

## CCV 300 – COAX TO THE ANYWHERE

blue wing

**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

The Blue Wing CCV 300 is the Client unit in the ELCONnect coax system and serves as subscriber-side device within the network. The CCV 300 comes with router and VoIP-functionality (over analogue phones via 2 × RJ11 or optionally via ISDN-S0-bus). Its enhanced functionality provides the end customer with both Internet telephony and broadband multimedia services. In addition to the functions offered by the CCV 300, the customer may optionally use wireless network interfaces (WLAN) and connect its ISDN terminating equipment.

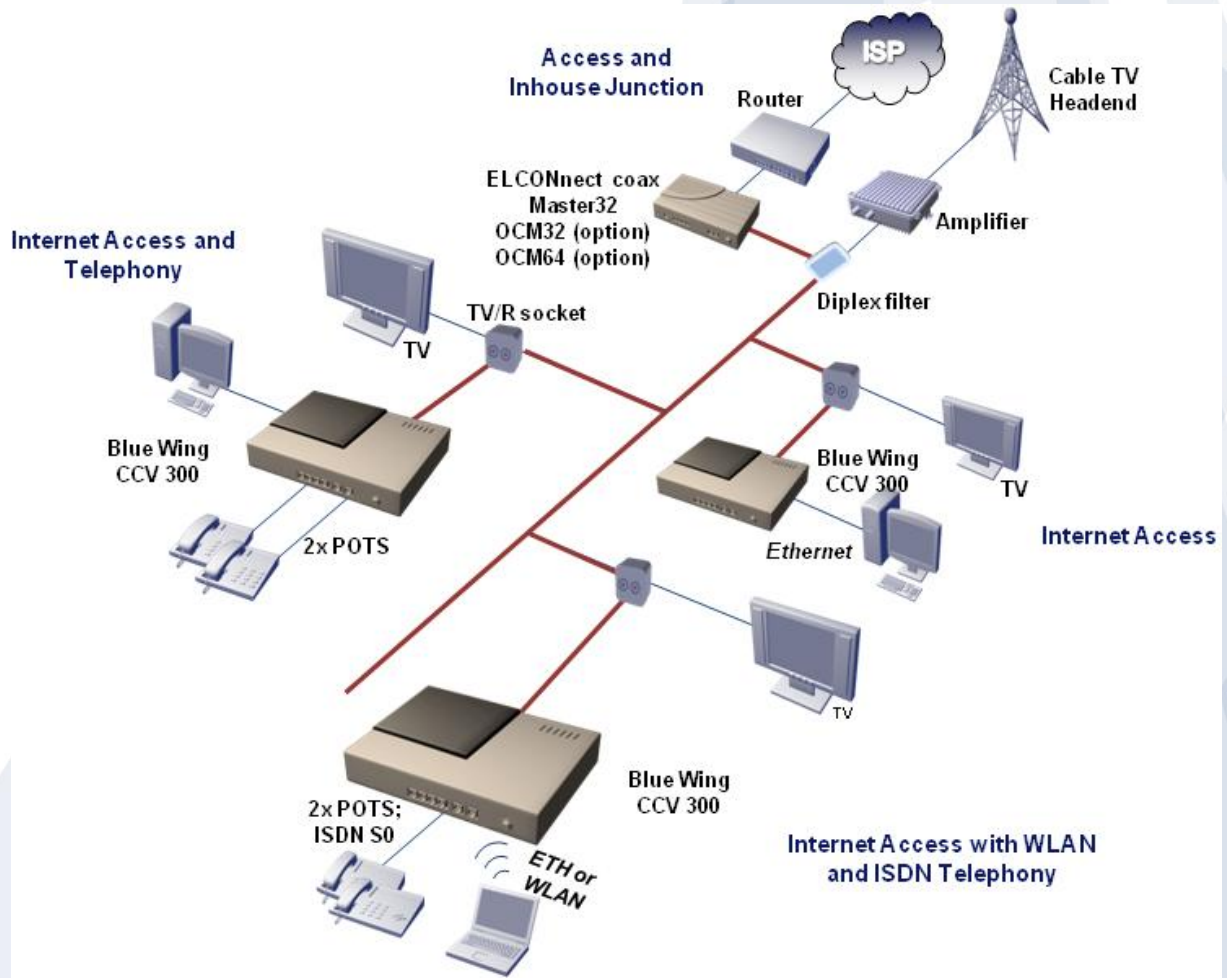
Enhanced setting options guarantee Quality of Service (QoS) and bandwidth profiles, while different security features (e.g. Firewall) allow for a most flexible application of the equipment which comes with versatile features.

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 easy and swift installation suits best for the expansion of existing cable networks, particularly in hotels or residential establishments, up to the extension of network level 4 at CATV operators.

