

# Today's Communication Networks Have Chomerics Written All Over Them



Whether you design equipment for the enterprise or core/long haul markets, Chomerics can solve your toughest EMI shielding and thermal management challenges.

As the world's leading provider of a broad range of EMI shielding and thermal management products, we've been helping the top voice and data communications equipment designers around the globe meet their performance and compliance goals.



#### Straight Talk, Smart Talk –

Count on Chomerics for more than fast, accurate quotations. Our Applications Engineering strength is without equal in the industry. It's the result of solving countless EMI shielding and thermal management challenges over the past four decades. Every day we help customers around the world avoid iterative testing that delays a product launch. You're just a call away from design advice and cost-effective material recommendations that can make a real difference to the success of your new equipment.

#### From Single Parts to Supply Chain Management...

the decision is yours. We're fully able to operate as lead vendor in managing the overall supply chain for shielded housings. Results? Enhanced quality and accountability, plus streamlined production and scheduling.

#### Our In-house EMC & Safety Test Services will expedite

the certification of your equipment to a full array of international standards.

Best of all, any problems can be addressed on-the-spot thanks to Chomerics' unrivalled experience with EMI shielding technologies.

#### Stocking and fabrication on five

continents makes our products available when and where you need them. We support you on a global scale through a network of sales and service offices, distributors and fabricators.

**CHOMERICS**

Parker Seals

## INTERCONNECT LEVEL

### Backplane Panels

Grounding of modules to backplane traces surrounding connectors requires low closure force, low compression set and excellent electrical contact. One-piece gasket construction aids in accurate installation.

- ✓ SOFT-SHIELD® 4000 Low Closure Force Gaskets
- CHO-SEAL® Extruded Frame Gasket

### I/O Panels

Highly conductive but conformable flat gaskets are needed to fill voids between the connector shell and enclosure wall at I/O cutouts. Shield connectors individually or with die-cut strips.

- ✓ SOFT-SHIELD® 4000 Low Closure Force Gaskets – Strips and D-Connector
- SPRING-LINE® Metal D-Connector Gaskets



## BOARD LEVEL

### Board Level Shielding

Component or source level suppression can be achieved without soldering using metal or metallized plastic covers that are over-molded with conductive elastomer on walls and ribs. Increasingly, engineers are discovering the benefits of integrating EMI shielding of components into the thermal management solution.

- CHO-VER SHIELD™ Molded Covers Grounding Tabs
- Integrated EMI Shielding/Thermal Management solutions

### Thermal Management

Cooling components like microprocessors and ASICs requires efficient thermal interface materials that provide solutions for heat sink attachment, gap filling and grease replacement, or as heat sink alternatives.

- ✓ THERMATTACH® Thermally Conductive Tapes
- ✓ THERM-A-GAP™ Gap Filler Pads
- ✓ T-WING® Heat Spreaders
- ✓ THERMFLOW™ Phase Change Materials



## MODULE LEVEL

### Faceplate / Front Panel

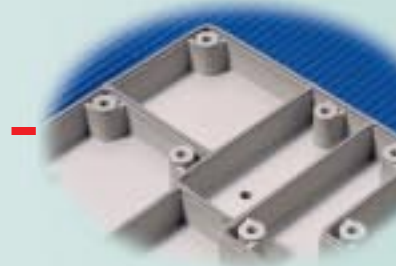
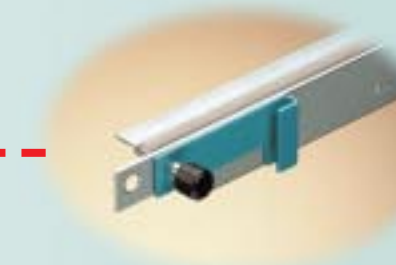
To seal EMI-susceptible gaps between faceplates on rack-mounted PCBs requires good panel-panel contact, compliant shielding materials, low compression set and abrasion resistance.

- ✓ SOFT-SHIELD® 5000 Low Closure Force Gaskets
- SPRINGLINE® Be-Cu Fingerstock

### Modular Housings

Densely populated rack-mounted cards may need their own enclosure for additional shielding within a cabinet. Gaskets for narrow compartment walls and ribs should have a small profile and provide good grounding. Mating flanges require low closure force gaskets.

