The SMASH connector offers extremely high robustness where signal integrity is required. Based on an aluminium shell with 1, 2 or 3 bays, the SMASH connector can house up to 450 contacts, with up to 150 contacts per bay. The chevron grid pattern (1.905 x 1.905 [.075 x .075]) provides high contact density for advanced electronics packaging. The metallic shell is equipped with grounding, guide pins, and keying devices to ensure mechanical reliability.

The modularity
Within the standard SEM E form factor, the SMASH connector provides a wide array of signal transmission combinations. Various inserts can be housed within the robust, modular shell while meeting the standard board and chassis formats.

A connector that is adaptable to all types of mounting and soldering processes
The sculptured flex circuit termination of the daughter card connector can accept the thickest boards. No tooling is required as the design provides good alignment to the solder pads of the daughter card.

A connector dedicated to harsh environment
The Starclip technology of the socket contact (with a 6 tine clip) offers high mechanical and electrical reliability, combined with low insertion force. The SMASH connector is ruggedized to meet extreme conditions such as salt spray, vibration, and contact resistance.

QUICK SELECTION GUIDE

Signal contacts

Housing

Shell

For further terminations of contacts, consult us.

For specific pitches or arrangements, consult us.

With or without ground spring or rackable, consult us.

* Consult us

All dimensions are given for information only and are in mm [inch], except as otherwise specified.
SMASH Series
Advanced SEM E modular connector

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The SMASH series serves various markets, including:

- Military Avionics & Airframe
- Commercial Avionics & Airframe
- C4ISR
SMASH>>> GENERAL SPECIFICATIONS

- No tooling required. SEM E form factor
- Flexible circuit termination of the plug can be used with daughter cards of various thicknesses. Compatible with all soldering processes.
- Excellent mechanical electrical reliability
- Chevron grid pattern 1.905 [.075] spacing along the row with 1.905 [.075] between rows, offset 0.635 [.025]

Main characteristics
- 3 versions with 1, 2 or 3 bays
- Each insert can house up 132 or 150 signal contacts depending on contacts sizes
- High density: 0.34 cts/mm² [130 cts/inch²]
- 3 A per contacts / DWV: 1000 Vrms / Insulation resistance: 5Gohms
- Press-fit solderless attachment possible. Consult us
- Aluminium shell for electrical enhancements (filters, shell to shell continuity) as well as advanced mechanical robustness.

Terminations
- Yd Yd Straight solder
- Z Z Solder cup
- - U01 SMT

How to order

<table>
<thead>
<tr>
<th>Number of signal contacts</th>
<th>Female</th>
<th>Male</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cavity</td>
<td>132</td>
<td>YD</td>
<td>Straight solder PC tail standard length</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>YD</td>
<td>Solder cup</td>
</tr>
<tr>
<td>2 cavities</td>
<td>264</td>
<td>Z</td>
<td>SMT</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>Z</td>
<td></td>
</tr>
<tr>
<td>3 cavities</td>
<td>396</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>450</td>
<td>U01</td>
<td></td>
</tr>
</tbody>
</table>

Amphenol Socapex capabilities for specific connector design
The metallic shell concept allows Amphenol to design numerous types of shells with various lengths and specific housings, providing:
- Insertion of specific contacts (RF, optical termini, power, high power)
- Modification of the height or type of signal contact terminations
- Customization of rack and panel shells or the addition of a ceramic plane for high-frequency filtering
- A variety of grid and footprint styles, to comply with density requirements
SMASH >>> TECHNICAL SPECIFICATIONS

Dimensional characteristics

H = 7.4 [0.291] for plug
H = 10.9 [0.430] for receptacle
L = 14.8 [0.583]
L = 179.7 [7.075]

Female contact

Starclip female technology: 6 times for better reliability
- 6 contact tines instead of 4
- Excellent mechanical and electrical reliability
- Better resistance to high vibrations
- Improved electrical conductivity
- 100% compatible with other connectors

Material
- Hood: machined brass alloy
- Starclip: CuBe [BeCu], stamped and formed

Plating
- Hood: tin lead or lead free plating
- Starclip: gold over nickel

Male contact

ø 0.635 [0.025]

- Mating end diameter: ø 0.635 [0.025]
- Mating end section (mating side): 0.32 mm² [0.0005 inch²]
- Material: machined brass alloy
- Plating: gold over nickel

Materials
- Guiding devices: passivated stainless steel 303
- Shells: aluminum 6060 T6
- Plating shells: electroless nickel
- Plastic insert & coding devices: thermoplastic LCP, 30% glass-fiber filled

