

# OCM32 / OCR32 – COAX TO THE ANYWHERE ELCONnect®

**SIMPLE** Use of existing coax cable infrastructure

**ADAPTIVE** Integrated solutions for fiber migration – VoIP – ISDN – WLAN

**FAST** Internet / Data up to 200 Mbps gross rate



## THE PRODUCT

In an ELCONnect coax system, the existing cable television network infrastructure is used for setting up the data network, without spending big efforts in providing active return channel capability for the CATV.

The ELCONnect coax Outdoor Master32 (OCM32) represents the linking element between the external access network (e.g. an ADSL port or DOCSIS system) and the ELCONnect coax network. When using an ELCONnect coax Outdoor Repeater32 (OCR32), greater distances can be covered or network clusters can be expanded by adding further subscribers.

Both the ELCONnect coax Outdoor Master32 and the ELCONnect coax Outdoor Repeater32 have been designed for operation under extreme environmental conditions. The equipment fully meets the high requirements regarding electromagnetic compatibility, weather and temperature conditions, and is therefore ideally suited for being installed in CATV networks. This makes it possible to deploy larger ELCONnect coax networks as well. The ELCONnect coax system provides solutions for up to network level 3.

The Master allows connecting several Clients (CCV 300). Without repeater structure, the Master32 can manage up to 32 Clients. The Master controls and assigns the data packets based on the MAC addresses of the linked ELCONnect coax units. All subsequent hardware structures (repeater, Client) receive their IP-addresses from the central DHCP server through the Master32, while their configuration file is made available by the connected TFTP server (depending on the configuration).

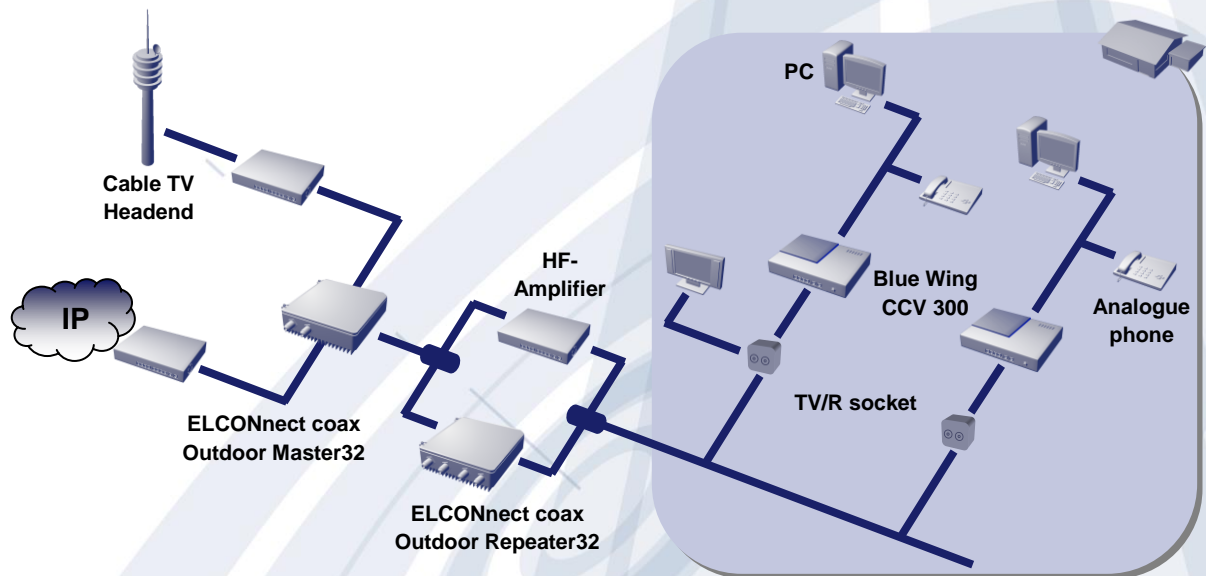
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## ELCONnect®

### APPLICATION



### TECHNICAL DATA

#### General

#### Outdoor Coax Master32 (OCM32)

- Gateway function for the ELCONnect coax network
- Single-port Ethernet bridge
- Gross data rate up to 200 Mbps on “shared medium”
- Net total bit rate up to 85 Mbps on “shared medium” depending on configuration and transmission parameters (attenuation, interferences etc.)
- Up to 32 nodes and 64 MAC addresses can be managed directly
- Integrated diplexer modules and remote power injection filters

#### Outdoor Coax Repeater32 (OCR32)

- Repeater function for the ELCONnect coax network
- Transmission parameters see OCM32
- 2 Master modules for repeater function
- Integrated diplexer modules and remote power injection filters

