THE DIGITAL SIDE

radio interfacing & aprs

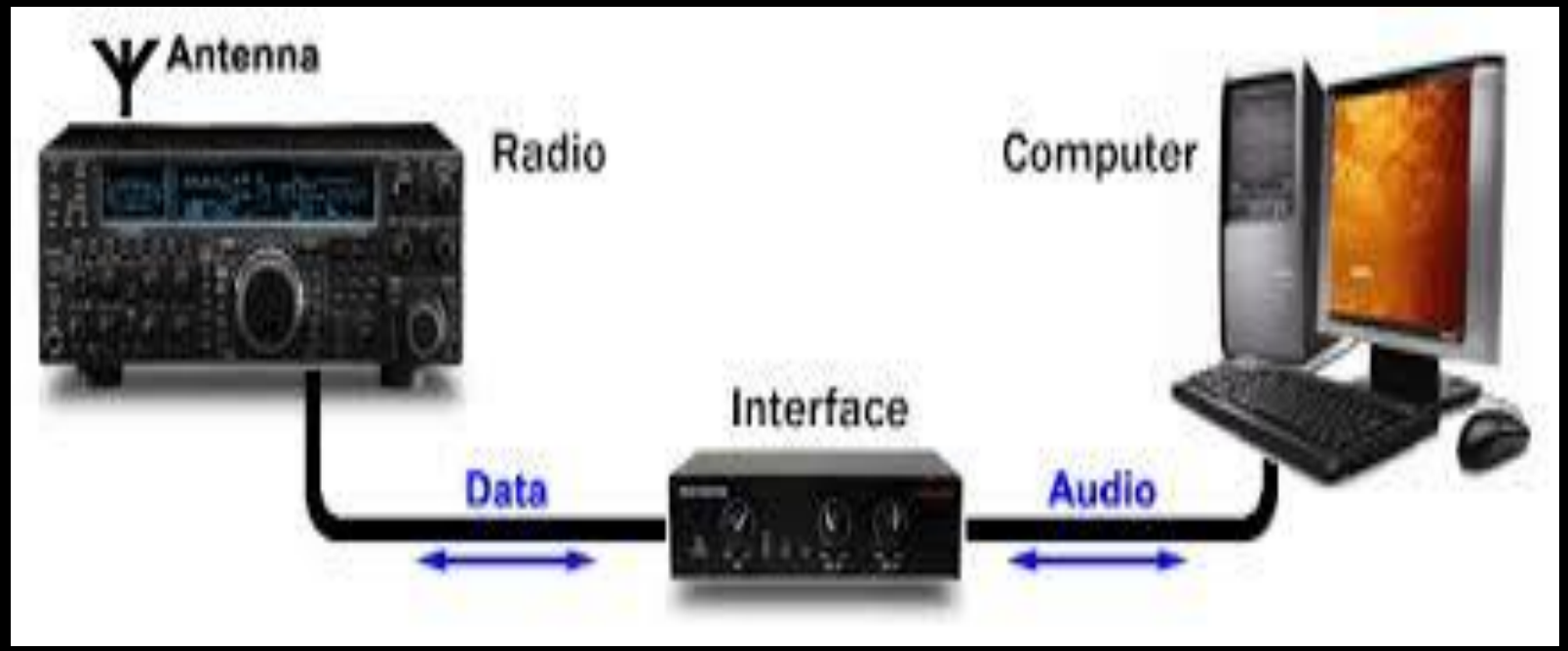
ap2cj

Pakistan Amateur Radio Society

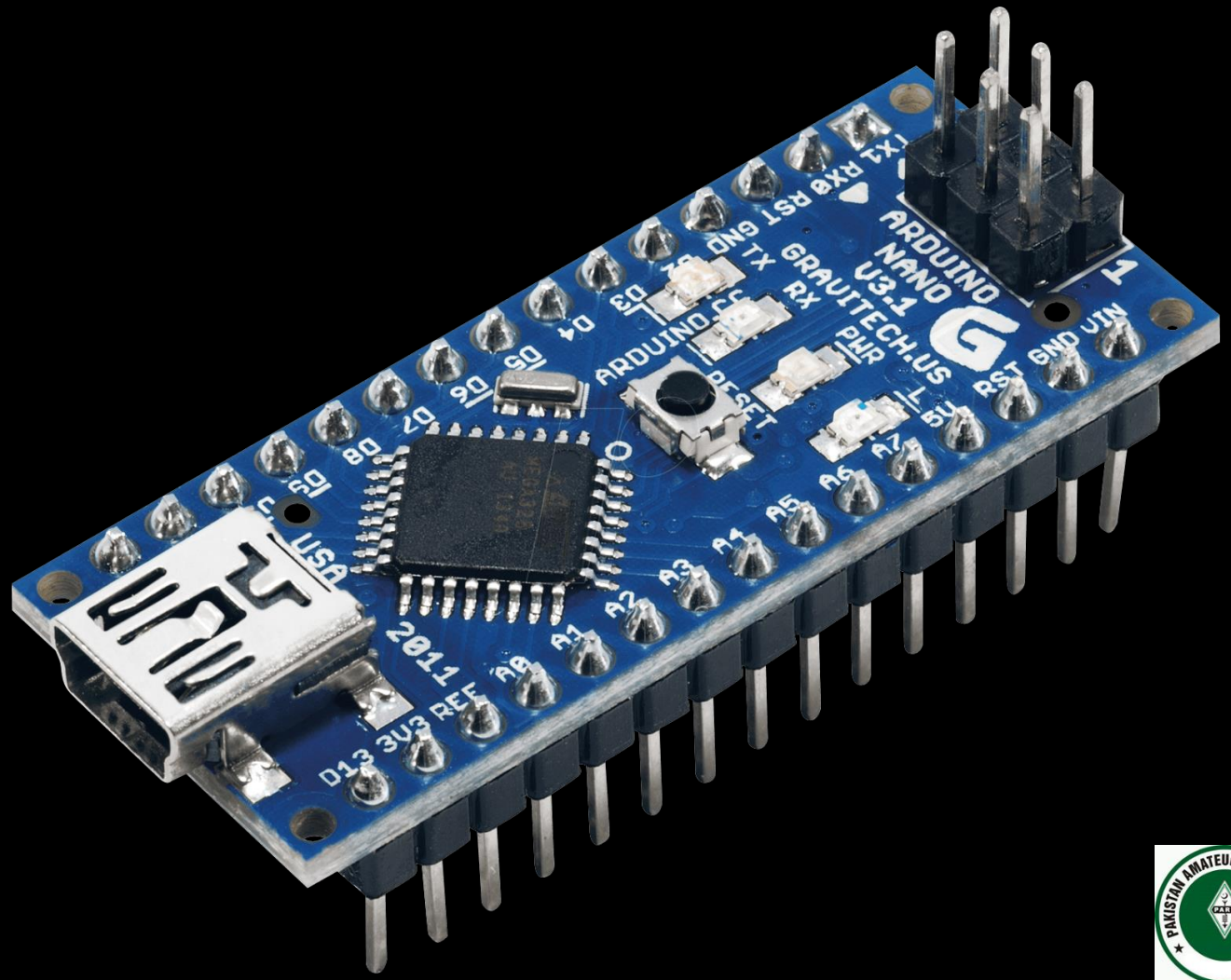
home brew, Linux and inexpensive

