# **Amphenol**







**Global Ethernet Network Solutions** for the **Military Market** 

# **GLOBAL ETHERNET NETWORK SOLUTIONS**



www.amphenol-socapex.com

FLUKE

# **Ethernet Network Solutions for** C4ISR applications

Amphenol Socapex provides Ethernet Network Solutions for use in harsh environments, where reliability and resistance to outside influences, such as temperature, shock, vibration, water, dust, etc. are paramount. Our rugged and durable solutions give you the assurance of a continuous and secure data transmission between all your communication equipments in the harshest environments.

#### **Amphenol Socapex capabilities in Ethernet networks 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.

## How can we provide you with 100% secure and reliable Ethernet Networks?

#### Our large range of MIL Spec connectors:

- · Optical connectors: expanded beam & butt joint
- Ethernet connectors

#### Our Ethernet Switches, the heart of the network, meet the following standards:

- · MIL-STD-810 (environment)
- · MIL-STD-461 (EMI)
- · MIL-STD-704 or MIL-STD-1275 (power)

#### **Our range of Media Converters and Connectors Adapters:**

- Ethernet Copper/Fiber optic
- · Ethernet/CAN Bus
- · RJ45/Quadrax adapters
- ·RJ45 and USB/38999 adapters

#### Our Network Design is 100% secure for data transmission with:

- · MIL-STD standards compliance
- Resistant components selected to support extreme conditions

#### **Our Network equipment:**

- Vectorial Network Analyser
- Fluke Cable analyser
- Switch Tester
- Optical Reflectometer

#### Our Dedicated Network team understands your requirements:

- Network Engineers
- Ethernet switches application Engineers
- Connector Product Group Managers









### **Ethernet Switches & Media Converters**



**RES-SCE-AC-8US** 

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



- 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



- 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



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



 Managed Military Ethernet Switch, RJFTV connectors • 8 x 10/100/1000Tx ports

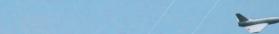
- MIL-STD-461 EMI
- MIL-STD-810 Environment
- MII -STD-704 and MII -STD-1275 Power



 Up to 2x 10/100/1000Tx to 2x 1000 TACBeam Fiber optic ports up to 50 kms

**Network Solutions** 

- TACBeam Expanded beam connector M83526
- MII -STD-461 FMI
- MIL-STD-810 Environment
- MIL-STD-704 and MIL-STD-1275 Power



# **Battlefield Communication**



# SOLDIERS AND BATTLEFIELD

#### **Typical applications:**

- Shelters
- Perimeter security systems
- HD video cameras
- Radars
- UAV control stations

- Tactical radios
- Satellite reception units
- Military computers
- Laser rangefinders
- Target training systems

# **Fiber Optics Connectors & Cable Assembly**



- Expanded Beam, Lens and Window technology
- Stainless steel and rubber protection
- · Hermaphroditic & easy daisy chaining
- 1/2/4/8 channels
- Singlemode & Multimode option
- Ethernet & RF compliant
- STANAG 4290 compliant



- Tactical drum for deployable power, data and optical
- Exists in different materials, accessories, size, diameters, length of cable



- Miniature Single Optical Expanded Beam termini
- 140 x the fiber section
- Reduced sensitivity to dust
- Compatibility Cavity #16 MIL-DTL-38999 series II & III TV/ CTV, EN3645 EN 4165 (SIM)
- · Possibility to mix with Electrical contact for Hybrid
- Performance standard MIL PRF 29504



- Fiber optic, multimode connector with hermaphroditic design
- Meets the MIL-C-83526 performance criteria
- · Easy field maintenance and cleaning



- Hermaphroditic coupling
- Intermateable/interchangeable with other manufacturers
- 1, 2, 3 or 4-Channels
- Rubber overmold
- Aluminum or marine bronze options
- MIL-PRF-83526 compliant (qualification ongoing)
- Multiple configurations available



- Fully keyed threaded connectors
- Aluminum, marine bronze or stainless steel
- APC Termini options
- Operates with singlemode and/or multimode
- Multiple keying options



TACBeam

- Optical Butt joint technology
- Fully keyed thread connectors as 38999 series III
- Aluminum or marine bronze version
- 1/2/4/8 channels
- · Singlemode & Multimode option
- Ethernet & RF compliant



- Oualified to the ARINC 801 Specification
- · Supports standard suite of 38999 backshells and accessories
- Aluminum or stainless steel version
- Removable ASR facilitates termini cleaning
- High density arrangements up to 32-channels
- MIL-DTL-38999 Footprints



