# Initial configuration Vega 100 T1 (H.323) Gatekeeper mode - R5.1



This document describes how to configure the Vega 100 T1 H.323 unit using the web browser interface. The configuration described will allow the Vega to be rapidly installed and tested.

The instructions below will configure the Vega 100 to be a transparent trunking gateway allowing a gatekeeper to deliver calls to, and receive calls from both a PBX and the PSTN.

- Calls made from the PBX or PSTN to the Vega will be forwarded using the gatekeeper. The telephone number passed to the Vega will be forwarded unchanged to the gatekeeper.
- Calls made from the gatekeeper to the Vega will be forwarded to the PSTN or to the PBX based on the leading two digits of the telephone number passed. A leading 01 will cause the call to be routed to the PSTN, and a leading 02 will cause the call to be routed to the PBX. The digits following the 01 or 02 will be passed as the dialed digits.



The configuration process is broken down into 11 stages as follows:

- 1 Connect your Vega to LAN, Telephone and Power
- 2 Configure the basic LAN parameters
- 3 Configure password and login timeout
- 4 Check and configure LAN settings and Host name
- 5 Select Gatekeeper mode
- 6 Configure the Dial Plan
- 7 Configure audio parameters
- 8 Configure DSLs
- 9 Configure pointer to CD ROM documentation
- 10 Save Changes
- 11 Archive Vega Configuration

Please also see:

- 12 Technical Support
- 13 Advanced configuration

# 1. Connect your Vega to LAN, Telephone and Power



# Before installing your Vega, ensure that you read the VegaStream VoIP Gateways Safety and Compliance Information document.

## LAN:

Using the yellow booted cable connect the LAN port on the Vega [5] to a standard or fast Ethernet hub or switch (10 baseT or 100 baseTx). The connector nearest the ferrite core should be plugged into the Vega.

### **Telephony:**

If you are connecting the Vega 100 to a PBX, the Vega 100 acts as the NeTwork equipment and a red-booted cable must be used.
For each trunk that is to be connected to the PBX, insert one end of a red booted cable into one of the Vega 100 DSL sockets [DSL 1 or DSL 2] and the other end to the PBX.
If you are connecting the Vega 100 directly to the public telephone network it acts as the Terminal Equipment and the blue-booted cable must be used.
For each trunk that is to be connected to the PSTN, insert one end of a blue booted cable to one of the Vega 100 DSL sockets [DSL1 or DSL2] and the other end to the PSTN terminating box.

### Power:

Insert the power cable into the AC power inlet on the Vega and switch on. The power LED on the front panel will illuminate.

The LAN LEDs will also illuminate indicating 10 (baseT) or 100 (baseTx) connection, and the FDX LED will illuminate if Full Duplex mode has been negotiated.

# 2. Configure the basic LAN parameters

If a DHCP server is available, by default, the Vega will automatically pick up an IP address. If you know the IP address served to the Vega, skip this section and start at  $\underline{3}$ .

If DHCP is <u>not</u> to be used to provide the Vega with an IP address, or you need to check the IP address provided to the Vega, connect the serial interface of the Vega to a PC serial interface using a 9 way male to female straight through cable.

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 default user name and password

Username: admin Password: admin

To display the current IP address, type:

```
> show lan.ip
```

If this is not the IP address required, it can be overridden, together with other LAN parameters by typing:

- > set lan.use\_dhcp=0
- > set lan.ip=aaa.bbb.ccc.ddd
- > set lan.subnet=eee.fff.ggg.hhh
- > set lan.gateway=iii.jjj.kkk.lll
- > save
- ➢ reboot system

# 3. Configure password and login timeout

Now configuration will be carried out via a web browser.

>Enter the IP address of the Vega into the "Address" field of your web browser.



You will then be presented with the login page:

🎒 VoIP Gateway Online Co	onfiguration - Microsoft Internet Explorer provided by AT&T Broadband Internet	
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	Host Name Vega100T1E1	
VegaStream	IF Address 192.106.1.100	E-Vin
	Login	
	Enter Username and Password	
	Username	
	Password	
	Login	
Cone		Internet //

Enter the default Username and Password

➤Username:	admin
≻Password:	admin
Select Login	



> On the left hand side menu select Users

🍯 Vega 100 T1E1 Online	e Configuration - Microso	ft Internet Explore		
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Dial Plan	Pomoto Accoso	1		
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lleare 4	Timeout	240		
QoS	Submit			
Advanced		Administrator	Deceword	
		New Decemend	Fassword	
Save		New Password		
		Re-enter Passwo	rd	
		Submit		
Help				
Reboot System	Billing User			
	Logging	0		
	Billing	1		
	Prompt	%u%p <b>&gt;</b>		
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			]	

### *Recommended:* Change the password

- enter New Password and Re-enter Password then
- > select Submit and then click "here" to return

**Optional:** Change the timeout<sup>1</sup> – default is 240 seconds; can extend to 7200 seconds (2hrs)

Select Submit and then click "here" to return

<sup>&</sup>lt;sup>1</sup> If the web interface is not used for this length of time the Vega will automatically log off the session. This change is only activated by logging out and back into the browser session.

