Newsletter

April Newsletter 2022

Welcome to the April 2022 edition of the OPTOKON newsletter. The theme of this edition is innovation, which is reflected in three articles focusing on the different aspects that comprise the new DOS® system and its implementation in the new Data Centers. We also feature the new FOTAS perimeter security system and the unique cable used in it that is produced by OPTOKON Kable.

In keeping with the theme of innovation, we also feature the recent visit to OPTOKON by a delegation from the Tampere Region in Finland. The visit to OPTOKON was included in their mission to work together with the Vysočina Region on future smart innovation and digitalization projects.

You can also find all our usual features including details of the new partnership between SAMM Teknoloji of Turkey and new products offered by Turkish facility OPTOKON Elektronik, which include a range of rugged tablets especially designed for harsh environments

DATOVÉ CENTRUM VYSOČINA

The New Data Center DATOVÉ CENTRUM VYSOČINA, located adjacent to OPTOKON Headquarters in Jihlava, is currently in the final stages of completion before the official opening later this year. OPTOKON can now announce that due to decisions at board level concerning limiting investment to within the European Union, that the Data Center is a 100% Czech investment owned by OPTOKON.

New products:

DOS – SN-MT16
DATA CENTER cable system

DATA CENTER
DOS®
CABLE SYSTEM

OPTOKON Elektronik
OERN-13 Rugged Notebook
13.3" Intel Core i5-1135G7
- 11th Gen. Intel® Processor Family – Tiger Lake Processor,Rugged Laptops
- Fanless Cooling System
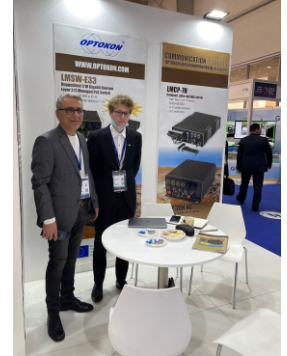- 13.3" 1920 x 1080 LED panel with direct optical bonding laptop

In this issue

Recent Exhibitions

WORLD DEFENSE SHOW 2022,
Riyadh, Saudi Arabia, 6.3.2022-9.3.2022

CABLEXX 2022
Hilton Cairo Heliopolis, Egypt , OPTOKON was a Golden Sponsor for this exhibition, 28.3.2022 - 29.3.2022

The new
OPTOKON DOS® System
was premiered
at CABLEXX 2022

DATA CENTER
DOS®
CABLE SYSTEM

DSA 2020
MITEC, Kuala Lumpur Malaysia, 28.3.2022-31.3.2022

SecurExpo
by OPTOKON Greek partners
15 - 18 Apr 2022, Paiania, Greece

OPTOKON Forthcoming Exhibitions

HEMUS 2022
INTERNATIONAL DEFENCE EQUIPMENT AND SERVICES EXHIBITION
Plovdiv, Bulgaria
1.6-2022-4.6.2022
Stand No. 3-N-2

ECOC 2022
Congress Center Basel
Messeplatz 21, CH-4058 Basel, Switzerland
19.9.22 – 21.9.22
OPTOKON Stand No: 163

Company News

Finnish Delegation from Tampere visits OPTOKON

At the end of March, a delegation from the Finnish region of Tampere accompanied by representatives from the Vysočina regional office visited OPTOKON as part of the proposed cooperation between the two regions in terms of innovation and digitalization.

Taking into account the Finnish region's orientation toward supporting development and innovation, the programme included a tour and presentation of OPTOKON and a visit to the new Data Center to discuss operational and cyber security.

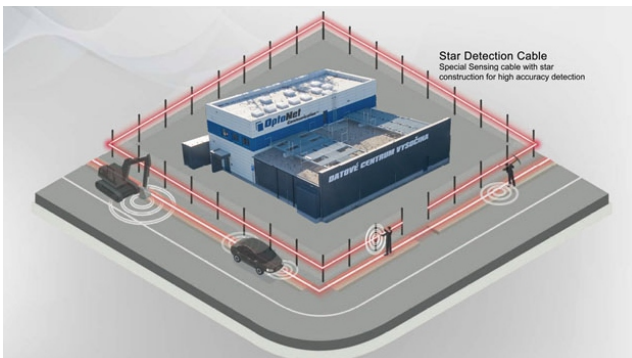## SecurExpo, 15 - 18 Apr 2022, Paiania, Greece

OPTOKON together with our partner ESB Agents participated at Indelex-SmartHome Expo exhibition in Athens/Greece on April 15-18. Mr Vasileios Kostaras presenting OPTOKON's complete FTTH and GPON solution at our partner's booth. Visitors had the opportunity to see OPTOKON's superior quality fiber optic products, testing equipment and splicing tools.

