

# Product Overview & Capabilities



# ABOUT AMPHENOL SOCAPEX



## Proven excellence in interconnect solutions

Since **1947**, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for **harsh environments**, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions. Located in the **Mont Blanc** region of France and Pune in India, Amphenol Socapex has a presence in over 100 countries around the world. Amphenol Socapex is part of the international **Amphenol Corporation**.



**1000+** employees



Net Sales 2020: **81,9 M€**  
72% Export - 28% France



Two facilities :  
**Thyez** (France), **Pune** (India)

OUR HISTORY

### 1947



- Socapex creation in Suresnes, France
- 1<sup>st</sup> radio connector

### 1956-57



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

### Early 1960's



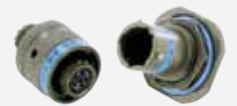
- 1<sup>st</sup> board level connectors: HE8
- 1<sup>st</sup> "licence Bendix" manufactured connectors
- SL Series launch

### 1973



- New factory 13 000 m<sup>2</sup> in Thyez (74) France with 250 people

### 1975



- Production of 38999 connectors

### 2014-2017



Quadrax Contacts

Cable Assembly

- New Cable Assembly workshop
- New Contact Manufacturing workshop

### Today and tomorrow | New technologies



Miniaturization High-speed signals  
 Rugged Ethernet  
 Fiber optics  
 Miniaturization ROHS solutions Power  
 Power Rugged Ethernet  
 Fiber optics ROHS solutions  
 Advanced Materials (composite)  
 Power Miniaturization ROHS solutions

# INTERNATIONAL EXPERTISE



## Our expertise has no boundaries

### Integrated Production in France & India

- **24 000 m<sup>2</sup>** manufacturing capacity on 2 sites
- Design centers in **France** and **India**
- State-of-the-art manufacturing technology



## Our markets



### Military

Communication Systems - Radios - C4ISR /  
Ground vehicles - Vetronics / Marine / Missiles



### Aviation

Commercial & military / Avionics /  
Engines / Landing gear / Actuators

1986

**Amphenol**  
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004



- RJ Field launch, "Award Electronica"

2005



- Opening of manufacturing site in Pune, India

2010's



- LuxBeam™ and HDAS launch

## Today and tomorrow | Sustainable development







### Respect for nature and the environment

Optimization of natural resources  
Recycling  
Waste Management  
Goodwill  
Optimization of natural resources  
Respect for nature and the environment  
Waste Management  
Recycling

# PRODUCING FASTER, SMALLER, STRONGER CONNECTORS...



## Technologies & innovation

Technological Center	High-Speed Expertise	Materials Expertise	Eco-responsibility
			
<p><b>Engineering Laboratory for product testing and qualification, product expertise and metrology</b></p> <ul style="list-style-type: none"> <li>- Mechanical and electrical skills</li> <li>- RF and fiber optics expertise</li> </ul>	<p><b>Strong expertise in high-speed signals</b></p> <ul style="list-style-type: none"> <li>- 3D EM simulation software &amp; EM models</li> <li>- Time Domain and frequency domain (VNA 20GHz, TDR and eye diagram)</li> </ul>	<p><b>Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products</b></p> <ul style="list-style-type: none"> <li>- 3D CAD mechanical software, simulation &amp; analysis</li> <li>- Disruptive metal alloys, additive manufacturing</li> </ul>	<p><b>Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)</b></p> <ul style="list-style-type: none"> <li>- New materials development, plating, and suitable processes</li> <li>- Recycling and rational resources consumption</li> </ul>

## Our workshops

Our workshops located in France & India provide consistent quality adapted to your volume requirements.


- Tooling** : Tools for our different activities : molding, machining, assembly
- Molding** : Solid expertise in thermoplastic elastomer and thermoset molding
- Machining** : Manufacturing of cylindrical shells from 10 to 90 mm in diameter and rectangular shells
- Screw Machining** : Cylindrical production parts up to 10 mm in diameter
- Plating** : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold
- Assembly** : Connector and harness assembly (electrical & optical)

## Our certifications

			
Certified Management System	Certified Management System	Certified Management System	Certified Management System

Product certifications : MIL-DTL38999, EN3645, EN3155, VG

## Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium

# DELIVERING GREAT CUSTOMER EXPERIENCE



► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.

