Technical Details & Assembly Note: Simple Sound Card Interface

Sound Card Interface is a simple device to connect your PC to the Radio. In an effort to minimize computer noise entering sensitive radio section, efforts are made to isolate DC and AC paths of the Audio generated to & from sound card.

SC1 is a simple interface useful for many digital communication programs. It achieves full isolation between PC & Radio.

### Completed SC1 Sound Card Interface:
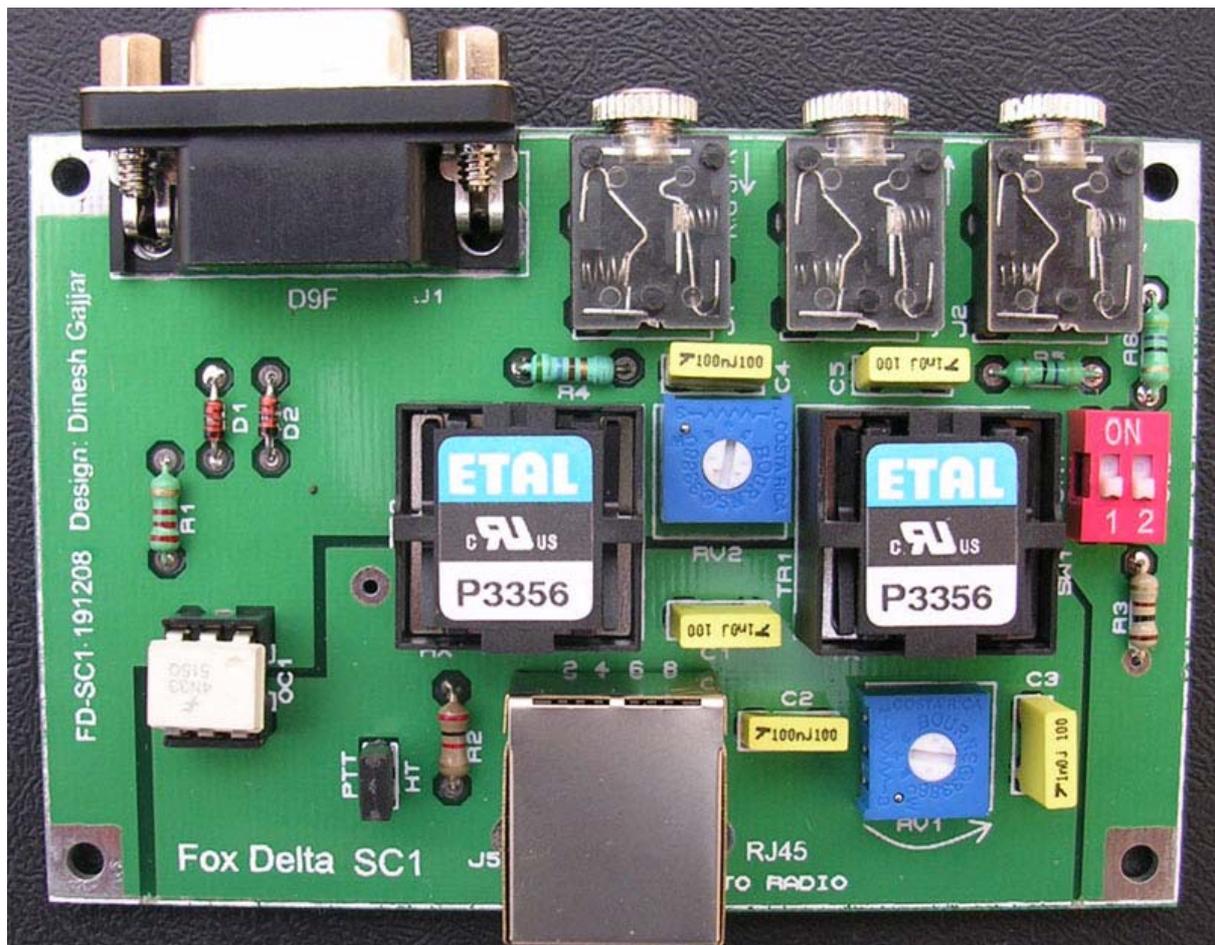
Circuit Details:

Sound card interface is basically designed for use with your radio transceiver. There are lots of free software available for digital mode operation to radio amateurs. This gives a very good reason to start thinking about digital communication. You may find links to free software at: http://hamradiosoftware.foxdelta.com

Basically, there is not much in a schematic of this interface. Interface is using two 600:600 ohms isolation transformers (Microphone & Speaker line) and one Opto Coupler for PTT. With this we have achieve an isolation of system grounds between PC and the radio. D9F connects to your PC to receive PTT commands.