The OPTOKON Group and SAMM Teknoloji Announce Partnership for the FOTAS Fiber Sensing System

The OPTOKON Group and SAMM Teknoloji of Turkey are pleased to announce a strategic partnership for the fiber optic based distributed acoustic sensing system FOTAS.

SAMM Teknoloji and OPTOKON Elektronik, the subsidiary of the OPTOKON Group, will be in a technology and product development partnership for mission-critical applications as well as providing business development and solutions to their clients. The FOTAS system will also be distributed by the OPTOKON GROUP.

Star Detection Cable
Special Sensing cable with star construction for high accuracy detection

Distributed Acoustic Sensing technology senses vibrations through standard fiber optic cables and only uses one fiber optic cable in the field to protect the perimeter. The FOTAS system provides 24/7 protection exceeding 50 km for oil, gas and mining industries, military installations, public buildings, airlines, railways and highways, power plants, border security and all major industrial and residential sites. The safe operation of a facility is monitored by continuous, local, and remote monitoring of the operating conditions for all supporting technologies, including the optical pyrometer developed by SAMM Tecknoloji – the "invisible optical fence". The system will be used in **OptoNet training center** and as part of the secure environment in the new OPTOKON data center DATOVÉ CENTRUM VYSOČINA, which will be opened in August 2022.

Company News

Jiří Štefl, the General Manager of the OPTOKON Group says:

"OPTOKON is excited to expand our relationship with SAMM Teknoloji, a long-standing and valued partner dedicated to continuous improvement, sustainability, and social responsibility. We look forward to expanding our global portfolio as we continue growing our strategic relationship with SAMM. Through our global technical and sales support network, OPTOKON is well-positioned to provide customers with a total solution for optimizing perimeter security."

Mustafa Aksit, General Manager of the SAMM Teknoloji says:

"It is my pleasure to announce the business partnership between SAMM Teknoloji and OPTOKON. This is an important step towards providing the best value solutions to our clients regarding fiber sensing technologies. OPTOKON is known for their strength in the fiber optic industry; and with SAMM Teknoloji's innovative R&D work on optical fiber detection technologies, this partnership offers strong support for our business."

The full press release can be viewed here

The following article provides an in-depth explanation of the FOTAS system

FOTAS SF-10
Single Channel Perimeter Security
Fiber Optic Based Acoustic Sensing System

The FOTAS SF-10 is an acoustic sensor based on fiber optic infrastructure that can be easily used across various terrains. The SF-10 keeps perimeters and borders safe and sends early threat warnings.

Laser beams sent by the laser source travel the entire system and provide information while flowing through the fiber optic cable. When the laser beams come back to FOTAS, they are analyzed by computer software, which eliminates any noises and unrelated data. Finally, FOTAS AI classifies the alarms.

Actions that create vibration can be watched live on the system. Noisy areas can be isolated and deactivated at the request of the user. All alarms are received and reported over the web interface and can be stored and exported.

As a proven early warning security system, FOTAS detects third-party intervention, illegal crossing attempts and any unauthorized excavations along a line that can span just several to thousands of kilometers.

Application Areas

- Industrial, Residential and Commercial Sites Security Military, Public and Private Facilities Security Airports, Railways and Highways Security
- Power Plants Security
- Border Security
- Security of Mining Enterprises

Company News

Application Types

A large variety of activities can be detected remotely along a fiber line, such as:

- Environmental and border security
- Unauthorized excavations when laid on the ground; when mounted on a fence, it can detect attempts at climbing and cutting.
- Telecom line security
- Advanced FOTAS artificial intelligence enables to detect multiple events and offers a wide range of application areas. Damage along communication lines can be monitored in real-time and easily detected.

