

**NAME**

**vte** - Vortex86 RDC R6040 Fast Ethernet driver

**SYNOPSIS**

To compile this driver into the kernel, place the following lines in your kernel configuration file:

```
device miibus  
device vte
```

Alternatively, to load the driver as a module at boot time, place the following line in loader.conf(5):

```
if_vte_load="YES"
```

**DESCRIPTION**

The **vte** device driver provides support for RDC R6040 Fast Ethernet controller which is commonly found on Vortex86 System On a Chip (SoC).

The RDC R6040 has integrated 10/100 PHY for 10/100Mbps support in full or half-duplex. The controller supports interrupt moderation mechanism, a 64-bit multicast hash filter, VLAN over-size frame and four station addresses. The **vte** device driver uses three station addresses out of four as perfect multicast filter.

The **vte** driver supports the following media types:

**autoselect** Enable autoselection of the media type and options. The user can manually override the autoselected mode by adding media options to rc.conf(5).

**10baseT/UTP** Set 10Mbps operation.

**100baseTX** Set 100Mbps (Fast Ethernet) operation.

The **vte** driver supports the following media options:

**full-duplex** Force full duplex operation.

**half-duplex**  
Force half duplex operation.

For more information on configuring this device, see ifconfig(8).

## HARDWARE

The **vte** device driver provides support for the following Ethernet controllers:

- DM&P Vortex86 RDC R6040 Fast Ethernet controller

## LOADER TUNABLES

Tunables can be set at the loader(8) prompt before booting the kernel or stored in loader.conf(5).

### *hw.vte.tx\_deep\_copy*

The RDC R6040 controller has no auto-padding support for short frames and the controller's DMA engine does not have capability to handle multiple buffers for a TX frame such that driver has to create a single contiguous TX buffer. This hardware limitation leads to poor TX performance since most of CPU cycles are wasted on both de-fragmenting mbuf chains and padding. This tunable enables deep copy operation for TX frames such that driver will spend less CPU cycles in de-fragmentation with the cost of extra TX buffer memory. The default value is 1 to use deep copy.

## SYSCTL VARIABLES

The following variables are available as both sysctl(8) variables and loader(8) tunables:

### *dev.vte.%d.rx\_mod*

Maximum number of packets to fire RX completion interrupt. The accepted range is 0 to 15, the default is 15.

### *dev.vte.%d.tx\_mod*

Maximum number of packets to fire TX completion interrupt. The accepted range is 0 to 15, the default is 15.

### *dev.vte.%d.stats*

Show hardware MAC statistics maintained in driver.

## SEE ALSO

altq(4), arp(4), miibus(4), netintro(4), ng\_ether(4), vlan(4), ifconfig(8)

*DM&P Electronics Inc. Vortex86*, <http://www.dmp.com.tw>.

## HISTORY

The **vte** driver was written by Pyun YongHyeon <[yongari@FreeBSD.org](mailto:yongari@FreeBSD.org)>. It first appeared in FreeBSD 8.3.