Audio Data Ports using PS/2 Keyboard/Mouse Extension

https://www.amazon.com/Tripp-Lite-Extension-Mini-DIN6-P222-006/dp/B0000511E5

Or Shorter M-M PS/2 Cables-to-Go

6ft: https://www.amazon.com/gp/product/B00005118F
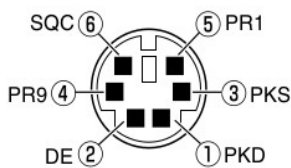
10ft https://www.amazon.com/Tripp-Lite-Extension-Mini-DIN6-P222-006/dp/B000067SB4

Kenwood TM-D710
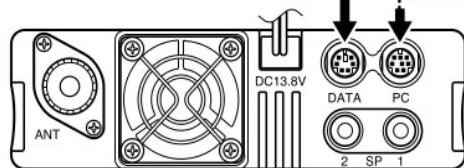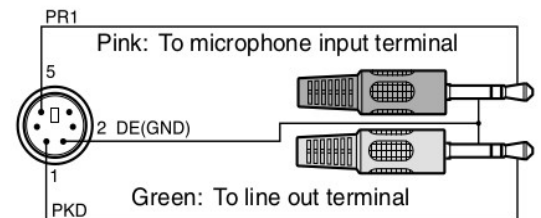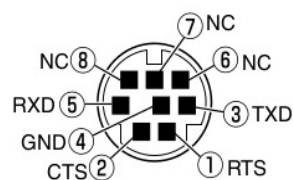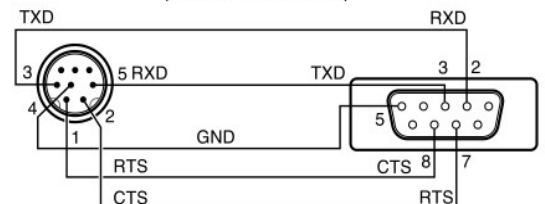
The PC/COM is a Apple computer type RS232 serial cable.
http://www.amazon.com/C2G-Cables-Go-Mini-Din-Charcoal/dp/B0002GWN84

For Yaesu FT-857D and FT-897D- three wire interface

1st Choice: http://www.amazon.com/champper-Stereo-Adaptor-Windows-Compatible/dp/B008KGL2L2

2nd Choice:https://www.amazon.com/champper-Stereo-Adaptor-Windows-Compatible/dp/B076T1BK7Y

   If you have no ground loops or noise on interface. Just use the three wires shown to right. Use 18" or less USB and PS2 cables to prevent noise pick up. Use something for strain relief, I used packing tape and a 1 meter USB extension cable.
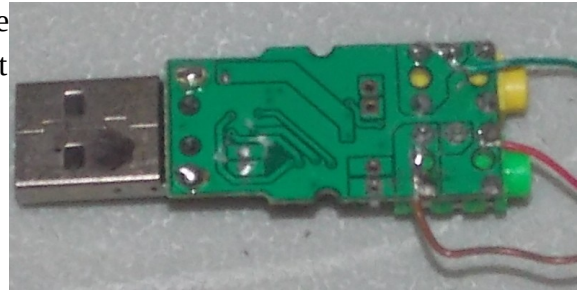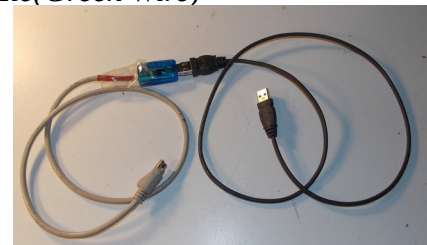
Adjust the mixer settings and the following menus:

Menu-37 DIG GAIN set to about 80 for transmit audio level.

Menu-40 DIG VOX set to about 85 for the VOX trigger level.

Ground (Red Wire)
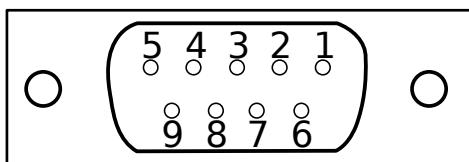*Left Earphone(Brown Wire) and the*
Mic(Green Wire)

