Viking PCI ADSL2+ Modem
OEM Documentation

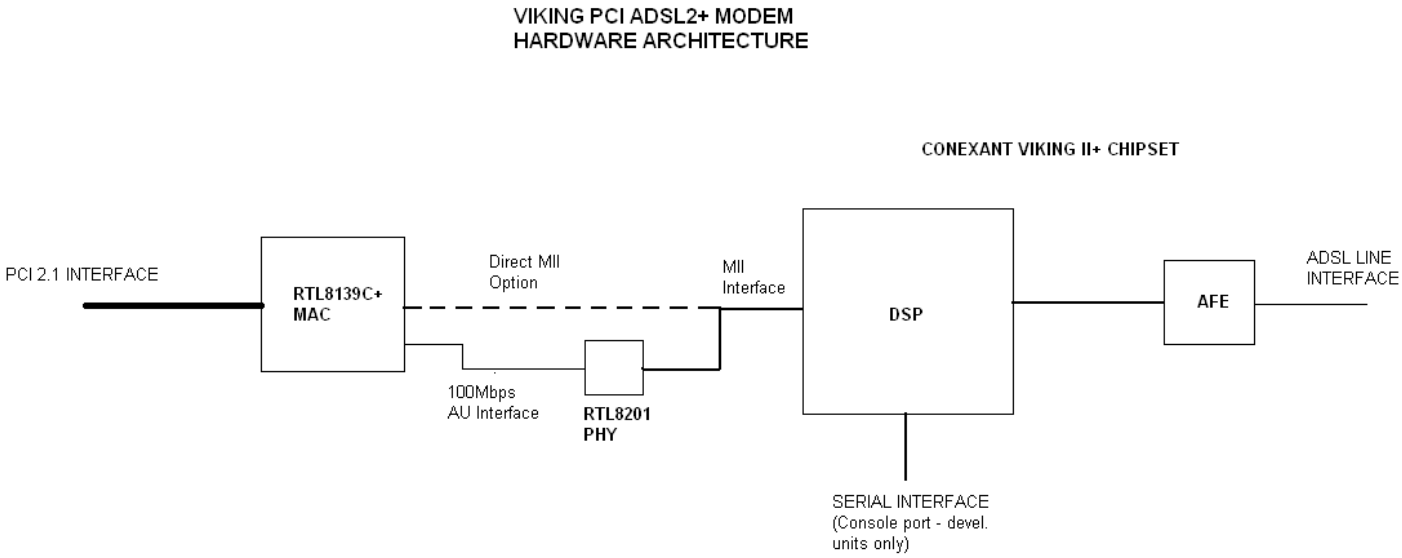
1. Introduction

This document outlines the basic architecture of the Viking PCI ADSL2+ Modem and describes basic configuration. The target audience for this document is OEM customers and Systems Integrators who require a more technical understanding than End Users.

2. Architecture

The architecture of the Viking is very different from it's ADSL1 predecessor. This new approach moves away from a PCI interface to the DSL Chipset to a more common one. Currently the two most common interfaces to DSL chipsets are Utopia and MII (Media Independent Interface). The Viking uses an MII Interface for it's cost advantages over Utopia, and ease of PCI implementation.

The basic architecture of the Viking is shown below…



As the above diagram illustrates there are two MII Options, Direct or via a 100Mbps AU Interface. ***Currently the AU interface is used***, so that standard PCI drivers and firmware can be used. A reduced cost option is to use Direct MII, but this requires custom PCI drivers and firmware. ***Use of the AU interface makes the Viking appear to the host PC as an External Ethernet modem, connected to a 100Mbps NIC.***

For development purposes a serial interface option is installed. This can be used as a console / debug port. See Appendix A for details.