MECHANICAL CHARACTERISTICS

| Backoff (mm) | 1.2 max [0.047] |
| Mating force per contact (N) | 100g |
| Unmating force per contact (N) | 40g |
| Durability cycles | 500 |
| Sinusoidal vibrations (10 to 2000 Hz) micro discontinuity 2ns | 15 g |
| Random vibrations (600 to 700 Hz) micro discontinuity 2ns | 2.682 g² / Hz |
| Shock micro discontinuity 2ns | 100 g / 6s |

Recommended tightening torques
- nuts for M2.5 screws, brass (m.N) | 0.25 |
- nuts for M2 screws, brass (m.N) | 0.2 |

ENVIRONMENTAL CHARACTERISTICS

| Thermal shocks (°C) | -65 / +150 |
| Cycles | 5 |
| Salt Spray (hours) | 96 |

ELECTRICAL CHARACTERISTICS

| Current rating per contacts (A) | 3 max |
| Insulation resistance (GΩ) | 5 min |
| Contact resistance (mΩ) | 10 max |
| Dielectric Withstanding Voltage (Vrms) | 1000 max |
| Service voltage (at 50 Hz) (Vrms) | 250 |

All dimensions are given for information only and are in mm [inch], except as otherwise specified.

*: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly.
SMASH >>> STANDARD TECHNOLOGY OF CONTACT (1)

FEMALE CONTACTS FOR RECEPTACLES

Starclip female technology
- 6 contact tines instead of 4
- Excellent mechanical and electrical reliability
- Better resistance to high vibrations
- Improved electrical conductivity
- 100% compatible with other connectors

- Size 23: high average current
- Clip for male contact 00.635 [.025]
- Plating on active part (clip)

<table>
<thead>
<tr>
<th></th>
<th>Cu</th>
<th>Ni</th>
<th>Au</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version RoHs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>1</td>
<td>.039</td>
<td></td>
</tr>
<tr>
<td>Pure Sn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5 [.098]</td>
<td>3.5 [.138]</td>
<td>1.3 [.051]</td>
<td></td>
</tr>
<tr>
<td>Sn Pb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 [.197]</td>
<td>10 [.394]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard straight PC tail
- Thru hole soldering
- Mother board or mezzanine connection
- PCB thickness: up to 5.5 [.217]
- Plating (µm [µin])

<table>
<thead>
<tr>
<th></th>
<th>Ni</th>
<th>Pure Sn</th>
<th>Sn Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version RoHs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>2.5 [.098]</td>
<td>3 [.118]</td>
<td>10 [.394]</td>
</tr>
</tbody>
</table>

Termination style | YD

Press-fit
- For solderless assembly
- Mother board or mezzanine connection
- PCB thickness: 2.5 mm [.098]
- Plating (µm [µin])

<table>
<thead>
<tr>
<th></th>
<th>Ni electrolytic</th>
<th>Ni electroless</th>
<th>Sn Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni electrolytic</td>
<td>2 [.079]</td>
<td>15.2 [.598]</td>
<td>10 [.394]</td>
</tr>
</tbody>
</table>

Termination style | YP

MALE CONTACT FOR PLUGS

SMT
- Flexible circuit for double sided SMT mounting
- Daughter card or extended card
- PCB thickness: specific, consult us
- Plating (µm [µin])

<table>
<thead>
<tr>
<th></th>
<th>Cu</th>
<th>Ni</th>
<th>Au</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.039</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.5 [.138]</td>
<td>1.3 [.051]</td>
</tr>
<tr>
<td>Consult us</td>
<td>U01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AMPHENOL SIGNAL CONTACTS CAPABILITIES

- Male contacts attached to flexible circuit for double sided SMT mounting on daughter card
- Female contacts with straight PC tails for thru hole soldering, with numerous contact lengths available
- Male and female solder cup termination for soldering on a cable
- Specific plating

All dimensions are given for information only and are in mm [inch], except as otherwise specified.
### SMASH >>> SPECIAL TECHNOLOGY OF CONTACT (1)

<table>
<thead>
<tr>
<th>Power contacts 20A</th>
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<tbody>
<tr>
<td><img src="image" alt="Power contacts 20A" /></td>
<td><img src="image" alt="Power contacts 20A" /></td>
</tr>
<tr>
<td>- Thru hole soldering</td>
<td>- Mother board or daughter board</td>
</tr>
<tr>
<td>- 20A / contact</td>
<td></td>
</tr>
<tr>
<td>Consult us</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RADSOK® contact 350A</th>
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<tr>
<td><img src="image" alt="RADSOK® contact 350A" /></td>
<td><img src="image" alt="RADSOK® contact 350A" /></td>
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<tr>
<td>- High power contact</td>
<td>- Mother board or daughter board</td>
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<tr>
<td>- 350A / contact</td>
<td></td>
</tr>
<tr>
<td>Consult us</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Optical contacts</th>
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<tr>
<td><img src="image" alt="Optical contacts" /></td>
<td><img src="image" alt="Optical contacts" /></td>
</tr>
<tr>
<td>- 2x12 optical channels (MT ferules)</td>
<td></td>
</tr>
<tr>
<td>Consult us</td>
<td></td>
</tr>
</tbody>
</table>

### AMPHENOL CUSTOM DESIGN CAPABILITIES

- Development of housings and shells for specific arrangement or special contacts
  
  *Consult us*

- Numerous types of special contacts, various lengths and mounting processes

- Various platings (Tin Lead, Gold, Pure bright tin ...)