- DuinoVox Box
- Control Cables
- APRS iGate

- Interfacing with computer



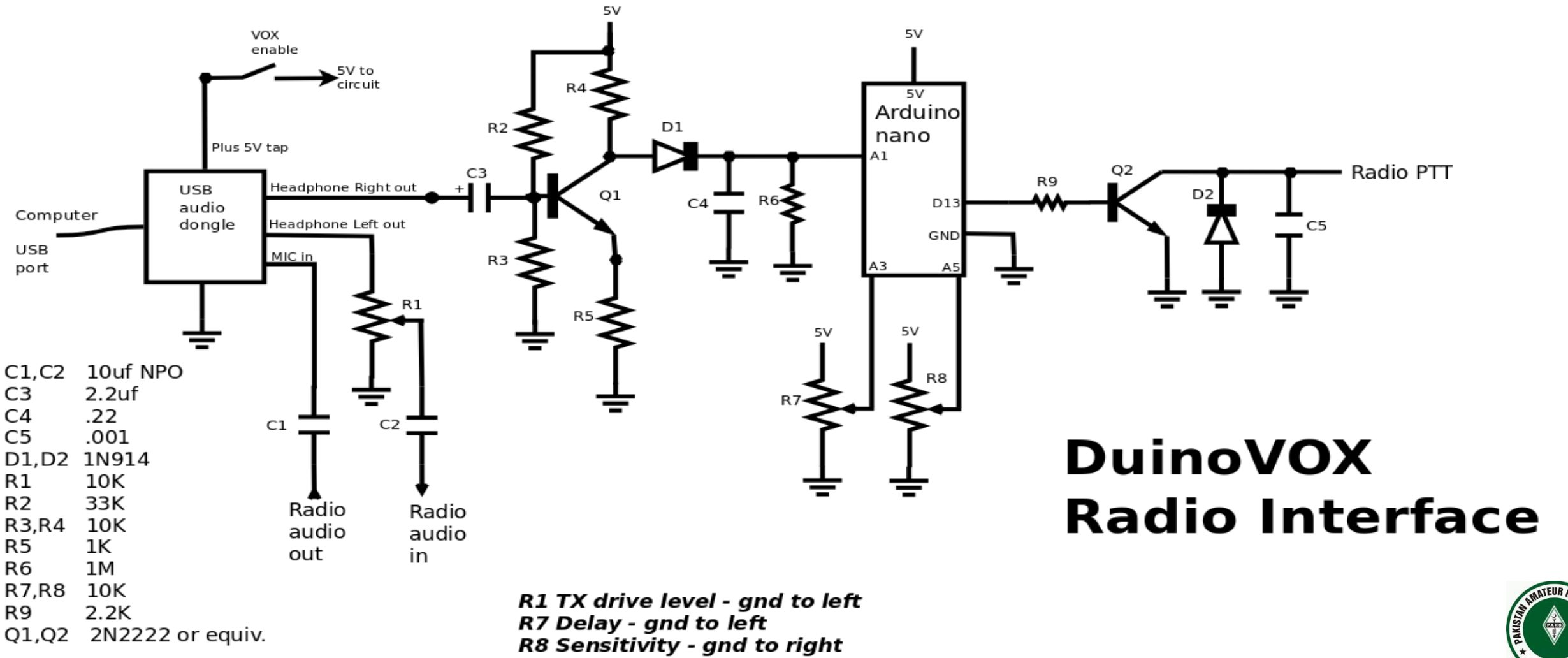
- Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code to the physical board.



