MICROSENS
fiber optic solutions
www.microsens.com
news 7
No. 7, December 2005

Dear Readers, Dear Business Associates,

Some of you may remember, that MICROSENS did the pioneering work regarding the introduction of Fiber To The Office and Fiber To The Desk concepts some 10 years ago. Extensive public and private enterprise projects already have been implemented.

Today we experience an interesting renaissance of this forward-looking concept. Thanks to the successful development of VoIP technology it is more interesting than ever before to install fiber optic cables in buildings. Together with the widespread Power-over-Ethernet standard VoIP is demanding for decentralized workgroup switches in offices. Where can these be better installed than in cable channels or floor tanks?

As a result of new applications such as CCTV monitoring using the IP-protocol, Gigabit Ethernet technology is also being used in industrial networks right now. This newsletter invites you to take a look at new products along with interesting projects. We hope you enjoy reading the articles!

Sincerely yours
Thomas Kwaterski
Marketing & Sales Director

Contents

Trade-Fairs exponet + SPS/IPC/DRIVES

The exponent has opened its doors on 8th November in Cologne. With its concentration on LAN technology, year after year exponent attracted the trade public. This year for the first time, the event was held in Hall 11.

At the end of November, MICROSENS was present as exhibitor for the first time at SPS/IPC/DRIVES, the leading trade-fair for electrical automation technology.

More on page 16.

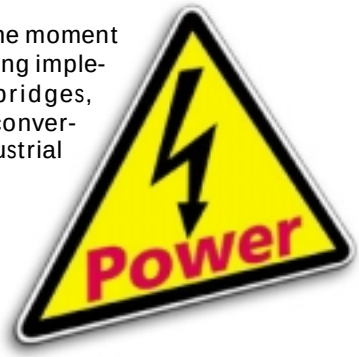
exponet Cologne
8.-10. November 2005 - Messe Köln

SPS/IPC/DRIVES/
Electric Automation
Systems and Components
Exhibition & Conference
Nuremberg 22 – 24 Nov. 2005

The Power-over-Ethernet Offensive

By adopting the Power-over-Ethernet standard IEEE 802.3af, the way has without doubt been smoothed for new applications and series of devices. IP-phones, IP-cameras or WLAN access points can be provided with power directly from the network connection.

MICROSENS is one of the first manufacturers to have implemented the standard in its active network solutions. The PoE functionality is currently being expanded to other products. Together with stand-alone and installation switches, at the moment PoE is also being implemented in bridges, installation converters and industrial switches.



More on pages 3, 4, 5, 7

10 Port Gigabit Ethernet Industrial Switch

MICROSENS is entering new broadband dimensions for industrial networking with Gigabit Ethernet.

The protection mechanism developed by MICROSENS allows the user to set up fault-tolerant Ethernet rings. The latest products make it possible to connect several rings together. In addition, the ring reconfiguration time has been reduced to less than 20 ms.

More on pages 13+14

3 Port Gigabit Ethernet Access Module

The new module for the modular MICROSENS Access Platform allows a flexible and cost efficient conversion of Gigabit Ethernet copper ports to fiber optic.

Typical applications are enterprise networks and location interconnection. With this actual development it is possible to increase the port density in central distributions significant.

More on page 8

MICROSENS Headquarters with a New Sign

For years, the official company sign outside MICROSENS headquarters in Hamm has been somewhat unimposing. Strict regulations meant it was not possible to change the somewhat obsolete sign which was already rather outdated when the company moved into the building, without facing major bureaucratic procedures. The old sign failed to reflect the otherwise fresh, dynamic corporate image of the company.

When the administrative regulations regarding signs were considerably relaxed before the end of the year, it was at long last time for a replacement.

The old sign was radically removed and replaced by new raised lettering on a silver background.

Even from afar, this now signals to employees and visitors that these are the headquarters of a dynamic technology company.

Current Partner Training Courses as Part of the MICROSENS Partner Programme

Once again this year, successful partner training courses have been held as part of the MICROSENS partner programme.

There was so much interest particularly from abroad, that we had to hold two separate events in order to prevent the course groups from getting too large. During the two-day training courses at company headquarters in Hamm, existing and new partners were trained in the sales activities and also in the technical aspects of the MICROSENS products.

New MICROSENS e-newsletter

From autumn this year on MICROSENS will send out regular monthly e-newletters to international sales partners, endusers end other prospects.

In order to offer a convenient information tool, the e-newsletter is based on html format.

The contents will be 2 product news and a case study. Additonally the reader can find hints regarding actual events.

Equivalent to the export organisation (Francophone countries incl. Spain, Eastern European Countries, APAC RIM and Rest of the World) the relevant return adress will route the response to the responsible sales team.

The e-newsletter can easily be subscribed via following newslink:

Newslink website: 120022

Mini Bridge with PoE-Functionality

MICROSENS' new Mini Bridge provides a fiber to copper media conversion whilst at the same time via the 10/100Base-TX port act as a power supply for active terminal equipment like e.g. WLAN-access points, IP-cameras or IP-phones. In addition to the media conversion a speed adjustment is made.

With the definition of the IEEE802.3af standard it is possible to supply active networking equipment with power over the twisted pair port.

With 10/100Base-TX and 100Base-FX port the Mini Bridge offers a direct media conversion and speed adaptation in a Fast Ethernet network. In an extended version this Mini Bridge can receive power via Power-over-Ethernet (Powered Device – PD).

Beside the multimode version there are several single mode versions developed for „Fiber To The Home" (FTTH) projects. With the standard 10/100Base-TX interface, the end user can use internet services, Video on Demand and VoIP applications.

Newslink website: 120022

Features

- Power-over-Ethernet according IEEE802.3af with max. power class 15.4 Watt
- Compact desktop chassis
- Segment splitting and speed adaptation
- Multimode max. 2 km, ST-/SC-connector, optional LC, VF-45 and MT-RJ,
  single mode versions up to 125 km
- Optional simplex fiber (WDM)

Fast Ethernet Switch with PoE

Another version of the 7 Port Fast Ethernet Switch stands out with the very latest features such as Power-over-Ethernet, VLANs and data prioritisation. The miniature switch can be used at very low-cost particularly in terminal applications and is ideal for use in small work groups. The mini switch offers six twisted pair connections (10/100Base-TX) and a fiber optic uplink (100Base-FX). Two of the six twisted pair connections offer Power-over-Ethernet as per IEEE 802.3af. The twisted pair ports adjust automatically to the corresponding speed of the connected device (10/100 auto negotiation). An auto crossover function allows for use of uniform 1:1 patch cables for cascading and terminal device connections. The switch automatically detects the population and adjusts accordingly.

Newslink website: 120123

Features

- Power-over-Ethernet with max. power class 2x 15.4 watt as per IEEE 802.3af
- Compact, fanless tabletop unit
- Integrated management for MICROSENS Device Manager
- 2x 10/100Base-TX with PoE
  4x 10/100Base-TX
  2x 100Base-FX
- Data prioritisation and VLANs as per IEEE 802.3p/Q

8 Port Gigabit Office Switch

The new 8 Port Gigabit Ethernet Switch of MICROSENS with web-based management was developed for today's higher bandwidth demand in office environments. The Two modular transceiver ports (SFPs) of the switch are offering a very high flexibility for Fiber To The Office (FTTO) and Fiber To The Home (FTTH) applications.

The Office Switch has 8 twisted-pair ports included which are adjusting automatically (10/100/1000Base-T auto negotiation) to the speed of the connected end device.

The two uplink ports are designed as SFP slots and are used for the uplink to the central distribution. A wide range of multimode and single mode SFPs is available.

A special feature is the alternative configuration as a media converter. In this configuration two of the eight TP-ports are used together with the two SFP ports as a media converter (2x 1000Base-T/1000Base-X).

