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>*. It first appeared in FreeBSD 8.3.