3. Linux Setup

Since the Viking uses a RTL8139C+ PCI interface, standard drivers supplied with the Linux kernel can be used. To load the driver and configure the interface…

linux # modprobe 8139cp

Assuming the Viking is the second ethernet device loaded in the system...

linux # ifconfig eth1 192.168.1.2 up

You should now be able to ping both the interface and modem…

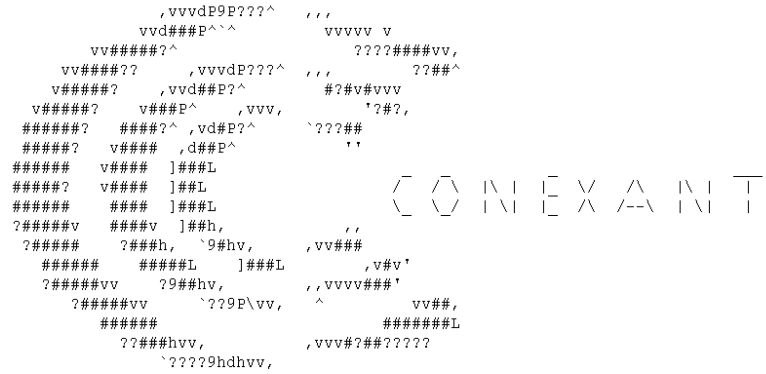
linux # ping 192.168.1.2 {interface}

linux # ping 192.168.1.1 {modem}

4. CLI Access

Currently the Viking is managed via a CLI (command line interface). The CLI can be accessed via Telnet or via the serial console port. Future firmware releases may also include SMNP and http management. A telnet session is shown below…

linux # telnet 192.168.1.1



```
Login:
```

At the Login prompt enter the username (admin) and password (admin) …

Login: admin
Password: **

Login successful

-->

5. CLI Commands

This document serves as a quick reference, as the CLI commands are fully described in the following Conexant documents…

DO-419228-TC-2_cli_manual.pdf

DO-419229-TC-2_config_guide.pdf

The Viking CLI is easy to use and has the following features…

- Context sensitive Online help – type **help** or **?**
- Command continuation via **TAB** key
- Command history via **Up** / **Down** keys

6. PPPoA Quick Reference

6.1 Setup a transport
pppoa add transport <name> dialout pvc <port> a1 <vpi> <vci>

eg. --> pppoa add transport pppoa1 dialout pvc 1 a1 0 38

Related commands
pppoa list transports
pppoa delete transport <name>

6.2 Setup pppoa username
pppoa set transport <name> username <username>

eg. --> pppoa set transport pppoa1 username me@myisp.net

6.3 Setup pppoa password
pppoa set transport <name> password <password>

eg. --> pppoa set transport pppoa1 password top_secret23

6.4 try to connect
pppoa set transport <name> manualconnect enabled

eg. --> pppoa set transport pppoa1 manualconnect enabled

pppoa set transport <name> connectnow enabled

eg. --> pppoa set transport pppoa1 connectnow enabled

6.5 Check status
pppoa show transport <name>

eg. --> pppoa show transport pppoa1

6.6 Add NAT reserved mapping
Adding a NAT reserved mapping maps an outside IP address to an internal host.

Nat add resvmap <name> interfacename <interfacename> <internalip> {icmp|igmp|ip|egp| rsvp|ospf|ipip|all|protocol <number>}

eg. --> nat add resvmap rm1 interfacename ipwan 192.168.1.2 all

7. PPPoE Quick Reference

7.1 Setup a transport
pppoe add transport <name> dialout pvc <port> a1 <vpi> <vci>

eg. --> pppoe add transport pppoe1 dialout pvc 1 a1 8 35

Related commands
pppoe list transports
pppoe delete transport <name>

7.2 Setup pppoe username
pppoe set transport <name> username <username>

eg. --> pppoe set transport pppoe1 username me@myisp.net

7.3 Setup pppoe password
pppoe set transport <name> password <password>

eg. --> pppoe set transport pppoe1 password top_secret23

7.4. try to connect
pppoe set transport <name> manualconnect enabled

eg. --> pppoe set transport pppoe1 manualconnect enabled

pppoe set transport <name> connectnow enabled

eg. --> pppoe set transport pppoe1 connectnow enabled

7.5 Check status
pppoe show transport <name>

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7.6 Add NAT reserved mapping
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Nat add resvmap <name> interfacename <interfacename> <internalip> {icmp|igmp|ip|egp| rsvp|ospf|ipip|all|protocol <number>}

