Initial configuration
Quick Config
reference guide

Introduction

Quick config is designed to enable users to quickly and fully configure Vega gateways for 90% of applications. It focuses on providing the user with the ability to configure the Vega with
1) information about a single proxy, or up to 8 discrete VoIP devices, and
2) the telephone numbers that are handled by each telephony interface on the Vega.

Where specific telephony configuration is required in order to allow the Vega to correctly connect with the external system a pull down section is provided on the relevant telephony interface tab. This should only ever need to be configured once.

Quick config allows users, particularly those managing FXS ports with analogue phones attached, to implement Adds Moves and Changes in a simple manner. By re-entering Quick config and making telephone number changes on the FXS page then pressing the submit button, the Vega will immediately handle the new configuration.

For the 10% of applications where more advanced configuration is required, Quick config is designed to work in conjunction with Expert mode configuration. Quick config only changes the parameters that it needs to, thus changes to the Vega configuration may also be made through the Expert pages. In order that the Expert user can keep an eye on what Quick config is doing, on entering Quick Config the values Quick config will set (with its current Quick config settings) are compared to the current settings of the Vega. If there are any differences a warning banner is raised and details of the differences can be reviewed.

If Quick config is to be used with Expert config it is best to configure as much as possible through Quick config, and then make any further changes through Expert mode. Adds Moves and Changes can then be handled by returning to the Quick config menu.

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Configuring your Vega using Quick Config

Connect your Vega

Details about connecting up your specific Vega are documented in Appendix 1, "Connect Your Vega" at the end of this document.

Before installing your Vega, ensure that you read the VegaStream VoIP Gateways Safety and Compliance Information document available on the Step-by-Step configuration page of www.VegaAssist.com.

Where an earth point is fitted to your Vega this must be connected. The Earth point serves a dual role, firstly it is a safety earth, and secondly, in electrically noisy conditions, this earth can stop noise on the telephone lines.

When configuring using Quick config, only LAN interface 1 will be configured.

Get an IP address

If a DHCP server is available, by default, the Vega will automatically pick up an IP address from that server. If you know the IP address served to the Vega, skip this section and move on to "Web browser connection and Summary page" on page 6.

If a DHCP server is being used to provide IP addresses but you do not know the IP address served to the Vega, then either:
- Perform an IP ping and look at the ARP cache
- Use a serial connection to let the Vega tell you its IP address

Use IP ping and Arp cache
Take a note of the MAC address of your Vega (this is printed on the rear of the Vega above the LAN interface(s) – The LAN 1 MAC address is the same value as the serial number of the Vega and is always even. The LAN 2 MAC address – if there is a LAN 2 – is LAN 1 MAC address plus 1, and so is always odd).

Connect your PC to the same subnet as the Vega and then ping all the IP addresses in the local subnet – either by manually typing the ping commads, or by using a tool like 'IPSCAN' (www.angryziber.com/ipscan/)

From the PC command prompt type 'arp –a' and look for the MAC address of your Vega in the Physical address column. The IP address of your Vega is in the 'Internet Address' column adjacent to its MAC address.

Use a serial connection
Use a 9 way D type to RJ45 serial cable (available as an accessory from your Vega gateway reseller).

Configure a terminal emulator program (such as Microsoft's HyperTerminal) for:
- Speed   = 115200 baud
- Data bits   = 8
- Parity   = none
- Stop bits   = 1
- Flow Control = none

Press <Enter> to get the Username: prompt

At the prompts enter the Username and Password for this Vega
By default:

        Username = admin
        Password = admin

at the admin > prompt, type

➢ `show .lan.if.1.ip`
- this shows the IP address of LAN interface 1

If DHCP is <u>not</u> available to provide the Vega with an IP address, then either:

- Use the Vega default IP address to gain access to the Vega
- Use a serial connection to gain access to the Vega

then manually set the required IP address(es).

Use Vega default IP address

If the Vega is powered up and no DHCP server is available, then the Vega will set its IP address to 169.254.xxx.yyy where xxx and yyy are defined by the MAC address of the Vega LAN interface. xxx and yyy are both one to three digit decimal values.

The MAC address of the Vega LAN interface will be 00:50:58:WW:XX:YY (found on the rear of the Vega – for details see the 'Use IP ping and Arp cache' section above) where WW, XX and YY are each 2 hexadecimal digits.

- The xxx value in the IP address is the decimal value of the XX hex value from the MAC address, and
- The yyy value in the IP address is the decimal value of the YY hex value from the MAC address.

A hexadecimal to decimal conversion table may be found in Appendix 2 "Hexadecimal to Decimal conversion" at the end of this document

Now, either connect your PC to the Vega using a LAN crossover cable, or connect it to the same hub / switch as the Vega. If the PC is configured to use DHCP, as it will not find a DHCP server it too will default its IP address. PCs' default their IP addresses to: 169.254.aaa.bbb with a subnet mask of 255.255.0.0

If your PC does not configure itself with an IP address of this form then manually configure the PC to IP address 169.254.aaa.bbb and subnet mask 255.255.0.0; aaa and bbb can both be any value between 1 and 254, but bbb must be different to the Vega's yyy.