Newslink website: 120115

Features

- Compact desktop chassis for FTTO and FTTH
- Fanless switch
- Integrated web-based management
- 8x 10/100/1000Base-T,
  2x SFP uplink slots
- Data Prioritisation according 802.3p/Q, VLAN Support
- Configurable as switch and media converter

Installation Switch with Power-over-Ethernet Powering via 10/100Base-TX-Uplink

For many years MICROSENS is successfully establishing its Fiber To The Office (FTTO) concept into the market. Based on a centralized optical fiber network special Mini Switches for the integration into cable channels or floor trunking are deployed right at the desk. In this way the end user can use network devices with copper ports whilst being part of a fiber optical network.

Now MICROSENS offers an Installation Switch with Twisted Pair uplink. Beside the connection to the central network the switch can also be powered over the uplink port via Power-over-Ethernet.

Switch as Power Injector

The IP-telephony growth strengthens the demand for products with copper uplink. The main application is the upgrade of existing copper networks with Power-over-Ethernet (PoE) functionality.

The PoE upgrade is limited on the end user side, therefore existing central switches can be maintained. The central coupling of Power-over-Ethernet by means of so called power injectors (mid span devices) is eliminated, thus leading to a much lower power density in the central distribution rack.

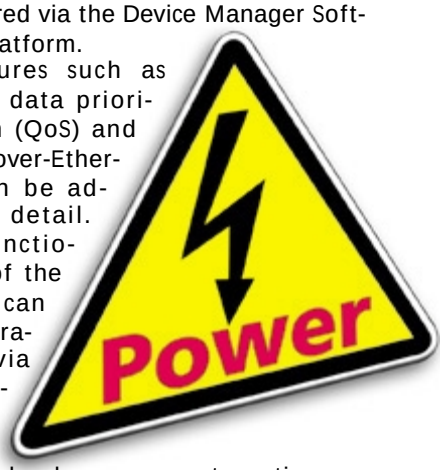
The Installation Switch is easy to install in the cable channel instead of the passive twisted pair socket. The power supply is realized via an external power supply unit. With a total power of 65 W the supply of the switch itself and the connected Power-over-Ethernet end devices with max. 4x15,.4 W is secured.

Powered Device

The power of max. 15,.4 W (according to PoE class 0) received via the uplink port is not only used for the own supply but also offered for the supply of end devices connected to the user ports.

Management

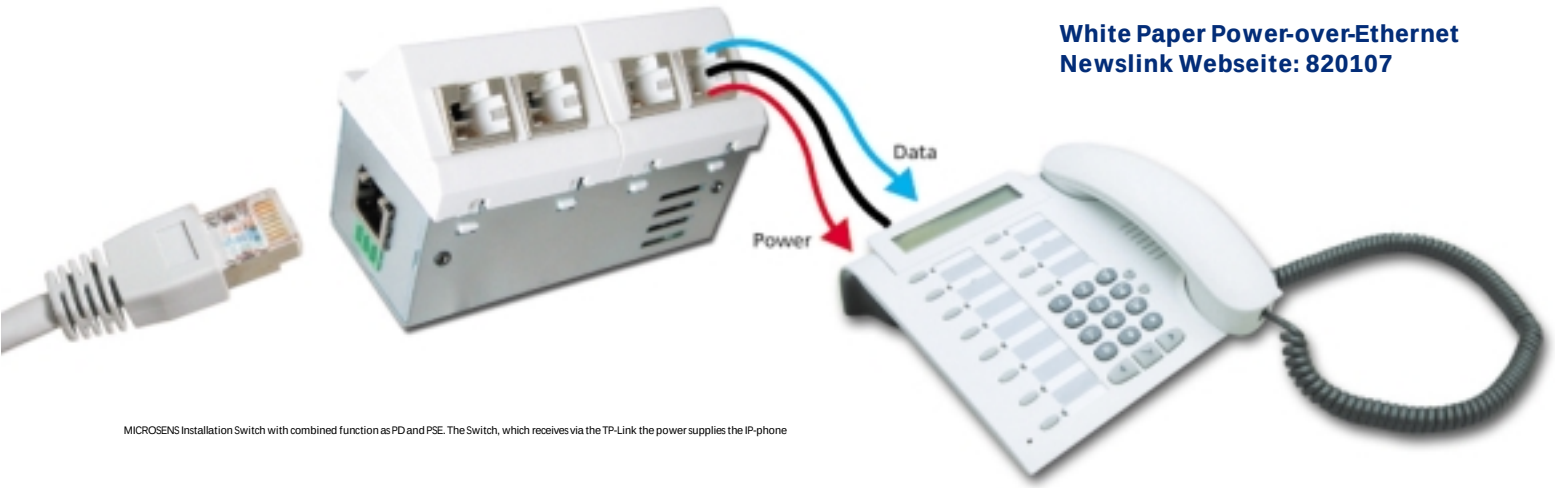
Beside the standard management systems e. g. SNMP and Telnet the Installation Switch can be configured and monitored via the Device Manager Software platform.



Features such as VLANs, data prioritisation (QoS) and Power-over-Ethernet can be adjusted detail. The functionality of the switch can be upgraded via firmware update without hardware access at any time.

Newslink website: 120055

White Paper Power-over-Ethernet
Newslink Webseite: 820107



MICROSENS Installation Switch with combined function as PD and PSE. The Switch, which receives via the TP-Link the power supplies the IP-phone

Power Supply via the Network Connection

For the first time, thanks to the implementation of the IEEE 802.3af standard, network based terminal units like IP-phones, WLAN-access points or IP-cameras can be supplied with electrical power directly from the data cable. The electrical power is transmitted in parallel to the data via the data cable. Therefore a separate 230V power supply is not required.

Safety and Compatibility

For safety reasons and in order to protect non IEEE 802.3af compatible devices the power supply is only switched on after checking the connected device. During the operation the supplied power is continuously monitored. If the max. current limit is exceeded, the power supply is automatically interrupted.

Features

- Compact Copper Switch for Mounting in Cable-trunks and Sub-floor boxes
- 4x 10/100TX Ports, 1x 10/100TX Uplink (RJ-45 plug)
- Integrated PoE-Controller according IEEE 802.3af
- Use as Powered Device (PD) and as Power Source Equipment (PSE)
- Fast, tool-less Snap-In-Mounting
- Integrated Management-Agent