## A partner you can trust

Customer Proximity	Design Expertise	Quality Commitment	On Time Delivery Performance	Compliance manager

## Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

### Field Sales Team :

- 12 in France
- 15 in Europe
- 100+ in North America and rest of the world.
- 5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

- Technical Support & Multilingual Customer Service :**  
15 people

### Worldwide Distribution Network :
















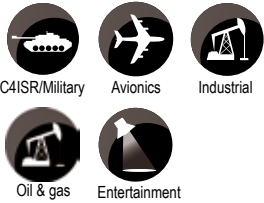
Including qualified distributors (QPL approved) for assembling : MIL-DTL-38999, PT/451/VG95328 & Fiber Optics connectors





# A LARGE RANGE OF INTERCONNECT SOLUTIONS

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<p>The largest range of rugged Ethernet connectors on the market</p>	<p>Factory tested &amp; ready to install Ethernet Cordsets &amp; Jumpers</p>	<p>Ethernet Switches &amp; Media Converters fully MIL-STD compliant</p>	<p>USB 2.0 &amp; USB 3.0 with a robust design and easy set-up</p>
<p><b>Network Adapters</b></p>  <p>Page 12</p>	<p><b>38999 Series I, II, III / EN3645 Connectors</b></p>  <p>Page 13</p>	<p><b>38999 Series Derived Connectors</b></p>  <p>Page 14</p>	<p><b>2M Micro-Minature Connectors</b></p>  <p>Page 15</p>
<p>Connect your equipment to any modern network</p>	<p>The largest range of the market for MIL-DTL-38999 Series I, II, III &amp; EN3645</p>	<p>Derived mounted in MIL-DTL-38999 Series I/III shells to fit your specific needs</p>	<p>Small, high density, lightweight connectors for harsh environments</p>
<p><b>Contacts</b></p>  <p>Page 16</p>	<p><b>Accessories: Backshells &amp; Protective Caps</b></p>  <p>Page 17</p>	<p><b>Board Level Connectors</b></p>  <p>Page 18</p>	<p><b>Fiber Optics Solutions</b></p>  <p>Page 19</p>
<p>A large range of contacts for high speed and power applications</p>	<p>Improve your connectors performance or protection</p>	<p>High-performance board to board connectors</p>	<p>Termini, connectors and cable assembly with expanded Beam or butt joint technology</p>
<p><b>Multicontact &amp; Power Connectors</b></p>  <p>Page 20</p>	<p><b>Cable Assemblies – Electrical and Fiber Optics</b></p>  <p>Page 21</p>	<p><b>Rugged Ethernet Network Solutions</b></p>  <p>Page 22</p>	<p>LOGO DEFINITIONS Market</p> 
<p>Additional connectors designed for a wide range of applications</p>	<p>Electrical harnesses engineered to your needs</p>	<p>Network design and evaluation for reliable &amp; secure battlefield communication</p>	

# RUGGED ETHERNET CONNECTORS



Often imitated never equalled!

- ▶ We are the original manufacturer of rugged RJ45 connectors, the RJ Field
- ▶ Custom design and specific solutions available
- ▶ We have the largest range of rugged Ethernet connectors on the market

## MIL-DTL-38999 BASED

## CONTACTS FOR STANDARD 38999 CAVITIES



### RJF TV

- **Cat 6-1Gb**
- Based on MIL-DTL-38999 series III/size 19
- Panel size: 36.53 mm
- Aluminum, Stainless Steel and Marine Bronze shell
- No tool cabling: uses standard RJ45 cordsets



### MIL-DTL-38999

- **Cat 5e-1Gb**
- MIL-DTL-38999 series III/size 11 & 13
- Panel size: 26.19 mm
- Aluminum, composite, stainless steel and marine bronze
- MILVA Vetronics approved



### QUADRAX

- **1 Quadrax • Cat5/2 Quadrax • Cat5e**
- Compliant with the standard size 8 connectors cavities
- Panel size 9: 23.83mm (38999 series III/EN3645)
- Panel size 17: 33.32mm (38999 series III/EN3645)
- Available for MIL-DTL-38999/EN3645/EN4165/ARINC
- Several cables already referenced
- Adaptable for IEEE1394 Firewire, USB2...



### SPLIT-PAIR QUADRAX

- **2 split pair Quadrax • Cat 6A**
- Compliant with the standard size 8 connectors cavities
- Panel size 17: 33.32mm (38999 series III/EN3645)
- Available for MIL-DTL-38999/EN3645/EN4165
- Several cables already referenced
- Adaptable for SATA 2.0, USB3...