- USB Audio Dongle (USB Sound Card)

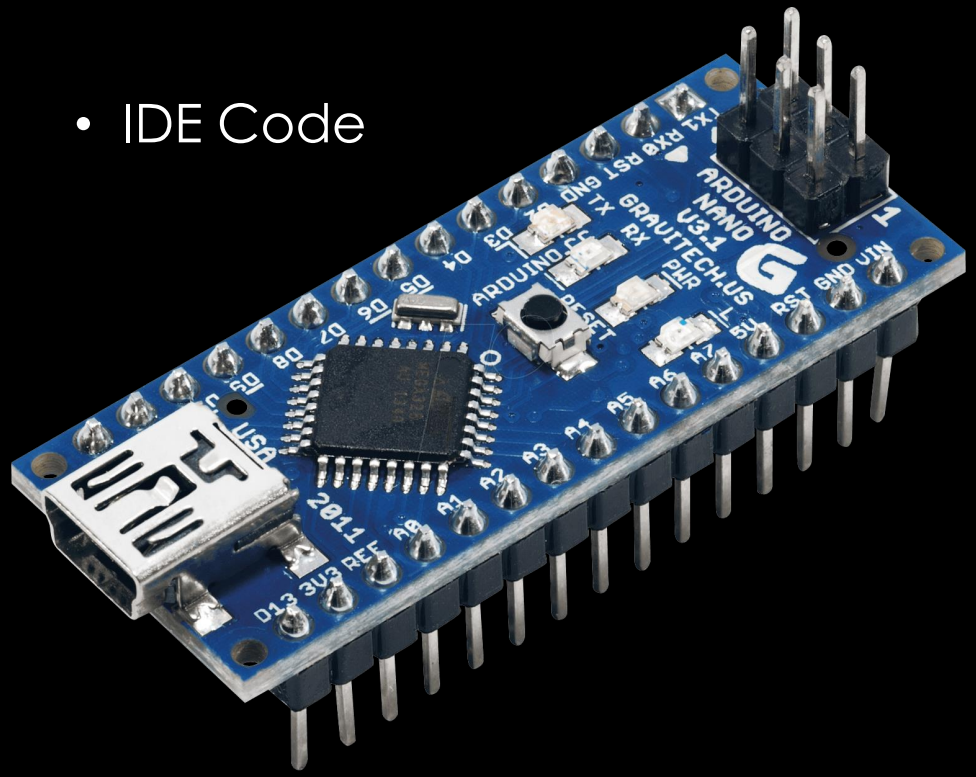
DUINOVOX BOX

- Originally Designed & Coded by KB9RLW



DUINOVOX BOX

- IDE Code



vox_digi_interface |

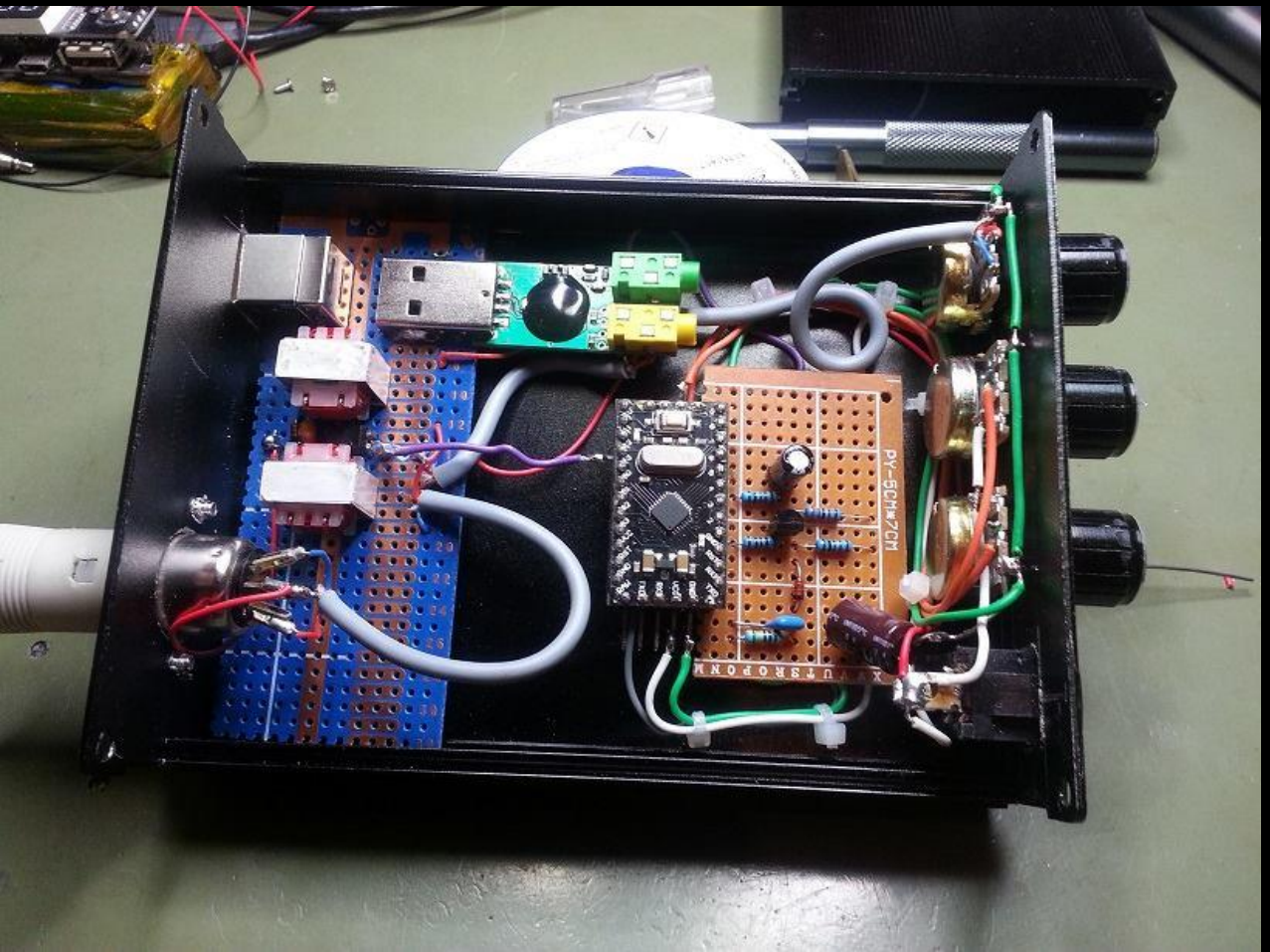
File Edit Sketch Tools Help

vox_digi_interface

```
7
8  //  Naming the pins I'm using for clarity.
9  const int audioInPin = A1;  // Audio sense
10 const int tailsetInPin = A3;  // delay time adjustment POT
11 const int sensitivity = A5; // threshold set POT
12 const int PTToutPin = 13; // output to keying transistor
13
14 //  declaring variables that we'll use
15 int delayvalue = 0; // amount of time in hundreths of a second before dropping PTT
16 int threshold = 0; // audio trigger level initial value
17 int ptt = 0;  // variable for holding current PTT delay countdown
18 int audio = 0;  // variable that will hold audio sense
19 int PTT_ON; // Flag to indicate current PTT status
20
21 void setup() {
22   // Turn off PTT right away so we're not keying on startup
23
24   pinMode (PTToutPin, OUTPUT);
25   digitalWrite(PTToutPin, LOW);
26   PTT_ON = 0;
27 }
28
29 void loop()
30 {
31   // Here we go. First read the pots and set variables
32
33   delayvalue = analogRead(tailsetInPin) / 5; // yields 0 to 204
```

