a Cannon, VEAM or BIW connector, you can rely on a product designed, developed, and manufactured to the highest quality and reliability standards. This tradition of excellence is based on ITT’s corporate culture of operating its businesses under the principles of Six Sigma. At ITT, Six Sigma is not just a quality philosophy but a complete corporate culture that drives the entire business. Our Value Based Management and Value Based Product Development systems are two cornerstones that allow for the development of both leadership and product engineering principles, ensuring the correct industry leading products are developed to the accepted market driven lead times. These principles have allowed ITT to become the market leader in all of our business portfolios.

Six Sigma Manufacturing

ITT operates manufacturing facilities in the United States, Germany, Italy, Mexico, China, Japan and the UK, all of which have particular product area strengths allowing ITT to offer a truly global footprint to our customers. Our facilities are world class and accommodate full vertical integration utilizing the latest manufacturing technologies including: automated and robotic machining centers, Super Market manufacturing cells, Kanban pull systems, and automated electrical, mechanical, and optical test and inspection equipment. The combination of our manufacturing strength and our advanced manufacturing facilities allows ITT to offer products at market driven prices. Our capabilities, especially in robotics, computerized precision tooling, Kaizen Project Management, Six Sigma tools, and testing, give ITT the most optimized global manufacturing footprint in the interconnect industry.

The Custom Difference

As the industry leader in harsh environment interconnect applications, ITT’s world class engineering teams will work directly with our customers to design and develop cost effective solutions for their applications. In many cases we may modify one of our standard designs to ensure a highly reliable solution where timing is critical. Yet, in those cases where a complete custom interconnect solution is required, ITT will work with our customer’s Engineers to design an interconnect solution which will be cost effective yet highly reliable. As professional consultants, our Engineering teams will provide a thorough systems and mechanical analysis of any proposed solution. These analyses provide our customers with sophisticated electrical signal and mechanical characterizations to determine the best solution for their application.

RoHS Compliance Information

ITT has implemented a strict parts control plan for all ITT electronics plants worldwide that allows the Cannon, VEAM, and BIW connector product portfolios to meet the requirements of European Union Directive 2002/95/EC better know as the Reduction of Hazardous Substances initiative. As appropriate, specific Cannon, VEAM, and BIW products may be ordered with an R prefix number which insures our customers will receive RoHS compliant parts for their commercial electronics applications and equipment. Since most RoHS hazardous substances center around specific metal plating and lead solder coatings, ITT’s products for RoHS compliance are available in the following plating finishes: electroless nickel, stainless steel, Anodize over aluminum and Gold plating. It should be noted that gold plating would be recommended as the replacement for tin-lead solder when ordering board mount connectors.
ITT ICS represents and innovator in PC Card kit technology since its inception in the late 1980’s, the initial development of PCMCIA packaging standards. In 1990 we were one of the first companies to introduce one piece PCMCIA card kits (StarCard Classic) and 68 way connectors. The success of this initial endeavor fostered many future enhancements in PC Card kit technology. Advancements in our PCMCIA portfolio include CompactFlash, ExpressCard, and most recently CFast.

In 1995 Cannon introduced StarCard II a PCMCIA frameless two piece snap to close cover sets with optional I/O end caps. By 1998 we would further improve upon this design and launch StarCard Nova which incorporated a 68 way cardbus connector. In 2005 we introduced StarCard Snappy. The StarCard Snappy offers the most enhanced mechanical snap to close features and extended cover packages known today.

In 1998 Cannon introduced StarCard Ultra, the first PCMCIA frameless Ultrasonic weld cover set. Once assembled, the covers are ultrasonically welded around the perimeter of the card to provide the most robust, strongest, and secure seal. We have since expanded our offerings to include 68 way cardbus connectors and customized extended covers to accept a multitude of I/O connectors. We are an industry leader in ultrasonic weld technology.

Also in 1998 we expanded our portfolio into CompactFlash with the acquisition of “The Great American Gumball Company.” That same year Cannon introduced C-Flash type I and II. Both styles are two piece ultrasonically welded CompactFlash cover sets with 50 way connectors. Once assembled, these covers provide the most rigid and secure flash products in the industry. Over the years we expanded our product offering to include customized extended covers.

In 2007 Cannon introduced the first PCMCIA ExpressCard type 34 and type 54 cover sets with 26 way connectors. ExpressCard is the latest hardware standard for replacing the PCMCIA card. We are offering cover set designs that support both snap to close and ultrasonically welded frame kits. In addition, we offer a wide variety of connector off-sets for unique applications and customized extended covers to accommodate multiple I/O connector packages.

Today, the latest standard to be released from the Compact Flash Association (CFA) is CFast, a future version of CompactFlash. CFast is based on the Serial ATA bus, rather than the Parallel ATA/IDE bus for which all previous versions of CompactFlash are designed. ITT will be supporting this new standard by introducing two piece ultrasonically welded cover sets and 24 way connectors.

ITT ICS designs and manufactures a complete range of standard and customized PC Card products. We offer designing, engineering support, in-house prototyping, assembly tooling, and manufacturing capability to produce low to high volumes of cover sets and connectors. Our experienced engineering teams work hand-in-hand with customers to advance projects from initial product concepts to final design and into full production. We look forward to serving your unique needs as a valued customer of ITT Interconnect Solutions.
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Universal Contact is an independent SMT contact which provides an electrical connection between a device and a PCB. The contact is manufactured as a single piece stamped product, incorporating pre-load and anti-lift features. The Universal Contact has been designed to replace traditional interfaces where the contact is custom designed into the component. It can be used to connect a number of device components in any direction and configuration using the same interface.

**Features & Benefits of the Design**

- Range of heights available:
  - 1.3mm contact with the minimum pitch of 1.35mm
  - 1.8mm contact with the minimum pitch of 1.25mm
  - 2.5mm contact the minimum pitch is 1.35mm
  - 3.5 & 4.0mm minimum pitch is 1.45mm
- Solderwell that prevents solder wicking up the contact
- “Side wings” protect the active parts of the contact which prevent contact from overstressing and potential damage
- Domed contact point allows good hertz stress and low contact resistance
- The X-Y-Z movement allows robust connection between the contact and component assembly during shock and vibration
- Compliant with WEEE and RoHS directives.

**Materials & Finishes**

<table>
<thead>
<tr>
<th>Base material</th>
<th>Beryllium Copper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plating</td>
<td>Selective Au in contact area 1m min over Au stripe, 0.05 - 0.1 m over Ni 1.0 - 3.0 m</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Contact resistance</th>
<th>Max 20 mΩ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max current rating</td>
<td>2.0 amps nominal 3.0 amps peak</td>
</tr>
</tbody>
</table>

**Environmental**

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>-40°C and +85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>Operable in 90% relative humidity (temp + 40°C)</td>
</tr>
<tr>
<td>Solder systems</td>
<td>Infrared and hot air reflow</td>
</tr>
<tr>
<td>Vibration</td>
<td>In accordance with IEC 68-2-36</td>
</tr>
<tr>
<td>Shock</td>
<td>In accordance with IEC 68-2-27, 30 g</td>
</tr>
</tbody>
</table>

**Mechanical**

See selection table on the right for contact forces at specific mating heights

Maximum mating cycle based on mating PCB plated with 0.05 Au over 2.0 m Ni = 3,000 cycles. (Wear resistance is subject to mating component surface finish and plating type, increased mating component plating spec = increased mating cycles.)

**Packaging**

Packaged in 12mm wide tape & reel packaging to EIA-481 standards

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**Applications**

Handset
- Solderless component interconnect
- I/O connector / Board to board interconnect
- Battery contact / Antenna contact
- Grounding contact / SIM contact
- Laptops & Computers
- Memory Stick
- Home Electronic Devices / White Goods
- Smoke detectors / Security alarm systems
- Home appliances
- Automotive - Keyfob
- Medical - CT scan equipment
- Industrial - Circuit breaker for GPS beacon

**Additional Advantages of using Universal Contacts**

- Qualification time reduction - same contact for many components
- Allows standard interface across applications and platforms
- Freedom to position at an angle - not fixed by mating component

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Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
1.3mm
120220-0210
packaging: 9,500 per reel

1.8mm
120220-0202
packaging: 6,800 per reel

2.5mm
120220-0161
packaging: 6,000 per reel

3.5mm
120220-0204
packaging: 3,600 per reel

4mm
120220-0206
packaging: 3,200 per reel

2 way - 2.5mm height,
1.5 pitch
120220-0162
Mini RF connectors are the ideal solution for customers producing devices that require verification of antenna or circuit board performance. They are specifically designed for use with portable terminal interfaces and the inspection of microwave boards used at frequencies of up to 6 GHz. The specially incorporated flared interface cone not only allows the user to snap on a bench test adaptor but also allows high mating cycles on the accessory connector.

**Features & Benefits of the Design**

- Small size / low profile saving space on PCB
- High mating cycles on accessory port
- Switchable
- High force on the switch providing more robust connection
- Robust design
- Latching mechanism for ease-of-use during bench testing
- Compatible with lead free soldering
- Designed for pick and place
- Cradle interface incorporates patented ball - enables angular misalignment without loss to performance
- Compliant with WEEE and RoHS directives

**Accessories**

Ball Nose Cradle connector typical for car kit applications and Low Profile Jump Cable typical for board-to-board system connection.