### Octonet™ Double Quad Gbe

- High speed multi Gb ethernet or simply double quadrax connection
- Fits within standard size 8 cavity of D38999, EN4165, ARINC, EN3645



## MINIATURE SOLUTIONS

## INDUSTRIAL APPLICATIONS



### µCom

- **Cat 6A-10Gb**
- Push-Pull or Threaded versions on same receptacle
- Miniature: 15mm max external diameter
- IP68
- Environmental testing based on MIL-DTL-38999 - III specification
- 2000 Mating cycle



8 pins  
4 pairs individual shielding



### 2M

- **Cat 5e-1Gb**
- Push-Pull or Threaded versions
- Miniature: 16.51mm max external diameter
- IP67
- Mil-spec performance for harsh environmental conditions
- 2000 Mating cycles (-16 Plugs) / 500 Cycles



7-10



### RJF

- **Cat 6 Aluminium**
- Circular shell
- Bayonet coupling
- Panel size: 33.3mm
- Based on MIL-C-26482 series I/size 18
- ATEX explosion proof versions
- No tool cabling: uses standard RJ45 cordsets



### RJFRB/RJF544

- **Cat 6**
- Circular composite shell
- Reverse bayonet & Push pull coupling
- Panel size: 27.4mm & 31mm
- No tool cabling: uses standard RJ45 cordsets





# MILITARY ETHERNET CORDSETS



**NEW**

Think about solutions, not just components!

- ▶ Factory tested & ready to install Ethernet Cordsets and Jumpers
- ▶ Large choice of connectors, same tactical Cat5e, Cat6 & Cat7 Ethernet Cables
- ▶ JD38999 versions compliant with Vetronics MILVA NGVA standard: NATO General Vehicle Architecture

## RJ FIELD TV CORDSETS & JUMPERS

## μCom CORDSETS & JUMPERS

**NEW**



RJF TV CORDSETS WITH TACTICAL ETHERNET CABLE

- 1Gb Cat5e, Cat6
- Reinforced PUR Jacket
- 38999 based RJFTV plug on each side
- Consult us for standard lengths



RJF TV RECEPTACLE WITH RJ45 BACK END

- 1Gb Cat5e, Cat6
- Reinforced PUR Jacket
- RJF TV – RJ45 Jumper
- Consult us for standard lengths



10 Gb μCom CORDSETS WITH TACTICAL ETHERNET CABLE

- 10 Gb Cat7
- Reinforced PUR Jacket
- Miniature 15mm μCom plug on each side
- Consult us for standard lengths



10Gb μCom RECEPTACLE WITH RJ45 BACK END

- 10 Gb Cat7
- Reinforced PUR Jacket
- μCom – RJ45 Jumper
- Consult us for standard lengths

## MILVA NGVA JD38999 CORDSETS & JUMPERS

**NEW**

## QUADRAX CORDSETS & JUMPERS

**NEW**



JD 38999 Series III CORDSETS WITH TACTICAL ETHERNET CABLE

- 1Gb Cat5e, Cat6
- Reinforced PUR Jacket
- JD 38999 plugs on each side
- 1 port: 9-9 & 11-35 (NGVA)
- 2 ports: 13-35 (NGVA)
- Consult us for standard lengths



JD 38999 Series III RECEPTACLE WITH RJ45 BACK END

- 1Gb Cat5e, Cat6
- Reinforced PUR Jacket
- JD 38999 – RJ45 Jumper
- 1 port: 9-9 & 11-35 (NGVA)
- 2 ports: 13-35 (NGVA)
- Consult us for standard lengths



QUADRAX CORDSETS WITH RUGGED ETHERNET CABLE

- Differential twinax contact option available on request
- 1Gb Cat5e, Cat6 cables
- Quadrax contact on each side
- Consult us for standard lengths



QUADRAX CONTACTS WITH RJ45 BACK END

- 1Gb Cat5e, Cat6 cables
- Quadrax – RJ45 Jumper
- Consult us for standard lengths

## RJ45 CORDSETS WITH TACTICAL ETHERNET CABLE



- 1Gb Cat5e, Cat6, 10 Gb Cat6A & Cat7
- Reinforced PUR Jacket
- Halogen free
- Double Shielding
- Cable also available in reels of 100 & 300 m



# ACTIVE INTERCONNECT NETWORK SOLUTIONS

## Ethernet Switches & Media Converters

- ▶ Fully MIL-STD compliant: MIL-STD-810 (environment), MIL-STD-461 (EMI), MIL-STD-704 or MIL-STD-1275 (Power)
- ▶ Compatible with the newest network protocols
- ▶ C4ISR applications: soldiers, ground vehicles, navy, drones