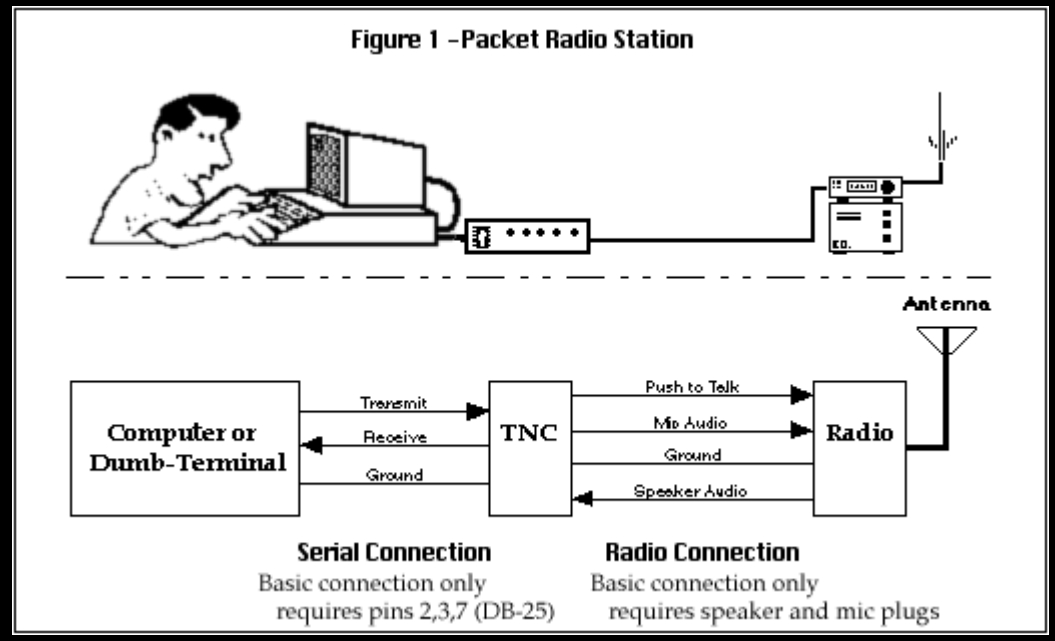
DUINOVOX BOX

- Some builds



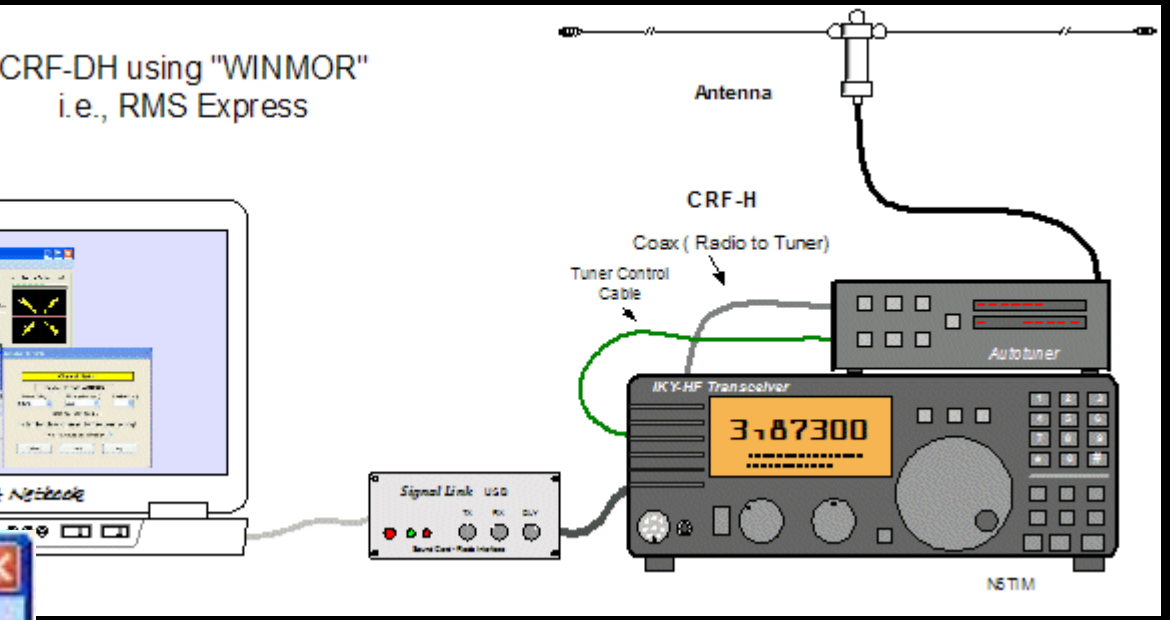
WINLINK

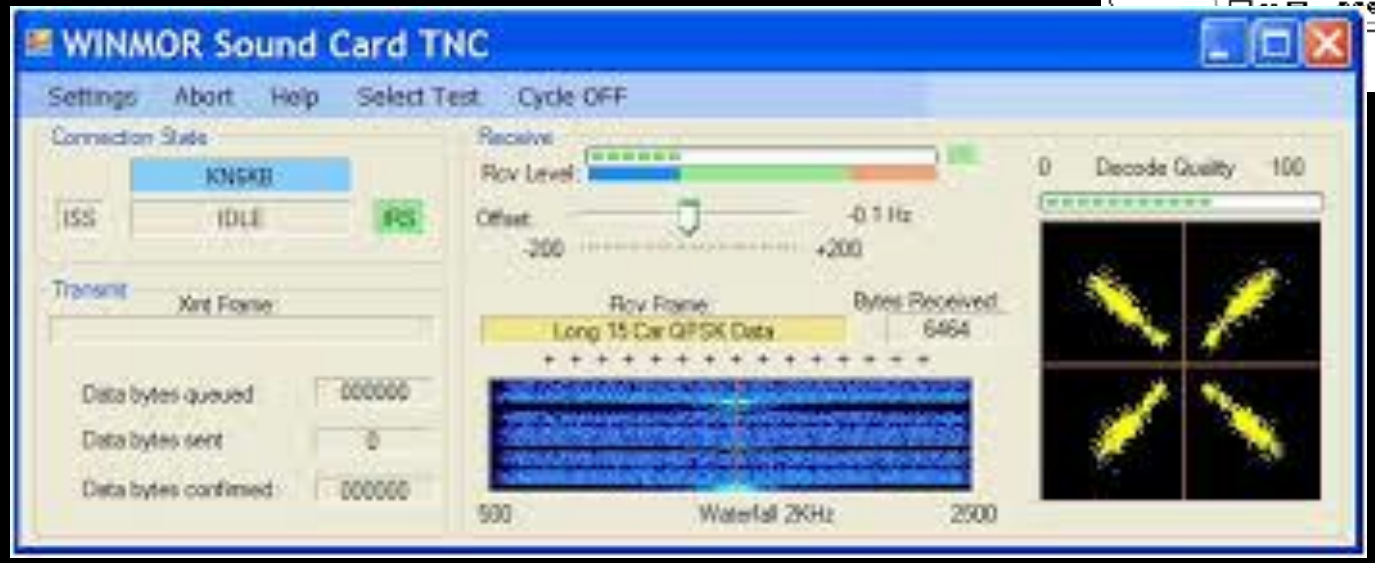
- *a worldwide radio email service that uses radio pathways where the internet is not present, and is capable of operating completely without the internet--automatically--using smart-network radio relays. Winlink provides its users email with attachments, position reporting, weather and information bulletins, and is well-known for its role in emergency and disaster relief communications.*



WINLINK

- **WINMOR** is a radio transmission protocol intended to be used in the **Winlink** 2000 Global Radio E-mail System by amateur radio operators, marine radio stations, and radio stations in isolated areas. **WINMOR** will complement the PACTOR modes in the high frequency portion of the **Winlink** system.