Features
- The fiber optic line can be monitored live using GIS-based Human Machine Interface.
- No installation is required to use the operator interface.
- Threat types and areas can be defined along the desired area of the fiber cables.
- Past threats can be accessed and analyzed.
- Access can be granted to multiple users.
- With CCTV integration, threat zones can be located and visually monitored.
- FOTAS can be integrated with other security solutions.
- Fast and reliable access to FOTAS with multiple devices via the web interface with 24/7 access
- Up to 10 km of real-time security with one device
- Up to 4 m sensitivity range
- Ease of use and installation
- Compatible with previously deployed fiber cables and can have dedicated fiber cables
- No other electrical or electronic devices are needed along the protected area

The full data sheet can be downloaded here.

And of course, we haven't forgotten to mention the unique cable used in the FOTAS system...

Sensitive Star Detection Cable

The new FOTAS System uses a unique fiber optic cable for Acoustic Sensing Systems produced by OPTOKON Kable. The cable is suitable for installation on the fence and into underground grooves with a silica sand bed.

Further areas of application include:
- Industrial, Residential and Commercial Sites
- Security for Military, Public and Private Facilities
- Security for Airports, Railways and Highway Security
- Power Plant Security
- Border Security
- Security of Mining Enterprises

The full data sheet can be downloaded here.

Outer Jacket

Water-swellable yarn

Optical fibre

Ripcord

Strength members
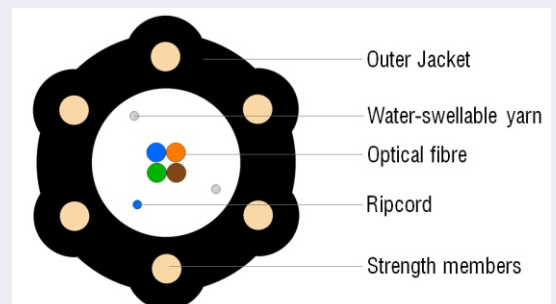
Company News

DATA CENTER DOS® CABLE SYSTEM

THE OPTOKON DATA CENTRE DOS® CABLE SYSTEM – a cutting edge solution for Data Centre architecture

Designing the modern data center begins with the careful placement of what can be called "good bones." Data center network architecture must be highly adaptive, as managers must essentially predict the future in order to create physical spaces that accommodate rapidly evolving tech.

The OPTOKON Data Centre infrastructure cable management solution features an innovative approach toward IT infrastructure management that takes into consideration the latest technological advancement.

Our well-planned data center cabling infrastructure is capable of meeting changing data center requirements to support new trends and is designed to facilitate DCI deployments and connections between data halls. The DOS® Solution utilizes trunk cables with the all-new Fast-Track SN (MT) Connector. DOS®, developed by OPTOKON and SENKO, was premiered during CABLEXX 2022 in Cairo on 28th March 2022. DOS® provides a new solution to extreme density, allowing to deploy more fibres in less time on data centre campuses.

DOS® is a completely pre-connectorized high-fibre count cabling solution that eliminates the need for splicing and can reduce trunk installation time for data center interconnections by up 80%.

The datasheet can be downloaded here.

DATA CENTER Cable system

The new DATOVÉ CENTRUM VYSOČINA located in Jihlava adjacent to OPTOKON Headquarters employs the new DOS® Data Center cable system. In the following article, Ing. Pavel Pospíchal, the Technical Director of OPTOKON, gives a detailed technical overview of the system.

Due to the ever-increasing volume of data in global networks, Data Centers are becoming increasingly important, and their construction continues at an increasing pace. This places ever-increasing demands on the optical infrastructure. Optical cabling must be used to reliably interconnect data center devices, such as servers, and switch data stores. It must also ensure the interconnection of individual data center nodes, connection to the global data network and the connection of customers and users of data center services. This is all while ensuring maximum economy during the installation and operation of the data center.

These requirements are met by the modular concept of the OPTOKON DOS® cabling system. The system is based on factory-prepared modules and pre-terminated cables, which significantly reduce the volume of installation work during construction and facilitate fault clearance during operation.