NEW

RES-GMC-CTOS

- Military Ethernet Media Converter with CTOS
- Up to 2 x 10/100/1000Tx to 2 x 1000 CTOS fiber optic ports up to 50Kms
- Supports PoE (PD or PSE)
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power



NEW

RES-GMC-4CTOS-4RJF

- 4x independent media converters
- CTOS Expanded beam connector STANAG 4290
- Cat 6 Gigabit RJFTV
- 4 x 1000 CTOS



NEW

RES-GMC-TACBeam

- Up to 2x 10/100/1000Tx to 2x 1000 TACBeam Fiber optic ports up to 50 kms
- TACBeam Expanded beam connector M83526
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power



RES-SCE-AC-8US

- Miniature Military Ethernet Switch
- 8 x 10/100Tx ports
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power



RESMLAC-8US

- Unmanaged Military Ethernet Switch
- MIL-DTL-38999 connectors
- 8 x 10/100Tx ports
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power



RJSMLAC-8MG

- Managed Military Ethernet Switch, RJFTV connectors
- 8 x 10/100/1000Tx ports
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power

## Rugged Ethernet Network Solutions for C4ISR: Design & Evaluation

Amphenol Socapex provides **Ethernet Network Solutions** for use in harsh environments.

Our Capabilities include:

- ▶ Network design
- ▶ Network evaluation
- ▶ Network gateways and converters
- ▶ Measurement equipment



Based on our expertise in harsh environment, we provide the Security & Defense markets with both the **interconnection products** and the **Ethernet network design**.  
More details on page 22

# RUGGED USB SOLUTIONS

## Robust design with an easy set-up

- ▶ USB 2.0 and USB 3.0 available
- ▶ Based on MIL-DTL-38999 series III
- ▶ Custom design and specific solutions available



### USBFTV & USB3FTV

- Based on MIL-DTL-38999 series III
- Threaded locking mechanism
- IP 68
- Now available in USB 3.0



### REINFORCED USB CABLE

- Reinforced USB cable
- Double shielding (Braid & Foil)
- Halogen free jacket
- Available in USB.A cordset or in 300 meters reel
- Available in USB2.0 and now in USB3.0



### RUGGED USB MEMORY KEY

- Based on MIL-DTL-38999 series III
- USB 3.0 for capacities 16, 32 & 64 GB
- IP68, -40/+85°C
- MIL-STD-810G vibrations
- MLC Memory with Wear leveling providing 3000 read/write cycles
- MTBF: 1,000,000 hours
- Higher capacities: please consult us



### EXTENDER/USB AMPLIFIER

- Based on MIL-DTL-38999 series III
- Dedicated to applications where the USB cable length is longer than 4.8 meters which is the limit of USB specification
- MIL-STD-810G vibrations
- Long distance extender on fiber optic on demand
- For more information, please contact us

## USB CORDSETS

## Think about solutions, not just components!

- ▶ Ready to Install USB Cordsets and Jumpers
- ▶ 3 choices of connectors, same tactical USB 2.0 and USB 3.0 Cables
- ▶ JD 38999 versions Compliant with Vetronics MILVA NGVA standard :NATO General Vehicle Architecture

### MILVA NGVA USB CORDSETS & JUMPERS



#### JD 38999 Series III CORDSETS WITH TACTICAL USB CABLE

- USB 2.0
- Reinforced PUR Jacket
- JD 38999 plugs on each side
- 9-35 layout (NGVA)
- Consult us for standard lengths (5m max)



#### JD 38999 Series III RECEPTACLE WITH USB BACK END

- USB2.0
- Reinforced PUR Jacket
- JD 38999 – USB Jumper
- 9-35 layout (NGVA)
- Consult us for standard lengths (5m max)

### USB FIELD TV CORDSETS & JUMPERS



#### USB TV CORDSETS WITH TACTICAL USB CABLE

- USB2.0 & USB 3.0
- Reinforced PUR Jacket
- 38999 based USBFTV plug on each side
- Consult us for standard lengths (5 m max)



#### USB TV RECEPTACLE WITH USB BACK END

- USB2.0 & USB 3.0
- Reinforced PUR Jacket
- USBF TV – USB Jumper
- Consult us for standard lengths (5 m max)

