PERFECTION
SOLUTIONS

2008

SIGNAMAX™
CONNECTIVITY SYSTEMS

Signamax LLC, a US based company, is uniquely focused on providing high-performance networks and complex distribution solutions for customers worldwide. We provide complete unified products for copper and fiber based network connections designed for increased performance, reliability and easy installation. Signamax components are also popular for their valued performance/price ratio.

Signamax worldwide support

Our knowledgeable sales, technical support and engineering staff is dedicated to understand the requirements of our customers. With company headquarters in Washington DC and contracted distributors in 14 European countries and production in US, Europe and Asia, Signamax Connectivity Systems is uniquely positioned to deliver complete network solutions to our customers worldwide. Moreover, with our new central warehouse and sales center for Europe in Czech Republic we can now provide better service and support to all European partners and customers.

Product solutions

With **Signamax Connectivity Systems** you can get the right solution for comprehensive complete infrastructure.

Signamax Network Connectivity Systems line represents one of the industry's best products for high performance Ethernet, Fast Ethernet and Gigabit Ethernet components including interface cards, switches and media converters supporting both copper and fiber optic based networks. Signamax Media Converters allow mixed media and speeds in networks for optimum performance. Signamax managed and unmanaged Switches range from 5 to 24 ports with support for 10/100Base to 1000Base speeds with both copper and fiber terminations. Signamax Wireless Products are perfectly suitable for mobile users and allow building of high-performance wireless networks and links. Signamax wireless networks are interactively compatible and allow high speeds of 11/22/54/108 Mbps.

Our premise cabling product line includes patch cords, panels and network components for Category 5 Enhanced, Category 6, Category 6A, Category 7 and fiber optic systems designed to exceed the latest ANSI/TIA/EIA, ISO/IEC and CENELEC specifications. We also supply distribution frames, data racks and cable management systems. All certified Signamax system installations are covered by 20 Years Registered System Warranty encompassing all system elements.

Standards and Quality

You will find that our products have better design, easier installation and bring unique level of performace and reliability to your network than most suppliers can offer. They are designed for the most demanding applications engineered to meet stringent standards and specifications. Each manufactured product has been tested to comply with the standards of organizations such as ANSI/TIA/EIA, ISO/IEC, CENELEC and IEEE. Signamax network and complex solutions are certified by independent laboratories and backed up by long-term performance warrantees that keep peace in your mind.
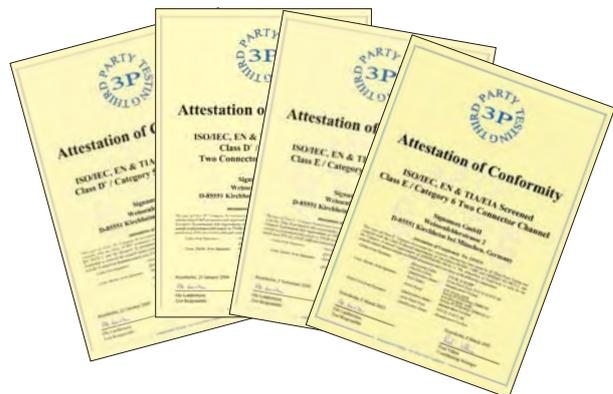
RoHS

We, here at Signamax, care about the environment we live in.
Therefore our products comply with the RoHS directive (2002/95/EC) valid from July 1st, 2006.

Visit the **www.signamax.eu** web page to find your local Signamax representative.

Table of Content

SIGNAMAX™
CONNECTIVITY SYSTEMS

Keeping Your World

In today's technology driven environment, the backbone of your organization is your network—keeping you connected to staff, customers, suppliers, and the world at large. To run a successful enterprise, you need a network that is reliable, fast, and ready to accommodate the inevitable growth and change you will experience. We are the company that can deliver you network solutions that are up to all those challenges, we are **Signamax Connectivity Systems**.

Our mission is to provide end-to-end network connectivity for all your needs. As your single source for your full range of both **Network & Premise Connectivity Systems**, Signamax delivers you wide range of high-performance and cost effective products for Ethernet, Fast Ethernet, Gigabit Ethernet and 10G Ethernet applications.

The Signamax media converters enable mixed media and also mixed speeds on a network for optimum performance. Our portfolio includes managed and unmanaged switches, that are offered in configurations from **5** to **48 ports** with support of **10/100Base** to **1000Base** speeds with both copper and fiber terminations. Signamax wireless products allow building of high-performance wireless networks and links, which can complement or replace standard cabling infrastructure and allow high speeds up to **54 Mbps** in **2.4 GHz** as well as in **5 GHz** band.

Signamax brought to you some great new products and solutions for the upcoming year 2008. We are pleased to introduce our **new hardened Ethernet switches** and media converters that are designed to operate in the harsh environments at the edge of the network as well as new structured cabling components designed to comply with **new 10GBase standards**.

Connected

The Signamax Premise Connectivity System enables you to build a network infrastructure that can accommodate all your network applications. This system is comprised of wiring solutions for your equipment room, distribution cabling and cross-connects to your work-areas with a wide-range of high-performance copper & fiber-optic components, all designed to work together as a system. Whenever you will need products from **category 5E**, **category 6**, or even **category 6A** and **category 7**, we are able to provide suitable solution upon your needs. From the smallest desktop installation projects to the largest enterprise fiber-optic installations, Signamax has the widest range of network solutions, which you will need to support your business.

You will find that our products are designed better, install with greater ease and bring an unparalleled level of performance and reliability to your network. Our systems are designed for the most demanding applications, engineered to meet stringent standards and specifications. Each product is manufactured to the highest quality standards and properly tested to ensure that it exceeds the application standards, such as **TIA/EIA**, **ISO/IEC** and **CENELEC**. The strength and integrity of our Network & Premise Connectivity Systems are backed by the skills and experience of our technical staff.

At Signamax, we are dedicated to help your business run more efficiently. With Signamax connectivity systems provided with long-term performance warrantees you can have a peace of mind you want when selecting **Network & Premise Connectivity Systems** to support your network. If you would like to keep your world connected, choose the supplier that can make it happen, **Signamax Connectivity Systems**.

NETWORK CONNECTIVITY SYSTEMS

Triple Play
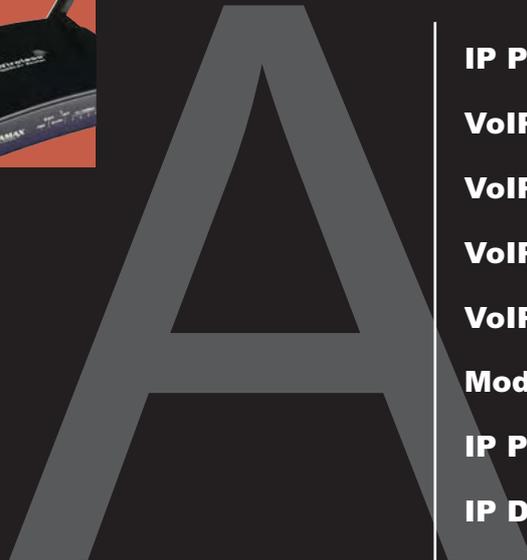
IP Phones

VoIP ATA Gateway

VoIP Gateway

VoIP Gateway w. SIP Proxy Server

VoIP Gateway w. H.323 Gatekeeper

Modular High Density VoIP Gateway

IP PBX

IP DSLAM

ADSL 2/2+ Routers

IP Camera

IP SetTopBox

IP Phones

Signamax, delivers stable, low-cost and fully featured IP telephones to customers.

065-9013 Signamax VoIP SIP Phone conforms to SIP standard and support ADSL, Cable Modem, LAN and WAN, ideal for both enterprise and home users.

065-9011 is a full-featured IP-based telephone set for home telephony via Ethernet base communication. It supports SIP RFC3261 protocol.

Two 10/100BaseT embedded switch/hub RJ-45 ports allow connect to office LAN and PC on your table. It is easily interface with ADSL/Cable Modem that is provided by ITSP, ISP or Carrier company to provide VoIP services to residential and SOHO application.

Model 065-9013

FUNCTIONS

- **Message Waiting Indicator**
- **Do Not Disturb**
- **Configurable Ring Tones**
- **Adjustable Ring Volume**
- **Full Duplex Speakerphone**
- **Mute**
- **Shared Lines**
- **Multiple Lines**
- **Multiple Proxies**
- **Music on Hold**
- **Backup Setting**
- **GMT Setting**
- **Date and Time display (Manual / SNTP)**
- **Optional: Digital answering machine**
- **Status Indication: Talk & Idle & Hold & Unregistered**
- **200 Names and Numbers Phonebook: 2 Numbers per Contact**
- **Calling Number with Phonebook Name Matching**
- **Call Log: Outgoing, Answered and Missed Calls (Each 20 Entries)**
- **Call Timer**
- **Speed Dial: 10 Numbers Max**
- **Redial**
- **Incoming Call with Number and Name Displaying**
- **Call Transfer: Attended & Blind**
- **Call Forwarding: Unconditional & No Answer & on Busy**

IP Phones

PART NO.	DESCRIPTION
065-9005	Signamax SIP WiFi Phone 802.11b
065-9011	Signamax VoIP SIP Phone
065-9013	Signamax VoIP SIP Phone Advanced
065-9014	Signamax VoIP SIP Phone with PoE

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

SPECIFICATIONS

065-9005

PERFORMANCE CHARACTERISTICS
Call Control Protocol: SIP (RFC2543/RFC3261)
Codec: G.711 / G.729a
Battery: 3.6 V, 1,350 mAhr Lithium
Battery Life: 3.2 hr talk time, 24 – 26 hours standby
Wireless Access Protocol: CSMA/CA
Frequency Range: 2.4 – 2.497 GHz
Number of Channel: Up to 14 channels
Data Rate: 802.11b Direct Sequence Rate
Scaling at 1, 2, 5.5, and 11 Mbps
Range RF output: 30 mW peak
Outdoor: 1,000 +ft./300 +m
Indoor: Up to 295 ft./75,5 m

PHYSICAL CHARACTERISTICS
Display LCD: 112 x 64 graphic mode, w/backlight
Notification: Ringer/vibration
Port: Ear-phone jack, mini-USB port

NETWORK CHARACTERISTICS
Protocol: TCP/IP; DHCP;
IEEE 802.11b protocol
Security: Wired Equivalent Privacy (WEP) 64 and 128 bit
Accessories:
AC adapter with mini-USB cable
Regulatory: EMI/RFI: FCC Class B, CE

Model 065-9005

065-9011

APPLICABLE STANDARDS
WAN interface: One RJ-45 10/100BaseT
LAN interface: One RJ-45 10/100BaseT
Power adapter: 5V DC
LCD Display: 13 characters, 2 lines
Keys: Function 4, Memory 5, Menu control 4
Hand free Speaker phone: with Echo cancellation
Network connect: Fix IP, DHCP, PPPoE
Link Mode (SIP):
Proxi mode and Peer to peer mode
Link Mode (H323): Peer to peer, Gatekeeper mode, DDNS mode
Protocol: SIP (RFC3216)
Audio Codec support:
G.711U, G.711A, G.723.1, G.729, G.729A

QoS support: WLAN (802.1p/q)
Telephony features: Mute, forward, Hold, Redial, Transfer
Configure management: LCD Front panel Web Browser, Telnet, Welltech's EMS
DTMF (SIP): In-band, RFC 2833 out-band DTMF generation/detection

ENVIRONMENT
Operating Temp: 0° – 40°C
Storage Temp: -10° – 60°C
Humidity: 10-90% non-condensing, operating and non-operating/storage
Dimensions (WxHxD): 200 x 79 x 210 mm
Weight: 830 g

CERTIFICATIONS
FCC Part 15 Class B, CE Class B

Model 065-9011

065-9013

PROTOCOLS
SIP: RFC3261; DTMF: inband, RFC2833, SIP Info;
RTP: RFC1889; RTCP: RFC3605, RFC3611;
DNS: RFC1035; FTP: RFC959;
TFTP: RFC1350; HTTP: RFC1945, RFC2616;
SNTP: RFC1361, RFC2030; SNMP: RFC1157;
DHCP: RFC2131, RFC2132; PPPoE: RFC2516; NAT: RFC1631, RFC2663

VOICE QUALITY
VAD – Voice Activity Detection;
CNG – Comfort-Noise Generation;
AEC – Acoustic Echo Cancellation;
QoS – Quality of Service;
Jitter Buffer (optional or dependent on IP telephone system);
Codec Support – G.711, G.723.1, G.729, G.722.

SECURITY
Encrypted (AES/DES) Voice Communication
Password Protected for Configuration
MD5 for SIP Authentication

MAINTENANCE
Web Browser Administration via Built-in Web Server,
Auto-Upgradable via HTTP/FTP

ENVIRONMENT
Operating Temperature: 0° – 50°C
Storage Temperature: -10° – 60°C
Relative Humidity: 10-90% (Non-condensing)

BOX CONTENTS
Signamax VoIP Phone, Power adaptor,
User's Manual, Quick Installation Guide,
Optional accessories: RJ-45 Ethernet Cable, Headset, CD

065-9014

PROTOCOLS
SIP v1 (RFC 2543), SIP v2 (RFC 3261), SIP RPORT(RFC 3581),
IP/TCP/UDP/RTP/RTCP, ICMP/ARP/RARP/SNTP,
FTP/DNS/TFTP/DHCP, PPPoE client, HTTP/NAT/DHCP server

VOICE QUALITY
VAD(Voice Activity Detection), CNG(Comfort Noise Generator)
AEC(Acoustic Echo Cancellation) G.168
Packet Loss Compensation, Adaptive Jitter Buffer

CODEC
G.711 64kbit/s (ulaw/alaw), G.723.1 6.3k/5.3k bit/s
G.726 16k/24k/32k/40k bit/s (ADPCM)
G.729A 8k bit/s (CS-ACELP), G.729B (VAD/CNG)

APPLICABLE STANDARDS
Network Interface: RJ45*2 10/100BaseT
NAT Traversal: STUN
Display: 16 characters* 2 lines Backlit, grayscale
Keypad: 40 Keys totally, 9 Soft keys,
10 Feature keys (Phone Book, Redial, DND, Hold, Transfer,
Conference, Forward, Voice Message, Intercom, Volume Adjustment)
Tone: Ring Tone, Ring Back Tone, Dial Tone, Busy Tone, Programmable Tone

ADMINISTRATION
Web-Based Configuration
Telnet Configuration
Keypad Configuration
Auto Provisioning on boot

DTMF
In-band DTMF
RFC2833(Out-of-band DTMF)
SIP INFO

ENVIRONMENT
Operating Temperature: 0° – 50°C
Storage Temperature: -10° – 60°C
Relative Humidity: 10-90% (Non-condensing)

SECURITY
HTTP 1.1 basic/digest authentication for web setup
MD5 for SIP authentication (RFC 2069/RFC 2617)

QOS
IEEE 802.1Q VLAN, ToS Field

VoIP ATA Gateway

When you use your high-speed Internet connection to make phone calls, you'll lower your monthly phone bills and add services and features not available with traditional phone service.

The Signamax ATA Gateways enables high-quality feature telephone service through your high speed Internet access (Cable or DSL Internet connection). Just plug Ethernet cable to WAN port of Signamax ATA Gateway and use the one/two standard telephone jacks to connect your existing phones, fax machines or PSTN line. Each phone jack operates independently, with separate phone service and phone numbers -- same like having two phone lines. With an appropriate Internet telephone service provider, you'll get clear telephone reception and reliable fax connections, even while using the Internet at the same time for normal data operations.

There is no necessary to set up any extra device that the embedded NAT function can allow user's PC to gallop on internet directly. Furthermore users can take advantage of many new and exciting IP telephony applications by connecting analog phone to this gateway. It is standard-based communication device that deliver true, next generation voice-over-IP (VoIP) application to residences and small-to medium enterprise in Internet communication environment.

Model 065-9055

Model 065-9061

Model 065-9062

Model 065-9056

Model 065-9066

VoIP Gateway - ATA

PART NO.	DESCRIPTION
065-9055	Signamax VoIP Gateway, 1xWAN, 1xLAN, 1xFXS, 1xPSTN
065-9056	Signamax VoIP Gateway, 1xWAN, 1xLAN, 2xFXS
065-9061	Wireless Router+VoIP, 1xFXS, 1xPSTN
065-9062	Wireless Router+VoIP, 2xFXS
065-9066	Quad-Band GSM over VoIP Gateway

VoIP Gateway

The 065-9200S/065-9400S Series VoIP Gateway is fully both H.323 and SIP standard compliant residential gateway that provides a total solution for integrating voice-data network and PSTN. By simple installation, this revolutionary compact voice over IP (VoIP) gateway could be configured as a 2/4 FXS/FXO VoIP Gateway which provides voice connectivity over the IP network and to the Public Switched Telephone Network (PSTN). Gateway is equipped with a four port Ethernet switch and built-in NAT router function that provides Internet access using only one IP address. Besides, it provides high voice quality and optimized packet voice streaming over managed and public (Internet) IP networks.

Model 065-9404s

The Signamax 065-9800 Series VoIP Gateway is fully H.323/SIP standard compliant residential gateway that provides a total solution for integrating voice-data network and PSTN. By simple installation, this revolutionary compact voice over IP (VoIP) gateway could be configured as 8 channels high density FXS/FXO VoIP Gateway which provides voice connectivity over the IP network and to the Public Switched Telephone Network (PSTN). The Gateway is equipped NAT router function that provides Internet access using only one IP address. Besides, it provides high voice quality and optimized packet voice streaming over managed and public (Internet) IP networks.

SPECIFICATIONS

RJ-45
LAN 1 – 4x for PC connection

RJ-11 PHYSICAL INTERFACE
Up to 8x FXo/FXs voice ports

POWER
Voltage: DC 12V
Current: 1A

LED
WAN: WAN link status indication
LAN: LAN link status indication
Status: VoIP status indication
Power: Power status indication
Phone: Analog phone status indication 5

PROTOCOL
SIP RFC 3261, Outbound proxy, Support IP or domain name for primary and secondary proxy address and auto switching is enabled.

CALL FUNCTION
Call Forwarding, Call Transfer, Un-connection LED alarm, Call Hold, Calling Number Delivery

VOICE FEATURE
Voice codec, G.711 (A-law/µ-law), G.723.1, G.729, G.711 FAX pass-through mode, RTP / RTCP, Echo Cancellation G.168, Silence Detection/Suppression, Comfort Noise Generation, DTMF Detection/Generation, Call Tone Generation

NETWORK
Network connection, PPPoE (RFC 2516) a. Account / password can be saved, b. Auto reconnection after disconnection, DHCP client (for WAN port), Static IP, DHCP Server and NAT, Bridge for LAN interface, QoS, ToS, Diff Serv, Support SNTP

SYSTEM MANAGEMENT
Support Web, Telnet for remote control, Username / Password for login to make configuration

FIRMWARE UPDATE / UPGRADING
TFTP / FTP / Web remote update

ENVIRONMENT
AC Power, 110 – 220V ± 10V, 60 Hz ± 3Hz, Environment, Temprature: 0° – 40°C,
Humidity: 10-90% RH

CERTIFICATION
FCC Part 15, CE Class B, LVD

Model 065-9201s

VoIP Gateway

PART NO.	DESCRIPTION
065-9200s	VoIP Gateway 1xWAN, 4xLAN, 2xFxs
065-9201s	VoIP Gateway 1xWAN, 4xLAN, 1xFxs, 1xFxo
065-9200s	VoIP Gateway, 1xWAN, 4xLAN, 2xFXo
065-9400s	VoIP Gateway 1xWAN, 4xLAN, 4xFxs
065-9401s	VoIP Gateway 1xWAN, 4xLAN, 3xFxs, 1xFxo
065-9402s	VoIP Gateway 1xWAN, 4xLAN, 2xFxs, 2xFxo
065-9404s	VoIP Gateway 1xWAN, 4xLAN, 4xFxo
065-9800s	VoIP Gateway 1xWAN, 4xLAN, 8xFxs
065-9802s	VoIP Gateway 1xWAN, 4xLAN, 6xFxs, 2xFxo
065-9804s	VoIP Gateway 1xWAN, 4xLAN, 4xFxs, 4xFxo
065-9806s	VoIP Gateway 1xWAN, 4xLAN, 2xFxs, 6xFxo
065-9808s	VoIP Gateway 1xWAN, 4xLAN, 8xFxo

VoIP Gateway

This Signamax 065-9400SVR and 065-9200SVR Series SIP Proxy Server is designed as an embedded-based platform. It performs internet telephony services, like registration status, call detail record and security registration policy. The Signamax 065-9400SVR provides a comprehensive, powerful platform for delivering IP telephony applications based on the Session Initiation Protocol (SIP). It also build in VoIP 2/4 voice channels Gateway which support SIP signal protocols.

This 065-9200SK/065-9400SK Gatekeeper is designed as an embedded-based platform. It performs internet telephony services, like registration, call detail record and security registration policy. Besides Gatekeeper function, 065-9200SK/065-9400SK also build in VoIP Gateway which both support H.323 and SIP signal protocols. A variety of H.323 entities including IP phone, gateway, soft phones as well as different vendor's Gatekeepers have been well tested with.

065-9201svr

065-9201sk

VoIP Gateway w. SIP Proxy Server

PART NO.	DESCRIPTION
065-9200svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 2xFxs
065-9201svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 1xFxs, 1xFxo
065-9202svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 2xFXo
065-9400svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 4xFxs
065-9401svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 3xFxs, 1xFxo
065-9402svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 2xFxs, 2xFxo
065-9404svr	VoIP Gateway w. SIP Proxy Server 1xWAN, 4xLAN, 4xFxo

VoIP Gateway w. H.323 Gatekeeper

PART NO.	DESCRIPTION
065-9200sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 2xFxs
065-9201sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 1xFxs, 1xFxo
065-9202sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 2xFXo
065-9400sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 4xFxs
065-9401sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 3xFxs, 1xFxo
065-9402sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 2xFxs, 2xFxo
065-9404sk	VoIP Gateway w. H.323 Gatekeeper 1xWAN, 4xLAN, 4xFxo

SPECIFICATIONS

All models svr/sk

TELEPHONY SPECIFICATION
Voice Codec: G.711, G.729 AB, G.723 (6.3 Kbps / 5.3 Kbps)
FAX support: T.30 / T.38
Echo Cancellation: G.165/G168
FXO Caller ID detection: DTMF and FSK
Adjustable AC Termination Impedance:
600 / 900 ohm and complex Impedance
Life-Line support (IP/ power failure over relay)
Polarity Reversal: Type I and Type II

IP SPECFICATIONS
H.323 v2/v3/v4 and SIP (RFC 3261), RAS, SDP (RFC 2327), Symmetric RTP, STUN (RFC3489), ENUM (RFC 2916).
LAN: NAT, Virtual Server, DHCP Server
WAN: PPPoE client, DHCP client, Fix IP Address, DDNS client
Network Address Translation: Providing build-in NAT router function
Smart QoS: Guarantee the voice bandwidth

CALL FEATURES
Voice channels status display;Direct Call Mode: peer to peer call;
Register Call Mode: register to H.323 Gatekeeper or
SIP Proxy Server
Adjustable volume: -9 – 9 db
Silence Compression, Auto Dial for speed, Dynamic Jitter Buffer

CONFIGURATION & MANAGEMENT
Web-based Graphical User Interface
Remote management over the IP Network
FTP firmware upgrade, Backup and Restore Configuration file

GENERAL SPECIFICATION
AC power: AC100 – 240V, DC12V / 1.5A, 50 – 60 Hz
Temperature: 0° – 45°C (Operation)
Humidity: up to 90% non-condensing
Emmision: FCC Part 15 Class B, CE Mark
Telephone Safety: FCC Part 68
Dimendion: 260 x 130 x 35 mm
Weight: 900 g (Aluminum)

Modular High Density VoIP Gateway

By Modular hardware design 065-9850/065-9854/065-9858 Series makes any combination of the telephone interface. The Signamax 065-9850/065-9854/065-9858 Series VoIP Gateway is fully SIP and /H.323 standard compliant high density gateway that provides a total solution for integrating voice-data network and PSTN. By modular installation, this revolutionary compact voice over IP (VoIP) gateway could be easily configured as 9850/9860/9870 channels high density FXS/FXO VoIP Gateway which provides voice connectivity over the IP network and to the Public Switched Telephone Network (PSTN).

SPECIFICATIONS

TELEPHONY SPECIFICATION
Voice Codec: G.711 (A-law /μ-law), G.729 AB, G.723
(6.3 Kbps / 5.3 Kbps), FAX support : T.30 / T.38
Echo Cancellation: G.165/G.168
FXO Caller ID detection: DTMF and FSK (Optional)
FXO Hang up detection / anti-seized:
Tone Learning Automatically / Manual Tone, Learning (Optional)
Answer supervision: Support Battery Reverse Detection
and Voice Detection
FXO answer delay time: Support delay 0 - 8000 ms to answer.
Adjustable AC Termination Impedance: 600 / 900 OHM and
complex Impedance, Failsafe Mechanism (FXS relay to FXO):
Power failed bypass support / Internet failed bypass / Registered
failed bypass / Unconditional bypass 12 KHz and 16 KHz Metering
(Customized)

IP SPECFICATIONS
H.323 v2/v3/v4 and SIP (RFC 3261), SDP (RFC 2327),
Symmetric RTP, STUN (RFC3489), ENUM (RFC 2916), RTP
Payload for DTMF Digits (RFC2833), Outbound Proxy Support.
LAN: Support Virtual Server, DHCP Server
WAN: Support PPPoE client, DHCP client, Fix IP Address, DDNS client
Network Address Translation: Providing build-in NAT router function
Smart QoS: Guarantee the voice bandwidth
IP TOS (IP Precedence) / DiffServ

CALL FEATURES
Voice channels status display
Direct Dialing Mode: peer to peer call (support IP Address Call
or Domain Name Call)
Register Call Mode: register to SIP Proxy Server or H.323 Gatekeeper
Adjustable volume: -9 – 9 db
Silence Compression / VAD
Auto Dial for speed, Dynamic Jitter Buffer, Hot-Line Support

CONFIGURATION & MANAGEMENT
Web-based Graphical User Interface
RS232 for configuration, Remote management over the IP Network
FTP firmware upgrade, Backup and Restore Configuration file
Front LCD Panel for System Status and Management
Syslog client support

GENERAL SPECIFICATION
Standard 50 pin RJ-21 Telco connectors
AC power: AC100 – 240V, DC12V/1.5A, 50/60 Hz
Temperature: 0° – 40°C (Operation)
Humidity: up to 90% non-condensing
Emission: FCC Part 15 Class B, CE Mark
Dimension: 440 x 250 x 45 mm
Weight: 3,500 g

VOIP KEY FEATURES

- **Modular design to accommodate various types of telephony interfaces**
- **Both support SIP and H.323 protocols: SIP Registration and Digest Authentication; H.323 Gatekeeper Registration**
- **Single Number / Account for multiple ports**
- **Caller ID Delivery and Detection: FXS support DTMF&FSK Caller ID generation; FXO supports DTMF&FSK Caller ID detection. (Optional)**
- **Smart VoIP call Dialing Book: VoIP call Book could provide any application VoIP call to any type destination (Domain name / IP address, PSTN or PBX) or hunting number setting**
- **AC termination Impedance: 600/900 OHM and complex impedance**
- **Answer Supervision for Polarity Reversal Detection and Voice detection**
- **NAT traversal: This feature allow gateway to operate behind any NAT/Firewall device. Need not to change any configuration of NAT/Firewall like setting virtual server**
- **Smart-QoS Guaranteed: This bandwidth management feature provide good voice quality when user place a VoIP call and access internet at the same time**
- **The gateway will automatically start to reserve bandwidth for voice traffic when VoIP call proceeds**
- **Call Hunting Facility: This function helps gateway to use the lines effectively. This facility automatically transfers your incoming call to a free line. Subscribers need not indicate numerous numbers of each port of gateway**
- **Voice channels status display: This function display each port status like as onhook, offhook, calling number callee's number, talk duration, codec**
- **Pulse Dial support: Support pulse dialing generation and detection. (Optional)**
- **Flash Detection and Generation Program: FXO support Flash Generation and FXS support Flash Detection**
- **FXO answer Mode: FXO provides Ringing Answer, Connection Answer and Non Answer for configuration**

Modular High Density VoIP Gateway

PART NO.	DESCRIPTION
065-9850	Signamax Modular VoIP Gateway Chassis 1xWAN, 1xLAN, 8xFXs, 1xRS-232, Standard 50pin telco Connector
065-9854	Signamax Modular VoIP Gateway Chassis 1xWAN, 1xLAN, 4xFXs 4xFXo, 1xRS-232, Standard 50pin telco Connector
065-9858	Signamax Modular VoIP Gateway Chassis 1xWAN, 1xLAN, 8xFXo, 1xRS-232, Standard 50pin telco Connector
Modules	
065-9860	Module 8x FXs Ports for Modular Chassis 065-985x
065-9861	Module 4x FXs / 4x FXo Ports for Modular Chassis 065-985x
065-9862	Module 8x FXo Ports for Modular Chassis 065-985x

IP PBX

Full featured Internet Telephone IP PBX System for SOHO and Enterprises!

Signamax 065-9101 combines complete IP-PBX features with standards based SIP for telephony solution that can stand alone or integrate with existing phone systems. 065-9101 is an embedded system with built-in SIP Proxy Server and NAT router for SOHO user not only provide network function but also provide an IP PBX feature in office.

Signamax 065-912x / 065-914x Series Full Featured Internet Telephone IP PBX System for SMB! There is no requirement to replace current analog PBX infrastructure. As a result, VoIP will be viewed as attainable by more businesses, providing greater opportunities for resellers to offer VoIP as part of their portfolio. The 065-912x / 065-914x series emphasizes open architecture, scalability and higher Return on Investment. The 065-912x / 065-914x series offers a multitude of features including extensive PBX functionality, integrated voicemail, cost saving call routing functionality, IP routing, SIP call signaling and much more.

Signamax 065-9155 is designed and optimized for SMB enterprise daily communications with easy configuration and cost advantages. Designed as a highly reliable, stable, and open telephony solution. It provides the advanced features of telephony which are required for around 200 users on their telecommunication needs.

The 065-9155 is an embedded system with built-in SIP Proxy/Registrar Server and NAT traversal that make it perfect for SMB enterprise usage. The 065-9155 provides not only basic call functions like Call Forward, Call Transfer on traditional PBX System, but also many advanced functions including Meet-Me Conference, Call Parking, and Voice Mail System with E-mail Notification and Attachment etc. These advanced functions are impossible on traditional PBX. The 065-9155 provides IP-based communications, 3-layer IVR, Meet-Me Conference, Call Parking, Voice Mail System with E-mail Notification and Attachment, and Web GUI Management. The 065-9155 also provides 2 PCI slots that can insert FXO, FXS or ISDN BRI module cards, so enterprise can seamlessly integrate with existing traditional PBX. With the 065-9155, standard SIP phones can be easily integrated in your office.

065-9155 is established by a very stable embedded system platform. All the System Configurations, Voice Mail and Call Detail Record are stored in the flash disk. Administrators could backup the system configuration file to their own computer through web GUI. If the system is damaged, administrator only have to restore the configuration file to a new 065-9155. No more re-configuration is needed and minimizes the maintenance effort.

VoIP IP PBX System

PART NO.	DESCRIPTION
065-9101	Signamax VoIP IP PBX, 1xWAN, 1xLAN
065-9120	Signamax VoIP IP PBX, 1xWAN, 4xLAN, 2xFXS
065-9122	Signamax VoIP IP PBX, 1xWAN, 4xLAN, 2xFXO
065-9140	Signamax VoIP IP PBX, 1xWAN, 4xLAN, 4xFXS
065-9144	Signamax VoIP IP PBX, 1xWAN, 4xLAN, 4xFXO
065-9155	Signamax Modular VoIP IP PBX, 1xWAN, 1xLAN, Rack Mount
Modules	
065-9160	Module 4xFXS Ports for 065-915x Chassis
065-9161	Module 4xFXO Ports for 065-915x Chassis
065-9162	Module 4x ISDN BRI Ports for 065-915x Chassis

IP DSLAM

065-9074/8 Series IP DSLAM has 24/48 ports subscriber line interface with POTS splitter built-in achieved 1U height space saving design. 065-9074/8 Series came with unique bandwidth management, flow prioritization and data flow security control key feature. 065-9074/8 Series provided QoS (quality of service) capability to meet triple play (voice, data, video) requirement, support ADSL/ADSL2/ADSL2+/G.SHDSL interface, stackable up to 8 065-9074/8 can be cascaded. No matters in features, performance, and cost wise, 065-9074/78 Series is the best choice for NSP (network service provider).

IP DSLAM

PART NO.	DESCRIPTION
065-9074	Signamax IP DSLAM ADSL/ADSL2+, 24 ports, 2x1000Base-TX Uplink
065-9078	Signamax IP DSLAM, ADSL/ADSL2+, 48 ports, 2x1000BaseTX Uplink
065-9081	Signamax IP DSLAM Uplink Module 1x100BaseTX + 2x1000Base TX
065-9082	Signamax IP DSLAM Uplink Module 1x100BaseTX + 1x1000BaseTX + 1x1000LX
065-9083	Signamax IP DSLAM Uplink Module 1x100BaseTX + 1x1000BaseTX + 1x1000LX
065-9094	Signamax IP DSLAM G.SHDSL.bis CPE unit, 4port switch, 4 wires
065-9098	Signamax IP DSLAM G.SHDSL.bis CPE unit, 4port switch, 8wires

SPECIFICATIONS

SYSTEM FEATURES
48/24 ports interface ADSL/2/2+ subscriber interface with built-in POTS Splitter
48/24 ports G.SHDSL/G.SHDSL.bis subscriber interface (optional)
One 100BaseT MGNT+ Two 1000BaseT or one Giga LX Uplink/Subtend
Interface optional, Stackable up to 8 units to be cascaded
Centronic 50 pin connector for line in and out
8 VCs per xDSL port, 128 MAC address per xDSL port
48*128 MAC address, Packet size 64 byte to 1,522 byte
PPPoE Intermediate Agent, DHCP Relay Agent
Inter-Working: IPOA to IPOE Trunneling, PPPoA to PPPoE
inter-working, Multiple mechanisms of prioritizing traffic

MULTICAST
1. Up to 256 multicast addresses
2. IGMP v1, v2, v3
3. Multicast VLAN mapping: Independent VLAN multicast (IVM),
   Shared VLAN Multicast (SVM)
4. Handle PPPoE Encapsulated IGMP packets

BRIDGING
1. Ethernet Bridging - Broadcast, Flooding/Dropping
2. VLAN bridging: 512 VLAN support, Static VLAN, VLAN Stacking,
   VLAN Trunking

ADSL/ADSL2/ADSL2+ INTERFACE
ADSL/ADSL2/ADSL2+: Downstream DMT data rate 32 Kb/s up to 25 Mbps;
Upstream DMT data rate 32 Kb/s up to 1 Mbps
Comply with ITU G.992.1 (G.DMT); G.DMT.bis; ITU G.992.2 (G.Lite);
ANSI T1.413 issue 2; ITU G.994.1 (G.handshake) for ADSL,
G.992.3 for ADSL2, and G.992.5 for ADSL2+
Extended power management capabilities to optimize power consumption
for each application, Distance up to 18 kft

G.SHDSL/G.SHDSL.BIS INTERFACE
G.SHDSL: Symmetric transmission rate up to 2.3 Mbps (2-wire)
G.SHDSL.bis: Symmetric transmission rate up to 5.7 Mbps (2-wire)
Comply with G.991.2

MANAGEMENT
Microsoft windows based GUI MSE
Local RS-232 CLI and Ethernet SNMP/TELNET management
Remote in-band SNMP/TELNET management
Firmware upgradeable via FTP or TFTP, Support SNMP v1, v2c

PROTOCOLS SUPPORT
STP; IGMP snooping, GMRP, GVRP, LACP,
SNMP/UDP/IP/MAC/Ethernet

OPERATING REQUIREMENTS
Operating Temperature: 0° – 50 °C
Storage Temperature: -30° – 70 °C
Operating Humidity: 5-90% RH non-condensing
Dimension (D x W x H): 400 x 440 x 44 mm
Weight: 6.8 kg
AC power model: 90 – 240V AC, 50 – 60 Hz
DC power model: -42 to -56 VDC
Power Consumption: 100 Watts

UPLINK UPGRADEABLE MODULE INTERFACE
1*1000BaseT-MGNT+2*1000BaseT
1*1000BaseT-MGNT+1*1000BaseT+
1*1000Fx (SX/LX/LH/ZX)

QoS
Input Rate Limiting (IRL) on a per-AAL5 interface
Output Rate Limiting (ORL) on a per ATM-port
and Ethernet basis
Rate Limiting

SECURITY
Throtting Control, Sticky Bridge Ports
MAC Adress Access Control List,
IP Adress Access Control List

ADSL 2/2+ Routers

Signamax ADSL routers are designed to provide a simple and cost-effective ADSL Internet connection for a private Ethernet network. The ADSL (Asymmetric Digital Subscriber Line) connection is made using ordinary telephone line. Signamax provide latest ADSL 2+ standards for high speed Internet access (up to 24Mbps for Downstream). With a built-in 4-Port switch (065-9088/065-9089), up to four computers or devices can simultaneously be connected and share Internet access.

Signamax offers the advanced security enhancements (IP/MAC Filter, Application Filter and URL Filter) to protect your network from unwanted intruders breaking into your system by malicious agents from outside of your network. Signamax brings you advanced features as VLAN support, QoS, Port Mapping and meny others. Routers also provide full IGMP as well and that is why they are the best choice for Triple Play applications specialy IPTV distributed via ADSL 2+ line.

You can configure Signamax ADSL routers not only via common html (Web Management) access but also you can use external easy setup utility software on CD, too. Signamax Router compliance to supported ADSL standards: ANSI T1.413 Issue 2, ITU-T G.992.1 (G.dmt), ITU-T G.992.2 (G.lite), ITU-T G.992.3 (G.dmt.bis/ADSL2), and ITU-T G.992.5 (ADSL2+) specification. Both Annex A (ADSL over POTS) and Annex B (ADSL over ISDN) are supported.

Model 065-9089

ADSL 2/2+ Routers

PART NO.	DESCRIPTION
065-9087	Signamax ADSL2/2+ Modem Router 1xLAN, AnnexB
065-9087A	Signamax ADSL2/2+ Modem Router 1xLAN, AnnexA
065-9088	Signamax ADSL2/2+ Modem Router 4xLAN, AnnexB
065-9088A	Signamax ADSL2/2+ Modem Router 4xLAN, AnnexA
065-9089	Signamax ADSL2/2+ WiFi Modem Router 4xLAN, 802.11b/g, AnnexB
065-9089A	Signamax ADSL2/2+ WiFi Modem Router 4xLAN, 802.11b/g, AnnexA
065-9085	ADSL Splitter, 3xRJ-11, AnnexB
065-9086	ADSL Splitter, 3xRJ-11, AnnexA

SPECIFICATIONS

ADSL COMPLIANCE
Full-rate ANSI T1.413 Issue 2
ITU G.992.1 (G.dmt) Annex A and B
Splitterless ITU G.992.2 (G.lite) specification
ITU G.992.5 (ADSL2plus)
ITU G.994.1 (G.hs), ITU G.992.3 (G.dmt.bis / ADSL2)
Supports splitterless ADSL implementation
Supports Dying Gasp

ATM SUBSYSTEM
PPP over ATM (RFC 2364), Bridged IP over ATM (RFC 1483)
PPP over Ethernet (RFC 2516), ATM Forum UNI 3.1/4.0 PVC
Multiprotocol Encapsulation over AAL5 (RFC 2684)
Supports up to 8 Virtual Channel Connections (VCCs)
Supports UBR, CBR, and VBR service classes
Support OAM F4/F5 look-back, AIS and RDI OAM cells

FEATURES
IP Alias, User Datagram Protocol (UDP)
Transmission Control Protocol (TCP)
Internet Control Message Protocol (ICMP)
Internet Group Management Protocol (IGMP)
PPP over PAP (RFC1334), PPP over CHAP (RFC1994)
MIB II support (RFC1213), NAT (Network Address Translation)
Transparent bridging as specified in IEEE 802.1D
Dynamic Host Configuration Protocol (DHCP)
Dynamic DNS support
Routing Information Protocol (RIP) v1 and v2
Supports Virtual LAN (VLAN)
Supports Quality of Service (QoS)

MANAGEMENT
TFTP client and server
FTP server and client, Universal Plug and Play (UPnP) support
Web-based Graphical User Interface (GUI) enabling end-user
device configuration via HTTP
DHCP client and server
Update of boot image or configuration data via TFTP/ FTP
Syslog, Built-in Diagnostic Tools
SNMP MIB support

ETHERNET INTERFACE
IEEE 802.3, 10/100 Mbps
Ethernet interface supporting up to 64 LAN hosts

VISUAL INDICATORS
PWR – on when power on
DSL LINK – on when ADSL is connected, flashing when
attempting connection
DSL ACT – on when transmitting/receiving data on the WAN
LAN LINK – on when Physical Ethernet link is up

IP Camera

Signamax 065-9001 Internet Camera and 065-9003 Internet Wireless Camera, a camera device that can be connected directly to an Ethernet or Fast Ethernet network also supported by the wireless transmission based on the IEEE 802.11g standard 065-9003. Compared to the conventional PC Camera, the Internet Camera features a built-in CPU and web-based solutions that can provide a cost-effective solution to transmit real-time high-quality video images and sounds for monitoring. This Internet Camera can be managed remotely, accessed and controlled from any PC/Notebook over the Intranet or Internet via a web browser. The simple installation procedures and webbased interface allow you to integrate it into your network easily. With comprehensive applications supported, this Signamax Internet Camera is your best solution for remote monitor, high quality, and high performance video images.

Model 065-9003

FEATURES

- **Simple to use just plug and view the image from the Internet Camera with a valid IP address**
- **Embedded Web UI configuration with Administrator ID/Password protection**
- **Secured User Management by ID and Password**
- **Allows remote access from web browser for live image viewing**
- **Supports TCP/IP networking, UPnP, SMTP e-mail, HTTP and other Internet related protocols**
- **Powerful application software for image capture and video recording:**
    - **Multiple Video Window Simultaneously,**
    - **Motion Detection with alert and E-mail sending,**
    - **Recording triggered by Motion Detection, Schedule, and Manual,**
    - **Single Frame Image Snap shot.**
- **Digital Zoom and Mirror function supported**
- **Support 10/BaseT/100BaseTX Ethernet with Auto-MDI/MDIX**

IP Camera

PART NO.	DESCRIPTION
065-9001	LAN IP Camera
065-9003	Wireless IP Camera

SPECIFICATIONS

IMAGE SENSOR
Sensor resolution: 640 x 480 pixel
Sensor: Color CMOS Sensor
Lens: f: 6.0 mm, F: 1.8

IMAGE (VIDEO SETTING)
JPEG still image compression
Image frame rate: QCIF@30fps, 25fps@CIF, 10fps@VGA
Compression Rate selection: 5 levels, very low, low, middle, high, very high
Frame rate setting: 1, 5, 7, 15, 20, auto (depends on the video format)
Video resolution: 160 x 120, 320 x 240, 640 x 480
Automatic Gain control   Yes
Automatic Exposure   Yes
Automatic White Balance Yes
Digital Zoom   Yes
Upside down and Mirror   Yes

COMMUNICATION
LAN port: RJ-45, 10/100M auto-sensed, AUTO-MDIX
Communication protocol: HTTP, FTP, TCP/IP, UDP, ARP, ICMP, BOOTP, DHCP,
PPPoE, SMTP, DDNS, UPnP

SYSTEM
CPU: RDC R2880
RAM: 8 MByte
Flash ROM: 2 MByte
OS: RTOS

SOFTWARE
Browser: Internet Explorer 5.0 or above, Netscape 6.0 or above
Application Software: IPview application software
OS supported: Microsoft Windows 98 SE, ME, NT 4.0, 2000, XP

FEATURES
System: Server Name, Location, Admin ID and Password
LED Control: Normal/OFF/Dummy
TCP/IP
Static IP Address: IP Address, Subnet Mask, Default Gateway
Dynamic IP Address: DHCP, BOOTP, PPPoE (Service Name, User ID, User Password)
Primary DNS Address, Secondary DNS Address
Users
Add User: 64 users account maximum, User Name, User Password, Delete User
Date/Time Setting
Date: Year/Month/Day (Default: 2001:10:01)
Time: Hour/Minute/Second (Default: 08:30:00)
NTP Protocol, NTP Server Address, Time Zone
Image
Compressing Rate: 5 levels, very low/low/medium/high/very high
Frame Rate: 1/5/7/15/20/Auto
Video Resolution: 160 x 120, 320 x 240/640 x 480
Brightness Control   Yes
Contrast Control   Yes
Saturation Control   Yes
Light Frequency   50/60 Hz
Digital Zoom   Yes
Upside down and Mirror   Yes
Anti-Flicker   Yes
Upload configuration
FTP Server, Time Schedule, Manual Operation
Dynamic DNS
Service, User Name, Password, Domain Name
Others
Reset, Factory Reset to Default setting
Web Browser Supported
Internet Explorer 5.0 or above
Netscape 6.0 or above

POWER
Power: DC 5V, switching type power supply
Power consumption: 3.5 Watt (700 mA x 5V)

LED
Power LED: Blue color
Activity LED: Orange color

OPERATING ENVIRONMENT
Operating temperature: 5° – 40°C
Storage temperature: 25° – 50°C
Humidity: 5-95% non-condensing

EMI
FCC / CE / VCCI class B

Model 065-9001

Model 065-9001 back

Model 065-9003 back

www.signamax.eu

SIGNAMAX™
CONNECTIVITY SYSTEMS

IP Set Top Box

065-9021 is an IP STB fully compatible with ISMA standard. It is widely used in communities, hotels and broadband environment for receiving MPEG-4 liveprogram and VOD. Meanwhile, with the support of head-end system, 065-9021 can be used for video shopping, network games, support EPG and so on.

Model Model 065-9021

Model 065-9021

FEATURES

- **Video Format: MPEG-4 SP/ASP Video Decoding**
- **Audio Formats: MP3 and AAC**
- **Picture Formats: JPEG, BMP, PNG and GIF animated picture formats**
- **Network Interfaces: 1x10/100MBase-T RJ45**
- **Browser: Embedded browser, supports HTML network surfing**
- **Supports IGMP Multicast, which is capable of Receiving channelized of multicast programs**
- **Transport Standard: Open International Streaming Standard ISMA 1.0/1.1 and TS stream**
- **Games: JavaScript based network games**
- **VOD: Video/Audio programs on demand**

IP Set Top Box

PART NO.	DESCRIPTION
065-9021	Signamax IP Set Top Box MPEG-4
065-9022	Signamax IP Set Top Box MPEG2
065-9023	Signamax IP Set Top Box MPEG2&4

FUNCTIONS

- **Media On demand:** Plays the video program in the playlist of EPG, supports play/stop/ pause/fast forwarding and backward/mute/volume up/volume down/Left and Right Audio channel/Stereo. It supports progress indication as well. It can also plays MP3 program in the play list of EPG supports play, stop, pause, mute, volume up, volume down and progress indication.
- **Multicast program:** Gets the channel information from the EPG and supports channel lineup. It does not support fast forwarding, fast backward, and pause. It supports mute, volume up, volume down, left and right Audio channels and stereo.
- **WEB Browsing:** Browses the Internet web pages of HTML 4.0 and Javascript 1.5 with the embedded browser.
- **Electronic Program Guide:** Enters the main EPG screen of the operator. Gets the information of the program and the playlist. Supports EPG dynamic upgrade, VOD, music on demand, picture viewing and network games.
- **Parameter configuration and display:** Supports PPPoE dialing through STB (modem bridge connection mode). Supports statically and dynamically obtain IP address. Configures the network parameter such as user name, password, DNS server, subnet mask, gateway and static IP address. Configures HTTP upgrade server, default PG server and default URL address. Modifies Password. Configures TV mode. Displays product information. Configures NTP server address. Configures Time Zone.

SPECIFICATIONS

Model 065-9021

MEDIA FORMATS
Video Formats: MPEG-4 ISO/IEC 14496-2 Advance simple profile without GMC and QPEL
Audio Formats: MP3 and AAC
Picture Formats: JPEF and GIF static pictures

STREAMING PROTOCOLS
Internet Streaming Media Alliance (ISMA) Implementation Specification version 1.0, including the following: Transport Protocols:
RTP: A Transport Protocol for Real-Time Applications, IETF RFC 1889;
RTP Profile for Audio and Video Conferences with Minimal Control, IETF RFC 1890; Transmission Control Protocol, IETF RFC793;
UDP: User Datagram Protocol IETF RFC768.
RTP Payload formats: RTP Payload Format for Transport of MPEG-4 Elementary Streams, IETF RFC 3640
Content distribution: MPEG-4 MP4 Format – ISO/IEC 14496-1:2000(E)
Media controls: Real Time Streaming Protocol (RTSP), IETF RFC 2326
Media Announce: SDP: Session Description Protocol, IETF RFC2327

NETWORK PROTOCOLS
HTTP 1.0/1.1, DHCP, NTP1.1 and IGMPV1/V2., Supports IPv4

ACCESSORIES
IPSTB Box: 1
Audio/Vido line: 1 suit
Net line: 1
Power Supply: 1
User Instruction: 1
Remote Control: 1
Batteries: 1 pair

TECHNICAL SPECIFICATIONS
Audio: MP3, AAC
Video: MPEG-4 ASP, SP, 4:3 and 16:9-aspect ratio
NTSC/PAL TV signal, 720 x 480 or 720 x 576 SD output
Sample Rate: 32, 44.1, 48, 88.2 and 96 KHz
Picture formats: GIF and JPEG
OSD: 256 colors, 16 level alpha blending

Model 065-9022

VIDEO DECODING
Decoding Standard: ISO/IEC 13818-2 MPEG-2 MP@ML
Video Format: PAL/NTSC/SECAM
Aspect Ratio: 4:3, 16:9
Output Definition: 720 x 480 or 720 x 576 SD

AUDIO DECODING
Decoding Standards: ISO/IEC 13818-3
Decoding Formats: MPEG-1, 2, 3
Sample Rates: 32, 44.1, 22.05, 24 and 48 KHz
Output Modes: Single and dual audio channels

PROTOCOLS SUPPORTED
IP protocol: IP v4
Network Protocols: HTTP 1.0/1.1, DHCP, IGMP v1/v2, TCP/IP, DNS, PPPoE and NTP
Streaming Media Protocols: RTP/RTCP/RTSP/SDP

SYSTEM MAINTENANCE
Upgrade: Manual/Automatic application software upgrade
System Configuration: Manual/Automatic configuration

PICTURE FORMAT
Static pictures: JPEG, BMP, PNG
Animated picture: GIF

INTERFACES
Input Interface: RJ45
Output Interfaces: RCA, S-Video
Network Interface: 1x10/100M Base-T
IR Interface: NEC

OSD
Color: 32-bit true color
Alpha blending: 256 levels

THIRD PARTY SOFTWARE SUPPORTED
Browser: Ant or iPanel
Games: JavaScript games

Model 065-9023

MEDIA FORMATS
Video Formats: MPEG-4 ISO/IEC 14496-2 Advance simple profile without GMC and QPEL
Audio Formats: MP3 and AAC
Picture Formats: JPEF and GIF static pictures

VIDEO DECODING
Decoding Standards: ISO/IEC 13818-2 MPEG-2 MP@ML, ISO/IEC 14496-10, MPEG-4 MP@L3
Video Format: PAL/NTSC, Aspect Ratio: 4:3, 16: 9
Output Definition: 720 x 480 or 720 x 576 SD

AUDIO DECODING
Decoding Standards: ISO/IEC 13818-3, ATSC A/52 and ISO/IEC 14496-3
Decoding Formats: MPEG Layer1/2/3, AC3, MPEG-2/4 AAC (ADTS)
Sample Rate: 32, 44.1, 22.05, 24 and 48 KHz

PROTOCOLS SUPPORTED
IP protocol: IP v4
Network Protocols: HTTP 1.0/1.1, DHCP, IGMP v1/v2, TCP/IP, DNS, SNMP v2, PPPoE and NTP
Streaming Media Protocols: RTP/RTCP/RTSP/SDP

PICTURE FORMAT
Static pictures: JPEG, BMP, PNG
Animated picture: GIF

INTERFACES
Input Interface: RJ45
Output Interfaces: RCA S-Video, SCART, and S/P DIF
Network Interface: 1x10/100M Base-T
IR Interface: NEC/RC5

OSD
Color: 32-bit true color
Alpha blending: 256 levels

THIRD PARTY SOFTWARE SUPPORTED
Browser: Ant or iPanel
Middleware: International leading middleware
Games: JavaScript games

SYSTEM MAINTENANCE
Upgrade: Manual/Automatic application software upgrade
System Configuration: Manual/Automatic configuration

NETWORK CONNECTIVITY SYSTEMS

SIGNAMAX™
CONNECTIVITY SYSTEMS

Media Converters

B

Switching Fiber Converters

10/100 to 100BaseFX Power over Ethernet Fiber Media Converters

Switching Managed Media Converters

10/100BaseT/TX Switching PCI Fiber Optic Media Converters

VDSL Ethernet Extender

10/100BaseT/TX Switching Mini Fiber Optic Media Converters

Stand Alone Managed Switching Media Converters

Hardened Media Converters with LFS

Single Channel Hardened Media Converters

Gigabit Media Converters

10/100/1000 Switching Fiber Optic Media Converters

SFP Fiber Converters

Serial Data to Fiber/TP Media Converters

Single Fiber WDM Converters

Singlemode to Multi Mode Converters

Basic Media Converter

12-Port Rack Mount Media Converters

16-Bay Media Converter Rack Mount Chassis

18-Bay Rack Mount Managed Media Converter Chassis

8-Bay Managed Media Converter Chassis

WebSmart Media Converters

16-Slot Chassis for Modular EPON Media Converters

Switching Fiber Converters

Signamax Connectivity Systems' Switching Media Converters provide an intelligent solution for long distance connections between legacy 10BaseT networks and the newer 100Base Fast Ethernet or 1000Base Gigabit Ethernet networks. These converters are designed to handle a wide variety of fiber optic network applications and eliminate the 412 meter distance limitation when connecting hub-based sub-networks at 100BaseFX. They also extend the maximum Single Mode fiber distance, spanning over 75 km with the 065-1120XLD model.