The DOS-SN-MT16 cabling system is based on multi-fiber connector technology. The newly developed SN-MT16 multi-fiber connectors are designed to terminate 16 fiber cables. The use of trunk cables with these connectors eliminates the need for splicing in optical cabinets, speeds up installation and ensures system modularity.

A cable design with 96 fibers was chosen; 6 tubes with 16 fibers per tube.

Company News

TECHNOLOGY FOR

FUTURE DATA CENTRE STRUCTURED CABLING SYSTEM
with SN-MT Next Generation Multi-Fiber Connector

Next Generation Multi-Fiber Connector
SN-MT® 16 CONNECTOR up to 16F in one row

The cables with 96 - 384 fibers terminated with multiber connectors are installed into PUDOS pull-out unit equipped with CNPM panels with SN-MT adapters.

Optical cable
96F to 384F
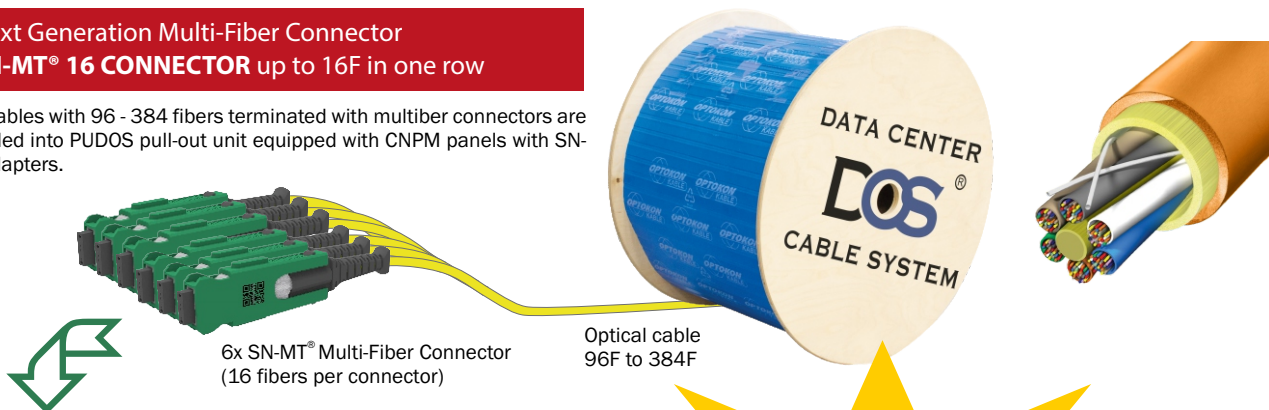
6x SN-MT® Multi-Fiber Connector
(16 fibers per connector)
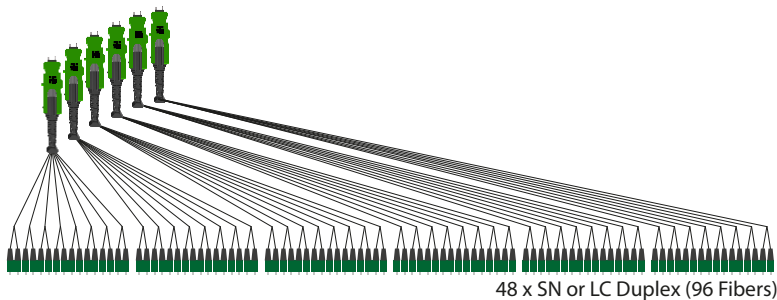
Example of PUDOS (1U Distribution Frame) with one CNPM panel equipped with 2 x SN-MT® Adapter and 6 connectors (96F)
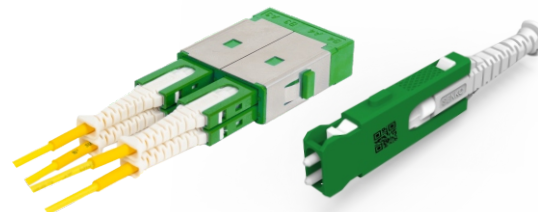
1x CNPM panel   = up to   6x SN-MT® Adapter for 4 connectors =   384 F
2x CNPM panels = up to 12x SN-MT® Adapter for 4 connectors =   768 F
3x CNPM panels = up to 18x SN-MT® Adapter for 4 connectors = 1 152 F