### USB 2.0 & 3.0 CORDSETS WITH TACTICAL USB CABLE



- USB 2.0 and USB 3.0
- Reinforced PUR Jacket
- Halogen free
- Double shielding
- Consult us for standard lengths (5m max)



# NETWORK ADAPTORS



## Connect your equipment to any modern network

- ▶ Allows you to plug your old equipment to new generation platforms or, for existing vehicles/systems, upgrade programs
- ▶ Turnkey solutions to jump from one connector format to another
- ▶ Custom design available

### ETHERNET RECEPTACLES



RJF Receptacle  
· Metal snap cap available

Quadrax Cables

RJFTV Receptacle  
· Metal snap cap available

Quadrax Receptacle

RJ45  
· Plastic snap cap available

M12 D Coding Receptacle

### ETHERNET CORDSETS



MIL-DTL-38999 Series III  
· 9-9, 11-35, 13-35 layouts

RJFTV

RJ45 Cat6a

µCom Cat6a  
· 10 Gbit/s Ethernet

RJ45

2M  
· 2M 7-10

### USB RECEPTACLES



USBFTV

Quadrax

USBFTV

11-98 Insert for Crimp Contact

USB

· Plastic snap cap available

MIL-DTL-26482 type

USB

MIL-DTL-38999 Series III

### USB CORDSETS



RJF receptacle

M12 D Coding Plug  
· NFF 16101 fire & smoke resistant cable

USB

MIL-DTL-38999 Series III  
· 9-35

USB

2M



# 38999 SERIES I, II, III / EN3645 CONNECTORS



The world's largest range of 38999 Series I, II, III

- ▶ The largest range of the market for MIL-DTL-38999 /EN3645 connectors
- ▶ Custom design and specific solutions available
- ▶ Over 100 contact arrangements



LJT connectors



- MIL-DTL-38999 series I and HE308 qualified
- Large variety of contact arrangements and shell types, with maximum weight / space savings
- 100% contact protection
- Metallic and composite version



JT connectors



- MIL-DTL-38999 series II qualified
- Large variety of contact arrangements and shell types, with maximum weight / space savings
- 100% contact protection
- Metallic and composite version



TV/CTV connectors



- MIL-DTL-38999 series III EN3645 qualified
- Large variety of contact arrangements and shell types, with maximum weight / space savings
- 100% contact protection
- Metallic and composite version

## MICROMINIATURE & HIGH DENSITY



SJT Series connectors



- Lightweight scoop proof bayonet
- Intermountable with MIL-C-26482 type connectors (same panel cut out)
- Approved to LN29729, VG96912, PAN 6433-2, JN1003



38999 Size 7



- 38999 Micro-miniature
- Derived and compliant with MIL DTL 38999 series III
- Available in High speed version (Coax, twinax, quadrax)



HD38999



- 40% more contacts vs 38999
- The only high density connector which meets or exceeds MIL-DTL-38999 series III performances



Grounded Connectors



- Derived from MIL-DTL-38999 and EN3645
- Metallic insert to maintain ground plane with the connector shell for all the shielded contacts



38999 Reduced Flange Receptacles



- 37% average footprint surface reduction
- 36% average reduction of panel/PCB distance
- 30% in average lighter than standard 38999 stand off receptacle
- Performance of MIL-DTL-38999 Series III Connectors



# 38999 SERIES DERIVED & EXTENSION RANGE



## 38999 connectors to fit your specific needs

- ▶ 38999 Derivatives mounted in MIL-DTL-38999 Series III shells
- ▶ Custom design available on demand
- ▶ Different finish and ROHS version available

### RACK & PANEL



RNJ/RNJLP



- Rack & Panel solutions for harsh environment
- Very light weight vs ARINC 404 or 600
- Derived from HE308/38999 series I (RNJ) & series III (RNJLP)
- Realignment capability on 3 axis
- 38999 level sealing with the specific membrane mounting

### STAND-OFF



Receptacle stand-off



- Allow to fix directly the connector to the board with 3 or 4 screws
- Square flange and jam nut receptacles equipped with PC tail contacts and stand-off
- Prevents any mechanical stress on the contacts terminations

### POWER



38999 Power



- Derived from the MIL-DTL-38999 series
- Equipped with ruggedized power inserts up to 500A
- Available in different shell types

PowerSafe



- Transmit high-power with voltages over 500V (EN61984, EN60664)
- Meet the most stringent requirements of the market regarding user safety
- Designed according to VG96944