Built-in 10/100 or 10/100/1000 switch enables the fiber cable connection to operate at 100 Mbps connected to either a 10BaseT or a 100BaseTX network, while remaining completely 100BaseFX or 1000BaseSX standard-compliant. Fiber connection can also operate in full duplex mode whether the RJ45 port is connected to a full duplex switch or a half duplex hub.

Each Media Converter provides a 10/100BaseT/TX auto-negotiating RJ45 twisted-pair connector port featuring store-and-forward switching architecture. Built-in switch does the network segmentation to provide the maximum fiber distance. Now with Auto-MDIX capability on the twisted-pair port for more convenient connection. Each Media Converter is also equipped with LFS (Link Fault Signaling) feature.

Switching Fiber Converters

PART NO.	DESCRIPTION	FIBER TYPE
065-1100	10/100BaseT/TX to 100BaseFX Converter	ST Multi Mode
065-1110	10/100BaseT/TX to 100BaseFX Converter	SC Multi Mode
065-1170	10/100BaseT/TX to 100BaseFX Converter	VF45 Multi Mode
065-1172	10/100BaseT/TX to 100BaseFX Converter	MTRJ Multi Mode
065-1174	10/100BaseT/TX to 100BaseFX Converter	LC Multi Mode
065-1120A	10/100BaseT/TX to 100BaseFX Converter	SC Single Mode (15 km span)
065-1120ED	10/100BaseT/TX to 100BaseFX Converter	SC Single Mode (40 km span)
065-1120XLD	10/100BaseT/TX to 100BaseFX Converter	SC Single Mode (75 km span)
065-11DINMT	DIN rail mounting bracket for 065-11xx series media converters	

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3u 100BaseFX
IEEE 802.3ab 1000BaseT
IEEE 802.3z 1000BaseSX

FIXED PORTS
Models 065-1100/1110/1170/1172/1174/1120/1120ED/1120XLD:
1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u
100BaseTX standard specifications; Category 5 or better cable, 100 meters
maximum distance for 100BaseTX, Category 3 or better cable, 100 meters
maximum distance for 10BaseT
plus
1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification;
62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters
maximum distance
or
1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification;
9/125 micron Single Mode fiber optic cable, spanning: 15 kilometers
maximum distance (model 065-1120)
or
40 kilometers maximum distance (model 065-1120ED)
or
75 kilometers maximum distance (model 065-1120XLD)

PERFORMANCE
Latency: < 4.2 μs (LIFO)
Throughput @ 100Base: 148,809 pps
Throughput @ 1000Base: 1,488,100 pps (64-byte packets)

LEDs
Per unit: Power status, RJ45 port speed
Per Port: LNK/ACT, FDX/COL
Six LEDs total

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H):
110 x 81 x 23 mm (4.33 x 3.19 x 0.91")
Fiber connector interface varies with model.
Weight: 150 grams

SAFETY
UL Listed

Model 065-1100

Model 065-1110

Model 065-1170

Model 065-1172

Model 065-1174

10/100 to 100BaseFX Power over Ethernet Fiber Media Converters

The Signamax 065-1050 series Media Converters are 10/100BaseT/TX to 100BaseFX Power over Ethernet (PoE) devices that serve as Power Sourcing Equipment (PSE), which allows the converter to provide power to IEEE 802.3af PoE standard-compliant Powered Devices (PDs) using the twisted pair connection. This AC-powered PoE Media Converter combines data received over a fiber optic link with -48 Volt DC power, which the PD can use instead of a separate power connector. The 065-1050 series converters are also equipped with PD signature-sensing, power monitoring, over-voltage protection, low voltage detection, and input fault protection features. The 065-1050 series' Link Fault Signaling (LFS) capability allows the media converter to monitor both the fiber and copper RX ports for signal loss. In case of a loss of RX signal on one media port, the converter will automatically disable the TX signal to the other media port, thus passing through the link fault. Far End Fault (FEF) capability enables the converter to stop sending link pulse to the link partner once a loss of the fiber RX signal is encountered; the link partner will then synchronously stop sending data, thereby preventing the loss of data that would occur when trying to transmit over a failed link.

The Signamax 065-1052 series Media Converters are PoE 10/100BaseT/TX to 100BaseFX Powered Devices supporting two types of media, 10/100BaseT/TX and 100BaseFX, for network connection. They are also equipped with Link Fault Signaling (LFS), to maintain link integrity and enable automatic failover when used with Spanning Tree-equipped switches.

Model 065-1050

10/100 to 100BaseFX Power over Ethernet Fiber Media Converters

PART NO.	DESCRIPTION
065-1050ST	10/100BaseT/TX to 100BaseFX PSE PoE Media Converter, Multi Mode/ST, 2 km
065-1050SC	10/100BaseT/TX to 100BaseFX PSE PoE Media Converter, Multi Mode/SC, 2 km
065-1050SM	10/100BaseT/TX to 100BaseFX PSE PoE Media Converter, Single Mode/SC, 15 km
065-1050SMED	10/100BaseT/TX to 100BaseFX PSE PoE Media Converter, Single Mode/SC, 40 km
065-1050SMXLD	10/100BaseT/TX to 100BaseFX PSE PoE Media Converter, Single Mode/SC, 75 km
065-1052ST	10/100BaseT/TX to 100BaseFX PD PoE Media Converter, Multi Mode/ST, 2 km
065-1052SC	10/100BaseT/TX to 100BaseFX PD PoE Media Converter, Multi Mode/SC, 2 km
065-1052SM	10/100BaseT/TX to 100BaseFX PD PoE Media Converter, Single Mode/SC, 15 km
065-1052SMED	10/100BaseT/TX to 100BaseFX PD PoE Media Converter, Single Mode/SC, 40 km
065-1052SMXLD	10/100BaseT/TX to 100BaseFX PD PoE Media Converter, Single Mode/SC, 75 km

SPECIFICATIONS

APPLICABLE STANDARDS
 IEEE 802.3 10BaseT
 IEEE 802.3u 100BaseTX
 IEEE 802.3u 100BaseFX
 IEEE 802.3af Power over Ethernet (PoE)

FIXED PORTS
models 065-1050ST, 065-1050SC, 065-1050SM, 065-1050SMED, 065-1050SMXLD:
 1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT
 plus
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance (model 065-1050ST & 065-1050SC)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 15 kilometers maximum distance (model 065-1050SM)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 40 kilometers maximum distance (model 065-1050SMED)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 75 kilometers maximum distance (model 065-1050SMXLD)

models 065-1052ST, 065-1052SC, 065-1052SM, 065-1052SMED, 065-1052SMXLD:
 1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT
 plus
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 52/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance (model 065-1052ST & 065-1052SC)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 15 kilometers maximum distance (model 065-1052SM)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 40 kilometers maximum distance (model 065-1052SMED)
 or
 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 75 kilometers maximum distance (model 065-1052SMXLD)

PERFORMANCE
 Latency: < 4.2 µs (LIFO)
 Throughput @ 100Base: 148,809 pps (64-byte packets)

LEDs
 models 065-1050ST, 065-1050SC, 065-1050SM, 065-1050SMED, 065-1050SMXLD:
 Power, PoE, TP Link/Act, 100, FX Link/Act, FDX/COL, 4W, 7W, 15.4W, Power Bad
 models 065-1052ST, 065-1052SC, 065-1052SM, 065-1052SMED, 065-1052SMXLD:
 FX Link/Act, FX FDX/Col, TX Link/Act, TX 100, PSE Power Good, PSE Power Bad, Power

PHYSICAL CHARACTERISTICS
 Case dimensions (L x W x H):
 models 065-1050ST, 065-1050SC, 065-1050SM, 065-1050SMED, 065-1050SMXLD:
 185 x 112 x 30 mm (7.28 x 4.41 x 1.18")
 models 065-1052ST, 065-1052SC, 065-1052SM, 065-1052SMED, 065-1052SMXLD:
 94 x 70.3 x 26.2 mm (3.70 x 2.77 x 1.03") Fiber optic interface varies with model.

SAFETY
 FCC Part 15 Class A & CE Mark

Model 065-1052SC

Model 065-1052ST

Switching Managed Media Converters

Signamax Connectivity Systems' 065-1400 series Managed Switching Media Converters are modular SNMP-managed media converter cards available with a variety of interfaces to provide copper-to-fiber conversion for mission-critical networks. They are used with the 065-1480 Managed Media Converter Rack Mount Chassis to enable network managers to remotely monitor the status of their entire network via RJ45 (in band) or RS-232 (out of band) connection to the 065-1481series SNMP Management Module included with every Signamax 065-1480 chassis system. Up to eighteen managed media converters are supported in a single 2U-high chassis. Equipped with Link Fault Signaling (LFS) and Loopback Testing capabilities, they extend the enterprise LAN configuration range up to 60 km while simultaneously minimizing downtime expenses and extending the lifespan and reach of existing copper-based managed switches.

Signamax Connectivity Systems' 065-1400 series Singlemode to Multi Mode Managed Media Converters are an enhancement to the Signamax SNMP-managed media converter system. These card-based converters are available with a variety of interfaces to provide Single Mode-to-Multi Mode fiber conversion for mission-critical Fast Ethernet, Gigabit Ethernet, and Asynchronous Transfer Mode (ATM) networks. Gigabit Ethernet Single Mode-to-Single Mode repeater model is also available on request. They are used with the 065-1480 Managed Media Converter Rack Mount Chassis to enable network managers to remotely monitor the status of their entire network via RJ45 (in band) or RS-232 (out of band) connection to the 065-1481 series SNMP Management Module included with every Signamax 065-1480 chassis system. Up to eighteen managed media converters are supported in a single 2U-high chassis. They extend the enterprise LAN or carrier network range up to 60 km while simultaneously minimizing downtime expenses and extending the lifespan and reach of existing copper-based managed switches.

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3u 100BaseFX
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX

FIXED PORTS
100BaseFX models:
1 ST duplex fiber optic port meeting
IEEE 802.3u 100BaseFX standard specification;
62.5/125 or 50/125 micron Multi Mode fiber optic cable,
2,000 meters maximum distance;
1 SC duplex fiber optic port meeting IEEE 802.3u
100BaseFX standard specification; 62.5/125 or 50/125
micron Multi Mode fiber optic cable, 2,000 meters
maximum distance;
1 SC duplex fiber optic port meeting IEEE 802.3u
100BaseFX standard specification; 9/125 micron Single
Mode fiber optic cable, spanning: 30 kilometers
maximum distance or 60 kilometers maximum distance

PERFORMANCE
Delay: less than 21 bit times

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H):
171.5 x 69 x 21.5 mm
(6.75 x 2.72 x 0.85")
Fiber optic interface varies with model.
Weight: 115 grams
Power: External power supply;
12 Volts DC;
0.8A (Supplied via 065-1480 chassis only)
Power consumption: 2.8 Watts maximum
Operating temperature: 0° – 50°C
(32° – 122°F)
Storage temperature:- 20° – 70°C
(-4° – 158°F)
Operating humidity: 10-80%,
non-condensing
Storage humidity: 5-90%, non-condensing

EMISSIONS
FCC part 15 Class A, CE Mark

Model 065-1476A/B

Model 065-1476AED/BED

Switching Managed Media Converters

PART NO.	DESCRIPTION
065-1400	10/100BaseT/TX to 100BaseFX Converter ST Multi Mode
065-1410	10/100BaseT/TX to 100BaseFX Converter SC Multi Mode
065-1420	10/100BaseT/TX to 100BaseFX Converter SC Single Mode (30 km span)
065-1420ED	10/100BaseT/TX to 100BaseFX Converter SC Single Mode (60 km span)
065-1476A	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (20 km span)
065-1476B	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (20 km span)

10/100BaseT/TX Switching PCI Fiber Optic Media Converters

Signamax Connectivity Systems' Switching PCI Fiber Optic Media Converters are an excellent solution for fiber-to-the-desktop installations where the workstation computers have pre-installed Network Interfaces. These media converters are inserted into one of the PC's available PCI slots, and a copper patch cable is used to connect the media converter to the existing network interface jack on the PC's motherboard or in an adjoining PCI slot. The fiber optic cable then connects to the fiber-based cabling plan for network connectivity. Avoids the need for fiber NIC driver maintenance in environments where PCs are used in both fiber- and copper-connected areas. These converters are designed to handle both legacy 10BaseT and 100BaseTX Fast Ethernet devices on their twisted pair port while maintaining 100BaseFX Fast Ethernet transmission on the fiber optic port. Plug-and-play simplicity makes connection easy.

Each Media Converter provides a 10/100BaseT/TX auto-negotiating RJ45 twisted-pair connector port with Auto-MDIX capability for convenient connection. Built-in 10/100 switch enables the fiber cable connection to operate at 100 Mbps connected to either a 10BaseT or a 100BaseTX network, while remaining completely 100BaseFX standard-compliant.

Model 065-1060ST

Model 065-1060SC

10/100BaseT/TX Switching PCI Fiber Optic Media Converters

PART NO.	DESCRIPTION
065-1060SC	PCI card-based 10/100BaseT/TX to 100BaseFX, Multi Mode/SC, 2 km
065-1060ST	PCI card-based 10/100BaseT/TX to 100BaseFX, Multi Mode/ST, 2 km
065-1060SM	PCI card-based 10/100BaseT/TX to 100BaseFX, Single Mode/SC, 20 km
065-1060SMED	PCI card-based 10/100BaseT/TX to 100BaseFX, Single Mode/SC, 40 km
065-1060SMXLD	PCI card-based 10/100BaseT/TX to 100BaseFX, Single Mode/SC, 75 km

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX,
IEEE 802.3u 100BaseFX, ANSI/IEEE 802.3 NWAY,
Auto-negotiation, PCI Specification 2.0/2.1

PERFORMANCE
Latency: < 4.2 µs (LIFO)
Throughput @ 100Base: 148,809 pps (64-byte packets)

LEDs
Per Port: LNK/ACT TX, LNK/ACT FX, Two LEDs total

ARCHITECTURE
32-Bit PCI Bus Mastering

FIXED PORTS
1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT **plus** 1 fiber optic port with SC (model 065-1060SC) or ST (model 065-1060ST) meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance **or** 1 SC duplex fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (model 065-1060SM) **or** 40 kilometers maximum distance (model 065-1060SMED) **or** 75 kilometers maximum distance (model 065-1060SMXLD)

VDSL Ethernet Extender

The Signamax VDSL Ethernet Externder is a point-to-point DSL solution that efficiently extends
10/100 Ethernet circuits to over 600 meters (1,960 feet) at 30 Mbps using existing straight pair copper wire.
The 065-1138 will allow Ethernet Networking in existing facilities without pulling extra cable. This is
the perfect solution to Ethernet on the factory floor where systems have been upgraded from slower
serial communications to Ethernet networkig.

Installation is easy with a single switch setting, one end is set for local and the other remote.
The 065-1138 is used in pairs to extend Ethernet connectivity over existing voice grade copper wire.

KEY FEATURES

- **High-Speed Full-Duplex 30Mbps communications link over existing copper cable, Symetric alon the VDSL**
- **8 Speeds with speed indiator LEDs on top of unit 30 Mbps @ up to 1,970 ft., ratchets down to 1 Mbps @ about 6,200 ft.**
- **Operates transparent to high layer protocols such as TCP/IP**
- **Auto-MDIX and Auto-sensing 10Base-T or 100Base-TX and Full or Half-Duplex on the Ethernet port**
- **Plug and Play design for simple installation, single switch config**
- **Eleven status LEDs for simple monitoring of the device and connection status**

VDSL Ethernet Extender

PART NO.	DESCRIPTION
065-1138	10/100BaseT/Tx Ethernet over VDSL Extender

SPECIFICATIONS

STANDARDS
IEEE802.3 10BASE-T
IEEE802.3u 100BASE-TX
Ethernet over VDSL

PROTOCOL
Transparent to higher layer protocols

CONFIGURATION
One DIP switch set: Local (CO) or Remote (CPE)
A link is established between a Local unit and a Remote unit (plug & play)

ETHERNET INTERFACE
One RJ-45 connector Auto-MDIX and Auto-sensing 10/100Base-T/TX and Full/Half-duplex

VDSL COPPER INTERFACEL
One RJ-11 connector VDSL port

TRANSMISSION
Ethernet Data Rate: 10/100Mbps Full/Half-Duplex
VDSL line rate: 1/3/5/10/15/20/25/30 Mbps

CABLE CONNECTION
RJ-45 (10BASE-T): UTP CAT. 3, 4, 5 (2-pair wire)
RJ-45 (100BASE-TX): UTP CAT. 5 (2-pair wire)
VDSL: Telephone line 24 AWG (0.5mm diameter, 1-pair wire) or larger

CABLE LENGTH
Ethernet: Maximum 100 meters (328 ft.) (UTP LAN cable)
VDSL: Maximum 1,900 meters (6,230 ft., 0.5 mm diameter phone line)

LEDS
Ethernet: Lnk/Act, Fdx
VDSL: Err, Lnk, Loc, Rmt

POWER
Power Input: 12V DC @ 0.8A, external power supply adapter
Frequency: 47Hz to 63Hz

PHYSICAL CHARACTERISTICS
Power Adapter: Universal 100-240 VAC
50-60 Hz 12VDC 0.2A External Power Supply
Power Dissipation: 2.4 W Max
Operating Temperature: 0 to 60°C
Storage Temperature: -20 to 70°C
Operating Humidity: 10-90%, non-condensing
Dimensions: 80.3 x 109.2 x 23.8 mm (W x D x H)
Weight: 150 g

EMISSIONS
FCC part 15 Class A, CE Mark

10/100BaseT/TX Switching Mini Fiber Optic Media Converters

Signamax Connectivity Systems' Switching Mini Fiber Optic Media Converters provide an intelligent solution for fiber optic connectivity where simplicity, low cost, and minimum footprint are the primary considerations. These converters are designed to handle both legacy 10BaseT and 100BaseTX Fast Ethernet devices on their twisted pair port while maintaining 100BaseFX Fast Ethernet transmission on the fiber optic port. Plug-and-play simplicity makes connection easy.

Model 065-1010

Each Media Converter provides a 10/100BaseT/TX auto-negotiating RJ45 twisted-pair connector port with Auto-MDIX capability for more convenient connection. Built-in 10/100 switch enables the fiber cable connection to operate at 100 Mbps connected to either a 10BaseT or a 100BaseTX network, while remaining completely 100BaseFX standard-compliant. Fiber connection can also operate in full duplex mode whether the RJ45 port is connected to a full duplex switch or a half duplex hub.

Model 065-1000

10/100BaseT/TX Switching Mini Fiber Optic Media Converters

PART NO.	DESCRIPTION
065-1000	10/100BaseT/TX to 100BaseFX, Multi Mode/ST, 2 km
065-1010	10/100BaseT/TX to 100BaseFX, Multi Mode/SC, 2 km
065-1020	10/100BaseT/TX to 100BaseFX, Single Mode/SC, 20 km
065-1020ED	10/100BaseT/TX to 100BaseFX, Single Mode/SC, 40 km
065-1020XLD	10/100BaseT/TX to 100BaseFX, Single Mode/SC, 75 km

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE 802.3u 100BaseFX

FIXED PORTS
1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT **plus** 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance (model 065-1010 & 065-1010) **or** 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (model 065-1020) **or** 40 kilometers maximum distance (model 065-1020ED) **or** 75 kilometers maximum distance (model 065-1020XLD)

PERFORMANCE
Latency: <4.2 µs (LIFO)
Throughput @ 100Base: 148,809 pps (64-byte packets)

LEDs
Per Port: LNK/ACT TX, LNK/ACT FX
Two LEDs total

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H):
80 x 54 x 22 mm (3.15 x 2.13 x 0.87")
Fiber optic interface varies with model.
Weight: 0.122 kg

SAFETY
UL Listed

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

Stand Alone Managed Switching Media Converters

Signamax Connectivity Systems' 065-1600 series Stand Alone Managed Switching 10/100 Media Converters are individually-housed SNMP-managed media converters available with Single Mode and Multi Mode interfaces to provide copper-to-fiber conversion for mission-critical networks. They are typically used as circuit endpoint devices together with the Signamax Managed Media Converter Rack Mount Chassis System to enable network managers to remotely monitor the status of their entire fiber optic Fast Ethernet network all the way to the fiber optic circuit's last termination.

Model 065-1696

An individual SNMP management agent is included with each Signamax 065-1600 series stand alone managed converter. Equipped with Link Fault Signaling (LFS) and Loopback Testing capabilities, they extend the enterprise LAN configuration range up to 60 km while simultaneously minimizing downtime and technician dispatch expense.

Model 065-1610

Stand Alone Managed Switching Media Converters

PART NO.	DESCRIPTION
065-1600	10/100BaseT/TX to 100BaseFX Converter ST Multi Mode
065-1610	10/100BaseT/TX to 100BaseFX Converter SC Multi Mode
065-1620	10/100BaseT/TX to 100BaseFX Converter SC Single Mode (30 km span)
065-1620ED	10/100BaseT/TX to 100BaseFX Converter SC Single Mode (60 km span)
065-1620XLD	10/100BaseT/TX to 100BaseFX Converter SC Single Mode (90 km span)
065-1676A	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (20 km span)
065-1676B	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (20 km span)
065-1676AED	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (40 km span)
065-1676BED	10/100BaseT/TX to 100BaseFX Converter WDM Single Mode (40 km span)
065-1696	10/100/1000BaseT/TX to 1000BaseSX Converter SC Multi Mode
065-1696LX	10/100/1000BaseT/TX to 1000BaseSX Converter SC Single Mode
065-1696LXWDMA	10/100/1000BaseT/TX to 1000BaseSX Converter WDM Single Mode
065-1696LXWDMB	10/100/1000BaseT/TX to 1000BaseSX Converter WDM Single Mode

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE 802.3u 100BaseFX

FIXED PORTS
1 twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT **plus** 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance **or** 1 SC duplex fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (model 065-1620) **or** 40 kilometers maximum distance (model 065-1620ED) **or** 60 kilometers maximum distance (model 065-1620XLD) **or** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (models 065-1676A and 065-1676B) **or** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 40 kilometers maximum distance (models 065-1676AED and 065-1676BED)

PERFORMANCE
Latency: < 0.25 µs (LIFO)
Throughput: 148,809 pps (64-byte packets)

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H): 267 x 126 x 44 mm
Fiber connector protrusion varies with model
Weight: 1.0 kg
Power: Internal power supply; 90 – 240 Volts AC
Operating temperature: 0° – 50°C
Storage temperature: -20° – 70°C
Operating humidity: 10-80%, non-condensing
Storage humidity: 5-90%, non-condensing
EMI: FCC part 15 Class A, CE Mark

Hardened Media Converters with LFS

Signamax has responded to the demands of fiber optic deployment in rugged environments by introducing the 065-1800 series of hardened media converters. The 065-1800 series provides flexibility in connector types with the extended temperature and humidity ranges required for high-risk installations. Switching models are available for converting Fast Ethernet twisted pair copper cabling to both Multi Mode and Single Mode fiber optic cabling, including models supporting single-strand Single Mode fiber requirements using Wave Division Multiplexing (WDM) technology. In addition, Fast Ethernet Single Mode to Multi Mode converters round out the line, making Signamax the choice for your harsh environment Fast Ethernet fiber optic conversion needs. Also Gigabit models are available.

Model 065-1810TB

Model 065-1800

Hardened Media Converters with LFS

PART NO.	DESCRIPTION
065-1800	10/100BaseT/TX to 100BaseFX MM/ST, 2 km Hardened Converter
065-1810	10/100BaseT/TX to 100BaseFX MM/SC, 2 km Hardened Converter
065-1820	10/100BaseT/TX to 100BaseFX SM/SC, 20 km Hardened Converter
065-1800TB	10/100BaseT/TX to 100BaseFX MM/ST, 2 km Hardened Converter, Terminal Block
065-1810TB	10/100BaseT/TX to 100FX MM/SC, 2 km Hardened Converter, Terminal Block
065-1820TB	10/100BaseT/TX to 100BaseFX SM/SC, 20 km Hardened Converter, Terminal Block
065-1895	1000 to 1000SX MM/SC, Hardened Converter
065-1895TB	1000 to 1000SX MM/SC, Hardened Converter, Terminal Block
065-1897	1000 to 1000LX SM/SC, Hardened Converter
065-1897TB	1000 to 1000LX SM/SC, Hardened Converter, Terminal Block

PERFORMANCE
Latency: <4.2 µs (LIFO)
Throughput:
148,809 pps @ 100 Mbps;
14,880 pps @ 10Mbps
(64-byte packets)

LEDs
Switching 10/100 to 100FX models:
Per Unit – Power status, Speed (2 LEDs)
Per Port – LNK/ACT, FDX/COL (2 LEDs)
6 LEDs total

PHYSICAL CHARACTERISTICS
Dimensions: 130 x 110 x 30 mm
Weight: 0.8 kg
Power: External power supply;
12 Volts DC; 0.5 A
Operating temperature: -34 – 74°C
Storage temperature: -45 – 93°C
Operating and storage humidity:
10-95%, non-condensing

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE 802.3u 100BaseFX

FIXED PORTS
Switching 10/100 to 100FX models:
1 twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT plus 1 fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance or 1 SC duplex fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (Model 065-1820)
1000BaseT to 1000BaseSx/Lx models:
1 twisted-pair port meeting IEEE 802.3ab 1000BaseT plus 1 fiber optic port meeting IEEE 802.3z 1000BaseSX standard specification; 62.5/125 or 50/125 micron Multi Mode fiber optic cable or 1 SC duplex fiber optic port meeting IEEE 802.3z 1000BaseLX standard specification; 9/125 micron Single Mode fiber optic cable, spanning: 20 kilometers maximum distance (Model 065-1897)
Models w. TB are equipped with Terminal Block

EMISSIONS
CC part 15 Class A, CE Mark

Single Channel Hardened Media Converters

Signamax offers its Hardened Media Converter Series as a concrete and affordable answer in response to an increase in fiber optics cabling deployment. Signamax's 065-1830 Series is one of the most complete solutions in media conversion. 065-1830 Series are available in all varieties of fiber connectors and 065-1830, fiber multi-mode/single-mode to Single Mode fast Ethernet media converter, comes in a wide range of selections. There are options for SC, ST, VF-45, MT-RJ, and LC multi-mode to SC and ST single-mode. We also provide in single-mode to single-mode converter/bridge.

KEY FEATURES

- **Full wire-speed forwarding rate**
- **0.8 A 12 VDC external universal PSU**
- **0° to 45°C operating temperature range**
- **Aluminum case**
- **Supports Wall Mounting installation or expansion use with**

Single Channel Hardened Media Converters

PART NO.	DESCRIPTION
065-1832	100Base-FX Multi Mode (SC) to 100Base-FX Single Mode 15km (SC) Media Converter
065-1830	100Base-FX Multi Mode (ST) to 100Base-FX Single Mode 15km (SC) Media Converter
065-1832ED	100Base-FX Multi Mode (SC) to 100Base-FX Single Mode 40km (SC) Media Converter
065-1830ED	100Base-FX Multi Mode (ST) to 100Base-FX Single Mode 40km (SC) Media Converter
065-1876A	100Base-FX Multi Mode (SC) to 100Base-FX Single Mode (SC) WDM – TX: 1,310 nm/RX: 1,550 nm Media Converter
065-1876B	100Base-FX Multi Mode (SC) to 100Base-FX Single Mode (SC) WDM – TX: 1,550 nm/RX:1,310 nm Media Converter

SPECIFICATIONS

STANDARDS
IEEE802.3u 100Base-FX

LED
Per Unit: Power Status (Power), Link

POWER
Power Input:
Input Voltage: 12 V DC
Input Current: 0.23 A
Power Consumption: 2.76 W Max.

ISO
Manufactured in an ISO9001 facility

PHYSICAL CHARACTERISTICS
Forward and Filtering Rate: 148,810 pps for 100 Mbps
Operating Temperature: 0° to 45°C
Storage Temperature: -10° to 70°C
Ambient Relative Humidity: 10-90%, non-condensing
Dimensions (W x D x H): 80.3 x 109 x 24 mm
Weight: 150 g
Casing: Aluminumcase

EMISSIONS
CE Mark Class A, FCC Part 15 Class A

Gigabit Media Converters

Signamax Connectivity Systems' Gigabit Ethernet Media Converters make it simple to extend distances over Multi Mode or Single Mode fiber. They are designed to expand the scope of your Gigabit Ethernet network applications and are 100% compliant with Ethernet IEEE 802.3ab and 802.3z specifications. These converters maintain the same form factor as other Signamax media converters, allowing use in the model 065-1185 16-Bay Signamax Rack Mount Chassis. Twisted pair to fiber optic converters for both Multi Mode and Single Mode fiber, Multi Mode to Single Mode converters, and Single Mode to Single Mode extenders are available.

Model 065-1195

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3ab 1000BaseT
IEEE 802.3z 1000BaseLX
IEEE 802.3z 1000BaseSX

FIXED PORTS
One twisted-pair port meeting
IEEE 802.3ab standard specification; Category 5e
or better cable, 100 meters maximum distance
and/or
One fiber optic port meeting IEEE 802.3z
standard; 62.5/125 micron Multi Mode fiber
optic cable, 220 meters maximum distance
or 50/125 micron Multi Mode fiber optic cable,
550 meters maximum distance
(model 065-1194 & 065-1195)
or
1 fiber optic port meeting IEEE 802.3z
1000BaseLX standard specification;
9/125 micron Single Mode fiber optic cable,
spanning 10 kilometers maximum distance
(model 065-1194 & 065-1197)
or
20 kilometers maximum distance
(models 065-1194ED, 065-1197ED &
065-1198XLD)

PERFORMANCE
1,488,000 packets per second
at 1,000 Mbps

LEDs
Power; TX; RX; FDX/COL; LNKF; LNKC
(or LNK1; LNK2, model 065-1198XLD)

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H):
110 x 81 x 23 mm (4.33 x 3.19 x 0.91")
Weight: 150 grams

SAFETY
UL Listed

Gigabit Media Converters

PART NO.	DESCRIPTION
065-1194	1000BaseSX to 1000BaseLX Gigabit Ethernet SC Multi Mode to SC Single Mode Media Converter, 10 km span
065-1194ED	1000BaseSX to 1000BaseLX Gigabit Ethernet SC Multi Mode to SC Single Mode Media Converter, 20 km span
065-1195	1000BaseT to 1000BaseSX Gigabit Ethernet Media Converter, SC Multi Mode
065-1197	1000BaseT to 1000BaseLX Gigabit Ethernet Media Converter, SC Single Mode, 10 km span
065-1197B	1000BaseT to 1000BaseLX Gigabit Ethernet Basic Media Converter, SC Single Mode, 10 km span
065-1197ED	1000BaseT to 1000BaseLX Gigabit Ethernet Media Converter, SC Single Mode, 20 km span
065-1198XLD	1000BaseLX to 1000BaseLX Gigabit Ethernet fibre optic repeater, SC Single Mode, 20 km span each port

10/100/1000 Switching Fiber Optic Media Converters

Signamax Connectivity Systems' 10/100/1000 Switching Media Converter provides an intelligent solution for long distance connections between legacy 10BaseT and 100BaseTX networks and the newer 1000Base Gigabit Ethernet networks. The built-in 10/100/1000 switch enables the fiber optic connection to operate at 1,000 Mbps connected to either a 10BaseT, 100BaseTX, or a 1000BaseT network, while remaining completely 1000BaseSX standard-compliant for the fiber optic connection. The fiber connection can also operate in full duplex mode whether the RJ45 port is connected to a full duplex switch or a half duplex hub.

Each model 065-1196 Media Converter provides a 10/100/1000BaseT/TX auto-negotiating RJ45 twisted-pair connector port featuring store-and-forward switching architecture. Built-in switch does the network segmentation to provide the maximum fiber distance. Auto-MDIX capability on the twisted-pair port allows convenient connection.

Model 065-1196

10/100/1000 Switching Fiber Optic Media Converters

PART NO.	DESCRIPTION
065-1196	10/100/1000BaseT/TX to 1000BaseSX, Multi Mode/SC
065-1196LX	10/100/1000BaseT/TX to 1000BaseLX, Single Mode/SC (10 km span)
065-1196LXED	10/100/1000BaseT/TX to 1000BaseLX, Single Mode/SC (20 km span)

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3ab 1000BaseT
IEEE 802.3z 1000BaseSX/LX

FIXED PORTS
1 Auto-MDIX twisted-pair port meeting
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX & IEEE 802.3ab
1000BaseT standard specifications; Category 5e or better cable,
100 meters maximum distance for 1000BaseT, Category 5 or better cable,
100 meters maximum distance for 100BaseTX, Category 3 or better
cable, 100 meters maximum distance for 10BaseT **plus**
1 fiber optic port meeting IEEE 802.3z 1000BaseSX standard
specification; 62.5/125 micron Multi Mode fiber optic cable, 220 meters
maximum distance, or 50/125 micron Multi Mode fiber optic cable,
550 meters maximum distance (model 065-1196) **or**
1 fiber optic port meeting IEEE 802.3z 1000BaseLX standard
specification; 9 micron Single Mode fiber optic cable, 10 km maximum
distance (model 065-1196LX) **or**
1 fiber optic port meeting IEEE 802.3z 1000BaseLX standard
specification; 9 micron Single Mode fiber optic cable, 20 km maximum
distance (model 065-1196LXED)

PERFORMANCE
Latency: < 4.2 µs (LIFO)
Throughput @ 100Base: 148,809 pps (64-byte packets)
Throughput @ 1000Base: 1,488,100 pps (64-byte packets)

LEDs
Per unit: Power status, RJ45 port speed
Per Port: LNK/ACT, FDX/COL
Six LEDs total

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H):
110 x 81 x 23 mm (4.33 x 3.19 x 0.91")
Fiber optic interface varies with model.
Weight: 150 grams

SAFETY
UL Listed

SFP Fiber Converters

The Signamax 10/100/1000 to 1000SX/LX (SFP) Media Converter is specifically designed to offer fiber advantages for mission-critical networks like Telco/ISP backbones, cable operators, banking and enterprise networks.

It can reduce network downtime and increase Quality of Service levels. The converter is completely transparent when installed, so the network performs exactly the way it would do normally—only now, it can incorporate both copper and fiber mediums.

This flexibility in cabling allows network managers to put fiber cables anywhere within a network without changing the arrangement of the copper-based Gigabit segments. Their compact size allows the converters to be wall-mounted to save space. Several converters can be simultaneously installed by using the 065-1185 19" rack-mountable chassis.

The Signamax SFP converter takes advantage of intelligent connection technology to support Auto-negotiation, thereby eliminating the hassle of manually configuring or monitoring settings. This ensures plug-n-play operability.

SFP Fiber Converters

PART NO.	DESCRIPTION
065-1192	10/100/1000BaseT/Tx to SFP Fiber Converter, 1x SFP Slot

SPECIFICATIONS

INTERFACE
One 10/100/1000 Mbps Ethernet port
Auto MDI/MDI-X support on RJ-45 port
One SFP slot for Gigabit links
Extends distances from 220m up to 120km under full-duplex mode
Supports Link Fault Signaling on both fiber port and copper port

MANAGEMENT
Alarm LED illuminates to indicate link failure
Status LEDs for easy monitoring of device's status

STANDARDS
IEEE 10/100Base-TX, IEEE 802.3ab 1000Base-T
IEEE 802.3z 1000Base-SX/LX
FCC Part 15 of Class A & CE approved
Complies with IEEE 10/100Base-TX,
IEEE 802.3ab 1000Base-T and IEEE 802.3z 1000Base-SX/LX

CONNECTOR
1 x RJ-45, 1 x Fiber

MECHANICAL & ENVIRONMENTAL
External power supply, Chassis-compliant (internal power supply)
FCC Class A & CE approved, RoHS-compliant

MAX. DISTANCE
UTP: 100 meters (Cat. 5/5e/6)
Fiber: SFP; up to 120km (single-mode)

UNIT LED
PWR: Illuminated for normal operation

POWER
Power Input: 12V DC @ 0.8A, external power supply adapter
Frequency: 47 Hz to 63 Hz

PHYSICAL CHARACTERISTICS
Operating Temperature: 0° to 50°C
Storage Temperature: -20° to 70°C
Operating Humidity: 10-90%, non-condensing
Storage Humidity: 5-90%, non-condensing
Dimensions (D x W x H): 109.2 x 73.8 x 23.4 mm
Weight: 158 g

EMISSIONS
FCC Part 15 of Class A & CE approved

DIP SWITCHES
DIP 1 – LFS: Enable/disable Link-Fault Singnaling (LFS)

Serial Data to Fiber/TP Media Converters

Signamax Connectivity Systems' Serial Data Fiber Media Converters make it simple to extend distances over Multi Mode or Single Mode fiber. They are designed to expand the scope of your RS-232 or RS-422/485 serial data applications, and are 100% compliant with EIA RS-232 unbalanced and both RS-422 & RS-485 4-wire balanced line specifications. Converters for both Multi Mode and Single Mode fiber are available in RS-232/-422/-485 configurations.

KEY FEATURES

- **Auto MDI/MDI-X**
- **External power supply**
- **FCC Class A & CE approved**
- **3-in-1 RS-232/422/485 serial interfaces**
- **Chassis compliant (internal power supply)**
- **Auto-detecting 10/100 Mbps Ethernet interface**
- **Extended distances up to 1.2 km (24 AWG) using RS-422/485**
- **Supports serial port asynchronous data rates up to 115.2 Kbps**
- **Managed via CLI, Telnet, RS-232 Console, and Menu-driven interfaces**
- **Distributed and scalable solution with 256 virtual COM ports control from one device server**
- **Complies with EIA/TIA-232, EIA/TIA-574, IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX)**
- **Supports 4 wires full duplex asynchronous serial data transmission (RS-422/485)**
- **Supports 2 wires half-duplex asynchronous serial data transmission (RS-485)**
- **The Nebility and Webility with Virtual COM (HP Open View and IBM/Tivoli NetView compatible)**

Model 065-1163FSM

Serial Data Fiber Optic/TP Media Converters

PART NO.	DESCRIPTION
065-1163T	RS-232/422/485 to 100BaseT/Tx RJ45 Converter
065-1163FST	RS-232/422/485 fiber optic Media Converter, ST Multi Mode connector 2,000 meter span
065-1163FSC	RS-232/422/485 fiber optic Media Converter, SC Multi Mode connector 2,000 meter span
065-1163FSM	RS-232/422/485 fiber optic Media Converter, SC Single Mode connector, 20 km span

SPECIFICATIONS

APPLICABLE STANDARDS
EIA RS-232, EIA RS-422. EIA RS-485, FIXED PORTS
One DB-9 serial data port meeting
EIA RS-232, EIA RS-422 and EIA RS-485

STANDARD SPECIFICATION.
Push-button switch on rear panel for DTE/DCE selection (all models)
DIP switch panel on 065-116x series for DTE/DCE selection and timer for multipoint (RS-485) environments.
Maximum distance: 1,000 meters **and**
One fiber optic port supporting either 62.5/125 micron or 50/125 micron Multi Mode fiber optic cable, 2,000 meters maximum distance **or**
one fiber optic port supporting either 9/125 micron or 10/125 micron Single Mode fiber optic cable, spanning 20 kilometers maximum distance

PERFORMANCE
Supports 5 Mbps (maximum) data transfer rate
Bit error rate (BER): < 10-9

LED INDICATORS
Unit: Power
Fiber Port: LNK; RCV

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H): 110 x 81 x 23 mm
Weight: 150 grams

SAFETY
UL Listed

Single Fiber WDM Converters

Signamax Connectivity Systems' Switching Single Fiber Wave Division Multiplexing (WDM) Media Converters with Link Fault Signaling allow data typically carried over two strands of fiber optic cable to be carried over a single strand of fiber optic cable, utilizing two different wavelengths to carry signals in both directions simultaneously. This technology doubles the capacity of a company's fiber optic network, allowing a carrier or an enterprise business to minimize its operational costs by eliminating or delaying the deployment of additional fiber optic capacity. These converters are available in Single Mode only, and span distances of up to 20 kilometerswith the 065-1176ALFS and 065-1176BLFS models.

Since WDM Switching Media Converters utilize two different wavelengths with one end of a circuit transmitting on the other end's receive frequency (and vice versa), they must be used in A/B pairs. A circuit utilizing these converters would therefore use a single strand of Single Mode fiber optic cable plus one each of the 065-1176ALFS and 065-1176BLFS depending upon the distance spanned. All Signamax WDM converters are equipped with Link Fault Signaling to provide the means for an SNMP-managed switch to recognize a failure on a fiber channel or twisted-pair connection, enabling the switch to automatically route to a backup path if the connected switch is equipped with Spanning Tree Algorithm. Each WDM Media Converter provides a 10/100BaseT/TX auto-negotiating RJ45 twisted-pair connector port, and features store-and-forward switching architecture. Auto-MDIX capability on the twisted-pair port is also provided for convenient connections.

Model 065-1176ALFS

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX
IEEE 802.3u 100BaseFX

FIXED PORTS
1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT **plus** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning 20 kilometers maximum distance (models 065-1176ALFS and 065-1176BLFS) **or** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification

PERFORMANCE
Latency: < 4.2 µs (LIFO) Throughput @ **100Base:** 148,809 pps (64-byte packets)

LEDs
Per unit: Power status, RJ45 port speed, Per Port: LNK/ACT, FDX/COL, Six LEDs total

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H): 110 x 81 x 23 mm
Fiber optic interface varies with model
Weight: 150 grams
USB power connector on the rear panel optionally powers converter from computer's USB port.

SAFETY
UL Listed

Single Fiber WDM Converters

PART NO.	DESCRIPTION	FIBER TYPE
065-1176ALFS	10/100BaseT/TX to 100BaseFX, SM/SC, 20 km, Tx=1,310 nm; Rx=1,550 nm	Simplex SC Single Mode
065-1176BLFS	10/100BaseT/TX to 100BaseFX, SM/SC, 20 km, Tx=1,550 nm; Rx=1,310 nm	Simplex SC Single Mode

Singlemode to Multi Mode Converters

Signamax Connectivity Systems' Singlemode to Multi Mode Converters provide efficient solutions for interconnecting Multi Mode fiber LANs over longer distances by integrating Single Mode fiber optic cable into the LAN. They also enable Ethernet LAN and WAN connectivity, by providing a Multi Mode interface to Single Mode fiber carrier demarcation points. Models are available for Single Mode to Multi Mode conversion between Fast Ethernet devices, or for Asynchronous Transfer Mode (ATM) applications transported over a Synchronous Optical Network (SONET). Each Media Converter is enclosed in a compact, strong metal case and includes an external power supply for stand-alone applications. They can also be installed without modification in the Signamax 065-1185 Rack Mount Chassis system, featuring redundant power supplies for high reliability in multiple converter installations.

SPECIFICATIONS

APPLICABLE STANDARDS
Ethernet IEEE 802.3u
Asynchronous Transfer Mode (ATM)
155 Mbps Specifications (model 065-1190)
Asynchronous Transfer Mode (ATM)
622 Mbps Specifications (model 065-1190HS)
Synchronous Optical Network (SONET)
Optical Carrier – 3 (OC-3) Specifications
(model 065-1190)
Synchronous Optical Network (SONET)
Optical Carrier – 12 (OC-12)
Specifications (model 065-1190HS)
Synchronous Digital Hierarchy (SDH)
STM-1 Specifications (model 065-1190)
Synchronous Digital Hierarchy (SDH)
STM-4 Specifications (model 065-1190HS)

FIXED PORT SPECIFICATIONS
models 065-1130, 065-1130ED, 065-1130XLD:
ST connector; 2,000 meters max. distance
100BaseFX Multi Mode fiber optic interface,
models 065-1132, 065-1132ED, 065-1132XLD:
SC connector; 2,000 meters max. distance
100BaseFX Multi Mode fiber optic interface,
**models 065-1130, 065-1130ED, 065-1130XLD,
065-1132, 065-1132ED & 065-1132XLD:**
SC connector, 100BaseFX Single Mode fiber
interface; Standard model: 15 kilometers
max. distance
ED model: 40 kilometers max. distance
XLD model: 75 kilometers max. distance
**SONET OC-3 / ATM 155 Mbps
Multi Mode fiber optic interface,
model 065-1190:**
ST connector; 2,000 meters max. distance
**SONET OC-3 / ATM 155 Mbps
Single Mode fiber optic interface,
model 065-1190:**
SC connector; 20 kilometers max. distance
**SONET OC-12 / ATM 622 Mbps
Multi Mode fiber optic interface,
model 065-1190HS:**
ST connector; 2,000 meters max. distance
**SONET OC-12 / ATM 622 Mbps
Single Mode fiber optic interface,
model 065-1190HS:**
SC connector; 20 kilometers max. distance

PERFORMANCE
Delay: less than 21 bit times

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H):
110 x 81 x 23 mm
(4.33 x 3.19 x 0.91")
Fiber optic interface varies with model.
Weight: 150 grams

SAFETY
UL Listed

Model 065-1130

Singlemode to Multi Mode Converters

PART NO.	DESCRIPTION
065-1130	100BaseFX SC Single Mode (15 km span) to ST Multi Mode
065-1130ED	100BaseFX SC Single Mode (40 km span) to ST Multi Mode
065-1130XLD	100BaseFX SC Single Mode (75 km span) to ST Multi Mode
065-1132	100BaseFX SC Single Mode (15 km span) to SC Multi Mode
065-1132ED	100BaseFX SC Single Mode (40 km span) to SC Multi Mode
065-1132XLD	100BaseFX SC Single Mode (75 km span) to SC Multi Mode
065-1190	ATM 155 Mbps / SONET OC-3 SC Single Mode (20 km span) to SC Multi Mode

Basic Media Conveters

Signamax Fast Ethernet WDM Media Converters are designed to bridge a 100Base-TX signal to a 100Base-FX signal. It's used to extend the connection distance between two Fast Ethernet Twisted-pair devices via fiber cable transparently with no performance degradation.

WDM Switching Media Converters utilize two different light spectra with one end of a circuit transmitting on the other end's receive frequency (and vice versa), they must be used in A/B pairs. A circuit utilizing these converters would therefore use a single strand of Single Mode fiber optic cable plus one each of the 065-1176A and 065-1176B. It's supported Auto-negotiation & flow control function on Twisted-pair port.

Model 065-1186

Model 065-1197B

Model 065-1176A

Basic Media Converter

PART NO.	DESCRIPTION
065-1197B	1000BaseT to 1000BaseLX, SM 10 km, SC
065-1176A	10/100BaseT/TX to 100BaseFX SC SM (20 km) Tx = 1,310, Rx = 1,550
065-1176B	10/100BaseT/TX to 100BaseFX SC SM (20 km) Rx = 1,310, Tx = 1,550
065-1186	16-Slot Basic Media Converter Chassis

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3u 100BaseFX

FIXED PORTS
1 Auto-MDIX twisted-pair port meeting IEEE 802.3 10BaseT & IEEE 802.3u 100BaseTX standard specifications; Category 5 or better cable, 100 meters maximum distance for 100BaseTX, Category 3 or better cable, 100 meters maximum distance for 10BaseT **plus** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning 20 kilometers maximum distance (models 065-1176ALFS and 065-1176BLFS) **or** 1 WDM fiber optic port meeting IEEE 802.3u 100BaseFX standard specification; 9/125 micron Single Mode fiber optic cable, spanning 40 kilometers maximum distance (models 065-1176AEDLFS and 065-1176BEDLFS)

PERFORMANCE
Latency: < 4.2 µs (LIFO) Throughput @
100Base: 148,809 pps (64-byte packets)

LEDs
Per unit: Power status, RJ45 port speed,
Per Port: LNK/ACT, FDX/COL
Six LEDs total

PHYSICAL CHARACTERISTICS
Case dimensions (L x W x H): 110 x 81 x 23 mm
Fiber optic interface varies with model
Weight: 150 grams
USB power connector on the rear panel optionally powers converter from computer's USB port

SAFETY
UL Listed

12-Port Rack Mount Media Converters

The Signamax 065-1200 12-Channel Rack Mount Media Converter is a perfect solution for large installations that utilize many of the same type of media converters. The 065-1200 contains 12 channels of media conversion in a standard rack mountable case only one rack unit high. This extremely high port density allows the maximum number of media converter channels per rack for enterprise-level businesses and carriers. Redundant fan-cooled power supplies ensure maximum system uptime.

The 065-1200 has a choice of configurations, utilizing the same technology and connector types as the standalone media converters in the 065-1100 series for 10/100BaseT/TX to 100BaseFX conversion. Standard or Link Fault Signaling (LFS) versions are available. In addition, the 065-1200 can be optionally equipped with twelve channels of Gigabit Ethernet 1000BaseT to 1000BaseSX media conversion, replacing twelve 065-1195 converters.