Use the Vega IP address 169.254.xxx.yyy as the IP address of the Vega when initially configuring it (you will be able to set a new IP address for the Vega using Quick config).

Use a serial connection

Use a 9 way D type to RJ45 serial cable (available as an accessory from your Vega gateway reseller).

Configure a terminal emulator program (such as Microsoft's HyperTerminal) for:

- Speed   = 115200 baud
- Data bits   = 8
- Parity   = none
- Stop bits   = 1
- Flow Control = none

Press <Enter> to get the Username: prompt

At the prompts enter the Username and Password for this Vega
By default:
       Username = admin
       Password = admin

at the admin > prompt, type
- ➢ `set .lan.if.1.use_dhcp=0`
- ➢ `set .lan.if.1.ip=aaa.bbb.ccc.ddd`
  - where `aaa.bbb.ccc.ddd` is the required IP address of the Vega LAN 1 interface
- ➢ `set .lan.if.1.subnet=eee.fff.ggg.hhh`
  - where `eee.fff.ggg.hhh` is the required subnet mask for the Vega LAN 1 interface
- ➢ set `.lan.gateway.dhcp_if=0`
- ➢ set `.lan.gateway.ip=iii.jjj.kkk.lll`
  - where `iii.jjj.kkk.lll` is the required LAN gateway address the Vega LAN 1 interface
- ➢ `set .sip.lan_profile=1`

now type:
- ➢ `save`
- ➢ `reboot system`

this will activate the changes. Once the Vega has rebooted the IP address of the Vega will be the IP address you entered (`aaa.bbb.ccc.ddd`)

Web browser connection and Summary page

In a web browser enter the IP address of the Vega in the address bar and press enter, or select 'Go'
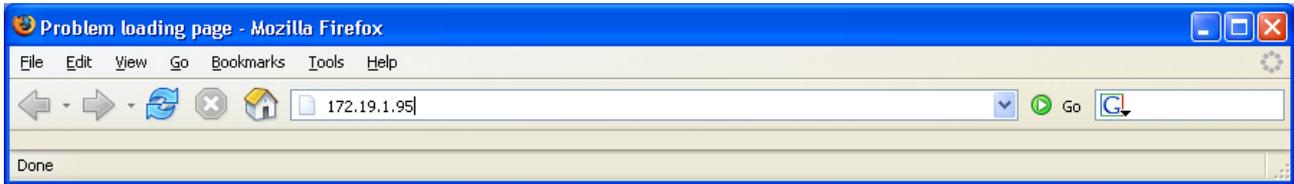
You will be presented with a login screen:

Enter the username and password for this Vega

By default:
    Username = admin
    Password = admin

This will bring you to the Vega summary page that contains details of the status of the Vega and provides buttons and links to obtain further details.

To start the configuration click on the Quick Config menu item on the left hand side.

Usually this will take you to a list of tabs that will allow you to configure the various elements of the Vega. Before displaying the tabbed page, however, the Vega checks whether the current quick config parameters are consistent with the current settings of the Vega. If they are not, you will see the following warning:
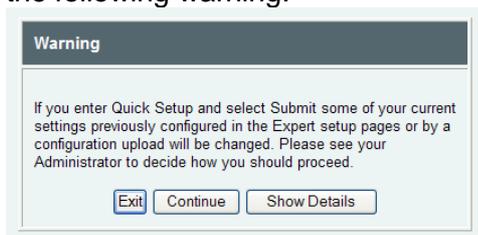
The quick config parameters may not be consistent with the current Vega settings if someone has used Expert mode to make advanced configuration changes.

Seek the advice of the person who has made the Expert mode changes before using Quick config to update the configuration.

If this is a brand-new configuration and you want to reset all configuration parameters as part of this configuration then select 'Continue', then tick the 'New Install?' tick box. This will cause the Vega to clear any old, unwanted, configuration when the Quick config changes are submitted.

If you or the Expert user wish to know which specific Vega parameters will be affected by entering and submitting Quick config (assuming no other changes to Quick config are made), then select

the 'Show Details' button and the full set of parameter differences will be listed (this list contains both the current value of the parameter and the value that Quick config would set).

The information provided in the Details section can be copied and saved, and if required, can be used to return these parameters back to their pre-Quick config values.

⚠ WARNING!	To exit Quick config ALWAYS use either the Submit or Exit buttons adjacent to the Quick config tabs. DO NOT use the navigation entries on the left hand menu; using these may cause you to lose Quick configuration settings that you want to keep.

Basic Config

Start configuring your Vega in the Basic configuration tab.

New Install?: Tick this box if you are starting a brand new configuration on this Vega (you are not just making an update to an existing configuration). This will cause the Vega to reset any existing, unwanted configuration parameters before applying the quick config values when you press submit. Any old configuration that may have existed on the Vega will be cleared and will not affect the configuration you are making now.