eg. --> nat add resvmap rm1 interfacename ipwan 192.168.1.2 all

8. RFC1483 (Bridged Ethernet) Quick Reference

8.1 Setup a transport
rfc1483 add transport <name> <port> <vpi> <vci> <encap> <bridged | routed>

eg. --> rfc1483 add transport breth a1 8 35 llc bridged

Related commands

rfc1483 list transports
rfc1483 show transport <name>
rfc1483 delete transport <name>

8.2 Create an Interface
ip add interface <name>

eg. --> ip add interface ipwan

8.3 Configure IP
ip set interface ipwan ipaddress <address>

eg. --> ip set interface ipwan ipaddress 203.15.16.20

8.4 Attach
ip attach ipwan <name>

eg. --> ip attach ipwan breth

8.5 Ping check
ip ping <address>

eg. --> ip ping 203.15.16.19

8.6 Bridging Setup
See section 20 of **DO-419229-TC-2_config_guide.pdf** for details.

9. ADSL Quick Reference

9.1 Linecode Options

Four different ADSL Linecode values are supported by the current release.
The Linecode value is set with the following command…

port a1 set Defaults <linecode>

Valid Linecode values are
ADSL2
ADSL2PlusAuto {with fallback to Annex A}
ADSL2PlusOnly
AnnexA

9.2 ADSL Standards

Some Linecodes also support different ADSL standards.
The ADSL standard is set with the following command…

port a1 set Standard <standard>

The following table show the full list of standards, and which Linecodes they apply to

Standard	Linecode
G.Dmt	AnnexA
G.Dmt.Bis	ADSL2
G.Dmt.BisPlusAuto	ADSL2PlusAuto
G.Span	
G.Span+	
G.Span++	
t1.413	AnnexA
g.lite	AnnexA
Multimode	AnnexA
ALCTL_14	AnnexA
ALCTL	AnnexA
ADI	AnnexA

9.3 Applying changes
To apply a Linecode or Standard change a retrain must be forced…

port a1 set ActivateLine start

It is also recommended that the settings be stored in flash, so they will be restored in the event of a reset or power failure…

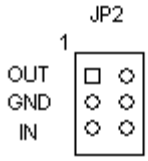
system config save

APPENDIX A – Serial Interface Details

Serial Interface Parameters

Parameter	Value
Signal Levels	RS-232
Baud Rate	38.4kbps
Data Bits	8
Parity	None
Stop Bits	1
Handshake	XON/XOFF