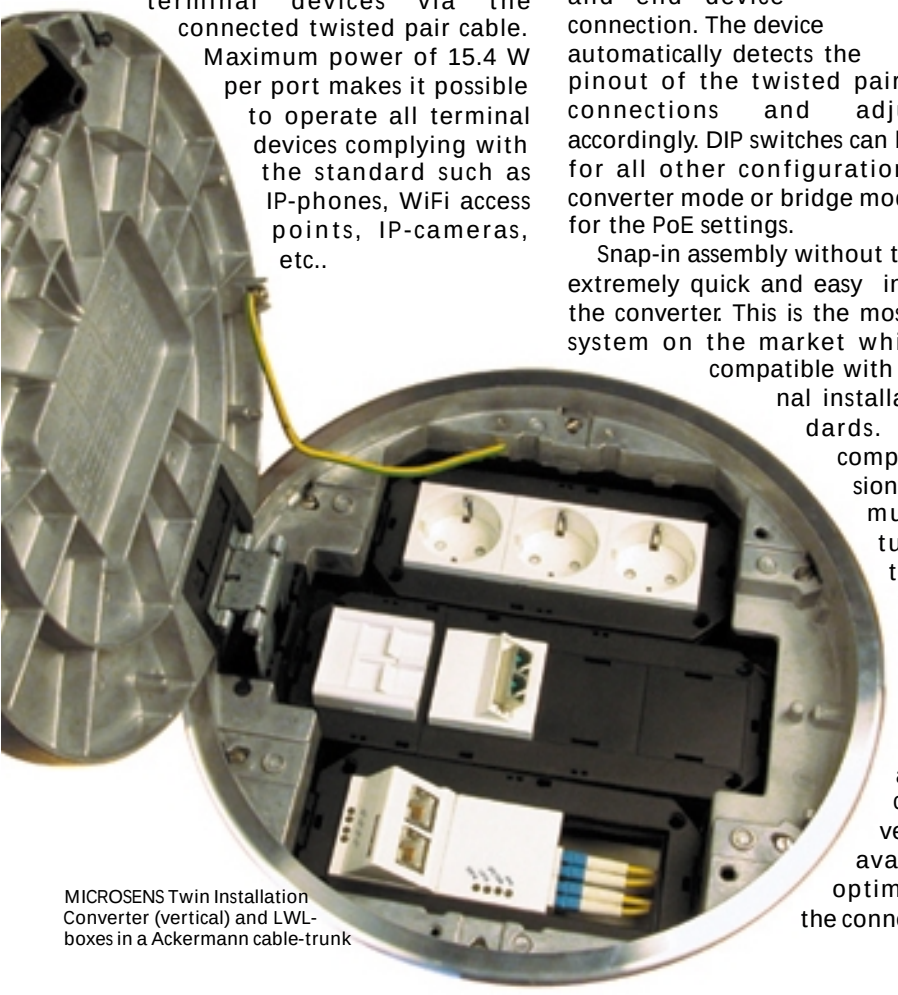
Twin Installation Converter with PoE

The increased use of IP-phones means that users of Fiber To The Desk networks (FTTD) in particular are being confronted with the issue of active media conversion. In FTTD networks, terminal devices are equipped directly with fiber connections with a dedicated link to the central building distribution. But IP-phones generally have twisted pair connections.

For this application, MICROSENS offers an installation converter with Power-over-Ethernet (PoE) functionality. For a typical office environment with two workstations, the device contains two independent Fast Ethernet media converters. The Fast Ethernet signals are converted transparently with extremely short latency time.

Data Connection including Power Supply

The special feature of the device is to combine active media conversion (2x 100Base-FX/100Base-T) and power supply in accordance with the standard IEEE 802.3af. The integrated Power-over-Ethernet (PoE) functionality provides both data and power to terminal devices via the connected twisted pair cable. Maximum power of 15.4 W per port makes it possible to operate all terminal devices complying with the standard such as IP-phones, WiFi access points, IP-cameras, etc..



MICROSENS Twin Installation Converter (vertical) and LWL-boxes in a Ackermann cable-trunk

Converter or Bridge

Legacy equipment can be integrated by switching the device to the bridging mode. Here speed adaption 10/100Base-TX is achieved in addition to media conversion.

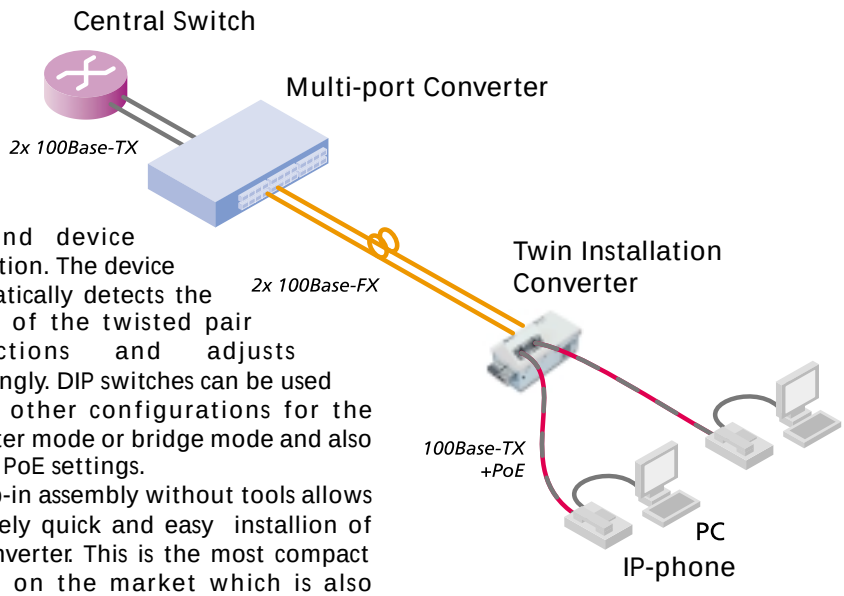
Furthermore, it is possible to combine the half and full duplex modes. The length restrictions for Ethernet segments (5 km) and fast Ethernet (412 m) in the half duplex mode can be overcome in the full duplex mode.

Simple Configuration and Installation

An integrated auto crossover functionality makes it possible to use standard 1:1 patch cables for cascading and end device connection. The device automatically detects the pinout of the twisted pair connections and adjusts accordingly. DIP switches can be used for all other configurations for the converter mode or bridge mode and also for the PoE settings.

Snap-in assembly without tools allows extremely quick and easy installion of the converter. This is the most compact system on the market which is also compatible with international installation standards. With its compact dimensions and minimum structural depth the converter is ideal for underfloor installation. Horizontal and vertical device versions are available for optimization of the connections.

Twin Installation Converter, Version for horizontal Mounting



Newslink website: 120103

Features

- Compact converter for mounting in cable-trunks and sub-floor boxes
- PoE-functionalty according IEEE 802.3af
- Configurable as bridge (10/100TX) or as media converter
- 2x 100TX and 10/100TX ports respectively + PoE, 2x 100Base-FX Uplink with SFF (LC-, MT-RJ or VF-45-plug)
- Fast tool-less Snap-In-Mounting
- Configuration via DIP-Switches

New Device Manager Version Released

Device Manager Software 3.40

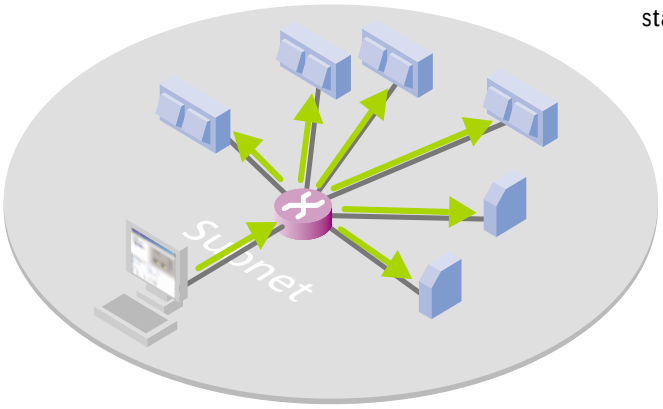
The MICROSENS Device Manager is the central component for effective, fast management of networks in office and industrial applications. It undergoes continuous further development to ensure constant optimum integration of new technologies and customer requirements. The currently available version 3.40 also offers a whole series of new features. The most important new aspect refers to the implemented extended automatic detection of devices.

Broadcast Method

One of the most important features to accelerate and simplify work in large networks is the automatic detection of all existing devices. Up to now, this entailed sending a query to the connected network, triggered by pressing the Auto Discovery button. The query was sent in the form of an IP broadcast. The advantage of this method is that it works very quickly, because only one package is sent to all devices. The new device list is usually ready after just a few seconds. The restrictions in this method consist in the use of the IP broadcast which is normally blocked by a router. And so only devices in the connected sub-network can be detected.

Polling Method

To overcome these restrictions, a second detection mechanism has been implemented which specifically queries every address within a defined IP area. This method can now detect devices in any IP sub-networks, even if these are only accessible via routers. But in view of the fact that every address is now queried individually, this search takes longer than the broadcast method.