# 4. Check and configure LAN settings and Host name

 $\succ$ On the left hand side menu select <u>LAN</u>

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	Host Name Vega100	T1E1	Lo Bar	
	IP Address 192.168. User Name admin	1.106	N. L.	
VegaStream	Unsaved Configu	ration Changes	1	
<u>Management</u>	Local Area Netwo	rk (changed)		-
Logging				
<u>Maintenance</u>	Warning: Changing thes	e parameters may prever	it remote access.	
LAN 🔫	Current Mode: Star	ndard Ethernet Mode		
DSL	Change to VLAN (8021	q) Ethernet mode	VLAN Mode	
<u>H.323</u>				-
<u>Dial Plan</u> Madia Channala	LAN Configuration			
Tones	Use DHCP	$\overline{\mathbf{v}}$		
Users	Host Name	Vega100T1E1		
<u>QoS</u>	IP Address	DHCP defined		
Advanced	Subnet Mask	DHCP defined		
Save	Domain Name Server	DHCP defined	Use DHCP 🔽	
	Default Gateway	DHCP defined	Use DHCP 🔽	
	TFTP Server	DHCP defined	Use DHCP 🔽	
Help	Network Time Server	DHCP defined	Use DHCP 💌	
Reboot System	FTP Server	192.168.1.108		
	NTP Offset (hhmm)	0000		
	NTP Poll Interval	0		
	Physical Layer Con	figuration		
	Full Duplex			•
<u>آ</u>				Internet

Scroll down to see the whole of the LAN Configuration section

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	Full Duplex			
Reboot System	Ethernet Type	10baseT & 10	10baseTX 💌	
	QoS profile	1		
	Submit			
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*Optional:* If there are any LAN values that need to be set up (e.g. NTP server or tftp server) set them up now, then

Select Submit and then click "here" to return

# 5. Select Gatekeeper mode

>On the left hand side menu select H.323



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Management		H 323							
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Log off		Use Early H2	45						
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нар		Use H245 tur	nelling						
Reboot System		Accept H245	tunnelling						
Apply Changes		Setup Mappir	ng	1					
		QoS profile		0					
		Submit							
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If this Vega is to be inter-working with another Vega leave the **H.323 LAN Configuration** alone, if it is to work with other manufacturer's devices, it is often best to untick the indicated items – as these are advanced H.323 features that are not always supported by other manufacturers. Once the Vega and the other device are working in the basic H.323 mode, try enabling other features – back towards this configuration, as this will improve call setup time.

Scroll down to the bottom of the H.323 page

🖉 Yega 100 T1E1 Onli	ine Co	nfiguration	- Microsoft Intern	et Explore	r					
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Media Channels		Submit		0						
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<u>Users</u>		H.323 Ga	tekeeper							
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Save		Submit		-						
Log off		Submit								
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Apply Changes		Delete	Add							
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E									Internet	11.

Either configure the H.323 Gatekeeper "Default Gatekeeper" with the IP address of the Gatekeeper, or tick Auto Discover.

≻select \_\_\_\_\_

Submit and then click "here" to return

Configure the gatekeeper Terminal alias – this needs to match the gatekeeper's expectations.

e.g. set it to an H.323 type alias "Vega\_100".

### In the H.323 Gatekeeper Terminal Alias section

> select Modify

### H.323 > Terminal Alias 1

Modify Terminal Alias	
Alias ID	1
Туре	H323 💌
Name	NULL
Submit	

Set Name = Vega\_100
 (hint: use \_ instead of space as spaces are not allowed)
 Select \_\_\_\_\_\_\_\_ and then click "here" to return

H.323 Gatekeeper Terminal Alias							
Del?	Alias ID	Туре	Name	Chg?			
	1	h323	Vega_100	<u>Modify</u>			
Delete	Add						

If more than one alias is required then select Add and configure as required.

# 6. Configure the Dial Plan

≻On the left hand side menu select Dial Plan

Elle Edle Wew Favorites Iools Help     Image: Second
Address http://192.168.1.106/vsframe?sid=2032057877&frame_id=35  Vega 100 Configuration Host Name Vega100T1E1 P Address 192.168.1.106 User Name admin  VegaStream Dial Planner Logging Maintenance Dial Planner LAN Del? Profile ID Enabled Name Plans Chg2 DSL I 1 1 1 Vega100T1E1_default ===> Modify H.323 Delete Add Dial Plan  Media Channels Tones Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Use Whitelist Submit Log off
Vega 100 Configuration         HostName       Vega100T1E1         IP Address       192.168.1.106         UserName       admin         Imagement       Dial Planner         Logging       Maintenance         Maintenance       Profiles         LAN       Del?         Del?       Profile ID         ELAN       Del?         Dial Planner       Modify         H.323       Delete         Dial Plan       Media Channels         Tones       Del?         USers       Del?         Del?       ID         Vega 100       off         OSS       Delete         Advanced       Planner Whitelist Enable         Use Whitelist       Use Whitelist         Log off
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IP Address 192.168.1.106   User Name admin   Image: Unsaved & Unapplied Changes     Management   Logging   Maintenance   LAN   Del?   Profile ID   Enabled   Name   Plan   Image: Imag
User Name       admin         Image ment       Dial Planner         Logging       Profiles         Maintenance       Profile         LAN       Del?       Profile ID       Enabled       Name       Plans       Chg2         DSL       1       1       Vega100T1E1_default       ===>       Modify         H.323       Delete       Add         Dial Plan       Media Channels       Planner Groups         Tones       Del?       ID Name       Cause       Lan       Gatekeeper       Active times       Priority       Chg?         Users       Del?       ID Name       Cause       Lan       Gatekeeper       Active times       Priority       Chg?         Use Whitelist       I       Default       0       off       off       O000-2359       0       Modify         QoS       Delete       Add       Image: Submit       Image: S
Management       Dial Planner         Logging       Profiles         Maintenance       Profile ID       Enabled       Name       Plans       Chg2         DSL       1       1       Vega100T1E1_default       ===>       Modify         H.323       Delete       Add       Dial Plan       Image: Classical state sta
Management Dial Planner   Logging Maintenance   Maintenance Profile ID   LAN Del?   Del? Profile ID   Enabled Name   Plans Chg2   DSL I   I 1   Media Channels Del?   Del? ID   Name Cause   Dal Plan I   Media Channels Del?   Del? ID   Name Cause   Lan Gatekeeper   Advanced I   Save Use   Log off Use
Logging Maintenance Profiles LAN Del? Profile ID Enabled Name Plans Chg? DSL I 1 1 Vega100T1E1_default ===> Modify H.323 Delete Add Dial Plan Planner Groups Tones Del? ID Name Cause Lan Gatekeeper Active times Priority Chg? Users Delete Add QoS Delete Add Advanced Planner Whitelist Enable Save Use Whitelist Enable
Maintenance       Profile ID       Enabled       Name       Plans       Chg2         LAN       Del?       Profile ID       Enabled       Name       Plans       Chg2         DSL       □       1       1       Vega100T1E1_default       ===>       Modify         H.323       Delete       Add
LAN       Del?       Profile ID       Enabled       Name       Plans       Chg2         DSL       □       1       1       Vega100T1E1_default       ===>       Modify         H.323       Delete       Add
DSL       □       1       1       Vega100T1E1_default       ===> Modify         H.323       Delete       Add         Dial Plan       ■       ■       ■       ■         Media Channels       Planner Groups       ■       ■       ■         Tones       Del? ID       Name       Cause       Lan       Gatekeeper       Active times       Priority       Chg?         Users       □       1       Default       □       off       0000-2359       0       Modify         QoS       Delete       Add       ■
H.323       Delete       Add         Dial Plan       Harris Groups       Value State       Plarrer Groups         Innes       Del?       ID       Name       Cause       Lan       Gatekeeper       Active times       Priority       Chg?         Users       Delete       Add       Off       off       0000-2359       O       Modify         QoS       Delete       Add       Save       Use Whitelist       Error Submit       Error Submit       Error Submit         Log off       Off       O
Dial Plan   Media Channels   Tones   Del?   Del?   D   Name   Cause   Log off     Planner     Planner   Bel?   Del?   D   Name   Cause   Log off     Planner     Planner
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Tones         Del? ID         Name         Cause         Lan         Gatekeeper         Active times         Priority         Chg?           Users         I         Default         O         off         off         0000-2359         O         Modify           QoS         Delete         Add         Save         Use Whitelist         Enable         Enable </td
Users       I       Default       0       off       off       0000-2359       0       Modify         QoS       Delete       Add         Advanced       Image: save         Save       Use Whitelist       Image: save       Image: save </td
QoS Delete Add   Advanced Planner Whitelist Enable   Save Use Whitelist   Log off Submit
Advanced Planner Whitelist Enable Use Whitelist Save Use Whitelist Submit
Planner Whitelist Enable       Save     Use Whitelist       Log off
Save Use Whitelist  Submit
Log off
Log off
Help Planner Whitelists
Deheat Outbox
Rebout system 1 default IF:.* Modify
Apply Changes Delete Add

