

# Product Overview

## Vega 400



### Vega 400 features

- Desktop or 19" rack mount
- 4 PRI / CAS connections
- NT / TE configurable
- Fractional E1 / T1 trunks supported
- PCMCIA DSP resources (15 to 120 simultaneous calls)
- 1 U height
- E1
  - 30 calls per trunk
  - Euro ISDN signaling
  - VN3 (French ISDN)
  - QSIG (basic call – SIP & H.323)
  - QSIG (tunnelled – H.323)
- T1
  - PRI – 23 calls per trunk
  - NI 1, NI 2, 4 ESS, 5 ESS, and DMS 100 signalling
  - QSIG (basic call – SIP & H.323)
  - QSIG (tunnelled – H.323)
  - CAS – 24 calls per trunk
  - E&M, loop start and ground start signalling

### Vega general product features

- Web browser configuration
- 10 base T / 100 base TX LAN
- QOS packet marking
  - layer 3 Type Of Service
  - layer 2 802.1 p/q

- Call detail records available
  - from Telnet and Serial interfaces
  - via Radius accounting records
- Built in dial planner
  - routing
  - number translation
  - white listing
- SNMP
- SYSLOG
- Auto-load of configuration and firmware
  - at boot
  - scheduled

## Vega VoIP features

- Echo cancellation
  - G.168 – up to 128ms
- Codecs / companders
  - G.711Alaw64k
  - G711ulaw64k
  - G729AnnexA (/b)
  - G.723.1
  - T.38
- Silence suppression configurable per codec
- Licencable between 15 and 120 simultaneous calls
  - software key
  - DSP PCMCIA cards

## Environmental

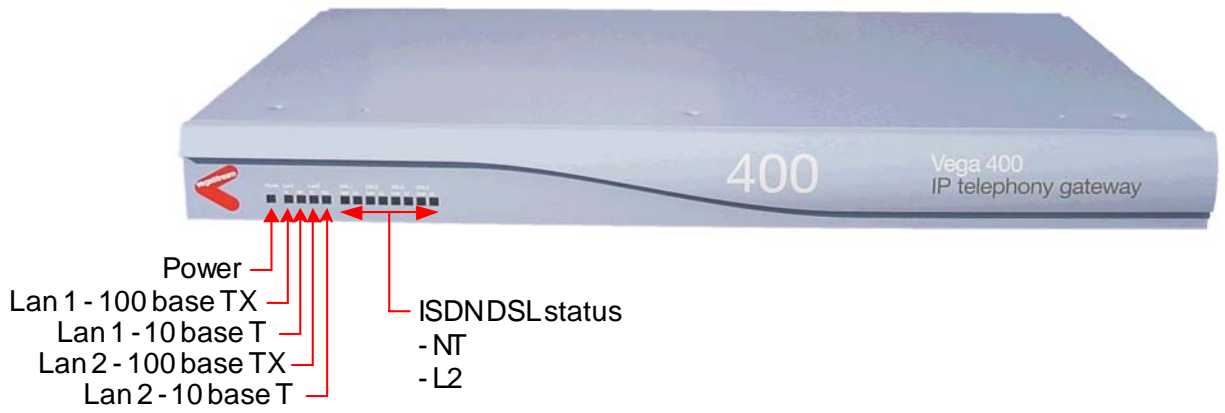
- Operating temperature: 0°C to +40°C
- Storage temperature: -20°C to +70°C
- Humidity: 0 to 90% (non condensing)

## Power

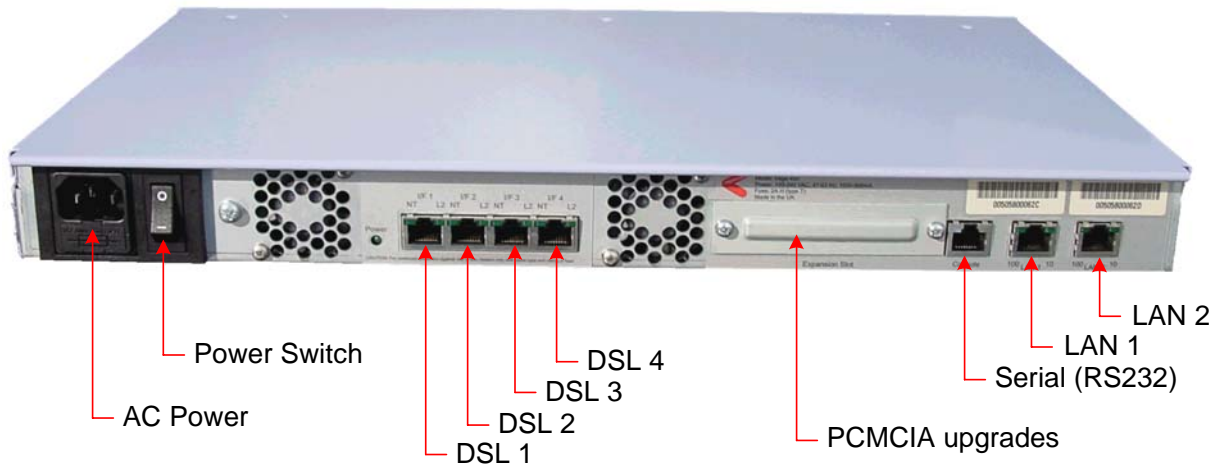
- 100 - 260 Vac, 47 - 63 Hz, 1A - 0.5A
- Fuse rating: 2A - type T (e.g. Bussmann S505)