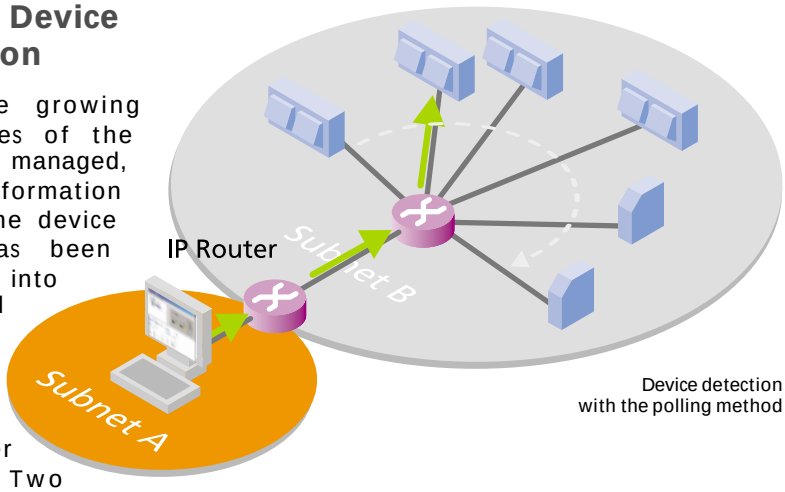


Device detection with the broadcast method

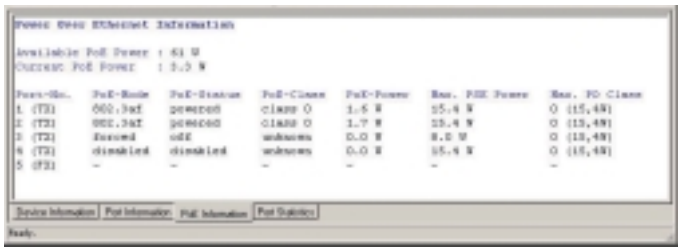
Both methods are implemented in the Device Manager and can be selected and configured in the settings menu. The selected method is then started by pressing the Auto Discovery button.

Extended Device Information

Given the growing functionalities of the devices being managed, the device information display in the device manager has been broken down into functions and spread out across several pages. This gives it a far clearer structure. Two important function areas have been added to Device Manager 3.4 (the information pages are naturally only visible for devices implementing the depicted functions).

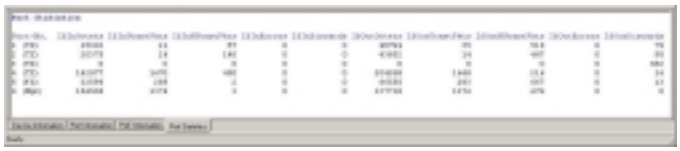


Device detection with the polling method



Extended PoE Information

This page shows all PoE-relevant information. Both the configuration and the current status is shown for every port. When using the extended power management, the current status is shown; the system also shows immediately whether a port has been switched off for example because of an overload.



Additional statistics information window

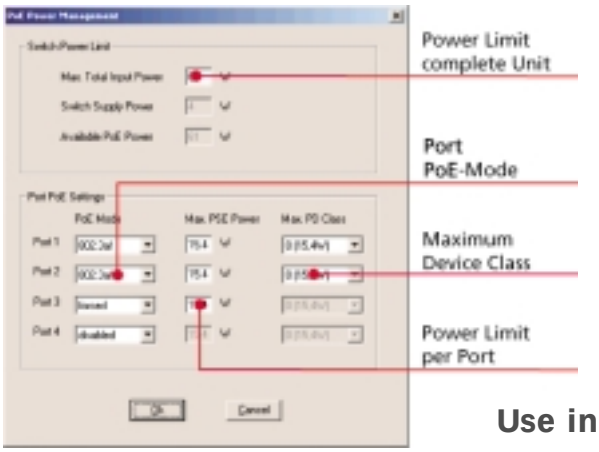
Statistics Counter

It can be a great help for network diagnosis to evaluate the counters registering the statistics for the transferred data. This allows for an analysis of the error status and load behaviour. These counters are clearly arranged according to ports for fast orientation. A new menu point in the Device Manager also makes it possible to reset all counters of the displayed device in order to start defined measurements.

Newslink website: 120049

Extended Power Management for Installation Switches with Power-over-Ethernet

Going over and beyond the power classes defined in standard IEEE 802.3af for terminal units, the load behaviour of switches has to be controlled with greater precision. It is possible to define how the unit behaves under overload at a port or in the complete device. The large number of possible settings made it necessary to move all PoE settings from a hardware option to a window of its own.




MICROSENS Installation Switch supplies a IP-phone of the company Snom with power via PoE

Power Limits per Port

An individual power limit can be adjusted for each port; this is permanently monitored. The PoE power supply to the port is interrupted immediately when the limit is exceeded.

Power Limit complete Unit

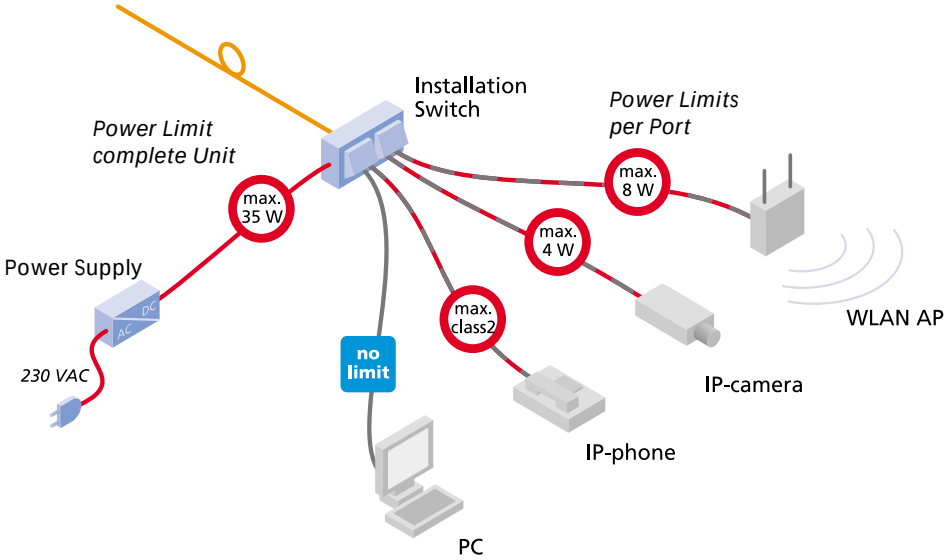
The total power supply of the switch can be limited regardless of the port load. If the total power of all ports exceeds this value, the PoE of defined ports is interrupted in succession until the total power is back below the limit value (load shedding).

Maximum Device Class

Together with the dynamic procedure described above, it is also possible to specify the maximum tolerable power class when connecting up a device. If the power class of the connected device is higher, no power is switched up in the first place.

Use in Practice

In practical terms, a maximum tolerable power supply of 15.4 W to all ports is often completely overrated. In a typical office environment, usually two IP phones are connected up to each installation switch. With power consumption of less than 3 W per phone (can differ according to manufacturer), it is clear that a power supply of 65 W per switch is overrated by more than 10 times. Even when allowing for considerable safety margins, one 65W power adapter can be used without any problems for 2, 3 or 4 switches with 2 phones each. This allows for significant reductions in the costs for providing the necessary power. However, this depends on the devices having extended power management to prevent any overload on the power supply in the case of increased load from incorrect or defective terminal devices.



New 7 HU Carrier Chassis

Features

- Maximum flexibility
- Populated front and back
- 54 module slots on 7 HU, 52 module slots with 3 HU and 2 module slots with 6 HU
- Fully compatible with all modules in the "Access" series
- "Hot swap" of modules
- Central power supply with redundancy option
- Exchangeable fan modules

With the modular access platform, MICROSENS offers an open system for a large number of function modules. These are designed both for LAN and WAN applications and also for the implementation of telecommunications and industrial interfaces. Together with the standard enterprise chassis with 3 HU structural height and 14 module slots, a special carrier chassis is available with 4 HU structural height and 28 module slots. Now with the latest carrier chassis with 7 HU structural height and 54 module slots, MICROSENS extends the access platform for the demanding marketplace.