**Applications**

- Mobile handset
- Other wireless (PDA, PPC, Gaming)
- Portable phones
- Network carriers - base stations
- Automotive - key fob / locking
- Industrial - transportation equipment
- Cable houses - board-to-board cable interconnect
- Electronic measuring instrumentation / equipment
- GPS - navigation systems (ETC)
- Wireless LAN

And any small devices requiring verification of antenna / circuit performance.

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<table>
<thead>
<tr>
<th><strong>Mini RF Series</strong></th>
<th>120220-0180 Accessory connector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120220-0190 Test Port</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Base materials</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper alloy - Shell</td>
</tr>
<tr>
<td>LCP plastic - Insulator</td>
</tr>
<tr>
<td>Beryllium copper - Contacts</td>
</tr>
<tr>
<td>120220-0180 - Gold over nickel</td>
</tr>
</tbody>
</table>

**Specifications**

**ELECTRICAL**

- Frequency: 0.01 - 6 GHz
- Impedance: 50Ω nominal
- VSWR: ≤ 1.2:1
- Insertion loss: u<sub>m</sub> < 0.1 dB, m<sub>a</sub> < 0.5 dB
- Dielectric withstanding voltage: 100 VAC (150 V peak)
- Contact resistance: 200mΩ max (initial)
- Power: 2 watts

**MECHANICAL**

- Mating Cycles: 120220-0180 (with cradle connector) up to 10,000 mating cycles

**ENVIRONMENTAL**

- Operating temperature: -40 to 85°C
- Humidity: operable in 95% RH temp +40°C
- Solder systems: Infrared and hot air reflow suitable for lead-free
- Vibration: In accordance IEC 68-2-64
- Shock: In accordance to IEC 68-2-27, 100 g

**PACKAGING**

- Packaging style: Tape and reel to EIA-481
- Packaging size: 8000 per reel

A float mount production test adaptor is available by request.

Dimensions shown in mm
Specifications and dimensions subject to change
**Mini RF**

**RF**

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**120220-0180**

Cradle Interface

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**Accessories**

120220-0175

Snap-on Bench Test Adaptor

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120220-0176

Ball Nose Production Test Adaptor

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120220-0177

Cradle Connector (Capability)

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Dimensions shown in mm

Specifications and dimensions subject to change

www.ittcannon.com
PCMCIA I/O Kit

STARCARD® Snappy

The New Successor to STARCARD® Nova in Our PCMCIA Universe.

The Starcard Snappy is a versatile frameless stainless steel type II PCMCIA card kit that simply snaps together without the use of any special tools. Available with a multitude of design options, we can customize extensions and connectors offset-sets, all from a standard platform. Our Starcard Snappy cover sets and 68 way connectors support both standard 16 bit and high performance 32 bit architectures (Cardbus).

Applications

- Notebooks
- Handheld Portable devices
- Set-top boxes
- Home entertainment devices
- Switches and Routers
- Machine control systems
- Digital TV
- Test and measurement devices
- Medical instrumentation

Product Features and Benefits

- Improved assembly cycle times
- Optimum EMI shielding
- A variety of connector offset options available
- RoHS Compliant
- Cover sets meet all type II specifications
- Meets PCMCIA and JEIDA standards
- Frameless design enables OEM’s to automate key aspects of manufacturing
- Polarized to prevent incorrect card insertion
- With or without cardbus feature
- Accommodates most 68 pin connectors
- Can be assembled by hand, simple press tool available for high volume assembly
- End cap extensions can be customized to accept a multitude of I/O connectors
- Low tooling costs on custom designed packages

Materials and Finishes: Snappy Card Kit

<table>
<thead>
<tr>
<th>Cover:</th>
<th>Stainless Steel Brushed, 0.2mm thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Insulation:</td>
<td>Double Mylar, 0.08mm thickness</td>
</tr>
</tbody>
</table>

Label – Recess and Recommended Size

<table>
<thead>
<tr>
<th>Label Recess:</th>
<th>0.08mm deep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label Size:</td>
<td>40 mm x 61mm</td>
</tr>
</tbody>
</table>

Materials and Finishes: 68 pin connector

<table>
<thead>
<tr>
<th>Connector Insulator:</th>
<th>High Performance Plastic, Glass Fiber Reinforced (30%), Flame Retardant UL 94V-0 rated, Color: Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Contacts:</td>
<td>Base Material Phosphor Bronze, Finish: Nickel base with 30µ gold for contact area, solder tails: Au 2 µ over Nickel 40µ</td>
</tr>
</tbody>
</table>

Electrical: 68 pin connector

<table>
<thead>
<tr>
<th>Voltage:</th>
<th>100V AC rms / DC 150V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating:</td>
<td>0.5 A ( per pin )</td>
</tr>
</tbody>
</table>

Dielectric

<table>
<thead>
<tr>
<th>Withstanding Voltage:</th>
<th>500V rms withstanding voltage between adjacent pads</th>
</tr>
</thead>
</table>

Operating Temperature:

| Maximum soldering temperature: 260° C for a maximum of one minute. |
|------------------------|-------------------------------------------------|

Mechanical: 68 pin connector

<table>
<thead>
<tr>
<th>Hertzian Stress:</th>
<th>140,000 psi minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durability:</td>
<td>10,000 mating cycles</td>
</tr>
</tbody>
</table>

StarCard is a registered trademark of ITT Industries
PCMCIA I/O Kit

Features and Benefits

- Type II, as defined in PCMCIA specifications
- Frameless cover set with snap-on mechanism
- Easy to assemble by hand or a simple press tool
- Available with or without label recess
- Customized end caps to accept a wide variety of I/O connectors

Materials and Finishes

| Cover: Stainless Steel Brushed 0.2mm thickness |
| Insulation: Customized Mylar available |

Top Cover – Standard Version
Bottom Cover – for both Standard and Cardbus

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Label Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>N20-2004-000</td>
<td>Yes</td>
</tr>
<tr>
<td>N20-2004-002</td>
<td>No</td>
</tr>
</tbody>
</table>

Materials and Finishes

| Labels/Recommended Size: |
| Label Recess: 0.08mm deep |
| Label Size: 40 mm x 61mm |

Top Cover – Cardbus Version

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Label Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>N20-2004-001</td>
<td>Yes</td>
</tr>
<tr>
<td>N20-2004-003</td>
<td>No</td>
</tr>
</tbody>
</table>

Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit  

68 Way Single-Sided Surface Mount Connector Snap-on/Standard

Features and Benefits

- Meets PCMCIA requirements
- Single-side, single-row, surface mount tails/0.1 (.004) thick by 0.25 (.010) wide
- Incorporates PCMCIA card keying at the ends of insulator.
- Can be modified to meet needs of different offsets
- Slots for positive cover set alignment
- Guide rail alignment feature – connector to PCB
- Can be pre-assembled to PCB before reflow
- RoHS Compliant

Materials and Finishes

<table>
<thead>
<tr>
<th>Connectors</th>
<th>High Performance Plastic, Glass Fiber Reinforced (30%) Flame Retardant UL 94V-0 rated, Color: Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts</td>
<td>Base Material Phosphor Bronze, Finish: Nickel Base with 30μ gold for contact area, solder tails : Sn/Pb (9:1) 120μ Min over Nickel 40μ</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Voltage</th>
<th>100V AC rms / DC 150V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
<td>0.5 A (per pin)</td>
</tr>
<tr>
<td>Dielectric</td>
<td>500V rms withstanding voltage between adjacent pads Withstanding Voltage</td>
</tr>
<tr>
<td>Operating</td>
<td>Maximum soldering Temperature: 260° C for a maximum of one minute</td>
</tr>
<tr>
<td>Temperature</td>
<td>Maximum soldering Temperature: 260° C for a maximum of one minute</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Hertzian Stress</th>
<th>150,000 psi minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durability</td>
<td>20,000 mating cycles</td>
</tr>
</tbody>
</table>

Table:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Offset</th>
<th>Mount</th>
<th>Package</th>
<th>Keying</th>
</tr>
</thead>
<tbody>
<tr>
<td>132001-0042LG</td>
<td>DICMF-68S</td>
<td>0.30mm upward</td>
<td>SMT</td>
<td>Tray</td>
<td>5 V</td>
</tr>
<tr>
<td>132001-0069LG</td>
<td>DICMF-68S</td>
<td>0.00mm offset</td>
<td>SMT</td>
<td>Tray</td>
<td>5 V</td>
</tr>
<tr>
<td>132001-0070LG</td>
<td>DICMF-68S</td>
<td>0.00mm offset</td>
<td>SMT</td>
<td>Tray</td>
<td>3.3V</td>
</tr>
<tr>
<td>132001-0071LG</td>
<td>DICMF-68S</td>
<td>0.30mm downward</td>
<td>SMT</td>
<td>Tray</td>
<td>5 V</td>
</tr>
<tr>
<td>132001-0072LG</td>
<td>DICMF-68S</td>
<td>0.30mm upward</td>
<td>SMT</td>
<td>Tray</td>
<td>3.3V</td>
</tr>
<tr>
<td>132001-0073LG</td>
<td>DICMF-68S</td>
<td>0.00mm downward</td>
<td>SMT</td>
<td>Tray</td>
<td>3.3V</td>
</tr>
</tbody>
</table>