Country: Select the country of operation – this will affect telephony signalling schemes available for configuration, daylight saving time rules, and it will also set up appropriate call progress (ringback, busy etc) tones.

Timezone Offset: Select the timezone offset for your country or area in your country. This sets up the base timezone (compared to UTC) that the Vega will use.

Emergency numbers: Choose which emergency numbers should be routed directly to interfaces marked as able to support emergency numbers. Delete emergency telephone numbers that are not supported in your country, and if necessary add others that need to be supported. The list of emergency numbers is space or comma separated.

LAN: Make changes here if the current settings are not the required ones

Codecs: Choose which codecs you wish the Vega to offer and accept. The Vega offers the codecs in the order priority 1 to priority 4 voice codecs first, then priority 1 to priority 4 data codecs

Login Password: It is advisable to change the admin password to something other than 'admin'. Enter and re-enter the password here to update the login password.

VoIP config

IP destinations: Choose whether the Vega is going to route calls to a VoIP service provider or Proxy, or alternatively whether up to 8 specific VoIP devices are to receive the VoIP calls from the Vega.

If the VoIP service provider / proxy option is chosen then specify the proxy / registrar details – these will be provided by your VoIP service provider / proxy administrator.

All IP address entries may be entered as dotted decimal values (a.b.c.d) or as DNS names (e.g. SIP.VegaStream.com).

Outbound proxy: Leave this set to 0.0.0.0 (unused) unless specifically requested to set up an outbound proxy address.

Registration mode: Registration may be:
- off – unused,
- per gateway – a single registration for the whole gateway (usually used for trunking gateways where the registration is used to keep firewalls open and to act as an I'm alive heartbeat)
- per FXS port – typically used when the gateway has analogue phones attached to FXS ports and the Vega is making them appear like a bank of SIP phones

When VoIP service provider / Proxy mode is chosen, apart from emergency numbers, which are routed directly to one of the interfaces ticked as supporting emergency numbers, all calls received from telephony interfaces will be routed to the VoIP service provider / proxy as they / it may have call forwarding or routing information configured by the user and not known to the Vega (The VoIP

service provider / Proxy is completely in charge of routing non emergency calls received on the Vega telephony interfaces).

Calls from SIP will be routed to the appropriate telephony interface designated as supporting that telephone number. If a call arrives from SIP and there is no telephony interface that allows routing to that number, the call will be rejected by the Vega with SIP error 404 Not Found, and Q.850 cause code 1 Unassigned number.

If 'Send calls to specified VoIP devices' is chosen

calls received on telephony interfaces may be routed to other telephony interfaces and may be routed to SIP devices; calls received from SIP may only be routed to the telephony interfaces – Vega does not support routing received SIP calls back to SIP.

When a call is received, if it is to an emergency number it will be routed to an interface configured as supporting emergency calls. If it is a non-emergency number, then the call will be routed to the appropriate telephony interface or VoIP device (if allowed) designated as supporting that telephone number.

If a call is received and the Vega cannot find an appropriate interface supporting that number the call will be rejected by the Vega with SIP error 404 Not Found, and Q.850 cause code 1 Unassigned number.

IP Address: This is the IP address of the VoIP device; it may be specified in either dotted decimal (a.b.c.d) or DNS name format (e.g. SIP.VegaStream.com).

Telephone number list: This lists the telephone numbers, space or comma separated, that are handled by the VoIP device (at this IP address), e.g. 01344784917,01344784906

Regular expressions / wildcards can be used to specify number ranges – see Appendix 3, "Telephone number Regular Expressions" at the end of this document.

FXS Config

Vega 50 Europa
Configuration

Host Name this_hostname
IP Address 200.100.50.101
User Name admin

Status
Quick Config
Expert Config

Log off
Reboot System

| FXS | FXO | Basic Config | VoIP | | Submit | □ New Install? | Exit |

Telephone Connections

Interface	Enabled?	Telephone number list	Numeric Caller ID	Textual Caller ID	Registration and Authentication ID (Numeric_ID ▾)	Authentication Password
0101	☑	0101	0101	FXS 1	default	auth password
0102	☑	0102	0102	FXS 2	default	auth password
0103	☑	0103	0103	FXS 3	default	auth password
0104	☑	0104	0104	FXS 4	default	auth password
0105	☑	0105	0105	FXS 5	default	auth password
0106	☑	0106	0106	FXS 6	default	auth password
0107	☑	0107	0107	FXS 7	default	auth password
0108	☑	0108	0108	FXS 8	default	auth password

Enabled: un-ticking 'enabled' disables this interface. No calls will be accepted by this interface or made from this interface.