Newslink website: 320127

New Gigabit Ethernet Access Module

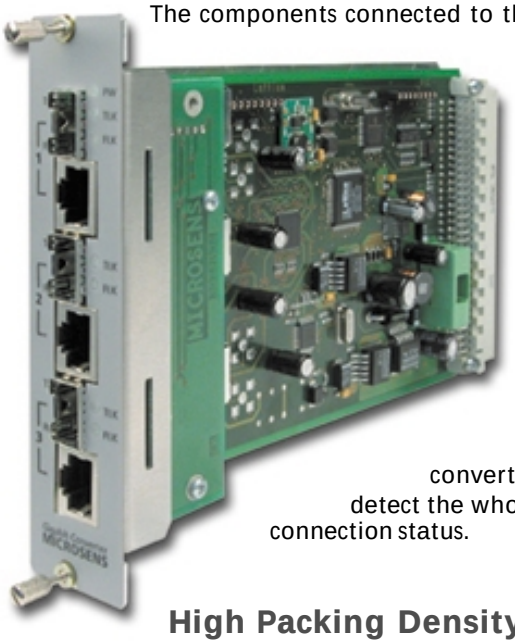
Media converter technology has become a central component in the modern wiring concepts Fiber To The Office and Fiber To The Desk (FTTO/FTTD). The use of central media converters makes sense particularly when making new investments in future Gigabit Ethernet technologies.

Use of the new Access Module by MICROSENS together with copper-based Gigabit switches achieves high port density and lowest per-port costs. This advantage makes itself felt particularly in FTTD networks where a correspondingly large number of Gigabit connections is needed on the central side.

Flexible Configuration

The new access module allows for three-fold Gigabit Ethernet media conversion (3x 1000Base-T to 1000Base-X) and is based on modular SFP connections. This modular design makes the access module particularly flexible. Here MICROSENS offers a wide range of plug-in optical transceiver modules for multimode and single mode applications.

The Gigabit connections are configured automatically with the auto negotiation protocol with transparent forwarding. An integrated link-through function guarantees additional link transparency for the whole connection. The components connected to the converter detect the whole connection status.



High Packing Density

The module belongs to the wide range of the modular Enterprise Access Platform. Together with the 4 HU chassis, maximum port density of up to 42 Gigabit conversion is achieved with only 4 HUs. Smaller versions such as the 1 HU chassis for up to 9 ports or the 3 HU chassis for up to 30 ports are also possible.

Together with the 19"chassis, the user can also choose from single and double version desktop housings. The access module can be combined with all other modules in the same series. Integration in SNMP or web-based management is possible with an optional management module.

Newslink website: 320129

Features

- 3x Gigabit Ethernet Converter 3x 1000Base-T onto 1000Base-X
- Insertion Card for modular Access Systems
- Flexibility with modular pluggable Transceivers (SFPs)
- High Port Densities in Central Distributors
- "Hot swap" of modules
- Link Through

MICROSENS provides Broadcasting Equipment for all Football Stadiums for the 2006 World Cup

The countdown is running: at long last on 9th June 2006, the most thrilling international sports event will start when the football World Cup comes to Germany. Football fans around the world will be kept enthralled for a full four weeks. MICROSENS and its technology is on site in the stadiums.

T-Com Partner

Kick-off started for MICROSENS already 10 months before the opening match, on signing the contract to supply broadcasting equipment with T-Com, the landline division of Deutsche Telekom AG (DTAG). As official supplier and sponsor for the FIFA football World Cup 2006, DTAG is equipping the media workstations in all twelve FIFA World Cup stadiums with state-of-the-art communications technology.

The new optical 4 channel crossbars are being used to broadcast TV signals, combining high data rates for signal processing, greatest possible flexibility of the optical interfaces and a highly compact density. The MICROSENS converter systems form the interface between the multimode connections of the TV broadcasting equipment and T-Com's broadcasting systems. "Uncomplicated technical application and, above all, compact architecture with 19" rack design and the possibility of accommodating two media converters in one slot are ideal for use in the confined space of the TV compounds", says Frank Jost, Project Manager at T-Com headquarters in Darmstadt.

MICROSENS crossbars in use (lower rack)

MICROSENS in all World Cup Stadiums

For the FIFA World Cup 2006, fully redundant systems will be used in each of the twelve venues. Absolute priority is being given to service availability. Trucks fully equipped with TV broadcasting equipment are available for further redundancy: these can operate as mobile broadcasting units. The project has already started, with the systems undergoing tough, long trial operation until the start of the World Cup.

Dress rehearsal: Confederations Cup

At this year's FIFA Confederations Cup, everyone involved in the project could already see that the systems were fully functional. During the dress rehearsal in summer 2005, the solutions for two of the grounds, Frankfurt's Waldstadion and the Rhein Energie Stadion in Cologne, were tested under real conditions and finally approved for use.

Newslink website: 820120

Nore info about the FIFA WM 2006: http://fifaworldcup.com

Trucks as mobile TV broadcasting units

Fans cheer during the Confederations Cup match between Tunisia and Argentina

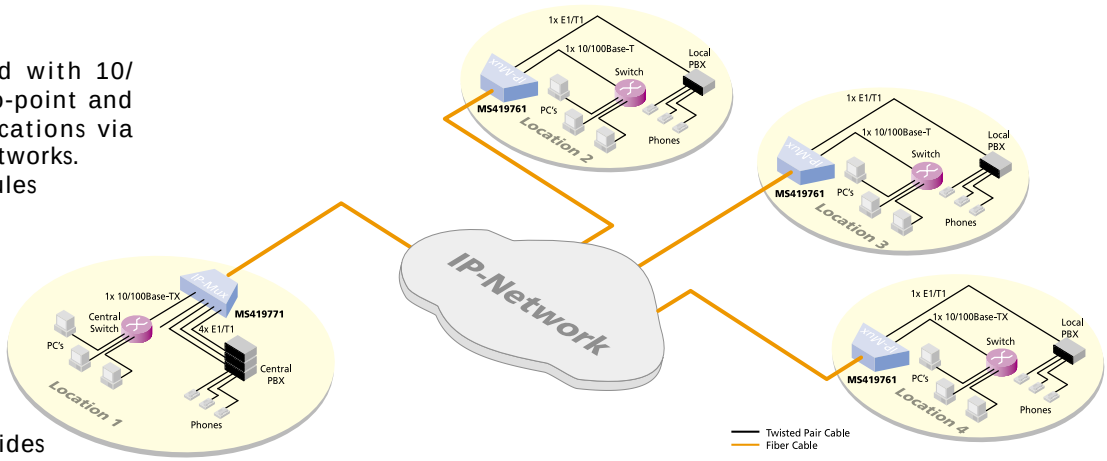
New E1/IP Multiplexer
Voice and Data Transfer via IP Networks

The IP-MUX allows for low-cost transmission of voice-data via packet-based IP networks. The voice or data signals are depicted in IP packets for synchronous, transparent transport via the IP network. The combined signals are received and unpacked by the remote unit. The IP-MUX thus offers customers with a traditional E1/T1 access the possibility of making cost-efficient use of modern IP networks.

E1/IP multiplexer version for installation in 19" distribution racks

Versatile Range of Applications

E1/T1 can be combined with 10/100Base-T data in point-to-point and point-to-multipoint applications via copper connections to IP networks. Optional fiber optic modules allow for optical transfer. Another typical application is the optical free space transfer (laser link). The IP-MUX family offers both carrier and company the possibility of saving on access and device costs and provides new services via existing Ethernet networks.