*Firstly, turn off the default profile:* In the **Profiles** section, Profile ID 1

> Select Modify

#### Dial Planner > Profile 1

Modify Profile	
Profile ID	1
Enabled (	
Name	Vega100T1E1_default
Submit	

- disable (un-tick) Enabled, then
- Select Submit and then click "here" to return

Now create a new profile and in it create a dial plan entry to handle calls being sent from ISDN to the LAN:

Dial Planner

Profiles											
Del?	Profile ID	Enabled	Name	Plans	Chg?						
	1	0	Vega100T1E1_default	===>	Modify						
Delet	e Add										

#### In the Profiles section

> Select Add

#### Dial Planner

Profiles												
Del?	Profile ID	Enabled	Name	Plans	Chg?							
	1	0	Vega100T1E1_default	===>	<u>Modify</u>							
	2	1	new_profile	===> (	Modify							
Delet	e Add											

## In the **Profiles** section, on Profile 2 (the new profile):

Select Modify

#### Dial Planner > Profile 2

Modify Profile	
Profile ID	2
Enabled	
Name	new_profile
Submit	

Set Name = ISDN\_To\_LAN
 select Submit and then click "here" to return

#### Dial Planner

Profiles												
Del?	Profile ID	Enabled	Name	Plans	Chg?							
	1	0	Vega100T1E1_default	===>	<u>Modify</u>							
	2	1	ISDN_To_LAN	===>(	<u>Modify</u>							
Delet	e Add											

In the **Profiles** section, on Profile 2 (the ISDN\_To\_LAN profile):

➢ Select Modify

### Dial Planner > Profile 2

Modify Profile	
Profile ID	2
Enabled	
Name	ISDN_To_LAN
Submit	

Plans	Plans in this Profile													
Del?	Plan ID	Name	Srce	Dest	Cost	Group	Chg?							
	1	new_plan	TEL:<><.*>	IF:<1>,TEL:<2>	0	0	Modify							
Delet	te Add													

### In the Plans in this Profile section:

➢ Select Modify

🚈 Yega 100 T1E1 Online Configuration - 1	Microsoft Internet Explorer
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> el	p 📲
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Address 🕘 http://192.168.1.106/vsframe?si	d=2032057877&frame_id=35
Vega 100	Configuration
Host Name	Vega100T1E1
IP Address	192.168.1.106
VegaStream User Name	admin
Unsav	ved & Unapplied Changes
Managamant Diel Blann	ar > Profile 2 > Plan 4
	$ er  > \frac{ rrow er }{ rrow er } >  rrow er $
Maintenance Modify Pla	n
LAN Plan ID	1
DSL Profile ID	2
H.323 Name	new_plan
Dial Plan Source	
Media Channels Destination	
Tones	
Users Cost Index	
QoS Group	0 - no group 💌
Advanced (Apply)	Generate Prefix Match
Save Regular E	xpressions for Source
Log off Any	character
[] Any	character within the parentheses
Help [X-y] Any	character in the range x-y
Reboot System	character except those within the parentheses
	character/expression before repeated one or more times
Apply Changes ? The c	character/expression before repeated zero or more times
\ The o	character following is taken literally
🖉 🗧 Capt	ure the sequence in parentheses and store as < n > where n is
the n	th occurrence of <> in the source expression
Done	📄 👘 Internet

- Set Name = From\_ISDN\_or\_PBX
- Set Source = IF:. [^5], TEL:<.\*>
- Set Destination = IF:05,TEL:<1>