Model 065-1200ST00

12-Port Rack Mount Media Converter

PART NO.	DESCRIPTION
065-1200ST00	10/100BaseT/TX to 100BaseFX Converters ST Multi Mode
065-1200SC10	10/100BaseT/TX to 100BaseFX Converters SC Multi Mode
065-1200LC74	10/100BaseT/TX to 100BaseFX Converters LC Multi Mode
065-1200SC20	10/100BaseT/TX to 100BaseFX Converters SC Single Mode (15 km span)
065-1200SC20ED	10/100BaseT/TX to 100BaseFX Converters SC Single Mode (40 km span)
065-1200SC95	1000BaseT to 1000BaseSX Converters SC Multi Mode
065-1200SC97	1000BaseT to 1000BaseLX Converters SC Single Mode

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX
IEEE 802.3u 100BaseFX, IEEE 802.3ab 1000BaseT
IEEE 802.3z 1000BaseSX

FIXED PORTS
Twelve channels of media conversion, each with a twisted pair port and a corresponding fibre optic port meeting either of the following specifications:
065-11xx series and 065-11xxLFS series versions:
10/100BaseT/TX to 100BaseFX, Multi Mode fibre; choice of SC, ST, VF45 or MTRJ connectors; maximum distance: 2,000 meters
10/100BaseT/TX to 100BaseFX, Single Mode fibre, SC connectors; MTRJ connectors available on request. Maximum distance: up to 75 kilometers

LEDs:
Per unit: Power status, Speed (2 LEDs)
Per port: LNK/ACT, FDX/COL (2 LEDs)

065-1195 version:
1000BaseT to 1000BaseSX, Multi Mode fibre, SC connectors; MTRJ connectors available on request. Maximum distance, 1000BaseSX port:
220 meters over 62.5 micron Multi Mode fibre or 550 meters over 50/125 micron Multi Mode fibre (full duplex only)

LEDs:
Per unit: Power status, FDX/COL, TX, RX (4 LEDs)
Per port: LNKF for fibre port, LNKC for copper port (1 LED each)

PHYSICAL CHARACTERISTICS
Dimensions (W x D x H):
440 x 205 x 45 mm (17.3 x 8.0 x 1.8")
Weight: 3.1 kg maximum
Standard 19" rack mounting (hardware included)

SAFETY
UL 1950

16-Bay Media Converter Rack Mount Chassis

The Signamax 065-1185 16-Bay Media Converter Rack Mount Chassis provides higher rack mount media converter density for large installations that can accommodate rear access to the chassis for power supply maintenance. The 065-1185 provides 16 bays of space for all 065-11xx series Signamax media converters in a standard two rack unit high enclosure. High port density allows a variety of media converter solutions to be utilized in a minimum amount of rack space for enterprise-level businesses and carriers. Redundant, fan-cooled load-sharing power supplies can be hot-swapped to ensure maximum system uptime.

The 065-1185 has a choice of power supply configurations, supporting AC power for 110 volt or 220 volt power systems or -48 volt DC power for carrier operations.

Model 065-1185

16-Bay Media Converter Rack Mount Chassis

PART NO.	DESCRIPTION
065-1185	16-Bay Rack Mount Media Converter Chassis System, includes 2 Redundant AC Power Supplies & 4 Fan Cooling Assemblies
065-1185DC	16-Bay Rack Mount Media Converter Chassis System, includes 2 Redundant -48 V DC Power Supplies & 4 Fan Cooling Assemblies
FO-AC-1185	Spare Redundant AC Power Supply for 16-Bay Chassis
FO-DC-1185	Spare Redundant -48 V DC Power Supply For 16-Bay Chassis
FO-1185FAN	Spare Individual Fan Assembly For 16-Bay Chassis

SPECIFICATIONS

CAPACITY
Sixteen bays, for up to sixteen 065-11xx series media converters

LEDs
Power 1/Power 2: Power supply on-line

SAFETY
UL 1950 listed
Cooling Fans: UL/cUL/TUV Listed/Approved

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H): 440 x 276 x 90 mm, 2 standard rack units
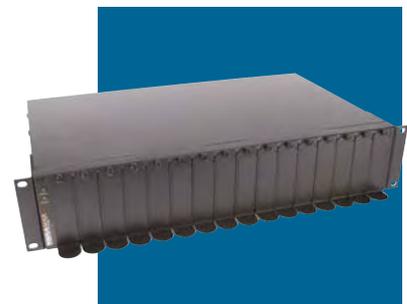**Weight:** Approximately 8.5 kg, fully loaded

POWER SUPPLIES
Load-sharing and hot-swappable,
2 supplied as standard equipment AC and -48 Volt
DC units available
Power status LED on each power supply, as well as remote status LEDs on front panel

Model 065-1185

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

18-Bay Rack Mount Managed Media Converter Chassis System

The Signamax™ 065-1480 18-Bay Managed Media Converter Rack Mount Chassis provides full SNMP management capabilities for mission-critical installations. The 065-1480 provides 18 bays of space for all 065-14xx series Signamax managed media converters in a standard 2U high enclosure. It also includes the 065-1481 Management Module, which communicates with the Signamax 065-14xx series media converters on the chassis' backplane. It provides full status information on the individual media converter's ports and allows the advanced management capabilities of the 065-14xx series managed media converters to be switched on or off remotely and individually. Diagnostic testing from a centralized location avoids unnecessary technician dispatch. Alarm traps can be sent to up to five remote IP addresses simultaneously, allowing integration within a variety of Network Management Systems. In-band and out-of-band management are supported by local and remote Telnet console Command Line Interface (CLI), a web browser-based Graphical User Interface (GUI), and a menu-driven interface.

Two fully redundant, load-sharing power supplies are standard, to ensure continued availability of the media converters in the event of a power supply failure. Either power supply is hot-swappable and can be taken off-line and removed from the unit while the media converters are operating; the media converters themselves are also hot-swappable. The 065-1480 also ships standard with three fully redundant, load-sharing cooling fans to ensure reliable operation.

Model 065-1480

18-Bay Rack Mount Managed Media Converter Chassis System

PART NO.	DESCRIPTION
065-1480	18-Bay Rack Mount Managed Media Converter Chassis System; includes 065-1481 SNMP Management Module, 2 Redundant AC Power Supplies, & 3 Fan Cooling Assemblies
065-1480DC	18-Bay Rack Mount Media Converter Chassis System; includes 065-1481 SNMP Management Module, 2 Redundant -48 V DC Power Supplies, & 3 Fan Cooling Assemblies
065-1481	Spare SNMP Management Module
AC-1480	Spare Redundant AC Power Supply for 18-Bay Chassis
DC-1480	Spare Redundant -48 V DC Power Supply For 18-Bay Chassis
1480FAN	Spare Individual Fan Assembly For 18-Bay Chassis

SPECIFICATIONS

065-1480 Chassis

CAPACITY
Eighteen bays for up to eighteen 065-14xx Media Converters

CONSTRUCTION
SECC zinc-coated steel

COOLING
One 42.5 cfm rear-mounted fan, plus one fan for each of the two redundant power supplies.

LEDs
Power (2x): Power supply on-line
FAN (3x): Fan status

DIMENSIONS (W x D x H)
440 x 276 x 90 mm
(17.3 x 10.9 x 3.5")
2 standard rack units

WEIGHT
Approximately 13.5 kg, fully loaded

POWER SUPPLIES—LOAD SHARING AND HOT-SWAPPABLE
(2 supplied as standard equipment)
Input:
model 065-1480: 90 – 240 Volts AC, 47 – 63 Hz
model 065-1480DC: -48 Volts DC
Output:
Normal +12 Volts DC (Min. +11.88 Volts, max. +12.12 Volts, 7.0 Amps)
Total Regulation:
+/-1.0%, Rip. 120 mV, Load 1.0%, Line 0.5%
Overload Protection:
All outputs protected against short circuit conditions; automatic recovery
Excess Voltage Protection:
Output level exceeding 13.2 Volts causes shutdown; automatic recovery
Temperature:
Operating: 0° – 40°C
Storage: -25° – 70°C
EMI: FCC Part 15 Class A, CE Class A
Safety: UL 1950 Listed

065-1481 Management Module
PROTOCOLS SUPPORTED
TCP, UDP, ICMP, IP, ARP
SERVICE
HTTP, Telnet, SNMP, TFTP
PORTS
DB-9 Serial Data (x1),
RJ45 10/100BaseT/TX (x1)
LEDs
Power, System, Alert, 10/100 speed, Link/ACT
MIB SUPPORTED
MIB II, RMON
PHYSICAL CHARACTERISTICS
Storage temp.: -40° – 80°C
Operating temp.: 0° – 50°C
Maximum altitude: 10,000 ft.
Dimensions (L x W x H):
171.5 x 69 x 21.5 mm
Weight: 115 grams
EMI: FCC Part 15 Class A, CE Class A

8-Bay Managed Media Converter Chassis

Through out-of-band management via Web Browser, the Managed Media Converter System can be monitored and configured. Each 065-1400M Managed Converter Chassis features eight slots for 065-1485 Chassis Manager Media Converter and 065-1400CO Media Converters (CO) in one Managed Converter Chassis. The Managed Converter Chassis System is allowed to have four 065-1485 Managed Converter Chassis on one Managed Converter Chassis System by using IN/OUT Port for stacking. One 065-1485 chassis manager will manage four stacked chassis plus local and remote media converters.

8-Bay Managed Media Converter Chassis

PART NO.	DESCRIPTION
065-1485	8-Bay Managed Media Converter Chassis
065-1400M	10/100BaseT/Tx to 100BaseFX Multi Mode (ST)
065-1410M	10/100BaseT/Tx to 100BaseFX Multi Mode (SC)
065-1420M	10/100BaseT/Tx to 100BaseFX Single Mode (SC) – 20 Km
065-1420MED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) – 40 Km
065-1476MA	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,310 nm/RX: 1,550 nm – 20 Km
065-1476MB	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,550 nm/RX: 1,310 nm – 20 Km
065-1476MAED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,310 nm/RX: 1,550 nm – 40 Km
065-1476MBED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,550 nm/RX: 1,310 nm – 40 Km
065-1410CO	10/100BaseT/Tx to 100BaseFX Multi Mode (SC)
065-1400CO	10/100BaseT/Tx to 100BaseFX Multi Mode (ST)
065-1420CO	10/100BaseT/Tx to 100BaseFX Single Mode (SC) – 20 Km
065-1420COED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) – 40 Km
065-1476COA	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,310 nm/RX: 1,550 nm – 20 Km
065-1476COB	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,550 nm/RX: 1,310 nm – 20 Km
065-1476COAED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,310 nm/RX: 1,550 nm – 40 Km
065-1476COBED	10/100BaseT/Tx to 100BaseFX Single Mode (SC) WDM – TX: 1,550 nm/RX: 1,310 nm – 40 Km

SPECIFICATIONS

POWER
  Input:
  100-240V AC, 50-60 Hz Internal Universal PSU
  12V DC, 1.67A
  Power Consumption: 32W Max

LEDs
  Per Unit: Power Status (Power), Fan Status, Stack Port Status

SAFETY
  Manufactured in an ISO9001 facility

PHYSICAL CHARACTERISTICS
  Casing: Metal case
  Operating Temperature: 0° to 45°C
  Storage Temperature: -10° to 70°C
  Ambient Relative Humidity: 10-90% (non-condensing)
  Dimensions (W x D x H): 440 x 235 x 44 mm
  Weight: 3 kg
  Installation: RackMounting

EMISSION COMPLIANCE
  CEMark Class A, FCC Part 15 Class A

WebSmart Media Converters

Signamax Connectivity Systems' 065-1300 series Standalone WebSmart Switching Media Converters are individually-housed WebSmart media converters available with Single Mode and Multi Mode interfaces to provide copper-to-fiber conversion for mission-critical networks. They are typically used as circuit endpoint devices together with the Signamax Managed Media Converter Rack Mount Chassis System to enable network managers to remotely monitor the status of their entire fiber optic Fast Ethernet and Gigabit Ethernet network all the way to the fiber optic circuit's last termination.

Model 065-1300

WebSmart Media Converters

PART NO.	DESCRIPTION
065-1300	10/100BaseT/TX to 100BaseFX WebSmart Media Converter, ST Multi Mode
065-1310	10/100BaseT/TX to 100BaseFX WebSmart Media Converter, SC Multi Mode
065-1320	10/100BaseT/TX to 100BaseFX WebSmart Media Converter, SC Single Mode
065-1376A	10/100BaseT/TX to 100BaseFX WebSmart Media Converter, WDM Single Mode
065-1376B	10/100BaseT/TX to 100BaseFX WebSmart Media Converter, WDM Single Mode
065-1395	1000BaseT to 1000BaseSX WebSmart Media Converter, SC Multi Mode
065-1397	1000BaseT to 1000BaseLX WebSmart Media Converter, SC Single Mode

SPECIFICATIONS

STANDARDS
IEEE 802.3 10BaseT, Priority Protocols
IEEE 802.3u 100BaseTX/100BaseFX
IEEE 802.1x, IEEE 802.1p Class of Service

FEATURES
Number of Ports:
1 10/100BaseT with RJ-45 Connector
1 100BaseFX with Fiber Connector (Multi/Single Mode, ST/SC, LC, MT-RJ Connector)

DATA TRANSFER RATE
Ethernet:
10 Mbps/Half-Duplex, 20 Mbps/Full-Duplex
Fast Ethernet: 100 Mbps/Half-Duplex, 200 Mbps/Full-Duplex

LEDs
Per Port:
(TX): Link/Act, Speed, FDX/COL
(FX): Link/Act, FDX/COL
Per Unit: Power

TRANSMISSION MEDIA
10BaseT Cat. 3, 4, 5 UTP/STP, up to 100 m
100BaseTX Cat. 5 UTP/STP, up to 100 m
100BaseFX:
50/125 or 62.5/125 micron Multi Mode ST/SC
Type Fiber optic cable, up to 2 km
9/125 or 10/125micron Single Mode Fiber optic cable

PHYSICAL CHARACTERISTICS
Power Requirement: DC 5V/2A
Power Consumption: 10 Watts (Max)
Temperature:
Operating: 0° – 45°C
Storage: -20° – 90°C
Dimensions (L x W x H): 130 × 77 × 24 mm
Weight: 0,28 grams
Humidity: 10-90% RH (non-condensing)
EMI: FCC Class A, CE

16-Slot Chassis for Modular EPON Media Converters

The manageable box is a 19" Media Converter Chassis with cabinet height 3U. It is designed to accommodate 16 slots of various type of fiber media converter module at a central location for multiple segments cross connection and network management. Any combination of GEPON Fiber conversion solutions can be installed in a wiring closet for cable connection. The network management supports Web UI via browser, CLI via local console, Telnet interface and SNMPv2c.

Supports IEEE 802.3ah OAM function for CO and CPE site "Remote Failure Indication", "Remote Loopback" and "Link Monitoring". Supports "Port Configuration" and "Bandwidth Configuration". Models equipped with DC 48V power unit are also available for Telecom applications.

16-Slot Chassis for Modular EPON Media Converters

PART NO.	DESCRIPTION
098-1580	16-Slot EPON Converter Chassis with Dual AC Input Redundant Power Supply
098-1580RDC	16-Slot EPON Converter Chassis with Dual DC Input Redundant Power Supply
098-1580RADC	16-Slot EPON Converter Chassis with AC+DC Input Redundant Power Supply
098-1580AC	16-Slot EPON Converter Chassis with Single AC Input Redundant Power Supply
098-1580DC	16-Slot EPON Converter Chassis with Single DC Input Redundant Power Supply
ONU-1510	10/100/1000Base-T to EPON ONU Managed Converter
OLT-1515	10/100/1000Base-T to EPON OLT Managed Converter Module

SPECIFICATIONS

PARAMETER
Capacity: 16 Slots for modular Media converter
Management: SNMP and web-base via in-band LAN port or local serial CLI
Power supply: Hot-swap redundant, high reliability/safety
Redundant Power Requirement:
AC Power Input:
Voltage: 100/240V AC
Frequency: 50-60Hz
Dissipation: 200W maximum
Telecom DC Input:
Voltage: 48V DC
Dissipation: 200W maximum

SAFETY
Complies with FCC Part 15 Class A & CE Mark Approval

PHYSICAL CHARACTERISTICS
Ambient Temperature: 0 to 70°C
Humidity: -40° to 85°C
Dimensions: 125 x 90 x 8 mm
Weight: 8.52 kg (without power)
9.54 kg (includes 1 x AC power)
10.56 kg (includes 2 x AC power)
9.57 kg (includes 1 x DC power)
10.62 kg (includes 2 x DC power)
10.59 kg (includes 1 x AC power + 1 DC power)

KEY FEATURES

- **Supports standard 19" 3U high rack-mount chassis with 16 slots for converter modules**
- **19-inch rack mount**
  - The concentrator unit will fit in both Electronic Industries Association (EIA) standard compliant racks.
- **Supports 3 fans for chassis heat radiating**
- **Operating temp range 0° – 50°C**
- **Supports chassis temperature detection with F/C both degree**
- **Supports FAN rotation rate (RPM) detection**
- **Supports chassis ID (CID) for chassis location indication**
- **Built-in management CPU module:**
  - Supports DB-9 RS232 interface for console
  - Supports two Ethernet ports in management network
- **Management Board LED display: PowerA/B, UTP port: Act/Link, CPU Run**
- **Supports hot-swappable and upgradeable management CPU module**
- **Supports hot-swappable converter modules**
- **Supports hot-swappable and loading-shared redundant power units, each can be DC or AC. Independent power input for each power modules**
- **Supports Real-Time Clock (RTC)**
- **Power monitor (absent/present, ON/OFF, DC/AC), fans monitor and temperature monitor**
- **Power supply: Hot-swap redundant, high reliability/safety**
- **Supports CO/CPE conversion port configuration for port state, Speed/Duplex, Flow Control and Bandwidth setting**
- **Comply with RoHS Requirement**
- **Provides a Gigabit Ethernet PON (Passive Optical Network), converting 10/100/1000 Mbps Ethernet into optical signals with an optical coupler for point-to-multipoint networks. The EPON OLT converter module for the center unit can be selected to provide datacom service for distances of up to 20 km. The same subscriber unit EPON ONU converter is used for remote CPE site, whether 20 km type.**
- **One OLT handles up to 32 subscribers per fiber**
  - Implements full duplex with single SM fiber links, along with an optical coupler for 32 branches, making it possible to handle up to 32 subscribers per single optical fiber
- **One chassis supports up to 512 subscribers**
  - The center unit (rear access type) uses high-density packing to fit up to 512 subscribers into a 3U case height (132 mm), saving your valuable rack space
- **Independent channel configuration**
  - Additional EPON converter module can be added as needed to economically handle subscriber growth. In addition, maintenance is possible in channel units, making it possible to respond to a fault on one channel without affecting the others.

NETWORK CONNECTIVITY SYSTEMS

Ethernet Switches

- 5- & 8-Port 10/100 Desktop Switches
- 8-Port 10/100 Desktop PoE Switches
- 8-Port Managed Desktop Switches
- Desktop Web Smart Fast Ethernet Switch
- Fast Ethernet 16-Port Desktop Switches
- 10/100BaseT/TX Rack Mount Unmanaged Ethernet Switch
- 16-Port WebSmart 10/100 Managed Ethernet Switches
- Gigabit POE Management Switch series
- Modularized 24+2G Access Switch
- Metro and Metro PoE Stackable Switches with 2 Combo ports
- Metro Stackable Switches with 4 Combo ports
- Compact Fiber Access Switch
- 5- and 8-Port 10/100/1000BaseT/TX Desktop Switches
- WebSmart Gigabit Ethernet Switches
- Gigabit Management Switch
- Advanced Gigabit L2 Managed Switches
- 24-Port 10/100 + 4G Combo L3 Switch
- Hardened Ethernet Switches
- Hardened Managed Switches
- 4-Port Broadband Access Router
- Signamax USB NAS
- SFP Fiber Modules
- 10 Gbps Modules

5- & 8-Port 10/100 Desktop Switches

Signamax Connectivity Systems' Desktop Switches makes it easy to increase user capacity and let 10 and 100 Mbps devices directly communicate with each other. Full duplex mode multiplies total network capacity by providing up to 200 Mbps bandwidth per port rather than sharing 100 Mbps bandwidth between hub users, and segments networks for improved performance by forwarding traffic only to the users to whom the message was sent. Auto-sensing speed feature automatically handles both 10 Mbps and 100 Mbps users.

State-of-the-art switches provide a straightforward upgrade from hub-based shared Ethernet using your existing investment in hardware, cabling and personnel training. By combining simple installation with dual-speed flexibility and scalable expansion, Signamax Ethernet switches virtually guarantee high network performance. Now is an even more compact size for easy placement.

Model 065-7025B

Model 065-7028B

5- & 8-Port 10/100 Desktop Switches

PART NO.	DESCRIPTION
065-7025B	5-Port 10/100BaseT/TX Desktop Ethernet Mini Switch, external power supply, plastic case
065-7028B	8-Port 10/100BaseT/TX Desktop Ethernet Mini Switch, external power supply, plastic case
065-7013	8-Port 10/100BaseT/TX Desktop Ethernet Switch, external power supply, metal case
065-7015Q	5-Port 10/100BaseT/TX WebSmart Media Streaming Fast Ethernet Switch

FEATURES

- **Non-blocking Performance Improves Access to Network Resources**
- **Five/eight Independent Bandwidths with 10-200 Mbps Capability**
- **All Ports Support Auto-negotiation and Auto-MDI/MDI-X to Facilitate Installation and Troubleshooting**
- **Full Wire Speed Store-and-Forward Technology Instantly Eliminates Bad Packets**
- **Automatic Source Address Learning and Aging**
- **Support 1K MAC Address**
- **Built-in High Efficiency SRAM for Packet Buffer**
- **Support IEEE 802.3x Flow-control for Full-duplex and Back-pressure Flow-Control for Half-duplex**
- **Delicate Plastic Palm Size with an External Power Adapter**
- **Easy-to-Understand LEDs Display Real-time Traffic Status to Monitor and Diagnose the Network**
- **Built-in High Efficiency SRAM for Packet Buffer**
- **Broadcast Storm Filter, Runt and CRC Filtering Eliminate Erroneous Packets to Optimize the Network Bandwidth**
- **Support Power Saving Mode by Cable Detection**

Model 065-7025B

Model 065-7025B back

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3x Flow Control
ANSI/IEEE 802.3 NWay Auto-negotiation

PORTS
Model 065-7025B: 5 – RJ-45 10/100BaseT/TX Auto-MDI ports
(IEEE 802.3 10BaseT; 802.3u 100BaseTX)
Models 065-7028/065-7028B:
8 – RJ-45 10/100BaseT/TX ports
(IEEE 802.3 10BaseT; 802.3u 100BaseTX)
16 – RJ-45 10/100BaseT/TX ports
(IEEE 802.3 10BaseT; 802.3u 100BaseTX)

PERFORMANCE
Throughput: 148,809 pps (64-byte packets)
Switch Fabric Speed: 065-7025: 1.0 Gbps, 065-7028: 1.6 Gbps

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H): 065-7025B/8B: 159 x 100 x 28 mm
Weight: 065-7025AB/8B: 0,3kg

LEDS
Power, Full/Half Duplex, 10/100 Collision, Link/Activity (all models)

SAFETY
Power supply UL & cUL listed

Model 065-7013

Model 065-7013 back

8-Port 10/100 Desktop PoE Switches

The Signamax 065-7013PD is 8-Port Ethernet Switch consists of 8 Ethernet ports, port No. 8 can be either Ethernet port or PD port for DC power input. Connect PD port with POE switch to enhance your networking environment, user will not compromise to the electrical system.

Model 065-7308PoE

Model 065-7013PD

8-Port 10/100 Desktop PoE Switches

PART NO.	DESCRIPTION
065-7013PD	8-Port 10/100BaseT/TX Desktop Ethernet Switch, 1xPoE PD Port
065-7308PoE	8-Port 10/100BaseT/TX Desktop Ethernet Switch, 4xPoE PSE Ports

FEATURES

- **8-Port 10/100BASE T/TX Nway (Auto-negotiation) Switch with RJ-45 connectors**
- **Port No. 8 is to be either Ethernet port or PD port which can get power source from the PSE port**
- **48V powered-able as link with PSE port**
- **Provides low-voltage DC power over existing Cat.5 cable to a device with an Ethernet port**
- **Complies with IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX; IEEE802.3af**
- **Fully Flow Control Supported: Half-duplex mode- Backpressure, Full-duplex mode- IEEE 802.3x**
- **Full/Half-duplex modes auto detecting and Auto-MDIX in all ports (twisted pair)**
- **High performance even under full-duplex 200Mbps bandwidth each port and Zero-Packet Loss**
- **Broadcast storm control, Store & Forward switching methods**
- **Non-blocking & Non-head-of-line blocking full wire speed forwarding**
- **Auto-learning of networking configurations**
- **Supports 2K MAC address filtering, aging and 1 Mbits buffer memory**
- **Packet Filter/Forward Rate: 100 Mbps/148,800 pps, 10 Mbps/14,880 pps**
- **Status LEDs: Power, 10/100M, Link/Activity, and FDX**
- **Network Transmission Media: 10BASE-T Cat. 3, 4, 5 UTP/STP, 100BASE-TX Cat. 5 UTP/STP**
- **Power supply: From PD port or AC power cord input (90-260V/AC, 50-60 Hz) UL Safety**
- **Operating Temperature: 0° – 60°C**
- **Store Temperature: -20° – 90°C**
- **Humidity: 10-90% RH (Non-condensing)**
- **Dimension (L x W x H): 130 × 80 × 25 mm**
- **Weight: 0.35 kg**
- **Safety & EMI Certificates: CE & FCC**
- **Smart plug & play**

8-Port Managed Desktop Switches

The Signamax 065-7508/065-7708 switches ares an full L2 management 8-Port Fast Ethernet switches, with high performance and competitive price. They are perfect way to extend your network structure.

KEY FEATURES

- **11" Metal Case**
- **Rack-Mount to 19" Cabinet**
- **No Fan No Noise**
- **Internal Power Supply**
- **Web-based Configuration and Management**

Model 065-7508

Model 065-7708

8-Port Managed Desktop Switches

PART NO.	DESCRIPTION
065-7508	8-Port 10/100BaseT/Tx Desktop Web Smart Fast Ethernet Switch
065-7708	8-Port 10/100BaseT/Tx Desktop L2 Managed Switch

SPECIFICATIONS

STANDARDS
IEEE 802.3 10Base-T
IEEE 802.3u 100Base-TX

MEDIA
UTP CAT3 or up for copper port

CHIP
88E6095+88E6218

ACCESS METHOD
CSMA/CD

Transmission Method: Store and Forward

MAC Address: 8K

Built-in Buffer: 1.5 Mbits

Data Transfer Rate:
10/100Mbps (Half-duplex),
20/200Mbps (Full-duplex for coppoer port)

LEDs
Power, Link/Activity

**ENVIRONMENTAL
TEMPERATURE HUMIDITY**
Dimension (LxWxH):
280 x 173 x 44 mm
Weight: 4000 g
Temperature:
0° to 50°C (operating),
-20° to 70°C (storage)
Humidity:
5 to 90 % non-condensing (operating),
5 to 90% non-condensing (storage)

CERTIFICATIONS
FCC Part 15 Class A, CE Mark

FEATURES

- **Compliant with the IEEE802.3 10Base-T Ethernet, IEEE802.3u 100Base-TX**
- **8 port 10/100Mbps TX Auto-Negotiation**
- **Supports TP interface Auto MDIX function for auto TX/RX swap**
- **Support up to 8K MAC address**
- **Up to 1.5 M bits packet buffer**
- **Supports Store & Forward architecture and performs forwarding and filtering**
- **Supports to handle up to 1522 bytes packet**
- **Supports 8 groups Port-Based VLAN and 512 groups 802.1q tag VLAN**
- **Supports rate control (64 Kbps – 80 Mbps)**
- **Supports port mirror**
- **Supports IEEE802.1D Spanning Tree and IEEE802.1w RSTP protocol**
- **Supports MAC address filter and binding (up to 400 rules)**
- **Supports IGMP snooping**
- **Supports port trunking (up to 12 groups and 8 ports in each group)**
- **Supports SNMP V1/V2, RMON MIB (group 1, 2, 3, 9)**
- **Supports access switch through Web/Telnet/Console**
- **Supports firmware upgrade through Web/Console**
- **Build-in power**

Desktop WebSmart Fast Ethernet Switch

065-7542 is 24-Port Desktop WebSmart Fast Ethernet Switch that is designed for small or medium network environment to strengthen its network connection. This product is compact in size, making it ideal for Desktop users with limited space. It also gives you the option of installing it in a 19" cabinet by rack-mount kits or underneath a desk. 065-7542 provides Smart features that are ideal for simple QoS/CoS applications and basic monitoring tools to improve network efficiency. Its security and management features, such as bandwidth control, and VLAN (IEEE 802.1Q VLAN tagging and port-based VLAN) to secure your network. Through a Web-based interface, an administrator can set up VLANs to segregate traffic, QoS to prioritize mission-critical data and link aggregation to create fat traffic pipelines. All of these features offer extra protection on the network edge. Best of all, the password-protected configuration interface can be accessed remotely.

Model 065-7542

FEATURES

- **Auto-MDI/MDI-X**
  Every port can automatically sense your type of cable, so there is no need for crossover cables whether you are connecting this switch to another switch or to a computer.

- **Auto-Negotiation**
  Every port can automatically sense if the connected network devices are running at 10Mbps or 100Mbps and Half/Full-Duplex mode, and adjust accordingly.

- **Non-Blocking**
  This switch receives and forwards traffic seamlessly with its non-blocking wire-speed. Every port simultaneously supports up to 200 Mbps of bandwidth in full-duplex mode. This feature provides full wire speed to the connected devices and allows you to run a smooth network.

- **Store and Forward**
  By this function, this switch can maximize network performance while minimizing the propagation of bad network packets.

Desktop WebSmart Fast Ethernet Switch

PART NO.	DESCRIPTION
065-7542	24-Port 10/100BaseT/Tx Desktop WebSmart Fast Ethernet Switch

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3x Flow Control
IEEE 802.1Q VLAN Tagging
IEEE 802.1p Class of Service
Priority Protocols

FEATURES
Number of Ports: 24
MAC Address: 4K
Buffer Memory: 1.5 Mbits
Transmission Method: Store and Forward

SMART FEATURES
Management: Password-protected Access,
Port Settings, Web-base Management,
Graphic User Interface

NETWORK CHARACTERISTICS
Filtering/Forwarding Rates:
100Mbps port – 148,800 pps
10Mbps port – 14,880 pps
Transmission Media:
10BaseT Cat. 3, 4, 5 UTP/STP
100BaseTX Cat. 5 UTP/STP

LEDs
Per Port: Link/Act, 10/100M
Per Unit: Power

PHYSICAL CHARACTERISTICS
Power Requirement: 90-260V/AC, 50-60 Hz
Power Consumption: 12 Watts (Max)
Dimensions (L x W x H): 266 × 160 × 44 mm
Weight: 1.7 kg
Operating Temperature: 0° to 55°C
Storage Temperature: -20° to 90°C
Humidity: 10-90% RH (non-condensing)
Certifications: FCC Class A, CE

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

Fast Ethernet 16-Port Desktop Switches

The Signamax 16-Port Ethernet Switches are designed to allow simultaneous transmission of multiple packets via an internal high-speed data channel. This means that it can partition a network more efficiently than bridges or routers in most environments. Signamax 16-Port Ethernet Switch is a highly reliable network Switch and is the ideal device for bridging Ethernet to Fast Ethernet workgroups or networks. Simple and cost-effective, the Signamax Switch supports IEEE 802.3 10Base-T Ethernet and IEEE 802.3u 100Base-TX Fast Ethernet. This Switch is therefore fast being recognized as one of the most important building blocks of current networking technology. The front panel of the Switch provides LEDs for easy recognition of the Switch operation status and for troubleshooting. These LEDs display the power status of the system and link status speed, collision and receives status for each port. With Signamax 16-Port Ethernet Switch designed specifically for connecting workgroup devices and desktops, companies no longer have to invest in expensive and inflexible switches engineered primarily for backbone implementations. Instead, companies can deploy scaleable, affordable Switch that increases the aggregate bandwidth of the network by boosting throughput to the workgroups that need it most.

Model 065-7031

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3x Flow Control
ANSI/IEEE 802.3 NWay Auto-negotiation

PORTS
16 – RJ-45 10/100BaseT/TX ports
(IEEE 802.3 10BaseT; 802.3u 100BaseTX)

PERFORMANCE
Throughput: 148,809 pps (64-byte packets)
Switch Fabric Speed: 065-7031: 3.2 Gbps

PHYSICAL CHARACTERISTICS
Dimensions (L x W x H): 065-7031: 165 x 105 x 28 mm
Weight: 065-7031: 1.1 kg

LED STATUS INDICATORS
Power, Full/Half Duplex, 10/100 Collision,
Link/Activity (all models)

SAFETY
Power supply UL & cUL listed

Model 065-7032A

Model 065-7032A

Fast Ethernet 16-Port Desktop Switches

PART NO.	DESCRIPTION
K19-7031	Rackmount Kit for 065-7031 – 19" Rack
065-7031	16-Port 10/100BaseT/TX Desktop Ethernet Switch, internal power supply, metal case
065-7032A	16-Port 10/100BaseT/TX Desktop Ethernet Switch, external power supply

10/100BaseT/TX Rack Mount Unmanaged Ethernet Switch

Signamax Connectivity Systems' 10/100BaseT/TX Ethernet Switches feature 24 10/100 ports, with the 065-7341 model.

This model transparently pass packets of up to 1,522 bytes, allowing its use in networks utilizing IEEE 802.1p and IEEE 802.1Q tagged packets. In addition, these models support 8K MAC addresses, and provide a true non-blocking switching architecture with full wire speed forwarding. The Signamax 065-7341 Switches provide a lower-cost answer to today's computing needs and high bandwidth requirements.

Model 065-7341

10/100BaseT/TX Rack Mount Unmanaged Ethernet Switch

PART NO.	DESCRIPTION
065-7341	24-Port 10/100BaseT/TX Switch Rack Mount

SPECIFICATIONS

APPLICABLE STANDARDS
   IEEE 802.3 10BaseT
   IEEE 802.3u 100BaseTX
   IEEE 802.3u 100BaseFX
   IEEE 802.3x Flow Control

LEDs
   Per Unit: Power
   Per Port: LNK/ACT; 100 Mbps speed indicator

PHYSICAL CHARACTERISTICS
   Dimensions (W x D x H): 440 x 140 x 44 mm
   Weight: 2.8 kg

MEMORY
   Packet Buffer Size: 2.5 Mb shared packet buffers

PORTS
   24 – Fixed 10/100BaseT/TX ports, RJ45 connectors with Auto-MDIX
   (IEEE 802.3u Type 10BaseT & 100BaseTX)
   Maximum distance:
   IEEE 802.3 10BaseT – 2-pair UTP Cat. 3, 4, 5 or better, up to 100 meters
   IEEE 802.3u 100BaseTX – 2-pair UTP Cat. 5 or better, up to 100 meters

PERFORMANCE
   Throughput: 148,800 pps at 100 Mbps
   14,880 pps at 10 Mbps (64-byte packets)
   MAC Address
   Table Size: 8K entries

ENVIRONMENT
   Operating:
   Temperature: 0° – 40°C
   Relative Humidity: 10-90%, non-condensing
   Altitude: 3,048 meters
   Non-Operating/Storage: Temperature: -25° – 70°C
   Relative Humidity: 10-90%, non-condensing

EMISSIONS
   FCC part 15 Class A, CE Mark Class A

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

16-Port WebSmart 10/100 Managed Ethernet Switch

Signamax Connectivity Systems' WebSmart 10/100 Ethernet Switches feature 16 10/100 ports, an optional 100BaseFX Multi Mode or Single Mode fiber module for longer distance network connections, and easy web-based administration. Fiber optic Multi Mode or Single Mode expansion module options allow installation of fiber cabling anywhere within your existing copper-based network. These switches also include advanced support for port-based Virtual Local Area Networking (VLAN) and multi-port inter-switch trunking for use
in larger-scale networks. WebSmart administrative and configuration capabilities provide network administrators with powerful, easy-to-use tools to reduce unnecessary broadcast traffic, flexibly segment networks, and enhance network security—either by a local cable connection or remotely from any convenient location using a standard web browser.

Model 065-7531A

16-Port WebSmart 10/100 Managed Ethernet Switches

PART NO.	DESCRIPTION
065-7531A	16-Port 10/100BaseT/TX WebSmart 10/100 Switch + 1x Fast Ethernet Fiber Slot
Expansion Modules	
065-75SC	100BaseFX Expansion Module For 10/100 Switch – SC Multi Mode
065-75ST	100BaseFX Expansion Module For 10/100 Switch – ST Multi Mode
065-75SM	100BaseFX Expansion Module For 10/100 Switch – SC Single Mode (15 km span)

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE 802.3u 100BaseFX,
IEEE 802.3x Flow Control

PORTS
16 – RJ45 10/100BaseT/TX Auto-MDIX ports
(IEEE 802.3 Type 10BaseT; 802.3u Type 100BaseTX)
1 – open 100BaseFX interface slot, RJ45 10/100BaseT/TX local console port

LEDs
Per Switch: Power
Per Console Port: Link, Activity
Per Port: Link/Activity, 100 Mbps Speed

PERFORMANCE
Latency: < 6.0 µs (FIFO)
Throughput: 148,810 pps (64-byte packets)
Switch Fabric Speed: 3.6 Gbps
Address Table Size: 2K MAC addresses

PHYSICAL CHARACTERISTICS
Dimensions (W x D x H): 440 x 207 x 44 mm
Weight: Approximately 2.8 kg

EMISSIONS
FCC Class A, CE Mark

SAFETY
UL 1950, CSA, TUV/GS

Model 065-75SC

Model 065-75ST

Gigabit POE Management Switch series

Signamax Gigabit switch 065-7820 POE supports 12x 10/100/1000 Mbps Auto-negotiation, Auto-MDIX Ethernet ports and Power over Ethernet to IEEE 802.3af compliant devices. It's fully compliant with the standards of IEEE 802.3/u/x/z/ab/af. It is equipped with 12 Giga TP ports and 2 of which are dual media ports that accommodate optional 10/100/1000Base-T or SFP modules. In addition, the switch implements the QoS (Quality of Service), Mac Filtering Policy, Port Mirror, VLAN and full L2 protocol. The overall network management is enhanced and the network efficiency is also improved to accommodate high bandwidth applications with security.

Signamax Gigabit POE Management Switch series

PART NO.	DESCRIPTION
065-7820POE	12-Port 10/100/1000BaseT/Tx Gigabit Managed Switch with 2 Combo

SPECIFICATIONS

APPLICABLE STANDARDS
   IEEE 802.3af PoE Standard, IEEE 802.3 10Base-T Ethernet (twisted-pair copper)
   IEEE 802.3u 100Base-T Ethernet (twisted-pair copper)
   IEEE 802.3ab 1000Base-T Ethernet (twisted-pair copper)
   IEEE 802.3z 1000Base-X Ethernet
   IEEE 802.3x Flow Control capability ANSI/IEEE 802.3 Auto-negotiation
   IEEE 802.1p Priority Tag, IEEE 802.1q VLAN

SUBSCRIBER INTERFACE
   12 Gigabit Ethernet ports, Auto-negotiation, Auto-MDIX
   Back pressure flow control for half duplex
   Flow control for full duplex
   Port 11, 12 are TP/SFP Fiber auto sense
   Connector: 12 RJ45 and 2 SFP module

PERFORMANCE
   Switching capacity:
   12 Gigabit Ethernet ports with non-blocking wire speed performance
   8K MAC addresses, 208 KB on-chip frame buffer, Jumbo frame support

QOS
   Supports Layer 4 TCP/UDP Port and ToS Classification
   Supports 802.1p QoS with two level
   Priority queue

BANDWIDTH CONTROL
   Supports bandwidth rating per port ingress and egress rate limit 1,000 Mbps with 1 Mbps increments

VLAN
   Port-base VLAN, IEEE802.1q tag-base VLAN, 4094 Max

PORTS TRUNK
   Ports trunking with 6 trunking group, up to 6 ports for each group

BROADCAST/MULTICAST STORM
   Broadcast Storm control

PORT MIRRORING
   All port support port mirroring

POE FEATURES
   Supports IEEE 802.3af compliant u Supports
   Power over Ethernet (PSE) on each Gigabit UTP port
   Full power support for per POE port, 135W Supported
   Auto detect powered device and consumption levels
   Supports per port power consumption monitoring
   Smart feature for PD on/off, PD detection, power level,
   PD status and power feeding priority
   Circuit protection to prevent power interference between ports
   Supports per port PoE State setting
   Supports per port power priority setting
   LED indicators for POE ready and POE activity

HW SPECIFICATION:
   Power Requirement 220W or 155W , Total Power for PoE 200W or 135W
   Dimensions (H x W x D): 44 x 442 x 211 mm

Modularized 24+2G Access Switch

Emanating from our expertise in developing network communication solutions, the 065-7750 Modularized 24-Port Ethernet Managed Switch incorporates leading switching technology and high-port density within a slim 1-rack unit chassis. The 065-7750 represents an industry first as no other switch in the market today can match the unique 3 x 8-Port modular, 2 GBIC slots plus console port design. This innovation offers the ultimate in flexibility and freedom to "mixand-match" in terms of cabling (fiber + copper) and speed (Ethernet to Gigabit). Furthermore, the available redundant power supply makes the 065-7750 ideal for mission critical installation as it ensures no disruption in service due to surges or drops in power.

Model 065-7751

SPECIFICATION

STANDARDS AND COMPLIANCE
IEEE 802.3: 10BASE-T specification
IEEE 802.3x: Flow control
IEEE 802.3z: 1000BASE-SX/LXspecification
IEEE 802.1d: Spanning-Tree Protocol
IEEE 802.1p: 1Priority Queues
IEEE 802.1q: VLAN Tagging, RFC 1350, TFTP
IEEE 802.1v: VLAN Classification
IEEE 802.3u: 100BASE-TX and 100BASE-FX specification

Model 065-7750

PERFORMANCE
Throughput: 14,880 packets per second (pps) to 10 Mbps ports
148,800 pps to 100BASE-TX ports, 1,488,000 pps to 1000BASE-T ports
Address Table Size: 14K MAC entries
Buffer Memory: 3Mbit Packet Memory
Flash Memory: 512K
VLANs: Port-based or 802.1q- Up to 256 VLANs, with GVRP for dynamic VLAN registration
Link Aggregation: 2-4 ports can be combined into a fat pipe, 7 trunks
Max. Distance: UTP: 100 meters (Category 5e or better)
Fiber: 2,000 meters (62.5/125 micron fiber cabling)
20,000 meters (9/125 micron fiber cabling), 60,000 meters (9/125 micron fiber cabling)
Management via: SNMP, Web Management, Command Line Interface (CLI), Menu-driven (Signamax's proprietary), RS-232 console

NETWORK MANAGEMENT
System Configuration: Console port, Telnet, Web browser, SNMP/RMON NMS
Management Agent: SNMP Support: MIB II, Bridge MIB, Ethernet MIB, RMON MIB, and Signamax's Private MIB
RMON Groups: 1, 2, 3, 9 (Statistics, History, Alarm and Event)
Link Aggregation: 2-4 ports can be combined into a fat pipe, 7 trunks

Model 065-7754

CONNECTORS AND CABLING
Ports: 3 x Fast Ethernet slots (for 8 or 4-Port modules); 2 x GBIC
Module Types: 8-Port 100 Mbps LC, fiber 8-Port; 100 Mbps MT-RJ, fiber
8-Port 10/100 Mbps RJ-45 8-Port; 100Mbps WDM fiber
4-Port 100 Mbps SC fiber 4-Port; 100Mbps ST fiber, 2-Port Gigabit (GBIC)
SNMP control: Out-of- band control: RS-232, In-band control: RJ-45, Fiber

SNMP STANDARDS
RFC 1213: MIB II, RFC 1493, Bridge MIB
RFC 1643: Ethernet MIB, RFC 1757, RMON MIB, Proprietary Signamax MIB

LEDs
Modular Ports:
10/10 0Mbps, Green, Illuminates when data transmission rate 100Mbp
LNK ACT, Green, Flashes or illuminates when transmitting or receiving data packets FDX, Amber, Illuminates when in full duplex mode
Gigabit Ports: LNK ACT, Green, Flashes or illuminates when link pulses from a compliant device

Model 065-7752

POWER CHARACTERISTICS
AC input voltage: 90 to 240V AC (auto-ranging) 50 to 60 Hz
Output: 3.3V DC, 20A & 5V, 1A (71W),
2 Power supplies (1 primary and 1 redundant)

ENVIRONMENTAL CHARACTERISTICS
Operating: Temperature: 0° – 50°C
Humidity: 5-90% (non-condensing)
Storage: Temperature: -28° – 70°C
Humidity: 5-90% (non-condensing)

HARDWARE SPEC.
Height: 4.4 cm, Width: 44 cm, Depth: 28.5 cm
Weight: 4.3 kg fully loaded
Mounting: Standard 19" Rack-mount case

ELECTROMAGNETIC COMPATIBILITY
Emissions: FCC Part 15 of Class A, CE approved

Modularized 24+2G Access Switch

PART NO.	DESCRIPTION
065-7750	Modularized 24+2G Access Switch
065-7751	8-Port 10/100BaseT/TX Module
065-7752	8-Port 100BaseFX Multi Mode LC Module
065-7753	8-Port 100BaseFX Single Mode LC Module
065-7754	4-Port 100BaseFX Multi Mode ST/SC Module

www.signamax.eu

SIGNAMAX™
CONNECTIVITY SYSTEMS

C10

Metro and Metro PoE Stackable Switches with 2 Combo Ports

Signamax Connectivity Systems' new stackable Metro Ethernet Power over Ethernet (PoE) Access Switch provides the capability to remotely power wireless access points, VoIP telephones, Powered Device (PD) Media Converters, and other devices that meet the IEEE 802.1af PoE standard. These switches provide non-blocking performance for two 10/100/1000BaseT/TX Dual Media Gigabit Ethernet ports plus 24 10/100BaseT/TX PoE-equipped ports. The 065-7726SPOE switch shares the same SNMP management package as its 065-7726S counterpart. Both ring and star Gigabit backbone network architectures are supported with full automatic failover AND PoE extension to every workstation. Enhanced Layer 3 look-ahead routing features and IEEE 802.1p Quality of Service / 802.1Q Tagged VLAN / IP Type of Service support make the Signamax 065-7726SPOE switch the cost-effective choice for creating an infrastructure capable of supporting Voice over IP telephony and wireless access.

Model 065-7710

Metro and Metro PoE Stackable Switches with 2 Combo ports

PART NO.	DESCRIPTION
065-7710	Desktop Switch, 10-Port 10/100BaseT + 2x SFP, Management
065-7726S	Rackmount Switch 24-Port 10/100BaseT, 2x SFP, Management, Stackable
065-7726SPOE	PoE, Rackmount Switch 24-Port 10/100BaseT, 2x SFP, Management, Stackable

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX
IEEE 802.3ab 1000BaseT
IEEE 802.3af Power over Ethernet (PoE)
IEEE 802.3z 1000BaseSX/LX
IEEE 802.1p Priority (Quality of Service [QoS])
IEEE 802.1D/802.1w/802.1s Spanning Tree & Rapid Spanning Tree Protocols
IEEE 802.1Q Tagged VLAN with "Q-in-Q" support
IEEE 802.3x Flow Control, IEEE 802.3ad Link Aggregation
IEEE 802.1x Access Control

PERFORMANCE
Latency: < 4.5 µs (LIFO)
Throughput: 1.48810 million pps (64-byte packets)
Switch Fabric Speed: 48.0 Gbps
PoE – 135W Supported

ADMINISTRATION CONSOLE
1 – RS-232C DB-9 local console serial port

PORTS
24 – RJ45 10/100BaseT/TX PoE-equipped ports
2 – Dual Media Gigabit Ethernet ports (2- RJ45 10/100/1000BaseT/TX ports with corresponding Small Form-factor Pluggable [SFP] auto-detecting ports)

Optional Interfaces:
065-77MM: 1000BaseSX SFP fiber optic module with LC Multi Mode fiber connectors
Maximum distance: 220 meters with 62.5/125 micron fiber cabling or 550 meters with 50/125 micron fiber cabling
065-77SM: 1000BaseLX SFP fiber optic module with LC Single Mode fiber connectors
Maximum distance: 10 km with 9/125 micron fiber cabling

SNMP MANAGEMENT
Console port access via RS-232 cable, Telnet remote access, SNMP agent, and Web browser
Kermit/TFTP software-upgrade capability

LEDs
Per Switch: Power, CPU
Per Port: Link/Activity (separate for SFPs), 10/100/1000 speed for RJ45 ports

PHYSICAL CHARACTERISTICS
Dimensions (W x D x H): 442 x 210 x 44 mm
Standard 19" rack mounting (hardware included)
Weight: 3.4 kg

SAFETY
FCC Part 15 Class A & CE Mark Approval

Metro Stackable Switches with 4 Combo Ports

The Signamax 065-7708 switch is an full L2 management 8-Port Fast Ethernet switch, with high performance and competitive price. It's a perfect way to extend your network structure.

The Signamax 065-7728 switch is an full L2 management 24-Port Fast Ethernet switch plus 4 Gigabits port (support auto copper/fiber switching), with high performance and competitive price. It's a perfect way to extend your network structure.

The Signamax 065-7764 switch is an full L2 management 48-Port Fast Ethernet switch plus 4 Gigabits port (support auto copper/fiber switching), with high performance and competitive price. It's a perfect way to extend your network structure.

Model 065-7728

Model 065-7708

Metro Stackable Switches with 4 Combo ports

PART NO.	DESCRIPTION
065-7708	8-Port 10/100BaseT/TX L2 Managed Switch
065-7728	24-Port 10/100BaseT/Tx + 4xCombo RJ45/SFP
065-7764	48-Port 10/100BaseT/Tx + 4xCombo RJ45/SFP

Model 065-7764

SPECIFICATIONS

STANDARDS
IEEE 802.3 10Base-T,
IEEE 802.3u 100Base-TX

CHIP
88E6095+88E6218

ACCESS METHOD
CSMA/CD

MEDIA
UTP CAT3 or up for copper port

LEDs
Power, Link/Activity

Transmission Method: Store and Forward

MAC Address: 8K

Built-in Buffer: 1.5 Mbits

Data Transfer Rate:
10/100Mbps (Half-duplex),
20/200Mbps (Full-duplex for coppoer port)

ENVIRONMENTAL
TEMPERATURE HUMIDITY
  Dimension (LxWxH):
  280 x 173 x 44mm
  Weight: 4,000 g
  Temperature:
  0° – 50°C (operating),
  -20° – 70°C (storage)
  Humidity:
  5-90% non-condensing (operating)
  5-90% non-condensing (storage)

CERTIFICATIONS
FCC Part 15 Class A, CE Mark

FEATURES

- **Build-in power**
- **Supports port mirror**
- **8-Port 10/100 Mbps TX Auto-Negotiation**
- **Support up to 8K MAC address**
- **Up to 1.5M bits packet buffer**
- **Supports IGMP snooping**
- **Supports TP interface Auto MDIX function for auto TX/RX swap**
- **Supports Store & Forward architecture and performs forwarding and filtering**
- **Supports IEEE802.1D Spanning Tree and IEEE802.1w RSTP protocol**
- **Supports 8 groups Port-Based VLAN and 512 groups 802.1q tag VLAN**
- **Compliant with the IEEE802.3 10Base-T Ethernet, IEEE802.3u 100Base-TX**
- **Supports rate control (64 Kbps – 80 Mbps)**
- **Supports to handle up to 1,522 bytes packet**
- **Supports MAC address filter and binding (up to 400 rules)**
- **Supports port trunking (up to 12 groups and 8 ports in each group)**
- **Supports SNMP V1/V2, RMON MIB (group 1, 2, 3, 9)**
- **Supports access switch through Web/Telnet/Console**
- **Supports firmware upgrade through Web/Console**

Compact Fiber Access Switch

Signamax' Connectivity Systems' Compact Fiber Access Switches provide the right port interface you need for fiber-extended networks. The 065-7111 series of switches allows cost-effective fiber extension to small workgroups and Programmable Logic Controller (PLC) clusters. These switches support enterprise-level network extension to distant buildings in a campus environment, and can also extend process control networks over fiber to production or control machinery equipped with PLCs at Fast Ethernet speeds. These switches, to allow administrative and production networks to coexist on the same fiber link transparently pass tagged VLAN and Quality of Service (QoS) packets used to separate and prioritize sub-networks.