### QUICK RELEASE



SC39



- Light, small and strong push/pull connector derived from MIL-DTL-38999 series III
- Mating/Unmating forces (excluding contact force retention)
- Standard version: from 5 to 10 kilos
- Low force version: less than 5 kilos
- Lanyard version available

### ENHANCED SEALING



Receptacle with enhanced sealing



- Withstand differential pressure with a very low air leakage (10<sup>-6</sup>)
- Available in male, female versions and with high speed contacts
- Aluminum alloy shells allow lots of geometries



## 2M MICRO-MINIATURE CONNECTORS



Small, high density, lightweight connectors for harsh environments

- ▶ 71% in weight savings & 52% smaller compared to MIL-DTL-38999
- ▶ Intermateable with Glenair's Mighty Mouse
- ▶ Broad family with many styles and options
- ▶ 7 plating including RoHs
- ▶ Crimp, solder cup, PC tail



2M801\*



- Dual-Start Thread Coupling
- Limited space
- High density
- Contact: crimp (plug & receptacle) / PCB - solder cup (receptacle only)



2M803\*



- ¼ Turn Bayonet
- Limited space
- Quick and sensitive connection
- Contact: crimp (plug & receptacle) / PCB - solder cup (receptacle only)



2M804\*



- Push to Mate
- Limited space
- Quick disconnect
- Contact: crimp (plug & receptacle) / PCB - solder cup (receptacle only)



2M805\*



- Triple-Start Thread w/EMI Strap
- Strong EMI
- Strong vibration performance
- Contact: crimp (plug & receptacle) / PCB - solder cup (receptacle only)

\*Coming soon - Quick delivery on selected part numbers



# CONTACTS



## Small in size, high in performance

- ▶ Strong knowledge in designing and manufacturing contacts including high speed contacts
- ▶ In-house screw machining and plating ROHS available
- ▶ 100% made in France



### Signal Contacts



- Several termination available (Crimp, Solder, PC Tail, Compliant pins...)
- MIL-DTL-38999 Series I, II, III / EN3645 / EN4165
- Available further AS39029 and EN3155 standards



### Power Contacts



- Size 4 & 8 contacts
- MIL-DTL-38999 Series III / EN3645 / EN4165
- Available further EN3155



### Coax Contacts



- 50Ohms and 75Ohms available
- Size 8 and 12 available
- Contact adaptation on customer request



### Quadrax Contacts



- 1 Quadrax Cat5/2 Quadrax Cat5e
- Compliant with the standard quadrax size 8 connector cavities
- Panel size 9 : 23.83mm (38999 series III/EN3645)
- Panel size 17 : 33.32mm (38999 series III/EN645)
- Available for MIL-DTL-38999/EN3645/EN4165/ARINC600
- Several cables already referenced
- Adaptable for IEEE1394 Firewire, USB2...



### Twinax Contacts



- Crimp and PC tail version available
- Custom design and adaptation on customer request
- The right choice for mil-std-1553 and arinc429 protocols
- Qualified further :
  - EN3155-024 and EN3155-025
  - M39029/90/91/113/114
  - ABS1600, ABS1607, ABS2217



### Octonet™ Double Quad Gbe



- Compliant with the standard quadrax size 8 connector cavities
- High speed multi Gb ethernet or simply double quadrax connection
- Fits within standard size 8 cavity of D38999, EN4165, ARINC600, EN3545



### Lux-Beam #12 & #16



- Easy-to-clean single expanded beam termini
- Compatibility with multisources connectors (38999, EN4165, EN3645)
- Hybrid solutions possible (mix with electrical contact)
- Size 12 and 16
- Size 16, EN2591 qualified





# ACCESSORIES: BACKSHELLS & PROTECTIVE CAPS



Improve your connectors performance or protection

- ▶ Large range of backshells with many possibilities and plating
- ▶ Large range of protective caps for plugs and receptacles
- ▶ QPL & ROHS plating available



## Backshells



- Rear accessories in different version: straight, angled, backnuts, cable clamps, EMI, etc
- For EMI version, # termination technologies: braid soldering, clamping, stainless steel band system...



