

Amateur Radio Digital Modes

PSK31

AMTOR

PACTOR

HF PACKET

G-TOR

PACTOR

HELLSCHREIBER

RTTY

CLOVER

MT63

CW

MFSK16

Why Digital Modes

1. Efficient use of band width.
2. Efficient use of power.
3. Provide more capability for Technician Class Licensees
4. A more “secure” method of passing traffic
5. Generate more use of our bands – “use them or lose them”.

What do you need?

1. Transceiver for the band desired
2. Laptop/Desktop with sound card*
3. Hardware interface between computer and radio
4. Software – Readily available & free

Receiving

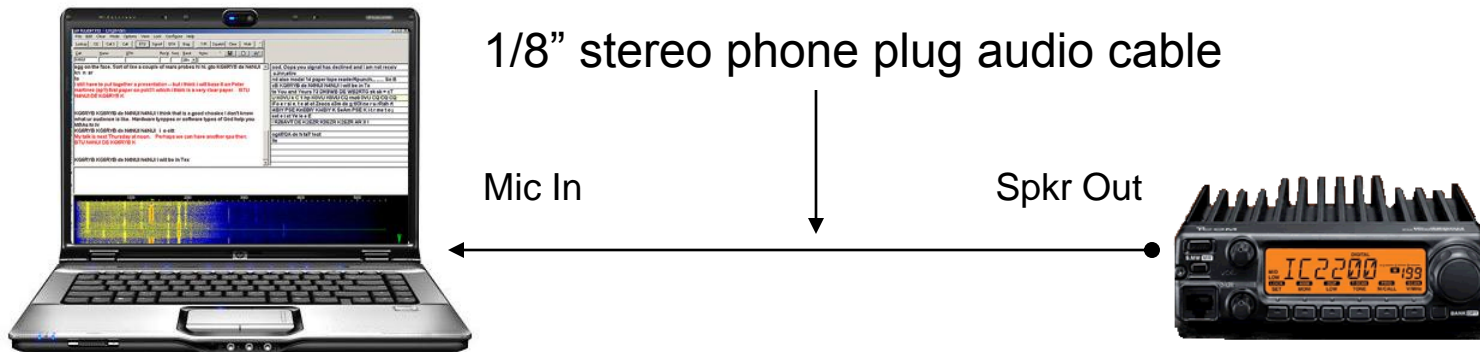
You do not need the interface

Typically 1/8" stereo audio cable

RadioShackModel: 42-2387 \$7.50

Software - Digipan or WinPSK or fldigi

Computer





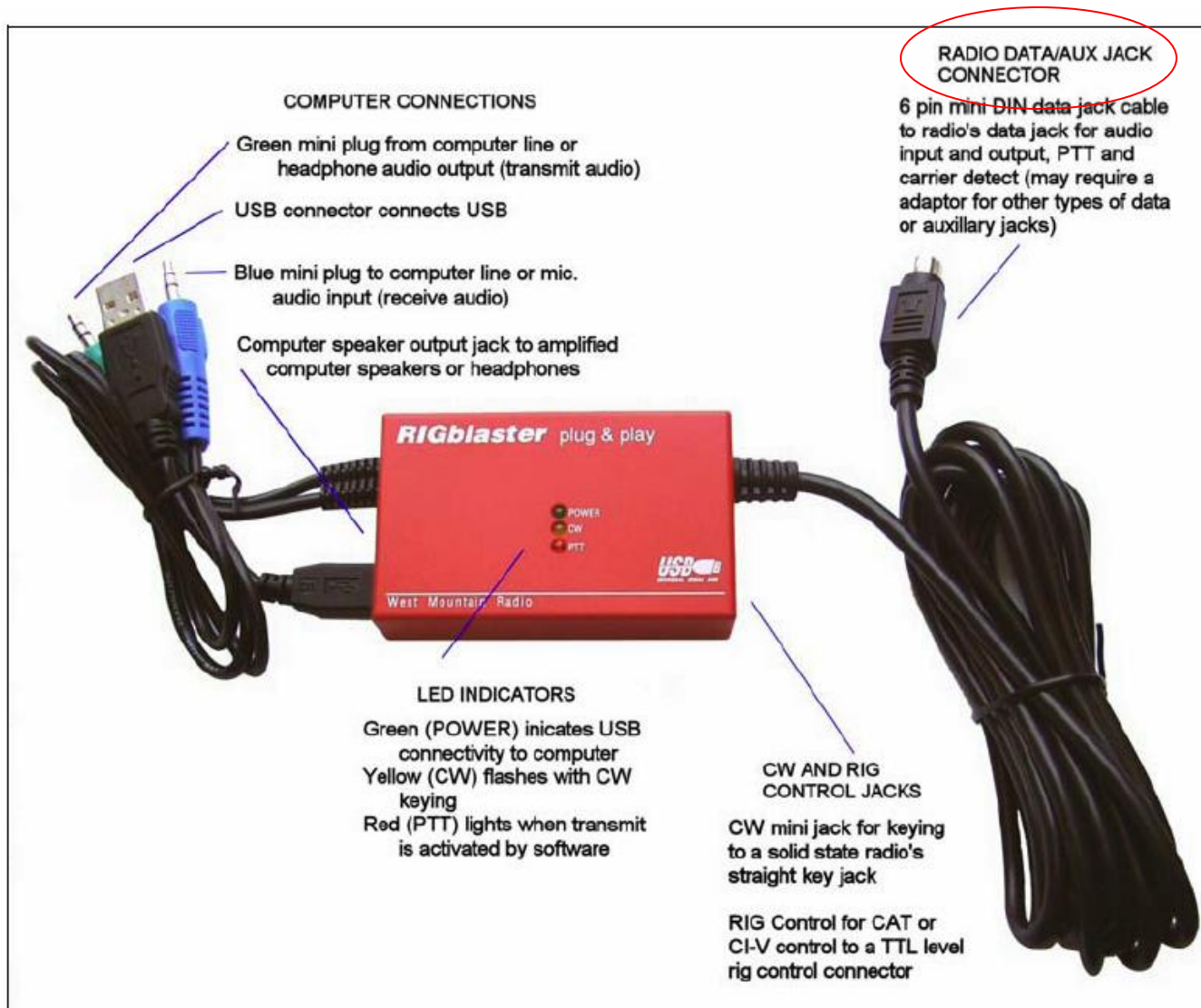
<http://www.tigertronics.com/>