Model 065-7111SC

Compact Fiber Access Switch

PART NO.	DESCRIPTION
065-7111SC	Multi Mode Compact Fiber Access Switch – SC

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX
IEEE 802.3u 100BaseFX, IEEE 802.3x Flow Control

PORTS
8 – Fixed 10/100BaseT/TX Auto-MDIX ports, RJ45 connectors; (IEEE 802.3u Type 10BaseT & 100BaseTX)
1 – Fixed 100BaseFX port, SC Multi Mode – connectors (IEEE 802.3u Type 100BaseFX)
Maximum distance: 2,000 meters with 62.5/125 micron or 50/125 micron Multi Mode fiber cabling

LEDS
Per Switch: Power
Per Port: Link/Activity

PERFORMANCE
Throughput:
148,810 pps at 100 Mbps,
14,800 pps at 10 Mbps (64-byte packets)
Switch Fabric
Speed: 1.6 Gbps
Address, Table Size: 2,048 entries

PHYSICAL CHARACTERISTICS
Dimensions (W x D x D): 254 x 135 x 35 mm
Weight: 1.6 kg

EMISSIONS
FCC part 15 Class A, CE Mark Class A, VCCI Class A

MOUNTING
Desktop or wall mounting

SAFETY
UL 1950, RoHS compatible

5- and 8-Port 10/100/1000BaseT/TX Desktop Switches

Signamax Connectivity Systems' 10/1001000BaseT/TX Desktop Switches make it easy to increase user capacity and provide Gigabit Ethernet to devices in a small workgroup. Auto-sensing speed, duplex mode, and Auto-MDIX features automatically handle 10 Mbps, 100 Mbps, and 1,000 Mbps users. State-of-the-art switches provide a straight-forward upgrade from standard or Fast Ethernet, using your existing investment in hardware, cabling and personnel training.
By combining simple installation with compact size, Signamax Gigabit Ethernet desktop switches virtually guarantee high network performance.

Model 065-7908A

5 and 8-Port 10/100/1000BaseT/TX Desktop Switches

PART NO.	DESCRIPTION
065-7905A	5-Port 10/100/1000BaseT/TX Desktop Ethernet Mini Switch
065-7908A	8-Port 10/100/1000BaseT/TX Desktop Ethernet Mini Switch
065-7912	8-Port 10/100/1000BaseT/Tx Desktop WebSmart Ethernet Switch

SPECIFICATIONS

APPLICABLE STANDARDS
IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX
IEEE 802.3ab 1000BaseT, IEEE 802.3x Flow Control
IEEE 802.3z 1000Base-X Ethernet
ANSI/IEEE 802.3 Auto-negotiation,
IEEE 802.1q VLAN

STANDARD COMPLIANCE
8 Gigabit Ethernet ports, Auto-negotiation, Auto-MDIX
Backpressure flow control for half duplex
Flow control for full duplex
Port 7,8 are TP/SFP Fiber auto sense
Connector: 8 RJ-45 and 2 SFP module

PERFORMANCE
Throughput:
1,488,000 pps forwarding rate for 1,000 Mbps
148,800 pps forwarding rate for 100 Mbps
14,880 pps forwarding rate for 10 Mbps (64-byte packets)
Switch Fabric Speed:
model 065-7905A: 10 Gbps
model 065-7908A: 16 Gbps
model 065-7912: 8 Gbps
Address Table Size:
model 065-7905A/065-7912: 8K entries
model 065-7908A: 4K entries

PORTS
5 – RJ45 10/100/1000BaseT/TX Auto-MDI ports
(IEEE 802.3 Type 10BaseT; 802.3u Type 100BaseTX;
IEEE Type 1000BaseT)
8 – RJ45 10/100BaseT/TX Auto-MDI ports (IEEE 802.3 Type
10BaseT; 802.3u Type 100BaseTX; IEEE Type 1000BaseT)

PHYSICAL CHARACTERISTICS
Dimensions (W x D x H):
model 065-7905A: 171 x 98 x 29 mm
model 065-7908A: 190 x 120 x 38 mm
model 065-7912: 132 x 217 x 44 mm
Weight:
model 065-7905A: 254 g
model 065-7908A: 395 g
Desktop or wall mounting, via slots in case.
Voltage: 100-240V
Frequency: 50-60 Hz
Consumption: 20 W
Ambient Temperature: 0° to 50°C
Storage humidity: 5-90%

LEDs
Per Switch: Power, CPU ACT, SFP
Per Port: Link/Activity, 100 Mbps, 1,000 Mbps

SAFETY
Comply with FCC Part 15 Class A & CE Mark Approval

WebSmart Gigabit Ethernet Switches

Signamax Connectivity Systems' 16- and 24-Port WebSmart™ Gigabit Ethernet Switch features 16 or 24 10/100/1000BaseT/TX twisted-pair ports to extend Gigabit Ethernet to your servers and workstation users with high-bandwidth requirements. This switch also includes advanced support for port-based Virtual Local Area Networking (VLAN) and multi-port inter-switch trunking for use in larger-scale networks. WebSmart™ administrative and configuration capabilities provide network administrators with powerful, easy-to-use tools to reduce unnecessary broadcast traffic, flexibly segment networks, and enhance network security—either by a local cable connection or remotely from any convenient location using a standard web browser.

Model 065-7942

WebSmart Gigabit Ethernet Switches

PART NO.	DESCRIPTION
065-7932	Gigabit Switch 16-Port 10/100/1000BaseT/TX, WebSmart, 4Combo Ports
065-7942	Gigabit Switch 24-Port 10/100/1000BaseT/TX, WebSmart, 4Combo Ports

SPECIFICATIONS

STANDARDS COMPLIANCE
  IEEE 802.3 10Base-T Ethernet (twisted-pair copper)
  IEEE 802.3u 100Base-T Ethernet (twisted-pair copper)
  IEEE 802.3ab 1000Base-T Ethernet (twisted-pair copper)
  IEEE 802.3z 1000Base-X Ethernet,
  IEEE 802.3x Flow Control capability
  ANSI/IEEE 802.3 Auto-negotiation, IEEE 802.1q VLAN

SUBSCRIBER INTERFACE
  16/24 Gigabit Ethernet ports, Auto-negotiation, Auto-MDIX
  Backpressure flow control for half duplex
  Flow control for full duplex
  Port 13, 14, 15 and 16 are TP/SFP Fiber auto sense
  Connector: 16/24 RJ45 and 4 SFP module

PORT TRUNK
  Port trunking with 8 trunking group, Up to 12 ports for each group

BROADCAST STORM
  Broadcast Storm suppression

PERFORMANCE
  Switching capacity:
  32 Gbps forwarding bandwidth for switch, nonblocking switch fabric
  Wire Speed Performance:
  8K MAC addresses, 272 KB on-chip frame buffer, Jumbo frame support

VLAN
  Port-base VLAN, IEEE802.1q tag-base VLAN, 4094 Max

QOS
  Supports Layer 4 TCP/UDP Port and ToS Classification
  Supports 802.1p QoS with two level priority queue

PORT MIRRORING
  All port support port mirroring

HW SPECIFIACTION
  Power Consuption: 30W max.
  Dimensions (H x W x D): 44 x 442 x 209 mm
  Veight: 2.78 kg

Gigabit Management Switch

The 065-7840/065-7850 is a L2 managed Gigabit switch that supports SNMP, Web UI and CLI management interface. It is equipped with 24/8 Giga TP ports and 2/16 Giga ports which accommodate optional SFP modules. In addition, the switch implements the QoS (Quality of Service), Mac Filtering Policy, Port Mirror, VLAN and full L2 protocol. It is suitable for workgroups or WAN edge application.

Model 065-7850

Model 065-7840

Gigabit Management Switch

PART NO.	DESCRIPTION
065-7840	Gigabit Switch 24-Port 10/100/1000BaseT/TX + 2 SFP Slots, L2 Management
065-7850	Gigabit Switch 8-Port 10/100/1000BaseT/TX + 16 SFP Slots, L2 Management

SPECIFICATIONS

STANDARDS COMPLIANCE
IEEE 802.3x Flow Control capability
IEEE 802.1q VLAN, IEEE 802.1p

PERFORMANCE
Switching capacity:
24 Gigabit Ethernet ports with non-blocking wise speed performance
8K MAC addresses
400 KB on-chip frame buffer
Supports Jumbo frame support, up to 9K
Broadcast/Multicast Storm Suppression
Port Mirroring

VLAN
Port-base VLAN;
IEEE802.1q tag-base VLAN, up to 256 active VLANs
Q-in-Q is an efficient method for enabling Subscriber Aggregation

QOS
Supports Layer 4 TCP/UDP Port and ToS Classification
Supports 802.1p QoS with two level priority queue
Supports priority in a Q-in-Q tag

BANDWIDTH CONTROL
Supports bandwidth rating per port ingress and egress rate limit 1,000 Mbps with 1 Mbps increments

PROTOCOL
LACP, Port trunking with 8 trunking group
Up to 12 ports for each group, GVRP/GARP
802.1q with GVRP/ GARP
Multicastingppression.ort.el priority queue
Supports IGMP snooping including active and passive mode
STP/RSTP, 802.1d/1w/1s STP

NETWORK SECURITY
802.1x access control
Management Access Policy Control (ACL)
Snmpv1, v2c Network Management

HW SPECIFIACTION:
Power Consuption 30W max.
Dimensions (H x W x D): 44 x 442 x 209 mm

Advanced Gigabit L2 Managed Switches

065-7841/065-7851, a 24-Port Gigabit L2 Managed Switches, is a standard switches that meet all IEEE 802.3/u/x/z Gigabit, Fast Ethernet specifications. The switches include 24-Port 10/100/1000 Mbps TP and 4-Port Gigabit TP/SFP Fiber management Ethernet switch. The switch can be managed through RS-232 serial port, or through Ethernet port using CLI or Web-based management unit, associated with SNMP agent. With the SNMP agent, the network administrator can logon the switch to monitor, configure and control each port's activity in a friendly way. The overall network management is enhanced and the network efficiency is also improved to accommodate high bandwidth applications. In addition, the switch features comprehensive and useful functions such as QoS (Quality of Service), Spanning Tree, VLAN, Port Trunking, Bandwidth Control, Port Security, SNMP/RMON, IGMP Snooping capability via the intelligent software. It is suitable for both metro-LAN and office applications.

Model 065-7841

Advanced Gigabit L2 Management Switches

PART NO.	DESCRIPTION
065-7841	Gigabit Switch 24-Port 10/100/1000BaseT/TX + 4 Combo Slots, Management
065-7851	Gigabit Switch 8-Port 10/100/1000BaseT/TX + 16 SFP Slots, Management

FEATURES

- **4 Dual Media for Flexible Fiber Connection**
- **9KB Jumbo Frame Support**
- **SSH/SSL/TACACS+/RADIUS for security network management**
- **Port Mirroring Helps Supervisor Monitoring Network**
- **Q-in-Q VLAN for performance & security and 4094 Vlan entries**
- **802.1x Access Control Improve Network Security**
- **802.1D Compatible, 802.1w Rapid Spanning Tree and 802.1s Multiple Spanning Tree**
- **Unknown Unicast/Broadcast/Multicast Storm Control**
- **Multicast Vlan Management for IPTV**
- **IP-Mac-Port binding for LAN security**
- **Based on Application traffic for QoS and rate limitation management**
- **DHCP relay agent**

SPECIFICATIONS

STANDARDS COMPLIANCE
   IEEE 802.3x Flow Control capability
   IEEE 802.1q VLAN, IEEE 802.1p

PERFORMANCE
   Switching capacity:
   24 Gigabit Ethernet ports with non-blocking wise speed performance
   8 K MAC addresses, Supports Jumbo frame support, up to 9K
   Unknown Unicast/Broadcast/Multicast Storm Suppression
   Port Mirroring
   WLAN:
   Port-base VLAN
   IEEE802.1q tag-base VLAN, up to 4k active VLANs
   Q-in-Q is an efficient method for enabling Subscriber Aggregation
   Multicast Vlan management
   VSM (Virtual Stacking Management)
   Support 16 devices stacking
   Multiple switches can be managed via one IP address,
   just like software stacking
   Low cost and easily to establish network environment,
   not extra hardware require
   Not center on the physical location of wiring closets

QOS
   Supports Layer 4 TCP/UDP Port and ToS Classification
   Supports 802.1p QoS with two level priority queue
   Supports priority in a Q-in-Q tag

BANDWIDTH CONTROL
   Supports bandwidth rating per port ingress and egress
   rate limit 1000 Mbps with 1 Mbps

PROTOCOL
   LACP: Port trunking with 12 trunking group up to 16 ports for each group
   GVRP/GARP: 802.1q with GVRP/ GARP
   Multicasting: Supports IGMP snooping including active
   and passive mode
   STP/RSTP/MSTP: 802.1d/1w/1s

NETWORK SECURITY
   802.1x access control for port based and mac based authentication
   Management Access Policy Control, Access control List,
   IP-mac-port binding, DHCP relay agent

24-Port 10/100BaseT/TX + 4G Combo L3 Switch

The Signamax L3 Switch is a high performance managed SNMP Layer 3 switch that provides users with 24 x 10/100 Mbps Ethernet and 4 Gigabit Combo ports. The Web/SNMP management provides remote control capability that gives flexible network management and monitoring options. Whether managed through "n-band" SNMP management station, internet web browser, or through "out-of-band" RS-232 console port, the 065-7428 facilitates network operational control and diagnosis.

For increased bandwidth application, 065-7428 can accommodate up to 32 trunk groups with LACP link aggregation. Moreover, these trunk ports are with fair-over function to provide redundant back up if one or more of ports are malfunctioning. It also supports both 802.1Q VLAN and GVRP VLAN Registration thereby simplifying network traffic segmentation, broadcast domain extension and other associated benefits of constructing VLANs. The abundance of features translates into increased efficiency and performance in network administration.

Model 065-7428

SPECIFICATIONS

STANDARDS
IEEE 802.3 10Base-T,
IEEE 802.3u 100Base-TX,
IEEE802.3ab 1000Base-T,
IEEE802.3z 1000Base-X

MEDIA
UTP CAT3 or up for copper port,
Single-mode or Multi-mode fiber
(with SFP connect) for fiber port

CHIP
BCM5650+BCM5248+
BCM5464S+IXP420

ACCESS METHOD
CSMA/CD

MAC Address: 16K

Built-in Buffer: 256 Mbits

Data Transfer Rate:
10/100Mbps (Half-duplex),
20/200/2000 Mbps
(Full-duplex for coppoer port),
2000 Mbps only for fiber port

LEDs
Power, Link/Activity

**ENVIRONMENTAL
TEMPERATURE HUMIDITY**
Dimension (LxWIH):
438 x 250 x 44 mm
Weight: 5,000 g
Temperature:
0° to 50°C (operating),
-20° to 70°C (storage)
Humidity:
5 to 90% non-condensing (operating),
5 to 90% non-condensing (storage)

CERTIFICATIONS
FCC Part 15 Class A, CE Mark

FEATURES

- Compliant with the IEEE802.3 10Base-T Ethernet, IEEE802.3u 100Base-TX, IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-X specifications
- 24 port 10/100 Mbps TX Auto-Negotiation and 4 port 10/100/1000 Mbps TX and 4 1000 Mbps SFP port (shared with 10/100/1000M port)
- Supports TP interface Auto MDIX function for auto TX/RX swap
- Support up to 16K MAC address,16K IPv4 routing table
- Up to 256M bits packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Supports Jumbo frame up to 9 KB
- Support RIP1/RIP2 routing
- Support OSPF routing
- VLAN 802.1q tag VLAN (up to 4K group)
- Support rate control (64 Kbps – 100 Mbps for Fast Ethernet port and 64 Kbps – 1,000 Mbps for Gigabits port)
- Support port mirror
- Support IEEE802.1D Spanning Tree and IEEE802.1w RSTP protocol
- Support Layer2-Layer7 packet classification and filtering at line rate
- Supports SNMP V1/V2, RMON MIB (group 1, 2, 3, 9)
- Supports access switch through Web/Telnet/Console
- Supports firmware upgrade through Web/Console
- Build-in power

24-Port 10/100BaseT/TX + 4G Combo L3 Switch

PART NO.	DESCRIPTION
065-7428	L3 Managed 24-Port + 4G Combo Switch
065-7429	Advanced L3 Managed 24-Port 10/100BaseT/TX + 4G Combo Switch

Hardened Ethernet Switches

The Signamax Hardened series compact Fast Ethernet Switches are equipped with 5-Port 10/100Base-TX or 4-Port 10/100Base-TX plus 1-Port 100Base-FX. By using standard auto-negotiation and the inclusion of auto-MDIX, Signamax provides a cost-effective way of integrating legacy 10 Mbps networks with 100 Mbps Fast Ethernet networks. The TX ports auto-negotiate for 10/100 Mbps speed and auto-detect Full or Half-duplex mode. The fiber port accommodates SC and ST with a fiber connection between two nodes that can reach up to 120 Km (74.4 miles). The Signamax hardened switch series can be DIN-Rail mounted and is equipped with Terminal Block power input to match the applications that require an Ethernet Switch.

Model 065-7405

Model 065-74081

Model 065-7408

Hardened Ethernet Switches

PART NO.	DESCRIPTION
065-7405	Hardened Unmanaged Switch with 5-Port 10/100BaseT/TX
065-74051	Hardened Unmanaged Switch with 4-Port 10/100BaseT/TX + 1-Port 100BaseFX SC, MM
065-74052	Hardened Unmanaged Switch with 4-Port 10/100BaseT/TX + 1-Port 100BaseFX SC, SM
065-7401	Hardened Unmanaged Switch with 1-Port 10/100BaseT/TX + 1-Port 100BaseFX SC, MM
065-7402	Hardened Unmanaged Switch with 1-Port 10/100BaseT/TX + 1-Port 100BaseFX SC, SM
065-7408	Hardened Unmanaged Switch with 8-Port 10/100BaseT/TX
065-74081	Hardened Unmanaged Switch with 8-Port 10/100BaseT/TX + 1-Port 100BaseFX SC, MM
065-74082	Hardened Unmanaged Switch with 6-Port 10/100BaseT/TX + 2-Port 100BaseFX SC, MM
065-74084	Hardened Unmanaged Switch with 4-Port 10/100BaseT/TX + 4-Port 100BaseFX SC, MM

SPECIFICATIONS

STANDARD
IEEE802.3 10Base-T, IEEE802.3u 100Base-TX/100Base-FX
IEEE802.3x

PERFORMANCE
Forward and Filtering Rate:
14,880 pps for 10 Mbps
148,810 pps for 100 Mbps
Packet Buffer Memory: 384 Kbits
Processing Type:
Store-and-Forward
Half-duplex back-pressure and IEEE802.3x full-duplex flow control
Address Table Size: 2,048 MAC addresses
Latency: Less than 5.1 µs

LEDs
Per Unit: Power Status (Power 1, Power 2)
Per Port: 10/100TX, 100FX: Link/Activity (Green), Speed (Yellow)

PHYSICAL CHARACTERISTICS
Power Input:
Input Voltage: 12 to 48V DC (Terminal Block)
Input Current: 0.1A Max. (Terminal Block)
Power Consumption: 2.4W Max.
Reverse Polarity Protection: Present
Mechanical Casing: Plastic case
Dimensions (W x D H): 25 x 70 x 110 mm
Weight: 0.2 Kg
Installation: DIN-Rail Mounting
Environment Operating Temperature: -10° – 60 °C
Storage Temperature: -25° – 85°C
Ambient Relative Humidity: 10-95% (non-condensing)

REGULATORY APPROVALS EMISSION COMPLIANCE:
FCC Part 15, Class A , CE

SAFETY
UL 60950

Hardened Managed Switches

The 065-741xx series, managed, Ethernet switches are designed to operate in the harsh environments at the edge of the network. Whether on the factory floor or the street corner, the 065-741xx will provide flawless communications when you need it most. The 065-741xx is a managed switch with the flexibility of eight 10/100 Ethernet ports that may be configured in various combinations of copper and fiber optic interfaces.

To increase its flexibility a 9th port may be added that is a Gigabit Ethernet interface, configured with copper or fiber optics. Flexibility is a main feature of the 065-741xx series product and it will fit any application that requires a tough, environmentally hardened Ethernet switch.

FEATURES

- **4 Dual Media for Flexible Fiber Connection**
- **9KB Jumbo Frame Support**
- **SSH/SSL/TACACS+/RADIUS for security network management**
- **Q-in-Q VLAN for performance & security and 4094 Vlan entries**
- **DHCP relay agent**
- **Multicast Vlan Management for IPTV**
- **IP-Mac-Port binding for LAN security**
- **802.1x Access Control Improve Network Security**
- **802.1D Compatible, 802.1w Rapid Spanning Tree and 802.1s Multiple Spanning Tree**
- **Unknown Unicast/Broadcast/Multicast Storm Control**
- **Port Mirroring Helps Supervisor Monitoring Network**
- **Based on Application traffic for QoS and rate limitation management**

Model 065-7418

Hardened Managed Switches

PART NO.	DESCRIPTION
065-7418	Hardened Managed Switch with 8-Port 10/100BaseT/TX
065-74181	Hardened Managed Switch with 8-Port 10/100BaseT/TX + 1-Port 100BaseFX
065-74182	Hardened Managed Switch with 6-Port 10/100BaseT/TX + 2-Port 100BaseFX
065-74184	Hardened Managed Switch with 4-Port 10/100BaseT/TX + 4-Port 100BaseFX
065-74185	Hardened Managed Switch with 8-Port 10/100BaseT/TX + 1-Port 10/100/1000BaseTX
065-74186	Hardened Managed Switch with 8-Port 10/100BaseT/TX + 1-Port 1000BaseSX
065-74187	Hardened Managed Switch with 8-Port 10/100BaseT/TX + 1-Port 1000BaseLX – 10 Km
065-74187ED	Hardened Managed Switch with 8-Port 10/100BaseT/TX + 1-Port 1000BaseLX – 20 Km

SPECIFICATIONS

STANDARD
IEEE802.3 10Base-T, IEEE802.3u 100Base-TX/100Base-FX, IEEE802.3ab 1000Base-T, IEEE802.3z 1000Base-SX/1000Base-LX, IEEE802.3x, IEEE802.1Q, IEEE802.1p, IEEE802.1w

PERFORMANCE
Protocols: IGMP, GVRP, SNMP V1/V2, RMON, TFTP
Forward and Filtering Rate:
14,880 pps for 10 Mbps
148,810 pps for 100 Mbps
1,488,100 pps for 1,000 Mbps
Packet Buffer Memory: 256 Kbits
Processing Type: Store-and-Forward
Half-duplex back-pressure and IEEE802.3x full-duplex flow control
Address Table Size: 4KMAC addresses
Latency: Less than 9.6 µs

LEDs
Per Unit: Power Status (Power 1, Power 2)
Per Port: 10/100TX, 100FX: Link/Activity (Green), Speed (Yellow)
10/100/1000TX, 1000SX/LX: Link (Green), Activity (Yellow)

PHYSICAL CHARACTERISTICS
Power Input:
Input Voltage: 12V DC (Power Jack); 10 to 30V DC (Terminal Block)
Input Current: 2A Max
Power Consumption: 12V DC@1.48A, 24V DC@0.77A, 18.48W Max.
Reverse Polarity Protection: Present
Mechanical Casing: Aluminumcase
Dimensions (W x D x H): 50 x 125 x 135 mm
Weight: 0.8 Kg
Installation: DIN-Rail, Panel, Rack Mounting
Environment Operating Temperature: -34° – 74 °C
Storage Temperature: -40° – 85°C
Ambient Relative Humidity: 10-95% (non-condensing)

REGULATORY APPROVALS EMISSION COMPLIANCE:
FCC Part 15, Class A

SAFETY
UL 60950, EN 60950, IEC 60950, IEC 61000-6-2

4-Port Broadband Access Router

The Signamax 065-1507 Broadband Access Router is an intelligent solution for sharing Calble Modem or DSL services between home computers, small office computers, or branch office installlation. The built-in 4-Port switch facilitates file sharing at either 10 Mbps or 100 Mbps, automatically determining the fastest possible connection speed and duplex mod. It also provides print server capabilities as well, to allow printer sharing between users without requiring a particular computer to be left on at all times. The 065-1507 Broadband Router incorporates a hardware-based firewall, securing your PCs from unwanted outside users breaking into your files an possibly using your PCs for illegal purposes.

Model 065-1507

Model 065-1507

4-Port Broadband Access Router

PART NO.	DESCRIPTION
065-1507	4-Port Broadband Access Router w. USB printer port

FEATURES

- **Allows multiple PCs to share one Internet connection**
- **Built-in firewall to protect your computers**
- **Integrated 4-Port 10/100BaseT/TX auto-sensing Fast Ethernet LAN switch**
- **WAN Port**
- **Built-in print server**
- **Web browser-based configuration and management**
- **DHCP Server**
- **Dynamic DNS**
- **Virtual Server**
- **Port Filter**

SPECIFICATIONS

PORTS:
4x RJ45 10/100BaseT/TX Local Area Network (LAN) ports
1x RJ45 10/100BaseT/TX Wide Area Network (WAN) port
1x DB-25 female parallel printer port
1x Serial Port

SUPPORTED PLATFORMS:
Win95/98/NT/2000XP; Unix LPR
Web-based configuration and management
Power, 10/100, System Status, LAN Link/Activity, WAN Link/Activity
External AC Power Supply
Desktop and wall mounting
Power supply UL & cUL listed
FCC Part 15 Class B, CE Mark B, VCCI-B

Signamax USB NAS

Signamax 065-1520 USB NAS can quickly and easily connect USB 2.0 hard drives. Add Gigabytes of storage to your existing LAN. You can connect up to 4 additional hard drives to provide over 1 Terabyte of shared storage for your networked computers, Windows, Mac and Unix. A great tool to use for sharing music and photo files or backup of network PC's and/or file servers.

Model 065-1520

Signamax USB NAS

PART NO.	DESCRIPTION
065-1520	Signamax USB NAS

SPECIFICATIONS

HARDWARE

- **Supported Standards: USB 1.1/2.0, IEEE 802.3, IEEE 802.3u**
- **Ports: 1-Port RJ45 10/100 Ethernet 4-Ports USB 2.0**
- **Buttons: Power, Configuration Reset**
- **Cabling Type: Category 5 Ethernet**
- **LED's: Power, Ethernet Link USB1, USB2, USB3, USB4**
- **Dimensions: 85 x 155 x 25 mm**
- **Unit Weight: 350 g**
- **Power Input: External, 5V DC, 2A**
- **Certifications: FCC, CE**
- **Operating Temp: 5° – 40°C**
- **Storage Temp: -10° – 60°C**

SOFTWARE

- **Linux Operating System**
- **User-friendly Web Based Interface**
- **Finder App to discover any number of 065-1520 devices**
- **Merges with existing Windows Workgroups**
- **DHCP client or fixed IP address**
- **File Sharing: FTP, SMB**
- **Printer Sharing**
- **Support for Windows**
- **Access Control List**
- **File System: FAT12/16/32, NTFS (read only)**
- **Support Multi Partition of Mass Storage**
- **Plug-in & Play hard drives—no need to power off to remove***

* Drives should be de-activated through the Web Based Interface to ensure no data loss.

SFP Fiber Modules

The 065-77SM is a high performance and cost-effective module for serial optical data communication applications specified for single-mode of 1.25 Gbps. It operates with + 3.3V power supply. The module is intended for single-mode fiber, operates at a nominal wavelength of 1,310 nm and complies with Multi-source Agreement (MSA) Small Form Factor Pluggable (SFP).

Each module consists of a transmitter optical subassembly, a receiver optical subassembly and an electrical subassembly. All of them are housed in a metal package and the combination produces a reliable component.

This module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications and to provide IEEE-802.3z compliant link for 1.25 Gbps intermediate reach applications.

The 065-77SM transceivers use a intermediate wavelength (1,310 nm) FP laser diode to enable data transmissions of up to 10km on a single mode optical fiber.

Model 065-77FESM

Model 065-77AMM
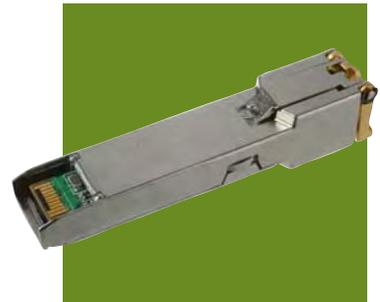
Model 065-77SM

Model 065-77RJ

SFP Fiber Modules

PART NO.	DESCRIPTION
065-77MM	SFP Fiber Module, Connector LC Multi Mode
065-77SM	SFP Fiber Module, Connector LC Single Mode
065-77AMM	SFP Fiber Module, Connector LC Multi Mode, Signamax Compatible
065-77ASM	SFP Fiber Module, Connector LC Single Mode, Signamax Compatible
065-77MAN	SFP Transceiver, RoHS Compliant 1.25 Gbps Managed, 1,310 nm, FP Laser
065-77RJ	SFP Transceiver, RoHS Compliant 1.25 Gbps 1000Base-T, RJ-45 Connector
065-77FEMM	SFP Transceiver, RoHS Compliant 100 Mbps Multi Mode, 1,310 nm, LED
065-77FESM	SFP Transceiver, RoHS Compliant 100 Mbps Single Mode, 1,310 nm, FP Laser
065-77WDMA	SFP Fiber Module Connector LC Single Mode WDM, Rx = 1,550, Tx = 1,310
065-77WDMB	SFP Fiber Module Connector LC Single Mode WDM, Tx = 1,550, Rx = 1,310
065-77CWDM1470	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,470 nm, 10 km
065-77CWDM1490	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,490 nm, 10 km
065-77CWDM1510	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,510 nm, 10 km
065-77CWDM1530	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,530 nm, 10 km
065-77CWDM1550	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,550 nm, 10 km
065-77CWDM1570	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,570 nm, 10 km
065-77CWDM1590	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,590 nm, 10 km
065-77CWDM1610	SFP Fiber Module LC Singlemode CWDM, 1.25 Gbps, 3.3V, 1,610 nm, 10 km

10 Gbps Modules

10 Gbps XENPAK transceiver module 065-10GMM is a hot pluggable module in the Z-direction that is usable in typical router line card applications, Storage, IP network and LAN and compliant to XENPAK MSA. The maximum transmission length of 065-10GMM is defined from 26m to 300m, depending on Multi Mode fiber types.

The 065-10GMM is a fully integrated 10.3 Gbit/s optical transceiver module that consists of a 850 nm wavelength VCSEL optical transmitter and receiver, XAUI interface, Mux and Demux with clock and data recovery (CDR).

Mechanical dimensions, connecters and footprint of 065-10GMM conform to XENPAK MSA. The module size is 4.76 x 1.42 x 0.46" with 70-pin electrical connector. The maximum power consumption is 4.0 W and power supply voltages are +3.3 V and +1.8 V.

10 Gbps Modules

PART NO.	DESCRIPTION
065-10GMM	10 Gbps module, 850 nm SC, 300 m
065-10GSM	10 Gbps module, 1,310 nm SC, 10 km
065-10GSMED	10 Gbps module, 1,550 nm SC, 40 km
065-10GBSMXLD	10 Gbps module, 1,550 nm SC, 80 km

SPECIFICATIONS

065-10GMM

- **10 Gbps (10.3125 Gbit/s) Transceiver**
- **Compliant to IEEE 802.3ae 10GBASE-SR Application**
- **XAUI Electrical Interface: 4 Lanes @ 3.125 Gbit/s**
- **Hot Z-Pluggable**
- **SC-Duplex Optical Receptacle**
- **MDIO, DOM Support**
- **850 nm wavelength VCSEL for Optical light source**
- **PIN Photo-detector**
- **Up to 300 m reach over 50/125 µm MMF with Minimum modal bandwidth @ 850 nm of 2,000 MHz**
- **Operating Case Temperature: -5° to 70°C**
- **Compliant to XENPAK MSA**
- **Mechanical Footprint (L x W x H): 4.76 x 1.42 x 0.46"**

065-10GSM

- **XAUI Electrical Interface: 4 Lanes @ 3.125 Gbit/s**
- **Hot Z-Pluggable**
- **SC-Duplex Optical Receptacle**
- **MDIO, DOM Support**
- **Uncooled 1.3 m DFB-LD**
- **PIN Photo-detector**
- **Operating Case Temperature: 0° to 70°C**
- **Compliant to IEEE 802.3ae 10GBASE-LR Application**
- **Compliant to XENPAK MSA**
- **Mechanical Footprint (L x W x H): 4.76 x 1.42 x 0.46"**

065-10GBSMXLD

- **80 km Transmission Distance**
- **[TRE7062ENabcSW] 100 GHz DWDM application**
- **Cooled 1550-nm EA-DFB Transmitter and APD Receiver**
- **XAUI Electrical Interface: 4 Lanes @ 3.125 Gbit/s**
- **Comply with XENPAK MSA for ER application with expansion to 80 km**
- **Hot Pluggable**
- **SC-Duplex Optical Receptacle**
- **MDIO, DOM Support**
- **Operating Case Temperature: 0° to 70°C**
- **Mechanical Footprint (L x W x H): 4.76 x 1.42 x 0.46"**

065-10GSMED

- **XAUI Electrical Interface: 4 Lanes @ 3.125 Gbit/s**
- **Hot Z-Pluggable**
- **SC-Duplex Optical Receptacle**
- **MDIO, DOM Support**
- **1.55 m laser**
- **PIN Photo-detector**
- **Operating Case Temperature: 0° to 70°C**
- **Compliant to IEEE 802.3ae 10GBASE-ER**
- **Compliant to XENPAK MSA**

NETWORK CONNECTIVITY SYSTEMS

SIGNAMAX™
CONNECTIVITY SYSTEMS
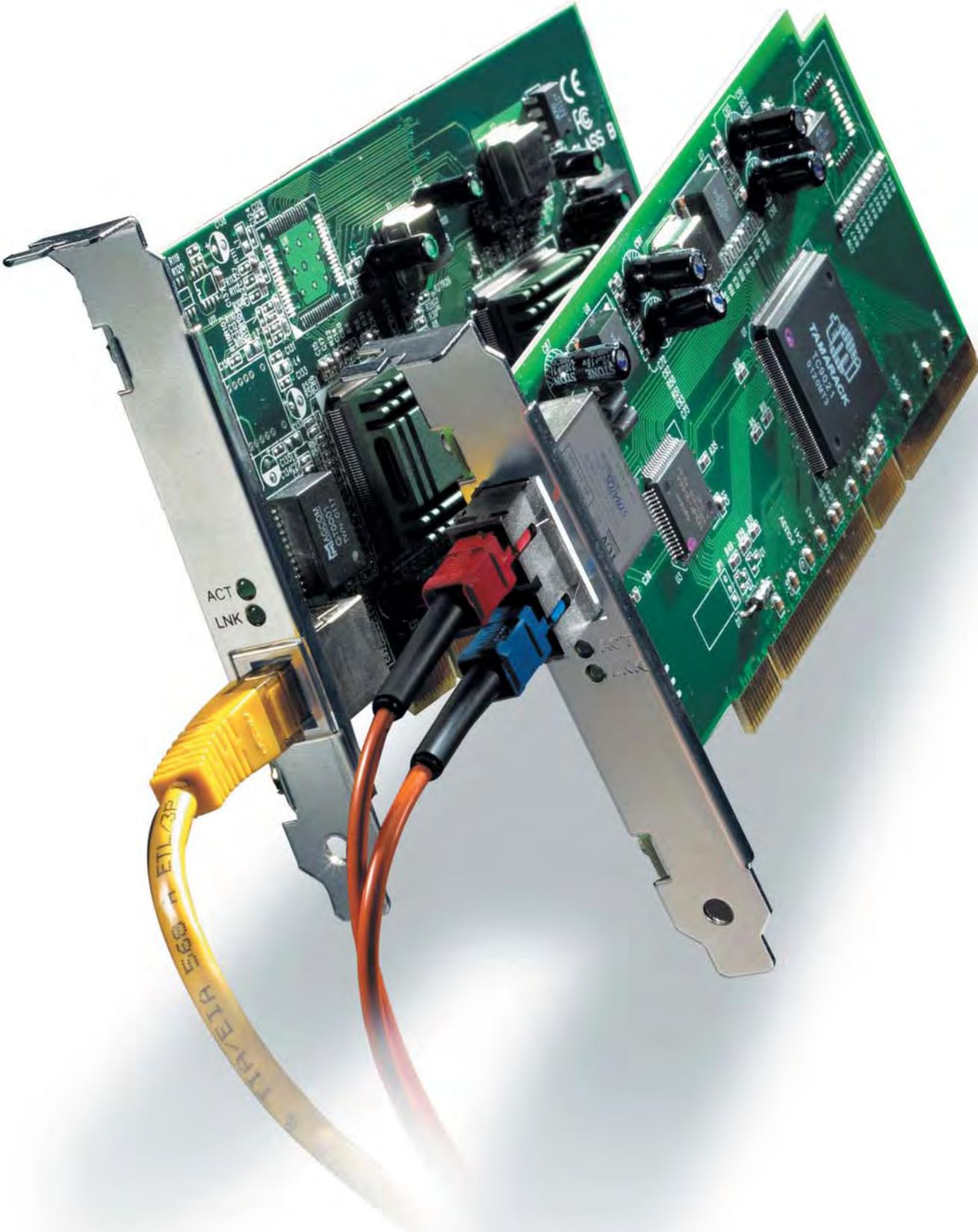
Network Interface Cards

D

Gigabit Ethernet PCI Adapter Cards
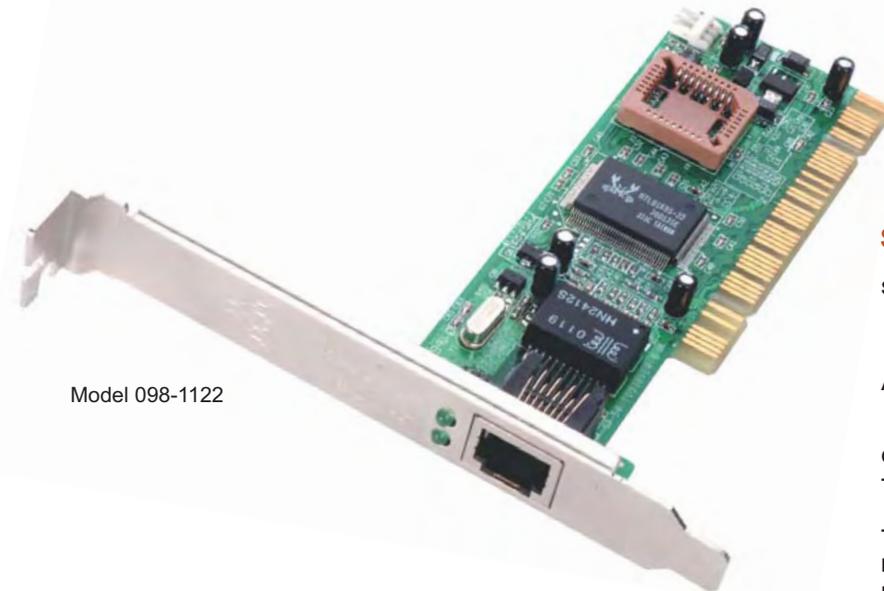
Fast Ethernet PCI Adapter Cards

Gigabit Ethernet PCI Adapter Card

Signamax Connectivity Systems' Gigabit network adapter cards are used wherever it is necessary to provide Gigabit Ethernet capability directly into a server or workstation. These cards utilize the new high-speed 64/32-bit PCI Bus Mastering architecture and support IEEE 802.1p Quality of Service (QoS) and 802.1Q VLAN Tagging standards for complete network optimization.

The model 098-1122 twisted-pair LAN card supports the IEEE 802.3ab 1000BaseT specification in a Category 5E or better cabling system, using a standard RJ-45 jack. This card also supports 10BaseT and 100BaseTX transmission, allowing its use in networks evolving to Gigabit Ethernet.

Model 098-2000SX

Model 098-1122

SPECIFICATIONS

STANDARD COMPLIANCE
IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
IEEE 802.3ab 1000BASE-T

ARCHITECTURE
PCI 2.1/2.2 (6/33 MHz)
32 bit & 64 bit

CONNECTOR: RJ-45

TRANSMISSION RATE
10/100/1,000 Mbps

TOPOLOGY: Star

PROTOCOL: CSMA/CD

NETWORK TRANSMISSION MEDIA
10BASE-T Cat. 3, 4, 5 UTP/STP
100BASE-TX Cat. 3, 4, 5 UTP/STP
1000ASE-TX Cat. 5, 6 UTP/STP

LED
100 Mb LINK/ACT, 1 Gb LINK/ACT

PHYSICAL CHARACTERISTICS
Power Consumption: 7 Watts (Max)
Weight: 0.095 kg
Operating Temperature: 0° – 55°C
Store Temperature: -20° – 70°C
Dimension: 122.2 x 42.9 mm
Humidity: 10-90% (Non-condensing)

SAFETY & EMI CERTIFICATES
CE & FCC-B

Gigabit Ethernet PCI Adapter Card

PART NO.	DESCRIPTION
098-1122	10/100/1000BaseT/TX PCI Network Adapter Card
098-2000SX	1000BaseSX – SC Multi Mode

FEATURES

- Support Auto-negotiation function
- Auto-setups IRQ and I/O address
- Supports Virtual LAN (VLAN) and long frame (1,536 Bytes)
- Supports 802.1D and 802.1Q priority queuing
- IPv.4 checksum task off-loading
- Supports MDIX at 10; 100; 1,000 Mb/s
- Supports Jumbo packets (9K)
- Supports 64/32 bit, 66/33 MHz PCI Bus Master for high performance
- Full duplex design to double the performance to 20/200/2,000 Mbps
- One STP connector for 1,000 Mbps, 100 Mbps or 10 Mbps network speed
- Net System: NDIS 4,5 driver for Microsoft Windows 95/98, Win2000, Me, Netware driver for Server V.4/5, UNIX, Linux
- Compliant with PC 97 and PC 98 Hardware Design Guides, PC 99 Hardware Design Guide draft. ACPI v1.0, PCI Power Management Specification v1, OnNow Device Class Power Management Reference Specification—Network Device Class v1.0a
- Wake on LAN (WOL) support compliant with PC98, PC99, and OnNow, including directed packets, Magic Packet TM, ARP packets, pattern mach packets, and Phy status change

Fast Ethernet PCI Adapter Cards

098-1111, the most cost-effective solution for end users, is equipped with Auto-negotiation function. Auto-negotiation function has become the basic requirement of network adapters. It automatically supports data transmission speeds ranging from 10 Mbps to 200 Mbps. This function smoothly and automatically switches drivers between 10 Mbps and 100 Mbps, Full- or Half-duplex, LAN connections.

Furthermore, an optional Boot ROM socket is provided to allow administrators to boot diskless computers from remote servers. This function is most frequently used for schools, libraries or other public buildings. 098-1111 runs in 32-bit PCI bus master mode. It is compliant with industrial standards and its drivers support all major operating systems.
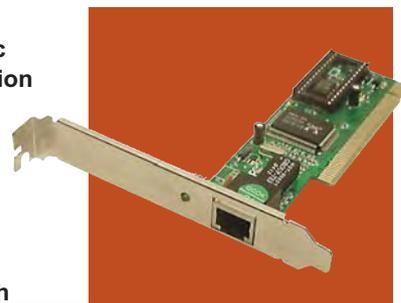
Model 098-1111
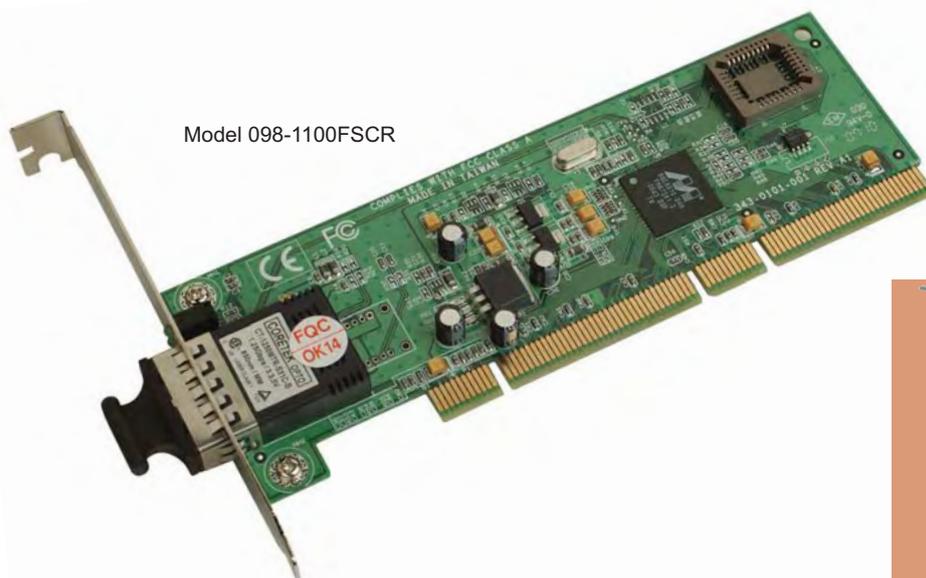
Model 098-1100FSCR

Model 098-1100FSCR

SPECIFICATIONS

STANDARDS
IEEE 802.3u: 100BASE-TX
IEEE 802.3: 10BASE-T

BUS TYPE
PCI specification revision 2.1, 2.2

NETWORK INTERFACE
One shielded RJ45 phone-type jack

NETWORK MODES SUPPORTED
10BASE-T: CAT 3, 4, and 5 TP
100BASE-TX: CAT 5 TP cable
Full-duplex available in both modes

LEDs
LINK (Green), TX/RX (Green)

BOOT ROM (OPTIONAL)
64K Bytes with optional on-board Boot ROM socket

DIMENSIONS
120 x 42 mm /4.72 x 1.65 inches)

ENVIRONMENT
Operating Temperature: 0° – 55°C
Storage Temperature: -20° – 70°C
Humidity: 10-90% Non-condensing

SOFTWARE SUPPORT
Windows 95/98/ME/ NT/2000/XP
Netware 3.x, 4.x, 5.x. Client 32,
NDIS 2.0 Drivers, Packet Driver, Linux,
SCO UNIX, Free BSD, DOS ODI

FEATURES

- **Sturdy Single Chip Design Enhances Reliability and Ensures Robust Running Usability**
- **Auto-negotiation Automatically Switches between 10/100 Mbps and Full-/Half-duplex Modes**
- **Equipped with one optional Boot ROM Socket to Boot Diskless Computers Remotely**
- **Fully Comply with IEEE 802.3u and IEEE 802.3 Standards**
- **Support IEEE 802.3x Flow-control for Full-duplex**
- **Shielded RJ45 Connector Provides Unified 100BASE-TX and 10BASE-T Network Media Interface**
- **Comply with PCI specification 2.1, 2.2**
- **Support ACPI, and PCI-Bus Power Management**
- **Compliant to PC99 and PC2001 Standards**

Fast Ethernet PCI Adapter Cards

PART NO.	DESCRIPTION
098-1100FSCR	100BaseFX PCI Network Adapter Card – SC Multi Mode
098-1111	10/100 Mbps Fast Ethernet PCI adapter, RJ-45 STP
098-1100FSMR	100BaseFX PCI Network Adapter Card – SC Single Mode

NETWORK CONNECTIVITY SYSTEMS

SIGNAMAX™
CONNECTIVITY SYSTEMS

KVM Switches
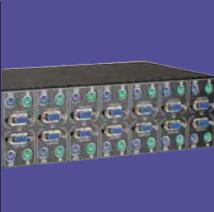
2-Port USB KVM Switch

4-Port Slim Desktop Switch

8- and 16-Port Rackmount KVM Switches

KVM Hydra Cables

VGA Splitter

2-Port USB KVM Switch

The 098-8026 Slim Palmtop USB KVM Switch is a 2-Port compact KVM Switch with Audio and Mic switching function. Its USB support on the console side allows you to use USB keyboard and mouse. It comes with 2 sets of detachable USB KVM combo cables & 2 sets of Audio/Mic cables for SOHO and office desktop multimedia application. And it allows you to access, control, boot and reboot two USB-enabled multimedia computers with only one USB keyboard, mouse, monitor and optional speaker set and microphone, using the Switching Software Client installed on your PCs.

USB interface compatibility for multi-platform support

The USB interface technology offers multi-platform support for PC, Macintosh G3/G4 and iMAC. The KVM Switching Software client supports Windows/Mac platforms.

Model 098-8026

Model 098-8026

SPECIFICATIONS

CABLES
  2 x detachable USB KVM Combo Cable
  2 x Audio/Mic Cables (USB Mini B-3.5 mm jack)

PC PORT CONNECTORS
  2 x USB Type A
  2 x audio/mic connector [USB Mini B]

CONSOLE PORT CONNECTORS
  2 x USB Type A (Keyboard & Mouse)
  1x HDB 15-pin female
  1 x 3.5 mm audio jack
  1 x 3.5 mm mic jack
  PC selection:
  Push button
  Hotkeys
  Switching Software (for Windows/Mac)

PC port LED: 2
VGA Resolution: 2,048 x 1,536
Power Type: USB interface power
Dimension (L x W x H): 96 x 61 x 24 mm
Size: Slim Palmtop
Housing: Plastic

SAFETY / EMISSION
  FCC, CE

SPECIAL FEATURES

• **2-Port Slim Palmtop KVM Switch with Audio&Mic and 2 x detachable USB KVM & 2 x Audio/Mic Cables**
• **USB console support for USB keyboard and mouse**
• **Audio and Microphone switching for uninterrupted multimedia experience across multi-platforms**
• **USB 1.1 Specification compliant**
• **Independent/simultaneous switching of both PC and audio/mic channel**
• **Multi-platform support for PCs and Macintosh G3/G4 MAC, iMAC**
• **Hot-plugging PCs for maintenance without powering down the KVM Switch or PCs**
• **Switching Software client for easy software switching on Windows and Mac platform**
• **User definable hotkeys**
• **Additional universal port switching hotkey—ScrollLock + ScrollLock—for non-Windows OS on PC platform**
• **Channel selection by push button, keyboard hotkeys and Switching Software Client (for Windows/Mac)**
• **LED indicators for easy status monitoring**
• **High VGA resolution 2,048 x 1,536**
• **USB interface power**

2-Port USB KVM Switch

PART NO.	DESCRIPTION
098-8026	Slim Palmtop USB KVM Switch w/ Audio & Mic

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

4-Port Slim Desktop Switch

4-Port Slim Desktop PS/2 KVM Switch with Audio&Mic for SOHO and office multimedia applications. The 098-8040 Slim Desktop PS/2 KVM Switch provides Audio and Microphone switching function for SOHO and office desktop multimedia application. And it allows you to access, control, boot and reboot four PS/2-enabled multimedia computers using only one keyboard, video, mouse and optional speaker set and microphone.

Audio and Microphone Switching offers uninterrupted multimedia experience

The audio and microphone switching function of 098-8040 allows you to leverage the multimedia systems on each of your four computers. You can monitor the audio/mic input/output of each computer without plugging on and off the audio/mic cables. And it takes only one set of speaker and microphone instead of one set for each computer. Furthermore, it offers you user-programmable simultaneous/independent PC and audio/mic switching function for flexible multimedia and KVM Switching operation.

Zero Cabling Hassles for KVM users

This KVM Switch saves you cabling troubles with its 4 x 1.2 M detachable KVM and 4 x audio/mic cables. In fact, you have zero cabling troubles since you don't have to worry about finding suitable cables to fit—They comes within the box package!

Model 098-8040

Model 098-8040

Model 098-8040

SPECIFICATIONS

PC Connections: 4
Console Connections: 1

PC PORT CONNECTORS
   4 x HDB 15-pin female
   (integrated with PS/2 interface)
   4 x 3.5 mm audio in/out jack
   4 x 3.5 mm mic in/out jack

CONSOLE PORT CONNECTORS
   1 x PS/2 Keyboard 6-pin Mini Din female
   1 x PS/2 Mouse 6 pin Mini Din female
   1 x HDB 15-pin female
   1 x 3.5 mm audio in/out jack
   1 x 3.5 mm mic in/out jack

PC/Audo/Mic selection:
Push buttons/Hotkeys
PC port LED: 4 (Green)
Keyboard/Mouse conversion: PS/2
VGA Resolution: 2,048 x 1,536
Power Type: PS/2 interface power
Dimension (L x W x H):
164 x 72 x 26 mm
Size: Slim Palmtop
Housing: Plastic

SAFETY / EMISSION
   FCC, CE

SPECIAL FEATURES

- **4-Port Slim Desktop PS/2 KVM switch with audio&mic**
- **Audio and microphone switching for uninterrupted multimedia experience across multi-platforms**
- **Simultaneous/independent PC and Audio/Mic Switching (User-programmable)**
- **Hot-plugging PCs for maintenance without powering down the KVM Switch or PCs**
- **Channel selection by keyboard hotkeys and face-panel push buttons**
- **Autoscan delay time programmable**
- **Separate LED indicators for PC port and audio channel status monitoring**
- **High VGA resolution 2,048 x 1,536**
- **PS/2 interface power**

4-Port Slim Desktop Switch

PART NO.	DESCRIPTION
098-8040	4-Port Slim Desktop PS/2 KVM Switch w/ Audio & Mic

8- and 16-Port Rackmount KVM Switches

The 098-8280/098-82160 are 8- and 16-Port cascadable 19" Rackmount KVM Switches with OSD. They are designed to provide robust and reliable KVM switching performance under harsh and critical environment either in corporate office or on industrial floor.