Telephone number list: This lists all telephone numbers that should be routed to this telephony interface. If phones are attached then typically there will be a single telephone number listed per interface. If the interface is connected to the analogue trunk interface of a PBX then multiple numbers or number ranges may need to be routed to a specific interface. List the numbers or number ranges here in either comma or space separated format, e.g. 01344784901,01344784955 Regular expressions / wildcards can be used to specify number ranges – see Appendix 3, "Telephone number Regular Expressions" at the end of this document.

Numeric Caller ID: This is the Caller ID that will be provided when making telephone to SIP or telephone to telephone calls from this interface. It is typically the telephone number of the telephone attached to this physical interface. In this field a single number is expected; no wildcard or regular expressions are allowed.

Textual Caller ID: This is a textual Caller ID that will be provided when making telephone to SIP or telephone to telephone calls from this interface. This is typically the name of the person who uses the telephone attached to this physical interface (e.g. John Smith).

Registration and Authentication ID:
This is only required for systems routing calls using a VoIP service provider or a Proxy, and is only configured here if configuration per FXS port was selected on the VoIP page.
If it is not required it will be greyed out.

At the top of the column you have a pull down block to select how the Registration and Authentication ID is generated.

- Choose 'Numeric ID' if the Registration and Authentication Name is always the same as the Numeric Caller ID.
- Choose 'Textual ID' if the Registration and Authentication Name is always the same as the Textual Caller ID.
- Choose 'Specified' if you want to define individual Names per interface. In this case the per-interface fields in this column will be editable.

The values to use will be specified by your VoIP service provider or Proxy administrator.

Authentication Password:
This is only required for systems routing calls using a VoIP service provider or a Proxy, and is only configured here if configuration per FXS port was selected on the VoIP page.
If it is not required it will be greyed out.

The values to use will be specified by your VoIP service provider or Proxy administrator.

FXO config

Vega 50 Europa
Configuration

Status
Quick Config
Expert Config

Log off
Reboot System

| FXS | FXO | Basic Config | VoIP | | Submit | ☐ New Install? | Exit |

Telephone Connections

Interface	Handle Emergency Calls?	Telephone number list	Numeric Caller ID	Textual Caller ID	Incoming Forward
0201	☐	0201	0201	FXO 1	default
0202	☐	0202	0202	FXO 2	default

Handle Emergency Calls:
Tick this box if you want emergency calls to be routed through the associated FXO interface. (The numbers treated as emergency numbers are defined on the Basic config page.)

Telephone number list: List all telephone numbers or number ranges here (in either comma or space separated format) that should be routed to this FXO interface, e.g.
01344784901,01344784955
Regular expressions / wildcards can be used to specify number ranges – see Appendix 3, "Telephone number Regular Expressions" at the end of this document.

Numeric Caller ID: This is the Caller ID that will be provided when making telephone to SIP or telephone to telephone calls from this interface. In this field a single number is expected; no wildcard or regular expressions are allowed.

Textual Caller ID: This is a textual Caller ID that will be provided when making telephone to SIP or telephone to telephone calls from this interface. In this field a single number is expected; no wildcard or regular expressions are allowed.

Incoming forward: When a call arrives on an FXO interface the Vega gets alerted to the fact by receiving ringing voltage on its interface; the incoming call does not supply any dialled number information to the Vega. The Vega therefore needs to be configured with a telephone number to route these incoming telephony calls to. Enter the telephone number that calls received on this telephone interface should be routed to.

Operational note: If the Vega has both FXS interfaces and fallback FXO interfaces and the Vega is powered down or is being upgraded, the two FXO fallback interfaces fallback to a hardwired connection through to the first two FXS interfaces. This allows calls to be made through the first two FXS interfaces even when the Vega is unable to actively process calls.

E1 / T1 config

Start by opening up the Port Settings section (once configured the first time, you should never need to re-visit the Port Settings section).

Protocol: If the protocol entry is left as auto, E1 products will be configured for ETSI ISDN, and T1 products will be configured for DMS-100 signalling. If these are not the required protocols, choose the protocol from the pull down list.

Framing: Usually this should be left as auto. The auto setting sets HDB3 for E1 (the only valid framing type on E1) and ESF for T1. If SF rather than ESF is required for T1, select it on the pull down tab.

NT: Tick NT against interfaces that are connected to PBX interfaces that would normally expect to be connected to the ISDN (PSTN). Un-tick NT for interfaces that are connected to the ISDN (PSTN) and for interfaces that are connected to PBX trunks configured as NT.

Number of channels: An E1 interface supports a maximum of 30 simultaneous calls and a T1 interface a maximum of 24 calls (CAS) and 23 calls (ISDN). Network operators however sell fractional E1s and fractional T1s at a reduced price where the full capacity is not required. In order that the Vega does not try to use up more channels than the Network operator will accept, set this value to the maximum number of simultaneous calls specified by the Network operator.

Channel allocation: If you know the order in which the other device uses the individual circuits within the E1 or T1, configure the Vega as follows:
- If the other end uses the lowest circuits and fills towards the upper circuits, choose Linear down on the Vega
- If the other end uses the highest circuits and fills towards the lower circuits, choose Linear up on the Vega
- If the other end uses the circuits in a round-robin order, configure the Vega also to use round-robin.