(This takes a call from either of the two ISDN interfaces and stores the telephone number presented in store <1>) (This routes the call to IF:05 (the LAN) and passes the received telephone number on as the destination telephone number)

> select Apply and then click "here" to return



>On the left hand side menu select Dial Plan

🎒 ¥ega 100 1	T1E1 (	Inlin	е Сог	nfigura	atio	n - Micro	osoft In	ternet	Explorer				
<u>Eile E</u> dit <u>V</u>	<u>/</u> iew	F <u>a</u> v	orites	<u>T</u> oo	ls	Help							
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Vega 100 Configuration													
	,	Host Name Vega100T1E1											
	P Address 192.168.1.106												
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Manageme	nt		г	Dial I	Pla	nner							
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LAN				Del?	F	Profile ID	En:	abled		Na	me	Plans	Chg?
DSL						1		0	Vega	100T1	E1_default	===>	Modify
H.323						2		1	IS	DN T	To LAN	===>	Modify
Dial Plan				Dele	te	Add				_			
Media Chai	nnels												
Tones				Plan	nei	r Grou	ps						
Users				Del?	ID	Name	Caus	e Lan	Gateke	eper	Active times	Priority	Chg?
QoS					1	Default	0	off	off		0000-2359	0	Modify
Advanced			- i	Dele	te	Add							
Save		1		Plan	ne	r White	list E	nable					
		1		Use V	Whit	telist							
Log off				Sub	mit								
Help		1				_							
				Plan	nei	r White	lists						
Reboot Sys	stem			D	el?	ID		Name	е	1	Number	Ch	g?
				ſ		1		defau	lt		IF:.*	Mo	dify
			- i	Dele	te	Add							
<b>a</b> 5													
e													

Now create a new profile and in it create a dial plan entry to handle calls being received inbound from the LAN:

In a similar manner to adding profile 2 add another profile, profile 3,

Set Name = LAN\_to\_ISDN\_or\_PBX

Modify the first plan for Profile 3:

2	Set Name = From_LAN	
	Set Source = IF:05, TEL:<><.*>	(For calls from IF:05 (LAN), take the first two digits presented and store them in store <1>; take any further digits and store them in store <2>)
	Set Destination = IF:<1>, TEL:<2>	(The first two digits presented define the interface – 01 or 02 – and the remainder of the digits are passed on as the telephone number)

> select Apply and then click "here" to return

**Note:** The gatekeeper must choose the appropriate interface on the Vega to dial out from; when the gatekeeper presents a call to the Vega, the telephone number field must contain either <code>01ttt...t</code> or <code>02ttt...t</code>, where <code>ttt...t</code> is the telephone number to dial.

For more details on the operation of the dial planner, including the various tokens that may be used, see the section "The Dial Planner" in the Vega Primer.

# 7. Configure audio parameters

>On the left hand side menu select Media Channels

🖉 Yega 100 T1E1 Online C	onfiguratio	n - Mic	rosoft Internet	Explorer					
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorite	es <u>T</u> ools	Help							-
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N 🦰 🥂	Host Nam	ne IN	/ega100T1E1			in the	- Veel		1 - M
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vegastream	🔥 Ur	isaved	Configuration C	hanges		1		. Anter	
Management	Media (	han	nels						-
Logging	inivala c	, nan	inene -						
Maintenance	Codec	Confi	guration						
LAN	g729Anni	exA	-						
DSL	<u>g729</u>								
H.323	g711Alaw	<u>/64k</u>							
Dial Plan	g711Ulav	<u>/64k</u>							
Media Channels 4	<u>g7231</u>								
Tones	<u>T38</u>								
Users	LLOVE O								
QoS	Del2	apap ur	unties 145 Com ID		Nama	Char2			
Advanced	Del?	Πź	245 Cap ID			Ung?			
			1		g/231	Modity			
Save			2	g/1	1Alaw64k	<u>Modify</u>			
			3	g71	1Ulaw64k	<u>Modify</u>			
Log off			4	1	t38tcp	<u>Modify</u>			
Heln			5	t	:38udp	<u>Modify</u>			
	Delete	Add							
Reboot System									
	H.245 C	apab	ility Descript	ors					
	Del?	ID	Descripti	on	Caps	Chg?			
		1	voice		1,2,3	<u>Modify</u>			
		2	t38Tcp		4	<u>Modify</u>			
		3	t38Udp	1	5	<u>Modify</u>			-
<b>@</b> ]								Internet	

Add 2 more codecs so that by default the Vega will handle calls with any of the codecs it supports.

## In H.245 Capabilities

> Select Add

🎒 ¥ega 100 T1E	1 Online Configu	uration - M	licrosoft Internet	Explorer						<u>_                                     </u>
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Address 🙆 http:	//192.168.1.106/	vsframe?sid	=2032057877&fram	e_id=24						Links »
	Ve	ga 100 -	Configuratio	n		Carl		1 page	1	
	Hos	st Name	Vega100T1E1			1. 1	Bank	1-1-0	a de la	S 1
	IP A	ddress	192.168.1.106			19	1.1			A.
VegaStream	Use	er Name 👘	admin							110
Vegastream	" <u>^</u>	Unsav	ed & Unapplied C	hanges		27			A starter	
Management	Me	dia Cha	nnele							-
Logging	me.		inicia							
Maintenance	Co	dec Con	figuration							
LAN	<u>g72</u>	<u>9AnnexA</u>								
DSL	<u>g72</u>	<u>9</u>								
<u>H.323</u>	<u>g71</u>	1Alaw64k								
Dial Plan	<u>g71</u>	<u>1Ulaw64k</u>								
Media Chann	els 🔺 📅	<u>31</u>								
Tones	<u>138</u>									
<u>Users</u>	H.2	45 Capa	bilities							
QoS	De	el? I	H245 Cap ID		Name	Cł	ng?			
Advanced	Γ		1		g7231	Mo	dify			
			2	g71	1Alaw64k	: <u>Mo</u>	odify			
Save	r		3	g71	1Ulaw64k	: <u>Mo</u>	dify			
Log off	1		4		t38tcp	Mo	dify			
11-1-			5	1	t38udp	Mo	<u>dify</u>			
l			6		g7231	Mo	<u>dify</u>			
Reboot System	De	lete Ad	b							
Apply Change	s									
	— H.2	45 Capa	bility Descript	tors						
	C	Del? ID	Descript	ion	Caps	Chg	j?			
		L 1	voice		1,2,3	Mod	<u>lify</u>			
<u> </u>		<b>□</b> 2	t38Tcj	0	4	Mod	<u>ify</u>			•
ど Done									Internet	11.