Sound Card Interface is basically like this:
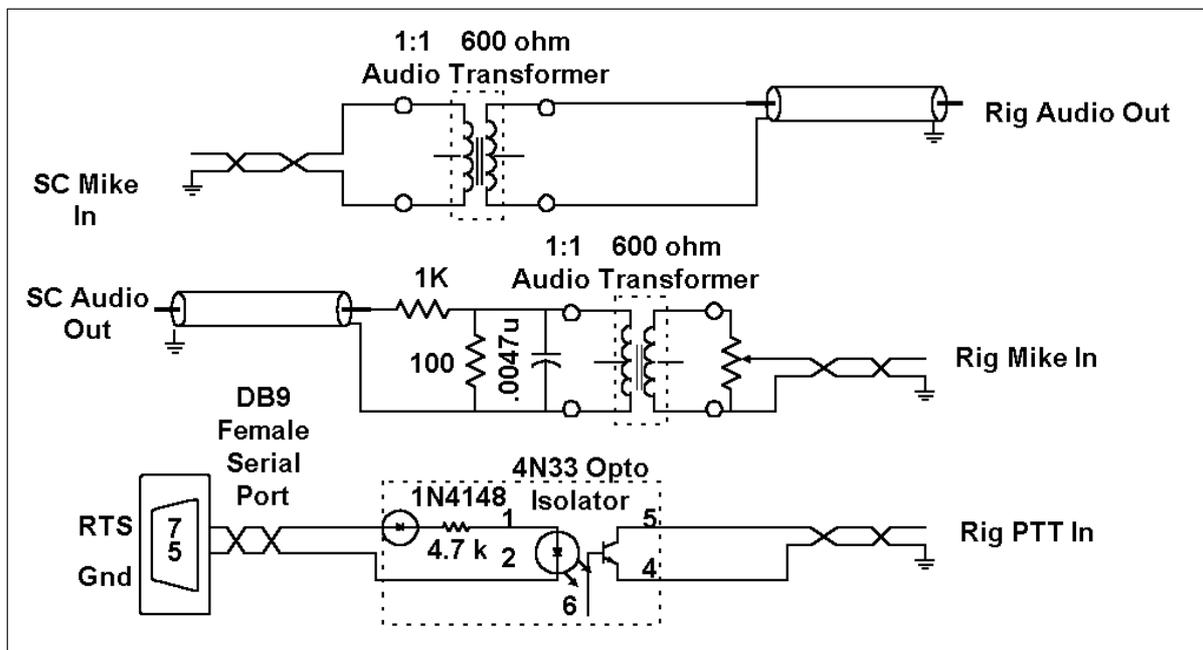
Above schematic represents a concept of a basic sound card where an attempt is made to