Note: for additional offset size contact Cannon

Recommended PCB layout

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
PCMCIA I/O Kit

68 Way Single-Sided Surface Mount Connector Snap-on/Cardbus

Features and Benefits

- Meet PCMCIA requirements
- Single-side, single-row, surface mount tails / 0.1 (.004) thick by 0.25 (.010) wide
- Earth grounding feature
- Incorporates PCMCIA card keying at the ends of insulator
- Can be modified to meet needs of different offsets
- Guide rail alignment feature – connector to PCB
- Can be pre-assembled to PCB before reflow
- RoHS Compliant

Materials and Finishes

| Connector | High Performance Plastic, Glass Fiber Reinforced (30%) |
| Contacts | Base Material Phosphor Bronze, Finish: Nickel Base with 30μ gold for contact area, solder tails: Sn/Pb (9:1) 120μ Min over Nickel 40μ |

Electrical

| Voltage | 100V AC rms / DC 150V |
| Current Rating | 0.5 A (per pin) |
| Dielectric Withstanding Voltage | 500V rms withstand voltage between adjacent pads Withstanding Voltage |
| Operating Temperature | Maximum soldering Temperature: 260° C for a maximum of one minute |

Mechanical

| Hertzian Stress | 150,000 psi minimum |
| Durability | 20,000 mating cycles |

Materials and Finishes

- Connectors
- Contacts
- Electrical
- Mechanical

Recommended PCB layout

Part Number Description Offset Mount Package Keying

| 132000-0058LG | DICMF-68SCB-SNPY-SMT-M02 | 0.0mm | SMT | Tray | 3.3 V |

| 132001-0046LG | DICMF-68SCB-SNPY-SMT-M04 | 0.6mm downward | SMT | Tray | 5 V |

Note: For additional offset size contact Cannon

Recommended PCB layout
STARCARD® Ultra

A Super Star in Our PCMCIA Universe

The StarCard Ultra Type I and Type II is the optimal solution for cover set toughness and offers maximum availability for component height. A plastic frame is molded around the perimeter of the cover and oriented into position with guide posts, which simplifies its assembly. Once assembled, the covers are ultrasonically welded together in a continuous weld joint around the perimeter of the card. This process provides the strongest known PC card kit available today. Starcard Ultra cover sets and 68 way connectors are available in either standard 16 bit high performance 32 bit architecture (Cardbus).

Applications

- Notebooks
- Handheld Portable devices
- Set-top boxes
- Home entertainment devices
- Switches and Routers
- Machine control systems
- Security devices
- Test and measurement devices
- Medical instrumentation

Product Features and Benefits

- Fast and easy assembly
- Patented, ultrasonically welded technology
- Optimum EMI shielding
- A variety of connector offset options are available
- Accommodates most 68 pin connectors
- Secure (tamper proof)
- Maximizes available PCB Space
- Meets PCMCIA and JEIDA standards
- Keying options for socket: 5V and 3.3V
- Insert molded rigid plastic frame enclosure
- Polarized to prevent incorrect card insertion
- Cover sets meet all Type I and Type II specifications
- End cap extensions can be customized to accept a multitude of I/O connectors
- Low tooling costs on custom designed packages
- With or without cardbus features
- USW tooling available
- RoHS Compliant

Material and finishes: Ultra Card Kit

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>Stainless Steel Brushed, 0.2mm thickness</td>
</tr>
<tr>
<td>Frame molding</td>
<td>Thermoplastic, Glass Fiber Reinforced, UL94V-0 Rated, Color: Black</td>
</tr>
<tr>
<td>Insulation</td>
<td>Polyester foil, 0.08mm thickness, Dielectric strength: 7.0 kV min</td>
</tr>
</tbody>
</table>

Material and finishes: 68 pin connector

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Insulator</td>
<td>High Performance Plastic, Glass Fiber Reinforced (30%), Flame Retardant UL94V-0 rated, Color: Black</td>
</tr>
<tr>
<td>Connector Contacts</td>
<td>Base Material: Phosphors Bronze, Finish: Nickel base with 30µ gold for contact area, solder tails Au 2µ* (for plating options, please contact ITT)</td>
</tr>
<tr>
<td></td>
<td>Base Material: Beryllium Copper, Finish: Nickel base with Palladium Nickel plus gold flash for contact area, solder tails AU 2µ**</td>
</tr>
</tbody>
</table>

Electrical: 68 pin connector

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>100V AC rms / DC 150V</td>
</tr>
<tr>
<td>Current Rating</td>
<td>0.5 A (per pin)</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500V rms withstanding voltage between adjacent pads</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Maximum soldering temperature: 260° C for a maximum of one minute</td>
</tr>
</tbody>
</table>

Label – Recess and Recommended Size

<table>
<thead>
<tr>
<th>Recess</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08 mm</td>
<td>40 mm x 61mm</td>
</tr>
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</table>

Mechanical: 68 pin connector

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hertzian Stress</td>
<td>140,000 psi minimum</td>
</tr>
</tbody>
</table>

* For standard version
** Optional

Starcard is a registered trademark of ITT Industries

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
# PCMCIA I/O Kit

## Top Cover – Standard Version

### Features and Benefits

- Type II defined by PCMCIA specification
- Patented ultrasonic welded covers
- Many I/O* options readily available
- Covers can be supplied with or without label recess
- Customized end caps to accept a wide variety of I/O connectors
- Offers excellent shielding features
- Ultrasonic welding tools are available

### Materials and Finishes

<table>
<thead>
<tr>
<th>Cover:</th>
<th>Stainless Steel Brushed, 0.2mm thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame molding:</td>
<td>Thermoplastic, Glass Fiber Reinforced, UL94V-0 Rated, Color: Black</td>
</tr>
<tr>
<td>Insulation:</td>
<td>Polyester foil, 0.08mm thickness, Dielectric strength: 7.0 kV min</td>
</tr>
</tbody>
</table>

### Labels/Recommended Size

40 mm x 61 mm

### Dimensions

![Dimensions](image)

### Part Numbers and Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>I/O Description</th>
<th>Insulation</th>
<th>Label Recess</th>
<th>Part Number</th>
<th>I/O Description</th>
<th>Insulation</th>
<th>Label Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>036-0151-000</td>
<td>Blind</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-111</td>
<td>4 Pos. Center</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>036-0151-002</td>
<td>Blind</td>
<td>No</td>
<td>No</td>
<td>036-0151-112</td>
<td>4 Pos. Center</td>
<td>Yes</td>
<td>No</td>
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<td>4 Pos. Left</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-077</td>
<td>15 Pos. Left</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>036-0151-024</td>
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<td>No</td>
<td>No</td>
<td>036-0151-078</td>
<td>15 Pos. Left</td>
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<td>No</td>
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<td>036-0151-107</td>
<td>4 Pos. Center</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-051</td>
<td>15 Pos. Center</td>
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<td>Yes</td>
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<td>036-0151-108</td>
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<td>No</td>
<td>036-0151-052</td>
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<td>No</td>
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<tr>
<td>036-0151-049</td>
<td>15 Pos. Left</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-055</td>
<td>15 Pos. Right</td>
<td>Yes</td>
<td>Yes</td>
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<td>15 Pos. Left</td>
<td>No</td>
<td>No</td>
<td>036-0151-056</td>
<td>15 Pos. Right</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>036-0151-011</td>
<td>15 Pos. Center</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-059</td>
<td>15 Pos. Dual</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>036-0151-012</td>
<td>15 Pos. Center</td>
<td>No</td>
<td>No</td>
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<td>15 Pos. Dual</td>
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<td>No</td>
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<td>036-0151-015</td>
<td>15 Pos. Right</td>
<td>No</td>
<td>Yes</td>
<td>036-0151-067</td>
<td>4/15 Pos. COMBO</td>
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<td>Yes</td>
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<td>036-0151-016</td>
<td>15 Pos. Right</td>
<td>No</td>
<td>No</td>
<td>036-0151-068</td>
<td>4/15 Pos. COMBO</td>
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<td>036-0151-019</td>
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<td>Yes</td>
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<td>No</td>
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<td>No</td>
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<td>4/15 Pos. COMBO</td>
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<td>Yes</td>
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<td>Yes</td>
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<td>036-0151-028</td>
<td>4/15 Pos. COMBO</td>
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<td>No</td>
<td>036-0151-092</td>
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<td>No</td>
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<td>036-0151-099</td>
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<td>No</td>
<td>Yes</td>
<td>036-0162-000</td>
<td>R/W switch*</td>
<td>No</td>
<td>No</td>
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<td>No</td>
<td>036-0162-002</td>
<td>R/W switch*</td>
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<td>No</td>
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<td>036-0162-006</td>
<td>R/W switch</td>
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<td>Yes</td>
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<td>036-0151-151</td>
<td>Blind</td>
<td>Yes</td>
<td>Yes</td>
<td>036-0162-008</td>
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<td>No</td>
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<td>Blind</td>
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<td>Yes</td>
<td>036-0162-010</td>
<td>R/W switch</td>
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* For standard version

