WolphiLink

SmartPhone to Ham Radio Rig Interface
Owners Manual

Works with DroidPSK, DroidRTTY, DroidSSTV, Morse Decoder, DroidNavtex and HF Weather Fax for Android

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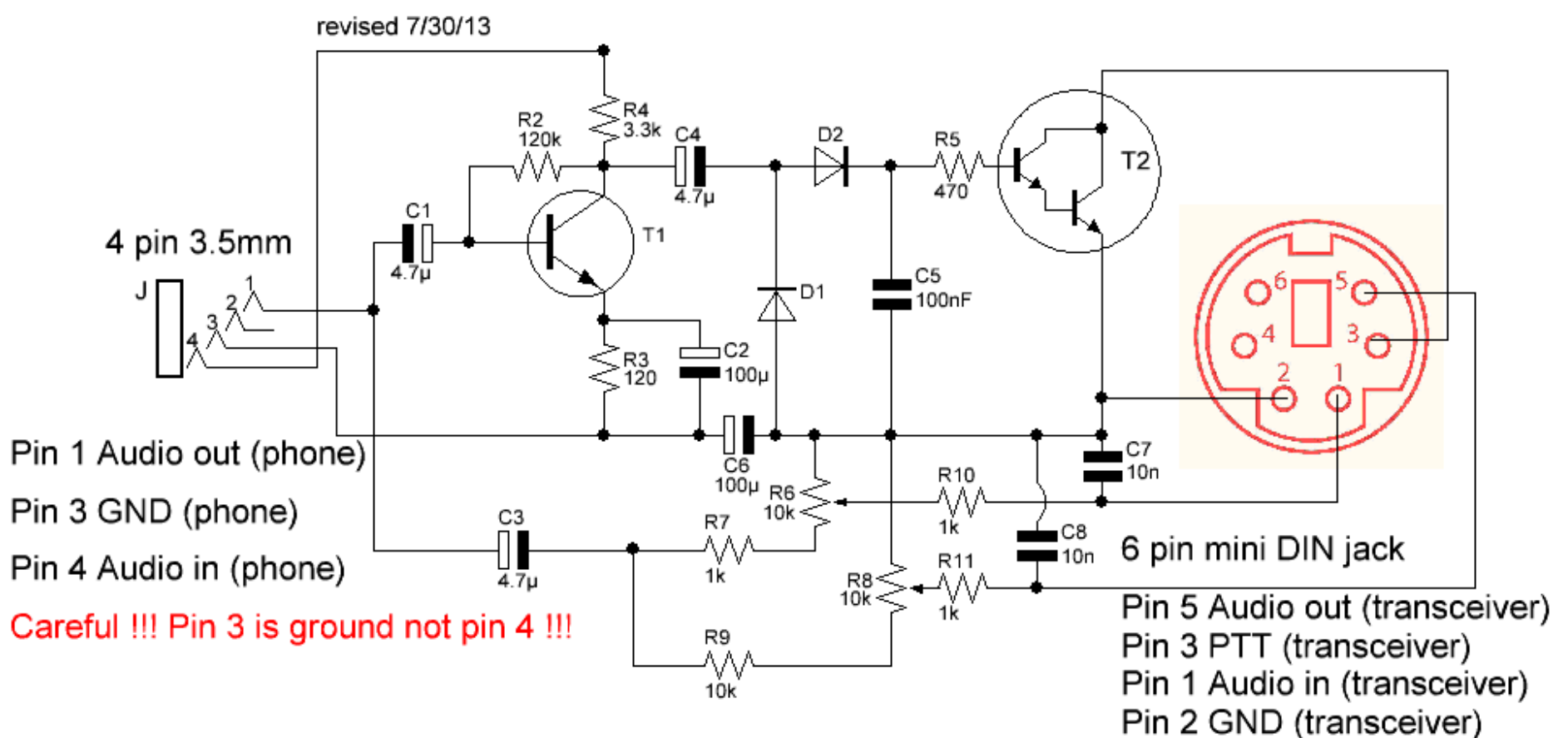# Email: info@wolphi.com

Overview

WolphiLink is small plug&play interface to connect your Ham Radio rig to an Android based SmartPhone or Tablet. WolphiLink was originally designed to work with a Yaesu FT-817 radio but WolphiLink works fine with other radio's as well.

WolphiLink uses the voltage present on the microphone pin of the Android device to amplify the signal from the phone to a level that it can be rectified and switch the PTT of the radio. The voltage on the microphone pin is usually used to power electret microphone in headsets.

Important: WolphiLink requires at least 1.4V on the microphone pin of the Android device. All the phones and tablets we know have voltages far higher than 1.4V but we can't exclude the possibility that there are Android devices out there which don't supply 1.4V or more on the microphone pin. WolphiLink will not work with voltages lower than 1.4V.

revised 7/30/13

4 pin 3.5mm

Pin 1 Audio out (phone)
Pin 3 GND (phone)
Pin 4 Audio in (phone)

Careful !!! Pin 3 is ground not pin 4 !!!