# In H.245 Capabilities

> Select Add

H.245 (	Capabilities		
Del?	H245 Cap ID	Name	Chg?
	1	g7231	Modify
	2	g711Alaw64k	<u>Modify</u>
	3	g711Ulaw64k	<u>Modify</u>
	4	t38tcp	<u>Modify</u>
	5	t38udp	<u>Modify</u>
	6	g7231	<u>Modify</u>
	7	g7231	<u>Modify</u>
Delete	Add		

Select Modify on H245 Cap ID 1

#### Media Channels > H.245 Capability 1

Modify Capability	
Capability ID	1
Name	g7231 💌
Submit	g711Alaw64k g711Ulaw64k g7231 g729 g729AnnexA t38tcp t38udp

- Select required codec type in this case g7231
- Select Submit and then click "<u>here</u>" to return
- > Modify all H245 Cap ID entries until the list looks as follows:

H.245 (	Capabilities		
Del?	H245 Cap ID	Name	Chg?
	1	g7231	<u>Modify</u>
	2	g729AnnexA	<u>Modify</u>
	3	g729	<u>Modify</u>
	4	g711Alaw64k	<u>Modify</u>
	5	g711Ulaw64k	<u>Modify</u>
	6	t38tcp	<u>Modify</u>
	7	t38udp	<u>Modify</u>
Delete			

Delete Add

Now update the Capability Description list that tells the Vega which codecs it can use.

H.245 C	apabi	ility Descriptors		
Del?	ID	Description	Caps	Chg?
	1	voice	1,2,3	Modify
	2	t38Tcp	4	Modify
	3	t38Udp	5	Modify
Delete	Add			$\smile$

Update entry 1 to select all voice codecs, and the other entries to configure them for the correct capability IDs.

For each capability:

- ≻Select Modify
- > Adjust them so that they have the capabilities indicated below:

H.245 C	H.245 Capability Descriptors									
Del?	ID	Description	Caps	Chg?						
	1	voice	1,2,3,4,5	<u>Modify</u>						
	2	t38Tcp	6	<u>Modify</u>						
	3	t38Udp	7	<u>Modify</u>						
Delete	Ad	d								

- Vega 100 T1E1 Online Configuration Microsoft Internet Explorer - 🗆 × <u>File Edit View Favorites Tools Help</u> 🕁 Back 🔹 🤿 🖌 🔯 🖓 Search 👔 Favorites 🐠 Media 🧭 🖏 - 🎒 🔯 - 📃 📿 i∂Go Links ≫ Address 🕘 http://192.168.1.106/vsframe?sid=2032057877&frame\_id=24 -Vega 100 Configuration Host Name Vega100T1E1 IP Address 192.168.1.106 User Name admin VegaStream ♠ Unsaved & Unapplied Changes Del? H245 Cap ID Name Chg? **Management** g7231 Modify 1 Logging 2 g729AnnexA Modify **Maintenance** 3 g729 Modify LAN 4 g711Alaw64k **Modify** DSL 5 q711Ulaw64k Modify <u>H.323</u> **Dial Plan** 6 t38tcp Modify Media Channels 🔫 7 t38udp **Modify Tones** Delete Add <u>Users</u> QoS H.245 Capability Descriptors Advanced Del? ID Description Caps Chq? 1,2,3,4,5 1 voice Modify Save 2 t38Tcp 6 Modify 3 t38Udp Modify Log off Delete Add Help H.245 Preferred Index Reboot System Preferred Index 0 - no preference 💌 Apply Changes Voice Capdesc Index 🚺 - no preference 💌 2-t38Tcp Fax Capdesc Index Ŧ Submit 🥝 Internet ē
- Scroll to the bottom of the Media Channels page:  $\geq$

Set Voice Capdesc Index to 1  $\geq$ 



٠

This has selected all voice codecs to be offered for all calls.

With Fax Capdesc Index set to "2 - t38Tcp" it has selected this codec for fax transfers. Note it is recommended that only a single T.38 codec is offered (as configured here), because if both are offered negotiations do not always complete correctly.

# 8. Configure DSLs

≻On the left hand side menu select DSL

🥂 Yega 100 T1E1	Online Ca	onfigura	tion - Mic	roso	oft Inter	net Explorer								<u>_   ×</u>
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Address 🙆 http://1	92.168.1	.106/vsfi	rame?sid=2	20320	)578778/	frame_id=7							· ?	Links »
		Vega	100 C	onf	igura	tion		6.01	120	1	-	~	T	è à
		Host N	lame 🛛 🔪	/ega	100T1E	1		101	Ban		1-5		a alk	51
		IP Add	ress 1	92.1	68.1.10	)6		m.						AG
VegaStream		UserN	lame a	admi	n							1		1.110
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Management		DSL												
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<u>Maintenance</u>		DSL	Configu	ırati	on									
LAN		Netwo	rk Type				<	ETSI	$\mathcal{D}$					
DSL	•	Netwo	rk Topola	gy				E1 🔽						
<u>H.323</u>		Line E	ncodina											
Dial Plan		Eromi												
Media Channels	3	Framin	ny											
Tones		Bus M	laster					1						
<u>Users</u>		Subr	nit											
QoS														
Advanced		POR	T Config	gura	ation									
		PORT	Enabled	NТ	Clock	Lovor 1	E1 rx Short	T1 tx	ISDN	240	Groupe	Cha2		
Save		ID	LIIADICU		Master	Layeri	Haul	equalization	IODIN	040	Croups	City		
Log off	1	1	1	0	0	g711Alaw64k	1	sh220_330	===>	===>	===>	<u>Modify</u>		
		2	1	1	1	g711Alaw64k	1	sh220_330	===>	===>	===>	Modify		
Help		Delet	e Add											
Reboot System														
Annly Changes	-													
Apply originges														
e												🥑 Inter	net	//.