## ABS 2216 Composite Backshells



- Lightweight solution, easy installation
- 3 angles available: straight, 45°, and 90°
- EMI protection backshell version
- Amphenol bonus: "kit backshell + connector available"



## Standard Caps



- For 38999 Series I, II, III (MIL-DTL-38999) & PT/451 Series (MIL-DTL-26482)
- Protect your plugs and receptacles against dust, water, moisture, EMI and contact bending
- Available with nylon cord, metallic chain or jacketed stainless steel rope
- Large range of material & finish



## Rubber Caps



- For 38999 Series I, II, III (MIL-DTL-38999) & PT/451 Series (MIL-DTL-26482)
- Protect your plugs and receptacles against dust, water, moisture, EMI and contact bending
- IP68
- Material: silicone 200°C



## Snap Caps



- Available in composite for PT/451, IP54
- Protection against dust & water spray
- For square flange receptacle and jam nut receptacles
- Self-Closing after disconnect
- Aluminum versions IP67 available RJFTV & USBFTV
- Aluminum versions coming soon for 38999 Series III



# BOARD LEVEL CONNECTORS



## High-Performance board to board connectors

- ▶ Ensure a secure data transmission for the most demanding industries
- ▶ Fast turn around time
- ▶ Extreme withstanding to harsh environments



Modul'R



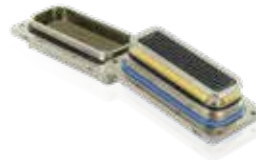
- A unique platform of proven technologies
- Extensive modular interface allowing the combination of all types of signals
- High-speed differential pairs, low-level signal contacts, press-fit power & high-power contacts
- Direct harness modules



HDAS



- Cost effective rugged connector for harsh environments
- 6-times starclip contact technology
- Robust and simple design
- High-density staggered grid
- High-performance to extreme conditions



Smash



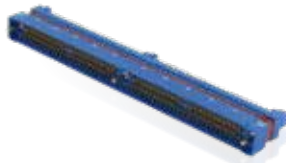
- High-density advanced SEM E modular connector
- Provide superior modules to backplane interconnects
- Flexible circuit terminations for a higher density



SIAL



- Modular PCB interconnect, which provides various combinations of both signal and HF contacts inserts
- Lateral displacer  $\pm 0.4\text{mm}$



SIHD



- Monolithic staggered grid connector, with floating capability feature



HE8/127



- Proven legacy product, which meets various worldwide standard
- Various features, including a wide range of hardware and locking devices



HE7-HE9/254



- The standardized single or double-sided connector range



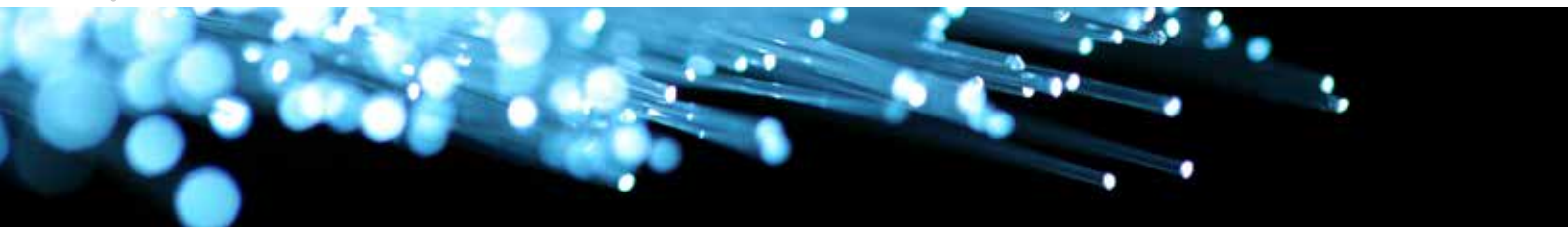
THERMAL CLAMPS



- Chassis devices, which both help to dissipate components heating and block the daughter cards into the box slots grooves



# FIBER OPTICS SOLUTIONS



## Innovative fiber optic interconnect solutions

- ▶ Expanded Beam and butt joint, singlemode & multimode
- ▶ Termini, connectors, cable assembly
- ▶ 30 years experience in fiber optics for harsh environments



NEW

Promi



- Fiber optic solution connection for reduced space
- Easy installation & maintenance
- In Line Miniature Optical Adaptor
- Compact removable splice
- Singlemode & multimode
- EN2591 qualified



NEW

Lux-Beam #12 & #16



- Easy-to-clean single expanded beam termini
- Compatibility with multisources connectors (38999, EN4165, EN3645)
- Hybrid solutions possible (mix with electrical contact)
- Size 12 and 16
- Size 16, EN2591 qualified



CTOS



- Singlemode & multimode, hermaphroditic fiber optic connector, up to 4 channels
- Expanded beam technology for contactless transmission
- Protective window for easy cleaning
- Design for gloved handling and blind mating in extreme conditions
- Qualified according to NATO/STANAG4290



