

## PRESS CONTACT

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# PRESS RELEASE

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## OPTIMIZED HYBRID SOLUTIONS FOR MILITARY APPLICATIONS

Efficient interconnect and power supply for military optronics

The operability and functionality of electronic equipment is a critical aspect in the military environments. In an emergency, it can mean the difference between life and death.

The pressure to develop technical designs that are not only reliable but also user centric and simple is a must. Military equipment and its operators experience extreme stress situations and need to be as well prepared as possible. But what options do engineers have to enable user-friendly handling, while RoHS directives, environmental requirements, and the desired function dictate the form?

### Requirements for the connection of electronic devices

Electronic devices require a power supply, data integrity from the sensors and the optical systems is critical. Most devices, whether worn by the soldier or installed in the ground combat stations or vehicles, have a wired transmission, as it is less susceptible to manipulation. Portable systems can be powered via an integrated battery, but connecting an external battery offers many advantages:

- Extended service life due to increased battery capacity
- Better ergonomics due to adjustable weight distribution
- Easy battery replacement

Imaging in **military optronics** is based on data from infrared, UV, or X-ray sensors in addition to conventional video capture. As an alternative to fiber optic technology, coaxial cables in particular offer the necessary prerequisites and in addition to a high bandwidth capacity, ensure good shielding against external electromagnetic interference. Compared to fiber optic contacts, they have significantly lower maintenance costs.

### Advantages of hybrid interfaces

The combination of power and data transmission in a hybrid cable requires connectors and cables that are adapted to the requirements and still offer high performance. Integration allows for a more compact installation space and can lead to overall cost savings. The advantages to the operator are:

- **Increased mobility and convenience** due to a reduced number of cables and interfaces.
- **Increased reliability**, as fewer interfaces reduce the risk of cable breakage and connection errors due to damage.
- **Faster operational readiness** thanks to less effort when putting on and taking off equipment.
- **Easier maintenance and repair**. A reduced number of potential sources of error simplifies troubleshooting and repair. This reduces maintenance costs and increases the-lifetime of the equipment.
- **Improved safety** as reduced cable quantities minimize the risk of soldiers becoming entangled in their equipment or surroundings.

The integration of hybrid cables in portable systems is possible, for example, using a hybrid connector such as the ODU AMC® High-Density (HD). The connection solution, specially optimized for military applications, enables the combination of power and data transmission with an outer diameter of only 12.8 mm.

The combination with polyurethane (PUR) sheathed hybrid cables is a good way to make-optimal use of the connector's potential. The thermoplastic elastomer (TPE) is characterized by its high tear, notch, and abrasion resistance, as well as its particular resistance to liquids such as oils, petrol, and solvents. The German manufacturer has a wide range of standard products and supplies complete, tested ready-made assemblies.



*The AMC® High Density connector provides maximum performance in a small installation space. An additional screw cap is available to create a resistant connection with an IP6K8 rating. Strong mechanical coding prevents damage caused by torsional forces and enables error-free mating in extreme situations.*

## Solutions for larger systems

The optronic systems are often permanently installed in vehicles, command posts, or mobile surveillance units. The interaction of several sensors provides a detailed overall picture of the surroundings. The required power and the large amounts of data cannot usually be transmitted via miniaturized connection solutions such as the AMC HD. The AMC portfolio of the manufacturer ODU also offers specifically developed solutions for these requirements.

Connections with 50-ohm coaxial contacts are available in both the High-Density and in the ODU AMC® Classic series. For the secure transmission of uncompressed HD video signals, 75 Ohm coax contacts in the classic AMC connector are ideal.



*The portfolio of **Advanced Military connectors (AMC)** of ODU provides a wide range of solutions, especially designed for the demands of harsh environments.*

## Conclusion

The use of highly advanced optronics places special demands on device manufacturers. The power supply and connection of military equipment to existing systems can be solved by specialized connections, whereby different dimensions and technologies are used. Hybrid solutions such as the ODU AMC® HD connector with matching PUR cables offer considerable added value for integrators and end users by reducing the number of interfaces.

 **Product Finder**



### **ODU Group: global representation with perfect connections**

The ODU Group is one of the world's leading suppliers of connector systems, employing 2,700 people around the world. In addition to its company headquarters in Muehldorf a. Inn (Germany), ODU also has an international distribution network, production and product development sites in Sibiu / Romania, Shanghai / China, Tijuana / Mexico and Camarillo / USA. ODU combines all relevant areas of expertise and key technologies including design and development, machine tooling and special machine construction, injection, stamping, turning, surface technology, assembly and cable assembly. The ODU Group sells its products globally through its sales offices in Austria, China, Denmark, France, Germany, Hong Kong, Italy, Japan, Korea, Sweden, UK and the US, as well as through numerous international sales partners. ODU connectors ensure a reliable transmission of power, signals, data and media for a variety of demanding applications including medical technology, military and security, automotive, industrial electronics, and test and measurement.