If you do not know the order, then leave the Vega configured as default. (Later use 'show ports' to check how the other end uses the circuits and then come back and configure as appropriate.)

Handle Emergency Calls:
Tick this box if you want emergency calls to be routed through the associated interface. (The numbers treated as emergency numbers are defined on the Basic config page.)
Typically tick this on all interfaces that are connected to the ISDN / PSTN.

Telephone Number List Same as Interface: Select whether the telephone numbers to be routed to this interface will be defined by the list following, or whether they are the same numbers as the number list defined for a different E1 / T1 interface. If they are the same as a different interface then select 'same as x' where x is the interface that specifies the number list. The Vega will share the calls between these interfaces.

If this interface is going to have the numbers defined in the following list, select 'None' and complete the 'Telephone number list'

Telephone number list: A list of telephone numbers or telephone number ranges that should be routed to this E1 / T1 telephone interface.

Regular expressions / wildcards can be used to specify number ranges – see Appendix 3, "Telephone number Regular Expressions" at the end of this document.

BRI config

Start by opening up the Port Settings section (once configured the first time, you should never need to re-visit the Port Settings section).

Line Type: set Line Type to be the same as the line type setting on the device(s) that the Vega interface is connected to. pp- Point to Point is typically used where the ISDN network is configured to connect to a single device, e.g. PSTN to PBX. pmp – Point to Multi Point is typically used where the PSTN or PBX is configured to connect to multiple handsets.

NT: Tick NT against interfaces that are connected to PBX interfaces that would normally expect to be connected to the ISDN (PSTN) and interfaces that connect directly to BRI handsets. Un-tick NT for interfaces that are connected to the ISDN (PSTN) and for interfaces that are connected to PBX trunks configured as NT.

Phantom Power: Tick phantom power if power to the line is required to provide power to BRI handsets, or because some BRI PBXs like to see it to confirm that the BRI cable is connected. (Phantom power is only available on lines configured as NT.)

Handle Emergency Calls:
Tick this box if you want emergency calls to be routed through the associated interface. (The numbers treated as emergency numbers are defined on the Basic config page.)
Typically tick this on all interfaces that are connected to the ISDN / PSTN.

Telephone Number List Same as Interface: Select whether the telephone numbers to be routed to this interface will be defined by the list following, or whether they are the same as the number list defined for a different BRI interface. If they are the same as a different interface then select 'same as x' where x is the interface that specifies the number list. The Vega will share the calls between these interfaces.

If this interface is going to have the numbers defined in the following list, select 'None' and complete the 'Telephone number list'

Telephone number list: A list of telephone numbers or telephone number ranges that should be routed to this BRI telephone interface.

Regular expressions / wildcards can be used to specify number ranges – see Appendix 3, "Telephone number Regular Expressions" at the end of this document.

Submit / Exit

Submit: Press submit to save and apply (and activate) the changes you have made using Quick Config. Pressing submit will bring up a confirmation request: Select OK to continue and activate the changes; selecting cancel will take you back to the Quick config pages.

Most Quick Config parameters can be activated without need for a reboot, so the save and apply will activate them. Changing some parameters, like changing the IP address of the Vega will require the Vega to be re-booted in order for the change to take effect. If a reboot is required the Vega will ask whether the reboot should occur immediately, or whether you wish to reboot the Vega manually later. If Reboot later is selected, the reboot button on the left hand side menu will be left RED to indicate that a reboot is required to activate some parameters.
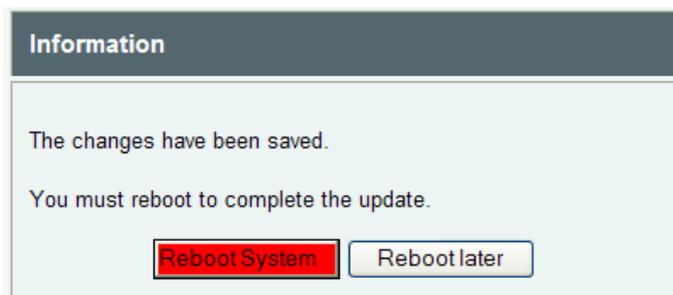
Exit: If you decide that you want to abandon the changes just made in Quick config then instead of selecting Submit, select Exit. An exit confirmation request will be displayed – select OK to exit, or select cancel to return to the Quick config pages.

Troubleshooting

1. If quick config has changed things that needed setting and you have forgotten what they are … before powering down or rebooting your Vega look at the log buffer (show log) – it contains details of the configuration changes made by Quick config.