<http://www.westmountainradio.com/>

<http://www.digipan.net>

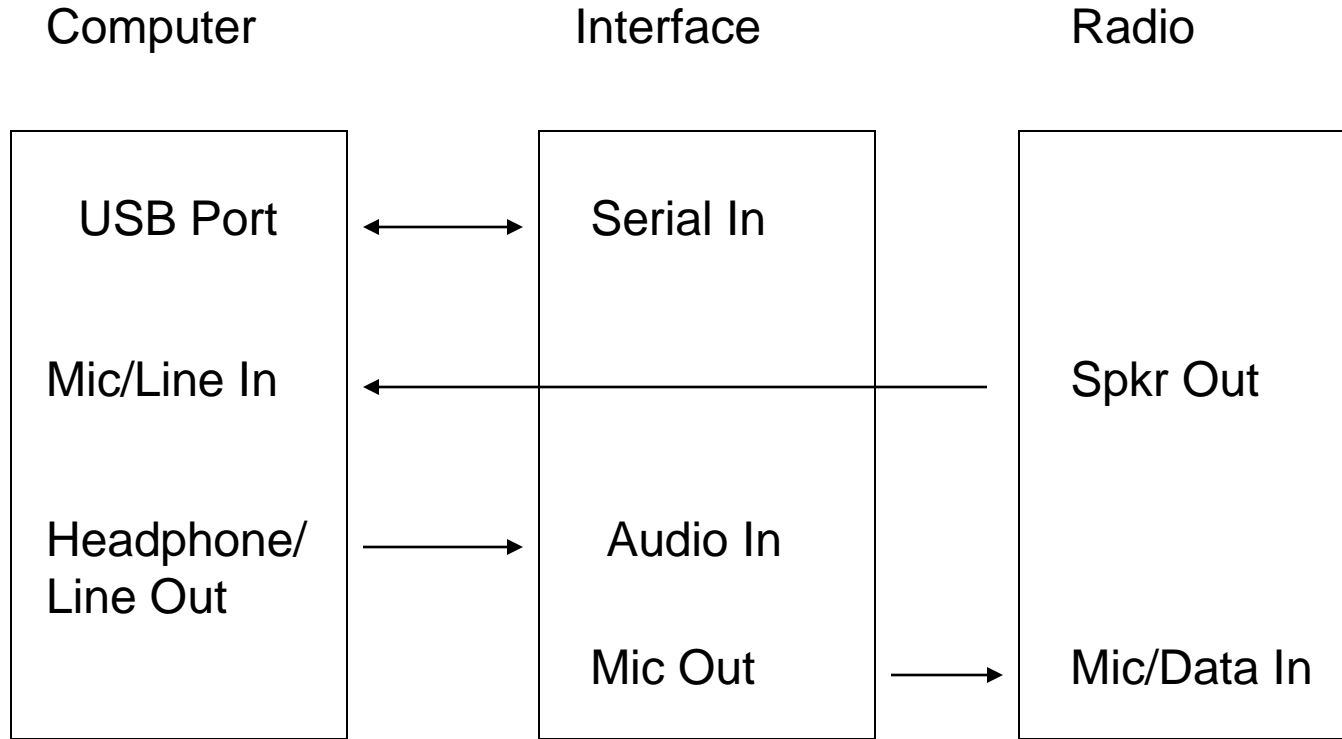


RIGblaster plug & play connections and indicators \$120



May require radio specific adapter ~\$10

Rigblaster Nomic Flowchart



Typical **RIGblaster nomic USB** station hookup diagram.

\$60

Note: This is only a sample station hookup diagram; what might be used for portable operation with a RIGblaster nomic.
A desktop computer would have similar connections with different sound card connections.

PTT CONTROL: Use either supplied DB9M to DB9F serial cable connected between the RIGblaster's serial port and the computer's RS232 serial port. If the computer doesn't have a DB9 (9 pin) serial port, use the supplied USB to DB9 serial converter. (The USB converter cable requires a driver installation)