**MAX CAPACITY
1 152 FIBERS**
with 3 fully-equipped CNPM panels
in 1 unit

High density with duplex SN® Connector and adaptor

48 x SN or LC Duplex (96 Fibers)

DOS® - OPTOKON Fast & easy installation modular system

PUDOS – pull-out unit :
The PUDOS 1U distribution frame is an economical pull-out unit for use with manufactured pigtails and pre-terminated cables. The cables are strain-relieved at the rear of the unit. The pull-out shelf which guides, stores and organizes excess slack. This prevents damage to fibers before routing into couplings. In addition, the shelf allows full access to the internal fiber connection, easy cleaning and connection management.

PUDOS-1E-384-SNMT4
Termination for 384 Fibers

PUDOS-1E-768-SNMT4
Termination for 768 Fibers

PUDOS-1E-1152-SNMT4
Termination for 1 152 Fibers

Company News

OPTOKON DOS® solution for 96 fiber trunk cables - or OPTOKON DOS® aggregation rack for 96 fiber trunk cables

DATA CENTER DOS® CABLE SYSTEM

Interconnection between Data center nodes:

All racks in the Data Center hall are connected via 96 fibers trunk cable to the Aggregation rack, which includes outgoing cables to backbones, incoming cables from data users and other fiber optic infrastructure. The modular design allows easy cable extension and fiber optic network reconfiguration.
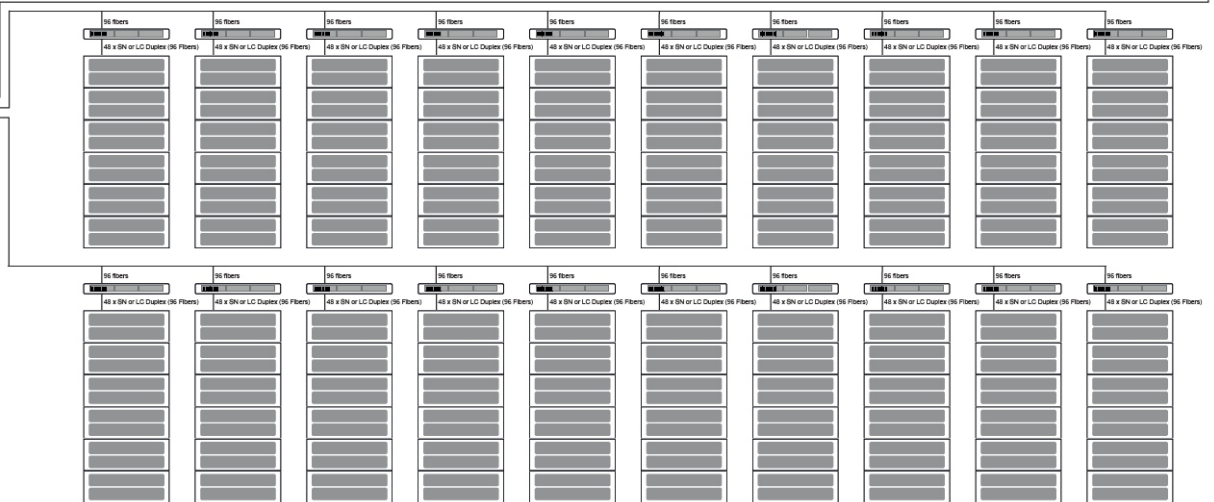
DATOVÉ CENTRUM VYSOČINA equipment layout Hall A

HALL A (up to 50 Racks units)