## Physical dimensions

- 445mm (17.5") x 44mm (1.7") x 280mm (11") width / height / depth
- Industrial rack mount: 483mm (19"), 1U
- Weight: 3.5 kg



L2 status LED	LED Off	LED Flash	LED On
Vega 400	No physical connection	Physical only	Physical + layer 2



4 RJ-45 connectors are used for DSL connections

DSL cables supplied:

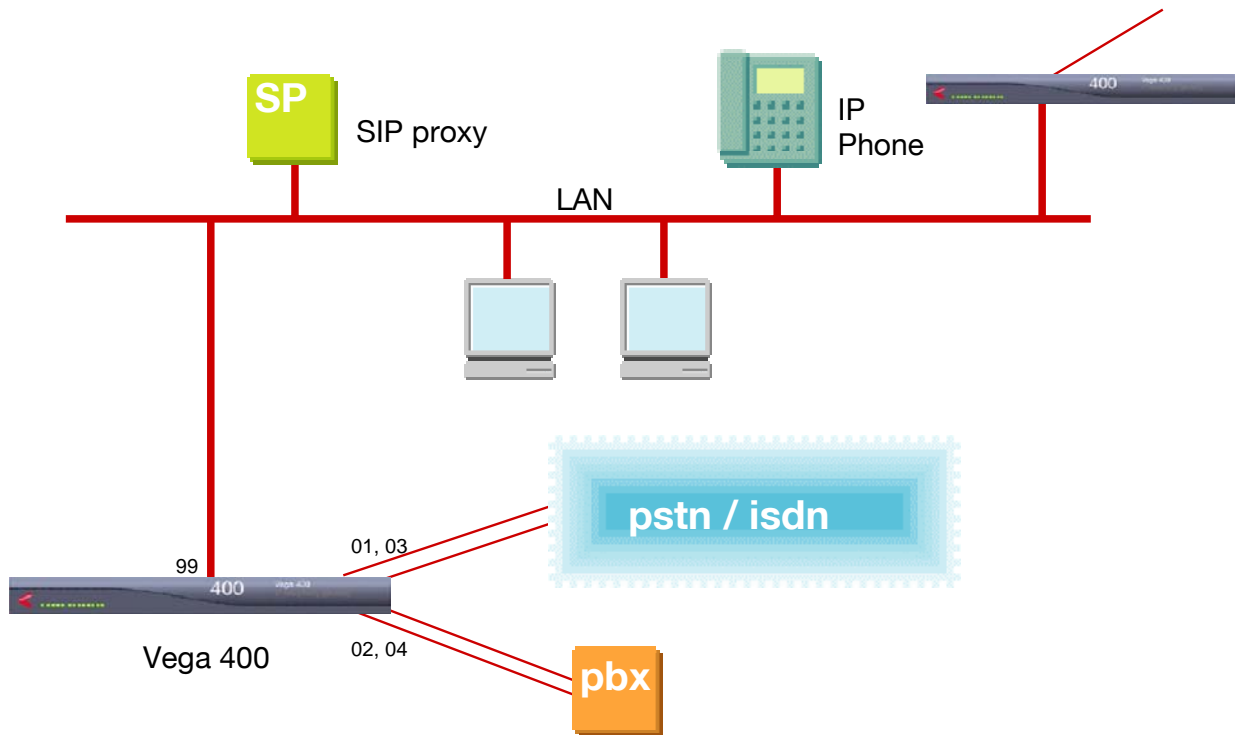
Red booted cable

- Vega NT → TE and Vega TE → NT

DSL Interfaces:

IF 0401	IF 0402	IF 0403	IF 0404
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## Typical configuration



## Approvals

- Approved for European CE Countries
  - ISDN – TBR4 (Euro ISDN)
  - Safety – EN60950, IEC60950
  - EMC – EN55022 class B (CISPR22), EN55024 (CISPR24)
- Approved for North America
  - Safety – UL60950
  - EMC – FCC part 15 class B
  - ISDN – FCC part 68 (USA), CS-03 (Canada)
- Approved for Australia / New Zealand
  - Approvals not yet sought