OSD Menu offers more intuitive and convenient control. The full-feature OSD gives an intuitive menu-driven operation most users will find dispensable for a truly convenient experience.

Port-capacity scalable up to two hundred more computers via daisy-chaining multiple KVM Switch units. Multiple units 098-8280/098-82160 could also be daisy-chained up to 16 levels and provide a total port capacity of up to two hundred more of PCs (depending on the unit combinations). Centralized Rackmount Management.

The rackmount design offers a neat placement of the KVM Switches units on the rack for centralized management and also for security enhancement that could be provided by a locked server room.

Model 098-82160

FEATURES

- 8- and 16-Port Cascadable 19" Rackmount KVM switch with OSD
- Cascadable up to 16 levels using daisy-chain cable
- Port capacity scalable up to 248/256 PCs with multiple units in daisy-chained configuration
- PS/2 style keyboard and mouse control
- Support Microsoft IntelliMouse®, IntelliMouse Explorer®, Logitech NetMouse® and other compatibles
- Channel selection and operation using front-panel push buttons, keyboard hotkeys and OSD Menu
- Support for DOS, Windows 95/98/SE/ME/2000/XP, Linux, etc.
- Dual numerical LED displays and LED indicators for easy port status monitoring
- Buzzer sound for port switching confirmation
- Autoscan mode for quick browsing of all connected computers
- Autoscan delay time programmable from 5 – 99" through OSD menu option
- Search PC by name
- Password protection
- High VGA resolution 2,048 x 1,536
- Video Bandwidth 250 MHz
- 19" rack mount design with metal enclosure for best shielding and protection

8- and 16-Port Rackmount KVM Switches

PART NO.	DESCRIPTION
098-8280	8-Port 19" Rackmount KVM Switch w/ Front-panel Buttons, Keyboard Hotkeys and OSD Control
098-82160	16-Port 19" Rackmount KVM Switch w/ Front-panel Buttons, Keyboard Hotkeys and OSD Control

SPECIFICATIONS

Model 098-8280
PC Ports: 8
Console Port: 1
Daisy-chain port: 1
Daisy-chain level: Up to 16 levels
Max. PC Connection: 248 PCs (1 x 098-8280 + 15 x 098-82160)

PC PORT CONNECTORS
    8 x PS/2 Keyboard 6-pin Mini Din female
    8 x PS/2 Mouse 6 pin Mini Din female
    8 x VGA HDB 15-pin Female

CONSOLE PORT CONNECTORS
    1 x PS/2 Keyboard 6-pin Mini Din female
    1 x PS/2 Mouse 6 pin Mini Din female
    1 x VGA HDB 15 pin female

OSD: Yes
PC selection: Push buttons / Hotkeys / OSD
PC port LEDs: 16
Scan delay time: 5 – 99 sec. programmable through OSD menu option
VGA Resolution: 2,048 x 1,536
Video Bandwidth: 250 MHz
Humidity: 0-90% RH, non-condensing
Size: Standard 19" rack mount
Housing: Metal enclosure
Dimension (L x W x H): 410 × 165 × 44.5 mm
Power: DC 9V 1A (required)
Weight: 2,200 g

SAFETY / EMISSION
    FCC, CE

Model 098-82160
PC Ports: 16
Console Port: 1
Daisy-chain port: 1
Daisy-chain level: Up to 16 levels
Max. PC Connection: 256 PCs (16 x 098-82160)

PC PORT CONNECTORS
    16 x PS/2 Keyboard 6-pin Mini Din female
    16 x PS/2 Mouse 6 pin Mini Din female
    16 x VGA HDB 15-pin Female

CONSOLE PORT CONNECTORS
    1 x PS/2 Keyboard 6-pin Mini Din female
    1 x PS/2 Mouse 6 pin Mini Din female
    1 x VGA HDB 15 pin female

OSD: Yes
PC selection: Push buttons / Hotkeys / OSD
PC port LEDs: 32
Scan delay time: 5 – 99 sec. programmable through OSD menu option
VGA Resolution: 2,048 x 1,536
Video Bandwidth: 250 MHz
Humidity: 0-90% RH, non-condensing
Size: Standard 19" rack mount
Housing: Metal enclosure
Dimension (L x W x H): 410 × 165 × 44.5 mm
Power: DC 9V 1A (required)
Weight: 3,500 g

SAFETY / EMISSION
    FCC, CE

Model 098-82160 rear panel

Model 098-8280

Model 098-8280 rear panel

KVM Hydra Cables

Tangle-proof, single-cable design combines monitor, keyboard and mouse cables into a single, flexible bundle.

Available in two types and in a variety of lengths for connection between CommandView KVM switches and your computers, and also as an extension between your monitor, keyboard, and mouse to the CommandView KVM switch.
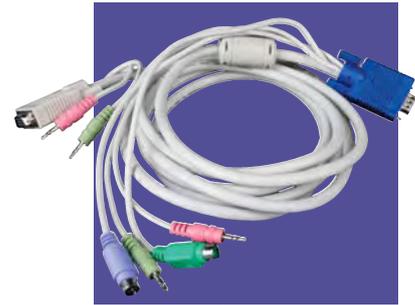
Model 098-A018

098-A100

Model 098-A050
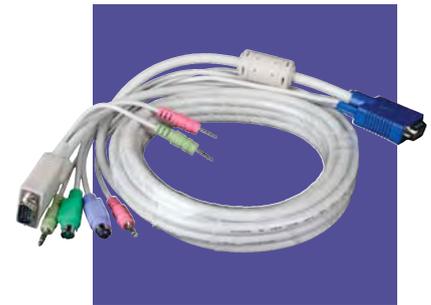
Model 098-A050

KVM Hydra cables

PART NO.	DESCRIPTION
098-A015	KVM cable for 1.5 m, 2x PS/2 M/M + video M/F + 2x stereo
098-A018	KVM cable for 1.8 m, 2x PS/2 M/M + video M/F + 2x stereo
098-A030	KVM cable for 3.0 m, 2x PS/2 M/M + video M/F + 2x stereo
098-A050	KVM cable for 5.0 m, 2x PS/2 M/M + video M/F + 2x stereo
098-A100	KVM cable for 10.0 m, 2x PS/2 M/M + video M/F + 2x stereo

VGA Splitter

Signamax Video Splitter is a VGA/SVGA/QXGA splitting device which boosts video signal from one PC to 2/4/8 monitors. Its built-in 300 Mhz Video Amplifier not only extends the transmission distance up to 210 ft (65 m) but also gains multiple high quality screens. It is very suitable for multiple display applications, such as Stock market monitor array, Educational demos, Airport & Railway station bulletin display.

VGA Splitter

PART NO.	DESCRIPTION
098-8220	Signamax VGA splitter 2PC
098-8240	Signamax VGA splitter 4PC

FEATURES

- **Splitting one PC's screen into 2/4/8 monitors for simultaneously display.**
- **Bypass DDC2/DDC2AB PnP from PC-VGA port to MONITOR1 port.**
- **Support maximum resolution up to 2,048 x 1,536 @ 75 Hz**
- **Maximum transmission distance is up to 210 ft. (65 m), including cascades.**
- **A built-in voltage detector will shut down video synchronous signal to protect from low power supply.**
- **A brightness control to select high brightness screen for long distance cabling.**
- **No DC clamping offset on R/G/B signals works on all type monitors (CRT/LCD).**

NETWORK CONNECTIVITY SYSTEMS

SIGNAMAX™
CONNECTIVITY SYSTEMS
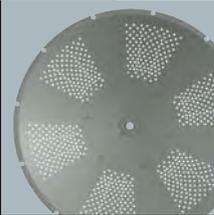
Wireless LAN

Wireless Access Point 802.11b/g

Wireless AP/Router 802.11b/g

Wireless PCI Card 802.11b

Wireless PCI Card 802.11b/g

Wireless PCMCIA Card 802.11b/g

Wireless USB Dongle 802.11b/g

Wireless AP/Router 802.11a/b/g

Wireless Access Point 802.11a/b/g

Wireless Outdoor Access Point 802.11a/b/g

Wireless PCI Card 802.11a/b/g

Wireless PCMCIA Card 802.11a/b/g

Wireless USB Dongle 802.11a/b/g

Wireless Mini PCI Card 802.11a/b/g

Wireless AP/Router 802.11b/g/n

Wireless MIMO Client Adapters 802.11b/g/n

Antennas for 2.45 GHz Band

Accessories for WiFi units

Antennas for 5 GHz Band

Wireless Access Point 802.11b/g

Signamax 802.11g Access Points are the ideal solution for any network administrator who needs to expand the capacity of the wireless network. This is especially applicable to wireless networks in high traffic areas such as airports, coffee shops, shopping centers, sporting venues, and university campus deployments. At transfer rates of up to 54 Mbps. In addition to bridging 802.11b/g wireless networks, For more secure communication, the 065-1784A supports the encryption settings up to 152-bit WEP, and advanced security of WPA, WPA2 and AES. With its web-based configuration the Access Point is easy to install, alter or activate advanced setting, or update with the latest firmware.

Model 65-1784A

Model 65-1784A

FEATURES

- **Fully Comply with IEEE 802.11b and 802.11g Standard High-Speed Data Rate**

- **High-speed Wireless Connection Up to 54 Mbps Data Rate**

- **Support 64/128/152 bit WEP and WPA/WPA2 Encryption for Advanced Transfer Security**

- **Easy Installation, Management, and Configuration Reset**

- **Act as Repeater and AP at the Same Time via WDS**

- **Support IP Sharing to Allow More than One Device ON-Line Simultaneously**

- **Built-in Firewall Provides Additional Security**

Wireless Access Point 802.11b/g

PART NO.	DESCRIPTION
065-1784A	Wireless Access Point 802.11b/g

SPECIFICATIONS

STANDARDS
IEEE 802.11b, IEEE 802.11g, IEEE 802.3, IEEE 802.3u, IEEE 802.3x
Modulation Types
802.11b: DQPSK, DBPSK and CCK
802.11g: BPSK, QPSK, 16QAM, 64QAM, OFDM
Operating Frequency: 2.400 – 2.497 GHz ISM band
Operating Channels: 11 for N. America, 14 Japan, 13 Europe (ETSI), 2 Spain, 4 France

DATA RATE
802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps
802.11b: 11, 5.5, 2, and 1 Mbps
Media Access Protocol: CSMA/CA with ACK
Receiver Sensitivity:
802.11b: Typical -83 dBm for 11 Mbps @ 8% PER (Packet Error Rate)
Typical -89 dBm for 2 Mbps @ 8% PER (Packet Error Rate)
802.11g: Typical Sensitivity at Which Frame (1,000-byte PDUs)
Error Rate = 10%
-87 dBm at 6 Mbps; -86 dBm at 9 Mbps; -85 dBm at 12 Mbps;
-83 dBm at 18 Mbps; -80 dBm at 24 Mbps;
-76 dBm at 36 Mbps; -71 dBm at 48 Mbps; -66 dBm at 54 Mbps
Transmitter Output Power
802.11b: Typical 18 dBm at 11, 5.5, 2 and 1 Mbps
802.11g: Typical RF Output Power at each Data Rate
+14 – 15 dBm at 54 Mbps; +14 – 16 dBm at 48 Mbps;
+16 – 18 dBm at 36, 24, 18, 12, 9, and 6 Mbps

ANTENNA
Dipole antennas with 2 dBi gain for 2.4 GHz

INTERFACE
Power Jack, Factory Reset Button,
10/100M Base-T (UTP), Wireless Dipole Antenna
Operating Voltage: 5V DC +/- 10%
Power Consumption: max. 6W (TBD)
Dimensions (L x W x H): 139.5 x 114.5 x 29.5 mm

LEDs
Power LED, 10/100M LED, Wireless LED

FEATURES
Transmit Power Control
Control TX power level from full, 50%, 25%, 12.5%, and min.
Radio control: Radio on/off supported
Auto Channel selection: Scan channel and find a clear channel
DFS/TPC: Dynamic Frequency Selection and Transmit Power Control
Security: 64/128/152 bit WEP and WPA/WPA2 Encryption
Authentication Type: Open System Authentication, Shared Key
Authentication or both enabled

Wireless AP/Router 802.11b/g

Signamax Wireless AP Router 065-1788, IEEE802.11b/g standard compliant, is a high quality and reliable Internet routing and security device, enables multiple users to share the Broadband Internet connection with or without wires through a Cable or DSL modem. Simply install the router, connect to Cable/DSL modem, and surf Internet without extra efforts. Acting as a 10/100 Mbps 4-Port Ethernet switch as well, the router, with all ports supporting MDI/MDIX, allows you to use CAT5 cable to uplink to other routers/switches.

The Wireless 11b/g AP Router is featured with advanced security technology, supporting WEP, WPA-PSK, WPA (Wi-Fi Protected Access) TKIP/AES, WPA2 and RADIUS. With the router, your network is armed with the highest levels of protection. The Router provides a total solution for the Small and Medium-sized Business (SMB) and the Small Office/Home Office (SOHO) markets, giving you an instant network today, and the flexibility to handle tomorrow's expansion and speed.

Model 065-1788

Wireless AP/Router 802.11b/g

PART NO.	DESCRIPTION
065-1788	Wireless AP/Router 802.11b/g

SPECIFICATIONS

DATA RATE
11 Mbps (11b mode), 54 Mbps (11g mode)

STANDARDS
IEEE 802.11b / 802.11g (Wireless),
IEEE 802.3 / 802.3u (Wired)
Operating Radius: Indoor: 100 m, Outdoor: 300 m
Bridging: IEEE 802.1x, Software bridge between wireless and wired LAN
Routing: Static Routing
RIP version 1 (RFC 1058) and version 2 (RFC 1723)
NAT (Network Address Translation)
NAPT (Network Address and Port Translation)
DHCP (Dynamic Host Configuration Protocol) Server/Client

SECURITY & MANAGEMENT (FEATURE)
64/128 bits WEP Encryption and SSID
WPA/ WPA2, Clone MAC
SNMP (simple Network Management Protocol) v1, v2
Supports DDNS
Supports RADIUS Client
Configuration of NAT/NAPT
Supports Virtual Server and Virtual DMZ
Provides MAC filter, Client filter, and URL/IP filter
WAN, LAN, DMZ and AP statistics
Restore to Factory Default
System Log
UPnP, ALG and Help
WDS (only / AP)
AP (Bridge / Getway mode)
Software Upgrade through Web
Firewall

ENVIRONMENTAL
Interface: LAN x 4, WAN x 1
LED Indicators: POWER, LINK (WLAN), ACT (WLAN), LAN x 4, WAN
Wireless Frequency: 2.400 – 2.4835 GHz
Receiver Sensitivity:
IEEE 802.11: -84 dBm (Typical),
IEEE 802.11g: -60 dBm (Typical)
Transmit Output Power: 11b: 19±1 dBm, 11g: 15±1 dBm
Power: AC 9V, 1A
Dimension (L x W x H): 160 x 95 x 30 mm
Weight: 200g
Temperature: 0° – 45°C (Operating), -20° – 70°C (Storing)
Humidity: 5-95% Non-Condensing
Supported OS: Windows 98SE, ME, 2000, XP, NT4.0, Mac and Linux
Regulations: FCC Part 15 class B, CE

Model 065-1788

FEATURES & BENEFITS

- **Maximum transfer rate up to 85 Mbps from WAN to LAN, 100 Mbps LAN to LAN and 11/54 Mbps through wireless channel enables High-speed access to ISP or corporate network**
- **Friendly GUI Configuration and Management software**
- **Supports IEEE 802.3 full duplex flow control**
- **Built-in DHCP server automatically assigns IP address to all workstations on your LAN**
- **802.11b/802.11g provides WEP Encryption and SSID functions for security purpose**
- **Supports MAC filter, Client filter, URL and IP filter blocking and Hacker pattern detection**
- **Supports ALGs (Microsoft NetMeeting, MSN Messenger, Windows Media Player, DirectX 8.0, PPTP pass through, IPSec pass through, FTP, ICMP, SMTP, POP3, DNS, Telnet, HTTP, HTTPS, H.323, SIP, Real Audio, CuSeeMe, AOL and Games)**

Wireless PCI Card 802.11b

Signamax 065-1796 let you connect your desktop computer to a wireless network, and is suitable for small offices, home offices and places where cable can not be installed. PCI card complies with 802.11b in 2,4 GHz frequency band. Users connected will enjoy faster downloads and truly instant email communication at transfer rates of up to 11 Mbps.

For more secure communication, the 065-1796 support the encryption settings up to 64/128-bit WEP and MAC address filter. 065-1796 is compliant with PCI 2.2 standard and supports most of operating systems—Windows 98/2000/XP.

Model 065-1796

FEATURES & BENEFITS

- **Complies with IEEE 802.11b**
- **Compliant with PCI 2.2 Standard**
- **High security—WEP, MAC address fiter**
- **Supports Windows 95/2000/XP**
- **Support AP, Client and Bridge mode**
- **Easy to install and configure**

Wireless PCI Card 802.11b

PART NO.	DESCRIPTION
065-1796	Signamax PCI card 802.11b, 11 Mbps, ext. antenna, SMA male rev.

SPECIFICATIONS

Standard: IEEE802.11b compliant
Bus Type: 32-bit PCI 2.2
Protocols: TCP/IP
Modulation Technology: DSSS
Data Encryption: 64/128bit WEP encryption;
TKIP (Temporal Key Integrity Protocol)
Frequency Band:
2.412 – 2.462 GHz (US), 2.412-2.484 GHz (Japan)
2.412 – 2.472 GHz (Europe), 2.45-2.462 GHz (Spain)
2.457 – 2.472 GHz (France)
Channels: 11 (US, Canada), 13 (Europe), 14 (Japan), 2 (Spain), 4 (France)
Date Rates & Modulation:
11 Mbps: CCK, 5.5 Mbps: CCK, 2 Mbps: DQPSK, 1 Mbps: DBSK
Media Access Protocol:
CSMA/CA (Carrier sense multiple access with collision avoidance)
Receive Sensitivity:
11 Mbps @ -84 dBm, 5.5 Mbps @ -86 dBm, 2 Mbps @ -91 dBm,
1 Mbps @ -93 dBm
LED Indicators: Power, Link
Supported OS: Windows ME, 2000, XP, Unix-Linux

ENVIRONMENTAL
Transmit Output Power: Up to 17 dBm
Operational Voltage: 3.3/5V
Power Consumption: Tx <350 mA / Rx <200 mA
Temperature:
Operating: -0° to 55°C
Storage: -5° to 70°C
Humidity:
Operating: 0-90% Non-Condensing
Storage: 0-95% Non-Condensing
Certifications: FCC, CE, SAR
Warranty: 2 years
SYSTEM REQUIREMENTS
Computer with CPU PII 366MHz or better
128MB RAM or better
CD-ROM Drive
1 PCI slot

Wireless PCI Card 802.11b/g

Signamax 065-1798 let you connect your desktop computer to a wireless network, and is suitable for small offices, home offices and places where cable can not be installed. PCI card complies with 802.11b/g in 2,4 GHz frequency band. Users connected will enjoy faster downloads and truly instant email communication at transfer rates of up to 54 Mbps.

It provides superior performance and interoperability within mixed mode network. For more secure communication, the 065-1798 support the encryption settings up to 128-bit WEP, WPA, WPA2 (TKIP/AES). 065-1798 is compliant with PCI 2.2 standard and supports most of operating systems—Windows 98/ 2000/XP/Vista, MAC OS and Linux too.

Model 065-1798

FEATURES & BENEFITS

- **Complies with IEEE 802.11b/g**
- **Compliant with PCI 2.2 Standard**
- **High security—WEP, WPA, WPA 2, 802.1x**
- **Supports Windows, MAC OS and Linux**
- **Lower power consuption**
- **Easy to install and configure**

Wireless PCI Card 802.11b/g

PART NO.	DESCRIPTION
065-1798	Signamax PCI card 802.11b/g, 54 Mbps, ext. antenna, SMA male rev.

SPECIFICATIONS

Standard: IEEE 802.11b, IEEE 802.11g
Bus Type: 32-bit PCI bus
Protocols: TCP/IP
Modulation Technology:
IEEE 802.11b: DSSS
IEEE 802.11g: OFDM
Modulation Method:
IEEE 802.11b: DBPSK / DQPSK / CCK
IEEE 802.11g: BPSK, QPSK, 16QAM, 64QAM
Data Rate: IEEE 802.11b: 1, 2, 5.5, 11 Mbps
IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps
Operation Mode: Ad hoc, Infrastructure, Soft AP
Transmitter Power: 17 (±2) dBm @11b, 14 (±2) dBm @ 11g
Receive Sensitivity:
Operating at 11 Mbps: < -80 dBm @ 8% FER,
54 Mbps: < -68 dBm @ 8% FER
Operating Range: Up to 300m, depending on surrounding environment
Antenna: External Antenna (2 dBi)
Power Consumption:
Transmit: around 616 mA @ 11b, 432 mA @ 11g
Receive: around 377 mA

Security: 64-bit, 128-bit WEP/ WPA / WPA2 (TKIP/AES)
LED: Red/Green LED indicator
Operating System: Windows XP/2K/CE/Vista,
MAC OS, Linux

ENVIRONMENTAL
Transmit Output Power: Up to 17dBm
Operational Voltage: 3.3/5V
Power Consumption: Tx < 350 mA/Rx < 200 mA
Operating temperature: 0° – 55°C
Storage temperature: -5° – 70°C
Humidity: 0-90% Non-Condensing
Certifications: FCC, CE
Warranty: 2 years

SYSTEM REQUIREMENTS
Computer with CPU PII 366 MHz or better
128 MB RAM or better
CD-ROM Drive
1 PCI slot

Wireless PCMCIA Card 802.11b/g

Signamax 065-1791 let you connect your laptop computer to a wireless network, and is suitable for small offices, home offices and places where cable can not be installed. PCMCIA card complies with 802.11b/g in 2,4 GHz frequency band. Users connected will enjoy faster downloads and truly instant email communication at transfer rates of up to 54 Mbps.

It provides superior performance and interoperability within mixed mode network. For more secure communication, the 065-1791 support the encryption settings up to 128-bit WEP, WPA, WPA2 (TKIP/AES). 065-1791 is compliant with 32-bit Card Bus Type II standard and supports most of operating systems—Windows 98/2000/XP/Vista.

Model 065-1791

FEATURES

- **Complies with IEEE 802.11b/g**
- **Compliant with 32-bit Card Bus Type II**
- **High security—WEP, WPA, WPA 2, 802.1x**
- **Plug and Play**
- **Lower power consuption**
- **Easy to install and configure**

Wireless PCI Card 802.11b/g

PART NO.	DESCRIPTION
065-1791	Signamax PCMCIA card 802.11b/g, 54 Mbps

SPECIFICATIONS

STANDARDS:
IEEE 802.11b (up to 11 Mbps), IEEE 802.11g (up to 54 Mbps)
Card Type: 32-bit Cardbus Type II
Modulation Technology:
IEEE 802.11g: BPSK, QPSK, 16 QAM, 64 QAM, OFDM
IEEE 802.11b: DQPSK, DBPSK, DSSS, CCK
Frequency Band:
2,400-2,483.5 MHz ISM band (IEEE 802.11b/g)
Antenna Type: Integrated Printed-PCB antennas
with dual diversity function
Channels:
Thirteen channels for European countries (IEEE 802.11b)
Thirteen channels for European countries (IEEE 802.11g)
Date Rates & Modulation:
1, 2, 5.5, 11 Mbps (IEEE 802.11b)
6, 9, 12, 18, 24, 36, 48, 54 Mbps (IEEE 802.11g)
Data Security: 64, 128-bit WEP, WPA, WPA2, 802.1x
LED Indicators: Power, Activity
Supported OS: Windows XP/2000/ME/98SE/Vista

ENVIRONMENTAL
Operational Voltage: 5V -10%
Network Architecture:
Ad-Hoc Mode (Peer-to-Peer without Access Point)
Infrastructure Mode (Communications to wired networks
via Access Points with Roaming)
Temperature:
Operating: 0° – 55°C
Storing: -20° – 75°C
Humidity:
10-90%, non-condensing (operating)
5-95%, non-condensing (non-operating)
Certification: FCC, CE
Warranty: 2 years

Wireless USB Dongle 802.11b/g

Signamax 065-1791A let you connect your laptop computer to a wireless network, and is suitable for small offices, home offices and places where cable can not be installed. USB Dongle complies with 802.11b/g in 2,4 GHz frequency band. Users connected will enjoy faster downloads and truly instant email communication at transfer rates of up to 54 Mbps.

It provides superior performance and interoperability within mixed mode network. For more secure communication, the 065-1791A support the encryption settings up to 128-bit WEP, WPA, WPA2 (TKIP/AES). 065-1791A is compliant with USB 2.0 standard and supports most of operating systems—Windows 98/2000/XP/Vista.

FEATURES

- **Complies with IEEE 802.11b/g**
- **Compliant with USB 2.0**
- **High security—WEP, WPA, WPA 2, 802.1x**
- **Plug and Play**
- **Lower power consuption**
- **Easy to install and configure**

Wireless USB Dongle 802.11b/g

PART NO.	DESCRIPTION
065-1791A	Signamax USB Dongle Adapter 802.11b/g, 54 Mbps

SPECIFICATIONS

STANDARDS:
IEEE 802.11b (up to 11 Mbps)
IEEE 802.11g (up to 54 Mbps)
Card Type: USB 2.0
Modulation Technology:
IEEE 802.11g: BPSK, QPSK, 16 QAM, 64 QAM, OFDM
IEEE 802.11b: DQPSK, DBPSK, DSSS, CCK
Frequency Band:
2,400-2,483.5 MHz ISM band (IEEE 802.11b/g)
Antenna Type: Integrated Printed-PCB antennas
with dual diversity function
Channels:
Thirteen channels for European countries (IEEE 802.11b)
Thirteen channels for European countries (IEEE 802.11g)
Date Rates & Modulation:
1, 2, 5.5, 11 Mbps (IEEE 802.11b)
6, 9, 12, 18, 24, 36, 48, 54 Mbps (IEEE 802.11g)
Data Security: 64, 128-bit WEP, WPA, WPA2, 802.1x
LED Indicators: Power, Activity
Supported OS: Windows XP/2000/ME/98SE/Vista

ENVIRONMENTAL
Operational Voltage: 5V -10%
Network Architecture:
Ad-Hoc Mode (Peer-to-Peer without Access Point)
Infrastructure Mode (Communications to wired networks
via Access Points with Roaming)
Temperature:
Operating: 0° – 55°C
Storing: -20° – 75°C
Humidity:
10-90%, non-condensing (operating)
5-95%, non-condensing (non-operating)
Certification: FCC, CE
Warranty: 2 years

Wireless AP/Router 802.11a/b/g

065-1756 Wireless 802.11a/b/g AP/Router is a complete all-in-one networking solution for homes and small/medium enterprises. With its built-in 4x 10/100 Mbps auto-sensing Ethernet switch ports, users can link multiple computers to Internet without any hassle. The built-in wireless function can let you connect wirelessly with your desktop or notebook computers from up to 300 meters away, and simultaneously in wireless A and G. The Wireless Router provides multiple levels of security: 64-bit/128-bit key WEP, WPA data encryption for high-level security. Moreover, the use of IEEE 802.1X offers an effective framework for authenticating and controlling user traffic to a protected network, as well as dynamically varying encryption keys. Proprietary wireless range extension technology expands wireless range at lower bit rate. 065-1756 is a special design for local network users to resist hackers from attacking your private network and share networking resource. Not only with the NAT as natural firewall, the build-in powerful advanced firewall proceeds SPI (Stateful Packet Inspection), stops LAN users accessing inappropriate web site, as well as setting the Internet accessing time schedule. Content filtering shields children from any inappropriateness allowing you to set levels for nudity, sex, violence, and language.

Model 065-1756

FEATURES

- **Provides High performance universal wireless network connectivity**
- **Ideal for multi-media data transmission with high speed wireless performance**
- **Enhanced security management to protect user network**
- **Supports VPN pass through, including IPSec and PPTP**
- **Supports routing ability**
- **Easy and fast installation and setup**

Wireless AP/Router 802.11 a/b/g

PART NO.	DESCRIPTION
065-1756	Signamax Wireless AP/Router 802.11a/b/g

SPECIFICATIONS

INTERFACE
Host Interface: WAN: 1x10/100Base-Tx (auto MDI/MDIX sensing) LAN: 4x10/100Base-T Ethernet switch port (auto sensing)
LED indicator: LED x9: Power; DMZ, 11a, 11g, LAN1–LAN4, Internet
Antenna: 802.11a: 4dBi (Peak Gain), 802.11g: 2 dBi (Peak Gain)

RADIO CHARACTERISTICS
Frequency Band: 802.11a:
US: UNI-Band 5.15 – 5.35 GHz,
EU: UNI-Band 5.15 – 5.35 GHz
UNI-Band 5.47 – 5.725 GHz, 802.11b/g: ISM band 2.4 – 2.4835 GHz
Modulation: 802.11a/g: OFDM, 802.11b: CCK, DQPSK, DBPSK
Receive Sensitivity: 802.11a/g: 6 Mbps – 10-5 BER @ -91 dBm, 9 Mbps – 10-5 BER @ -90 dBm, 12 Mbps – 10-5 BER @ -89 dBm, 18 Mbps – 10-5 BER @ -88 dBml, 24 Mbps – 10-5 BER @ -85 dBm, 36 Mbps – 10-5 BER @ -82 dBm, 48 Mbps – 10-5 BER @ -75 dBm, 54 Mbps – 10-5 BER @ -72 dBm, 108 Mbps – 10-5 BER @ -69 dBm
Transmit Power: 802.11a: Max. 16 dBm @ 16QAM R3/4,
802.11g: Typ: 16 dBm @ Normal Temp Range,
802.11b: Typ: 18 dBm @ Normal Temp Range
Data Rate:
802.11b: 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps, (Auto fallback);
802.11a/g: Auto fallback
Operating Range[1]:
802.11a: Up to 50 m (Indoor)
802.11g: Up to 100 m (Indoor)
Power Supply: Input: AC 85 – 230V, 0.35A Output: DC 5V, 2.5A

REQUIREMENT
Operating Systems: Win98SE/ME/2000/XP

ENVIRONMENTAL
Dimension (L x W x H): 198 x 160 x 33 mm
Weight: 700 g
Temperature: 0° – 40°C (Operating), -20° – 70°C (Storing)
Humidity: Operating 10-85% Non-Condensing, Storage 5-90% Non-Condensing

SOFTWARE FEATURES
Standard: 802.3, 802.11a, 802.11b, 802.11g
Protocol Support: TCP/IP, NetBEUI, IPX/SPX
Basics: DHCP client/server, NAT, PPPoE Client, DNS Proxy/Relay, Dynamic DNS
Security: 64/128-bit WEP encryption, WPAI802.1x (Authentication)MAC address filtering, IP Filtering, Content Filtering, DoS prevention, Time-of-Day ACL
Advanced: DMZ Hosting, UPnP, VPN pass-through (IPSec/PPTP/L2TP), NTP
Management: Embedded Web configuration, Web, firmware upgrade, configuration backup and restore are supported, DHCP, Static IP, PPPoE, and PPTP login support

CERTIFICATION: FCC class B, CE Mark

WARRANTY: 2 years

PACKAGE CONTENT
Wirelress 802.11a/b/g Broadband AP/Router
CD-ROM with User Guide, Quick Installation Guide, DC Power Adapter, RJ45 Cat. 5, UTP cable

[1] The transmission speed varies in the surrounding environment

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

Wireless Access Point 802.11a/b/g

Signamax 065-1755 Wireless 11a/b/g Dual-Band Access Point can be accessed in all three 802.11 wireless networks. 065-1755 contains two separate wireless connectivity radio transceivers, which support all three popular wireless networking specifications. One of the two transceivers uses 2.4 GHz frequency band and supports both wireless 802.11b and 802.11g, which offers up to 11 Mbps and 108 Mbps data rate respectively. The other transceiver uses 5 GHz frequency band and supports wireless 802.11a, also up to 108 Mbps. Since two radio waves operate in different frequency bands, they can work simultaneously and cover your wireless zone with high-speed performance. In terms of security, 065-1755 offers up to 128-bit WEP Encryption, WPA and also includes MAC address filtering, which allows you to assign Internet Access to those you permit. The configuration and installation is made to be simple and fast following the web browser-based setup wizard.

FEATURES & BENEFITS

- **Provide High performance universal wireless network connectivity**
- **Ideal for multi-media data transmission with high speed wireless performance**
- **Easy and fast installation and setup**
- **WDS: AP, Bridge, Repeater, and AP Client**
- **Atheros XRTM eXtended Range technology**

Model 065-1755

Wireless Access Point 802.11a/b/g

PART NO.	DESCRIPTION
065-1755	Signamax Wireless 5 GHz Access Point/Client/Repeater 802.11a/b/g

SPECIFICATIONS

INTERFACE
Ethernet LAN: One 10/100Base-T Ethernet switch port (auto sensing)
LED indicator: LED x4: Power, LAN, 11a link/Act, 11g link/Act
Antenna: 802.11a: 4 dBi (Peak Gain), 802.11b/g: 2 dBi (Peak Gain)
Reset Button: Reset to default setting (hold the reset button after 6 sec)

RADIO CHARACTERISTICS
Standard: IEEE 802.11a 802.11b and 802.11g for WLAN;
802.3 for wired LAN
Frequency Band: 802.11a: US: UNI-Band 5.15 – 5.35 GHz
EU: UNI-Band 5.15 – 5.35 GHz; UNI-Band 5.47 – 5.725 GHz
802.11b/g: ISM band 2.4 – 2.4835 GHz
Modulation: 802.11b: 11 Mbps & 5.5 Mbps CCK;
2 Mbps: DQPSK; 1 Mbps: BPSK
802.11g and 802.11a: OFDM
Media Access Protocol: CSMA/CA with ACK
Transmit Power: 802.11a: Max 16dBm@16QAM R3/4
802.11g: Typ. 16 dBm @ Normal Temp Range
802.11b: Typ. 18 dBm @ Normal Temp Range
Receive Sensitivity: 802.11a: 6 Mbps 10-5 BER @ -91 dBm;
54 Mbps 10-5BER @ -72 dBm; 108 Mbps 10-5BER @ -69 dBm
802.11g: 11 Mbps 10-5 BER @ -85 dBm; 54 Mbps 10-5 BER @ -72 dBm;
108 Mbps 10-5BER @ -69dBm
Data Rate: 802.11b: 11, 5.5, 2, 1 Mbps, auto fallback
802.11g & 802.11a: 108, 54, 48, 36, 24, 18, 12, 9, 6 Mbps
Operating Range: 802.11b: up to 300 m (Outdoor), 35 – 60 m (Indoor)
802.11g: up to 50 m (Outdoor), 20 m (Indoor)
802.11a: up to 300 m (Open space), 100 m (Indoor)
* The performance various depend on environment.

ENVIRONMENTAL
Dimension (L x W x H): 195 x 160 x 27 mm
Weight: 700 g
Temperature: 0° – 40°C (Operating), -20° – 70°C (Storing)
Humidity: 95% Non-Condensing

SOFTWARE FEATURES
Protocol Support: TCP/IP, IPX, NetBEUI
Security: Up to 64bit/128-bit WEP & WPA, MAC address filtering, IP Filtering, Content Filtering. DoS prevention, Time-of-Day ACL
Operating mode: AP, AP Client, Repeater, P2P & P2MP Bridge
Management: Built-in HTTP Server for setup and remote management via any browser

POWER SUPPLY
Input: AC 85 – 230V, 0.35A
Output: DC 5V, 2.5A

CERTIFICATION
FCC class B, CE Mark

WARRANTY
2 years

PACKAGE CONTENT
One Wireless AP, One CD-ROM with User Guide
One DC Power Adapter, One Quick Installation Guide
One RJ45 Cat.5 UTP cable

Wireless Outdoor Access Point 802.11a/b/g

Signamax 065-1761 Wireless 11a+g Dual-Band Outdoor Access Point w. Integrated 20dBi Outdoor Flat Antenna can be accessed in all three 802.11 wireless networks. 065-1761 contains two separate wireless connectivity radio transceivers, which support all three popular wireless networking specifications. One of the two transceivers uses 2.4 GHz frequency band and supports both wireless 802.11b and 802.11g, which offers up to 11 Mbps and 108 Mbps data rate respectively. The other transceiver uses 5 GHz frequency band and supports wireless 802.11a, also up to 108 Mbps. Since two radio waves operate in different frequency bands, they can work simultaneously and cover your wireless zone with high-speed performance. In terms of security, 065-1761 offers up to 128-bit WEP/WPA Encryption and also includes MAC address filtering, which allows you to assign Internet Access to those you permit. The configuration and installation is made to be simple and fast following the web browser-based setup wizard.

Model 065-1761

Model 065-1761

FEATURES & BENEFITS

- **Protocol Support TCP/IP, IPX, NetBEUI**
- **Security Up to 64bit/128-bit WEP & WPA, MAC address filtering**
- **MAC address filtering, IP Filtering, Content Filtering**
- **DoS prevention, Time-of-Day ACL**
- **Operating mode AP, AP Client, Repeater, P2P & P2MP Bridge**
- **Management Built-in HTTP Server for setup and remote management via any browser**

SPECIFICATIONS

RADIO CHARACTERISTICS
Standard IEEE 802.11a 802.11b and 802.11g for WLAN; 802.3 for wired LAN
Frequency Band 802.11a: US: UNI-Band 5.15–5.35 GHz, EU: UNI-Band 5.15–5.35 GHz, UNI-Band 5.47–5.725 GHz
802.11b/g: ISM band 2.4–2.4835 GHz
Modulation 802.11b: 11 Mbps & 5.5 Mbps CCK;
2 Mbps: DQPSK;
1 Mbps: BPSK
802.11g and 802.11a: OFDM
Media Access Protocol CSMA/CA with ACK
Transmit Power 802.11a: Max 16dBm@16QAM R3/4
802.11g: Typ. 16 dBm @ Mormal Temp Range
802.11b: Typ. 18 dBm @ Mormal Temp Range
Receive Sensitivity 802.11a: 6 Mbps 10 – 5 BER @ -91dBm;
54 Mbps 10–5BER @ -72 dBm; 108 Mbps 10–5BER @ -69dBm
802.11g: 11 Mbps 10–5 BER @ -85dBm;
54 Mbps 10–5 BER @ -72 dBm; 108 Mbps 10-5BER @ -69dBm
Data Rate 802.11b: 11, 5.5, 2, 1 Mbps, auto fallback
802.11g & 802.11a: 108, 54, 48, 36, 24, 18, 12, 9, 6 Mbps

INTERFACE
Ethernet LAN One 10/100Base-T Ethernet switch port (auto sensing)
Integrated Outdoor 20 dBi Flat Antenna 5.150 – 5.875 GHz
Interface for 2,4 GHz Antenna (SMA)
Reset Button Reset to default setting (hold the reset button after 6 sec), 802,3af PoE support

ENVIRONMENTAL
Dimension: 190 x 216 x 50 mm
Weight: 1,800 g
Temperature: -20° – 60°C (Operating), -20° – 70°C (Storing)
Humidity: 95% Non-Condensing

POWER SUPPLY
Input Input: AC 85 – 230V, 0.35A
Output Output: DC 5V, 2.5A

CERTIFICATION: FCC class B, CE Mark

WARRANTY: 2 years

PACKAGE CONTENT
One Wireless Outdoor AP, One CD-ROM with User Guide
One DC Power Adapter, One Quick Installation Guide
One RJ45 Cat.5 UTP cable

Wireless Outdoor Access Point 802.11a/b/g

PART NO.	DESCRIPTION
065-1761	Wireless 11a+g Dual-Band Outdoor Access Point w. Integrated 20dBi Outdoor Flat Antenna

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

Wireless PCI Card 802.11a/b/g

Signamax 065-1750 Wireless 11a/b/g PCI Adapter offers high-speed wireless connection with a data rate up to 108 Mbps. 065-1750 supports seamless roaming from cell to cell in all types of wireless networks. You can place your desktop computers anywhere at home or in the office building without any wire limitation. The 065-1750 supports advanced security features including 64/128-bit Wired Equivalent Privacy (WEP) & WPA encryption for more secured user network environment.

The 3dBi high gain Antenna makes 065-1750 more sensitive to the wireless surrounding. Wider and longer receiving range increases your Internet access mobility and still provides the speed you need for large file download, digital video and audio transmissions.

Model 065-1750

Model 065-1750

SPECIFICATIONS

INTERFACE
Host Interface: PCI rev2.3 Interface
LED indicator: Activity, Network Link
Antenna: Dual Band a: 3dBi antenna / b: 1dBi

RADIO CHARACTERISTICS
Standard: IEEE 802.3, 802.3u, 802.11a, 802.11b, 802.11g
Frequency Band: 802.11a:
US: UNI-Band 5.15 – 5.35 GHz
EU: UNI-Band 5.15 – 5.35 GHz, UNI-Band 5.47 – 5.725 GHz
802.11b/g: ISM band 2.4 – 2.4835 GHz
Modulation: 802.11a/g: OFDM,
802.11b: CCK, DQPSK, DBPSK
Receive Sensitivity:
802.11a: -70 dBm @ 54 Mbps 10% PER
802.11g: -72 dBm @ 54 Mbps 10% PER
802.11b: -88 dBm @ 11 Mbps 10% PER
Transmit Power: 802.11a: 11 – 18 dBm;
802.11g: 15 – 19 dBm
802.11b: 18 ±1 dBm
Data Rate:
802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps per channel,
auto fallback;
802.11b: 11, 5.5, 2, 1 Mbps per channel, auto fallback;
802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps
per channel, auto fallback
Operating Range:
802.11a: Up to 50 m (Indoor)
802.11g: Up to 100 m (Indoor)

ENVIRONMENTAL
Dimension (L x W x H): 147 x 120 x 20 mm
Weight: 104 g
Security: 802.11a: 64/128-Bit WEP, WPA
802.11b/g: 64/128-Bit WEP, WPA
Temperature:
0° – 60°C (Operating), -20° – 80°C (Storing)
Humidity:
Operating 10-85% Non-Condensing
Storage 5-90% Non-Condensing
Operating Voltage: 3.3V ±5%

REQUIREMENT
Operating Systems: Win98SE/ME/2000/XP/Vista

CERTIFICATION
FCC, CE

WARRANTY
2 years

PACKAGE CONTENT
Dual-Band Wireless 802.11a/b/g PCI Adapter
Setup CD-ROM with User Guide, Quick Installation Guide

FEATURES

• **One adapter connects either 2.4 GHz (802.11b or 802.11g) or 5 GHz (802.11a) networks.**
• **Advanced security features with up to 128-bit WEP encryption and WPA**
• **Easy to setup**

BENEFITS

• **Dual-Band wireless adapter connects your destop PC to 802.11a, 802.11b, 802.11g wireless networks**
• **Protects your wireless communications with up to 128-bit encryption**
• **Incredible data rates up to 108 Mbps**

Wireless PCI Card 802.11a/b/g

PART NO.	DESCRIPTION
065-1750	Signamax Wireless 5 GHz PCI Card 802.11a/b/g

www.signamax.eu

SIGNAMAX™
CONNECTIVITY SYSTEMS

Wireless PCMCIA Card 802.11a/b/g

The 065-1751 Wireless 11a/b/g CardBus Adapter offers high-speed wireless connection with a data rate up to 108 Mbps. It can provide the speed you need for large file download, digital video and audio transmissions. 065-1751 supports seamless roaming from cell to cell in all types of wireless networks. You can place your notebook anywhere at home or in the office building without any wire limitation. The 065-1751 supports advanced security features including 64/128-bit Wired Equivalent Privacy (WEP) & WPA encryption for more secured user network environment.

Model 065-1751

Wireless PCMCIA Card 802.11a/b/g

PART NO.	DESCRIPTION
065-1751	Signamax Wireless 5 GHz PCMCIA Card 802.11a/b/g

BENEFITS

• **Dual-Band wireless adapter connects your desktop PC to 802.11a, 802.11b, 802.11g wireless networks**
• **Protects your wireless communications with up to 128-bit encryption**
• **Incredible data rates up to 108 Mbps**

FEATURES

• **One adapter connects either 2.4 GHz (802.11b or 802.11g) or 5 GHz (802.11a) networks**
• **Advanced security features with up to 128-bit WEP encryption and WPA**
• **Easy to setup**

SPECIFICATIONS

INTERFACE
Host Interface: CardBus Interface
LED indicator: Power, Network Link
Antenna: Integrated Dual Band diversity antenna

RADIO CHARACTERISTICS
Standard: IEEE 802.3, 802.3u, 802.11a, 802.11b, 802.11g
Frequency Band: 802.11a: US: UNI-Band 5.15 – 5.35 GHz
EU: UNI-Band 5.15 – 5.35 GHz, UNI-Band 5.47 – 5.725 GHz
802.11b/g: ISM band 2.4 – 2.4835 GHz
Modulation: 802.11a/g: OFDM
802.11b: CCK, DQPSK, DBPSK
Receive Sensitivity: 802.11a: -70dBm @54 Mbps 10% PER
802.11g: -72 dBm @ 54 Mbps 10% PER
802.11b: -88 dBm @ 11 Mbps 10% PER
Transmit Power: 802.11a: 11 – 18 dBm; 802.11g: 15 – 19dBm
802.11b: 18 ±1dBm
Data Rate: 802.11a[1]: 54, 48, 36, 24, 18, 12, 9, 6 Mbps per channel, auto fallback; 802.11b: 11, 5.5, 2, 1 Mbps per channel, auto fallback
802.11g[1]: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps per channel, auto fallback
Operating Range[2]: 802.11a: Up to 50 m (Indoor)
802.11g: Up to 100 m (Outdoor)

ENVIRONMENTAL
Dimension (L x W x H): 120 x 54 x 8 mm
Weight: 42 g
Security: 802.11a: 64/128-Bit WEP, WPA
802.11b/g: 64/128-Bit WEP, WPA
Temperature: 0° – 60°C (Operating), -20° – 80°C (Storing)
Humidity:
Operating 10-85% Non-Condensing
Storage 5-90% Non-Condensing
Operating Voltage: 3.3V ±5%

REQUIREMENT
Operating Systems: Win98SE/ME/2000/XP/Vista

CERTIFICATION
FCC, CE

WARRANTY
2 years

PACKAGE CONTENT
Dual-Band Wireless 802.11a/b/g CardBus Adapter
Setup CD-ROM with User Guide, Quick Installation Guide

[1] Support enhanced proprietary Super Mode up to 108 Mbps
[2] The transmission speed varies in the surrounding environment

Wireless USB Dongle 802.11a/b/g

The 065-1752 Wireless 11a/b/g USB Dongle offers high-speed wireless connection with a data rate up to 54 Mbps. It can provides the speed you need for large file download, digital video and audio transmissions. 065-1752 supports seamless roaming from cell to cell in all types of wireless networks. You can place your desktop computers anywhere at home or in the office building without any wire limitation. The 065-1752 supports advanced security features including 64/128-bit Wired Equivalent Privacy (WEP) & WPA encryption for more secured user network environment.

FEATURES

- **One adapter connects either 2.4 GHz (802.11b or 802.11g) or 5 GHz (802.11a) networks**
- **Advanced security features with up to 128-bit WEP encryption and WPA**
- **Easy to setup**

BENEFITS

- **Dual-Band wireless adapter connects your destop PC to 802.11a, 802.11b, 802.11g wireless networks**
- **Protects your wireless communications with up to 128-bit encryption**
- **Incredible data rates up to 54 Mbps**

Wireless USB Dongle 802.11a/b/g

PART NO.	DESCRIPTION
065-1752	Signamax Wireless USB Dongle Adapter 802.11a/b/g

SPECIFICATIONS

INTERFACE
  Host Interface: USB2.0
  LED indicator: Power
  Antenna: Integrated Dual Band diversity antenna

RADIO CHARACTERISTICS
  Standard: IEEE 802.3, 802.3u, 802.11a, 802.11b, 802.11g
  Frequency Band: 802.11a: US: UNI-Band 5.15 – 5.35 GHz
  EU: UNI-Band 5.15 – 5.35 GHz. UNI-Band 5.47 – 5.725 GHz
  802.11b/g: ISM band 2.4 – 2.4835 GHz
  Modulation: 802.11a/g: OFDM
  802.11b: CCK, DQPSK, DBPSK
  Receive Sensitivity: 802.11a: -70dBm @54 Mbps 10% PER
  802.11g: -72 dBm @ 54 Mbps 10% PER
  802.11b: -88 dBm @ 11 Mbps 10% PER
  Transmit Power: 802.11a: 11 – 18dBm; 802.11g: 15 – 19dBm
  802.11b: 18 ±1dBm
  Data Rate: 802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps per channel, auto fallback; 802.11b: 11, 5.5, 2, 1 Mbps per channel, auto fallback
  802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps per channel, auto fallback
  Operating Range[1]: 802.11a: Up to 50 m (Indoor)
  802.11g: Up to 100 m (Indoor)

ENVIRONMENTAL
  Dimension: 80 x 25 x 10 mm (L x W x H)
  Weight: 20 g
  Security: 802.11a: 64/128-Bit WEP, WPA
  802.11b/g: 64/128-Bit WEP, WPA
  Temperature: 0° – 50°C (Operating), -20° – 80°C (Storing)
  Humidity: Operating 10-85% Non-Condensing
  Storage 5-90% Non-Condensing
  Operating Voltage: 5V ±5%

REQUIREMENT
  Operating Systems: Win2000/XP/Vista, Linux

CERTIFICATION
  FCC, CE

WARRANTY
  2 years

PACKAGE CONTENT
  Dual-Band Wireless 802.11a/b/g USB Dongle
  Setup CD-ROM with User Guide, Quick Installation Guide

[1] The transmission speed varies in the surrounding environment

Wireless Mini PCI Card 802.11a/b/g

The 065-1753 Wireless mini PCI card compatible with 802.11a/b/g offers high-speed wireless connection with a data rate up to 108 Mbps. It can provide the speed you need for large file download, digital video and audio transmissions. 065-1753 supports seamless roaming from cell to cell in all types of wireless networks. You can insert this card anywhere to different router boards supporting Atheros chipsets.

The 065-1753 supports advanced security features including 64/128-bit Wired Equivalent Privacy (WEP) & WPA encryption for more secured user network environment.