- Proven knowledge in custom design for tailor-made applications

- Development of coaxial contacts
SMASH >>> STANDARD HOUSINGS AND SHELLS (2 & 3)

HOUSINGS 6-ROW CHEVRON GRID PATTERN

150 signal contacts insert

132 signal contacts insert

STANDARD SHELLS WITH 1, 2 OR 3 BAYS

1 bay connector / 150 signal contacts

1 bay connector / 132 signal contacts

2 bays connector / 300 signal contacts

2 bays connector / 264 signal contacts

3 bays connector / 450 signal contacts

3 bays connector / 396 signal contacts

KEYING AND GUIDING

Connectors are supplied with non-assembled keying and guiding devices.
SMASH >>> SPECIAL HOUSINGS AND SHELLS (2 & 3)

AMPHENOL CAPABILITIES: HOUSINGS
Specific grid: Square grid pattern, 1.905 [.075] x 1.905 [.075] staggered grid pattern, 1.588 [.063] x 1.588 [.063] staggered grid pattern, 2.54 mm...

Housings for specific contacts

AMPHENOL CAPABILITIES: SHELLS
Rackable shells

Specific shells

MATING SEQUENCE

<table>
<thead>
<tr>
<th>Guiding</th>
<th>Insulator</th>
<th>Keying</th>
<th>Electrical engagement</th>
<th>Electrical contact</th>
<th>Mated connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.95 ± 0.35</td>
<td>5.9 ± 0.1</td>
<td>5.54 ± 0.2</td>
<td>4.75 ± 0.25</td>
<td>1.75 ± 0.35</td>
<td>0</td>
</tr>
</tbody>
</table>

All dimensions are given for information only and are in mm [inch], except as otherwise specified.
SMASH >>> 150 SIGNAL CONTACTS

TYPICAL ARRANGEMENTS & LAYOUTS

Dimensions are in mm

Receptacle with straight PC tails YD

Layouts for 150 signal contacts connector with YD/YP contacts

Plug with SMT flexible circuit technology U01

Layouts for 150 signal contacts connector with U01 contacts

Part number: HDC E 150 YD-000

Part number: HDC F 150 U01-000

For further arrangements, consult us

All dimensions are given for information only and are in mm, except as otherwise specified
SMASH >>> 300 SIGNAL CONTACTS

TYPICAL ARRANGEMENTS & LAYOUTS

Dimensions are in mm

Receptacle with straight PC tails

Layouts for 300 signal contacts connector with YD/YP contacts

Plug with SMT flexible circuit technology

Layouts for 300 signal contacts connector with U01 contacts

Part number: HDC E 300 YD-000

Part number: HDC F 300 U01-000

For further arrangements, consult us

All dimensions are given for information only and are in mm, except as otherwise specified.
SMASH >>> 450 SIGNAL CONTACTS

TYPICAL ARRANGEMENTS & LAYOUTS

**Dimensions are in mm**

**Receptacle with straight PC tails YD**

**Layouts for 450 signal contacts connector with YD/YP contacts**

PCB FACE A

Part number: HDC E 450 YD-000

**Plug with SMT flexible circuit technology U01**

Part number: HDC F 450 U01-000
SMASH >>> 396 SIGNAL CONTACTS

TYPICAL ARRANGEMENTS & LAYOUTS

**Receptacle with straight PC tails YD**

![Diagram of receptacle with straight PC tails YD]

Part number: HDC E 396 YD-000

**Layouts for 396* signal contacts connector with YD/YP contacts**

![Diagram of layouts for 396* signal contacts connector with YD/YP contacts]

**Plug with SMT flexible circuit technology U01**

![Diagram of plug with SMT flexible circuit technology U01]

Part number: HDC F 396 U01-000

**Layouts for 396* signal contacts connector with U01 contacts**

![Diagram of layouts for 396* signal contacts connector with U01 contacts]

Part number: HDC F 396 U01-000

For further arrangements, consult us.

All dimensions are given for information only and are in mm, except as otherwise specified.