USBRadio Channel Driver

From "AllStarLink Wiki"

Chan_usbradio is a feature rich DSP radio interface. It requires more CPU than chan_simpleusb and therefor chan_simpleusb may be a better choice on smaller computers.

Contents

usbradio.conf

usbradio.conf setting are well documented in the configuration file itself:

```
;
; Usbradio channel driver Configuration File
;

[general]

[usb]

hdwtype=0               ; Leave this set to 0 for USB sound fobs modified using
                        ; the instructions from usbfob.pdf. Use a setting of
                        ; 1 is for Dingotel/Sph interfaces.

rxboost=1               ; 0 = 20db attenuator inserted, 1= 20db attenuator removed
                        ; Set to 1 for additonal gain if using a low-level receiver output

rxctcssrelax=1          ; reduce talkoff from radios w/o CTCSS Tx HPF
                        ; Do not change this, leave this as a 1

txctcssdefault=100.0    ; default tx ctcss freq, any frequency permitted
rxctcssfreqs=100.0      ; rx ctcss freqs in floating point. must be in table
txctcssfreqs=100.0      ; tx ctcss freqs, any frequency permitted
;rxctcssoverride=0      ; Set to 1 or yes to start out in carrier squelch mode

carrierfrom=dsp         ; no,usb,usbinvert,dsp,vox
                        ; no - no carrier detection at all
                        ; usb - from the COR line on the modified USB sound fob
                        ; usbinvert - from the inverted COR line on the modified USB sound
                        ; fob
                        ; dsp - from RX noise using dsp techniques
                        ; vox - voice activated from RX audio

ctcssfrom=dsp           ; no,usb,dsp
                        ; no - CTCSS decoding, system will be carrier squelch
                        ; usb - CTCSS decoding using input from USB FOB
                        ; (currently not supported)
                        ; dsp - CTCSS decoding using RX audio in DSP.
                        ; rxdemod option must be set to flat for this to work.

rxdemod=flat            ; input type from radio: no,speaker,flat
                        ; no - RX audio input not used
                        ; flat - Use RX audio from discriminator (before de-emphasis)
                        ; speaker - use de-emphasized audio

txprelim=yes            ; Audio processing on left output channel: no,yes
                        ; no - Audio is not pre-emphasized and limited.
                        ; Suitable for use on a microphone input
                        ; yes - Audio is pre-emphasized and limited
```

```
                          ; yes - Audio is pre-emphasized and limited.
                          ; Suitable for direct connection to an FM modulator

txlimonly=yes             ; Audio limiting with no pre-emphasis on output channel: no,yes
                          ; no - Audio is not limited.
                          ; yes - Audio is  limited.
                          ; Suitable for transmitters with no limiting but with pre-emphasis.

txtoctype=notone          ; Transmit tone control type: no,phase,notone
                          ; no - CTCSS tone encoding with no hang time
                          ; phase - encode CTCSS and reverse phase
                          ; AKA ("reverse burst") before unkeying TX
                          ; notone - encode CTCSS and stop sending tone before unkeying TX
                          ; AKA ("chicken burst")

txmixa=composite          ; Left channel output: no,voice,tone,composite,auxvoice
                          ; no - Do not output anything
                          ; voice - output voice only
                          ; tone - CTCSS tone only
                          ; composite - voice and tone
                          ; auxvoice - auxiliary voice output at headphone level for monitoring

txmixb=no                 ; Right channel output: no,voice,tone,composite, auxvoice
                          ; See txmixa above.

invertptt=0               ; Invert PTT 0 = ground to transmit, 1 = open to transmit
                          ; This is the collector lead of the 2n4401 on the modified
                          ; usb sound fob.
                          ; please refer to the howto for the procedure to do this.

duplex=1                  ; Full Duplex

;rxondelay=20             ; Uncomment and/or adjust for simplex nodes to eliminate "Ping
                          ; Ponging" or "Relay Racing".
                          ; A positive value here will instruct the usbradio driver to ignore
                          ; the COR line for a specified number of 20mSec intervals following
                          ; the release of PTT. Use this only on simplex nodes, and
                          ; leave commented out for repeaters or other full duplex nodes.
```

Configuration

Parallel Port

When setting chan_usbradio to use a parallel port for I/O you must set a definition for the port address in rpt.conf:

```
iobase=0x378    ; Parallel port address (using for cor/ptt & switches +dh-rbi  - 378,278,3bc common Lpt 1,2,3
```

You must then define the parallel port pins used for I/O in usbradio.conf:

```
[usb]
pp6=ptt
pp11=cor
```

When configuring your usbradio node you *MUST* ensure that the name of the radio is the same in both rpt.conf and usbradio.conf.

Node names are in format of *usb_<nodenumber>*. Where <nodenumber> = the AllStar Link node of your system. *Note that usb and the node number are separated by an underscore (_) character.*

Example:

Your usbraido.conf file defines your usb radio as **[usb_1000]**. Your rpt.conf file would then have:

```
rxchannel = radio/usb_1000
```

If you are reusing the usbradio.conf file from an older installation (i.e., ACID), take special note of the change in naming. chan_usbradio may not work without first making this change to your usbradio.conf file.

Miscellaneous

Parallel Port Pin Numbers

More information regarding numbering of parallel port hardware pins to their software equivalents can be found at Parallel Port Pin Numbers

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