Aggregation RACK

OptoNet Communication
DATOVÉ CENTRUM VYSOČINA
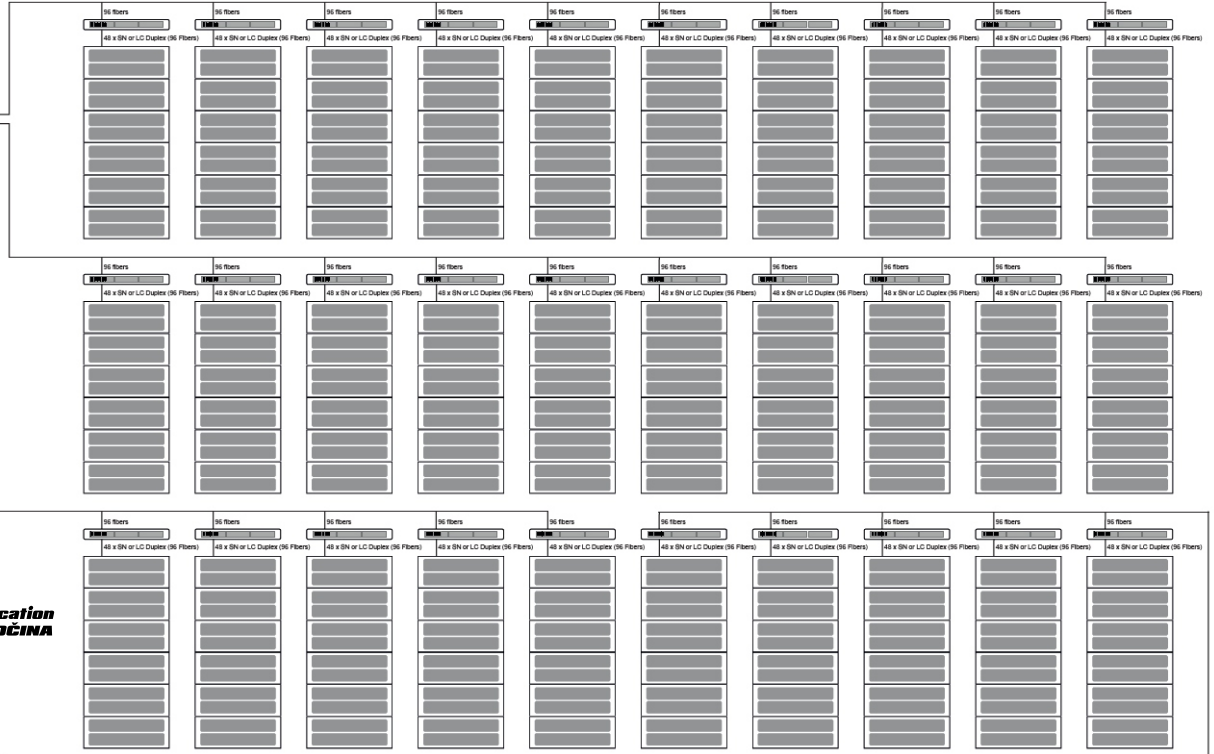
Aggregation RACK

Company News

Expansion of OPTOKON production with cable harnesses for military use

**LMCAB Multi Cables Ruggedized Cable Assemblies
Management Cable, Multi I/O Cable, CANbus Cable**

The LMCAB series introduces the expansion cable accessory designed for high speed data transmission in industrial or military environments. This data cable meets the requirements of Standards EIA/TIA-568B and is equipped with a ruggedized connector on the server side and industrial IP65 connectors on the peripheral side.

The datasheet can be downloaded here.

OPTOKON Metalic cables assembly line

KEY FEATURES
- Halogen Free Flame Retardant Polyether-based Polyurethane. Glossy finish. Excellent hydrolysis resistance, High microbial resistance. UV resistant. High flexibility.
- Ruggedized design for field installations, IP65 protection class.
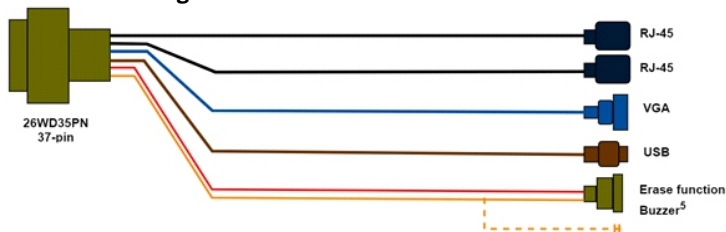- Main cable Connector 37-pin MIL-DTL-D38999 type, 26WD35PN.