Appendix 1.   Connect Your Vega

Appendix 1a.   Connect Your Vega 50 Europa
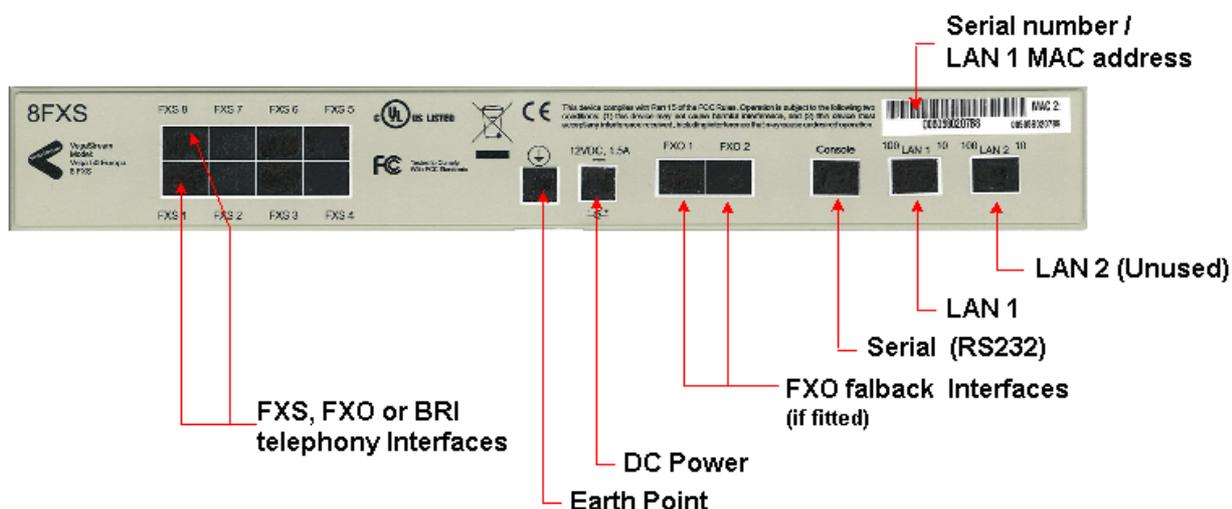
Earth point
It is important to connect the Earth point to a tested earth. Earthing your Vega 50 Europa provides both a safety earth and, in electrically noisy conditions, this earth can stop noise on the telephone lines.

LAN
Only LAN interface 1 is active (LAN 2 is reserved for future upgrade).
Connect the LAN 1 interface to a standard or fast Ethernet hub, router or switch (10 baseT or 100 baseTx), or alternatively for initial configuration connect it using a crossover cable directly to your PC.

Telephony
The telephone connector layout differs depending on the product purchased; the connector layouts and their corresponding interface IDs are shown below:

8 FXS 2 FXO:
Analogue telephones or the trunk interface connections of a PBX can be connected to the eight FXS interfaces.
PSTN Telephone lines or the extension port interfaces of a PBX can be connected to the two FXO ports.
On both the FXS and FXO interfaces RJ11 or RJ45 connectors may be used. The 2 centre pins connect to the analogue Tip and Ring signals.
Note, the port numbers on the Vega are as follows:

FXS 8 IF:0108	FXS 7 IF:0107	FXS 6 IF:0106	FXS 5 IF:0105
FXS 1 IF:0101	FXS 2 IF:0102	FXS 3 IF:0103	FXS 4 IF:0104

FXO 1 IF: 0201	FXO 2 IF: 0202

If the Vega is powered down or is being upgraded, the two FXO interfaces fallback to a hardwired connection through to the first two FXS interfaces. This allows calls to be made through the first two FXS interfaces even when the Vega is unable to actively process calls.

4 FXS 2 FXO:

Analogue telephones or the trunk interface connections of a PBX can be connected to the four FXS interfaces.

PSTN Telephone lines or the extension port interfaces of a PBX can be connected to the two FXO ports.

On both the FXS and FXO interfaces RJ11 or RJ45 connectors may be used. The 2 centre pins connect to the analogue Tip and Ring signals.

Note, the port numbers on the Vega are as follows:

FXS 1	FXS 2	FXS 3	FXS 4
IF:0101	IF:0102	IF:0103	IF:0104

FXO 1	FXO 2
IF: 0201	IF: 0202

If the Vega is powered down or is being upgraded, the two FXO interfaces fallback to a hardwired connection through to the first two FXS interfaces. This allows calls to be made through the first two FXS interfaces even when the Vega is unable to actively process calls.

4 BRI:

ISDN Telephones or the ISDN trunk interfaces of a PBX can be connected to the ISDN interfaces configured as NT

ISDN lines from the telephone network, or ISDN extension ports of an ISDN PBX can be connected to the ISDN interfaces configured as TE

(Each ISDN interface can be independently configured as NT or TE to match your requirements)

On BRI interfaces an 8 pin RJ45 (CAT 5 or better) cable should be used to make the connection.