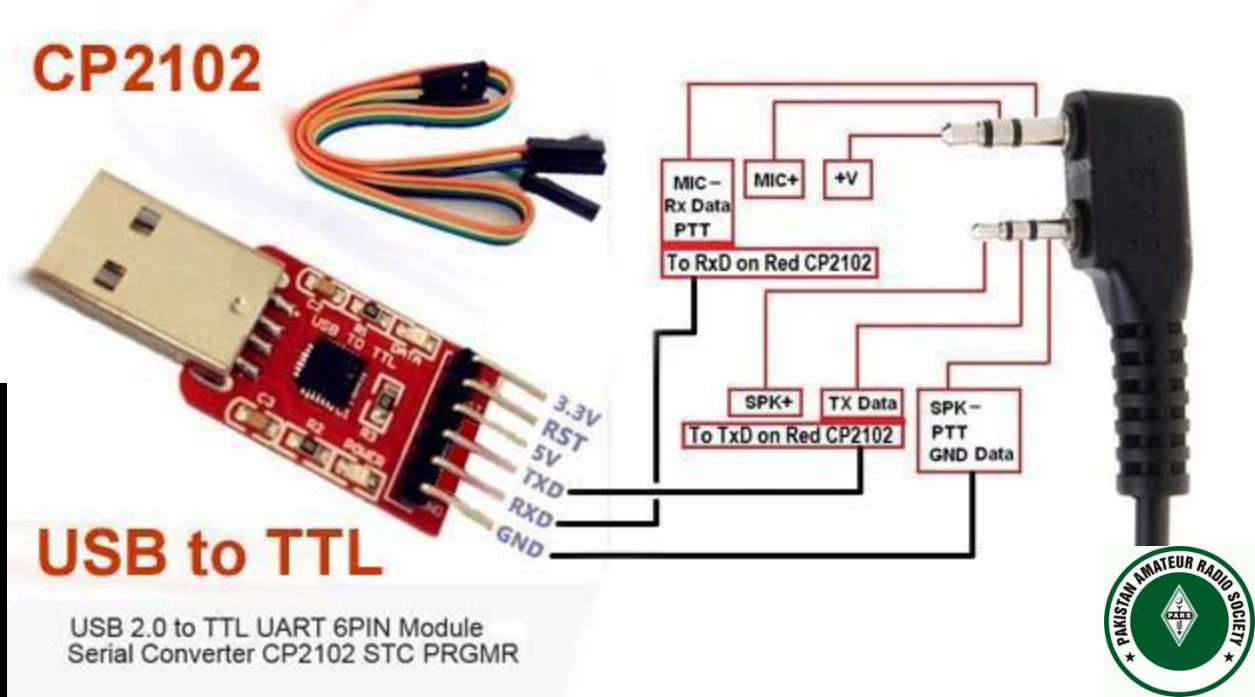


CONTROL CABLE

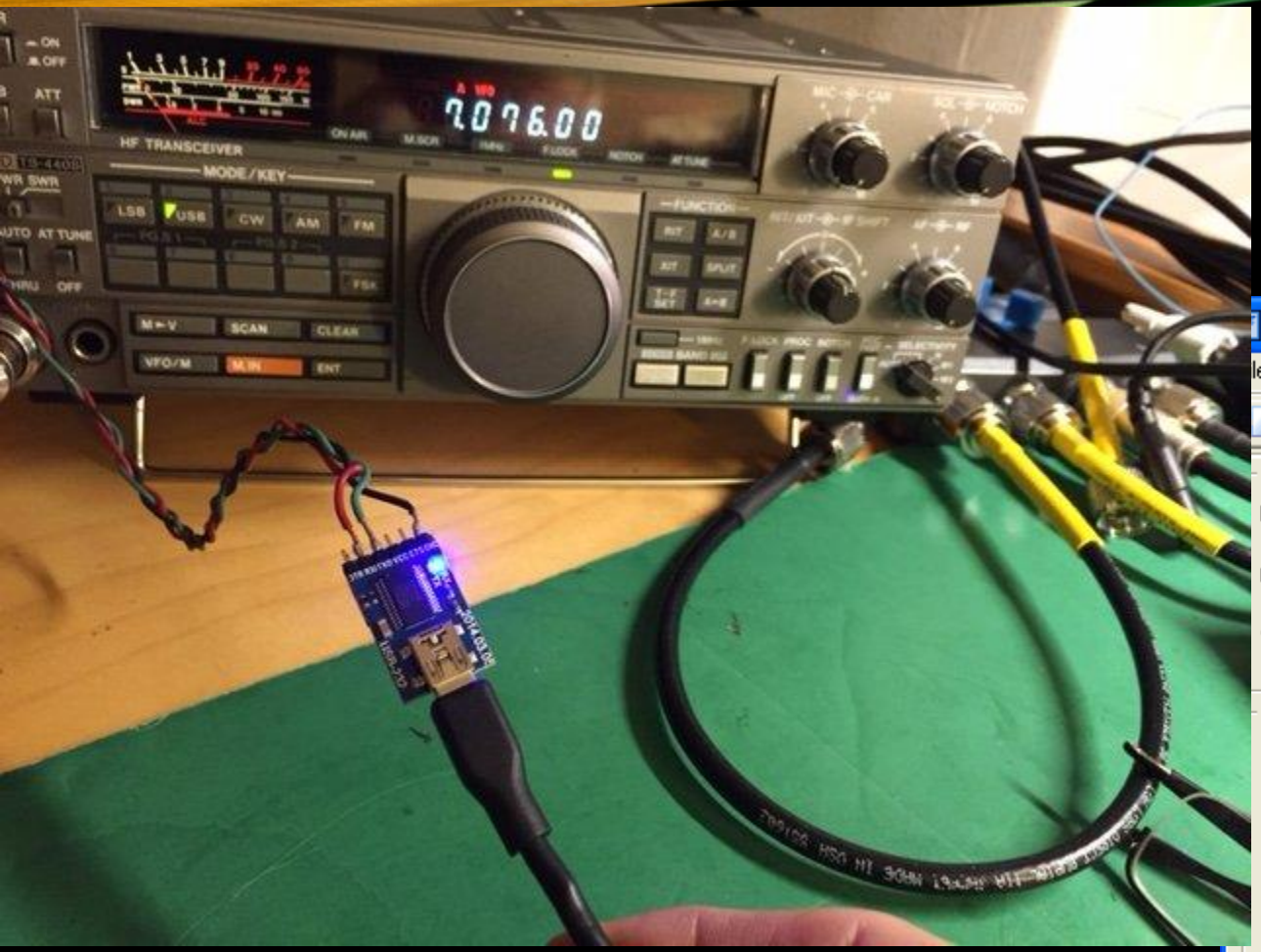
- The **USB TTL** Serial cables are a range of **USB** to serial converter cables which provide connectivity between **USB** and serial UART interfaces. A range of cables are available offering connectivity at 5V, 3.3V or user specified signal levels with various connector interfaces..