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## APPLICATION



## TECHNICAL DATA

### General

- Client for ELCONnect coax networks
- 4-port Ethernet Router
- Integrated analogue interfaces with VoIP functionality for direct connection of POTS telephones to the IP network
- 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.)
- Optimized for point-to-multipoint applications

### ELCONnect coax features

- 1 × F-plug 75 Ω for linking the coaxial cable
- UPA-compliant
- Transmission frequency 4 MHz ... 34 MHz
- Adjustable frequency range
- Modulation method: OFDM self-adjusting multicarrier approach
- PSK, QAM
- 1536 carriers
- Power spectrum density PSD: max. -55 dBm/Hz
- Total transmitting power: max. 20 dBm (≅ 100 mW)
- Setting range of transmitter: -10 dBm ... 20 dBm
- Control range of receiver: -47 dBm ... 13 dBm
- Admissible linear path loss: up to 50 dB – 100% up to 70 dB – linear reduction of the data rate

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## TECHNICAL DATA

### WAN / LAN features

#### WAN interface

- Coax interface with F socket
- Standard Ethernet IEEE 802.3 protocol
- DHCP client
- TCP/IP

#### LAN interface

- Ethernet LAN:
- 4 × RJ45 socket 10/100Base-T;
- MDI / MDIX; autosensing
- DHCP: dynamic IP address assignment

#### Router functions

- NAT
- Port Mapping
- DHCP Server
- Firewall
- DMZ

#### Quality of Service

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

### Analogue interfaces

#### Electrical parameters

- Ringing voltage:  $\geq 30$  Vrms
- Ringing frequency: 25 Hz
- Line resistance: 600  $\Omega$  (incl. terminal)
- a/b voltage:  $\geq 46$  V on-hook
- Loop current:  $\geq 20$  mA / 600  $\Omega$
- Impedance: 220  $\Omega$  + (820  $\Omega$  || 115 nF)

#### Connectors

- Telephone jacks: 2 × RJ11

#### VoIP supplementary services

- Calling Line Identification Presentation CLIP FSK
- Calling Line Identification Restriction CLIR
- Call Waiting CW
- Broker's call, Call Hold
- Three-Party Conference 3PTY
- Call Forwarding Services CFU, CFNR, CFB

#### VoIP parameters

- Codec: G711
- Optional Codecs (subject to license): G.729 and others, T.38
- Signaling: SIP (RFC 3261)

### Optional interfaces

#### ISDN S0 interface

- acc. to ETS 300 012 guideline
- Operating range:
  - max. 220 m (short passive bus)
  - max. 1100 m (point-to-point connection)
- Transmission method: Four-wire duplex
- Channel structure: 2B+D, synchronization and monitoring
- Line code: AMI (modified)
- Total bit rate: 192 kbps
- Useful bit rate: 144 kbps
- Wattage:  $\leq 2$  W
  - optionally on request:  $\leq 4.5$  W
- Connector type 1 × RJ45
- 100  $\Omega$  Bus terminating resistors (switchable)

#### WLAN interface

- Operating mode: Access Point
- Standards 802.11g,b
- Frequency range 2.412 GHz ... 2.472 GHz
- Data rates
  - 802.11b: 11 / 5.5 / 2 / 1 Mbps
  - 802.11g: 54 / 48 / 36 / 24 / 12 / 9 / 6 Mbps
- Types of modulation: QAM-64; QAM-16; QPSK; BPSK
- Max. effective radiation power ERP:
  - 802.11g 54 Mbps = 17 dBm;
  - 802.11b 11 Mbps = 19 dBm
- Aerial power gain: +2 dBi
- Receiver sensitivity
  - 802.11g 54 Mbps = -72 dBm;
  - 802.11b 11 Mbps = -83 dBm
- Encryption: WEP, WPA, WPA-2

### Management and Configuration

#### Coax configuration

- Configuration via DHCP and text-based config files
- Software configuration tools
- SNMP
- optionally static configuration possible
- Remote and local firmware update

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## TECHNICAL DATA

### VoIP configuration

- Remote Management via SNMP v1, v2c, v3;
- Dynamic configuration: DHCP TFTP
- Remote and local firmware update
- optional: Web GUI

### 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

### Physical parameters


#### Power supply of plug-in power supply module (Euro plug)

- Operating voltage range: 100 V ... 240 V AC
- Frequency range: 50 Hz ... 60 Hz
- Current consumption:  $\leq 0.5$  A

#### Power supply of CCV 300

- Nominal voltage: 12 V DC
- Current consumption:  $< 1.2$  A

### LED display

- 1 x PWR (power supply)
- 1 x WAN (access network)
- 2 x  (analogue interfaces)
- 1 x ISDN (S0 in operating mode)
- 1 x WLAN (WLAN active)
- 1 x ALARM (start, synchronization, LinkLoss)
- each 1 x LAN1 ... LAN4 (data transfer)

### Dimensions

- Dimensions: 240 mm x 168 mm x 48 mm
- Weight:  $> 0.5$  kg

### Environmental conditions

- ETSI EN 300 019-2-3 V2.2.2 Class 3.1
- Operation: 0 °C ... 40 °C
- Humidity: 5 % ... 85 % (not condensing)
- Storage: -40 °C ... 70 °C
- Humidity: 0 % ... 85 % (not condensing)

## System requirements

### ELCONnect coax system

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

### PC hardware

- CPU: from Pentium II; 500 MHz
- Memory size: 256 MByte
- Interface: 10/100Base-T

### Operating system

- any OS supporting TCP/IP- protocol and providing Ethernet LAN interfaces

### For the planning stage

- analyze existing cable television network (network 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

## Conformity

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

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## PURCHASE ORDER INFORMATION

Product designation	Order number
Blue Wing CCV 300	900257
Blue Wing CCV 300w (with WLAN)	900256
Blue Wing CCV 300i (with ISDN)	900255
Blue Wing CCV 300wi (with WLAN + ISDN)	900253