

NAME

ng_ubt - Netgraph node type that is also a driver for Bluetooth USB devices

SYNOPSIS

```
#include <sys/types.h>
#include <netgraph/bluetooth/include/ng_ubt.h>
```

DESCRIPTION

The **ubt** node type is both a persistent Netgraph node type and a driver for Bluetooth USB devices. It implements a Bluetooth USB transport layer as per chapter H2 of the Bluetooth Specification Book v1.1. A new node is created when a supported USB device is plugged in.

The node has a single hook called *hook*. Incoming bytes received on the device are re-assembled into HCI frames (according to the length). Full HCI frames are sent out on the hook. The node will add a HCI frame indicator if the device did not send it. HCI frames received on hook are transmitted out. The node will drop the HCI frame indicator unless the device requires it to be present.

HARDWARE

The **ng_ubt** driver supports all Bluetooth USB devices that conform with the Bluetooth specification v1.1, including:

- ⊕ 3Com 3CREB96
- ⊕ AIPTEK BR0R02
- ⊕ EPoX BT-DG02
- ⊕ Mitsumi Bluetooth USB adapter
- ⊕ MSI MS-6967
- ⊕ TDK Bluetooth USB adapter
- ⊕ Broadcom Bluetooth USB adapter

HOOKS

This node type supports the following hooks:

hook single HCI frame contained in a single *mbuf* structure.

CONTROL MESSAGES

This node type supports the generic control messages, plus the following:

NGM_UBT_NODE_GET_DEBUG (**get_debug**)

Returns an integer containing the current debug level for the node.

NGM_UBT_NODE_SET_DEBUG (set_debug)

This command takes an integer argument and sets the current debug level for the node.

NGM_UBT_NODE_GET_QLEN (get_qlen)

This command takes a parameter that specifies the queue number and returns the current maximal length of the queue for the node.

NGM_UBT_NODE_SET_QLEN (set_qlen)

This command takes two parameters that specify the queue number and the maximum length of the queue and sets the maximal length of the queue for the node.

NGM_UBT_NODE_GET_STAT (get_stat)

Returns various statistic information for the node, such as: number of bytes (frames) sent, number of bytes (frames) received and number of input (output) errors.

NGM_UBT_NODE_RESET_STAT (reset_stat)

Reset all statistic counters to zero.

SHUTDOWN

This node shuts down when the corresponding USB device is un-plugged.

SEE ALSO

netgraph(4), ugen(4), usb(4), ngctl(8)

HISTORY

The **ubt** node type was implemented in FreeBSD 5.0.

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BUGS

Isochronous USB transfers are broken. This means that the USB device will not be able to transfer SCO data (voice). USB interrupt transfers are implemented as bulk-in transfers (not really a bug).