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit
Top Covers – Cardbus Version

Features and Benefits

- Type II defined by PCMCIA specification
- Patented ultrasonic welded covers
- Many I/O* options readily available
- Covers can be supplied with or without label recess
- Customized end caps to accept a wide variety of I/O connectors
- Offers excellent shielding features
- Available with or without ground clip opening

Material and Finishes

- **Cover:** Stainless Steel Brushed, 0.2mm thickness
- **Frame molding:** Thermoplastic, Glass Fiber Reinforced, UL94V-0 Rated, Color: Black
- **Insulation:** Polyester foil, 0.08mm thickness, Dielectric strength: 7.0 kV min

Labels/Recommended Size

- 40 mm x 61mm

```
<table>
<thead>
<tr>
<th>Part Number</th>
<th>I/O Description</th>
<th>Insulation</th>
<th>Label Recess</th>
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<tbody>
<tr>
<td>036-0151-085</td>
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<td>036-0151-035</td>
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<tr>
<td>036-0151-036</td>
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<tr>
<td>036-0151-039</td>
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<td>15 Pos. Dual</td>
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<td>4/15 Pos. COMBO</td>
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<td>036-0151-048</td>
<td>4/15 Pos. COMBO</td>
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<td>036-0151-173</td>
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<td>036-0151-189</td>
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<td>036-0151-175</td>
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<td>036-0168-000</td>
<td>26 Pos. Center</td>
<td>W/Mech.STOP</td>
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<table>
<thead>
<tr>
<th>Part Number</th>
<th>I/O Description</th>
<th>Insulation</th>
<th>Label Recess</th>
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</thead>
<tbody>
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<tr>
<td>036-0151-090</td>
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<td>No</td>
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<td>036-0151-071</td>
<td>15 Pos. Center</td>
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<td>036-0151-072</td>
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<td>036-0151-075</td>
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<td>Yes</td>
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<td>036-0151-076</td>
<td>15 Pos. Right</td>
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<td>No</td>
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<td>036-0151-079</td>
<td>15 Pos. Dual</td>
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<td>Yes</td>
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<td>036-0151-080</td>
<td>15 Pos. Dual</td>
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<td>No</td>
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<tr>
<td>036-0151-087</td>
<td>4/15 Pos. COMBO</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>036-0151-088</td>
<td>4/15 Pos. COMBO</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>036-0151-083</td>
<td>26 Pos. Center</td>
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<td>Yes</td>
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<tr>
<td>036-0151-084</td>
<td>26 Pos. Center</td>
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<td>036-0151-155</td>
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<td>036-0151-156</td>
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<td>036-0151-161</td>
<td>4 Pos. Center</td>
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<tr>
<td>036-0151-171</td>
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<td>No</td>
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<tr>
<td>036-0151-177</td>
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<td>Yes</td>
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<tr>
<td>036-0168-001</td>
<td>4 Pos. Center</td>
<td>W/Mech.STOP</td>
<td>Yes</td>
</tr>
</tbody>
</table>
```

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
### PCMCIA I/O Kit

**Bottom Cover – Standard and Cardbus Version**

### Features and Benefits
- Type II defined by PCMCIA specification
- Patented ultrasonic welded covers
- Many I/O options readily available
- Covers can be supplied with or without label recess
- Customized end caps to accept a wide variety of I/O connectors
- Offers excellent shielding features
- Available with or without ground clip opening
- Ultrasonic welding tools are available

#### Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com

#### Part Number | I/O Description | Insulation | Label Recess | Key
---|---|---|---|---
036-0151-001 | Blind | No | Yes | 5V
036-0151-003 | Blind | No | No | 5V
036-0151-025 | 4 Pos. Left | No | Yes | 5V
036-0151-026 | 4 Pos. Left | No | No | 5V
036-0151-109 | 4 Pos. Center | No | Yes | 5V
036-0151-110 | 4 Pos. Center | No | No | 5V
036-0151-073 | 15 Pos. Left | No | Yes | 5V
036-0151-074 | 15 Pos. Left | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-190 | Blind | No | Yes | 3.3V
036-0151-191 | Blind | No | No | 3.3V
036-0151-022 | 15 Pos. Dual | No | No | 5V
036-0151-102 | 26 Pos. Center | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
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036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
036-0151-029 | 4/15 Pos. COMBO | No | Yes | 5V
036-0151-097 | 22 Pos. Center | No | Yes | 5V
036-0151-098 | 22 Pos. Center | No | No | 5V
036-0151-101 | 15 Pos. Center | No | Yes | 5V
036-0151-102 | 15 Pos. Center | No | No | 5V
PCMCIA I/O Kit  

68 Way Single-Sided Surface Mount Connector - Standard

Features and Benefits

- Conforms to recommended connector and pad footprint in PCMCIA specifications

- Single-side, single row, surface mount tails/0.10 (.004) thick by 0.25 (.010) wide

- Incorporates PCMCIA card keying at the ends of insulator

- Slots for positive cover set alignment

- 68 way connector is also available with location boss

- Can be modified to meet needs of different offsets

- RoHS Compliant

Materials and Finishes

<table>
<thead>
<tr>
<th>Description</th>
<th>Connectors</th>
<th>Contacts</th>
<th>Cardbus</th>
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<tbody>
<tr>
<td></td>
<td>High Performance Plastic, Glass Fiber Reinforced (30%), Flame Retardant UL 94V-0 rated, Color: Black</td>
<td>Base Material Phosphors Bronze, Finish: Nickel Base with Palladium Nickel plus gold flash for contact area, solder tails Tin/Lead 90%, Tin 10% lead</td>
<td>Base Material Phosphor Bronze</td>
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Electrical

<table>
<thead>
<tr>
<th>Voltage</th>
<th>100V AC rms / DC 150V</th>
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<tbody>
<tr>
<td>Current Rating</td>
<td>0.5 A (per pin)</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500V rms withstanding voltage between adjacent pads</td>
</tr>
</tbody>
</table>

Operating Temperature

| Maximum soldering Temperature: 260°C for a maximum of one minute |

Hertzian Stress

| 140,000 psi minimum |

Durability

| 10,000 mating cycles |

Part Number | Description               | Offset       | Mount | W/Boss | Package       | QTY/Reel |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>132001-0026LG</td>
<td>DICMF-68S-SPC-M11</td>
<td>0.60mm downward</td>
<td>SMT</td>
<td>Yes</td>
<td>Tape &amp; Reel</td>
<td>1000</td>
</tr>
<tr>
<td>132001-0029LG</td>
<td>DICMF-68S-SPC-M06</td>
<td>0.0mm</td>
<td>SMT</td>
<td>Yes</td>
<td>Tape &amp; Reel</td>
<td>1000</td>
</tr>
<tr>
<td>132001-0051LG</td>
<td>DICMF-68S-SPC-M10</td>
<td>0.30mm downward</td>
<td>SMT</td>
<td>Yes</td>
<td>Tape &amp; Reel</td>
<td>1000</td>
</tr>
</tbody>
</table>

Recommended PCB layout

Specifications and dimensions subject to change

www.ittcannon.com
PCMCIA I/O Kit

68 Way Single-Sided Surface Mount Connector - Cardbus

**Features and Benefits**

- Connector conforms to recommended pad footprint in current PCMCIA release
- Single-sided, single row, surface mount inline tails/0.10 (.004) thick by 0.25 (.010) wide
- Incorporates PCMCIA card keying for Ultrasonic type
- Slots for positive cover set alignment
- 68 way connector is available with locating boss
- Can be modified to meet the needs of different off sets
- RoHS Compliant

**Materials and Finishes**

- **Connectors**: High Performance Plastic, Glass Fiber Reinforced (30%), Flame Retardant UL 94V-0 rated, Color: Black
- **Contacts**: Base Material Beryllium Copper, Finish: Nickel Base with Palladium Nickel plus gold flash for contact area, solder tails Tin/Lead 90%, Tin 10% lead
- **Cardbus**: Base Material Phosphor Bronze

**Electrical**

- **Voltage**: 100V AC rms / DC 150V
- **Current Rating**: 0.5 A (per pin)
- **Dielectric Withstanding Voltage**: 500V rms withstanding voltage between adjacent pads
- **Operating Temperature**: Maximum soldering Temperature: 260° C for a maximum of one minute

**Mechanical**

- **Hertzian Stress**: 140,000 psi minimum
- **Durability**: 10,000 mating cycles

**Recommended PCB layout**

**Dimensions shown in mm**

Specifications and dimensions subject to change

www.ittcannon.com
COMPACTFLASH®

C-Flash®

Great Things Come in Small Packages

The latest small form factor removable storage units are here, C-Flash packaging for CompactFlash®. C-Flash is the optimal solution for cover set toughness. A plastic frame is molded around the perimeter of the cover and orientated into position with guide posts, which simplifies its assembly. Once assembled the covers are ultrasonically welded together in a continuous weld joint around the perimeter of the card. This process provides the most rigid compact flash products in the industry and allows OEMs to streamline their manufacturing processes to deliver cost effective solutions while maximizing production efficiencies. C-Flash cover sets and 50 way connectors are available in either Type I or Type II packages.