isolate PC Ground from RIG Ground by way of using Transformers for audio paths and Opto Isolator for PTT.
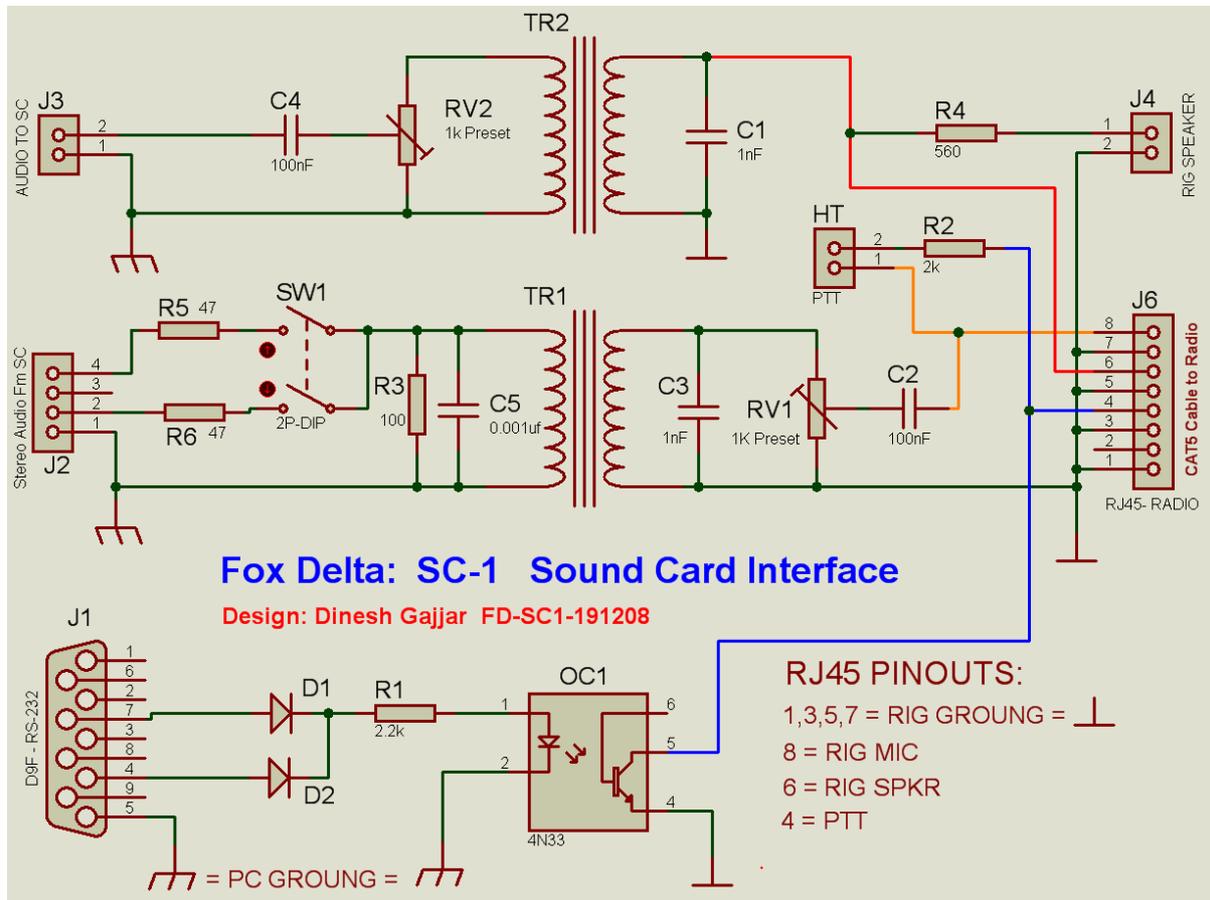
SC1 Further Addresses following:

1. Uses RJ45 Modular connector for your Transceiver

2. Accepts Speaker audio from rig to back panel 3.5mm jack.

3. **Selectable Left or Right Channel of Audio from Sound Card.**

4. **PTT (HT) Header for HTs**

Schematic of SC1:

Fox Delta: SC-1 Sound Card Interface

Design: Dinesh Gajjar FD-SC1-191208

RJ45 PINOUTS:
1,3,5,7 = RIG GROUNG = ⏚
8 = RIG MIC
6 = RIG SPKR
4 = PTT

= PC GROUNG =

Schematic details:

Audio Isolation:
Two audios, from & to Sound Card are isolated by quality Transformers.

PTT Isolation:
4N33 Opto Coupler is used for isolation of PTT from PC Ground.

Ground Isolation:
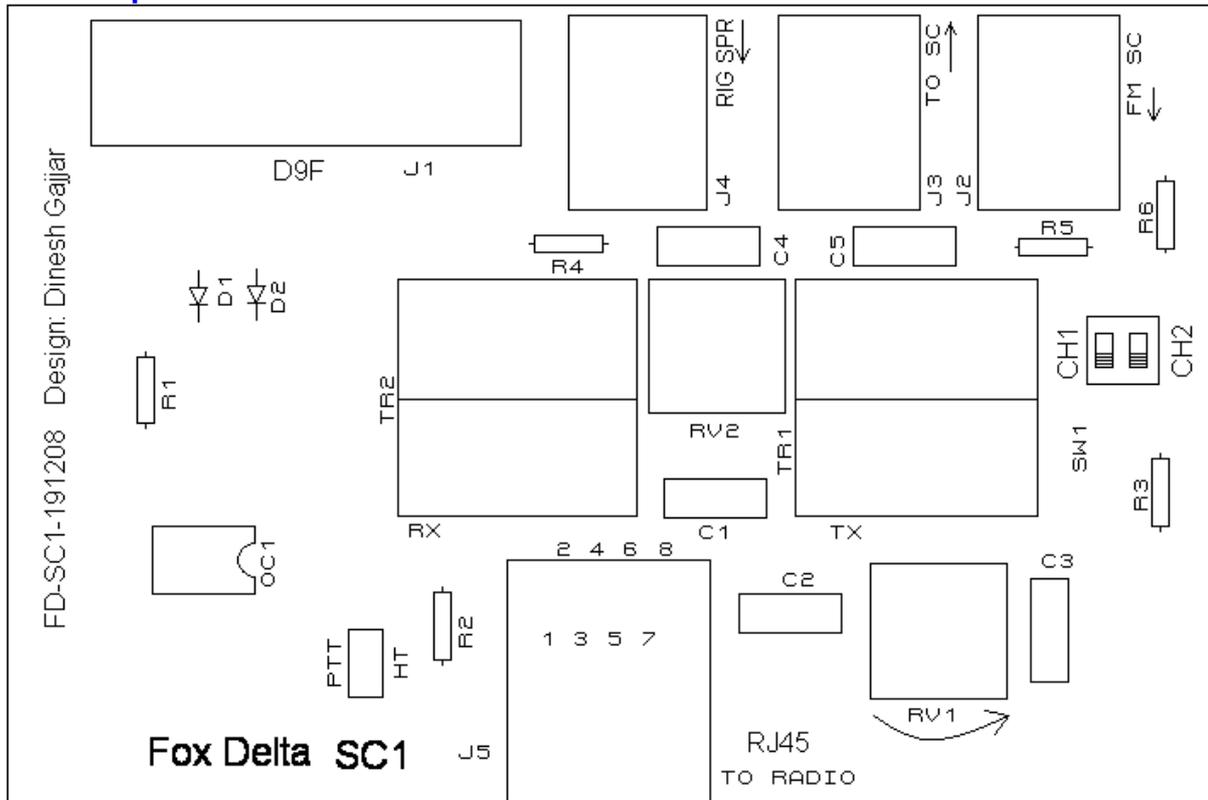**PC and Transceiver are 100% isolated.**

Power for Soundcard:
No power is required for sound card to function, as this is a passive interface.

SW1: PTT Control:

This switch selects L & R channel of received audio from sound card. In normal situation, both channels may be merged except where L & R contain different outputs for two channel of radios connected.
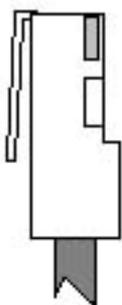
Silk Snap:
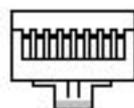

Only two steps required for SC1 setup:

1) Selection of SW1 for either or both audio channels and
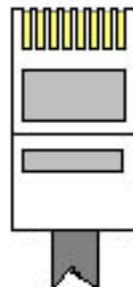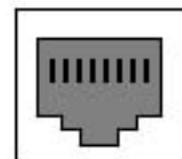2) HT Header, will enable HT PTT thru MIC.

RJ45 Connections:

RJ45 Output Connections:

1, 3, 5, 7   =   **Radio Ground**
4   =   **PTT OUT**
6   =   **Audio input (From Radio Speaker)**
8   =   **Audio Output (MIC input to Radio)**

J4:

You may also apply Speaker audio to this connector. Its internally connected to RJ454 pin 6. This jack has Radio Ground.

J1:

D9 Female Connector. Connects to PC's Serial port using standard serial cable. Uses PC Ground.

J2:

Audio from Sound Card. Uses PC Ground.

J3:

Audio to sound card. Uses PC Ground.

I hope this simple sound card design and kits will be useful to many.

73s / Dinesh Gajjar
29th December 2008

Please visit project page at: http://www.foxdelta.com