CONTROL CABLE

- CI cables



CONTROL CABLE



- FTDI Chipset
- Invert Tx and Rx

MProg - Multi Device EEPROM Programmer (Program Mode)

le Device Tools Help

Basic Details
Device Type: FT232R
USB VID / PID: FTDI Default
Vendor ID: 0403 Product ID: 6001

BM / C Device Specific Options
USB Version Number: USB 2.0
Disable USB Serial Number
Pull Down IO Pins in USB Suspend

USB Power Options
Bus Powered
Self Powered
Max Bus Power: 90 milli Amps

USB Serial Number Control
Serial Number Prefix (2 digits): A6
Use Fixed Serial Number
Fixed Serial Number (8 digits): A6003Slu

USB Remote Wake Up
Enable USB Remote Wake Up

Plug & Play (FT232 Series Only)
Enable Plug And Play

Product and Manufacturer Descriptor Strings
Manufacturer: FTDI
Product Description: FT232R USB UART

Programming Options
Only Program Blank Devices

Programmed Serial Number : A6TLWRBR

FT2232C Options | FT232R

Invert RS232 Signals
Invert TXD
Invert RXD
Invert RTS#
Invert CTS#
Invert DTR#
Invert DSR#
Invert DCD#
Invert RI#

I/O Controls
TXLED# C0
RXLED# C1
TXDEN C2
PWRON# C3
SLEEP# C4

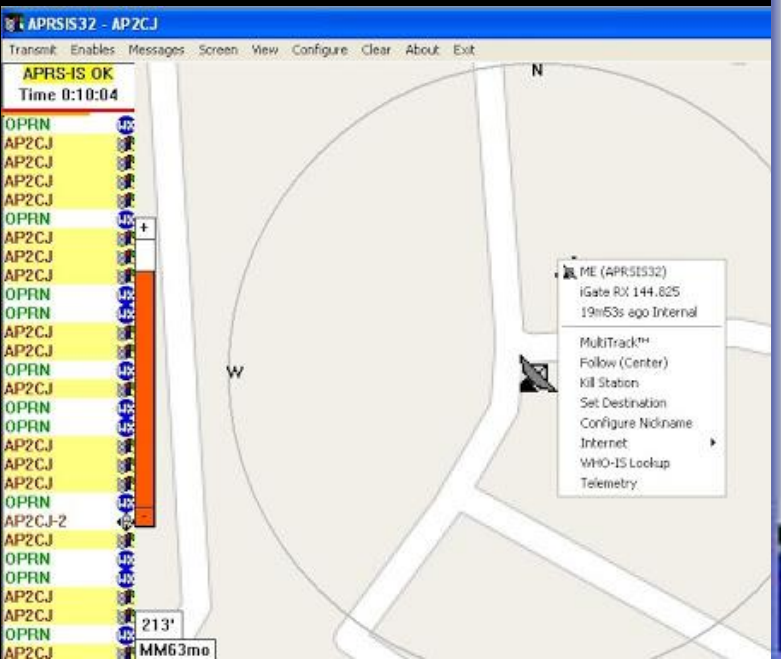
High Current I/O's