Applications

- Digital Camera’s
- Handheld portable devices
- Camcorders
- Home entertainment devices
- Wireless communications
- Personal computers & printers
- Security devices
- Test and measurement devices
- Medical instrumentation

Product Features and Benefits

- Fast and easy assembly
- Patented, ultrasonically welded technology
- Cover sets meet all Type I and Type II specifications
- A variety of connector offset options are available
- Accommodates most 50 pin connectors
- Meets Compact Flash Association standards
- Insert molded rigid plastic frame enclosure
- Polarized to prevent incorrect card insertion
- Optimum EMI shielding
- Customized extensions for Type I and Type II cover sets
- Secure (tamper proof)
- Cover sets are available with or without insulation on the inside of either cover
- Type II cards are available with various I/O configurations
- Low tooling costs on custom designed packages
- USW tooling available
- RoHS compliant

Materials and Finishes: C-Flash Card Kit

<table>
<thead>
<tr>
<th>Material/Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covers</td>
<td>304 Annealed stainless steel, Durabrush, 0.20mm thickness</td>
</tr>
<tr>
<td>Cover Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
<tr>
<td>Length</td>
<td>36.40 ± 0.15mm</td>
</tr>
<tr>
<td>Width</td>
<td>42.8 ± 0.10mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3.30 ± 0.10mm (including label area)</td>
</tr>
</tbody>
</table>

C-Flash is a registered trademark of ITT Industries

* Compact Flash is a registered trademark of Compact Flash Association

Materials, Finishes, and Mechanical: 50 pin connector

<table>
<thead>
<tr>
<th>Material/Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulator</td>
<td>Liquid Crystal Polymer, UL 94V-0 Rated Color: Black</td>
</tr>
<tr>
<td>Contact</td>
<td>100µ in. Nickel over Copper Alloy</td>
</tr>
<tr>
<td>Contact Wiping Area</td>
<td>PdNi 40µ in. with gold flash</td>
</tr>
<tr>
<td>Contact Solder Tails</td>
<td>Au 2µ</td>
</tr>
<tr>
<td>Connector Type</td>
<td>Straddle Mount or Surface Mount</td>
</tr>
<tr>
<td>Single Socket Holding Force</td>
<td>4.9N min push out at 25mm/minute</td>
</tr>
<tr>
<td>Total Mating Force</td>
<td>28.8N max at 25mm/minute</td>
</tr>
<tr>
<td>Total Unmating Force</td>
<td>4.9N min and 24.5N max at 25mm/min</td>
</tr>
<tr>
<td>Durability</td>
<td>10,000 mating cycles</td>
</tr>
</tbody>
</table>

Electrical: 50 pin connector

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
<td>0.5A</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500 Vms at Sea Level</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +85°C</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>Initially 500mΩ at 500 Vdc</td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
COMPACT FLASH®

Cover C-Flash Type I

**Features and Benefits**

- Meets Type I specifications as defined by the Compact Flash Association
- Two stainless steel metal stamping with an insert molded frame that is ultrasonically welded to form a rigid closure measuring 36.4mm x 42.8mm
- Cover sets ar available with or without insulation on the inside of either cover
- Optimum EMI shielding
- Polarized to prevent incorrect card insertion
- USW tooling available

**Materials and Finishes**

<table>
<thead>
<tr>
<th>Material</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>304 Annealed stainless steel, Durabrush 0.20mm thickness</td>
</tr>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
</tbody>
</table>

**Meets CFA Specifications**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>36.40 ± 0.15mm</td>
</tr>
<tr>
<td>Width</td>
<td>42.8 ± 0.10mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3.30 ± 0.10mm (including label areas)</td>
</tr>
</tbody>
</table>

**Bottom Cover**

**Insulation**

Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

**Labels- recess and recommended size**

<table>
<thead>
<tr>
<th>Label Recess</th>
<th>Label Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08mm deep</td>
<td>37.00mm x 32.00mm</td>
</tr>
</tbody>
</table>

**Top Cover**

**Insulation**

Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

**Labels- recess and recommended size**

<table>
<thead>
<tr>
<th>Label Recess</th>
<th>Label Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08mm deep</td>
<td>37.00mm x 32.00mm</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Cover Set Description*</th>
<th>Part Number</th>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top and Bottom No Insulation</td>
<td>036-0144-000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Top Insulation Only</td>
<td>036-0144-003</td>
<td>Top Insulation with Adhesive</td>
<td>036-0144-004</td>
</tr>
<tr>
<td>Bottom Insulation Only</td>
<td>036-0144-001</td>
<td>Bottom Insulation with Adhesive</td>
<td>036-0144-005</td>
</tr>
<tr>
<td>Top and Bottom Insulation</td>
<td>036-0144-002</td>
<td>Top and Bottom Insulation with Adhesive</td>
<td>036-0144-006</td>
</tr>
</tbody>
</table>

*Blind I/O only

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
COMPACT FLASH®
Cover C-Flash Type I- Extension

Features and Benefits

• Meets Type I specifications as defined by the Compact Flash Association
• Two stainless steel metal stamping with an insert molded frame that is ultrasonically welded
• Tailormade to meet the customers requirements for wireless application antenna, Led feature
• Optimum EMI shielding
• Polarized to prevent incorrect card insertion
• USW tooling available
• Low tooling costs on customized designs for plastic extensions

Materials and Finishes

<table>
<thead>
<tr>
<th>Cover</th>
<th>Insulation</th>
<th>Frame Molding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>304 Annealed stainless steel, Durabrush 0.20mm thickness</td>
<td>Black Thermoplastic</td>
</tr>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
<td></td>
</tr>
</tbody>
</table>

Width 42.8 ± 0.10mm
Thickness 3.30 ± 0.10mm (including label areas)

Bottom Cover

Insulation
Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

<table>
<thead>
<tr>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Cover, Internal antenna</td>
<td>036-0154-019</td>
</tr>
</tbody>
</table>

Top Cover

Insulation
Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

<table>
<thead>
<tr>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Cover, Internal antenna</td>
<td>036-0154-020</td>
</tr>
</tbody>
</table>
### Features and Benefits
- Type II cards are electronically compatible with Compact Flash Specifications
- Type II cards will be used in higher capacity applications
- Type II cards are available with various I/O configurations including 4 and 15 position blind I/O and custom
- Optimum EMI shielding
- Polarized to prevent incorrect card insertion
- USW tooling available
- Low tooling costs on customized designs for plastic extensions

### Materials and Finishes
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>304 Annealed stainless steel, Durabrush 0.20mm thickness</td>
</tr>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
</tbody>
</table>

### Meets CFA Specifications
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>36.40 ± 0.15mm</td>
</tr>
<tr>
<td>Width</td>
<td>42.8 ± 0.10mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>5.0mm max</td>
</tr>
</tbody>
</table>

### Top Cover

**Insulation**
Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

**Labels - recess and recommended size**
- Label Recess: 0.08mm deep
- Label Size: 37.00mm x 32.00mm

### Bottom Cover

**Insulation**
Insulation is optional. It measures 36.83mm x 24.13mm. A double-sided adhesive strip (for the 50 position) on insulation is also available.

**Labels - recess and recommended size**
- Label Recess: 0.08mm deep
- Label Size: 37.00mm x 32.00mm

### Cover Set Description

<table>
<thead>
<tr>
<th>Cover Set Description*</th>
<th>Part Number</th>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top and Bottom No Insulation</td>
<td>036-0155-000</td>
<td>Top Insulation</td>
<td>036-0155-003</td>
</tr>
<tr>
<td>Top Insulation Only</td>
<td>036-0155-001</td>
<td>Top Insulation with Adhesive</td>
<td>036-0155-004</td>
</tr>
<tr>
<td>Bottom Insulation Only</td>
<td>036-0155-002</td>
<td>Bottom Insulation with Adhesive</td>
<td>036-0155-005</td>
</tr>
<tr>
<td>Top and Bottom Insulation</td>
<td>036-0155-006</td>
<td>Top and Bottom Insulation with Adhesive</td>
<td>036-0155-007</td>
</tr>
</tbody>
</table>

*Blind I/O only

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
COMPACT FLASH®

50 Way Surface Mount Connector

Features and Benefits

• Meets all CFA standard requirements
• Electronically complies with the PCMCIA ATA standard
• Mounts the PCB allowing reflow, how bar or hand soldering
• RoHS Compliant