Serial Interface Pinout

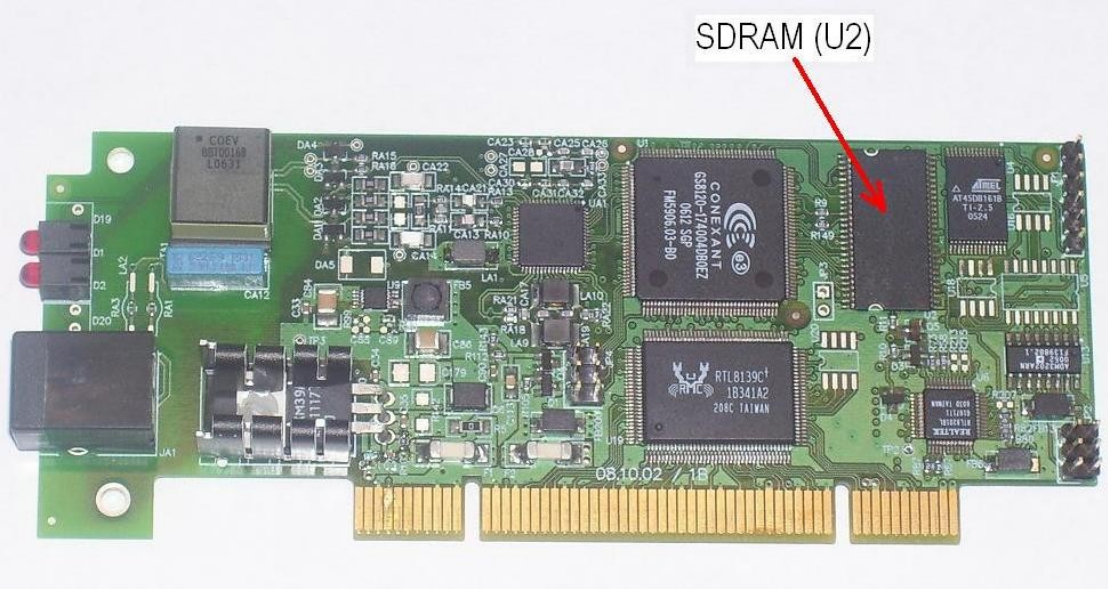


JP2 Header Connections	PC Serial Port Connections		
	SIGNAL	DB-9 Pin	DB-25 Pin
OUT	RD	3	3
GND	GND	5	7
IN	TD	2	2

APPENDIX B – Firmware Upgrade

B1. Firmware Images

There are two different firmware images, one for cards with 8MB of SDRAM and the other for 16MB. The first step is to check the SDRAM part number to determine the size. The SDRAM is U2 as shown below…



The SDRAM part numbers are as follows...

MT48LC4M16...8MB (64Mb)
MT48LC8M16...16MB (128Mb)

Both firmware images are in the file viking_fw_10.0.1.20.zip which you can download from the ftp site. Since this product is BETA documentation & firmware is only available via FTP, not the Traverse website.

The ftp site to download Viking (ADSL2+) doc etc. is

```
150.101.156.18

username : viking2p
password : qewof505
```

viking_fw_10.0.1.20.zip archive contents...

/8MB/TEPatch.bin	-	8MB image for http upgrade
/8MB/TEImage.bin	-	8MB image for ICP cable
/16MB/TEPatch.bin	-	16MB image for http upgrade
/16MB/TEImage.bin	-	16MB image for ICP cable

IMPORTANT : The use of the wrong image will prevent the card from booting. Please take care to load the correct image.
If the wrong image is loaded, the only way to resolve this is to reload the flash with a special ICP cable and utility program on a PC.

B2. http Upgrade Procedure

Beta testers have access to a web interface to allow an easy method for firmware upgrade. Please note that the web interface will not be included in the production release - contact Traverse for more details.

(i) Unzip the firmware patch which will extract a file called TEPatch.bin

(ii) Using a web browser such as Firefox or Internet Explorer point to the IP address of modem.
The default value is http://192.168.1.1

(iii) login as admin with the password admin

(iv) From the top left frame select "Firmware Upgrade" - see below…

(v) From the main frame then select the "Browse" button and browse to the location of the TEPatch.bin file. Then select "Upgrade" and follow the prompts.

(vi) When prompted select reboot and the new firmware should now run.

APPENDIX C – Test Modes

Port attributes can be set through the CLI.

port <portname> set <attribute> <value>

The attributes available depend on the port type. The ATM port, a1 has a number of test modes that can be selected by setting the **Action** attribute.

For the new mode to take effect, the attribute **ActivateLine** must be set to **Abort** prior to changing the value of **Action**. After the new action has been set, **ActivateLine** must be started again.

eg. --> port a1 set ActivateLine Abort
--> port a1 set Action SpectrumReverb
--> port a1 set ActivateLine Start

The complete list of Actions available is:

Startup
DELT
L3REQ
SpectrumReverb
SpectrumMedely
SpectrumPilot