### Start by selecting the correct Network Topology – T1

DSL Configuration	
Network Type	ETSI 💌
Network Topology	E1 🔽
Line Encoding	
Framing	CRC4
Bus Master	1
Submit	

>In the DSL Configuration section select the required Network Topology = T1

In the DSL Configuration section select the Network Type as required:

DSL

DSL Configuration	
Network Type	FTSL
Network Topology	
Line Encoding	DMS
Framing	NI NI
Bus Master	
Submit	AUTO

- ATT = 4ESS / 5ESS
- DMS = DMS 100
- DMS\_M1 not supported on H.323 products
- NI = National ISDN NI1 / NI2
- QSIG = QSIG
- RBS = CAS RBS (Robbed Bit Signalling)
- AUTO = DMS 100

Note: ETSI is not supported on the T1 interface.

In the **DSL Configuration** section select the Framing Method as required:

## DSL

DSL Configuration	
Network Type	NI 💌
Network Topology	T1 💌
Line Encoding	HDB3 🗸
Framing	CRC4 -
Bus Master	
Submit	CRC4
DODT CARE much an	

- ESF = Extended Super-Frame 16 state signaling
- SF = Super-Frame (also known as D4)
- AUTO =  $\mathsf{ESF}$

Note: CRC4 and PCM30 are not supported on the T1 interface

In the **DSL Configuration** section select the Line Encoding as required:

DSL

DSL Configuration	
Network Type	NI
Network Topology	T1 💌
Line Encoding	HDB3 -
Framing	
Bus Master	HOBS
Submit	

- B8ZS = Bipolar with 8 zero substitution (forces line reversals regularly)
- AMI = Alternate Mark Inversion
- AUTO = B8ZS

Note: HDB3 is not supported on the T1 interface.

select Submit and then click "here" to return



For the configuration indicated in the initial diagram Port 1 = connection to the PSTN and Port 2 is a connection to a PBX, and so the Vega needs Port 1 configured as TE (and a blue booted cable used on it), and Port 2 configured as NT (and a red booted cable used on it).

Bus Master needs to be configured to point to an active TE trunk – to identify where the Vega will synchronise its internal clock from – in this configuration this should be 1 (DSL 1).

These are the default settings of the Vega and so no changes are required to the Network Terminator, Clock\_Master, or Bus\_Master settings.

# In the Port Configuration section, for Port ID 1:

≻Select Modify

### Port 1

Port (	Configura	ation							
Port ID				1					
Enable	d			<b>V</b>					
Networ	k Termina	tor							
Clock I	Master								
Layer 1	I		9	g711Alaw	64k 🔽				
Set E1	Set E1 RX short haul								
T1 TX e	T1 TX equalization sh220_330 🔽								
Subm	nit								
	_								
ISDN	Configu	ration							
DTMF	Terminatio	n Char		*					
DTMF Dial Timeout 2									
Setup Mapping 0									
Cause	Mapping			0					
Subr	nit								
CAS C	onfigur:	ation							
ANI									
DTMF :	Separator		[	*					
DTMF I	' Dial Timeo	ut	i	2					
Info			ľ	- dtmf ▼					
Signal				om wink	-				
Signal T D					2	_			
Ione D	elay		I	50					
Subm	it								
Group									
Group	Interface	Cost		Firet	Laet	Alloc	Tunnol		
ID	ID	Index	DN	Channel	Channel	Channel	Mode	Chg?	
1	01	1	*	1	(30)	default	off	<u>Modify</u>	

Delete Add

In the <b>Port Configuration</b> section, set Layer $1 = g711Ulaw64k$ ,	Submit	, click " <u>here</u> "
In the <b>Groups in this DSL</b> section, set the Last Channel = auto,	Submit	, click " <u>here</u> "

For a CAS RBS configuration:

In the **CAS Configuration** section, set Signal to the type of CAS RBS signalling required:

- em\_wink = E & M wink start signalling
- loopstart = Loop start signalling
- gndstart = Ground start signalling
- fgd = E & M wink start signalling supporting Feature Group D for transferring ANI

Select Submit and then click "here" to return

If any of the other Port parameters need changing, e.g. Network Terminator, alter them now.

- Note: 1. if NT (Network Terminator) is ticked then typically Clock Master should also be ticked; if NT is un-ticked (TE mode) then typically Clock Master should also be un-ticked.
  - 2. if either trunk is TE then the Bus Master value (in the ISDN Configuration section) should be set to point to the (one of the) TE trunk(s); 1 for Port 1 and 2 for Port 2.

In each section that further changes are made

> select Submit and then click "here" to return

N.B. Submit must be selected immediately after changes are made to a specific section. If changes are made to two sections before Submit is pressed then only the changes made in the section whose Submit button is pressed will be kept, other changes will be returned to their previous values.

> Repeat for the other Port (Port ID 2).

Table 1 can be used as a guide when setting up parameters for Vega 100 T1 ISDN installations.