PS/2 Mouse/Keyboard Cable color Codes

PS/2 Mouse/Keyboard Extension cables have the miniDIN-6pin end needed for this type of audio data port. Be aware the color of the wires vary from cable to cable, I have used Belkin and Cables-to-Go from http://amazon.com/
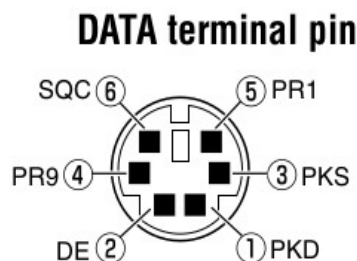
6-pin miniDIN	Kenwood	Yaesu	Function		Belkin wire color	Cable to Go wire color	Tracker DB9
Pin 1	PKD	Data in	Data to radio		Orange	Brown	Pin 1
Pin 2	**DE**	**Ground**	**Ground**		**Red**	**Red**	**Pin 6**
Pin 3	PKS	PTT	Ground via 2.2kΩ		Yellow	Orange	Pin 3
Pin 4	PR9	9600bps Out	9.6k Data **from** radio		Brown	Yellow	
Pin 5	PR1	1200bps Out	1200bps Data radio		Green	Green	Pin 5
Pin 6	SQC	SQL	Squelch		Black	Black	Pin 2

```
        5  4  3  2  1
  O    ○  ○  ○  ○  ○    O
          ○  ○  ○  ○
          9  8  7  6
```
Note: DB9M solder cup side

Pin 7 is VDC in

DATA terminal pin

```
SQC ⑥        ⑤ PR1

PR9 ④             ③ PKS

   DE ②       ① PKD
```

The color is subject to change. Do continuity test on the plug and remember the pin order is mirrored. For Higher Baud Rates the PR9, 9600baud pin is needed without an intervening transformer, itbypasses the deemphasis (http://en.wikipedia.org/wiki/FM_broadcasting#Pre-emphasis_and_de-emphasis)

#	Color	Function on Argent Data System OpenTracker
1	Red	Audio **to** Radio Microphone/Data IN
2		
3	Black	Radio PTT
4		
5	Yellow	Audio **from** Radio Speaker/Earphone/Data OUT
6	Green	Ground
7	Blue	OT-USB Power input(7 to 24Volts)
8		
9	Orange	AUX IO/GPIO1

DB-9F Solder Cups

① ◯ ● ◯ ⑤
⑥ ⑦ ◯ ⑨

DB-9M Solder Cups

⑤ ◯ ③ ◯ ①
⑨ ◯ ⑦ ⑥
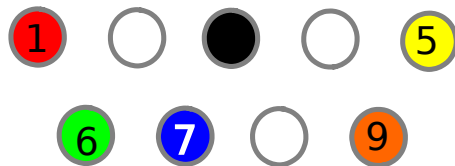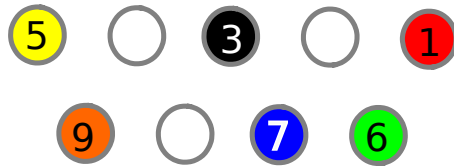
	GPS/RS232 Port (Default 4800,8N1)
1	
2	Port A input (GPS TX)
3	Port A output (GPS RX)
4	GPS Power
5	Ground
6	
7	Port B output
8	Port B input
9	

CONNECTING THE PG-5G/ PG-5H INTERFACE CABLES

The PG-5G package comes with cable ① (below).

The PG-5H packages comes with cables ① and ② (below).

① Data communications cable

To PC audio terminal

② Serial communications cable

To PC 9-pin D-SUB terminal

Data communications cable pin configuration

Pink: To microphone input terminal

Green: To line out terminal

PR1

PKD

5

1

2 DE(GND)

Serial communications cable pin configuration (cross connection)

RXD
2

3

CTS 8

RTS
7

TXD

GND

RTS

CTS

5 RXD

TXD

3

2
1

4
5

DATA terminal pin

⑤ PR1

③ PKS

① PKD

SQC ⑥

PR9 ④

DE ②

DC13.8V

DATA

PC

SP

1

2

ANT

COM

PC/ COM terminal pin

⑦ NC

⑥ NC

③ TXD

① RTS

NC ⑧

RXD ⑤

GND ④

CTS ②

Serial Port Pinout https://www.db9-pinout.com/

RS-232 Features Explained https://pdfserv.maximintegrated.com/en/an/AN882.pdf

Pinout and diagram of DE9 connector (DB9 connector), commonly used for serial ports (RS-232).

The DTR(pin 4) and RTS(pin 7) can be used for PTT signal. It is best to use a opto-isolater(aka optocoupler)

Voltages vary the RS232 Spec Mark(1) at -12V to -3V and Space(0) at +3V to 12V.