Materials and Finishes

<table>
<thead>
<tr>
<th>Insulation</th>
<th>Liquid Crystal Polymer, UL 94V-0 Rated, Color: Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>100µ in. Nickel over Copper Alloy</td>
</tr>
<tr>
<td>Contact Wiping Area</td>
<td>PdNi 30µ in. with gold flash</td>
</tr>
<tr>
<td>Contact Solder Tails</td>
<td>150µ in. min 90/10 Tin Lead</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Current Rating</th>
<th>0.5A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500 Vrms at Sea level</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +85°C</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>Initially 1000mΩ at 500 Vdc</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Straddle mount or Surface Mount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Socket Holding Force</td>
<td>4.9N minimum push out at 25mm/minute</td>
</tr>
<tr>
<td>Total Mating Force</td>
<td>28.8N maximum at 25mm/minute</td>
</tr>
<tr>
<td>Total Unmating Force</td>
<td>4.9N minimum and 24.5N maximum at 25mm/minute</td>
</tr>
<tr>
<td>Durability</td>
<td>10,000 mating cycles</td>
</tr>
</tbody>
</table>

Recommended PCB Layout

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Offset (downward)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>980-2001-169</td>
<td>0.00mm</td>
<td>50 way female straddle mount socket</td>
</tr>
<tr>
<td>132001-0022LG</td>
<td>0.26mm</td>
<td>50 position without ground, without locating boss</td>
</tr>
<tr>
<td>132001-0023LG</td>
<td>0.85mm</td>
<td>50 position SMT without ground, with locating boss</td>
</tr>
<tr>
<td>132001-0028LG</td>
<td>0.26mm</td>
<td>50 position SMT with ground clip</td>
</tr>
<tr>
<td>132001-0036LG</td>
<td>-0.40mm</td>
<td>50 position SMT without ground clip</td>
</tr>
<tr>
<td>132001-0038LG</td>
<td>0.26mm</td>
<td>50 position SMT without ground clip with locating boss</td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change
PCMCIA I/O Kit

ExpressCard Snappy
The Future of PCMCIA Cards is Here

ITT’s ExpressCard 26 pin edge card connectors and snappy cover sets meet the PCMCIA industries demands for 34mm and 54mm wide modules. Our stainless steel cover sets are quick and easy to assemble. With a universal slot design and module formats measuring 5mm deep by just 75mm long, the connectors and cover sets enable both compact ExpressCard/34 and /54 cards to fit in the same aperture, saving component count. This robust design is RoHS compliant and allows up to 10,000 cover set mating cycles. ITT Express Card products are certified to the Express Card Compliant Program (PCMCIA) and are listed in the Express Card Resource Directory.

Applications

- Notebook/Desktop computers
- Handheld portable devices
- Set-Top boxes
- Storage devices
- Wireless/Wired communications
- Digital TV
- Memory media adapters
- Test and measurement devices
- Biometric devices

Product Features

- Fast and easy hand assembly
- Simple press tool available for high volume assembly
- A variety of connector offset options are available
- Accommodates most 26 pin connectors
- ExpressCard/34 Module: 34mm (W) X 75mm (L) X 5mm (T)
- ExpressCard/54 module: 54mm (W) X 75mm (L) X 5 mm (T)
- Meets PCMCIA Express Card Associations Standards
- 26 pin connector designed to prevent incorrect card insertion
- Optimum EMi shielding
- End cap extensions can be customized to accept a multitude of I/O connectors
- Customized decorative finishes
- Cover sets are available with or without insulation on the inside of either cover
- SIM card cut-out options are available upon request
- Low tooling costs on custom designed packages
- RoHS compliant

Materials and Finishes: ExpressCard Kit

<table>
<thead>
<tr>
<th>Cover</th>
<th>304 Annealed stainless steel, 0.20mm thickness, Durabrush</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Insulation</td>
<td>Mylar, 0.08mm thickness</td>
</tr>
<tr>
<td>Label Recess and Recommended Size</td>
<td></td>
</tr>
<tr>
<td>Label Recess</td>
<td>0.08mm deep</td>
</tr>
<tr>
<td>Label Size</td>
<td>58.40mm x 22.40mm</td>
</tr>
</tbody>
</table>

Materials and Finishes: 26 pin connector

<table>
<thead>
<tr>
<th>Connector Insulator</th>
<th>Liquid Crystal Polymer, Flame Retardant Rate: UL94V-0, Color: Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Contacts</td>
<td>Base Material: Phosphor Bronze, Finishes: Nickel base with Au at contact area and pure tin at solder tails</td>
</tr>
</tbody>
</table>

Electrical: 26 pin connector

<table>
<thead>
<tr>
<th>Current Rating</th>
<th>0.75 A Per Pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500 Vms AC for 1 minute</td>
</tr>
<tr>
<td>LL Contact Resistance</td>
<td>40mΩ Max</td>
</tr>
</tbody>
</table>

Mechanical: 26 pin connector

<table>
<thead>
<tr>
<th>Total Mating Force</th>
<th>39N Maz at Speed of 12.5mm per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Unmating Force</td>
<td>3.7 - 18.5 N at speed of 12.5mm per minute</td>
</tr>
<tr>
<td>Durability</td>
<td>10,000 cycles</td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit

Specifications and dimensions subject to change

Features and Benefits

- Compliant with ExpressCard Standard
- Frameless cover set with snap-on locking mechanism
- Easy to assemble by hand or simple press tool
- Available with or without label recess
- Flexibility to customize end caps

Materials and Finishes

<table>
<thead>
<tr>
<th>Cover</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>Top with label recess</td>
<td>039-4004-304</td>
</tr>
<tr>
<td>SIM Access Feature</td>
<td>Optional, Contact ITT for SIM Cut-out</td>
<td></td>
</tr>
<tr>
<td>Bottom</td>
<td>Top with label recess</td>
<td>039-4004-304</td>
</tr>
<tr>
<td></td>
<td>Bottom without label recess</td>
<td>039-4004-358</td>
</tr>
</tbody>
</table>

Dimensions shown in mm

www.ittcannon.com
PCMCIA I/O Kit

Snap-On Version, Standard Type 34, End Cap and Extended Box

### End Cap

<table>
<thead>
<tr>
<th>Material</th>
<th>Nylon Glass filled or PC + ABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>End Cap</td>
</tr>
<tr>
<td>Part Number</td>
<td>140-4004-340</td>
</tr>
</tbody>
</table>

### Extended Box

With optional features of openings for:
- LED
- USB/Mini USB
- HDMI
- RJ Plug
- Antenna Slot
- RF

With the option of surface treatment of:
- Paint, Silk Print, Pad Print, and UV Treatment

Our custom extended box solutions employ the latest standards and techniques in 3D modeling to ensure your project is a success. Our ExpressCard extended boxes can be customized to accept a multitude of I/O packages. Contact your local ITT sales office for more information.

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit
Snap-On Version, Type 34, 26 Way Surface Mount Connector

Features and Benefits
- Compliant with ExpressCard Standard
- Snap-on design with locking mechanism feature along both ends
- Easy to assemble
- Flexibility to custom design offsets
- RoHS Compliant

Materials and Finishes

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation</td>
</tr>
<tr>
<td>Color: Black</td>
</tr>
<tr>
<td>Contact Base Material</td>
</tr>
<tr>
<td>Phosphor Bronze</td>
</tr>
<tr>
<td>Contact Wiping Area</td>
</tr>
<tr>
<td>Au over Nickel</td>
</tr>
<tr>
<td>Contact Solder Area</td>
</tr>
<tr>
<td>Pure Tin over Nickel</td>
</tr>
</tbody>
</table>

Electrical
- Current Rating: 0.75A per pin max
- Dielectric Withstanding Voltage: 40mΩ Max

Mechanical
- Contact Type: Surface Mount
- Total Mating Force: 39N max at speed of 12.5mm per minute
- Total Unmating Force: 3.7-18.5 N at speed of 12.5mm per minute
- Durability: 5000 Cycles

Part Number Offset Mount W/Boss Package Qty/Reel
132001-1117 0.0mm SMT No Tape and Reel 800
132001-1118 0.25mm upward SMT No Tape and Reel 800

Recommended PCB Dimensions
ExpressCard Ultra
The Future of PCMCIA Cards is Here

ITT’s ExpressCard 26 pin edge card connectors and ultrasonic cover sets meet the PCMCIA industry’s demands for 34mm and 54mm wide modules. A plastic frame is molded around the perimeter of the cover and orientated into position with guide posts, which simplifies its assembly during ultrasonic welding. With a universal slot design and module formats measuring 5mm deep by just 75mm long, the connectors and cover sets enable both compact ExpressCard/24 and /54 cards to fit in the same aperture, saving component count. This robust design is RoHS compliant and allows up to 10,000 cover set mating cycles. ITT Express Card products are certified to the Express Card Compliant Program (PCMCIA) and are listed in the Express Card Resource Directory.