Application E1/IP multiplexer: wide-ranging connection of LANs and PBX systems

E1, X.21 and V.35

Together with the typical E1 interface for phone systems, modules with the universal RS-530 interface are also available. Special adapter leads can be used to connect interfaces RS-232, X.21 and V.35.

Simple Operation

Easy configuration and maintenance with VT100 and SNMP Management. The system also supports data prioritisation QoS and VLAN tagging.

Versions

Together with the standard version, one E1(RS-530) connection, MICROSENS also offers an additional variation with four connections. This permits point-to-multipoint structures. Cascading of several IP multiplexers can increase the number of terminal unit connections even further.

Newslink website: 420130

Applications

- Connection of E1/T1 telephone systems via IP networks (point-to-point and point-to-multipoint)
- Transmission of serial interfaces (V.24, X.21 and V.35) via IP networks
- Point-to-point connection of Ethernet+E1/T1 via fiber optics or Laser Link (FSO)
- First mile service for Telcos or internet providers
- Connection of GSM transmission stations via IP networks

Features

- Data rates of 56/64 kbps up to 1.544/2.048 Mbps and 10/100TX
- Various interfaces available: E1/T1, RS-530, 10/100TX
- Network management and redundant power supply for 230 VAC or 48 VDC
- Second 10/100TX uplink port for connecting further Ethernet devices or cascading a second IP-MUX
- Optional fiber optic module for optical data transmission as per 100Base-FX standard

MICROSENS Converters count Visitors to the Eiffel Tower

The Eiffel tower, Paris' landmark and one of the most frequently visited tourist attractions in the world with more than 6 million visitors every year, was erected for the World Exhibition in Paris in 1889.

Eventful history

Measuring 324 m in height, it stands on a square with 125 m side length over the Champs de Mars. Right from the start, it attracted big names from all over the world and of course from Paris as well.

Originally it was to be dismantled in 1909. In contrast to the Parisians, who admired the tower, numerous artists demanded that it should disappear. The possibility of using it for military purposes saved it initially. The transmitter fitted at the top of the tower played a crucial role during the first World War. From 1910, the tower emitted a time signal and in 1916 it acted as terminal for the first trans-Atlantic radio link; from 1918 on it was used as radio transmitter. Since 1957 it has been used as television tower. Until the Chrysler Building was built in 1930 and the Empire State Building in 1931 in New York, the Eiffel Tower was the highest building in the world.

Long Climb

Visitors can reach the top of the Eiffel tower by climbing up the steps or using the lift. The steps, which are accessible to the general public, extend to the 2nd floor at a height of 115 m. Three lifts (in the North, East and West pillar) also extend up to the 1st (56 m) and 2nd floor (115 m). Only one or two of the lifts are ever in use at any one time because of maintenance work. To get to the top at a height of 276 m, visitors have to change lift on the second floor.

By mid October of this year, already more than 5.3 million visitors had been counted since the start of the year, which indicates growth of nearly 5% compared to the previous year.

Flocking Tourists

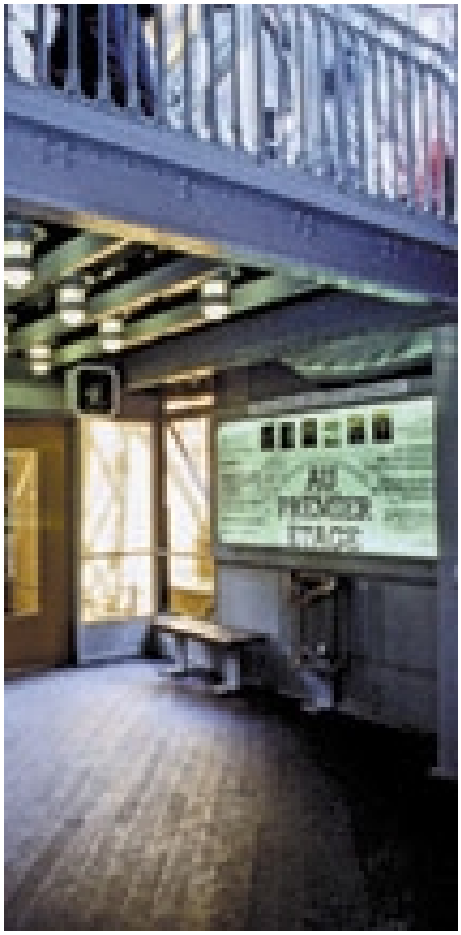
To regulate the flow of tourists and to register the number of people on the platform on the 3rd floor, the entrance and exit areas were fitted with revolving doors.

They are connected to the backbone via MICROSENS fiber optic ports. Given the long distances involved and the electromagnetic interference generated by the lift motors, fiber optic solutions are the ideal transmission medium for this kind of application.

70 MICROSENS devices help to count the tourists at the top of the proud landmark every day.

The long-standing partner, Amec Spie, was commissioned to install a network with a star-based architecture. As competent integrator with a wealth of know-how and more than 22,000 employees throughout France, Amec Spie relies on MICROSENS experience for active media conversion.

Outside picture

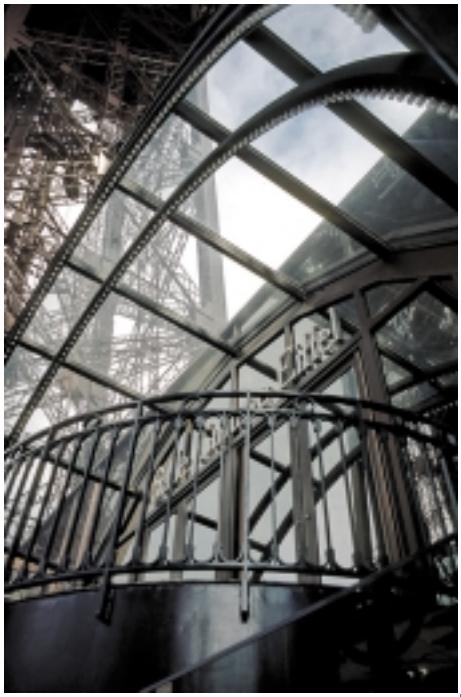


First floor of the Eiffel tower

Newslink website: 820100

Official website of the Eiffel tower: http://www.tour-eiffel.fr

Inside picture of the Eiffel tower



Vienna's Citybike Project Uses Switches by MICROSENS

Bikes for Public Transport

Since May 2003, Vienna offers an unprecedented, attractive alternative for public transport. The Citybike project offers the possibility of using bikes to cover certain distances. The so-called Citybikes can be borrowed from and returned to public bike stations. Bike availability can be queried at any time from a terminal or using the internet. Use of the bikes is free for the first hour, the second hour costs 1 EUR and from the third hour, a fee of 2 EUR is charged for every additional hour. The bike stations consist of a bike terminal and 10 to 20 bike boxes. To use the Vienna Citybike service, the only prerequisite is to hold a Citybike Card or an ATM bank card issued by an Austrian bank. Users can log into Vienna's Citybike system directly at a bike terminal or on the internet. There's a non-recurring registration fee of 1 EUR.

Fiber Optic Terminal Network

The bike terminals are connected online for operations by single mode switches from MICROSENS installed in fiber optic lines along the underground tracks. The terminals were developed specially for this application by sycube Informationstechnologie GmbH. Together with consulting, conception and development of these information technologies, sycube was also responsible for implementation of this project. The system is being continuously expanded so that nearly every month, a new bike station is added in the Vienna city area. The project was generated on behalf of Gewista Werbegesellschaft. Gewista offers a wide range of out-of-home media such as classical poster advertising, city lights, the Vienna city terminals, advertising pillars, posters at bus/tram stops, noise-barrier walling and other projects for continuous transport advertising. The Citybike project is supported by renowned sponsors such as Nokia, One, Raiffeisen Bank Vienna, the City of Vienna and the Vienna Lines.