- ✓ Cho-Form® Form-In-Place Conductive Elastomer
- SOFT-SHIELD® 5000 Low Closure Force Gaskets



## ENCLOSURE LEVEL

### Windows

Engineers designing windows into enclosure panels or doors need to consider shielding effectiveness and light transmittance characteristics at different thickness.

- ✓ EmiClare™ Shielded Windows

### Cabinet Door & Panel Mating Flanges

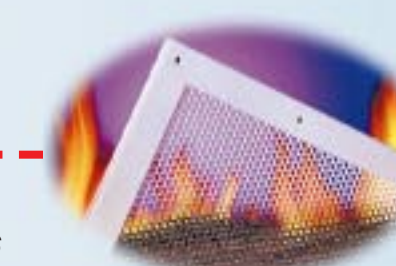
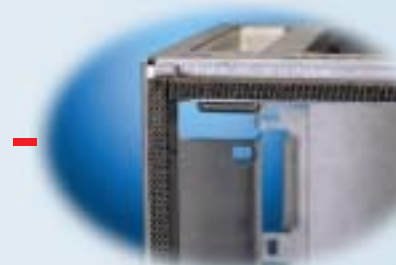
Ensure EMI integrity at mating surfaces with low closure force and low compression set, highly conductive gaskets. Environmental sealing may be required in door and panel applications. A clean conductive surface on powder coated mating flanges can be achieved using conductive foil tapes with peel-off mask.

- ✓ CHO-SEAL® Conductive Elastomer Extrusions
- ✓ CHO-MASK® II Foil Tape with Peel-Off Mask
- ✓ SOFT-SHIELD® 5000 Low Closure Force Gaskets
- SOFT-SHIELD® 1000 Low Closure Force Gasket
- SPRING-LINE® Be-Cu Fingerstock

### Airflow Management / NEBS Compliance

Higher component density requires higher airflow than perforated metal can provide. Economical honeycomb vents provide 95% open area while maintaining > 50 dB of shielding effectiveness at 10 GHz.

- ✓ STREAMSHIELD™ Vents



- ✓ Recommended Chomerics solution for application
- Alternative Chomerics solution

**Don't let electromagnetic interference and thermal problems slow down your product release. Call our experts today.**

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## EMI SHIELDING

## CHOMERICS SOLUTIONS

- Faceplates / Front Panels**
- ✓ **SOFT-SHIELD® 5000 Low Closure Force Gaskets** — nickel-plated fabric over foam – high shielding effectiveness to 10 GHz – many profiles – UL94 V-0 rated – low compression set – air sealing
  - **SPRING-LINE® Be-Cu Fingerstock** — high levels of EMI shielding – low closure force – many profiles – assorted finishes – excellent performance under sheer

- Module Covers**
- ✓ **CHO-FORM® Form-In-Place Conductive Elastomer** — robotically dispensed onto walls and ribs as thin as 0.03" (0.76 mm) – moisture or heat cure
  - **SOFT-SHIELD® 5000 Low Closure Force Gaskets** — nickel-plated fabric over foam – high shielding effectiveness to 10 GHz – many profiles – UL94 V-0 rated – low compression set – air sealing

- Backplanes**
- ✓ **SOFT-SHIELD® 4000 Low Closure Force Gaskets** — fabric-reinforced foil over foam – die-cut or fully wrapped for higher shielding – UL 94 V-0 rated
  - **CHO-SEAL® Conductive Elastomers** — excellent shielding to 10 GHz – choice of filler particles – environmental sealing – low compression set – unlimited extrusion profiles – molded forms – over-molded onto metal or plastic frames
  - **SPRING-LINE® Be-Cu Fingerstock** — high levels of EMI shielding – low closure force – many profiles – assorted finishes

- Airflow Management & Fire Containment**
- ✓ **STREAMSHIELD™ Commercial Vents** — attenuate > 50 dB at 10 GHz – lightweight, economical thermal management – 95% open area for minimal pressure drop – fire retardant HEICF 1594 coating available