 TTL level or Mark(1) at 5V and Space(0) at Ground. Raspberry PI uses 3.3V and Ground

Pin   SIG.   Signal Name   DTE (PC)

1   DCD   Data Carrier Detect   in

2   RXD   Receive Data in

3   TXD   Transmit Data out

4   DTR   Data Terminal Ready out

5   GND   Signal Ground -

6   DSR   Data Set Ready   in

7   RTS   Request to Send   out

8   CTS   Clear to Send in

9   RI   Ring Indicator in

The DTE (PC) has the male connector (shown below),
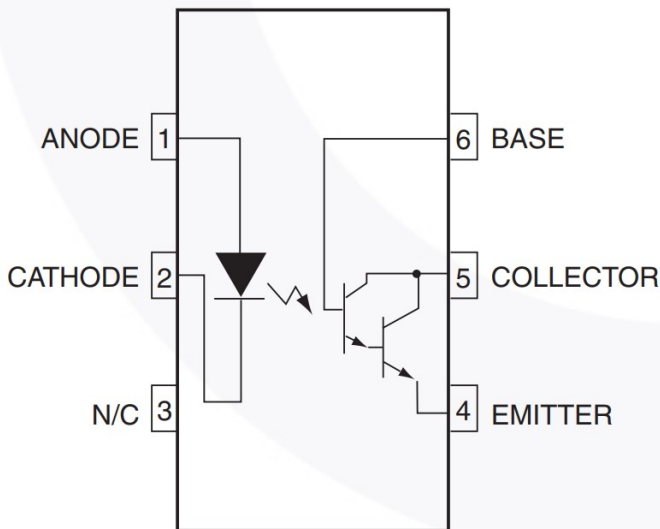and the DCE (peripheral) has the female.