Bike station Vienna, Schwarzenberger Platz

7500 Trips every Week

The free Citybikes are being used increasingly not just by tourists. In 2005 the lovely weather meant that the Citybikes were being used for 7,500 trips every week. With a growing tendency: by the end of June 2005, the central computer for Citybike Vienna registered around 80,000 trips – nearly just as many as for the whole of 2004.

Similar projects are being planned in other cities, such as Salzburg and Bregenz.

Newslink website: 820088

More information about Citybike under: http://www.citybikewien.at

10 Port Gigabit Ethernet Industrial Switch with Fastest Ring Redundancy

There's no stopping the triumphant success of the IP-protocol for industrial networks. Together with classical manufacturing environments, this technology is also used for traffic control, monitoring and signaling systems. Currently attention is being focused on CCTV monitoring which needs high availability and a broad bandwidth.

Especially for these applications, MICROSENS presents a new 10 Port Gigabit Ethernet Switch. The high performance offers more reserves for time-critical applications respectively increasing data volumes, so that it has a direct affect on stability and availability.

Fault-tolerant Fiber Ring

The Ring Switch has two Gigabit Ethernet fiber ports as per 1000Base-SX/LX, allowing for connection to an fault-tolerant fiber ring. A mechanism patented by MICROSENS guarantees automatic reconfiguration in the event of a failure, thus safeguarding accessibility of all network devices such as machine controllers, IP-cameras and access points. In an extended version, the ring switch is available with a third Gigabit fiber connection. This can be used to link several rings together. A redundant ring link is possible by using further switches with three fiber connections in the ring.

Power-over-Ethernet

Another version of the switch supports Power-over-Ethernet (PoE) as per IEEE 801.3af on all twisted pair connections. That means that PoE-capable terminal devices connected to the switch such as IP-phones, IP-cameras and WLAN access points can be supplied with power from the switch directly via the network cable. The terminal devices do not require their own or separate power supply.

Prioritisation

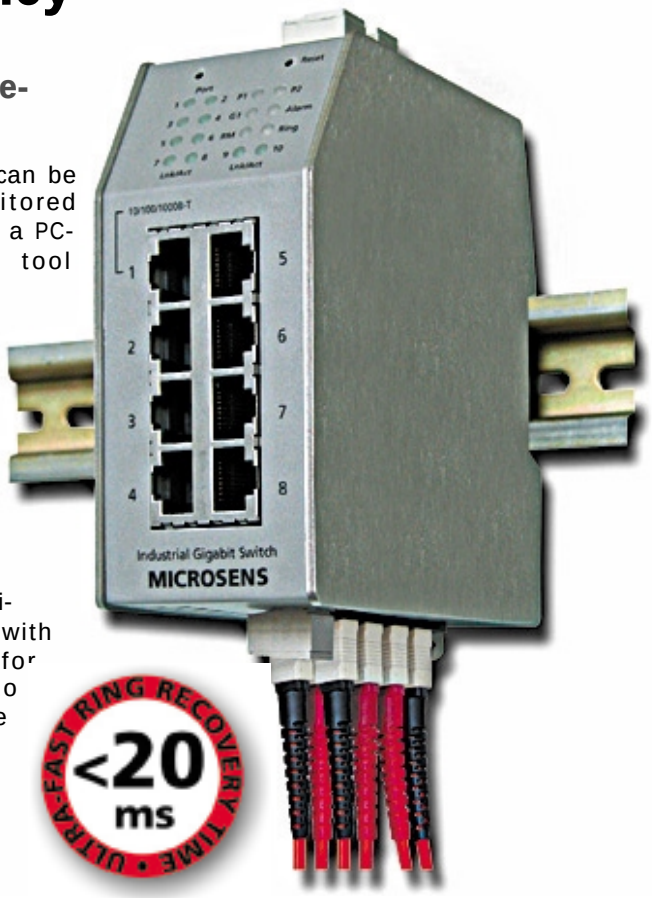
Implementation of data prioritisation (QoS) and VLANs as per IEEE 802.1Q is an essential element of the industrial switch. The integrated 4-level prioritisation of data flows allows for optimum implementation of performance-critical applications such as IP-telephony or IP-video. Full support of VLANs as per IEEE 802.3q also makes it possible to separate safety-relevant sub-networks up to the terminal device.

Network Management

The Gigabit Switch can be configured and monitored either by SNMP or by a PC-based management tool (Device Manager). Alternatively, web-based depiction of all stati is possible using the integrated http server.

Installation

The industrial switches are designed in a robust structure for particularly demanding use with an integrated holder for fitting directly onto 35 mm DIN-rails. The devices correspond to IP-protection class 20 and are rated for an extended temperature range.



Standard for the Future

The new Gigabit Switch with its extraordinary features sets new standards for future safety and investment protection. The main focus here is on higher performance for more reserves and stability, ring functionality for fault-tolerant connections and transmission standards for QoS and VLANs for networking throughout the whole company.

Newslink website: 220091

Advantages

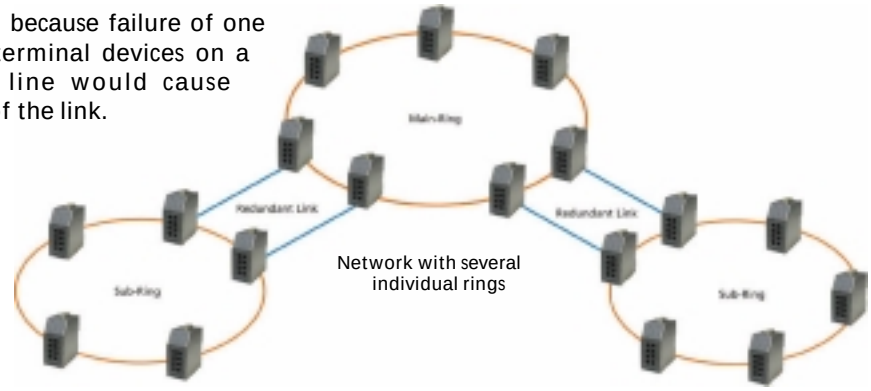
- High performance even under strong network load
- Short latency, fast forwarding of data packages
- Data prioritisation
- Full VLAN implementation
- Standard management interface (SNMP) for monitoring and configuration
- Versions for distances of up to 80 km

Maximum Safety with Ring Recovery Protocol

- Patented procedure for setting up fault-tolerant Ethernet rings
- Maximum system availability
- Reconfiguration time < 20 ms
- Ring recovery non-detrimental to network performance
- Reliable master/slave concept
- Efficient software tool for alarm signaling in the event of an error

Redundant Coupling of Ring Networks

The use of ring networks offers high failure safety with an optimised wiring structure. In practice the network often has to be broken down into several individual rings. Usually several sub-rings are connected up to one main ring. It goes without saying that these links have to fulfil the same fail-safe requirements as the rings themselves. Simple connection of the rings with branch lines is not feasible, because failure of one of the terminal devices on a branch line would cause failure of the link.



Network with several individual rings

Independent Segments

The safest method to link rings consists of two independent segments with corresponding mechanisms to ensure redundant operation.

Normal Operation

In normal operation, only one of the links is logically active (main link). The second link is logically blocked to prevent a network loop. The switch at the main link, the so-called main link controller, indicates to the back-up link controller that the link is OK.

Behaviour when an Error occurs

If an error now occurs on the main link, the main link controller indicates this to the back-up link controller, which activates the back-up link until the error has been rectified. This redundant procedure ensures that there is always an active connection between the rings, even in the event of total failure of a link or switch.