#### ELCONnect coax Features

- Up to 32 nodes and 64 MAC addresses can be managed directly
- UPA-compliant
- Transmission frequency 4 MHz ... 34 MHz
- Adjustable frequency range
- Modulation method: OFDM  
Self-adjusting multi-carrier approach
- 1536 carriers QAM modulated
- Total transmitting power: max. 23 dBm  $\cong$  200 mW
- Setting range of transmitter: -7 dBm ... 23 dBm
- Power spectrum density PSD: max. -52 dBm/Hz
- Control range of receiver: -47 dBm ... 13 dBm
- Admissible linear path loss:  
up to 50 dB – 100% data rate  
up to 70 dB – linear reduction of the data rate
- Insertion loss CATV (OCM32,  
47 MHz ... 862 MHz):  $\leq$  2 dB
- Insertion loss per CATV high pass filter (OCR32,  
47 MHz ... 862 MHz):  $\leq$  2 dB

#### Repeater functions

- for structuring and expansion of coax cable networks
- for range extension
- to increase the number of connected Clients and terminal equipment (administration of several MAC addresses)

# OCM32 / OCR32 – COAX TO THE ANYWHERE

## ELCONNECT®

### TECHNICAL DATA

#### Ethernet Features

- Standard Ethernet IEEE 802.3 protocol
- IEEE 802.1q, 802.1d, native Multicast
- DHCP client
- TCP/IP

#### Quality of Service

- Prioritization
- Definition of service classes CoS
- Bandwidth management, Bandwidth limitation
- Latency management

#### Security

- Encoding of the transmission path using Tone mapping (Negotiation of physical link parameters between Master and each Client as individual virtual P2P connection)
- VLAN, oVLAN

#### Management and Configuration

- Configuration via DHCP and TFTP-files
- Software configuration tools
- SNMP
- Optional static configuration

#### Physical parameters

##### Power supply

- Local power supply: 230 V / 50 Hz or Remote powering: 30 V...70 V / 50 Hz (placement option)
- Power consumption:
  - < 10 W (Outdoor Coax Master32)
  - < 16 W (Outdoor Coax Repeater32)
- Euro mains plug (for local powering) or terminal strips (with remote powering)

#### External ports

##### OCM32

- 1 × RJ45 Ethernet (8-pin) 10/100 Base-T, MDI/MDIX autosensing
- 2 × CATV connectors 75 Ω for linking the coaxial cable, optional version as required by customer: F, IEC, etc.

##### OCR32

- 2 × RJ45 Ethernet in-device (8-pin) 10/100 Base-T, MDI/MDIX autosensing
- 4 × CATV connectors 75 Ω for linking the coaxial cable, optional version as required by customer: F, IEC, etc.

#### Chipsets

- AFE DSS7700
- PowerLine IC DSS9001

#### Casing

- Dimensions (W × D × H): 250 mm × 250 mm × 95 mm
- Weight: 4.4 kg
- Aluminium die-casting housing
- Degree of protection IP54

#### Environmental conditions

- Operation: -20 °C ... 60 °C  
Humidity: 10 % ... 85 % (not condensing)
- Storage: -20 °C ... 70 °C  
Humidity: 5 % ... 90 % (not condensing)
- Environmentally sealed housing

#### Conformity

- CE
- EN 60950-1, ETSI EN 300 386, EN 55013, EN 55022, EN 55024, EN 55083

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### TECHNICAL DATA

#### System requirements

##### ELCONnect coax System

- ELCONnect coax Master32 (outdoor) or Master64 as Gateway to other networks and for control of the ELCONnect coax network
- CATV network with passive return channel in the frequency range

##### Operating System

- Any OS supporting TCP/IP- protocol and providing Ethernet LAN interfaces
- Windows 98 SE, Windows ME, Windows 2000/XP, MAC, Linux

##### For the Planning Stage

- Analyze existing CATV network (net-work structure, amplifiers, cable attenuation, PAY-TV carriers)
- Remark: The CATV network needs a passive return path. Potentially installed CATV amplifier needs to be checked and equipped.
- Determine maximum number of needed Clients
- Accessories: TV distributor

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### PURCHASE ORDER INFORMATION

Product designation	Order number
ELCONnect coax Outdoor Master32 with local power supply 230 V / 50 Hz	900135
ELCONnect coax Outdoor Master32 with remote power supply 30 V ... 70 V / 50 Hz	900179
ELCONnect coax Outdoor Repeater32 with local power supply 230 V / 50 Hz	900133
ELCONnect coax Outdoor Repeater32 with remote power supply 30 V ... 70 V / 50 Hz	900177