6 pin mini DIN jack

Pin 5 Audio out (transceiver)
Pin 3 PTT (transceiver)
Pin 1 Audio in (transceiver)
Pin 2 GND (transceiver)

6 pin Mini DIN to radio

TX gain

RX gain

4 pin 3.5 mm to phone

Schematics

First, receive audio is connected from the radio Data Out pin (pin 5of the mini DIN jack) to receive level potentiometer R8 and by way of R11. R9, C3 and C1 pass it to the base of Transistor T1. T1 amplifies the signal and passes it into the mic input of the phone headset jack through R4.

Next, transmit, audio is taken from one stereo channel of the phone headset jack and passed to the Data In pin (pin 1of the mini DIN jack) by way of C3, R7, transmit audio level potentiometer R6, and R10.

Finally, the Push to Talk line (collector of T2) is connected to

the PTT pin of the radio's DATA connector. T2's collector is "open" if no transmit audio is present. But when transmit   audio is fed by C1 to the base of T1 it is amplified and fed through C4 to the rectifier(D1, D2 and C5) producing a   positive DC voltage at the base of T2. That turns on T2 pulling its collector to ground switching the transceiver to transmit.

The 100 mfd capacitor C6 provides DC isolation between the phone and the radio while providing a ground path for the audio for both transmit and receive.

Connectors

(socket view)
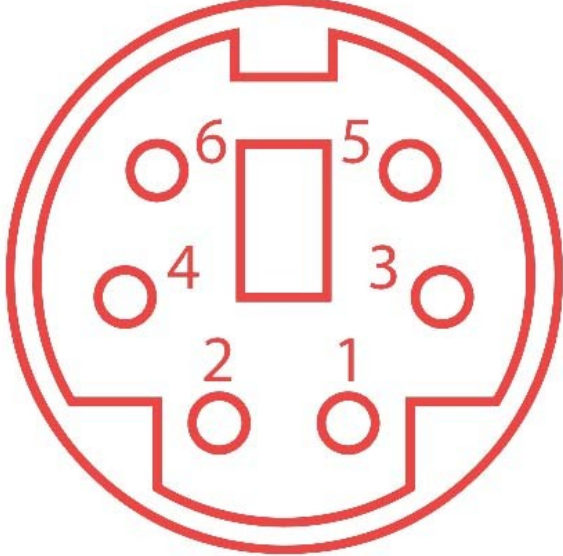
6 pin Mini DIN jack: A straight 6 pin Mini Din cable can be used to connect WolphiLink to an FT817 transceiver. Other radios might need a custom made cable.
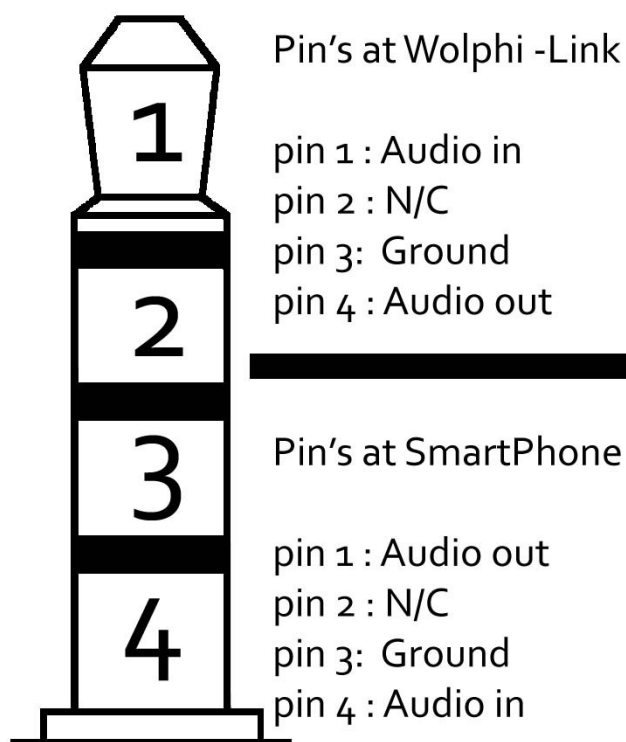
Socket view:
Pin 1: Audio out. (connect to audio in of the rig) (red)
Pin 2: Ground (black)
Pin 3: PTT (white)
Pin 4: not connected
Pin 5: Audio in (connect to audio out of the rig) (green)

Pin's at Wolphi -Link

pin 1 : Audio in
pin 2 : N/C
pin 3: Ground
pin 4 : Audio out

Pin's at SmartPhone

pin 1 : Audio out
pin 2 : N/C
pin 3: Ground
pin 4 : Audio in

4 pin 3.5mm jack: A straight 4 pin 3.5mm cable can be used to connect WolphiLink to the headset jack of the Android Device.

Important

Always adjust the audio level of the Android device to the highest level before transmitting.
If the level is adjusted to low the PTT relay of the radio might flicker when transmitting.