Note, the port numbers on the Vega are as follows:

BRI 1	BRI 2	BRI 3	BRI 4
IF:0301	IF:0302	IF:0303	IF:0304

2 BRI:

ISDN Telephones or the ISDN trunk interfaces of a PBX can be connected to the ISDN interfaces configured as NT

ISDN lines from the telephone network, or ISDN extension ports of an ISDN PBX can be connected to the ISDN interfaces configured as TE

(Each ISDN interface can be independently configured as NT or TE to match your requirements)

On BRI interfaces an 8 pin RJ45 (CAT 5 or better) cable should be used to make the connection.

Note, the port numbers on the Vega are as follows:

BRI 1	BRI 2
IF:0301	IF:0302

Power

Connect the power supply into the Vega, then plug it into the mains socket. The power LED on the front panel will illuminate.

After a short while the Vega Status LED will illuminate – the Vega is ready to be configured.

Appendix 1b.   Connect Your Vega 5000
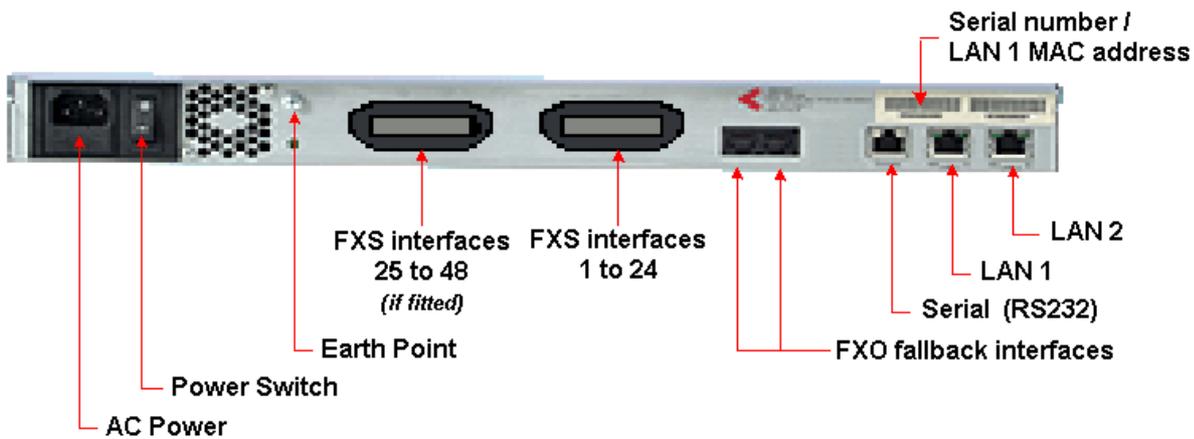
Earth point
It is important to connect the Earth point to a tested earth. Earthing your Vega 5000 provides both a safety earth and, in electrically noisy conditions, this earth can stop noise on the telephone lines.

LAN
LAN interfaces 1 and 2 may be connected to standard or fast Ethernet hubs, routers or switches (10 baseT or 100 baseTx), or alternatively for initial configuration connect one of the LAN interfaces directly to your PC using a crossover cable.

It is important that if both LAN 1 and LAN 2 are to be used that they are connected to separate (non-overlapping) subnets.

Telephony
The model of Vega 5000 that you have determines the interfaces that you will see on the rear of your unit. The Vega 5000/24 has a single telephony connector and the Vega 5000/48 has 2 telephony connectors.

The telephony connectors are known by various names, RJ21, Amphenol and Telco 50. These connectors support 24 2-wire analogue telephone connections.

You should connect to these connectors as follows:

Vega 5000/24 and Vega 5000/48 – first 24 ports:
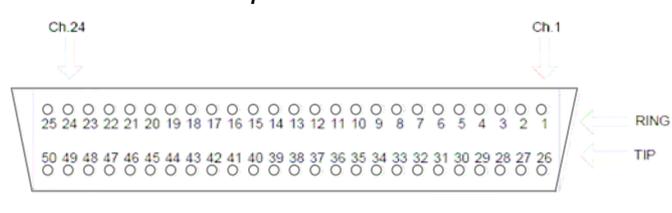
FXS interface 1 (IF:0101) = pin 1 and pin 26
FXS interface 2 (IF:0102) = pin 2 and pin 27

…

FXS interface 24 (IF:0124) = pin 24 and pin 49
(pins 25 and 50 are unused)

Vega 5000/48 – ports 24 to 48:
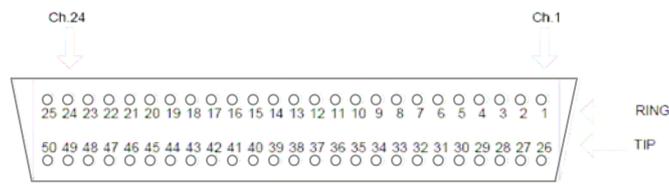
FXS interface 25 (IF:0125) = pin 1 and pin 26
FXS interface 26 (IF:0126) = pin 2 and pin 27
…
FXS interface 48 (IF:0148) = pin 24 and pin 49
(pins 25 and 50 are unused)

FXO ports (IF:0201 and IF:0202) are connected using RJ45 (Cat 5) or RJ11 connections.