Model 065-1761

Wireless Mini PCI Card 802.11a/b/g

PART NO.	DESCRIPTION
065-1753	Wireless Mini PCI Card 802.11a/g/b

CHIPSET
Atheros AR5006XS(AR5414A)

INTERFACE
Mini PCI Interface Type IIIA

ENVIRONMENTAL
Dimension: 60 x 45 x 4 mm
Weight: 20 g
Security:
802.11a: 64/128-Bit WEP, WPA
802.11b/g: 64/128-Bit WEP, WPA
Temperature: 0° – 55°C (Operating), -20° – 80°C (Storing)
Humidity:Operating 10-85% Non-Condensing
Storage 5-90% Non-Condensing
Operating Voltage: 3.3V ±5%

REQUIREMENT
System Requirements
Desktop PC containing:
- 32-bit PCI slot
- 64 MB memory or greater
- 300 MHz processor or greater
Microsoft Windows 98 Second Edition/Millennium Edition/2000/Windows XP
Operating Range:
Open Space: Up to 260 m, Indoor: 100 m
The transmission speed varies in the surrounding environment
Network Protocol: TCP/IP, IPX, NDIS4 and NDIS5, NDIS 5.1
Management Utility: Monitor Internet Access Status via UI
Supplied Driver: Windows 98SE/ME/2000/XP, Linux

WARRANTY
2 years

NETWORK STANDARD
IEEE 802.11a, 802.11b, 802.11g

STANDARDS
IEEE 802.3, IEEE 802.3u, IEEE 802.11a, IEEE 802.11b,
IEEE 802.11g draft standard, Wi-Fi compliant

SPECIFICATIONS

RADIO CHARACTERISTICS
Frequency Band:
802.11a: 5.15 – 5.85 GHz (subject to local regulations)
802.11b: ISM band 2.400 – 2.484 GHz (subject to local regulations)
802.11g: ISM band 2.400 – 2.484 GHz (subject to local regulations)
Number of Channel
802.11a: subject to local regulations
802.11b: USA and Canada – 11, Most European countries – 13, Japan – 14, France – 14
802.11g: USA and Canada – 13, Most European countries – 13, Japan – 14
Spreading
802.11a: Orthogonal Frequency Division Multiplexing (OFDM)
802.11b: Direct Sequence Spread Spectrum (DSSS)
802.11g: Orthogonal Frequency Division Multiplexing (OFDM)
Modulation
802.11a/g: 64 QAM, 16 QAM,QPSK, BPSK
802.11b: CCK,DQPSK,DBPSK
Data Rate
802.11a: 54, 48, 36,24,18,12, 9, 6 Mbps per channel, auto fallback for extended range
802.11b: 11,5.5, 2, 1 Mbps per channel, auto fallback for extended range
802.11g: 108, 54, 48, 36, 24, 18, 12, 9, 6 Mbps per channel, auto fallback for extended range
Antenna: Single antenna with 1dBi antenna gain at 2.4 GHz band and 2dBi antenna gain at 5 GHz band (External antenna)
Transmitted power
802.11a: 17dBm
802.11g: 18dBm
802.11b: 19dBm
tolerance: +/-1.5dBm
Receive Sensitivity
802.11a/g
Nominal Temp Range:
- 6 Mbps 10-5 BER @ -90 dBm, typical
- 9 Mbps 10-5 BER @ -89 dBm, typical
- 12 Mbps 10-5 BER @ -88 dBm, typical
- 18 Mbps 10-5 BER @ -86 dBm, typical
- 24 Mbps 10-5 BER @ -82 dBm, typical
- 36 Mbps 10-5 BER @ -78 dBm, typical
- 48 Mbps 10-5 BER @ -72 dBm, typical
- 54 Mbps 10-5 BER @ -68 dBm, typical
802.11b
Typ. -88 dBm @ 11 Mbps, +/-2dBm
Typ. -91 dBm @ 5.5 Mbps
Typ. -92 dBm @ 2 Mbps
Typ. -93 dBm @ 1 Mbps
Power consumption (peak)
802.11a
Continue TX: 510 mA @ 3.3V
Continue RX: 250 mA @ 3.3V
802.11b
Continue TX: 380 mA @ 3.3V
Continue RX: 220 mA @ 3.3V
802.11g
Continue TX: 400 mA @ 3.3V
Continue RX: 280 mA @ 3.3V

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

Wireless AP/Router 802.11b/g/n

Signamax 065-1710 complies with 802.11n draft 2.0 wireless standard in 2,4 GHz frequency band. Utilizing the advanced MIMO technology, it can support the data transmission rate of up to 300 Mbps and the coverage distance is far than IEEE 802.11b/g products. Stable wireless connection and high bandwidth enable you to enjoy the network applications without any interruption.

Users connected will enjoy faster downloads and truly triple play communication at transfer rates of up to 300 Mbps.It provides superior performance and interoperability within mixed mode network. For more secure communication, the 065-1710 support the encryption settings up to 128-bit WEP, WPA, WPA2 (TKIP/AES). 065-1710 contains 1 x WAN Port + 4 x LAN Port Switch + IEEE 802.11b/g/n AP/Router.

Wireless AP/Router 802.11b/g/n

PART NO.	DESCRIPTION
065-1710	Signamax Wireless LAN Broadband AP/Router 802.11b/g/n

SPECIFICATIONS

Data Transfer Rates:
11 Mbps (11b mode), 54 Mbps (11g mode),
300 Mbps (802.11n draft 2.0)
Standard: IEEE 802.11b / 802.11g, 802.11n (Wireless),
IEEE 802.3 / 802.3u (Wired)
Operating Radius: Indoor: 100 m, Outdoor: 300 m
Routing: Static Routing
RIP version 1 (RFC 1058) and version 2 (RFC 1723)
NAT (Network Address Translation)
NAPT (Network Address and Port Translation)
DHCP (Dynamic Host Configuration Protocol) Server/Client

SECURITY & MANAGEMENT (FEATURE)
NAT/NAPT IP Sharing
Anti-DoS Firewall
Virtual Server/DMZ
Complies with 2.4GHz Draft 802.11n and backward compatible
with IEEE 802.11b/g standards
Supports 64/128-bit WEP Encryption and WPA-PSK, WPA2-PSK
Security
High speed data rate – up to 300 Mbps
Supports WMM function to meet the multi-media data bandwidth requirement
Supports advanced MIMO technology, enhancing the throughput and coverage
range significantly
Supports Special Applications (Port Triggers)
Supports DDNS (DynDNS, TZO)
VPN Pass Through (IPSec/PPTP)
Obtain WAN IP by PPPoE/Static IP/PPTP/DHCP
DHCP Server
Web User Interface (Remote Configuration)
System Status
Security Log
Firmware Upgrade

ENVIRONMENTAL
Interface: 1xWAN RJ-45, 4xLAN RJ-45
LED Indicators: POWER, LINK (WLAN), ACT (WLAN), LAN x 4, WAN
Wireless Frequency: 2.400 – 2.4835 GHz
Receiver Sensitivity: IEEE 802.11b: -84 dBm (Typical),
IEEE 802.11g/n: -60 dBm (Typical)
Transmit Output Power: 11b: 19±1 dBm, 11g/n: 15±1 dBm
Power: 12V DC
Temperature: 0° – 40°C (Operating), -20° – 70°C (Storing)
Humidity: 5-95% Non-Condensing
Supported OS: Windows 98SE/ME/2000/XP, NT4.0, Mac and Linux
Regulations: FCC Part 15 class B, CE
Warranty: 2 years

Wireless MIMO Client Adapters 802.11b/g/n

Signamax 065-1711/12/13 complies with 802.11n draft 2.0 wireless standard in 2,4 GHz frequency band. Utilizing the advanced MIMO technology, it can support the data transmission rate of up to 300 Mbps and the coverage distance is far than IEEE 802.11b/g products. Stable wireless connection and high bandwidth enable you to enjoy the network applications without any interruption.

Users connected will enjoy faster downloads and truly triple play communication at transfer rates of up to 300 Mbps. It provides superior performance and interoperability within mixed mode network. For more secure communication, the 065-1711/12/13 support the encryption settings up to 128-bit WEP, WPA, WPA2 (TKIP/AES). 065-1711/12/13 is compliant with 32-bit Card Bus Type II / 32-bit PCI / USB 2.0 standard and supports most of operating systems—Windows 98/2000/XP/Vista.

FEATURES

• **Complies with 802.11n draft, 802.11g and 802.11b standards**
• **Farther coverage, less dead spaces and higher throughput with MIMO technology**
• **Supports QoS-WMM, WMM-PS**
• **Supports 64/128-bit WEP, WPA (TKIP with IEEE 802.1x), WPA2 (AES with IEEE 802.1x) functions for high level of security**
• **Supports the most popular operating system: Windows 2000/XP/XP64/Vista**
• **Supports 32-bit Cardbus interface / 32-bit PCI / USB 2.0**
• **Supports WPS (WiFi Protected Setup)**

SPECIFICATIONS

Standards:
IEEE 802.11b (up to 11 Mbps)
IEEE 802.11g (up to 54 Mbps)
IEEE 802.11n (up to 300 Mbps)
Card Type: 32-bit Cardbus Type II / 32-bit PCI / USB 2.0
Frequency Band:
2,400-2,483.5 MHz ISM band (IEEE 802.11b/g/n)
Antenna Type: 3 x Internal antenna
Date Rates & Modulation:
11b: 1/2/5.5/11 Mbps
11g: 6/9/12/24/36/48/54 Mbps
11n (20 MHz): MCS0-15, 32 with Half Guard Interval Support (up to 144 Mbps)
11n (40 MHz): MCS0-15, 32 with Half Guard Interval Support (up to 300 Mbps)
Data Security: 64, 128-bit WEP, WPA, WPA2, 802.1x
LED Indicators: Power, Activity
Supported OS: Windows XP/2000/ME/98SE/Vista

ENVIRONMENTAL
Operational Voltage: 5V -10%
Temperature:
Operating: 0° – 55°C
Storing: -20° – 75°C
Humidity:
10-90%, non-condensing (operating)
5-95%, non-condensing (non-operating)
Certifications: FCC, CE
Warranty: 2 years

Wireless MIMO Client Adapters 802.11b/g/n

PART NO.	DESCRIPTION
065-1711	Signamax PCMCIA card 802.11b/g/n, 300 Mbps
065-1712	Signamax PCI card 802.11b/g/n, 300 Mbps
065-1713	Signamax USB Adapter 802.11b/g/n, 300 Mbps

Antennas for 2.45 GHz Band
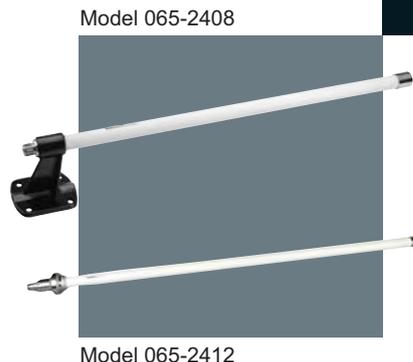
Model 065-2408

Model 065-2412

Model 065-2411

Signamax Antennas for 2.45 GHz Band

PART NO.	DESCRIPTION	CONNECTOR
065-2408	OMNI-8.5 Omnidirectional antenna, Gain 8,5 dBi, to be used in ISM band – 2.4 GHz, vertical HPBW, V25°	N female
065-2411	UNI-11 Unidirectional antenna, Gain 11,5 dBi, to be used in ISM band – 2.4 GHz, HPBW – H80°, V30°	SMA female
065-2412	OMNI-12 Omnidirectional antenna, Gain 12 dBi, to be used in ISM band – 2.4 GHz, HPBW – V20°	N female

Accessories for WiFi Units

The 065-18xx Signamax series coaxial cable reductions are best to be used for connecting WiFi Access Point, Bridges, Clients and/or WiFi Routers to external antennas.
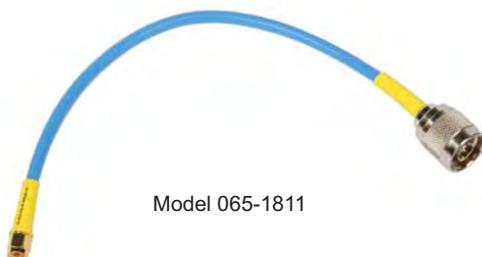
Model 065-1834

Model 065-1811

Signamax cables for connecting WiFi units to external antennas

PART NO.	DESCRIPTION	LENGTH
065-1811	Reduction from SMA female rev. (regular WiFi connector) to N male. Cable used: RG-58	0.25 m
065-1812	Reduction from SMA female rev. (regular WiFi connector) to N male. Cable used: RG-58	0.5 m
065-1813	Reduction from SMA female rev. (regular WiFi connector) to N male. Cable used: RG-58	0.75 m
065-1821	Reduction from SMA female rev. (regular WiFi connector) to N female. Cable used: RG-58	0.25 m
065-1822	Reduction from SMA female rev. (regular WiFi connector) to N female. Cable used: RG-58	0.5 m
065-1823	Reduction from SMA female rev. (regular WiFi connector) to N female. Cable used: RG-58	0.75 m
065-1832	Reduction from SMA female rev. (regular WiFi connector) to SMA male. Cable used: CNT-195	0.5 m
065-1834	Reduction from SMA female rev. (regular WiFi connector) to SMA male. Cable used: CNT-195	1 m
065-1836	Reduction from SMA female rev. (regular WiFi connector) to SMA male. Cable used: CNT-195	3 m
065-1838	Reduction from SMA female rev. (regular WiFi connector) to SMA male. Cable used: CNT-195	5 m

Antennas for 5 GHz

The Signamax Antennas are designed by Signamax for the 5 GHz communication system. After structure optimized and being tuned carefully, it has excelent performance such as very good VSWR, high gain nad big F/B Ratio etc. The strong structure and small dimension make it easy to install. Each antenna is tested by HP network analyzer strictly before delivery.

Model 065-5020

Model 065-5020

Antennas for 5 GHz communication system

PART NO.	DESCRIPTION
Antennas for 5.150 – 5.875 GHz Band	
065-5020	UNI-directional antenna, Gain 20 dBi, Band 5.150 – 5.875 GHz, Vert./Hor. pol., connector N Female
Antennas for 5.725 – 5.875 GHz Band	
065-5808	OMNI-directional antenna, Gain 8 dBi, Band 5.725 – 5.875 GHz, Vert. pol., connector N Female
065-5812	OMNI-directional antenna, Gain 12 dBi, Band 5.725 – 5.875 GHz, Vert. pol., connector N Female
065-5818	UNI-directional antenna, Gain 18 dBi, Band 5.725 – 5.875 GHz, Vert./Hor. pol., connector N Female
065-5824	UNI-directional antenna, Gain 24 dBi, Band 5.725 – 5.875 GHz, Vert./Hor. pol., connector N Female
065-5829	UNI-directional antenna, Gain 29 dBi, Band 5.725 – 5.875 GHz, Vert./Hor. pol., connector N Female
065-5832	UNI-directional antenna, Gain 32 dBi, Band 5.725 – 5.875 GHz, Vert./Hor. pol., connector N Female
Antennas for 5.400 – 5.725 GHz Band	
065-5423	UNI-directional antenna, Gain 23,5 dBi, Band 5.400 – 5.725 GHz, Vert./Hor. pol., connector N Female
065-5428	UNI-directional antenna, Gain 28,5 dBi, Band 5.400 – 5.725 GHz, Vert./Hor. pol., connector N Female
065-5431	UNI-directional antenna, Gain 31,5 dBi, Band 5.400 – 5.725 GHz, Vert./Hor. pol., connector N Female

SPECIFICATIONS

065-5020
Frequency Range: 5,150 – 5,875 MHz
Gain: 20 dBi
Vertical Beamwidth: 16°
Horizontal Beamwidth: 16°
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical / Horizontal
Max Power: 100W
Dimension: 190 x 216 x 50 mm
Weight: 1.1 kg
Connector: N female
Rated Wind Velocity: 60 m/s

065-5808
Frequency Range: 5,725 – 5,875 MHz
Gain: 8 dBi
Vertical Beamwidth: 16°
Horizontal Beamwidth: 360°
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical
Max Power: 100W
Dimension: ≥20 x 350 mm
Weight: 200 g
Connector: N female
Rated Wind Velocity: 60 m/s

065-5812
Frequency Range: 5,725 – 5,875 MHz
Gain: 12 dBi
Vertical Beamwidth: 7°
Horizontal Beamwidth: 360°
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical
Max Power: 100W
Dimension: ≥20 x 540 mm
Weight: 500 g
Connector: N female
Rated Wind Velocity: 60 m/s

065-5818
Frequency Range : 5,150 – 5,350/
5,725 – 5,875 MHz
Gain: 18 dBi
Horizontal Beamwidth: 40±5°
Vertical Beamwidth: 40±5°
F/B Ratio: 15 dB
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical
Max Power: 100W
Connector: N female
Dimension: 190 x 216 x 50 mm

065-5824
Frequency range: 5,725 – 5,875 MHz
Gain: 24 dBi
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical or Horizontal
Max Power: 100W
Connector: N Female
Horizontal Beamwidth: 9°
F/B ratio: ≥30 dB
Diameter: 0.4 m
Weight: 3 kg

065-5829
Frequency range: 5,725 – 5,875 MHz
Gain: 29 dBi
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical or Horizontal
Max Power: 100W
Connector: N Female
Horizontal Beamwidth: 6°
F/B ratio: ≥35 dB
Diameter: 0.6 m
Weight: 5 kg

065-5832
Frequency range: 5,725 – 5,850 MHz
Gain: 32.5 dBi
VSWR: ≤1.5
Nominal Impedance: 50 Ω
Polarization: Vertical or Horizontal
Max Power: 100W
Connector: N Female
Horizontal Beamwidth: 4°
F/B ratio: ≥38 dB
Diameter: 0.9 m
Weight: 10 kg

065-5423, 065-5429, 065-5431
Freq. Range: 5,400 – 5,725 MHz
Gain: 23.5, 28.5, 31.5 dBi
Hor. Beamwidth: 9, 6, 4°
Vert. Beamwidth: 9, 6, 4°
F/B Ratio: ≥30, ≥35, ≥38 dB
VSWR: ≤1.65
Input Impedance: 50 Ω
Polarization: Vertical or Horizontal
Max. Power: 100W
Connector: N Female
Diameter: 0.4, 0.6, 0.9
Weight: 3, 5, 10 kg

Model 065-5423

Model 065-5431

Model 065-5832

Model 065-5808

NETWORK CONNECTIVITY SYSTEMS
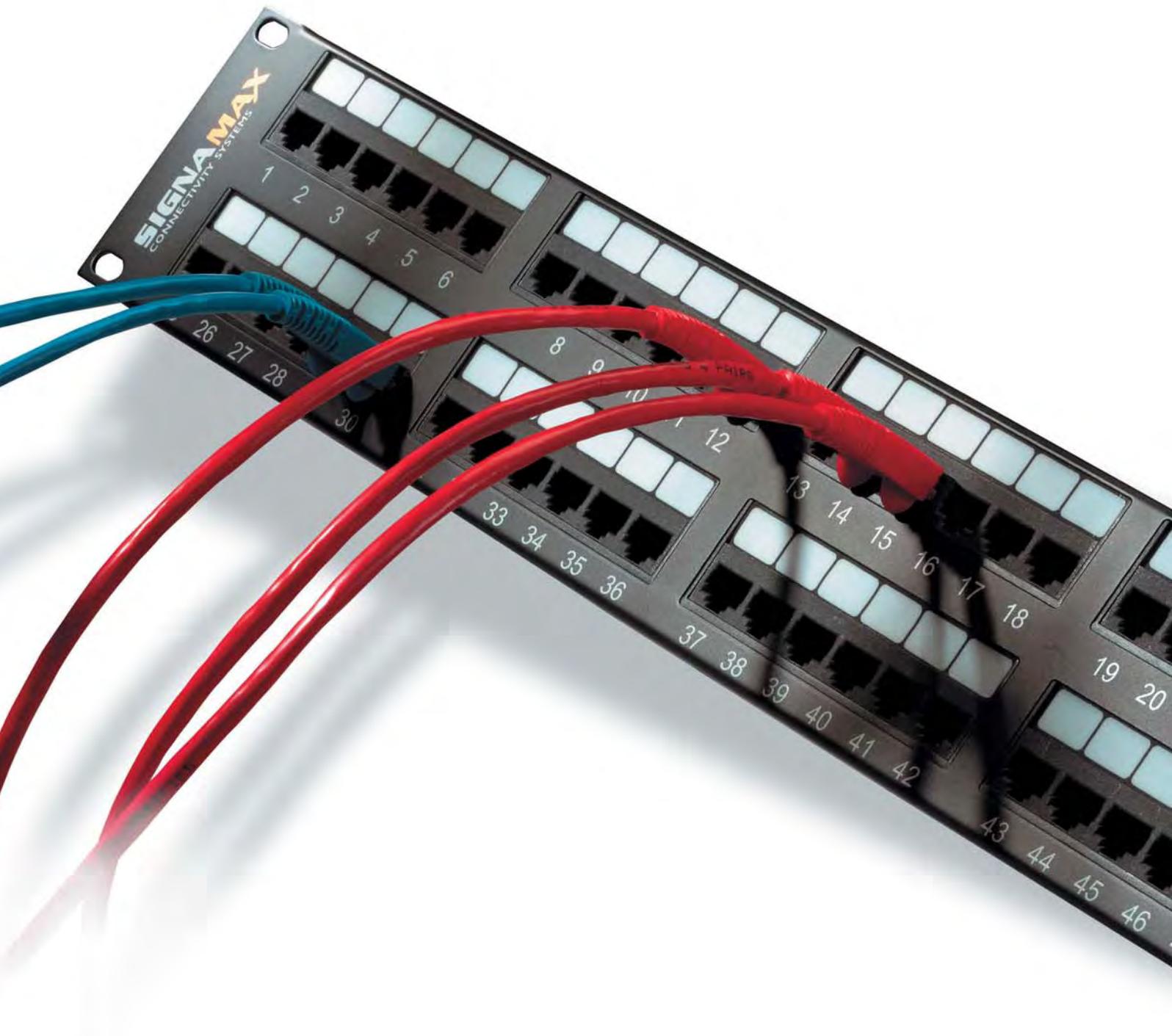
Structured Cabling
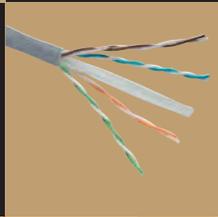
Introduction to Structured Cabling

What is Structured Cabling?

Structured Cabling Testing

10GBaseT and Structured Cabling

Introduction to Structured Cabling

History

Until the beginning of the 1980's, the majority of computer networks worked in the host/terminal mode. Applications as well as data were stored centrally on a host computer and user stations, so-called terminals, handled them in this centralized way. Considering the text character of this type of communication, it was not necessary to build special high capacity transmission paths in terminal networks.

The prevalence of terminal networks ended in 1981 when IBM launched their first personal computer onto the market. This new type of work station, which, contrary to terminals, was equipped with a local memory and their own outputs for connecting peripherals, meant a different—decentralized—mode of operation for users. This greater independence, however, brought two important issues,

1. Difficult administration of workstations (i.e. problem solving and software installation).
2. Mutual user cooperation.

It was therefore necessary to find a way that would enable to connect the new PC's into a network, through which it would be possible to share files, applications, and costly peripherals in the same manner as it had been previously on terminal networks.

In the beginning, several solutions arose from different producers. The differences in applied technologies and the diversity in the components of these new systems, however, led to their mutual incompatibility. The solution was to design a universal system, which would set recommended standards determining the electrical and physical characteristics of cables as well as connecting hardware. At the beginning of the 1990's, therefore, the American National Standards Institute (ANSI) asked Telecommunications Industry Association (TIA) and Electronic Industries Alliance (EIA) to propose a uniform standard for cabling systems. One of the most suitable ways for the new cabling system design was to use the already existing solution introduced by the American telecommunication company AT&T. These networks used AT&T's telephone distribution systems that were installed in most administrative buildings. They had a star topology and used a twisted pair cable as the main transmission medium. The outcome of the Standards Commission work was the first specification for structured cabling, which was published in July 1991 and was referred to as ANSI/TIA/EIA 568. Together with technical bulletins TSB-36 and TSB-40 issued a little later, the standard defined the basic transmission requirements for Category 3, 4, and 5.

In 1995, the first update of the above mentioned standard and also the first version of an international ISO/IEC 11801 standard were issued. A year later, in 1996, the organization CENELEC published the first European standard for structured cabling, with the designation EN 50173. As a result of a new high-speed protocols development (e.g. Gigabit Ethernet), these standards were updated in 2000 and 2002. The updates defined new parameters, which must be met by structured cabling components in order to comply with the new protocol requirements. The standards were supplemented with further measured or numerated parameters, such as PSNEXT, PSACR, PSELFEXT, Delay Skew, and so on. In these specification updates new Category 5 (today known as Category 5E, please see bellow for more information), and later Category 6 as well as Category 7, were introduced.

Introduction to Structured Cabling

Currently existing categories

Category 3—this is the first and thus oldest category in structured cabling. In the beginning, Category 3 components were used for both voice and data transmissions. The bandwidth was defined up to 16 MHz with data rates of 10 Mbps. Today, Category 3 is predominantly used only for telephone distribution systems (e.g. connection from ISDN patch panels to telephone PBX board, telephone equipment cords etc).

Category 5E—at present, Category 5E (or Enhanced Category 5) is still the most frequently used category in structured cabling. The first standard for Category 5E was published in 2000 and was referred to as ANSI/TIA/EIA 568B.1 (for the American standards), CENELEC EN 50173-1:2000 (for the European standards), and ISO/IEC 11801:2000 (for the international standards). In CENELEC as well as ISO/IEC specifications it is still referred to as Category 5 (i.e. not Category 5E). The "Category 5E" is officially used only in ANSI/TIA/EIA standards; it was originally introduced by the manufactures themselves in order to distinguish between the already existing Category 5 components and the "new" improved Category 5 products (i.e. today known as Category 5E). As mentioned above, Category 5E structured cabling components are suitable for the Gigabit Ethernet protocol (i.e. 1000BaseT), which should fit the requirements of most company networks with regular data traffic. However, the 1 Gbps transmission rate is the limit for all Category 5e components and no further improvement will be possible.

Category 6—the final specification of Category 6 was published in 2002. The document update is known as ANSI/TIA/EIA 568B.2-1 (for the American standards), EN 50173-1:2002 (for the European standards), and ISO/IEC 11801:2002 (for the international standards). Category 6 is specified up to 200 MHz (standard bandwidth) and 250 MHz (testing bandwidth). The double available bandwidth in comparison with Category 5E requires higher component quality. On the other hand, if these quality requirements are met, Category 6 components offer improved performance and transmission reliability.

Category 6A—a new category that is currently being defined by the organizations that set the standard recommendations for structured cabling. The "new" Category 6 will be referred to as "Augmented Category 6" or "Category 6A". It is developed specifically for the new 10GBaseT Ethernet protocol in mind. Category 6A will offer 500 MHz bandwidth and thus will be suitable for the most data-intensive applications used on metallic computer networks. You can learn more about the 10GBaseT protocol as well as Category 6A further on in this catalogue (please see the "10GBaseT and Structured Cabling" section).

Category 7—this category was first mentioned in 1997, however, its specification was not finished before 2002. Now Category 7 is specified in CENELEC EN 50173-1:2002 and ISO/IEC 11801:2002 standards; in the TIA/EIA standards Category 7 is not mentioned. The bandwidth that is defined for the current Category 7 is 600 MHz (standard bandwidth) and 750 MHz (testing bandwidth). With reference to the Category 6a and its 500 MHz frequency, it will be necessary to re-define the current Category 7. It is estimated that a "new" Category 7 will be introduced and it will be referred to as "Augmented Category 7" or "Category 7A" with the bandwidth of up to 1,000 MHz.

The table bellow shows supported protocols, bandwidth, maximum transmission rates, and recommended use for all categories.

	Cat 3	Cat 4	Cat 5	Cat 5E	Cat 6	Cat 6A	Cat 7	Cat 7A
Supported Protocols	Analog. Voice, ISDN, 10BaseT	IBM Token Ring	100BaseT and lower	1000BaseT and lower	1000BaseTX and lower	10GBaseT and lower	10GBaseT and lower	10GBaseT and lower
Bandwidth	16 MHz	20 MHz	100 MHz	100 MHz	200 MHz/ 250 MHz	500 MHz	600 MHz/ 750 MHz	1,000 MHz
Maximum Transmission Rate	10 Mbps	16 Mbps	100 Mbps (Fast Ethernet)	1,000 Mbps (Gigabit Ethernet)	1,000 Mbps (Gigabit Ethernet)	10 Gbps	10 Gbps	10 Gbps
Usability	Predominantly telephone distribution systems	No longer installed	No longer installed	Regular data and voice traffic	Higher data traffic (multimedia, streaming)	High data traffic, backbone distribution systems, SAN	High data traffic, backbone distribution systems, SAN	High data traffic, backbone distribution systems, SAN

# Introduction to Structured Cabling

In the ISO/IEC 11801 generic cabling standard document, further copper cabling distinctions referred to as "Classes" were introduced. Classes are used for classifying the permanent link or channel performance rather than for rating the individual structured cabling components. The brief description of all classes as specified in the ISO/IEC standard is the following:

Class A – analogue voice telephony with the bandwidth of up to 10 KHz.

Class B – frequencies up to 1 MHz for voice and slow data links (i.e. IBM 3270 terminals etc.)

Class C – this class corresponds to a permanent link or channel performance using Category 3 components. Similarly to Category 3, it covers the bandwidth of up to 16 MHz. Its primary application today is to classify telephone distribution systems.

Class D – ratified in 1995 but updated in 2000 and 2002. Today Class D covers the bandwidth of up to 100 MHz.

Class E – this class was finished in 2002. Class E corresponds to the permanent link or channel performance using Category 6 components with the bandwidth of up to 200 MHz as standard and 250 MHz as the bandwidth to which Class E/Category 6 is actually tested.

Class E$_A$ – a new class that is currently being defined. Class E$_A$ will be specified up to 500 MHz and corresponds to permanent link or channel performance of Category 6A cabling. In particular, Class E$_A$ is aimed to be used with 10GBaseT protocol.

Class F – this class covers the standard bandwidth of up to 600 MHz and the testing bandwidth of up to 750 MHz. Class F corresponds to the permanent link or channel performance of Category 7 components.

What is Structured Cabling?

Structured cabling is a universal system

▪ **that supports digital as well as analog signal transmissions,**

▪ **in which the telecommunication outlets are installed even in locations where they are not needed at the moment of installation,**

▪ **that use data cables with four twisted pairs and fiber cables,**

▪ **in which long technical and also moral service life is expected,**

▪ **whose correct functionality is as important for a company as the functioning of the electrical distribution system or any other system in company's infrastructure.**

Installation Cables

Patch Panels

Work Area Outlet System

Fiber Optic System
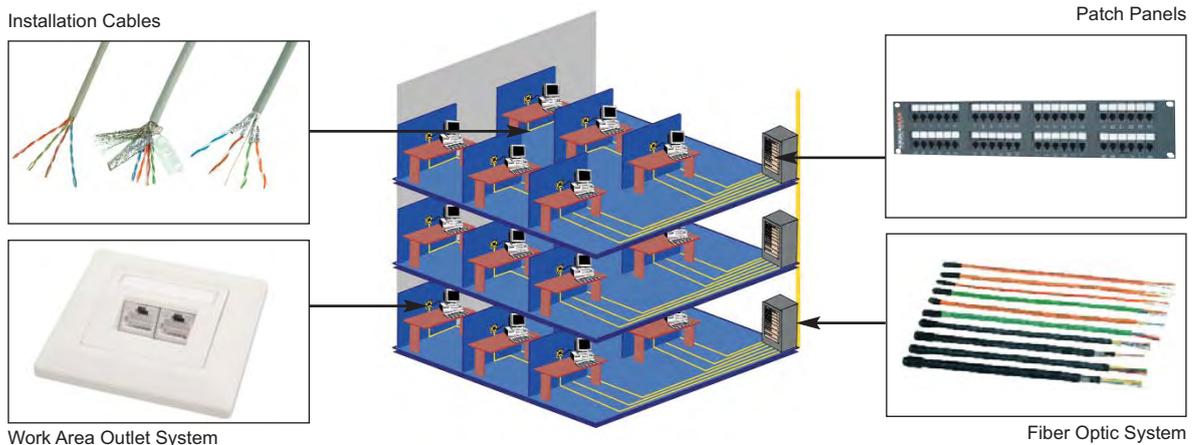
Structured Cabling Testing

Testing has a major significance for the correct functionality of structured cabling. Testing devices are able to measure installed components and determine whether all requirements defined in the international standards necessary for reliable operation have been met. For Category 5e and Category 6 the following main parameters are measured:

Wire Map
This parameter checks the correct termination of cable wires in telecommunication outlets and patch panels, including the shielding in STP cabling. At the same time, it checks the signal throughput on the whole cable length—i.e. it is able to show any open-circuit or short circuit faults. The Wire Map parameter is very important but in itself it cannot ensure the correct functionality of an installed computer network.

What to do if the Wire Map parameter fails?
First, it is necessary to check whether the individual wires have been installed correctly in the termination block. If so (i.e. the wire map corresponds to the standardized T568A or T568B schemes) and the Wire Map parameter still fails, there could be several causes for this: an incorrectly terminated wire in the termination block, a wire interruption inside the cable, or a short-circuit. Advanced testing devices are able to determine the location of the fault with a relatively high accuracy and by doing so make fixing the problem easier.

T568A and T568B wire map schemes:

T568A
1. white-green
2. green
3. white-orange
4. blue
5. white-blue
6. orange
7. white-brown
8. brown

T568B
1. white-orange
2. orange
3. white-green
4. blue
5. white-blue
6. green
7. white-brown
8. brown
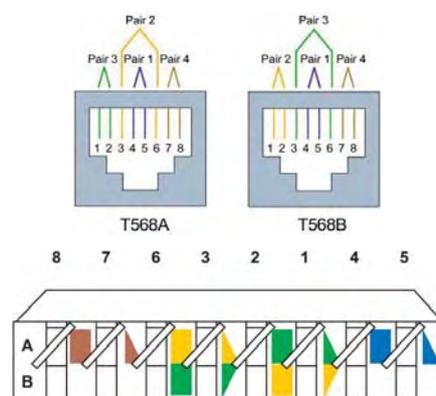
NEXT (Near End Cross Talk)
NEXT is the value that expresses how much signal can get from one pair to another pair within one cable. The measurement of cross-talk at the near end takes place at the same end of the cable as the location of the signal source. For this parameter, all combinations of pairs are measured within one cable—i.e. 12-36, 12-45, 12-78, 36-45, 36-78, 45-78. This measuring is done for both ends.

What to do if the NEXT parameter fails?
First, it is essential to find out at which end of the cable NEXT is showing the error (this function is supported by all advanced testing devices). Then it is necessary to check the maximum permitted unlaid of wires in one pair on the termination block—that should not be more than 13 mm. Typically for category 6, the 13 mm does not necessarily ensure that the NEXT parameter will pass so it is essential to keep the pair unlaid as short as possible. It is also important that the original twisting of each pair is preserved during installation and that there is no air core between the twisted wires in a pair. A frequent source of cross-talk problems can also be the use of cable couplings. Hence if a cable is not long enough, it is better to replace it with a cable of a corresponding length rather than use couplings.

Attenuation
Attenuation shows the difference between the strength of the initial signal and the strength of the signal after it gets to the other end of the wire. It is caused mainly by the wire resistance and is usually larger for higher frequencies. Attenuation also increases as the diameter of the cable decreases—this means that a cable with a size of AWG 24 has a slightly higher attenuation than an AWG 23 cable.

What to do if the attenuation parameter fails?
The length of the horizontal cable must be checked—i.e. whether the electrical length of the link (the actual length of the twisted pairs inside the cable) corresponds to the maximum permitted permanent link of 90 m. A frequent cause of higher attenuation is also an incorrectly terminated wire in patch panels, outlets, or keystones.

Structured Cabling Testing

ACR (Attenuation to Crosstalk Ratio)

ACR is a theoretical parameter (i.e. it is not measured but is deduced from two previously measured values) which shows the margin between the NEXT and attenuation values: ACR [dB] = NEXT [dB] - A [dB]. If the level of attenuation meets or approaches the level of near end cross-talk, the transmitted signal will be lost. The interval between NEXT and attenuation must be at least 10 dB.

What to do if the ACR parameter fails?
As the ACR parameter is dependent on the NEXT as well as attenuation values, an improvement of these two parameters will influence the resulting ACR values.
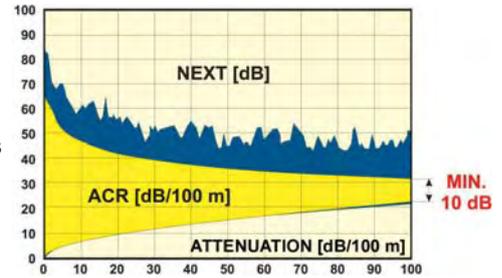
FEXT (Far End Cross Talk)

FEXT expresses the cross-talk of the signal from one pair to another pair within one cable measured at the far end. This is the same parameter as NEXT, only with FEXT, the measurement is done at a different cable end. Again, all combinations of pairs are measured within one cable—i.e. 12-36, 12-45, 12-78, 36-45, 36-78, and 45-78. FEXT servers an important basis for the following ELFEXT parameter.

ELFEXT (Equal Level Far End Cross Talk)

ELFEXT corresponds much better to the actual situation during data transfer than FEXT. It is because the cross-talk inside the cable decreases as the attenuation increases. Just as with ACR, ELFEXT is a theoretical parameter (i.e. it is not measured but is calculated from other previously measured values): ELFEXT [dB] = FEXT [dB] - A [dB]. Thus ELFEXT is the cross-talk at the far end decreased by the attenuation.

PSNEXT (Power Sum NEXT)

PSNEXT is a theoretical value calculated from the previously measured NEXT. The PSNEXT parameter is primarily important for protocols that use all four pairs for signal transfer (e.g. Gigabit Ethernet). The output sum of cross-talk at the near end shows how much signal gets from three pairs to the remaining fourth pair. The source of the signal and measurement of cross-talk takes place at the same end of the cable.

What to do if the PSNEXT parameter fails?
Just as with other parameters, PSNEXT is also influenced by the measured values of NEXT. Thus, an improvement in the near end cross-talk value will affect the resulting value of PSNEXT.

PSELFEXT (Power Sum ELFEXT)

PSELFEXT is calculated from the ELFEXT value. Just like PSNEXT, this parameter is important for protocols that use all four pairs for signal transfer. PSELFEXT expresses how much signal in the same cable gets from three pairs to the remaining fourth pair. The source of the signal and measurement of cross-talk takes place at opposite ends of the cable.

Propagation Delay

This value expresses a delay of the signal travelling from one end of the cable to the other. The typical delay of the signal in a category 5e cable is around 5 ns per 1 m; the permitted limit is 5.7 ns per 1 m, which is 570 ns per 100 m. Propagation Delay also serves as a basis for testing the Delay Skew value.

Delay Skew

Delay Skew shows the difference in signal delay between the fastest and the slowest pair. The Delay Skew parameter is affected by (1.) different length of the pairs; (2.) difference in material (resistance, impedance etc.); (3.) the effect of surrounding interference. If the difference is too great, there can be an incorrect interpretation of data by the active device (usually a switch, network card, etc.). Just as for PSNEXT and PSELFEXT, the Delay Skew parameter is critical for protocols that use all four pairs, such as Gigabit Ethernet.

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu
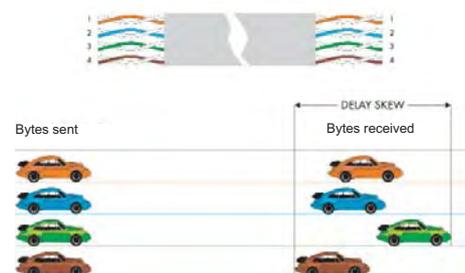
# Structured Cabling Testing

Length
There is a direct proportionality between the length and attenuation (i.e. the longer the length of cable, the higher the attenuation). Testing devices use so-called TDR (Time Domain Reflectometery) for measuring lengths. This means that a pulse is sent down the cable, then it is reflected back onto the remote unit, and subsequently the time during which the pulse travels the whole track is recorded. Based on the NVP (i.e. Nominal Velocity of Propagation, which expresses the signal speed in the cable as compared to the speed of light in a vacuum), the length of the measured segment is calculated. This concerns the length of the twisted pairs inside the cable (so-called electrical length), not "untangled" cable (so-called physical length). At 85 m, the variation between electrical and physical length can be up to 5 m depending on the twisting of each pair.

Return Loss
Return Loss shows the reflection of the signal because of varying impedance at different cable parts. Due to these impedance imbalances, part of the energy can return to the transmitter, which can cause the signal interference.

When testing structured cabling, two basic topologies are used:
Permanent link—the connection from the patch panel to the work area telecommunication outlet (i.e. horizontal cabling); this is the most permanent fixture on the structured caballing and cannot easily be taken apart. The maximum permitted length is 90 m.

Horizontal Cabling

Patch Panel

Outlet

max. 90 m
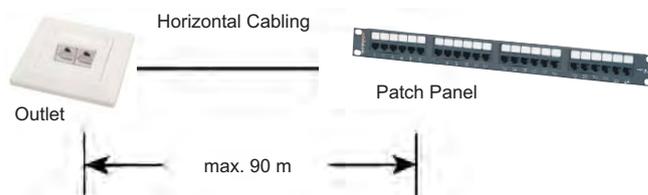
Channel—the connection from the active device (e.g. switch) in the data rack to the network card in the computer, patch cords included. The recommended maximum length of an equipment cord in the data rack is 5 m; the maximum recommended length for work area cord is 20 m. The length of the channel (i.e. the horizontal caballing plus equipment cord as well as work area cord) should not exceed 100 m.

Work Area Cord

Horizontal Cabling

Equipment Cord

Patch Panel

Outlet

max. 100 m
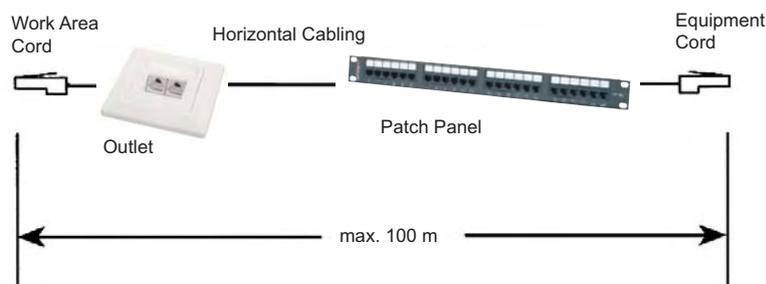
10GBaseT and Structured Cabling

Gigabit Ethernet was, until recently, considered to be the limit that would be very difficult to overcome on metallic structured cabling. Now it is obvious that 1 Gbps will not be the maximum transmission rate that can be achieved on copper twisted pair cables. The new 10GBaseT Ethernet standard that was published in June 2006 by the IEEE 802.3an group proves this. In the first stage, this new protocol with transmission speeds of up to 10 Gbps will be primarily employed in backbone distribution systems, SAN's (Storage Area Networks), and data centers.

1. Running 10GBaseT on currently existing cabling

The document ANSI/TIA/EIA TSB 155 deals with operating 10GBaseT over currently existing Category 5E and 6 cablings. The test results performed in connection with this bulletin showed that it will not be possible to run 10 Gbps data transfers on Category 5E networks and that on current unshielded Category 6 cabling the 10GBaseT protocol will be able to operate for a distance of up to 55 m. This length limitation should be improved on shielded Category 6 systems but it is highly recommended to use Category 6A components for all new 10G installations as the this new category was primarily designed to provide full compatibility with no length or other limitations for the 10GBaseT. The factor that plays an important role in the above mentioned length restriction is the so-called Alien Crosstalk. It is influenced by the amount of crosstalk signal from external sources, such as other cables in a cable bundle, electronic devices operated nearby, telephones, etc.

2. New requirements for future cabling systems for 10GBaseT

As it was already mentioned, a new category with bandwidth of up to 500 MHz (i.e. double of what is available for the current Category 6) was defined to ensure full compatibility of cabling systems with the 10GBaseT protocol, both including the Permanent Link and Channel topologies as well as unscreened and screened cablings. This new category is referred to as "Augmented Category 6" or "Category 6A" and will be published in the upcoming structured cabling specification updates (e.g. ANSI/TIA/EIA 568B.2-10). These updates are currently available in drafts and will be published for the wide public very soon.

Similarly to Category 6A, a "new" Category 7 will be defined. It will be referred to as "Augmented Category 7" or "Category 7A" with bandwidth of up to 1,000 MHz (as compared to 600 MHz of the current Category 7).

Signamax Category 7 shielded cable parameters (at temperature of 20°C).
The cable supports 10GBaseT. See page K1 for more.

f (MHz)	Attenuation (dB/100 m)	NEXT (dB)	PS-NEXT (dB)	ACR (dB/100 m)	PS-ACR (dB/100 m)	ELFEXT (dB/100 m)	PS-ELFEXT (dB/100 m)	Return loss (dB)
1	1.8	100	97	98	95	105	105	–
4	3.4	100	97	97	94	105	102	27
10	5.4	100	97	95	92	97	94	30
16	6.8	100	97	93	90	93	90	30
20	7.7	100	97	92	89	91	88	30
31.2	9.6	100	97	90	87	87	84	30
62.5	13.7	100	97	86	83	81	78	30
100	17.4	100	97	83	80	77	74	30
125	19.5	95	92	75	72	75	72	26
155.5	21.9	94	91	72	69	73	70	26
175	23.3	93	90	70	67	72	69	25
200	25.0	92	89	67	64	71	68	25
250	28.1	90	87	62	59	69	66	24
300	30.9	89	86	58	55	67	64	24
450	38.3	87	84	48	45	64	61	23
600	44.8	85	82	40	37	61	58	22
750	52.0	83	80	31	28	59	56	21
900	59.4	82	79	23	20	58	55	20

Signamax Category 6A shielded cable parameters (at temperature of 20°C).
The cable supports 10GBaseT.

f (MHz)	Attenuation (dB/100 m)	NEXT (dB)	PS-NEXT (dB)	ACR (dB/100 m)	PS-ACR (dB/100 m)	ELFEXT (dB/100 m)	PS-ELFEXT (dB/100 m)	Return loss (dB)
1	1.8	100	97	98	95	105	105	–
4	3.4	100	97	97	94	105	102	27
10	5.4	100	97	95	92	97	94	30
16	6.8	100	97	93	90	93	90	30
20	7.7	100	97	92	89	91	88	30
31.2	9.6	100	97	90	87	87	84	30
62.5	13.7	100	97	86	83	81	78	30
100	17.4	100	97	83	80	77	74	30
125	19.5	95	92	75	72	75	72	26
155.5	21.9	94	91	72	69	73	70	26
175	23.3	93	90	70	67	72	69	25
200	25.0	92	89	67	64	71	68	25
250	28.1	90	87	62	59	69	66	24
300	30.9	89	86	58	55	67	64	24
400	38.3	87	84	48	45	64	61	23
500	44.8	85	82	40	37	61	58	22

NETWORK CONNECTIVITY SYSTEMS
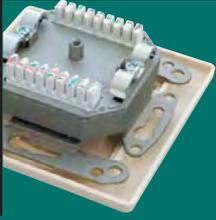
Work Area Outlet Systems

Category 6 Wall Outlets

Category 5E Wall Outlets

Category 6A Keystone Jacks

Category 6 Keystone Jacks

Category 5E Keystone Jacks

Keystone Jack Modular Outlets

Keystone Multimedia Modules

Category 6 Wall Outlets

Signamax Category 6 outlets are designed for an easy installation. This is ensured by strain relief providing cable positioning and screening contact between the shielded cable and metallic outlet housing. The outlet has a slim design and excellent EMC performance.

The modular construction of the outlet allows flush mounting or wall mounting installation using universal back box. The Signamax Category 6 outlets exceed all electrical parameters specified in the TIA/EIA 568-B.2-1, ISO/IEC 11801:2002, and EN 50173-1 standards. Both T568A and T568B wiring configurations are supported on the LSA+/Krone IDC termination block.
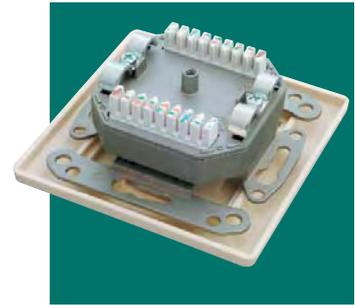
W45/6-2ESH/R back view uncovered

W45/6-2ESH/R

W45/6-2E/R

W45/6-2E/R back view

Category 6 Wall Outlets

PART NO.	DESCRIPTION
W45/6-2ESH/R	Shielded Wall Outlet Cat 6, 80 x 80 mm, White
W45/6-2ESH	Shielded Wall Outlet Cat 6, 80 x 80 mm, Ivory
W45/6-2E/R	Unshielded Wall Outlet Cat 6, 80 x 80 mm, White
W45/6-2E	Unshielded Wall Outlet Cat 6, 80 x 80 mm, Ivory
W45-AP80-32/R	Wall Mounted Back Box 80 x 80 x 32 mm, White
W45-AP80-32	Wall Mounted Back Box 80 x 80 x 32 mm, Ivory

W45-AP80-32/R

Category 5E Wall Outlets

For Signamax Category 5 Enhanced outlet its high transmission parameters is the key attribute. Two angled RJ45 ports are covered by plastic frame that fits trunking systems using 80 x 80 mm modules. Outlet has an excellent EMC performance and is developed for all demanding markets. Modular construction of the outlet allows flush mount or wall mount installation using universal back box. Space for port numbering stickers or direct marking above each port allows an easy administration and is user friendly.
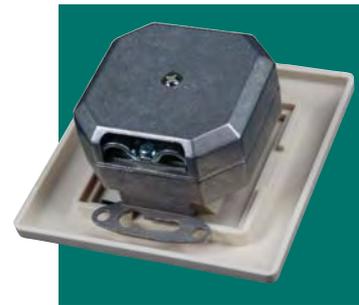
W45/5-2ESH

W45/5-2ESH

W45/5-2E

Category 5E Wall Outlets

PART NO.	DESCRIPTION
W45/5-2ESH/R	Shielded Wall Outlet Cat 5E, 80 x 80 mm, White
W45/5-2ESH	Shielded Wall Outlet Cat 5E, 80 x 80 mm, Ivory
W45/5-2E/R	Unshielded Wall Outlet Cat 5E, 80 x 80 mm, White
W45/5-2E	Unshielded Wall Outlet Cat 5E 80 x 80 mm, Ivory
W45-AP80-32/R	Wall Mounted Back Box 80 x 80 x 32 mm, White
W45-AP80-32	Wall Mounted Back Box 80 x 80 x 32 mm, Ivory
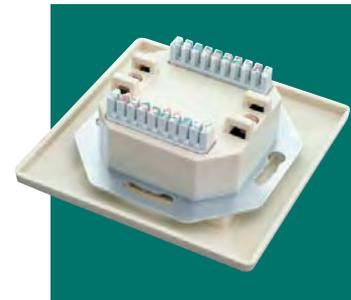
W45/5-2E back view

W45-AP80-32

Category 6A Keystone Jacks

Signamax 10G shielded Category 6A keystone jacks have been designed to meet the need for high-bandwidth applications, such as 10GBaseT. These components have very slim profile and thus can fit in all highest density applications. They are engineered to exceed the 10G/Category 6A permanent link as well as channel level requirements and are fully tested up to 500 MHz.

The compliancy of the Signamax 10G keystones with 10G/Category 6A standards have been confirmed by both permanent link and channel certificates issued by an independent testing laboratory GHMT. The Signamax 10G keystone jacks support T568A and T568B wiring for maximum flexibility using an easy to read color-code wiring label and can be terminated by standard 110 or Krone termination tools. New contact design provide enhanced plug to jack connection integrity and protects against damage caused by insertion of 4 or 6 position plugs and are rated for 1,000 plug insertions.
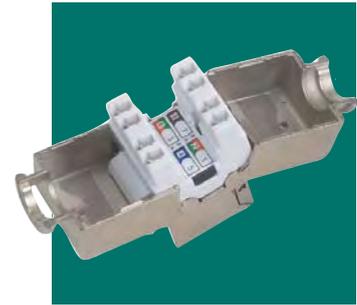
KJS458-10G

KJS458-10G

KJS458-10G

Category 6A Shielded Keystone Jacks

PART NO.	DESCRIPTION
KJS458-10G	10G Shielded Keystone Jack, Universal Wiring, T568A/B

Protocols:	10GBaseT
Life Cycle:	1,000 plug insertions
Contact Material:	50µ gold and 100µ nickel
IDC Block:	dual 110/Krone 8p8c
IDC Block Life Cycle:	200 terminations
Wire:	AWG 26-22
Other material:	FR according to UL94V-2
Storage Temperature:	-40° – 80°C
Operation Temperature:	-40° – 80°C
Max. Humidity Operation:	93%

Category 6 Keystone Jacks

Signamax Connectivity Systems Category 6 Keystone Jacks have been designed to meet the need for high-bandwidth applications. Category 6 connectors are slim in profile for the highest density applications, and are engineered to exceed all TIA/EIA-568-B.2-1 Category 6 permanent link and channel level requirements. Category 6 jacks are fully tested to 250 MHz.