- Cabinet Door and Mating Flanges**
- ✓ **CHO-SEAL® Conductive Elastomer Gaskets** — excellent shielding to 10 GHz – choice of filler particles – environmental sealing – low compression set – unlimited extrusion profiles – available in CLIP-SHIELD™ form with integrated metal clip for non-PSA attachment
  - ✓ **CHO-MASK® II Foil Tape with Peel-Off Mask** — masking medium for powder coat painting – provides clean conductive surface for gasket attachment
  - ✓ **SOFT-SHIELD® 5000 Low Closure Force Gaskets** — nickel-plated fabric over foam – high shielding effectiveness to 10 GHz – many profiles – UL94 V-0 rated versions – low compression set – air sealing
  - **SOFT-SHIELD® 1000 Low Closure Force Gaskets** — economical mesh over foam – wrinkle & crease-free – softest gasket offered
  - **SPRING-LINE® Be-Cu Fingerstock** — high tensile strength – excellent corrosion resistance – high levels of EMI shielding available with PSA or integral metal clips for easy installation

- Windows**
- ✓ **EmiClare™ Shielded Windows** — proprietary mesh/laminate shielding design eliminates distortion – attenuate 55 dB at 1 GHz

- I/O Panels**
- ✓ **SOFT-SHIELD® 4000 Low Closure Force Gaskets** — fabric-reinforced foil over foam – die-cut or fully wrapped for higher shielding – UL 94 V-0 rated – also available in standard D-connector shapes
  - **SPRING-LINE® D-Connector Gaskets** — high performance Be-Cu or economical SS in all standard pin connector configurations

- Board Level Shielding & Grounding**
- **CHO-VER SHIELD™ Covers** — low closure force conductive elastomer over-molded onto perimeter and internal walls of metal or metallized plastic covers and cans
  - **SOFT-SHIELD® 5000 & 4000 Ground Tabs** — conductive fabric or foil/fabric over foam with PSA pre-cut lengths or kiss-cut to size on film release backers
  - **SPRING-LINE® "Pick and Stick" Springfingers** — highly resilient, tin-plated Be-Cu – corrosion-resistant – snap-off strips or individually spaced on film reels
  - **Integrated EMI Shielding/Thermal Management Solutions**

## THERMAL MANAGEMENT

## CHOMERICS SOLUTIONS

- Heat Sink Attachment**
- ✓ **THERMATTACH® Thermally Conductive Adhesive Tapes (T411/T405)** — double-sided tapes replace mechanical attachment and liquid adhesives – conform to non-flat surfaces – versions for plastic, metal or ceramic packages – electrically insulating or non-insulating – kiss-cut on rolls

- Thermal Gap Filling**
- ✓ **THERM-A-GAP™ Gap Filler Pads (G174/G574)** — highly conformable, thermally conductive pad blankets highly uneven surfaces – aluminum or fiberglass carriers – flat sheets, kiss-cut on Mylar or custom molded for maximum surface contact
  - **THERM-A-FORM™ Form-in-Place Compounds (T644)** — flexible, dispensable cure-in-place elastomers low stress on solder joints – multi-height component cooling

- Heat Sink Alternative**
- ✓ **T-WING® Heat Spreaders** — low profile copper/dielectric laminate with pressure-sensitive adhesive – low-cost – lightweight and flexible – standard and custom sizes – available kiss-cut on roll
  - **C-WING™ Heat Spreaders** — electrically non-conductive ceramic version for EMI-sensitive applications

- High Performance Thermal Interface**
- ✓ **THERMFLOW™ Phase Change Material (T725/T766)** — thermal grease replacement – softens at operating temperature, filling voids to achieve maximum performance between heat sink and hot component – works under 10-100 psi – kiss-cut on rolls – inherently tacky free film, or reworkable version with metal carrier



*Chomerics is a division of the Seal Group of the Parker Hannifin Corporation. Parker Seal is one of the world's largest and most experienced manufacturers of elastomer and other sealing and shielding devices.*

[www.chomerics.com](http://www.chomerics.com)

**CHOMERICS**

*Leader in EMI Shielding and Thermal Management*

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