CTOL



- Singlemode & multimode, hermaphroditic fiber optic connector, up to 8 channels
- Expanded beam technology for contactless transmission
- Protective window for easy cleaning
- Design for gloved handling and blind mating in extreme conditions



TACBEAM®



- Singlemode & multimode, hermaphroditic fiber optic connector, up to 4 channels
- Expanded beam technology for contactless transmission
- M83526/20 & /21 Qualified



FO Drums



- Wide range of drums, accessories and tactical optical cables deployable for harsh environments
- Drums of different capacities up to 2200m,
- Accessory Range for easy storage and deployment of cables.
- Tactical cable product range up to 8 singlemode or multimode channels



TVOP



- Fiber optic connector design with 38 999 Séries III shell & Optimised insert for butt joint termini dia. 2.5mm
- Design for Multimode and Singlemode PC or APC version for high return loss.
- Up to 8 channels



Startop



- Fiber optic connector design with 38 999 séries III shell & standard insert for butt joint termini POM or 29504/dia. 2.5mm



# MULTICONTACT & POWER CONNECTORS



## For a wide range of applications

- ▶ We are the original manufacturer of the «Soca», the standard connector for stage lighting
- ▶ We provide MIL-DTL-26482 Series I subminiature cylindrical connectors



PT-451

- MIL-DTL-26482 Series I subminiature cylindrical connectors
- Crimp, solder, & PCB contact versions
- Wide range of backshells and inserts arrangements
- Available with plastic self closing cap option



SL61-Socapex

- Aimed at I/O applications
- 4 types of housing (10, 20, 30 and 40)
- 26 arrangements from 2 to 61 mixed solder contacts
- Configurations available: plugs, receptacles, line mount receptacles, receptacles with locking ring and crimp contacts.
- RoHS version



ABS2286

- Self-locking plug with sleeves and spacers defined in MIL-C-5015/EN2591
- Fire smoke and Toxicity compliant further ABD00631



RFM Series

- Blind mate, floating fixing
- High mating/unmating cycles (up to 5000)
- Power contacts (60 & 200 Amps)
- NF F 61-032 approved



RFM Power

- Blind mate, floating fixing
- High mating/unmating cycles (up to 5000)
- Compliant with NF F 61-032

# CABLE ASSEMBLIES – ELECTRICAL AND FIBER OPTICS



## Electrical harnesses engineered to your needs

- ▶ A 400 m<sup>2</sup> workshop and a team dedicated to harness manufacturing
- ▶ Field Application Engineers in France at your disposal to listen your needs
- ▶ Technical support for your products manufacturing engineering
- ▶ Adjusted work capacity following different production volume



Ruggedized Ethernet network cable assemblies\*:

- Ruggedized RJ45 connectors (Amphenol Socapex RJField®)
  - Mil/aero connectors with Quadrax, Twinax
  - µCom connectors with standard CAT6 or CAT7 patch cable (10Gb+)
- \* Can be delivered in addition to our ruggedized Ethernet switches and media converters*



Fiber Optic cable assemblies

- Expanded Beam butt joint
- Single & multimode
- Drums
- Tactical Drums



Harnesses

- Overmolded harsh environment wiring harnesses
- For both high and low-temperature applications
- Impervious to high-vibration, high-abrasion, moisture, oil & corrosive elements



Signal and power cable assemblies

- Single or multi phase(s) current up to 500 Amp
- Connectors up to 500 Volts
- Tooling available for high section copper cable
- Tactical Drums



All protection sleeving implementation:

- Textile open sleeves
- Corrugated tubing
- Overbraiding
- Heat shrink tubes



Overmolded 38999

- For sizes 7 to 17
- Straight and right angle
- NGVA Ethernet and USB versions



# RUGGED ETHERNET NETWORK SOLUTIONS



## 100% Secure Battlefield Communication

- ▶ Capabilities includes: network design, evaluation, gateways & converters, measurement equipment
- ▶ We provide secure communications to battlefield deployments
- ▶ C4ISR applications



## ABOUT AMPHENOL

Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

**Amphenol** has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

More info on [www.amphenol.com](http://www.amphenol.com)



**Amphenol Military & Aerospace Operations (AMAO)** has the largest and broadest selection of interconnect products in the military and aerospace markets.

More info on [www.amphenolmao.com](http://www.amphenolmao.com)



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Designed by Amphenol Socapex  
DOC-000101-ANG - February 2021