CABLE STANDARDS
- Ethernet Cable, modular connectors RJ45, a 4 pair, 24 AWG, 100 Ohm SFTP round patch cable, designed to the ISO/IEC 11801 Category 5e requirements (cat5e on 76 m). The cable contains 4 twisted pairs, cabled, double shielded with kevlar reinforcement strands, jacketed in black UV resistant Polyurethane HFFR. Designed for fixed or portable applications in harsh environments.
- USB 2.0, maximum signaling rate of 480 Mbit/s.
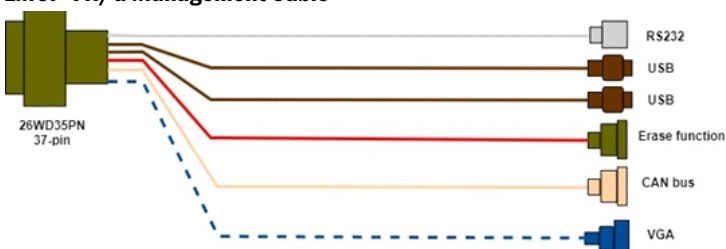- RS-232 standard is commonly used in computer serial ports.

APPLICATIONS
- Light Mobile Computing Platform LMCP-28H, LMCP-7H
- Switches LMSW-E33
- Routers LMSR-R63

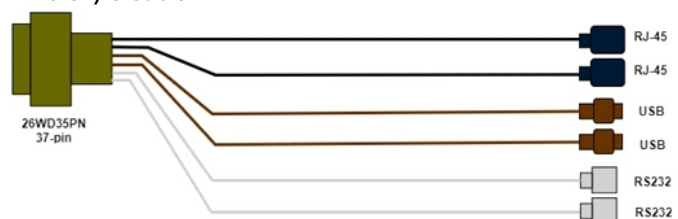**LMCP-28H Management Cable**

26WD35PN
37-pin

RJ-45
RJ-45
VGA
USB
Erase function
Buzzer[5]

LMCP-7H/a Management Cable

26WD35PN
37-pin

RS232
USB
USB
Erase function
CAN bus
VGA

Multi I/O Cable

26WD35PN
37-pin

RJ-45
RJ-45
USB
USB
RS232
RS232

New Products

DOS – SN-MT16
DATA CENTER cable system

The DOS-SN-MT16 cabling system is based on multi-fiber connector technology. The newly developed multi-fiber connectors SN-MT16 are designed to terminate 16 fiber cables. The use of trunk cables with these connectors eliminates the need for splicing in optical cabinets, speeds up installation and ensures system modularity.
A cable designed with 96 fibers was chosen; 16 fibers are stored in 6 tubes.

The datasheet can be downloaded here.

LMB-1-4
LMCP Base holder for LMCP/LMSW installation

The OPTOKON LMCP Base is a platform for mounting the LMCP-28H and the LMSW-E33 switch. The base is equipped with four silent-blocks and is designed to protect the device under mechanical stress and especially to dampen the impact on the entire device during operation. In addition, the base is equipped with two fans on the rear panel, which serve for better heat dissipation from the installed equipment. The power supply to the fans can be taken from a standard vehicle onboard wiring system.

The datasheet can be downloaded here.

FOTAS SF-10
Single Channel Perimeter Security, Fiber Optic Based Acoustic Sensing System

FOTAS SF-10 is an acoustic sensor based on fiber optic infrastructure and It can be easily distributed in various terrains. The SF-10 keeps perimeter and borders safe and sends early threat warnings.
Laser beams sent by the laser source travel the entire system, providing information while flowing through the fiber optic cable. When laser beams come back to the FOTAS, they are analyzed by computer software. Noises and unrelated data are eliminated through the software. Finally, FOTAS AI classifies the alarms.

The datasheet can be downloaded here.

New Products

Sensitive Star Detection Cable

Special fiber optic cable for Acoustic Sensing Systems. Suitable for installation on the fence and into underground grooves with a silica sand bed.

Applications Areas:

- Industrial, Residential and Commercial Sites Security Military, Public and Private Facilities Security Airports, Railways and Highways Security
- Power Plants Security
- Border Security
- Security of Mining Enterprises

The datasheet can be downloaded here.