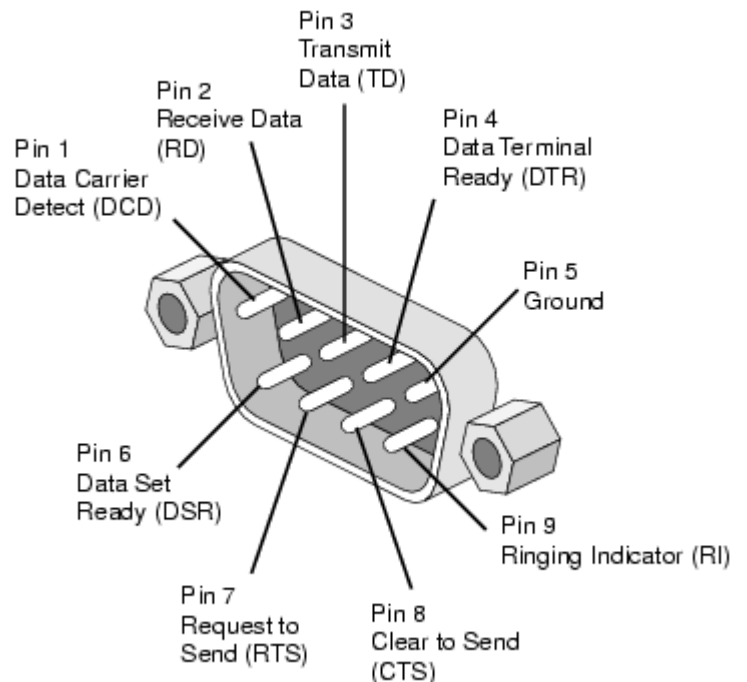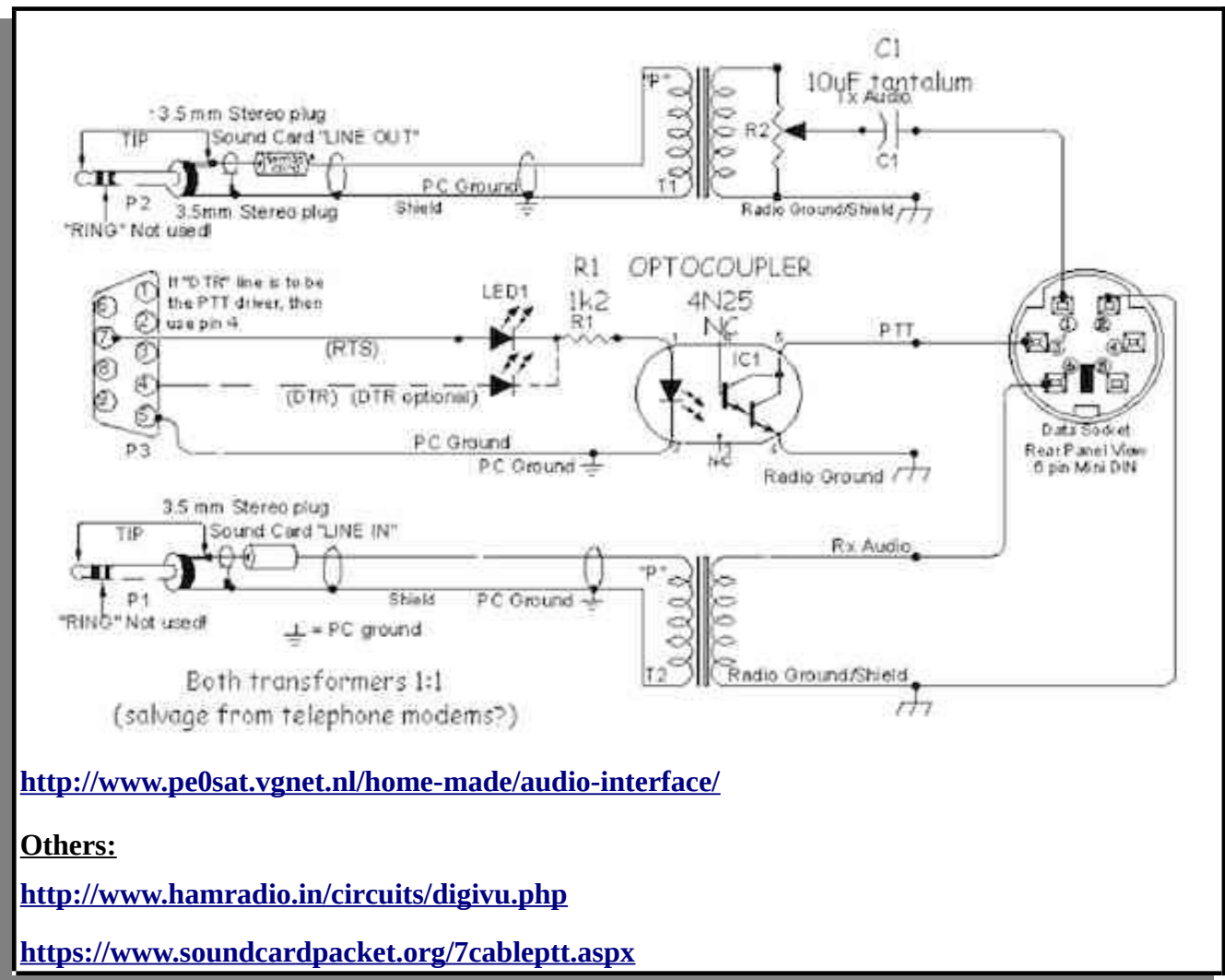
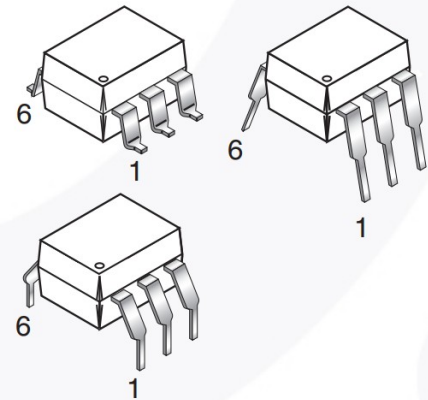# TIL113 Photodarlington/ Optocoupler

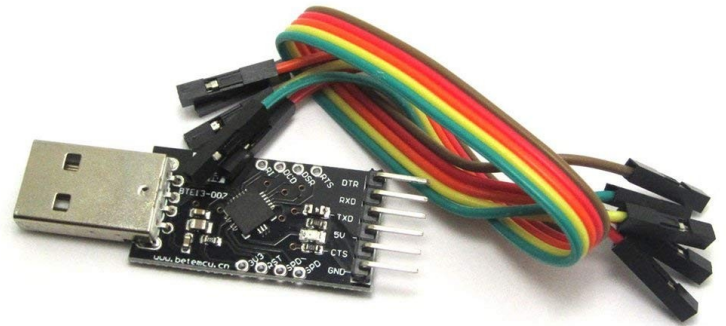Figure 1. Schematic

Figure 2. Package Outlines

l

RS232 Serial to USB Adapters

https://www.amazon.com/gp/product/B01JO87BIM

Signal Levels: about 3.3/0V levels

https://www.amazon.com/gp/product/B01FLRTYSU

Signal Levels: about 3.3/0V levels

https://www.amazon.com/gp/product/B0007T27H8

Signal Level: about +/- 6-8vdc