If the Vega is powered down or is being upgraded, the two FXO interfaces fallback to a hardwired connection through to the first two FXS interfaces. This allows calls to be made through the first two FXS interfaces even when the Vega is unable to actively process calls.

Power
Connect the power cord into the Vega, and then switch on. The power LED on the front panel will illuminate.

After a short while the Vega Status LED will illuminate – the Vega is ready to be configured.

Appendix 2.   Hexadecimal to Decimal conversion

Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec	Hex	Dec
00	0	20	32	40	64	60	96	80	128	A0	160	C0	192	E0	224
01	1	21	33	41	65	61	97	81	129	A1	161	C1	193	E1	225
02	2	22	34	42	66	62	98	82	130	A2	162	C2	194	E2	226
03	3	23	35	43	67	63	99	83	131	A3	163	C3	195	E3	227
04	4	24	36	44	68	64	100	84	132	A4	164	C4	196	E4	228
05	5	25	37	45	69	65	101	85	133	A5	165	C5	197	E5	229
06	6	26	38	46	70	66	102	86	134	A6	166	C6	198	E6	230
07	7	27	39	47	71	67	103	87	135	A7	167	C7	199	E7	231
08	8	28	40	48	72	68	104	88	136	A8	168	C8	200	E8	232
09	9	29	41	49	73	69	105	89	137	A9	169	C9	201	E9	233
0A	10	2A	42	4A	74	6A	106	8A	138	AA	170	CA	202	EA	234
0B	11	2B	43	4B	75	6B	107	8B	139	AB	171	CB	203	EB	235
0C	12	2C	44	4C	76	6C	108	8C	140	AC	172	CC	204	EC	236
0D	13	2D	45	4D	77	6D	109	8D	141	AD	173	CD	205	ED	237
0E	14	2E	46	4E	78	6E	110	8E	142	AE	174	CE	206	EE	238
0F	15	2F	47	4F	79	6F	111	8F	143	AF	175	CF	207	EF	239
10	16	30	48	50	80	70	112	90	144	B0	176	D0	208	F0	240
11	17	31	49	51	81	71	113	91	145	B1	177	D1	209	F1	241
12	18	32	50	52	82	72	114	92	146	B2	178	D2	210	F2	242
13	19	33	51	53	83	73	115	93	147	B3	179	D3	211	F3	243
14	20	34	52	54	84	74	116	94	148	B4	180	D4	212	F4	244
15	21	35	53	55	85	75	117	95	149	B5	181	D5	213	F5	245
16	22	36	54	56	86	76	118	96	150	B6	182	D6	214	F6	246
17	23	37	55	57	87	77	119	97	151	B7	183	D7	215	F7	247
18	24	38	56	58	88	78	120	98	152	B8	184	D8	216	F8	248
19	25	39	57	59	89	79	121	99	153	B9	185	D9	217	F9	249
1A	26	3A	58	5A	90	7A	122	9A	154	BA	186	DA	218	FA	250
1B	27	3B	59	5B	91	7B	123	9B	155	BB	187	DB	219	FB	251
1C	28	3C	60	5C	92	7C	124	9C	156	BC	188	DC	220	FC	252
1D	29	3D	61	5D	93	7D	125	9D	157	BD	189	DD	221	FD	253
1E	30	3E	62	5E	94	7E	126	9E	158	BE	190	DE	222	FE	254
1F	31	3F	63	5F	95	7F	127	9F	159	BF	191	DF	223	FF	255

Appendix 3. Telephone number Regular Expressions

In quick config, telephone numbers can be specified as exact numbers, or they can be specified as number ranges using the following regular expressions.

.	Any single digit
[abc]	Range of digits 'a', 'b' and 'c'
[a-d]	Range of digits 'a' thru 'd'
[^abc]	Range of digits excluding 'a', 'b' and 'c'
*	Previous character or regular expression repeated 0 or more times
+	Previous character or regular expression repeated 1 or more times
?	Previous character or regular expression repeated 0 or 1 times
\	Turn off the regular expression meaning of the following character, e.g. * = DTMF *

Example 1 – 013447849..
013447849.. means a telephone number starting with the digits 013447849 and then having two further digits, e.g. all the following would match:
- 01344784900
- 01344784952
- 01344784999

Example 2 – 01344.*
01344.* means a telephone number starting with the digits 01344 and then having 0 or more further digits, e.g. all the following would match:
- 01344
- 01344784900
- 01344123423412341234

Example 3 – 01344784[89]..
01344784[89].. means a telephone number starting with the digits 01344784 and then having the next digit as an 8 or a 9 and then having two further digits, e.g. all the following would match:
- 01344784800
- 01344784837
- 01344784899
- 01344784900
- 01344784976
- 01344784999

Example 4 – 0[78].8
0[78].* means a telephone number starting with the digits 07 or 08 and then having 0 or more further digits, e.g. all the following would match:
- 0712341234
- 0812341234
- 07515151
- 08882883

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