Applications

- Notebook/Desktop computers
- Handheld portable devices
- Set-Top boxes
- Storage devices
- Wireless/Wired communications
- Security devices
- Memory media adapters
- Test and measurement devices
- Biometric devices

Product Features and Benefits

- Fast and easy assembly
- Ultrasonic weld tools available for high volume assembly
- A variety of connector offset options are available
- Accommodates most 26 pin connectors
- ExpressCard/34 Module: 34mm (W) X 75mm (L) X 5mm (T)
- ExpressCard/54 module: 54mm (W) X 75mm (L) X 5 mm (T)
- Secure (tamper proof)
- Meets PCMCIA ExpressCard Association Standards

- Polarized to prevent incorrect card insertion
- Optimum EMI shielding
- SIM card cut-out options available
- Customized decorative finishes
- Cover sets are available with or without insulation on the inside of either cover
- End Cap extensions can be customized to accept a multitude of I/O connectors
- Low tooling costs on custom designed packages
- RoHS Compliant

<table>
<thead>
<tr>
<th>Materials and Finishes: ExpressCard kit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cover</strong></td>
</tr>
<tr>
<td>304 Annealed stainless steel, 0.20mm thickness, Durabrush</td>
</tr>
<tr>
<td><strong>Cover Insulation</strong></td>
</tr>
<tr>
<td>Mylar, 0.08mm thickness</td>
</tr>
<tr>
<td><strong>Label Recess and Recommended Size</strong></td>
</tr>
<tr>
<td>Label Recess</td>
</tr>
<tr>
<td>58.40mm x 22.40mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials and Finishes: 26 pin connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connector Insulator</strong></td>
</tr>
<tr>
<td>Liquid Crystal Polymer, Flame Retardant Rate: UL94V-0, Color: Black</td>
</tr>
<tr>
<td><strong>Connector Contacts</strong></td>
</tr>
<tr>
<td>Base Material: Phosphor Bronze, Finishes: Nickel base with Au at contact area and pure tin at solder tails</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical: 26 pin connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
</tr>
<tr>
<td>0.75 A Per Pin</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
</tr>
<tr>
<td>600 Vms AC for 1 minute</td>
</tr>
<tr>
<td>LL Contact Resistance</td>
</tr>
<tr>
<td>40mΩ Max</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical: 26 pin connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Mating Force</td>
</tr>
<tr>
<td>39N Maz at Speed of 12.5mm per minute</td>
</tr>
<tr>
<td>Total Unmating Force</td>
</tr>
<tr>
<td>3.7 - 18.5 N at speed of 12.5mm per minute</td>
</tr>
<tr>
<td>Durability</td>
</tr>
<tr>
<td>10,000 cycles</td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit

Ultra Version, Standard Type 34-Covers

Features and Benefits

• Compliant to ExpressCard Standard
• Utilizes an insert molded frame that is ultrasonically welded to form a rigid encasing
• Ultrasonic weld assembly tools available
• Flexibility to customize end caps
• Available with or without label recess

Materials and Finishes

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>304 Annealed stainless steel, 0.20mm thickness, Durabrush finish</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic, UL 94-VO</td>
</tr>
<tr>
<td>Insulation</td>
<td>Customized mylar available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labels - recess and recommended size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label Recess</td>
</tr>
<tr>
<td>Label Size</td>
</tr>
</tbody>
</table>

Top Cover

<table>
<thead>
<tr>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top with label recess</td>
<td>132001-3403</td>
</tr>
</tbody>
</table>

SIM Access Feature

Optional, Contact ITT for SIM Cut-out

Bottom Cover

<table>
<thead>
<tr>
<th>Cover Set Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom with label recess</td>
<td>132001-3404</td>
</tr>
</tbody>
</table>

SIM Access Feature

Optional, Contact ITT for SIM Cut-out

Dimensions shown in mm
Specifications and dimensions subject to change
**Extended Box**

Our custom extended box solutions employ the latest standards and techniques in 3D modeling to ensure your project is a success. Our ExpressCard extended boxes can be customized to accept a multitude of I/O packages. Contact your local ITT sales office for more information.

With optional features for openings:
- LED
- USB/Mini USB
- HDMI
- RJ Plug
- Antenna Slot
- RF

With the option of surface treatment:
- Paint, Silk Print, Pad Print, UV Treatment

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
PCMCIA I/O Kit

Ultrasonic Weld Version, Type 34, 26 Way Surface Mount Connector

Features and Benefits
- Compliant to Express Card Standard
- Easy to assemble
- Flexibility to custom design offsets
- RoHS Compliant

Materials and Finishes
- Insulation: Liquid Crystal Polymer, Color: Black
- Contact Base Material: Phosphor Bronze
- Contact Wiping Area: Au µ over Nickel
- Contact Solder Area: Pure Tin over Nickel

Electrical
- Current Rating: 0.75A per pin max
- Dielectric Withstanding Voltage: 500 Vrms AC for 1 minute
- LL Contact Resistance: 40m Ω Max

Mechanical
- Contact Type: Surface Mount
- Total Mating Force: 39N max at speed of 12.5mm per minute
- Total Unmating Force: 3.7-18.5N at speed of 12.55 per minute
- Durability: 5000 cycles

Part Number Offset Mount W/Boss Package Qty/Reel
132001-0140 0.635mm upward SMT Yes Tape and Reel 800
132001-0141 0.535mm upward SMT Yes Tape and Reel 800
132001-0202 0.50mm upward SMT Yes Tape and Reel 800

Recommended PCB Dimension

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com
CFast

The Future of CompactFlash is Here

The latest small form factor removable storage standard to be released from the Compact Flash Association (CFA) is CFast. ITT ICS is pleased to support this new standard with our line of two piece ultrasonic weld cover sets and 24 way connectors.

Our CFast covers offer the optimal solution for cover set toughness. A plastic frame is molded around the perimeter of the cover and orientated into position with guide posts, which simplifies its assembly. Once assembled the covers are ultrasonically welded together in a continuous weld joint around the perimeter of the card. This process provides the most rigid CFast products in the industry and allows OEM’s to streamline their manufacturing processes to deliver cost effective solutions while maximizing production efficiencies. CFast cover sets and 24 way connectors are available in either Type I or Type II packages.

Applications

- Digital Camera’s
- Handheld portable devices
- Camcorders
- Security devices
- Wireless communications
- Personal computers and printers
- Industrial and enterprise storage systems
- Test and measurement devices
- Medical instrumentation

Product Features

- Fast and easy assembly
- Patented, ultrasonically welded technology
- Cover sets meet all Type I and Type II specifications
- 24 position connector
- Meets Compact Flash Association CFast Standards
- Insert molded rigid plastic frame enclosure
- Polarized to prevent incorrect card insertion
- Optimum EMI shielding
- Secure (tamper proof)
- Cover sets are available with or without insulation on the inside of either cover
- USW tooling available
- RoHS compliant

Materials and Finishes: CFast Card Kit

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>304 Annealed Stainless Steel, Durabrush 0.2mm thickness</td>
</tr>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
</tbody>
</table>

Materials and Finishes: 24 pin connector

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation</td>
<td>Liquid Crystal Polymer, UL94V-0</td>
</tr>
<tr>
<td>Contact</td>
<td>Nickel over Copper Alloy</td>
</tr>
<tr>
<td>Contact Wiping Area</td>
<td>Au over Nickel</td>
</tr>
<tr>
<td>Contact Solder Tails</td>
<td>Pure tin over Nickel</td>
</tr>
</tbody>
</table>

Mechanical: 24 pin connector

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Type</td>
<td>Surface Mount</td>
</tr>
<tr>
<td>Mechanical Shock</td>
<td>No discontinuity greater than 100ns</td>
</tr>
<tr>
<td>Total Mating Force</td>
<td>28.8N maximum at 25mm/minute</td>
</tr>
<tr>
<td>Total Unmating Force</td>
<td>3.7N minimum and 24.5N maximum at 25mm/minute</td>
</tr>
<tr>
<td>Durability</td>
<td>10,000 mating cycles</td>
</tr>
</tbody>
</table>

Electrical: 24 pin connector

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Rating</td>
<td>1.5A Per Pin</td>
</tr>
<tr>
<td>Dielectric Withstanding Voltage</td>
<td>500 Vms at Sea Level</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +85°C</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>Initially 100mΩ at 500 Vdc</td>
</tr>
</tbody>
</table>
Compact Flash
Cover - Type I

Features and Benefits

- Meets Type I specifications as defined by the Compact Flash Association
- Two stainless steel metal stamping with an insert molded frame that is ultrasonically welded to form a rigid closure measuring 36.4mm x 42.8mm
- Cover sets are available with or without insulation on the inside of either cover

Materials and Finishes

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>304 Annealed stainless steel, Durabrush, 0.20mm thickness</td>
</tr>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
</tbody>
</table>

Meets CFA Specifications

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>36.40 ± 0.15mm</td>
</tr>
<tr>
<td>Width</td>
<td>42.8 ± 0.10mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>3.6mm Max (including label area)</td>
</tr>
</tbody>
</table>

Bottom Cover

Insulation

Insulation is optional. A double-sided adhesive strip (for the 24 position) on insulation is also available.

Labels - recess and recommended size

- Label Recess: 0.08mm deep (optional)
- Label Size: Contact ITT for design

Cover Set Description Part Number

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom with Insulation</td>
<td>132001-0630</td>
</tr>
</tbody>
</table>

Top Cover

Insulation

Insulation is optional. A double-sided adhesive strip (for the 24 position) on insulation is also available.