Product	Physical Connectio n	Network Topology	Network Type	DSL s	Framing	Line Encoding	Calls
Vega 100- PRI-T1	T1-1.544 Mbps	T1	AT&T 4ESS / 5ESS, NI 1 / NI 2, DMS-100	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100- PRI-T1	T1-1.544 Mbps	T1	QSIG	2	SF / ESF	B8ZS, AMI	23 / 46
Vega 100- PRI-T1	T1-1.544 Mbps	T1	CAS RBS	2	SF / ESF	B8ZS, AMI	24 / 48

 Table 1.
 Network type, Line Encoding, and Topology

# 9. Configure pointer to CD ROM documentation

➤On the left hand side menu select LAN

Scroll to the bottom of the screen

🚈 Yega 100 T1E1 Online Configuration - Microsoft Internet Explorer 📃 📃 🔀						
Eile Edit View Favorites Iools Help						
🗢 Back 🔹 🤿 🗸 🔯	📸 🗌 🥘 Search 🛛 🙀 Favorit	es 🎯 Media 🎯 🗟 🗸	😂 💽 - 📃 📿			
Address 🙆 http://192.168.1	.106/vsframe?sid=203205787	7&frame_id=1		▼ 🔗 Go Links ≫		
	Vega 100 Configuration					
	Host Name Vega100T	1E1	2 Burn			
	IP Address 192.168.1	.106	The state			
VegaStream	Unsaved & Unapp	olied Changes	1			
	Subnet Mask	255.255.255.0				
<u>Management</u>	Domain Name Server	0000				
Logging	Domain Name Server					
Maintenance	Default Gateway	192.168.1.1	Use DHCP 🔽			
	TFTP Server	192.168.1.108	Use DHCP 🔽			
<u>N27</u>	Network Time Server	0.0.0.0	Use DHCP 🔽			
Dial Plan	FTP Server	192.168.1.108				
Media Channels	NTP Offset (hhmm)	0000	1			
<u>Tones</u>	NTP Poll Interval					
<u>Users</u>	Physical Layer Conf	iguration				
QoS	Full Duplex					
Advanced	Ethernet Type	10baseT & 100baseT				
Save	QoS profile					
Log off	Submit					
Help	Lan Hosts					
Rehort System	ID Name	IP	Chg?			
TREBOOL Bystem	1 loopback	127.0.0.1	<u>Modify</u>			
Apply Changes	Delete Add					
Advanced LAN Configuration						
Advanced LAN						
Cone Done				🔰 Internet 🛛 🗸		

Select Advanced LAN



To configure for operation using the CD in the local PC CD-ROM drive,

Set Path or URL = D:/Content/help/v100t1h\_R5.htm

... N.B. use forward slashes "/" not back slashes "\".

(Substitute the appropriate drive letter if D: is not the CD-ROM)

> select Submit and then click "here" to return

# 10. Save Changes

The changes to the configuration must be saved and activated. This is carried out as follows:

>On the left hand side menu select	Save
------------------------------------	------

Microsoft Internet Explorer Save Configuration Changes? OK Cancel
Select and after the configuration has been saved click "here" to return
>On the left hand side menu select Reboot System
Microsoft Internet Explorer
Unsaved Configuration Changes Reboot Vega 100 ?
OK Cancel
> Select

The Vega will reboot and once back on-line, it will be ready to take its first call.

# **11. Archive Vega Configuration**

Once configured it is recommended that the configuration is archived to an external server.

To do this check that the tftp address is configured to point to a tftp server (in the <u>LAN</u> page), then on the left hand side menu select <u>Advanced</u>, and scroll to the CLI Command section:

Submit

> in the text entry box type "PUT tftp:initial\_cfg.txt". Select

This will send all the configuration parameters to the tftp server and save them as the file "initial\_cfg.txt". (Note: you may want to choose a unique name rather than "initial\_cfg.txt", especially if you are configuring more than 1 unit).

The Vega configuration can be archived to an ftp server instead of a tftp server by configuring the ftp server address in the LAN page and then typing the CLI command "PUT FTP:initial\_cfg.txt". (Again a unique name can be used in place of "initial\_cfg.txt")

If the ftp server requires a login username and password configure the following:

- > set \_advanced.lan.ftp.anonymous\_login=0
- > set \_advanced.lan.ftp.username=<ftp username>
- > set \_advanced.lan.ftp.\_password-<ftp password>

# 12. Technical Support

Support information can be found on the VegaStream Support web site www.VegaAssist.com

If you require help from VegaStream support personnel, please use the serial interface or telnet into the unit, log in and then type:

- > show support
- ➢ log display on

Carry out the interaction you want explained, then copy the information provided by the Vega and e-mail it to <a href="mailto:support@VegaStream.com">support@VegaStream.com</a> together with your question.

Notes:

 If the screens do not appear as indicated, check that Java is enabled on your web browser (Tools>internet options>Security, select internet and custom level and configure Microsoft VM Java permissions and Scripting parameters as indicated below.



- 2. Where there are multiple sections each with a <u>Submit</u> button entries must be made to one section at a time, and those entries confirmed by the <u>Submit</u> button before the next section is altered. Each <u>Submit</u> button only confirms entries for its own section. Any changes in other sections will be discarded when the <u>Submit</u> is pressed.
- 3. H.323 supports two methods for transmitting call setup details. There is a standard method and then Fast Start. To allow the Vega to accept calls using the Fast Start technique ensure "Accept Fast Start" is enabled ... see section 1.5

For the Vega to initiate calls using Fast Start ensure that "Use Fast Start" is enabled ... see section 1.5.

# 13. Advanced configuration

T1 units have further configurable parameters that may be desirable to configure in order to fully integrate into the attached infrastructure.