Category 6 jacks support both T568A and T568B wiring for maximum flexibility using an easy to read color-code wiring label and can be terminated using standard 110 or Krone termination tools. New contact design provide enhanced plug to jack connection integrity and protects against damage caused by insertion of 4 or 6 position plugs and are rated for 1,000 plug insertions providing for the highest level of system reliability.

These jacks feature the ability to mount either color-coded icon tabs for service identification or dust covers to protect unused jacks form dust and other contaminants. Jacks are available in various colors and are supplied with three color-matched icon tabs and dust covers for voice or data identification.
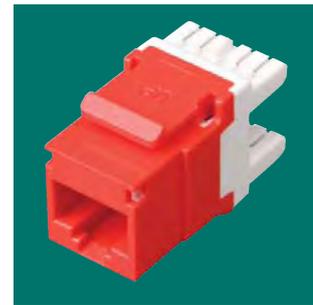
KJ458-C6-RD

KJ458-C6-WH

KJS458-C6

KJ458-C6-YE

Category 6 Unshielded Keystone Jacks
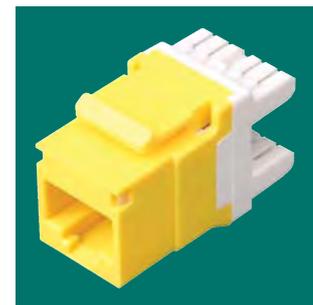
PART NO.	DESCRIPTION
KJ458-C6-WH	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, White
KJ458-C6-BK	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, Black
KJ458-C6-BU	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, Blue
KJ458-C6-GN	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, Green
KJ458-C6-RD	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, Red
KJ458-C6-YE	Category 6 Unshielded Keystone Jack, Universal Wiring T568A/B, Yellow

KJ458-C6-BK

Category 6 Shielded Keystone Jack

PART NO.	DESCRIPTION
KJS458-C6	Category 6 Shielded Keystone Jack, Universal Wiring, T568A/B

KJ458-C6-BK

www.signamax.eu

SIGNAMAX™
CONNECTIVITY SYSTEMS

H4

Category 5E Keystone Jacks

Category 5E Keystone Jacks exceed permanent link and channel level requirements as defined in TIA/EIA-568-B.2 and are fully tested to 155 MHz. Provide a sound platform for supporting all today's network operating systems including Gigabit Ethernet.

Category 5E jacks can be terminated with industry standard 110 or Krone termination tools and feature color-coding for both T568A and T568B wiring. Jacks feature the ability to mount either color-coded icon tabs for service identification or dust covers to protect unused jacks form dust and other contaminants. Jacks are available in various colors and are supplied with three color-matched icon tabs and dust covers for voice or data identification.

KJ458-C5E-WH

KJ458-C5E-YE
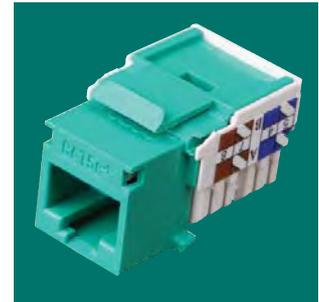
KJ458-C5E-BK

KJ458-C5E-GN

Category 5E Unshielded Keystone Jacks

PART NO.	DESCRIPTION
KJ458-C5E-WH	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, White
KJ458-C5E-BK	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, Black
KJ458-C5E-BU	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, Blue
KJ458-C5E-GN	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, Green
KJ458-C5E-RD	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, Red
KJ458-C5E-YE	Category 5E Unshielded Keystone Jack, Universal Wiring T568A/B, Yellow

Category 5E Feed-Thru Coupler

PART NO.	DESCRIPTION
KRJ45/5S	Category 5E Panel Mount Feed-Thru Coupler, Black
KRJ45/5S-SH	Category 5E Shielded Panel Mount Feed-Thru Coupler, Black

KRJ45/5S

Category 5E Shielded Keystone Jack

PART NO.	DESCRIPTION
KJS458-C5E	Category 5E Shielded Keystone Jack, Universal Wiring, T568A/B

KJS458-C5E

NETWORK CONNECTIVITY SYSTEMS

Keystone Jack Modular Outlets

Modular outlets from Signamax are dedicated to be user-friendly solution for customers who need high modularity in reasonable quality. Contains wide range of outlets and frames, each usable for all keystone jacks, modular jacks and faceplates from our portfolio.

KJGM – back
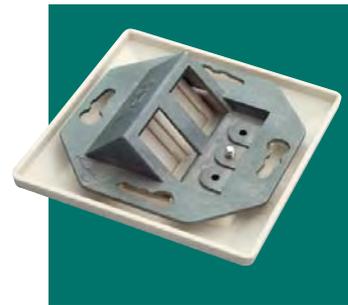
KJGM

KJGM-WH

Keystone Jack Modular Outlets

PART NO.	DESCRIPTION
KJGM	Modular Outlet for 2 x 45 Keystone, 80 x 80 mm, Ivory
KJGM-WH	Modular Outlet for 2 x 45 Keystone, 80 x 80 mm, White

Keystone Multimedia Modules

Signamax Premise Connectivity System offers a wide range of keystone connector modules designed to create a customized multimedia solution in any single or double gang faceplate or surface mount box. Applications include wide variety of small form factor fiber optic couplers.
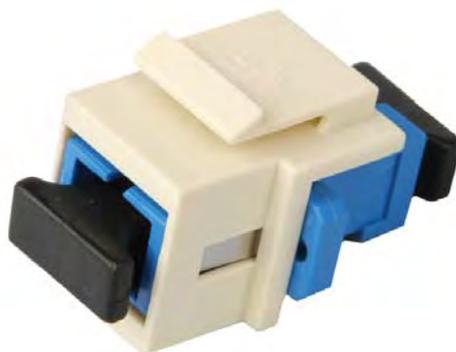
CMK-ST

CMK-BL

Keystone Multimedia Modules

PART NO.	DESCRIPTION
CMK-BL	Blank Keystone Module
CMK-ST	ST MM Fiber Connector Module
CMK-SC	SC MM Fiber Connector Module

NETWORK CONNECTIVITY SYSTEMS
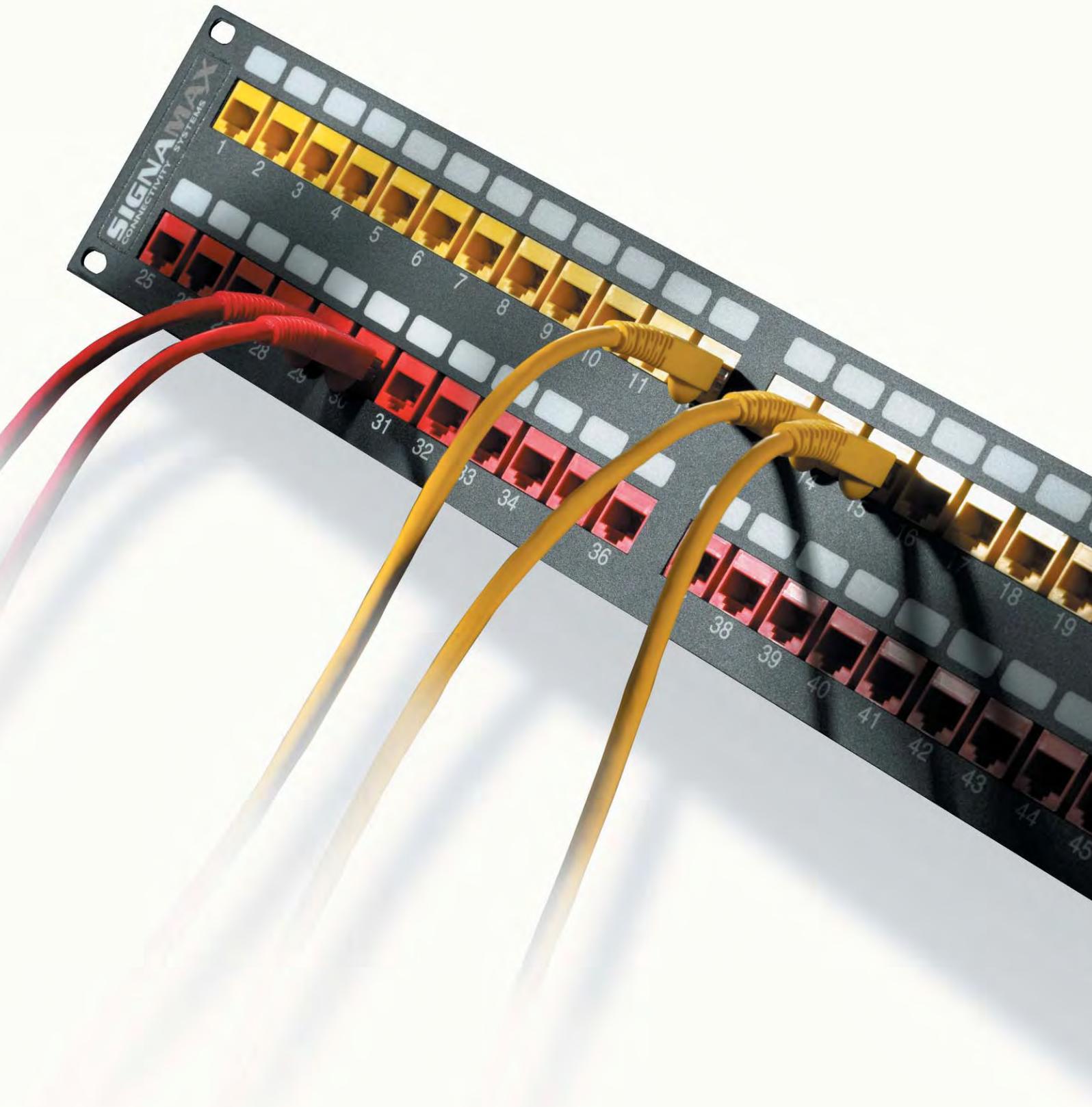
Patch Panels

Unloaded Shielded Patch Panel for 10G

Category 6 Shielded Patch Panels

Category 6 Unshielded Patch Panels

Category 5E Shielded Patch Panels

Category 5E Unshielded Patch Panels

ISDN Patch Panels

Unloaded Shielded Patch Panel for 10G

Signamax shielded unloaded patch panel is designed to be used with the Signamax 10G shielded Category 6A keystone jacks (i.e. KJS458-10G) and therefore is an important part of the Signamax 10G high-performance solution. The panel can be loaded with 24 keystones and is equipped with a cable management bar to secure the cables and ensure proper and stable connection. The colour of the Signamax shielded unloaded patch panel is black and its height is 1U.
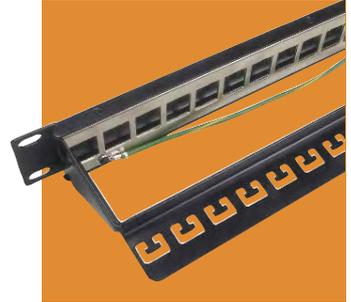
EPP-0-24SH

EPP-0-24SH

Category 6A Shielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
EPP-0-24SH	24-Port Unloaded Shielded Patch Panel for 10G keystones	1U

Number of Ports:	24 port
Color:	Black
Units:	1U
Height:	44 mm
Width:	484 mm
Depth:	114 mm
Storage Temperature:	-40° – 70°C
Operation Temperature:	-30° – 60°C
Max. Humidity Operation:	93%

Category 6 Shielded Patch Panels

Signamax shielded Category 6 patch panel is designed to be used with other Category 6 components as part of complete high-performance solution. The panel meets all electrical parameters specified in the TIA/EIA 568-B.2-1, ISO/IEC 11801:2002 and EN 50173-1 standards. It supports both T568A and T568B wiring configurations using an easy to read color-coded wiring label. Each port of the Signamax Category 6 panel is sequentially numbered for easy administration. The panel is equipped with finger-screw strain reliefs to secure the cables and to ensure proper connection between the shield of the cable and the panel. The Signamax shielded Category 6 patch panel is equipped with LSA+/Krone IDC termination block.

EPP-8KS6-24SH
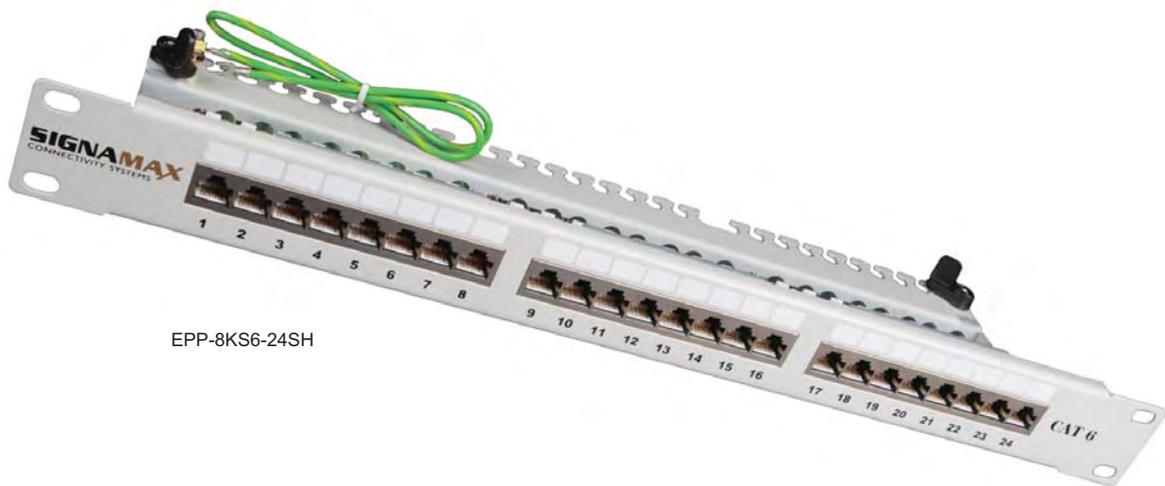
EPP-8KS6-24SH

Category 6 Shielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
EPP-8KS6-24SH	24-Port Category 6 Shielded Patch Panel	1U

Each panel is supplied with a set of installation screws, earthing set and plastic ties for cable fixing. Cable organizer, base frames, blind panels and other accessories are available on special request.
Panel is supplied in grey colour (RAL 7035).

Category 6 Unshielded Patch Panels

Signamax Category 6 unshielded patch panels are designed to exceed TIA/EIA-568-B.2-1, ISO/IEC 11801:2002 and EN 50173-1 performance specifications providing usable bandwidth beyond 250 MHz. These high-density panels are available in 12- through 48-Port versions and feature enhanced front and rear labeling for easy circuit identification. Signamax Category 6 unshielded panels support both T568A and T568B wiring configurations using an easy to read color-coded wiring label. These panels are constructed for maximum durability and feature a fully enclosed, 8-Port modular design, which provides flexibility and protection of printed circuitry during termination.
A newly designed RJ45 contact configuration provides enhanced plug to jack connection integrity for superior reliability. Rear termination is made quick and easy using a 4-pair inline 110 type connector compatible with industry standard 110 termination tool. The panels include an integrated cable management feature for routing and strain relief requirements.
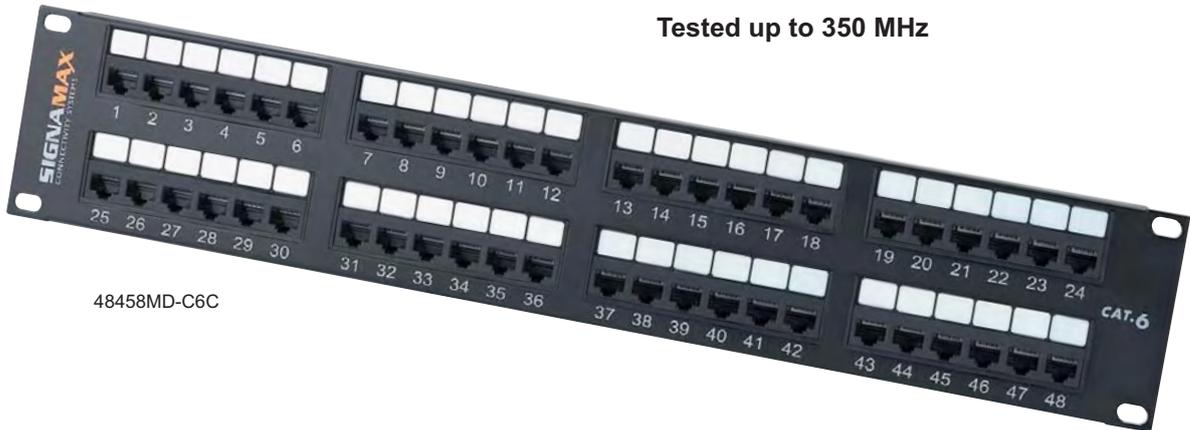
24458MD-C6C

Tested up to 350 MHz

48458MD-C6C

Category 6 Unshielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
12458MD-C6C	12-Port Category 6 Patch Panel, Universal Wiring T568A/B	1U
24458MD-C6C	24-Port Category 6 Patch Panel, Universal Wiring T568A/B	1U
48458MD-C6C	48-Port Category 6 Patch Panel, Universal Wiring T568A/B	2U

*Standard jack colour is black. Other colour jacks are available.*

12458MD-C6C

Category 5E Shielded Patch Panels

Signamax Category 5E shielded patch panel is designed to exceed TIA/EIA-568-B.2, ISO/IEC 11801:2002 and EN 50173-1 performance specifications providing usable bandwidth beyond 155 MHz. This panel is available in 24-Port version and features enhanced front and rear labeling for easy circuit identification. The panel supports both T568A and T568B wiring configurations using an easy to read color-coded wiring label. It is constructed for maximum durability and features a fully enclosed, 8-Port modular design, which provides flexibility and protection of printed circuitry during termination. The Signamax shielded Category 5E panel includes an integrated cable management feature for cable routing and strain relief requirements.
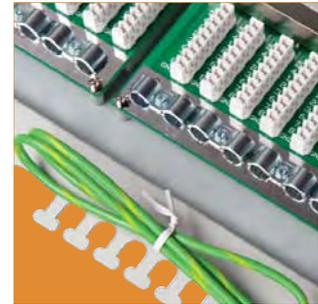
EPP-8KS5-24-SH

EPP-8KS5-24-SH

Category 5E Shielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
EPP-8KS5-24SH	24-Port Category 5E Shielded Patch Panel	1U

Each panel has Back Krone IDC block and is supplied with the grounding set and plastic ties for cable attachment. Panel is supplied in grey colour (RAL 7035).

Category 5E Unshielded Patch Panels

Signamax Category 5E unshielded patch panels have been engineered for high-performance, high-density, and ease of installation. These panels exceed both component and channel performance as specified in TIA/EIA-568-B.2, ISO 11801:2002 and EN 50173-1, and include new features for port labeling, colour-coding and cable management. These Signamax Category 5E panels are designed for maximum strength, which allows for termination with a standard multi-pair 110 impact tool to reduce installation time. The panels feature a fully enclosed design for protectionof printed circuitry during termination. The Signamax Category 5E unshielded panels include an integrated cable management feature for routing and strain relief requirements.

48458MD-C5E

24458MD-C5E

Category 5E Unshielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
12458MD-C5E	12-Port Category 5E Patch Panel, Universal Wiring T568A/B	1U
24458MD-C5E	24-Port Category 5E Patch Panel, Universal Wiring T568A/B	1U
48458MD-C5E	48-Port Category 5E Patch Panel, Universal Wiring T568A/B	2U

Standard jack colour is black. Other colour jacks are available.

24458MD-C5E

12458MD-C5E

ISDN Patch Panels

**Signamax ISDN Category 3 patch panel is a high-density
telecommunication panel with 25 and 50 standard RJ45 jacks. The panel
meets all latest standards and electrical parameters and is designed for
termination of two pair cable in Krone termination blocks. Printed circuit
board together with high quality components ensures the Category 3
performance. Integrated back cable management for separate cables
provides organized and secure installation. All ports are numbered.
The panel is available in 1U height.**
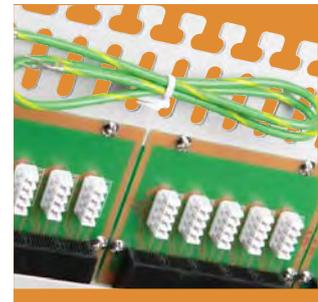
ISDN25
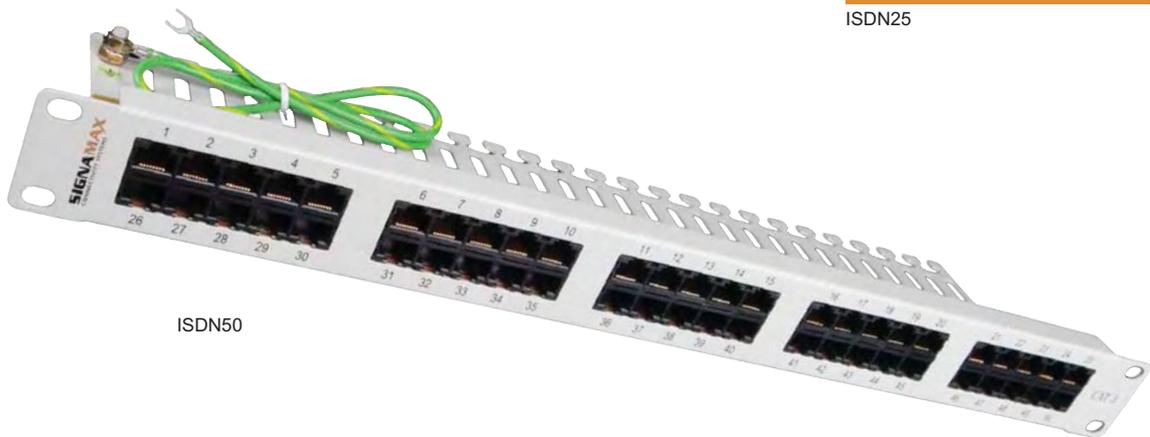
ISDN50

Category 3 Shielded Patch Panels

PART NO	DESCRIPTION	RACK SPACE
ISDN25	25-Port Category 3 ISDN Patch Panel	1U
ISDN50	50-Port Category 3 ISDN Patch Panel	1U

ISDN50

SPECIFICATIONS
  25-Port Category 3 ISDN patch panel
  Front connector
  RJ45, 8P8C, connected pins 3-6
  Plated by 30 micro inches of gold over nickel
  Jacks grouped into blocks by 5 pieces, single layer
  Terminal block
  4 position Krone block, 4P4C, all connected
DIMENSIONS (H x W x D)
  43.8 mm x 464.7 mm x 130.5 mm
SPECIFICATIONS
  50-Port Category 3 ISDN patch panel
  Front connector
  RJ45, 8P8C,connected pins 3-6
  Plated by 30 micro inches of gold over nickel
  Jacks grouped into blocks by 5 pieces, double layer
  Terminal block
  8 position Krone block, 8P8C, all connected

ISDN25

www.signamax.eu

SIGNAMAX™
CONNECTIVITY SYSTEMS
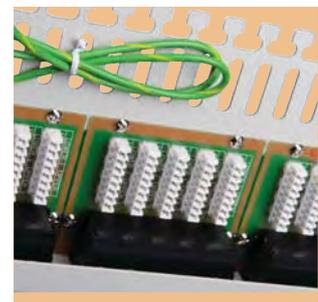
NETWORK CONNECTIVITY SYSTEMS
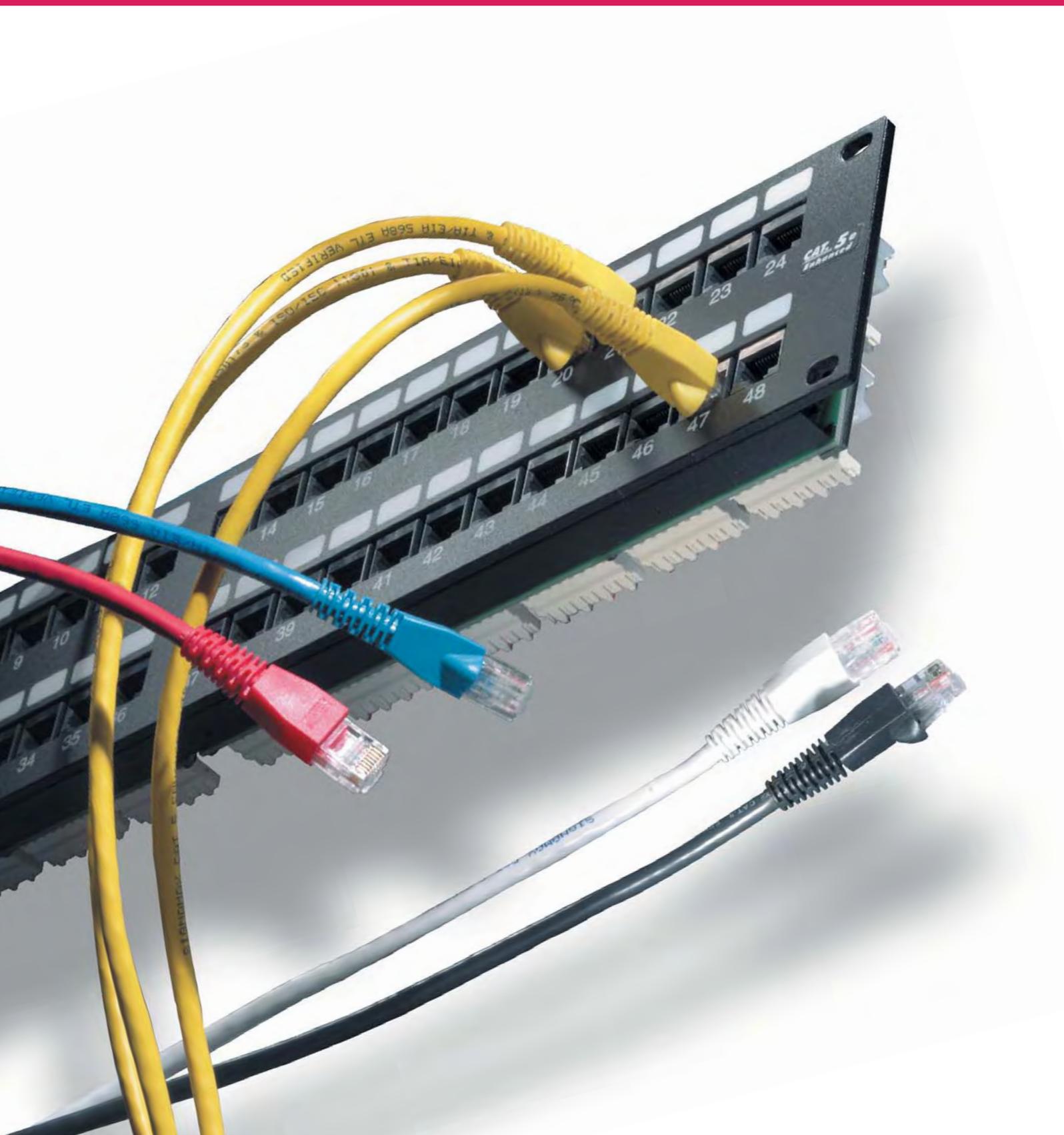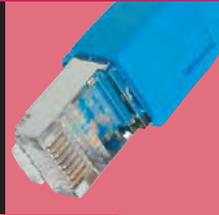
Patch Cords/Testers

S-FTP Category 6A Patch Cords

S-FTP Category 6 Patch Cords

S-FTP Category 5E Patch Cords

UTP Category 6 Patch Cords

UTP Category 5E Patch Cords

T-Adapters and Testers

Inline Couplers and Connection Boxes

SIGNAMAX™
CONNECTIVITY SYSTEMS

S-FTP Category 6A Patch Cords

Signamax shielded 10G Category 6A patch cables with high quality RJ45 connectors are assembled by using AWG 26 individually shielded pairs PiMF patch cable. The high quality plugs are plated by gold over nickel on polished bronze for up to 2,500 plug cycles. The Category 6A halogen-free patch cables are available in 1m, 2m, 3m, 5m and 10m lengths. Protection provided by rubber boots prevents pair-to-pair disturbance inside the body of the connector and increases performance of the patch cable.

C6A-315GY

S-FTP Category 6A Patch Cords

LENGTH	GREY
0.5 m	C6A-315GY-0.5 MB
1 m	C6A-315GY-1 MB
2 m	C6A-315GY-2 MB
3 m	C6A-315GY-3 MB
5 m	C6A-315GY-5 MB
7 m	C6A-315GY-7 MB
10 m	C6A-315GY-10 MB

S-FTP Category 6 Patch Cords

Signamax shielded Category 6 patch cables with high quality Category 6 connector are assembled using 26 AWG individually shielded pairs patch cable. The high quality Category 6 plugs are plated by gold over nickel on polished bronze for up to 2,500 plug cycles. Protection provided by rubber boots prevents pair-to-pair disturbance inside the body of the connector and increases performance of the patch cable.

C6-315GY

S-FTP Category 6 Patch Cords

LENGTH	GREY	GREEN	BLUE	RED	YELLOW
0.5 m	C6-315GY-0.5 MB	C6-315GR-0.5 MB	C6-315BU-0.5MB	C6-315RD-0.5 MB	C6-315YE-0.5 MB
1 m	C6-315GY-1 MB	C6-315GR-1 MB	C6-315BU-1MB	C6-315RD-1 MB	C6-315YE-1 MB
2 m	C6-315GY-2 MB	C6-315GR-2 MB	C6-315BU-2MB	C6-315RD-2 MB	C6-315YE-2 MB
3 m	C6-315GY-3 MB	C6-315GR-3 MB	C6-315BU-3MB	C6-315RD-3 MB	C6-315YE-3 MB
5 m	C6-315GY-5 MB	C6-315GR-5 MB	C6-315BU-5MB	C6-315RD-5 MB	C6-315YE-5 MB
7 m	C6-315GY-7 MB	C6-315GR-7 MB	C6-315BU-7MB	C6-315RD-7 MB	C6-315YE-7 MB
10 m	C6-315GY-10 MB	C6-315GR-10 MB	C6-315BU-10MB	C6-315RD-10 MB	C6-315YE-10 MB

Other lengths, colours or halogen free cables on request.

S-FTP Category 5E Patch Cords

Signamax shielded Category 5 Enhanced patch cables are assembled using high quality 26 AWG double shielded patch cable. Protection provided by molded boots prevents pair-to-pair disturbance inside the body of the connector and increases performance of the patch cable.

C5E-315GY

S-FTP Category 5E Patch Cords

LENGTH	GREY	GREEN	BLUE	RED	YELLOW
0.5 m	C5E-315GY-0.5 MB	C5E-315GR-0.5 MB	C5E-315BU-0.5 MB	C5E-315RD-0.5 MB	C5E-315YE-0.5 MB
1 m	C5E-315GY-1 MB	C5E-315GR-1 MB	C5E-315BU-1 MB	C5E-315RD-1 MB	C5E-315YE-1 MB
2 m	C5E-315GY-2 MB	C5E-315GR-2 MB	C5E-315BU-2 MB	C5E-315RD-2 MB	C5E-315YE-2 MB
3 m	C5E-315GY-3 MB	C5E-315GR-3 MB	C5E-315BU-3 MB	C5E-315RD-3 MB	C5E-315YE-3 MB
5 m	C5E-315GY-5 MB	C5E-315GR-5 MB	C5E-315BU-5 MB	C5E-315RD-5 MB	C5E-315YE-5 MB
7 m	C5E-315GY-7 MB	C5E-315GR-7 MB	C5E-315BU-7 MB	C5E-315RD-7 MB	C5E-315YE-7 MB
10 m	C5E-315GY-10 MB	C5E-315GR-10 MB	C5E-315BU-10 MB	C5E-315RD-10 MB	C5E-315YE-10 MB
15 m	C5E-315GY-15 MB	C5E-315GR-15 MB	C5E-315BU-15 MB	C5E-315RD-15 MB	C5E-315YE-15 MB
20 m	C5E-315GY-20 MB	C5E-315GR-20 MB	C5E-315BU-20 MB	C5E-315RD-20 MB	C5E-315YE-20 MB

Other lengths, colours or halogen free cables on request.

UTP Category 6 Patch Cords

Signamax continues to set the standard for high-quality, high-performance patch cords. These Category 6 cables are manufactured to the strictest performance requirements as specified in TIA/EIA-568-B.2-1, ISO 11801:2002 and EN 50173-1 using the highest-level connector design and cable construction. Signamax category 6 patch cords incorporate slim-profile snag-free boots, which protect the plug latch, and a flexible, but durable cable strain relief. All patch cords use a special new connector design that assures maximum pair twist for unparalleled transmission performance and signal integrity. All cords are 100% tested.

C6-114GY

UTP Category 6 Patch Cords

LENGTH	GREY	GREEN	BLUE	RED	YELLOW
0.5 m	C6-114GY-0.5 MB	C6-114GR-0.5 MB	C6-114BU-0.5 MB	C6-114RD-0.5 MB	C6-114YE-0.5 MB
1 m	C6-114GY-1 MB	C6-114GR-1 MB	C6-114BU-1 MB	C6-114RD-1 MB	C6-114YE-1 MB
2 m	C6-114GY-2 MB	C6-114GR-2 MB	C6-114BU-2 MB	C6-114RD-2 MB	C6-114YE-2 MB
3 m	C6-114GY-3 MB	C6-114GR-3 MB	C6-114BU-3 MB	C6-114RD-3 MB	C6-114YE-3 MB
5 m	C6-114GY-5 MB	C6-114GR-5 MB	C6-114BU-5 MB	C6-114RD-5 MB	C6-114YE-5 MB
7 m	C6-114GY-7 MB	C6-114GR-7 MB	C6-114BU-7 MB	C6-114RD-7 MB	C6-114YE-7 MB
10 m	C6-114GY-10 MB	C6-114GR-10 MB	C6-114BU-10 MB	C6-114RD-10 MB	C6-114YE-10 MB

Other lengths, colours or halogen free cables on request.

UTP Category 5E Patch Cords

Signamax unshielded Category 5 Enhanced patch cables with high quality connector are assembled using high quality 26 AWG patch cable. High quality plugs are plated by gold over nickel on polished bronze for up to 2,500 plug cycles. Protection provided by molded boots prevents pair-to-pair disturbance inside the body of the connector and increases performance of the patch cable.
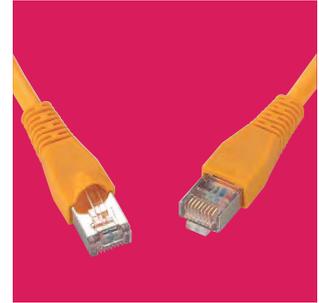
C5E-114YE

C5E-114GY

C5E-114RD

UTP Category 5E Patch Cords

LENGTH	GREY	GREEN	BLUE	RED	YELLOW
0.5 m	C5E-114GY-0.5 MB	C5E-114GR-0.5 MB	C5E-114BU-0.5 MB	C5E-114RD-0.5 MB	C5E-114YE-0.5 MB
1 m	C5E-114GY-1 MB	C5E-114GR-1 MB	C5E-114BU-1 MB	C5E-114RD-1 MB	C5E-114YE-1 MB
2 m	C5E-114GY-2 MB	C5E-114GR-2 MB	C5E-114BU-2 MB	C5E-114RD-2 MB	C5E-114YE-2 MB
3 m	C5E-114GY-3 MB	C5E-114GR-3 MB	C5E-114BU-3 MB	C5E-114RD-3 MB	C5E-114YE-3 MB
5 m	C5E-114GY-5 MB	C5E-114GR-5 MB	C5E-114BU-5 MB	C5E-114RD-5 MB	C5E-114YE-5 MB
7 m	C5E-114GY-7 MB	C5E-114GR-7 MB	C5E-114BU-7 MB	C5E-114RD-7 MB	C5E-114YE-7 MB
10 m	C5E-114GY-10 MB	C5E-114GR-10 MB	C5E-114BU-10 MB	C5E-114RD-10 MB	C5E-114YE-10 MB
15 m	C5E-114GY-15 MB	C5E-114GR-15 MB	C5E-114BU-15 MB	C5E-114RD-15 MB	C5E-114YE-15 MB
20 m	C5E-114GY-20 MB	C5E-114GR-20 MB	C5E-114BU-20 MB	C5E-114RD-20 MB	C5E-114YE-20 MB

Other lengths, colours or halogen free cables on request.

T-Adapters and Testers

When installing a cabling system, checking for open or short circuits is always a requirement. Signamax remote cable testers answer the need for testing T568A, T568B, 10BaseT, 10Base2, 10Base5 and Token Ring systems, for UTP and STP cabling.

E079X

Remote Cable Tester with USB Port

PART NO	DESCRIPTION
E097X	Remote Cable Tester with USB Port

T-Adapters

PART NO	DESCRIPTION
TA-V1	T-Adapter for splitting 4-pair Outlet to one 10Base-T and one Telephone Outlet
TA-V2	T-Adapter for splitting 4-pair Outlet to two 10Base-T Outlets
TA-V3	T-Adapter for splitting 4-pair Outlet to two Telephone Outlets

T-Adapters must be used in pairs.

TA-V1

Inline Couplers and Connection Boxes

Inline couplers and connection boxes allow a simple operation with installation cables, which can be easily extended. Broken cables can be coupled with no need to install new complete cable segment. Connection boxes can be used for all standard 4- to 8-wire installation cables of 26-22 AWG up to 10 mm outer diameter.

KRJ45-VEB5

KRJ45-VEB6

Inline Couplers and Connection Boxes

PART NO	DESCRIPTION
KRJ45-S	Inline Coupler E-TA 8/8 unshielded RJ45 UTP
KRJ45-VEBB	Inline Coupler E-TA 8/8 shielded RJ45 STP
KRJ45-VEB6	Connection Box LSA+ up to 600 MHz, Cat6, unshielded
KRJS45-VEB6	Connection Box LSA+ up to 600 MHz, Cat6, shielded
KRJ45-VEB5	Connection Box LSA+, Cat5e, unshielded
KRJS45-VEB5	Connection Box LSA+, Cat5e, shielded

KRJS45-VEB6

NETWORK CONNECTIVITY SYSTEMS

Category 5e Cable
Conforms to:
TIA/EIA 568B.2
ISO/IEC 11801
EN 50173

SIGNAMAX
CONNECTIVITY SYSTEMS

Keeping your world connected.

CATEGORY
Enhanced **5e**

HIGH PERFORMANCE
NETWORK CABLE

Category 6 Cable
Conforms to:
TIA/EIA 568B.2-1
ISO/IEC 11801
EN 50288

SIGNAMAX
CONNECTIVITY SYSTEMS

Keeping your world connected.

CATEGORY **6**

HIGH PERFORMANCE
NETWORK CABLE

SIGNAMAX™
CONNECTIVITY SYSTEMS

Installation Cable
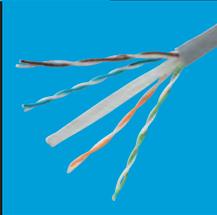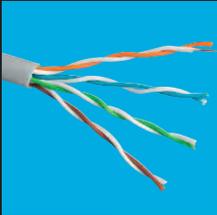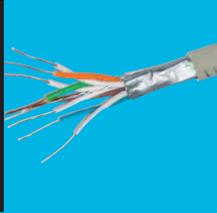
S-STP Category 7 Installation Cable

Certificates 10GBaseT

FTP Category 6 Installation Cable

UTP Category 6 Installation Cable

UTP Category 5E Installation Cable

FTP Category 5E Installation Cable

S-STP Category 7 Installation Cable

Signamax Category 7 shielded installation cable complies with the most stringent parameters with significant headroom for installation safety. Selected design goes hand-in-hand with the best quality which, with strictly controlled production, guarantees the highest performance. The shielded Category 7 installation cable is produced in S-STP configuration (PimF—Pair in metal foil) and is tested up to 900 MHz. Its excellent performance ensures full compatibility with all new high-speed data protocols, such as 10GBaseT. Foamed PE insulated conductors in the cable have the pairs shielded by aluminum foil (each pair separately) and copper braid (all four pairs). Sheath material is supported by fire retardant halogen free compound. Signamax Category 7 shielded installation cable complies with the latest standards as specified in EN 50173-1 and ISO/IEC 11801:2002.
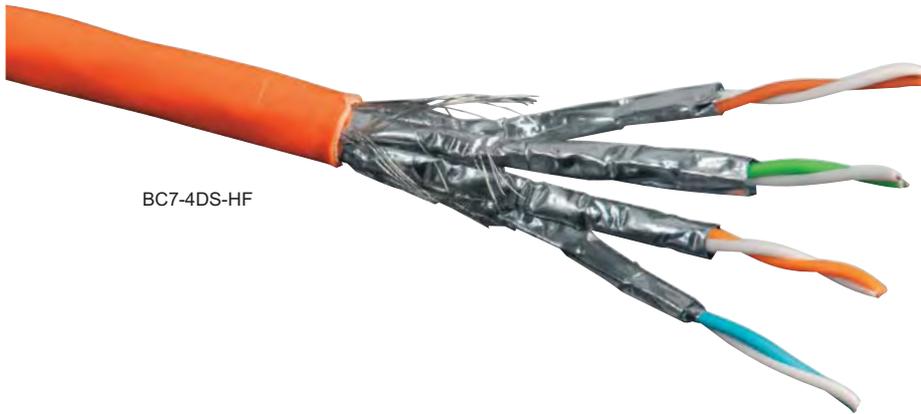
BC7-4DS-HF

Construction, Mechanical and Electrical Properties

Bending radius	
Minimum bending radius, installation	8 x D
Minimum bend radius, installed	4 x D

Tensile strength	
Maximum tensile load, installation	100 N
Maximum tension load, installed	No stretch

Temperature limits	
Installation	0° to +50°C
Operation	-20° to +60°C

Fire classification	
LSOH	IEC 60332-1

Heat release	
LSOH	500 MJ/km

Insulation resistance	> 5,000 MΩ/km
Resistance unbalance, maximum	2%
NVP	79%
Delay skew	20 ns/100 m
Diameter of copper conductor	AWG 23
Outer diameter	7.0 mm
Weight	65 kg/km

Transfer impedance, nominal IEC96-1	
1 MHz	1.1 MΩ/m
10 MHz	1.0 MΩ/m

Transmission characteristics acc. to CAT 7 (at 20°C)

Frequency (MHz)	Attenuation, nom. (dB/100 m)	NEXT (dB)	ACR (dB)
1.00	1.9	118	116
10.00	5.8	105	99
16.00	7.1	100	93
20.00	8.0	99	91
31.25	10.0	98	88
62.50	14.7	94	79
100.00	18.5	90	71
300.00	29.0	83	54
600.00	48.7	77	28
750.00	54.0	75	21
900.00	57.0	74	17

S-STP Category 7 Installation Cable

PART NO.	DESCRIPTION
BC7-4DS-HF	Category 7 S-STP Installation Cable, 500 m reels, LSOH

Certificates 10GBaseT

Signamax Permanent Link Certificate
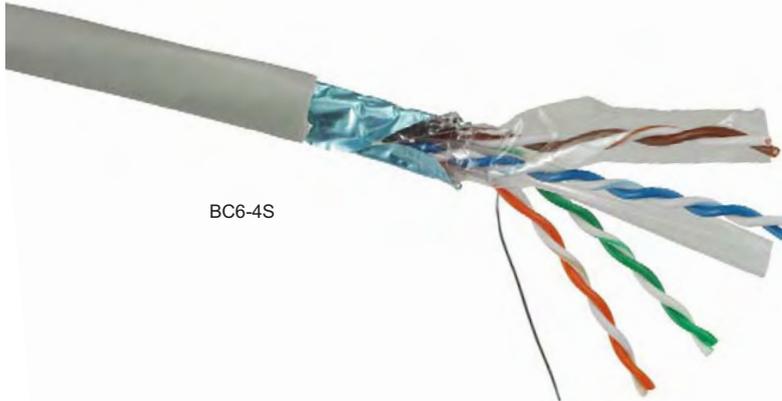

Signamax Channel Certificate

FTP Category 6 Installation Cable

Signamax Category 6 shielded installation cable BC6-4S is a high-performace data cable that is designed to meet the demands of today's most advanced voice and data networks. Category 6 cables support 1000Base-T/TX protocols for data rates up to 1 Gb/s and exceed the requirements of ANSI/TIA/EIA-568-B.2-1, ISO 11801:2002 and EN 50173-1:2002 standards. The Signamax Category 6 cable conductor is AWG 23 bare copper wire with high density polyethylene insulation. The non-metallic cross separator inside the cable ensures the best crosstalk elimination between individual pairs. The jacket of the BC6-4S horizontal cable is produced with PVC compound and its color is grey, the halogen-free version is also available.

BC6-4S

Mechanical Properties

Bending radius	$\geq$ 20 mm without load
	$\geq$ 40 mm with load
Temperature range, during operation	-20° up to +60°C
during installation	0° up to +50°C

Electrical Properties (at 20°C ± 5°C)

DC loop resistance	$\leq$ 176 Ω/km
Resistance unbalance	$\leq$ 2%
Insulation resistance (500 V)	$\geq$ 5,000 MΩ *km
Capacitance at 800 Hz	nom. 48 nF/km
Capacitance unbalance (pair to ground)	$\leq$ 1,500 pF/km
Characteristic impedance (1-100 MHz)	(100 ± 15) Ω
Characteristic impedance (1-100 MHz) (1-100 MHz)	(100 ± 15) Ω (100 ± 22) Ω
Nominal velocity of propagation	approx. 67%
Propagation delay	$\leq$ 535 ns/100 m
Delay skew	$\leq$ 20 ns/100 m
Test voltage (DC, 1 min) Core/Core and Core/Screen	1,000 V

Construction

Conductor	bare copper wire Ø 0.56 mm (AWG23)
Insulation	Polyethylene, Ø 1.0 mm
Twisting	2 cores to the pair

Transmission characteristics acc. to Category 6 (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		ACR (dB/100 m)		Return loss (dB)
	max.	nom.	min.	nom.	min.	nom.	min.
1	2	2	74	90	71.8	88	23
4	3.8	3.8	65	89	61.2	85.2	23
10	6	6	59	89	53	82.8	23
16	7.6	7.6	56	86	48.4	78.1	23
20	8.5	8.5	55	84	46.5	75.8	23
31.2	10.7	10.7	52	81	41.3	70.7	23
62.5	15.5	15.1	47	77	31.5	61.8	23
100	19.9	19.1	44	74	24.1	54.7	23
125	22.5	21.3	43	72	20.5	51	21
155.5	25.4	23.8	42	71	16.6	47.1	21
175	27.1	25.3	41	70	13.9	44.9	21
200	29.2	27	40	69	10.8	42.3	21
250	33	32.6	38	68	5	35.2	19

Technical Data

Product code	Outer diameter mm	Fire load MJ/km	kWh/m	Weight kg/km	Copper content kg/km	Tensile force N
BC6-4S	6.2	329	0.091	42	18	80

FTP Category 6 Installation Cable

PART NO.	DESCRIPTION
BC6-4S	Category 6 FTP Installation Cable, 500 m reels, PVC
BC6-4S-HF	Category 6 FTP Installation Cable, 500 m reels, LSOH

UTP Category 6 Installation Cable

Signamax Category 6 unshielded installation cable is designed to provide the highest level of transmission performance to meet the needs of today's most advanced voice and data networks. Category 6 cables support 10Base-T through 1000Base-T/TX protocols for data rates up to 1 Gb/s and exceed the requirements of TIA/EIA-568-B.2-1, ISO 11801:2002 and EN 50173-1 standards. The Signamax Category 6 cable conductor is AWG 23 bare copper wire with high density polyethylene insulation. The non-metallic cross separator inside the cable ensures the best crosstalk elimination between individual pairs.

BC6-4

Mechanical Properties

Bending radius	≥ 20 mm without load
	≥ 40 mm with load
Temperature range, during operation	-20° up to +60°C
during installation	0° up to +50°C

Electrical Properties (at 20°C ± 5°C)

DC loop resistance	≤ 176 Ω/km
Resistance unbalance	≤ 2%
Insulation resistance (500 V)	≥ 5,000 MΩ *km
Capacitance at 800 Hz	nom. 48 nF/km
Capacitance unbalance (pair to ground)	≤ 1,500 pF/km
Characteristic impedance (1-100 MHz)	(100 ± 15) Ω
Characteristic impedance (1-100 MHz) (1-100 MHz)	(100 ± 15) Ω (100 ± 22) Ω
Nominal velocity of propagation	approx. 67%
Propagation delay	≤ 535 ns/100 m
Delay skew	≤ 20 ns/100 m
Test voltage (DC, 1 min) Core/Core and Core/Screen	1,000 V

Construction

Conductor	bare copper wire Ø 0.56 mm (AWG23)
Insulation	Polyethylene, Ø 1.0 mm
Twisting	2 cores to the pair
Sheath	non metallic cross separator (spline) PVC

Transmission characteristics acc. to CAT 6 (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		ACR (dB/100 m)		Return loss (dB)
	max.	nom.	min.	nom.	min.	nom.	min.
1	2	2	74	90	71.8	88	23
4	3.8	3.8	65	89	61.2	85.2	23
10	6	6	59	89	53	82.8	23
16	7.6	7.6	56	86	48.4	78.1	23
20	8.5	8.5	55	84	46.5	75.8	23
31.2	10.7	10.7	52	81	41.3	70.7	23
62.5	15.5	15.1	47	77	31.5	61.8	23
100	19.9	19.1	44	74	24.1	54.7	23
125	22.5	21.3	43	72	20.5	51	21
155.5	25.4	23.8	42	71	16.6	47.1	21
175	27.1	25.3	41	70	13.9	44.9	21
200	29.2	27	40	69	10.8	42.3	21
250	33	32.6	38	68	5	35.2	19

Technical Data

Product code	Outer diameter mm	Fire load MJ/km	kWh/m	Weight kg/km	Copper content kg/km	Tensile force N
BC6-4	6.2	329	0.091	39	18	80

UTP Category 6 Installation Cable

PART NO.	DESCRIPTION
BC6-4	Category 6 UTP Installation Cable, 500 m reels, PVC

Halogen free cable available on request.

SIGNAMAX™
CONNECTIVITY SYSTEMS

UTP Category 5E Installation Cable

The Category 5E unshielded installation cable is mostly used cable for data transmission where no electromagnetic disturbance is a problem. Supplied as part of complete Signamax Category 5E solution, the cable represents one of the key elements for safety and economical data transfer. Sophisticated cable design ensures very low electromagnetic emitency and low crosstalk. All parameters exceed requirements specified by TIA/EIA 568-B.2-1, ISO/IEC 11801:2002, and EN 50173-1 standards. The Signamax Category 5E cables are suitable for the high-speed 1000BaseT Ethernet protocol. Sheath material is supported by fire retardant PVC and halogen free compound.

BC5E-4

Construction

Conductor	bare copper wire Ø 0.51 mm (AWG 24)
Insulation	Polyethylene, Ø 0.95 mm
Twisting	2 cores to the pair
Sheath	PVC alt. FRNC

Electrical Properties (at 20°C ± 5°C)

DC loop resistance	$\leq 192\ \Omega$/km
Resistance unbalance	$\leq 2\%$
Insulation resistance (500 V)	$\geq 2,000\ M\Omega$ *km
Capacitance at 800 Hz	nom. 48 nF/km
Capacitance unbalance (pair to ground)	$\leq 1,500$ pF/km
Characteristic impedance (1-100 MHz)	$(100 \pm 15)\ \Omega$
Nominal velocity of propagation	approx. 67%
Propagation delay	≤ 535 ns/100 m
Delay skew	≤ 20 ns/100 m
Test voltage (DC, 1 min) Core/Core and Core/Screen	1,000 V

Mechanical Properties

Bending radius	≥ 20 mm without load
	≥ 40 mm with load
Temperature range, during operation	-20° up to +60°C
during installation	0° up to +50°C

Transmission characteristics acc. to Category 5e (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		ACR (dB/100 m)		Return loss (dB)
	max.	nom.	min.	nom.	min.	nom.	min.
1	2	1.9	65	71	63.3	69.1	23
4	3.9	3.7	56	62	52.4	58.3	23
10	6.3	6.0	50	56	44.0	50.0	23
16	8.0	7.6	47	53	39.3	45.3	23
20	9.0	8.5	46	51	36.8	43.0	23
31.2	11.4	10.7	43	49	31.5	37.9	23
62.5	16.5	15.7	38	44	21.9	28.4	23
100	21.3	19.8	35	41	14.0	21.2	23

Technical Data

Product code	Outer diameter mm	Fire load MJ/km	kWh/m	Weight kg/km	Copper content kg/km	Tensile force N
BC5E-4	5.9	336	0.093	35	17.5	80

UTP Category 5E Installation Cable

PART NO.	DESCRIPTION
BC5E-4	Category 5E UTP Installation Cable, 305 m boxes, PVC

Halogen free cable available on request.