## Tech Spec

- E1 DSL Physical
  - 120 Ohm connection
  - 30 bearer channels - channels 1 to 15 & 17 to 31
  - 1 "D" channel (signalling) - channel 16
  - 1 framing channel - channel 0
  - PCM30 or CRC-4 framing
  - HDB3 line encoding
  - TE / NT mode soft configurable by DSL
  
- E1 D-channel Signalling
  - PRI Euro-ISDN/CTR4/NET4/DSS1
  - PRI QSIG
  
- T1 DSL Physical
  - 100 ohm connection
  - PRI
  - 23 bearer channels - channels 1 to 23
  - 1 "D" channel (signalling) - channel 24
  - CAS
  - 24 bearer channels - channels 1 to 24
  - Robbed bit signalling
  - 8 kbps framing
  - Superframe, Extended Superframe framing
  - AMI, B8ZS line encoding
  - TE / NT mode soft configurable by DSL
  
- T1 D-channel Signalling
  - N. American PRI
  - NI1/2, AT&T 4/5ESS, DMS100
  - Robbed bit signalling CAS
  - E&M inc feature group D, loop start, ground start

## Cable pinouts

Cables with RJ48 plugs are used to connect to the Vega 400's ISDN ports. The pinout of the Vega 400 automatically change from NT to TE depending on the configuration setting in the Vega. A (RED) straight through cable is used to connect an NT Vega DSL to a TE far end device, and the same (RED) straight through cable is used to connect a TE Vega DSL to an NT far end device.

Vega 400 PRI	Far end device
NT (physical)	TE
1 (Tx+)	1 (Rx+)
2 (Tx-)	2 (Rx-)
4 (Rx+)	4 (Tx+)
5 (Rx-)	5 (Tx-)
	VegaStream provided cables (ISO 10173)

Vega 400 PRI	Far end device
TE (physical)	NT
1 (Rx+)	1 (Tx+)
2 (Rx-)	2 (Tx-)
4 (Tx+)	4 (Rx+)
5 (Tx-)	5 (Rx-)
	VegaStream provided cables (ISO 10173)

For Loopback between a Vega NT port and a Vega TE port, use the RED cable

Cables with RJ45 sockets are used to connect the Vega to a Ethernet LAN hub. A standard 1:1 cable is required.

Ethernet
1 (Tx+)
2 (Tx-)
3 (Rx+)
6 (Rx-)

To Make cables for Vegas use the following parts (or similar)

T1/E1 and BRI cable:

Component	Part number	Description	Manufacturer
<b>Cable</b>	Belden 9804	Cat 5 S-FTP 2 Twisted Pair Cable (UL2960)	Belden <a href="http://www.belden.com">www.belden.com</a>
<b>RJ45 connector</b>	Stewart 360808A217	RJ45 Screened plug	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>
<b>RJ45 boot for TE</b>	Stewart 361010SRX225A255	RJ45 UL approved blue strain relief boot	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>
<b>RJ45 boot for NT</b>	Stewart 361010SRX225A257	RJ45 UL approved red strain relief boot	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>

Note:

1. When connecting the cable to the RJ45 connector ensure that there is 360° contact between the cable's braided screen and the RJ45 screen.
2. Balanced connections should have their + and – sides in the same twisted pair

LAN cable:

Component	Part number	Description	Manufacturer
<b>Cable</b>	Belden 9804	Cat 5 S-FTP 2 Twisted Pair Cable (UL2960)	Belden <a href="http://www.belden.com">www.belden.com</a>
<b>RJ45 connector</b>	Stewart 360808A217	RJ45 Screened plug	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>
<b>RJ45 boot</b>	Stewart 361010SRX225A256	RJ45 UL approved yellow strain relief boot	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>
<b>Ferrite</b>	Stewart 28B0562-200	EMI suppression ferrite core (solid, loose)	Stewart <a href="http://www.stewartconnector.com">www.stewartconnector.com</a>
<b>Heat-shrink sleeve</b>	TAKBRO CPA-100-13/4	Adhesive heatshrink (13mm od, 3:1) black UL224, MIL-1-23053	TAKBRO <a href="http://www.takbro.co.uk">www.takbro.co.uk</a>

Note:

1. When connecting the cable to the RJ45 connector ensure that there is 360° contact between the cable's braided screen and the RJ45 screen.
2. EMI suppression ferrite is to be fitted within 2mm +/- 2mm of the RJ45 connector boot – on the end that connects to the Vega.

Serial cable:

The serial cable consists of a lead with an RJ45 connector on the Vega gateway end and a female 9 way D-Type connector to plug into the PC.

Serial Cable	
RJ45	9 way D-Type
1	8
2	6
3	2
4	5
5	5
6	3
7	4
8	7

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