# 13.1 Web browser configurable parameters

# 13.1.1 Line impedance matching

In order to match the signal shapes produced by the Vega to the T1 line it is working with there is a parameter tx\_equalisation that can be configured:

> set \_advanced.isdn.tx\_equalization=<tx\_equ>

<tx\_equ> can take the following values:

lhlbo0	(long haul line break out 0 dB)				
lhlbo7_5	(long haul line break out -7.5 dB)				
lhlbo15	(long haul line break out -15 dB)				
lhlbo22_5	(long haul line break out -22.5 dB)				
sh0_110	(short haul 0-110 ft.)				
sh110_220	(short haul 110-220 ft.)				
sh220_330	(short haul 220-330 ft.) -	default setting			
sh330_440	(short haul 330-440 ft.)				
sh440_550	(short haul 440-550 ft.)				
sh550 660	(short haul 550-660 ft.)				

on the web browser interface, in the port configuration section off the DSL page:

Port Configuration					
Port ID	1				
Enabled					
Network Terminator					
Clock Master					
Layer 1	g711Alaw64k 💌				
Set E1 RX short haul					
T1 TX equalization	sh220_330 💌				
Submit	Ihlbo0 Ihlbo7_5 Ihlbo15				
ISDN Configuration	lhlbo22_5				
DTMF Termination Char	sh0_110 sh110_220				
DTMF Dial Timeout	sh220_330 sh330_440				
Setup Mapping	sh440_550				
~ ·· ·	<u>snoou_000</u>				

Long haul values are used where the distance between the Vega and the closest repeater or other ISDN endpoint is greater than 660 feet. Short haul value lengths are the distance between the Vega and the closest repeater or other ISDN endpoint.

If the appropriate test and measurement equipment is not available to check the required setting, for long haul try **Ihlbo0** and for short haul try **sh220\_330**.

# 13.1.2 Channel Allocation Strategies

The Vega allows configuration of the channel allocation strategy to be used for each DSL on outgoing calls. Four options are available,

- i) *Linear\_down* where the Vega will use the highest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using *Linear up*.
- ii) Linear\_up where the Vega will use the lowest available free channel to make the outbound call ... use this mode when the attached device is configured to make outbound calls using Linear down.
- iii) *Round\_robin* in this mode the Vega remembers the last allocated channel and then tries to use the next channel up from this for the next outbound call. (After reaching the highest channel ID it restarts at the lowest channel again.) … use this mode when the attached device is configured to make outbound calls using *Round\_robin* mode.
- iv) *Default* if the DSL is configured as NT then the Vega will use the *Linear\_up* scheme, and if the DSL is configured as TE then the Vega will use *Linear\_down*.

By default the Vega has chan\_alloc set=Default

Using the web browser interface:

- >On the left hand side menu select DSL
- Then select the Port to alter
- Scroll to the bottom of the page

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	Unapplied	Configurati	on Changes	6	1			
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Logging	Setup Mapping		0					
Maintenance	Cause Mapping		0					
	Submit							
H.323								
Dial Plan	CAS Configur	ation						
Media Channels	Dial Format Strir	g						
Tones	Digit Dial Timeou	ıt	6					
<u>Users</u>	Info		dtmf 💌					
QoS	Signal		om wink	-				
Advanced	Tana Dalau							
	Tone Delay		150					
Save	Submit							
Log off	Groups							
Help	Group Interface	Cost	First	Last	Alloc	Tunnel	Cho2	
	ID ID	Index	° Channel	Channel	Channel	Mode	City	
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In the Groups in this DSL:

> Select Modify

# DSL > Port 1 > Group 1

Modify Port Group	
Group ID	1
Port ID	1
Interface ID	01
Cost Index	1
DN	*
First Channel	1
Last Channel	auto
Alloc Channel	Default
Tunnel Mode	Default Linear Un
Submit	Linear Down Round Robin

Select the desired channel allocation strategy from the Alloc Channel pull down.
 Select Submit and then click "here" to return

Save and reboot system to activate the change

# **13.2Command Line Interface configurable parameters**

These items must be configured using the Command Line interface available either using the serial connection or using a telnet session.

Connect to the Vega and log in.

# 13.2.1 End to End Call Proceeding

For H.323 to ISDN calls, by default the Vega will send the Call Proceeding message on the H.323 interface as soon as all the dialling information has been received.

It is possible to configure the Vega only to send the Call Proceeding on the H.323 interface once it has received the call proceeding from the outgoing call made on the ISDN interface – i.e. the call proceeding is passed from end to end rather than being generated by the Vega. This mode is useful when the Vega is not the end point in the telephony network, but is an intermediate carrier.

To set the Vega to support end to end call proceeding, at the CLI prompt type:

Set \_advanced.isdn.end\_to\_end\_call\_proceeding=1

To allow the Vega to generate the call proceeding message set this configuration parameter to 0.

> Save and reboot system to activate the change

# 13.2.2 User progress tones – towards ISDN interface

For ISDN to H.323 calls, by default if the Vega DSL is configured as TE it will connect media through before or at alerting so that progress tones are passed through from end to end (i.e. for the ISDN caller to hear ringback and other progress tones the audio must be received over the H.323 interface).

If it is required that the Vega generates these progress tones on the TE ISDN interface, then at the CLI prompt type:

- > Set \_advanced.isdn.user\_progress=1
- > Save and reboot system to activate the change
- Notes: 1. If the Vega DSL is configured as NT it will always generate the call progress tones. E.g. ringback and disconnect tones.
  - 2. Typically wait\_for\_connect and user\_progress configuration parameters should either both set to 1 or both set to 0.

### 13.2.3 User progress tones – towards H.323 interface

For H.323 to ISDN calls, by default the Vega will act upon the in-band audio indicator in the alerting message and if present will connect the media path.

If it is required that the Vega should ignore the in-band audio indicator, and so not pass on the inband tone, then at the CLI prompt type:

- Set \_advanced.isdn.alert\_with\_progress=0
- > Save and reboot system to activate the change

If it is required that the Vega should always cut through the audio whatever the value of the inband audio indicator, then at the CLI prompt type:

- Set \_advanced.isdn.alert\_with\_progress=2
- > Save and reboot system to activate the change

# Further details on this and other parameters may be found in the Vega Primer.