Outer Jacket
Water-swellable yarn
Optical fibre
Ripcord
Strength members
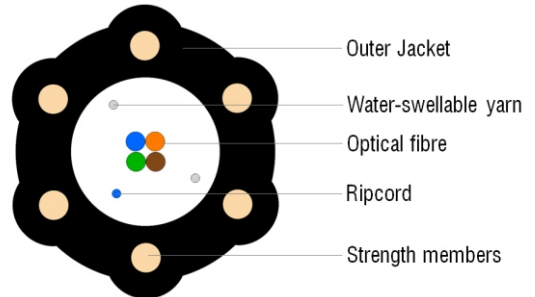
Military Breakout cable

Flexible fiber optic cable for repeated deployment with highly resistant to abrasion and cutting, suitable for harsh environment.

Fiber count	8
Fiber Type	G.657.A1, G.657.A2, OM1, OM2, OM2+, OM3, OM4, OM5
Fiber colour	Natural
Buffer colour	Blue, Orange
Subunit jacket material	Halogen-free flame-retardant thermoplastic elastomer
Subunit Diameter	1.6 mm
Core wrapping	Water swellable tape
Peripheral strength members	Water swellable Aramid yarns
Ripcord	1x under outer jacket
Outer jacket	UV resistant, Flame retardant (V-2, UL94) Thermoplastic Polyurethane
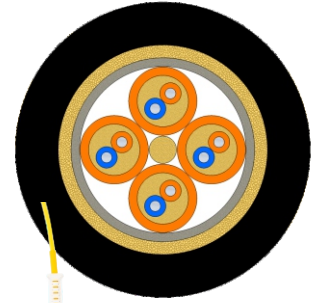
The datasheet can be downloaded here.

PM-800-SN optical Power Meter

The PM-800-SN optical power meter is designed to measure absolute or relative optical power in optical networks terminated with duplex SN connectors.
It can be used as a portable power meter or as a USB probe.

The datasheet can be downloaded here.

PRODUCTS from OPTOKON ELEKTRONIK

OERN-13 Rugged Notebook
13.3" Intel Core i5-1135G7

IP65 rating and MIL-STD-810H Suitable for Public Safety and Military application
The OERN-13 rugged laptop can go wherever you go, thanks to an IP65 rating and MIL-STD-810H shock, drop, and vibration testing. The OERN-13 is tough enough to withstand repeated drops, extreme temperatures, altitudes, humidity, and water and dust exposure, and is for Public Safety and Military application.

- 11th Gen. Intel® Processor Family – Tiger Lake Processor,Rugged Laptops
- Fanless Cooling System
- 13.3" 1920 x 1080 LED panel with direct optical bonding laptop
- Anti-glare technology for sunlight readability
- Flip design for quick switching between laptop and tablet modes
- Dual battery with hot-swappable design for whole-day-work
- Expansion slot supporting optional 2nd removable SSD and smart card reader

The datasheet can be downloaded here.

OERT-13 Rugged Tablet
Intel® Core™ i5-7200U Kaby Lake 2.5GHz (Turbo up to 3.1GHz)

Durable tablet pc with Mobile Rugged Design
The industrial tablets withstanding shock and vibrations can be operated at wide-ranging temperatures of -20°C to 60°C, allowing the tablet to be used in harsh environments for industrial and military use. The device is dust-tight with an IP65 rating and can withstand a water jet against the device enclosure. It can also be easily wiped cleaned to reduce the spread of infection for medical use.

- Intel® Core™ i5-7200U Kaby Lake 2.5GHz (Turbo up to 3.1GHz) rugged tablet
- Optional Intel® Core™ i5-7300U Kaby Lake 2.60GHz (Turbo up to 3.5GHz)
- 11.6" 1920 x 1080 LED panel with direct optical bonding,tablet industrial windows
- IP65 water and dust proof with MIL-STD-810G rugged housing
- Optional Integrated 1D/2D Barcode Reader and HF RFID for data collection
- Removable battery with hot-swap function for all day productivity

The datasheet can be downloaded here