# **GROUND VEHICLES**

#### **Typical applications:**

- Vetronic architecture
- Tactical computers
- Tactical radios HD cameras
- Remote controlled weapon stations
- Bomb Jammers
- Secure Wireless External Gateways

**Network Solutions** 

# **Ethernet Connectors & Cable Assembly**



- Based on MIL-DTL-38999 series III
- •Threaded locking mechanism
- 10/100/1000/BASE-T Ethernet (category 6)
- IP 68
- · Coming soon in Cat6A (10GBase-T)



- Miniature 10 Gb + Ethernet connector /Cat6A
- 15 mm(.59") max
- MIL-DTL-38999 environmental resistance
- Solder and crimp contacts
- Threaded coupling mechanism
- Push-pull version on same receptacle



- Based on MIL-DTL-26482
- Bayonet locking mechanism
- 10/100/1000/BASE-T Ethernet (category 6)
- IP 68
- Coming soon in Cat6A (10GBase-T)



#### Coming soon:

- 10 Gb + Ethernet contact to be used in MIL-DTL-38999
- series III size 11 and SIM-EN4165 connectors
- Category 6A (10GBase-T)



- Reinforced Ethernet category 5E cable (1000 Base T)
- Also now available in Cat6, Cat6A & Cat7
- Double shielding (Braid & Foild)
- Halogen free jacket
- Available in numerous cordset length or in reel of 100 or 300 meters



- Offers high performance interconnect solution for CAT6A type cable
- Enhanced crosstalk performance due to compatibility with shielded twisted pair of cables
- Available in size 8 crimp termination style or PC tails
- Can be installed into existing quadrax contact connector cavities



- MIL-DTL-38999 series I, II and III cylindrical connectors • 9-9, 11-35 & 15-35 MIL-DTL-38999 series III for Cat5E
- 9-9, 11-35 & 15-35 MIL-DTL-38999 series III for Cat5E Ethernet
- Wide range of backshells
- Signal, power, twinax, quadrax contacts, optical termini



- Offers advantage for high data transfer rates, low power consumption and excellent EMI compatibility
- Available in size 8 crimp termination style as well as PC tails
- Four strategically spaced inner contacts form two 100 or 150 Ohm matched impedance differential pairs



• Connector series that can be used for all your multi-media needs. USB2.0, HDMI, Ethernet



- · Small and lightweight connector
- Versatility of styles and options
- Mil-spec performance for harsh environmental conditions

# Network Design & Evaluation

#### **Typical applications:**

NAVY

- Embedded ethernet networks
- Tactical computers
- Sensors
- Very long range radios
- Consoles

- Perimeter security systems
- HD video cameras
- Radars
- Missile tracking/launch systems
- Positioning systems

# **Network Solutions**

Shells are also available in Marine Bronze and Stainless Steel





## **Rugged USB Solutions**



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



- 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



- Based on MIL-DTL-38999 series III
- USB 3.0 for capacities from 32 to 256GB
- IP68
- USB2.0 for capacity 4GB
- MIL-STD-810F



- 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
- Long distance extender on fiber optic on demand
- For more information please contact us

## **Additional Solutions for Networks**



- MIL-DTL-38999 series I, II and III cylindrical connectors
- Wide range of backshells and more than 80 inserts arrangements
- Signal, power, twinax, quadrax contacts, optical



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



- From 13A to 100A safety due to a first-to-mate earth contact linked to the shell
- Derived from the standard MIL-DTL-38999 III with the same environmental characteristics



- Rack & Panel solutions for harsh environment
- Very lightweight vs ARINC 404 or 600
- Derivated from 38999 series
- Realignment capability on 3 axis
- MIL-DTL-38999 level sealing with the specific membrane mounting



- 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



- Circular push-pull connectors
- Superior EMC performance and high environmental sealing to IP68
- Optional locking mechanism, multiple shell sizes, suitability for overmoulding



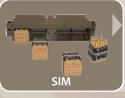
- · Military & harsh environment applications
- · All types of sleeves, overbraiding, overmolding
- Cost advantage on Amphenol content for connectors & backshells



- For MII -DTI -38999/FN3645/FN4165
- The HIGHEST frequency available on the market: up to 65Ghz
- The LARGEST range of size available on the market: 3 sizes 8,12 & 16
- Designed for HARSH ENVIRONMENT
- Unique "Float Mount" technology to allow consistant microwave performance



- · Lightweight composite & modular connector
- For sealed and EMC applications in harsh environment
- Modularity for customization: all technologies in one shell (signal, power, optics, ethernet, quadrax...)





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