Labels - recess and recommended size

- Label Recess: 0.08mm deep (optional)
- Label Size: Contact ITT for design

Cover Description Part Number

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top with Insulation</td>
<td>132001-0629</td>
</tr>
</tbody>
</table>

* Blind I/O only
Compact Flash

Cover- Type II

Features and Benefits

- Meets Type II specifications as defined by the Compact Flash Association
- Two stainless steel metal stamping with an insert molded frame that is ultrasonically welded to form a rigid closure measuring 36.4mm x 42.8mm
- Cover sets are available with or without insulation on the inside of either cover

Materials and Finishes

<table>
<thead>
<tr>
<th>Cover</th>
<th>304 Annealed stainless steel, Durabrush, 0.20mm thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation</td>
<td>Mylar, 0.05mm thickness</td>
</tr>
<tr>
<td>Frame Molding</td>
<td>Black Thermoplastic</td>
</tr>
</tbody>
</table>

Meets CFA Specifications

| Length | 36.40 ± 0.15mm |
| Width  | 42.8 ± 0.10mm |
| Thickness | 5.0mm Max (including label area) |

Bottom Cover

Insulation

Insulation is optional. A double-sided adhesive strip (for the 24 position) on insulation is also available.

Labels- recess and recommended size

| Label Recess | 0.08mm deep (optional) |
| Label Size   | Contact ITT for design |

Cover Set Description Part Number

| Bottom with Insulation | 132001-0633 |

Top Cover

Insulation

Insulation is optional. A double-sided adhesive strip (for the 24 position) on insulation is also available.

Labels- recess and recommended size

| Label Recess | 0.08mm deep (optional) |
| Label Size   | Contact ITT for design |

Cover Description* Part Number

| Top with Insulation | 132001-0632 |

* Blind I/O only

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
Compact Flash
24 Way Surface Mount Connector

Features and Benefits

- Meets all CFA standard requirements
- Mounts the PCB allowing reflow, hot bar or hand soldering
- RoHS Compliant

Materials and Finishes

- Insulation: Liquid Crystal Polymer, UL94V-0 Rated, Color: Black
- Contact: Nickel over Copper Alloy
- Contact Wiping Area: Au over Nickel
- Contact Solder Tails: Pure tin over Nickel

Electrical

- Current Rating: 1.5A Per Pin
- Dielectric Withstanding Voltage: 500 Vms at Sea Level
- Operating Temperature: -55°C to +85°C
- Insulation Resistance: Initially 100mΩ at 500 Vdc

Mechanical

- Connector Type: Surface Mount
- Mechanical Shock: No discontinuity greater than 100
- Total Mating Force: 28.8N maximum at 25mm/minute
- Total Unmating Force: 3.7N minimum and 24.5N maximum at 25mm/minute
- Durability: 10,000 mating cycles

Recommended PCB Layout

- Dimensions shown in mm
- Specifications and dimensions subject to change
Ultrasonic Welding Tool

ITT offers the ultrasonically welded package using the Branson welder. All welders come in a compact bench unit and include: the power supply, controls, indicators and a welding stand.

Ultrasonic welding is a superior technology providing the most rigid card set in the industry. The welder has digital controls to ensure accurate and repeatable assemblies. The fixtures insure exact repeatability, no additional adjustments are needed once the machine has been programmed for a specific unit.

The welder applies direct pressure and focused ultrasonic energy to the kit to reflow the plastic frame halves together to form a solid and rigid unit. Welding takes very short time to complete.

This welding technique can be used to produce the following packaging: PCMCIA Cards, CompactFlash Cards, and ExpressCards and CFast.

* For detail application and selection, please consult with your nearby Branson.

Cover Set Assembly Tools

ITT offers a complete line of customized assembly tooling for all of our snappy and ultrasonically welded products. Contact factory for details.

<table>
<thead>
<tr>
<th>Card Assembly Tools</th>
<th>Card Opening Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMCIA Snappy</td>
<td></td>
</tr>
<tr>
<td>PCMCIA Ultra</td>
<td></td>
</tr>
<tr>
<td>C-Fast (Compact Flash)</td>
<td></td>
</tr>
<tr>
<td>ExpressCard Snappy</td>
<td></td>
</tr>
<tr>
<td>ExpressCards Ultra</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
1. MATERIAL CONTENT AND PHYSICAL FORM
Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alulm, chromel or steel. In special applications, other alloys may be specified.

2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD
There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning. Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

3. HANDLING
Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

4. DISPOSAL
Incineration of certain materials may release noxious or even toxic fumes.

5. APPLICATION
Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION

(i) Air and creepage paths/Operating voltage. The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations. For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

(ii) Temperature
All information given are temperature limits. The operation temperature depends on the individual application.

(iii) Other important information
Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

ITT Interconnect Solutions, a Division of ITT Corporation manufactures the highest quality products available in the marketplace; however these products are intended to be used in accordance with the specifications in this publication. Any use or application that deviates from the stated operating specifications is not recommended and may be unsafe. No information and data contained in this publication shall be construed to create any liability on the part of Cannon. Any new issue of this publication shall automatically invalidate and supersed all previous issues.

Product Warranty
A limited warranty applies to Cannon products. In general, except for obligations assumed by Cannon under this warranty, Cannon shall not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether or not based on express or implied warranty, contract, negligence or strict liability arising in connection with the design, manufacture, sale, use or repair of the products. Product availability, prices and delivery dates are exclusively subject to our respective order confirmation form; the same applies to orders based on development samples delivered. Please refer to www.ittcannon.com (General Terms of Sale) for the complete text of Cannon’s applicable Terms and Conditions, including Warranty.

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Commodities in this catalog may be controlled for export by the International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) when specifically designed modified, or configured for articles controlled by the United States Government.
Circular/Filter/Hermetic/Fiber Optic Connectors

As a world leader in circular, filter, and hermetic connectors, ITT can leverage its design and manufacturing expertise to fit virtually any application. Our expertise includes fast positive mating for a wide range of military applications, as well as numerous sizes and contact configurations for various harsh environments. Our wide variety of fiber optic products include hybrid contacts, multi-channel, rack and panel, and hi-rel assemblies, including MIL and ARINC standard solutions. ITT can meet numerous specs, including NATO and MIL standards.


D-Subminiature Connectors

Cannon invented D-sub connectors in 1952. Our family of D-Subs now includes combinations of signal, power and RF, as well as severe service sealed connectors. Cannon D-Subs are available with an extensive line of backshells and accessories and are one of the most economical shielded connector solutions available. ITT D-Sub connectors are qualified to the MIL-DTL-24308 specification.

www.ittcannon.com/dsubs

Microminiature Connectors

Developed first by Cannon in the 1960’s, Interconnect Solutions microminiature connectors offer high performance and reliability with exceptional versatility. Available in rectangular, circular, and strip configurations for countless applications, many of our connectors meet or exceed applicable requirements of the MIL-DTL-83513 specification.

www.ittcannon.com/micro

Rack and Panel Connectors

Initially pioneered by Cannon during the 1930s, Interconnect Solutions is the world leader in rack and panel connectors, offering unmatched variety of shell configurations and insert arrangements, materials, plating, and contact options. Many of our standard and custom designs meet the stringent requirements of ARINC 600, ARINC 404 (MIL-C-81659), and MIL-DTL-83733 standards.

www.ittcannon.com/rackandpanel

RF Connectors

ITT Interconnect Solutions has been providing interconnect products to the Microwave and RF industry since 1963 (formerly The Sealectro Corporation). The RF 50 & 75 Ohm product lines cover UHF band through Ku band requirements. These connectors and cable assemblies are available with a thread type, snap type, bayonet type or slide on coupling method. The frequencies range from DC to 18+ GHz.

www.ittcannon.com/RF50 • www.ittcannon.com/RF75

Transportation

The ITT ICS interconnect range includes sealed circular and rectangular connectors in metal or plastic shells. These configurations include board to cable or cable to cable/ bulkhead applications. Both signal and power contacts can be combined in various layouts. All product lines within the Transportation segment offer very low contact resistance providing maximum signal integrity.

www.ittcannon.com/transportation

ITT Interconnect Solutions is an international manufacturer and supplier of connectors including circular, rectangular, fiber optic, RF, power and high voltage, audio, PMClA, Compact Flash Card, enclosures, cable assemblies, and application specific custom solutions. The Interconnect Solutions portfolio includes the brands Cannon, VEAM, and BIW. As a worldwide leader in connector technology for nearly a century, ITT offers one of the broadest product offerings, six sigma manufacturing capability, Value Based Product Development with exceptional engineering capability, and an extensive sales, distribution, and customer support network.
Customer Support Locations

CHINA
Tuopandun Industrial Area, Jinda Cheng,
Xiner Village, Shajing Town,
Baoan District, Shenzhen City,
Guangdong, China 518125
Phone: +86.755.2726.7238
Fax: +86.755.2726.7515

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phone: +49.7151.699.0
fax: +49.7151.699.217

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fax: +33.1.60.04.93.90

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fax: +852.2732.2919

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Lainate (MI),
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phone: +39.02938721
fax: +39.0293872300

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