Newslink website: 920093

New compact Power Supplies for Industrial Use (AC/DC)

For the particular critical industrial use in rough environments MICROSENS has developed a special compact power supply. Beside standardized features this device offers additional optimizations for the use in switching cabinets.

The main feature of the power supplies is the insensitivity to electrical interference. This is very important especially in failure-sensitive industry and production enviroments.

Further important properties it possesses are the high efficiency, compact dimensions, low weight and very easy Snap-on mounting on DIN-rails.

The power supplies are offered in the following power classes: 24, 60, and 120 W. Output voltages from 24 VDC as well as 48 VDC are available. The output voltage is adjustable in default range. All power supplies include efficient over voltage and overload protection circuitry.

The design of the chassis increases the thermally conductive surface area leading to high efficiency in optimum heat dissipation.

Newslink Webseite: 220060

New compact power supplies for industrial use:
24 W (left side) and
60 W (right side)

Features

- Highest reliability and availability
- High efficiency
- Wide range input 85..264 VAC
- Output voltage 24 VDC, optional 48 VDC (adjustable)
- Power classes 24 / 60 / 120 W
- Power Good Signaling
- Integrated over voltage and overload protection
- Parallel operation of up to 5 power supplies
- Extreme compact chassis, IP20
- Low weight
- Snap-on mounting on 35 mm DIN-rails, wall bracket inclusive

FU Berlin Uses FTTO Switches of MICROSENS

The Free University of Berlin (FU) is one of the leading universities in the world and stands out with its modern, international character. With more than one hundred degree courses and 35,500 students, the FU is one of Germany's largest, strongest universities.

In 1948 it was founded by students with assistance from the USA and from scientists after losing their licence to study at the re-opened University "Unter den Linden" which was now under communist influence.

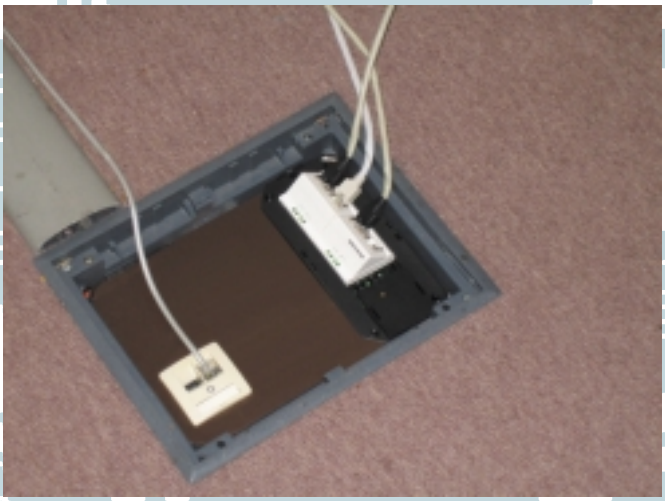
The administrative headquarters of FU Berlin are in Berlin-Dahlem, and the various schools, faculties and institutions are spread out in about 230 different buildings.

The central university administration and chancellor's office are accommodated in the former buildings of the Allied Command.

Chancellory building of FU Berlin in Kaiserwerther Strasse 16-18

Historical Building

The Allied Command was the top Allied government authority for Berlin for 45 years after the second World War, responsible for administration of the four sectors of the city under the supervision of the Allied Control Council. Originally the listed house was used as administration building for the Association of Public Fire Insurance Corporations and was built in 1929 by Heinrich Straumer, the architect responsible for Berlin's radio tower.

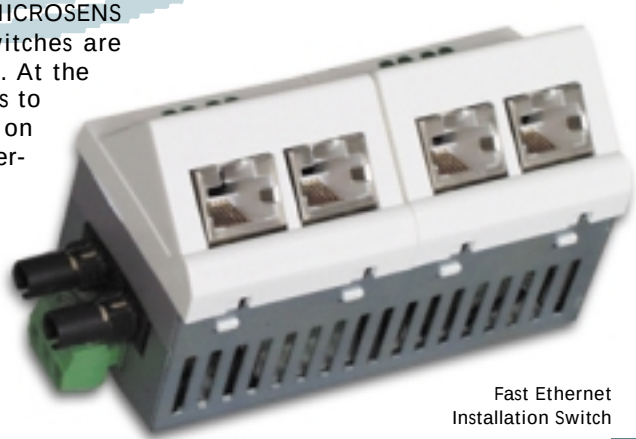


Installation Switches in 45x45 design by MICROSENS installed in underfloor tanks

Clear Decision for the FTTO Concept

Given this historical background, the Zedat (central institution for data processing, networks of FU Berlin) was confronted by the task of setting up a modern data network in this building. The decision was made in favour of the Fiber To The Office concept (FTTO), because the existing underfloor system could be used without the need for any reconstruction work. In order to provide users with the standard RJ-45 interfaces for the terminal devices, MICROSENS manageable Installation Switches are used on the workstation side. At the moment plans are in progress to set up a wireless LAN, focusing on systems with Power-over-Ethernet (PoE) functionality.

FU Berlin on the internet: http://www.fu-berlin.de



Fast Ethernet Installation Switch

Fiber to the Office

Newslink website: 820071

Events Autumn 2005

GITEX 25.09.-29.09.2005 Dubai/VAE

From the 25th to the 29th of September the GITEX , which is the most important IT Exhibition in the Middle East took place in Dubai/UAE. This year it was the 25th anniversary of this event. Opposite to most of the IT Shows in Europe the GITEX reflects the dynamic development of the IT markets in the Middle East and North Africa. MICROSENS presented its Fiber Optic Solutions for the first time on this year's event. Together with the local partner Bond Communications the innovative FTTO and Industrial Ethernet Solutions were shown.

Cabling Systems 27.09.-29.09.2005 Paris

Cabling Systems, the main event regarding the Networking and Wireless segment took place from the 27th to the 29th of September in Paris with 120 exhibitors. MICROSENS focused on the presentation of the FTTO Solutions. Due to the extension to Power-over-Ethernet ports it is possible to supply IP-phones with power via the data port. Another main point was the industrial networking with Gigabit Ethernet.

Optical Communication 21.10.-22.10.2005 Prague

Between 20th and 21st October 2005 an exhibition and conference Optical Communication OK 2005 took place in Prague. This year event is focussed on Triple Play in optical transmission and topics such as Fiber To The Home and combined transfer of audio-video-internet in metro networks were discussed. MICROSENS together with its Czech partner, company RLC Praha a.s. were presenting fiber optic solutions for transmission in local and metro networks.

exponet 08.11.-10.11.2005 Cologne

MICROSENS did not miss the most important international autumn event of the IT industry. Many people visited us in Cologne for the comprehensive information about the latest technology and future trends in this particular industry. MICROSENS presented mainly solutions of the segments FTTO/H, Triple Play and Power-over-Ethernet.

Current infos about fairs and further events please find under newslink website: 920013

SPS/IPC/DRIVES Industry Fair Nuremberg

SPS/IPC/DRIVES, the leading trade-fair for electrical automation technology, is being held from 22nd-24th November in Nuremberg. SPS/IPC/DRIVES 2005 was larger than ever before, with 1,130 exhibitors from 31 countries showing their products and solutions. MICROSENS was attending this fair as exhibitor for the first time, showing its extensive industrial solutions. Ethernet in automation was a focal point of this year's SPS/IPC/DRIVES, with organisers and exhibitors offering many special activities such as presentations, forum discussions and lectures.

MICROSENS was presenting new solutions for industrial Gigabit Ethernet, fault-tolerant ring structures and Power-over-Ethernet. The applications for these state-of-the-art technologies extend from classic automation via traffic information systems through to CCTV monitoring systems.

SPS/IPC/DRIVES/
Electric Automation
Systems and Components
Exhibition & Conference
28 – 30 Nov. 2006
Nuremberg

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