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu

FTP Category 5E Installation Cable

The Category 5E shielded installation cable is mostly used cable for data transmission where electromagnetic disturbance is a problem. Supplied as part of complete Signamax Category 5E solution, the cable represents one of the key elements for safety and economical data transfer. Sophisticated cable design ensures very low electromagnetic emitency and low crosstalk. All parameters exceed requirements specified by TIA/EIA 568-B.2-1, ISO/IEC 11801:2002, and EN 50173-1 standards. The Signamax Category 5E cables are suitable for the high-speed 1000BaseT Ethernet protocol.

BC5E-4S

Construction

Conductor	bare copper wire Ø 0.51 mm (AWG 24)
Insulation	Polyethylene, Ø 0.95 mm
Twisting	2 cores to the pair
Sheath	PVC alt. FRNC

Mechanical Properties

Bending radius	$\geq$ 20 mm without load
	$\geq$ 40 mm with load
Temperature range, during operation	-20° up to +60°C
during installation	0° up to +50°C

Electrical Properties (at 20°C ± 5°C)

DC loop resistance	$\leq$ 192 Ω /km
Resistance unbalance	$\leq$ 2%
Insulation resistance (500 V)	$\geq$ 2,000 MΩ *km
Capacitance at 800 Hz	nom. 48 nF/km
Capacitance unbalance (pair to ground)	$\leq$ 1,500 pF/km
Characteristic impedance (1-100 MHz)	(100 ± 15) Ω
Nominal velocity of propagation	approx. 67%
Propagation delay	$\leq$ 535 ns/100 m
Delay skew	$\leq$ 20 ns/100 m
Test voltage (DC, 1 min) Core/Core and Core/Screen	1,000 V

Transmission characteristics acc. to CAT 5E (at 20°C)

f (MHz)	Attenuation (dB/100 m)		NEXT (dB)		ACR (dB/100 m)		Return loss (dB)
	max.	nom.	min.	nom.	min.	nom.	min.
1	2	1.9	65	71	63.3	69.1	23
4	3.9	3.7	56	62	52.4	58.3	23
10	6.3	6.0	50	56	44.0	50.0	23
16	8.0	7.6	47	53	39.3	45.3	23
20	9.0	8.5	46	51	36.8	43.0	23
31.2	11.4	10.7	43	49	31.5	37.9	23
62.5	16.5	15.7	38	44	21.9	28.4	23
100	21.3	19.8	35	41	14.0	21.2	23

Technical Data

Product code	Outer diameter mm	Fire load MJ/km	Fire load kWh/m	Weight kg/km	Copper content kg/km	Tensile force N
BC5E-4S	5.9	336	0.093	35	17.5	80

FTP Category 5E Installation Cable

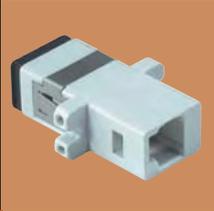| PART NO.	DESCRIPTION
BC5E-4S	Category 5E FTP Installation Cable, 305 m boxes, PVC

Halogen free cable available on request.

NETWORK CONNECTIVITY SYSTEMS
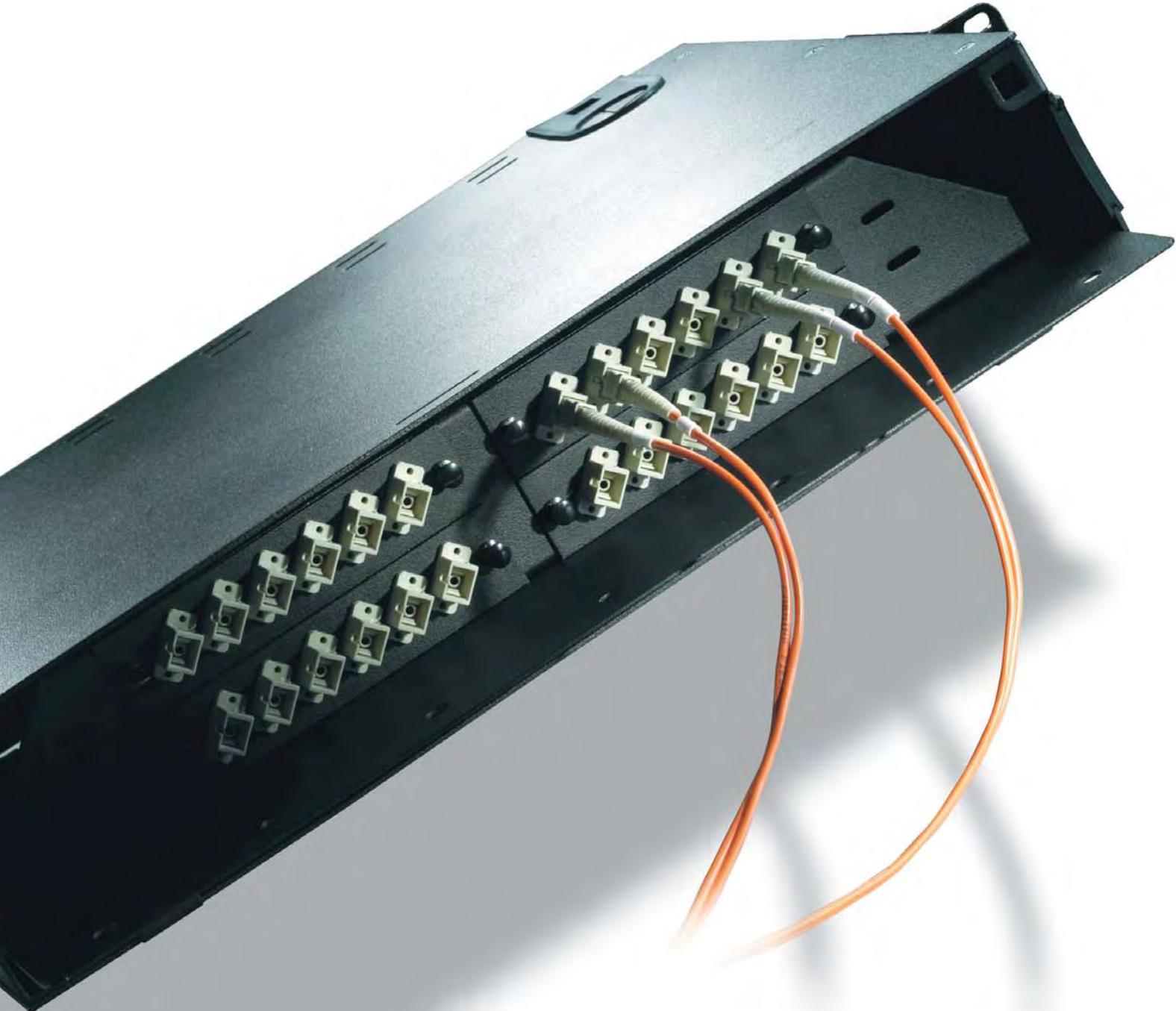
Fiber Optic Systems

Fiber Optic Patch Cords

Fiber Optic Adapters

Fiber Optic Patch Panels

Wall Mount Fiber Optic Box

Fiber Optic Patch Cords

Fiber optic patch cords are suited for equipment jumper cable, cross connects, and work area connections. All patch cords are manufactured using OFNR riser grade cable and are 100% factory tested to ensure performance to TIA/EIA-568-B-2, ISO 11801:2002 and EN 50173-1 standards. ST/ST, SC/SC and hybrid ST/SC Patch Cords are available in both multimode (62.5/125 μm and 50/125 μm) and singlemode cable-types, in duplex and simplex versions.

ST Fiber Optic Patch Cords

PART NO.	DESCRIPTION
FC-2/2-LM	ST to ST Duplex Multi Mode Patch Cord, 62.5/125
FC50-2/2-LM	ST to ST Duplex Multi Mode Patch Cord, 50/125
FC9-2/2-LM	ST to ST Duplex Single Mode Patch Cord, 9/125

For length substitute L in P/N.
1=1 meter   2=2 meters   3=3 meters   5=5 meters
Other lengths and Simplex are available.

ST/ST Duplex

SC Fiber Optic Patch Cords

PART NO.	DESCRIPTION
FC-4/4-LM	SC to SC Duplex Multi Mode Patch Cord, 62.5/125
FC50-4/4-LM	SC to SC Duplex Multi Mode Patch Cord, 50/125
FC9-4/4-LM	SC to SC Duplex Single Mode Patch Cord, 9/125

For length substitute L in P/N.
1=1 meter   2=2 meters   3=3 meters   5=5 meters
Other lengths and Simplex are available.
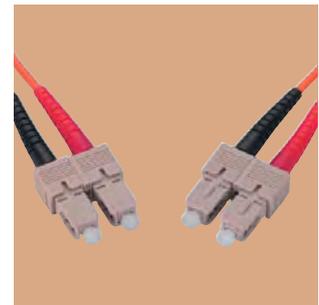
SC/SC Duplex

SC/ST Fiber Optic Patch Cords

PART NO.	DESCRIPTION
FC-4/2-LM	SC to ST Duplex Multi Mode Patch Cord, 62.5/125
FC50-4/2-LM	SC to ST Duplex Multi Mode Patch Cord, 50/125
FC9-4/2-LM	SC to ST Duplex Single Mode Patch Cord, 9/125

For length substitute L in P/N.
1=1 meter   2=2 meters   3=3 meters   5=5 meters
Other lengths and Simplex are available.
Other connectors on request.

ST/SC Duplex

NETWORK CONNECTIVITY SYSTEMS

www.signamax.eu
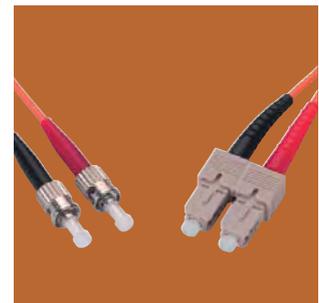
Fiber Optic Patch Cords

Signamax MTRJ and LC fiber optic patch cords suited for equipment jumper cable, cross connects, and work area connections. All patch cords are manufactured using OFNR riser grade cable and are 100% factory tested to ensure performance to TIA/EIA-568-B-3, ISO 11801:2002 and EN 50173-1 standards. MTRJ/MTRJ, LC/LC and hybrid MTRJ and LC to ST and SC multimode (62.5/125 µm and 50/125 µm) patch cords are available.
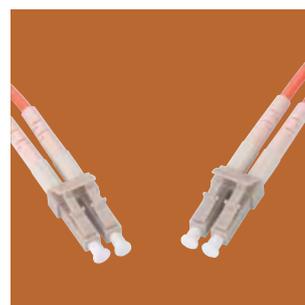
LC/LC Duplex

LC/ST (SC) Duplex

MTRJ Duplex

ST/MTRJ Duplex

SC/MTRJ Duplex

LC Fiber Optic Patch Cords

PART NO.	DESCRIPTION
FC-9/9-LM	LC to LC Duplex Multi Mode Patch Cord, 62.5/125
FC-9/2-LM	LC to ST Duplex Multi Mode Patch Cord, 62.5/125
FC-9/4-LM	LC to SC Duplex Multi Mode Patch Cord, 62.5/125
FC50-9/9-LM	LC to LC Duplex Multi Mode Patch Cord, 50/125
FC50-9/2-LM	LC to ST Duplex Multi Mode Patch Cord, 50/125
FC50-9/4-LM	LC to SC Duplex Multi Mode Patch Cord, 50/125

For length substitute L in P/N.
1=1 meter   2=2 meters   3=3 meters   5=5 meters
Other lengths are available.

MTRJ Fiber Optic Patch Cords

PART NO.	DESCRIPTION
FC-8/8-LM	MTRJ to MTRJ Duplex Multi Mode Patch Cord, 62.5/125
FC-8/2-LM	MTRJ to ST Duplex Multi Mode Patch Cord, 62.5/125
FC-8/4-LM	MTRJ to SC Duplex Multi Mode Patch Cord, 62.5/125
FC50-8/8-LM	MTRJ to MTRJ Duplex Multi Mode Patch Cord, 50/125
FC50-8/2-LM	MTRJ to ST Duplex Multi Mode Patch Cord, 50/125
FC50-8/4-LM	MTRJ to SC Duplex Multi Mode Patch Cord, 50/125

For length substitute L in P/N.
1=1 meter   2=2 meters   3=3 meters   5=5 meters
Other lengths are available.

Fiber Optic Adapters

SIGNAMAX Premise Connectivity System Fiber optic connectors are offered in wide range of types. All standard shapes are offered in both multimode and singlemode construction.

Signamax offers a wide variety of fiber optic adapters including ST, SC, LC and MTRJ. Our ST and SC adapters are available with a phosphor bronze sleeve for universal applications (MM/SM). All SC, LC and MTRJ adapters are provided with retaining clips for easy, snap-in mounting.
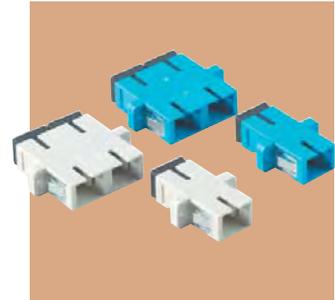

FA-ST

ST Fiber Connectors and Adapters

PART NO.	DESCRIPTION
FC-ST-MM	ST MM Connector, Zirconia sleeve, crimping, 3.0 mm
FC-ST-SM	ST SM Connector, Zirconia sleeve, crimping, 3.0 mm
FA-ST02	ST MM/SM Adapter w/Phosphor Bronze Sleeve

Singlemode Adapter available on request.

SC Fiber Connectors and Adapters

PART NO.	DESCRIPTION
FC-SC-MM	SC MM Connector, Phosphor bronze sleeve, crimping, 3.0 mm, Simplex
FC-SC-SM	SC SM Connector, Zirconia sleeve, crimping, 3.0 mm, Simplex
FA-SCD02-B	SC Duplex MM Adapter, Phosphor Bronze Sleeve, Beige
FA-SCD03-BU	SC Duplex SM Adapter, Zirconia Ceramic Sleeve, Blue

SM and Simplex Adapters available on request.
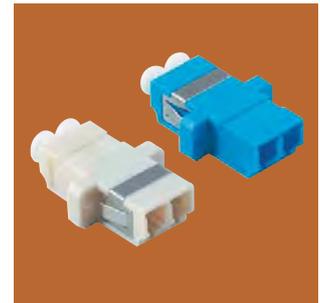
FA-SC

LC Fiber Connectors and Adapters

| PART NO.	DESCRIPTION
FC-LC-MM	LC MM Connector, Phosphor bronze sleeve, crimping, 3.0 mm, Simplex
FC-LC-SM	LC MM Connector, Zirconia sleeve, crimping, 3,0mm, Simplex
FA-LCD02-B	LC Duplex MM Adapter w/Phosphor Bronze Sleeve
FA-LCD03-B	LC Duplex SM Adapter, Zirconia Sleeve

SM available on request.

FA-LC

MTRJ Fiber Connectors and Adapters

PART NO.	DESCRIPTION
FC-MTM-MM	MTRJ MM Connector, Phosphor bronze sleeve, crimping, 3.0 mm, Male
FC-MTF-MM	MTRJ MM Connector, Phosphor bronze sleeve, crimping, 3.0 mm, Female
FC-MTM-SM	MTRJ MM Connector, Zirconia sleeve, crimping, 3.0 mm, Male
FC-MTF-SM	MTRJ MM Connector, Zirconia sleeve, crimping, 3.0 mm, Female
FA-MTRJ-B	MTRJ MM/SM Adapter

FA-MTRJ

Fiber Optic Pigtails

PART NO.	DESCRIPTION
FC50-PI-ST-2m	Pigtail 2m ST 50/125 µm
FC50-PI-SC-2m	Pigtail 2m SC 50/125 µm
FC50-PI-LC-2m	Pigtail 2m LC 50/125 µm
FC-PI-ST-2m	Pigtail 2m ST 62.5/125 µm
FC-PI-SC-2m	Pigtail 2m SC 62.5/125 µm
FC-PI-LC-2m	Pigtail 2m LC 62.5/125 µm

Other lenghts and accessories (splice tray, fusion protector) available on request.
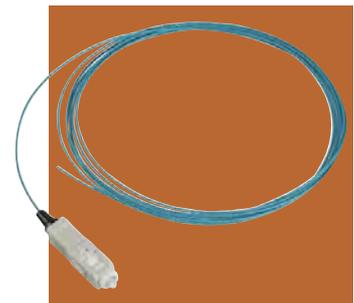
Pigtail SC

Fiber Optic Patch Panels

Signamax 19" Rack mountable fiber optic patch panel is designed for direct fiber optic cables termination. Standard size is 1U. The patch panel is modular and contains two parts—body and faceplate for several adapter types and count. Panel has fully metal massive construction for usage in critical environments and can be easily pulled out with no need to be dismantled from the rack. Rear section accommodates cable entry and cable holder that protects cables against damage.


FP-1U

Fiber Optic Patch Panels

PART NO.	DESCRIPTION
FP-1U	Fiber optic patch panel without face plate 1U
FP-12ST-1U	1U face plate for fiber optic patch panel for 12 ST adapters
FP-16ST-1U	1U face plate for fiber optic patch panel for 16 ST adapters
FP-24ST-1U	1U face plate for fiber optic patch panel for 24 ST adapters
FP-12SCD-1U	1U face plate for fiber optic patch panel for 12 duplex SC adapters
FP-16SCD-1U	1U face plate for fiber optic patch panel for 16 duplex SC adapters
FP-24SCD-1U	1U face plate for fiber optic patch panel for 24 duplex SC adapters
BPE-SC-3-01	Blank plate SC duplex

Colour grey RAL 7035
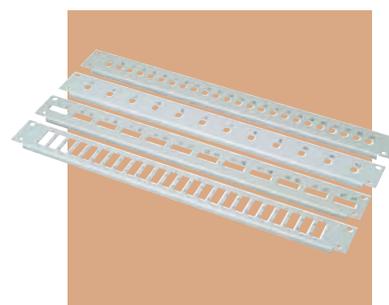
Face plates

Wall Mount Fiber Optic Box

Signamax Wall Mount Fiber Optic Box is used for the direct termination of fibers. The rear section accommodates cable entry and protects against taking out the cables. Box includes two separate sections for fusion splice trays and for routing optical patch cords to the equipment. Box is fitted with two locks with different keys. The Signamax four-rack space fiber optic enclosure contains all of the features of the two-rack space model, but with additional capacity to manage fiber counts up to 144. Cable entry/exit feature utilizes a flexible grommet seal, which is cut at time of installation to accommodate the desired cable diameters for entry and exit points. These grommets provide a dust & debris barrier during and after installation.
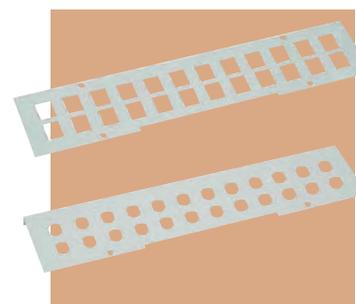

RA2-FO-A05

Wall Mount Fiber Optic Box

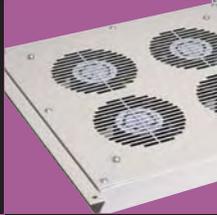| PART NO.	DESCRIPTION
RA2-FO-A05	Wall mounted fiber optic box without accessories
RA-FO-24ST	Panel for RA2-FO-A05 and for 24 ST adapters
RA-FO-24SC	Panel for RA2-FO-A05 and for 24 SC adapters
RA-FO-12ST	Panel for RA2-FO-A05 and for 12 ST adapters
RA-FO-12SC	Panel for RA2-FO-A05 and for 12 SC adapters

Colour grey RAL 7035

Panels

NETWORK CONNECTIVITY SYSTEMS
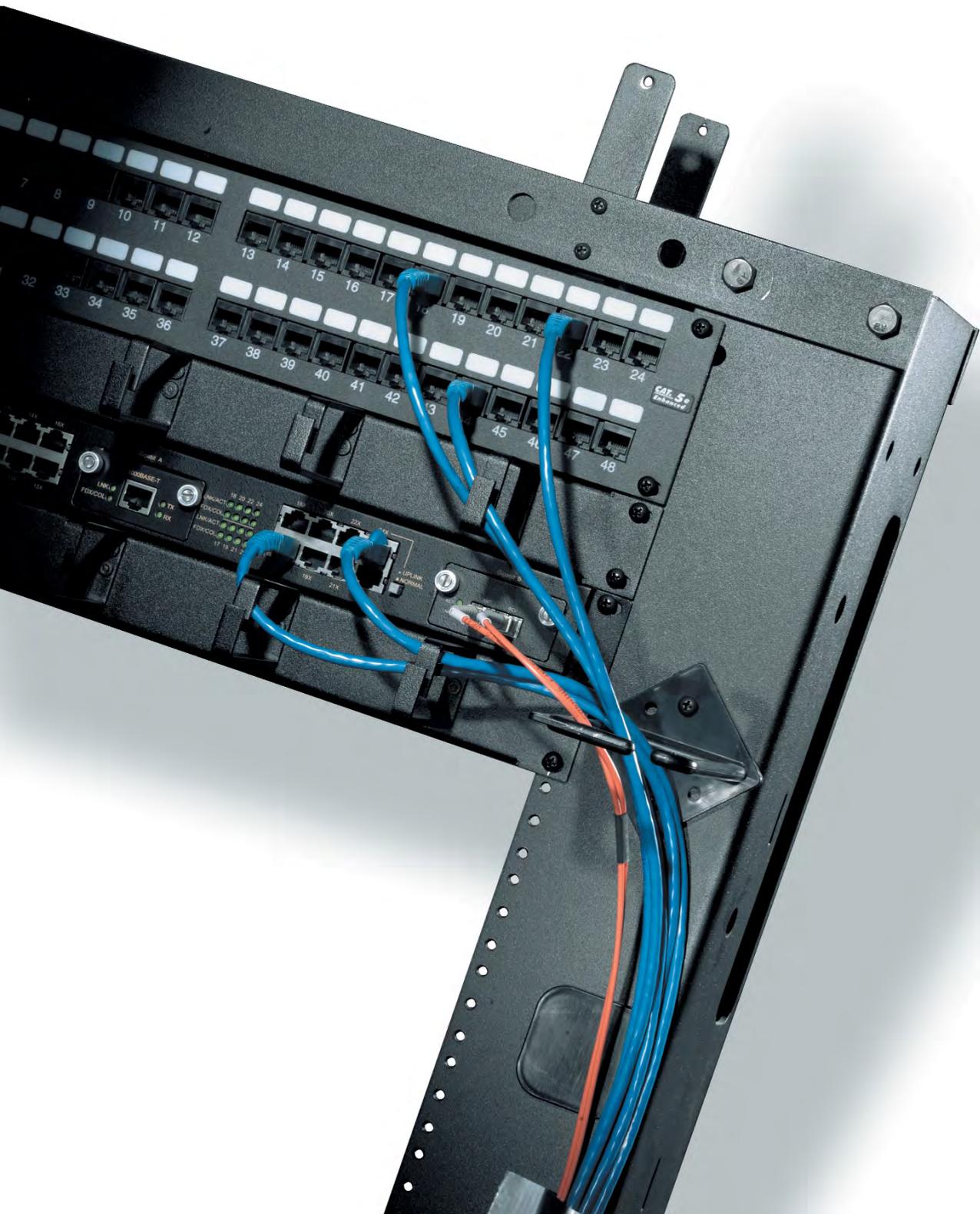
Data Racks

19" Data Racks

19" Server Racks

19" Wall Mounted Racks

19" Mounted Rack Signamax

19" Assembled Data Racks
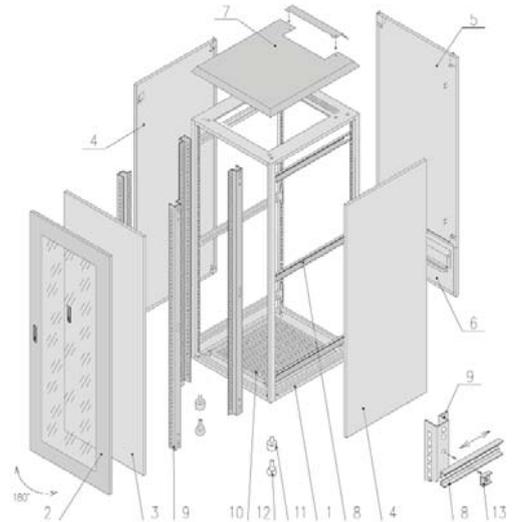
19" Fan Units

19" Shelves

Diode Lighting Unit

Accessories

19" Data Racks

Attractive design and high quality are hallmarks of these data racks. Their basic framework is welded metal plate, multiple-bent for the strength and rigidity necessary for heavier equipment. All profile moldings are flexible and adjustable. Vent slots in the upper or lower cabinetry allow airflow for efficient cooling. The door is made of safety glass, and can be mounted for either left or right-hand opening on either the front or rear of the data rack. The side-walls and door are assembled and provided with ground straps. These data racks can also be interconnected into sets, for larger switch or server rooms.

1. Skeleton
2. Glass door (right-or left-hand) (three-point bar locking)
3. Flush door (upon request only) (right-or left-hand) (three-point bar locking)
4. Side cover
5. Rear cover (right-or left-hand) (three-point bar locking)
6. Cable opening
7. Ceiling cover
8. Cross bar
9. 19" Frame
10. Filter (both in the bottom and the ceiling)
11. Adjustable feet
12. Travel wheels (upon request only)
13. Roof cover

Fan units
Can be mounted in the lower and/or the upper part of the enclosure without effecting available rack space. Dust filter included.

Wheels
Four wheels, two of which are adjustable. (available on request)

Supply includes
4 adjustable feet, Brush insert (foam insert), Door lock including set of 2 keys.

Colour and material
1.4 mm sheet steel, shaded 4 mm safety glass. Grey colour (RAL 7035), black colour (RAL 9005).

Adjustable feet
All feet can be adjusted up to 20 mm to compensate for uneven floors and assure high stability.

Door lock
Adjustable 3-point lock on the front door.

Front and side access
The door and sidewalls can be easily removed.

Cable entry
Via the slot in the lower back side and through the top of the rack, either through brushes or gasket foam.
Entry from the top of the rack is available on special request.

Profile moldings
Four profile moldings are easily adjustable.

NETWORK CONNECTIVITY SYSTEMS

19" Data Racks

PART NO.	DESCRIPTION
REC-6156B	19" Rack Signamax, height 15U, width and depth 600 mm
REC-6186B	19" Rack Signamax, height 18U, width and depth 600 mm
REC-6246B	19" Rack Signamax, height 24U, width and depth 600 mm
REC-6286B	19" Rack Signamax, height 28U, width and depth 600 mm
REC-6326B	19" Rack Signamax, height 32U, width and depth 600 mm
REC-6386B	19" Rack Signamax, height 38U, width and depth 600 mm
REC-6426B	19" Rack Signamax, height 42U, width and depth 600 mm
REC-6456B	19" Rack Signamax, height 45U, width and depth 600 mm

PART NO.	DESCRIPTION
REC-6288B	19" Rack Signamax, height 28U, width 600 mm, depth 800 mm
REC-6328B	19" Rack Signamax, height 32U, width 600 mm, depth 800 mm
REC-6388B	19" Rack Signamax, height 38U, width 600 mm, depth 800 mm
REC-6428B	19" Rack Signamax, height 42U, width 600 mm, depth 800 mm
REC-6458B	19" Rack Signamax, height 45U, width 600 mm, depth 800 mm

PART NO.	DESCRIPTION
REC-8288B	19" Rack Signamax, height 28U, width and depth 800 mm
REC-8328B	19" Rack Signamax, height 32U, width and depth 800 mm
REC-8388B	19" Rack Signamax, height 38U, width and depth 800 mm
REC-8428B	19" Rack Signamax, height 42U, width and depth 800 mm
REC-8458B	19" Rack Signamax, height 45U, width and depth 800 mm

PART NO.	DESCRIPTION
REC-6421B	19" Rack Signamax, height 42U, width 600 mm and depth 1,000
REC-8421B	19" Rack Signamax, height 42U, width 800 mm and depth 1,000

PART NO.	DESCRIPTION
REC-8286B	19" Rack Signamax, height 28U, width 800 mm, depth 600 mm
REC-8326B	19" Rack Signamax, height 32U, width 800 mm, depth 600 mm
REC-8386B	19" Rack Signamax, height 38U, width 800 mm, depth 600 mm
REC-8426B	19" Rack Signamax, height 42U, width 800 mm, depth 600 mm
REC-8456B	19" Rack Signamax, height 45U, width 800 mm, depth 600 mm

Side wall hinge

Bottom part

Metal handle

Door hold

19" Server Racks

**Signamax 19" Server Racks are especially suitable for server instalation, but all other 19"
components and accessories can be installed as well. Back of the rack is perforated and allows
higer air flow. All other attributes are identical with regular Signamax 19" Data Racks (see page M1).**

19" Server Racks

PART NO.	DESCRIPTION
RECS-6421B	19" Server Rack Signamax, height 42U, width 600 mm, depth 1,000 mm, bottom end top cable entry
RECS-8421B	19" Server Rack Signamax, height 42U, width 800 mm, depth 1,000 mm, bottom end top cable entry

19" Wall Mounted Racks

Vent slots in the upper and lower part of the Signamax Wall Mounted Data Rack allow sufficient airflow inside. Can be mounted upside-down, enabling the door to be opened from the left or right. Wall section can be directly hinged on the wall or by means of a fixed frame. Front door is made of safety glass. The rack is lockable. Center section lock system can be unlocked separately.

19" Wall Mounted Racks – not divided

PART NO.	DESCRIPTION
RECW-044B	Signamax 19" Wall Mounted Rack, height 4U, depth 400 mm
RECW-064B	Signamax 19" Wall Mounted Rack, height 6U, depth 400 mm
RECW-094B	Signamax 19" Wall Mounted Rack, height 9U, depth 400 mm
RECW-124B	Signamax 19" Wall Mounted Rack, height 12U, depth 400 mm
RECW-154B	Signamax 19" Wall Mounted Rack, height 15U, depth 400 mm
RECW-184B	Signamax 19" Wall Mounted Rack, height 18U, depth 400 mm
RECW-214B	Signamax 19" Wall Mounted Rack, height 21U, depth 400 mm

19" Wall mounted racks – divided

PART NO.	DESCRIPTION
RECW-065B	Signamax 19" Wall Mounted Rack, height 6U, depth 500 mm
RECW-095B	Signamax 19" Wall Mounted Rack, height 9U, depth 500 mm
RECW-125B	Signamax 19" Wall Mounted Rack, height 12U, depth 500 mm
RECW-155B	Signamax 19" Wall Mounted Rack, height 15U, depth 500 mm
RECW-185B	Signamax 19" Wall Mounted Rack, height 18U, depth 500 mm
RECW-215B	Signamax 19" Wall Mounted Rack, height 21U, depth 500 mm

Cable entry: From the top, bottom or the back of the data rack.
Ground strap: Four ground straps are mounted.
*Colour and Material:*
RAL 7035,1.4 mm sheet steel, shaded 4 mm safety glass. Black colour (RAL 9005) available on request.

19" Assembled Data Rack

The Signamax Assembled Rack is suitable for installation of structured cabling components—e.g. patch panels, active equipment and telecommunication cabling components. The design of the rack is accommodated to fit most computing and data centers.

Rack Description

This 19" Assembled Data Rack consists of assembled skeleton. The front side door is mounted using three hinges and secured by 1-point lock. The safety glass used in the door assembly provides high safety. The removable back and side covers are locked and can be opened with a key that is provided with the rack. The cable entry is located under the back cover. The side and back covers are swappable. In the bottom and ceiling, slots for optional fan installation are provided. These racks can be attached together to form groups. The surface is treated with pulverized color for internal environment (for external environment on request only) according to RAL color scale. Standard color is grey (RAL 7035) and black (RAL 9005).
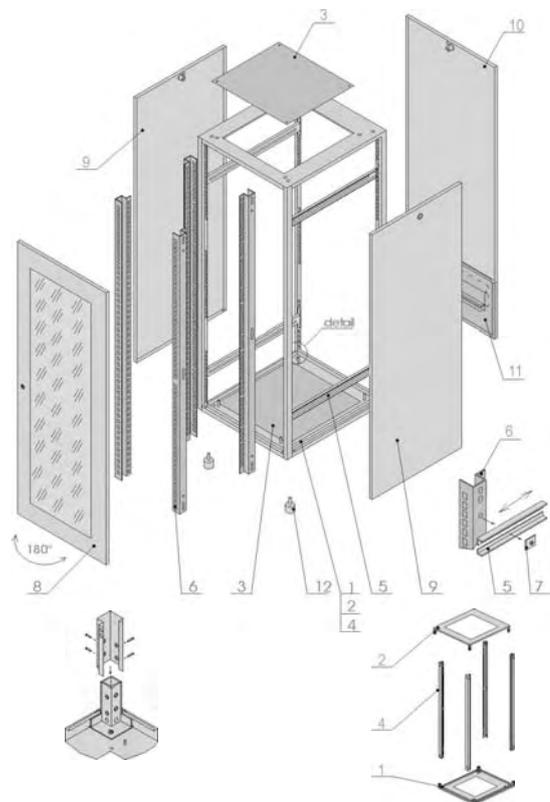
Standard package contains:

1. Bottom	7. Guide
2. Ceiling	8. Glass Door(right- or left-hand)
3. Ceiling and Bottom Cover	9. Side Cover
4. Bars	10. Rear Cover
5. Cross Bar	11. Cable Entry
6. 19" Frame	12. Adjustable Feet

Non-standard components (on request only)

Full Door
Perforated Door
Perforated Side Cover
Perforated Back Cover
Travel Wheels

Table of standard Rack dimensions

PART NO.	DESCRIPTION
RECA-6156B	19" Assembled Signamax Rack, height 15U, depth and width 600 mm
RECA-6186B	19" Assembled Signamax Rack, height 18U, depth and width 600 mm
RECA-6246B	19" Assembled Signamax Rack, height 24U, depth and width 600 mm
RECA-6286B	19" Assembled Signamax Rack, height 28U, depth and width 600 mm
RECA-6326B	19" Assembled Signamax Rack, height 32U, depth and width 600 mm
RECA-6386B	19" Assembled Signamax Rack, height 38U, depth and width 600 mm
RECA-6426B	19" Assembled Signamax Rack, height 42U, depth and width 600 mm
RECA-6456B	19" Assembled Signamax Rack, height 45U, depth and width 600 mm
RECA-6288B	19" Assembled Signamax Rack, height 28U, depth 800 mm, width 600 mm
RECA-6328B	19" Assembled Signamax Rack, height 32U, depth 800 mm, width 600 mm
RECA-6388B	19" Assembled Signamax Rack, height 38U, depth 800 mm, width 600 mm
RECA-6428B	19" Assembled Signamax Rack, height 42U, depth 800 mm, width 600 mm
RECA-6458B	19" Assembled Signamax Rack, height 45U, depth 800 mm, width 600 mm
RECA-8288B	19" Assembled Signamax Rack, height 28U, depth and width 800 mm
RECA-8328B	19" Assembled Signamax Rack, height 32U, depth and width 800 mm
RECA-8388B	19" Assembled Signamax Rack, height 38U, depth and width 800 mm
RECA-8428B	19" Assembled Signamax Rack, height 42U, depth and width 800 mm
RECA-8458B	19" Assembled Signamax Rack, height 45U, depth and width 800 mm
RECA-8286B	19" Assembled Signamax Rack, height 28U, depth 600 mm, width 800 mm
RECA-8326B	19" Assembled Signamax Rack, height 32U, depth 600 mm, width 800 mm
RECA-8386B	19" Assembled Signamax Rack, height 38U, depth 600 mm, width 800 mm
RECA-8426B	19" Assembled Signamax Rack, height 42U, depth 600 mm, width 800 mm
RECA-8456B	19" Assembled Signamax Rack, height 45U, depth 600 mm, width 800 mm
RECA-6421B	19" Assembled Signamax Rack, height 42U, depth 1,000, width 600 mm
RECA-8421B	19" Assembled Signamax Rack, height 42U, depth 1,000, width 800 mm

Skeleton detail – inside assembly

1-point door lock


Skeleton detail – outside assembly

19" Fan Units

Signamax 19" Fan Units are constructed to fit into all Signamax 19" Data Racks, to provide forced airflow inside. Fits in lower as well as in the upper part of the rack. Standard and recommended installation is in the lower part of the rack to ensure a proper "chimney-effect", which supplies the rack with fresh air. Fan units allow airflow of up to 160 m³/hour. All fan units are equipped with a thermostat to regulate the airflow for temperatures in the range of 0° to 60°C. Fan units can be deactivated by using the main switch.

REC-RMFT150B

REC-RMFT2B
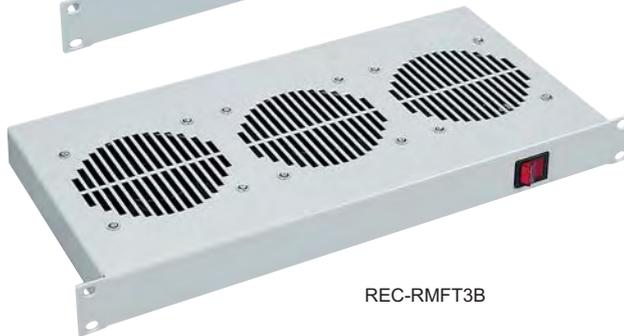
REC-RMFT3B-IN

REC-RMFT3B

REC-RMFT30B

19" Fan Units with Thermostat

PART NO.	DESCRIPTION
REC-RMFT2B-IN	19" Fan unit 2x fan with inbuild thermostat
REC-RMFT3B-IN	19" Fan unit 3x fan with inbuild thermostat
REC-RMFT30B	Side wall Fan unit 3x fan
REC-RMFT70B	Lower/Upper Fan unit 2x fan
REC-RMFT150B	Lower/Upper Fan unit 4x fan

Colour grey (RAL 7035). Black (RAL 9005) available on request.

19" Shelves

Signamax shelves for keyboard, documentation and LCD monitor are designed for the installation into the 19" data rack profiles. Shelves with lockable drawers for safe stowage of service documentation and shelves with an integrated computer keyboard and monitor occupy the space of 1U. This gives you more room in the data rack.

Documentation shelf opened

Keyboard and documentation shelves

PART NO.	DESCRIPTION
REC-SV-DOC	1U documentation shelf with lock
REC-SV-KB	Keyboard shelf 1U
REC-SV-KBM	Shelf for keyboard and LCD monitor, 1U

Colour grey (RAL 7035). Black (RAL 9005) available on request.

Keyboard shelf opened

Keyboard shelf closed

19" Shelves

Signamax 19" shelves are convenient for equipment not designed for 19" installations. Our product range includes shelves for fixed and drawer-style installations. Drawer-style system enables easier access to the equipment being used. Ventilated bottom assures cooling airflow to the equipment. Shelf supports and mounting brackets are included.

**Fixed shelves are available in depths from 150 mm to 550 mm.
Sliding shelves are available in depths from 250 mm to 450 mm.**
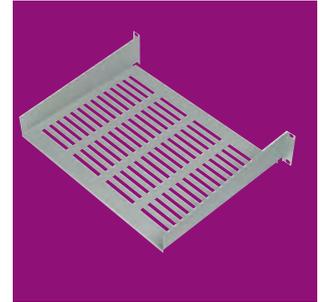
REC-SV15B
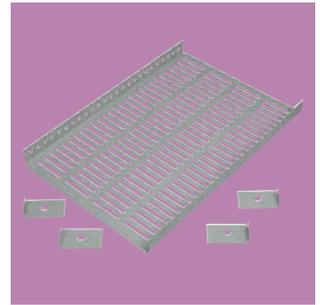
REC-SV35B

19" Shelves

PART NO.	DESCRIPTION
REC-SV15B	Shelf, 150 mm depth, 1U
REC-SV25B	Shelf, 250 mm depth, 1U
REC-SV35B	Shelf, 350 mm depth, 1U
REC-SV45B	Shelf, 450 mm depth, 1U
REC-SV55B	Shelf, 550 mm depth, 1U
REC-SV65B	Shelf, 650 mm depth, 1U
REC-TSV25B	Drawer-style Shelf, 250 mm depth, 1U
REC-TSV35B	Drawer-style Shelf, 350 mm depth, 1U
REC-TSV45B	Drawer-style Shelf, 450 mm depth, 1U

Colour grey (RAL 7035). Black (RAL 9005) available on request.
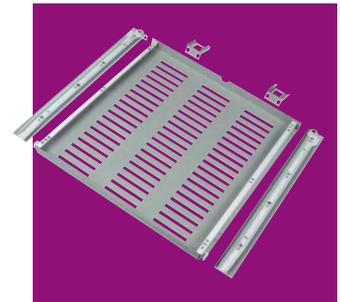
REC-TSV45B

19" Diode Lighting Unit

The 19" diode lighting unit is constructed as a compact fixture designed for installation into 19" distribution board frames for illumination of equipment installed within distribution board. The ON/OFF pushbutton and the LED-signaling that indicates On/Off state are located on the face of the unit. The rear side is equipped with a socket for power feed. The underside of the unit is fitted with the line of LED—i.e. the light is directed downwards. The unit is movable in its holders forward or backward in order to set the optimal illumination direction.

Diode Lighting Unit

PART NO.	DESCRIPTION
REC-LU-LED-BK	Diode Lighting Unit 1U black, RAL 9005
REC-LU-LED	Diode Lighting Unit 1U grey, RAL 7035

MAIN CHARACTERISTICS
- **– High illuminating power**
- **– Low electric power consumption**
- **– Long lifespan**
- **– Very low heat radiation**

TECHNICAL DATA
Dimensions (W x H x D): 483 x 44 x 125 mm
Mass: 3 kg without connecting cable
Voltage system: 1NPE, 230 V, 50/60 Hz, TN-S
Current: 0.06A maximum
Power supply: 15W maximum

Accessories

These base frames are suitable for all Signamax data racks and are used for fixing the rack to the floor to assure stability. Cable inlets placed on each side of the base are covered by a filter grid. Filter grid can be removed to insert cables inside. Adjustable feet for 19" Data racks are to compensate for uneven floors and to assure high stability.

REC-RB-66BF

REC-CB

REC-LU

REC-MLU

REC-CCK

Blanking panels

PART NO.	DESCRIPTION
EPP-BL1	Blank panel 1U, RAL 7035
EPP-BL2	Blank panel 2U, RAL 7035
EPP-BL3	Blank panel 3U, RAL 7035
EPP-BL4	Blank panel 4U, RAL 7035
EPP-BL6	Blank panel 6U, RAL 7035

Base frames

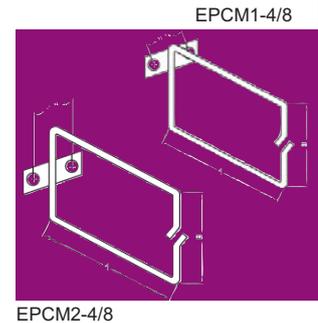| PART NO.	DESCRIPTION
REC-RB-66BF	Rack Base Frame, 600 x 600 x 100 mm, 4 filters, RAL 7035
REC-RB-68BF	Rack Base Frame, 600 x 800 x 100 mm, 4 filters, RAL 7035
REC-RB-88BF	Rack Base Frame, 800 x 800 x 100 mm, 4 filters, RAL 7035
REC-RB-66-20	Rack Base Frame, 600 x 600 x 200 mm, 4 filters, RAL 7035
REC-RB-88-20	Rack Base Frame, 800 x 800 x 200 mm, 4 filters, RAL 7035

Accessories

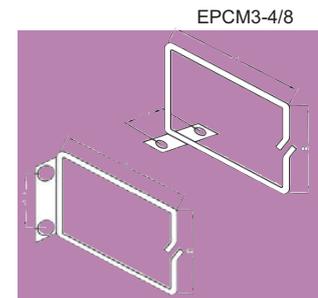| PART NO.	DESCRIPTION
REC-FPFP-4	Mounting Kit M5 4pcs set
REC-FPFP-20	Mounting Kit M5 20pcs set
REC-FPFP-50	Mounting Kit M5 50pcs set
REC-LU	19" Light unit, 1U, 3 halogen lights, black colour
REC-MLU	Lighting unit fluorescent, mounting by magnet, RAL 7035
REC-CB	Signamax Racks Wheels, set of 4 pieces
REC-CCK	Racks connecting kit (incl. screws and nuts)
REC-LOCK	Half cylinder for the plastic lock

Accessories

Ring brackets are used for organizing cables inside of the enclosure. Cables are organized by vertical or horizontal organizer brackets. Two mounting sets allow multiple placement possibilities within the data rack. Metal brackets have a polished surface texture. 19" cable organizer with 5 plastic rings and side protection is designed for easy and fast management of patch cords and other cables.

EPCM1-4/8

EPCM2-4/8

EPCM3-4/8

EPCM4-4/8

REC-VP1

REC-MCO-F60

REC-MCO-S60

Cable Management Ring Brackets

PART NO.	DESCRIPTION	A	B
EPCM1-4/4	Cable management bracket 40 x 40 mm	40	40
EPCM1-4/8	Cable management bracket 40 x 80 mm	80	40
EPCM1-8/8	Cable management bracket 80 x 80 mm	80	80
EPCM2-4/4	Cable management bracket 40 x 40 mm	40	40
EPCM2-4/8	Cable management bracket 40 x 80 mm	80	40
EPCM2-8/8	Cable management bracket 80 x 80 mm	80	80
EPCM3-4/4	Cable management bracket 40 x 40 mm	40	40
EPCM3-4/8	Cable management bracket 40 x 80 mm	80	40
EPCM3-8/8	Cable management bracket 80 x 80 mm	80	80
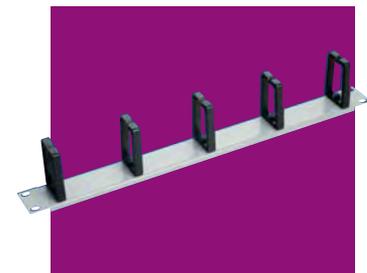
Cable Organizer

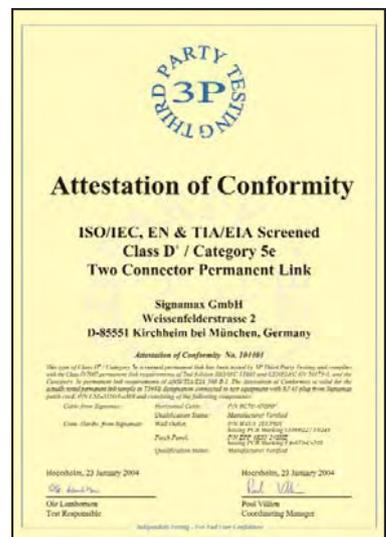| PART NO.	DESCRIPTION
EC-VP1	Cable oranizer 1U, with plastic rings, grey
REC-MCO-S60	Multi cable organizer, side mounting, 600 mm, RAL 7035
REC-MCO-S80	Multi cable organizer, side mounting, 800 mm, RAL 7035
REC-MCO-S100	Multi cable organizer, side mounting, 1,000 mm, RAL 7035
REC-MCO-F60	Multi cable organizer, front mounting, 600 mm, RAL 7035
REC-MCO-F80	Multi cable organizer, front mounting, 800 mm, RAL 7035
REC-MCO-F100	Multi cable organizer, front mounting, 1,000 mm, RAL 7035

NETWORK CONNECTIVITY SYSTEMS
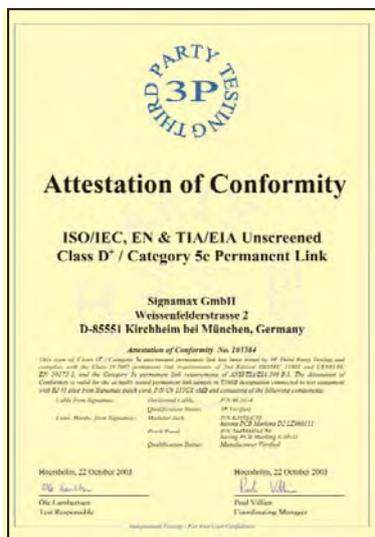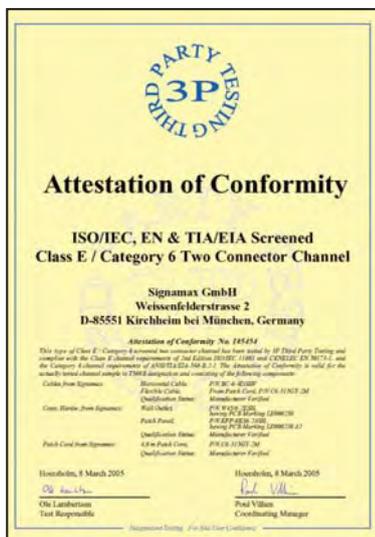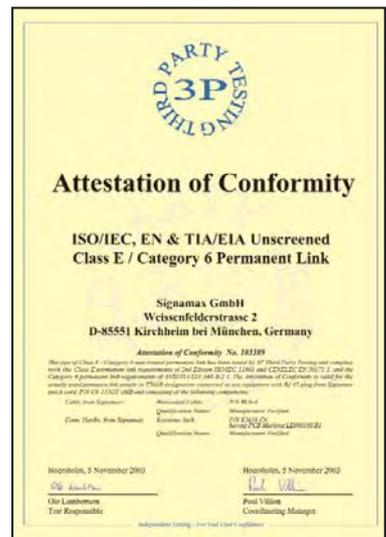
www.signamax.eu

References

ABB elektro Zilina (Slovakia)
Adelphia Cable (USA)
Air Jamaica (USA)
Augusta National Golf Club (USA)
AVEX Oravska Lesna (Slovakia)
Axton (Slovakia)
Bayern Chemie (Germany)
Bechtel Corporation (USA)
CASINO Austria (Austria)
Catholic University (Slovakia)
CCR-Princeton (USA)
CEZ (Czech republic)
Comcast Cable (USA)
Constantin University (Slovakia)
Depository Trust (USA)
eBanka (Czech republic)
Federal Bureau of Investigation (USA)
Federal Reserve Bank (USA)
Florida Department of Transportation (USA)

Fort Lauderdale International Airport (USA)
GTS (Czech republic)
Hilton-Wien (Austria)
Hospice of Marion County (USA)
Illinois National Bank (USA)
John F. Kennedy International Airport (USA)
Kia Motors Zilina (Slovakia)
Lidl (Germany)
Liqued Nitra (Slovakia)
Lockheed Martin Corporation (USA)
Miami Children's Hospital (USA)
Muckleshoot Indian Casino (USA)
Nestle (USA)
PepsiCola (USA)
Philadelphia International Airport (USA)
PPS Detva (Slovakia)
Prague International Airport (Czech republic)
Public schools (Germany)

Raven (Slovakia)
Remi (Germany)
Salt Lake City International Airport (USA)
SBC Telecom (USA)
Slovak Embassy Rome (Italy)
Social Insurence Company Poprad (Slovakia)
SPP Kosice (Slovakia)
Sprint (USA)
Stadtverwaltung DGF (Germany)
The May Company (USA)
Time Warner Cable (USA)
T-mobil Austria (Austria)
Twin City Foods (USA)
U.S. Navy (USA)
UNIQUA Insurance Company (Austria)
United Parcel Service (USA)
University of Denver (USA)
University of North Carolina (USA)
Verizon (USA)
Yakima Legends Casino (USA)

Certificates

SIGNAMAX
CONNECTIVITY SYSTEMS

YOUR DISTRIBUTOR

SIGNAMAX™
CONNECTIVITY SYSTEMS