NAME

    axe - ASIX Electronics AX88x7x/760 USB Ethernet driver

SYNOPSIS

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

        device ehci
        device uhci
        device ohci
        device usb
        device miibus
        device uether
        device axe

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

        if_axe_load="YES"

DESCRIPTION

    The **axe** driver provides support for USB Ethernet adapters based on the ASIX Electronics AX88172, AX88178, AX88772, AX88772A, AX88772B and AX88760 USB 2.0 chipsets.

    The AX88172, AX88772, AX88772A, AX88772B and AX88760 contain a 10/100 Ethernet MAC with MII interface and are designed to work with both Ethernet and HomePNA transceivers. The AX88178 has a 10/100/1000 Ethernet MAC with GMII/RGMII interface for interfacing with Gigabit Ethernet PHY.

    These devices will operate with both USB 1.x and USB 2.0 controllers, however performance with 1.x controllers will be limited since the USB 1.x standard specifies a maximum transfer speed of 12Mbps. Users with USB 1.x controllers should therefore not expect to actually achieve 100Mbps speeds with these devices.

    All chipsets support a 64-bit multicast hash table, single perfect filter entry for the station address, all-multicast mode and promiscuous mode. Packets are received and transmitted over separate USB bulk transfer endpoints.

    The **axe** 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. The ifconfig(8) **mediaopt** option can also be used to select either **full-duplex** or **half-duplex** modes.

100baseTX   Set 100Mbps (Fast Ethernet) operation. The ifconfig(8) **mediaopt** option can also be used to select either **full-duplex** or **half-duplex** modes.

1000baseT   Set 1000Mbps (Gigabit Ethernet) operation (AX88178 only). The ifconfig(8) **mediaopt** option can also be used to select either **full-duplex** or **half-duplex** modes.

The **axe** 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 **axe** driver supports ASIX Electronics AX88172/AX88178/AX88772/AX88772A/AX88772B/AX88760 based USB Ethernet adapters including:

AX88172:
- AboCom UF200
- Acer Communications EP1427X2
- ASIX AX88172
- ATen UC210T
- Billionton SnapPort
- Billionton USB2AR
- Buffalo (Melco Inc.) LUA-U2-KTX
- Corega USB2_TX
- D-Link DUBE100
- Goodway GWUSB2E
- JVC MP_PRX1
- LinkSys USB200M
- Netgear FA120
- Sitecom LN-029
- System TALKS Inc. SGC-X2UL

AX88178:
- ASIX AX88178
- Belkin F5D5055
- Logitec LAN-GTJ/U2A
- Buffalo (Melco Inc.) LUA3-U2-AGT
- Planex Communications GU1000T
- Sitecom Europe LN-028

AX88772:
- ASIX AX88772
- Buffalo (Melco Inc.) LUA3-U2-ATX
- D-Link DUBE100B1
- Planex UE-200TX-G
- Planex UE-200TX-G2

AX88772A:
- ASIX AX88772A
- Cisco-Linksys USB200Mv2

AX88772B:
- ASIX AX88772B
- Lenovo USB 2.0 Ethernet

AX88760:
- ASIX AX88760

DIAGNOSTICS
axe%d: watchdog timeout A packet was queued for transmission and a transmit command was issued, however the device failed to acknowledge the transmission before a timeout expired.

axe%d: no memory for rx list The driver failed to allocate an mbuf for the receiver ring.

SEE ALSO
altq(4), arp(4), miibus(4), netintro(4), ng_ether(4), rgephy(4), vlan(4), ifconfig(8)

ASIX AX88x7x and AX88760 data sheets, http://www.asix.com.tw.

HISTORY
The **axe** device driver first appeared in FreeBSD 5.0.

AUTHORS

The **axe** driver was written by Bill Paul *<wpaul@windriver.com>*.