Load D2XX driv

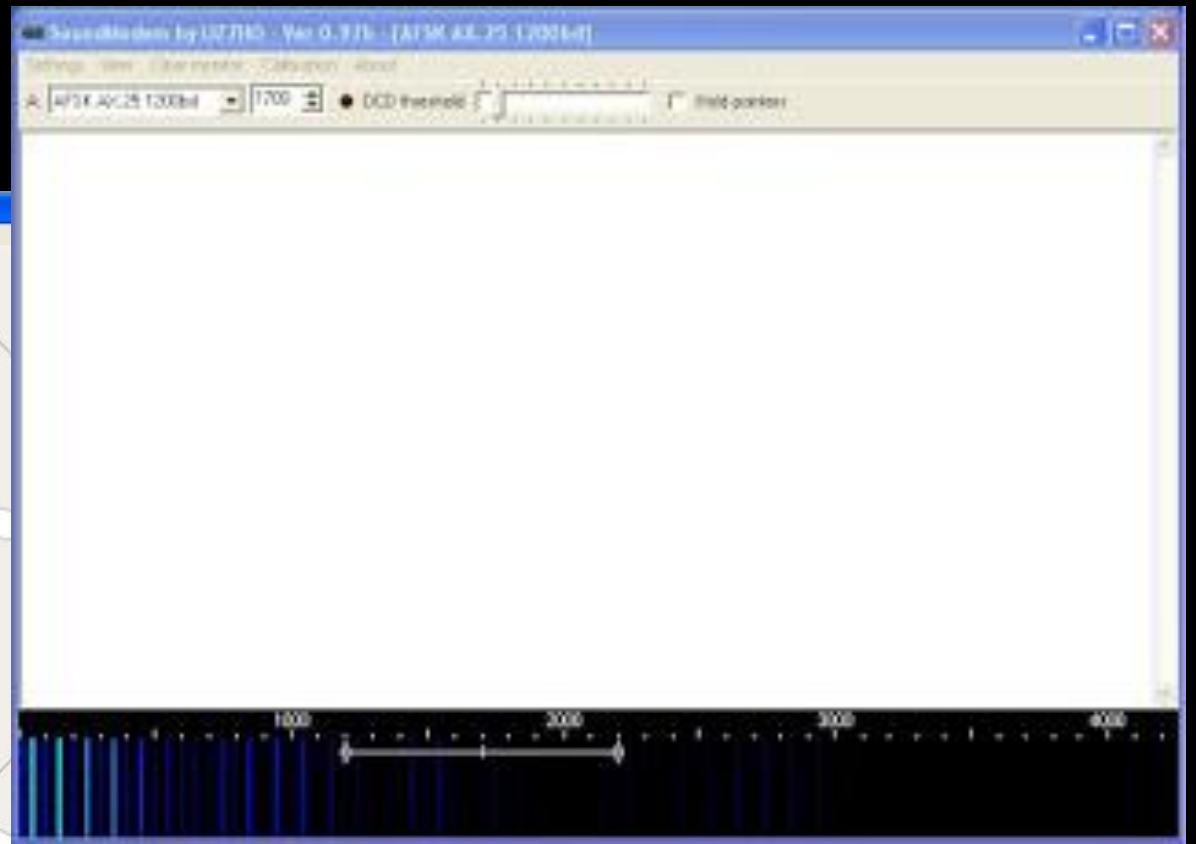
APRS IGATE

- Automatic Packet Reporting System (**APRS**) is an amateur radio-based system for real time digital communications of information of immediate value in the local area. Data can include object Global Positioning System (GPS) coordinates, weather station telemetry, text messages, announcements, queries, and other telemetry.
- Internet Gateway

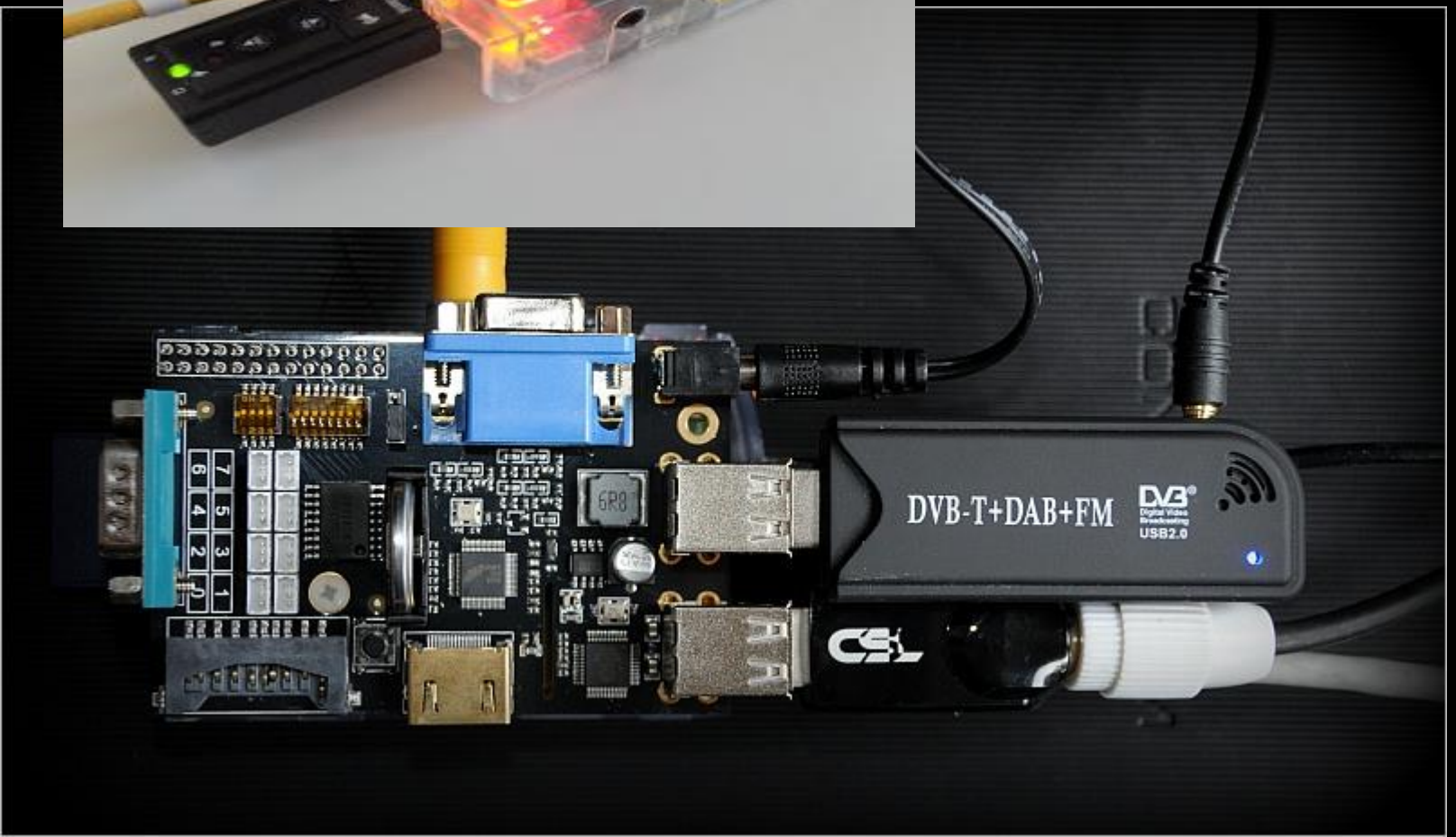
APRS IGATE

- Windows computer with mic in
- An HT with external antenna
- Cable connection from HT speaker to computer mic in
- UZ7HO Software packet radio TNC
- APRSIS32 software





APRS IGATE



- **Raspberry Pi** is a credit card-sized computer originally designed for education, inspired by the 1981 BBC Micro. Creator Eben Upton's goal was to create a low-cost device that would improve programming skills and hardware understanding at the pre-university level

LINKS

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- http://icemanjeep.blogspot.com/2017/08/aprs-rx-only-igate-direwolf-raspberry.html
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