RECEIVE AUDIO: Supplied 3.5mm, 1/8" stereo phone plug audio cord from radios speaker or fixed level output to computer's mic* input.



TRANSMIT AUDIO: Supplied 3.5 mm, 1/8" stereo phone plug audio cord from computer's headphone* output to RIGblaster's audio in.



MICROPHONE TRANSMIT AUDIO & PTT: Mic. cable supplied with RIGblaster connects to radios mic. input.

COMPUTER AUDIO MONITOR: Connect computer headphones or amplified computer speakers.

* For desktop computers use the computer's line input in place of the mic. input and use the line output in place of the headphone output.

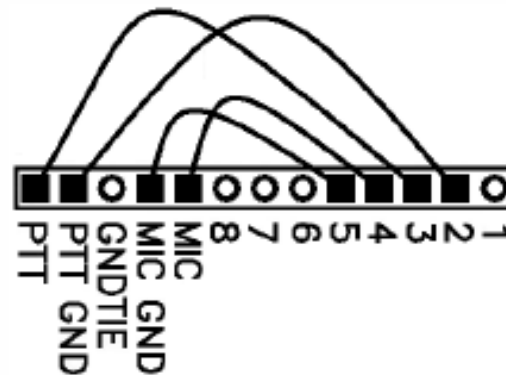
Interface uses jumpers to configure different radios/manufacturers

Example: Nomic jumper setup

Typical Yaesu® RJ45 (8 wire) Modular mic. connector radios

Most but not all FM rigs. including FT817,FT897,FT857

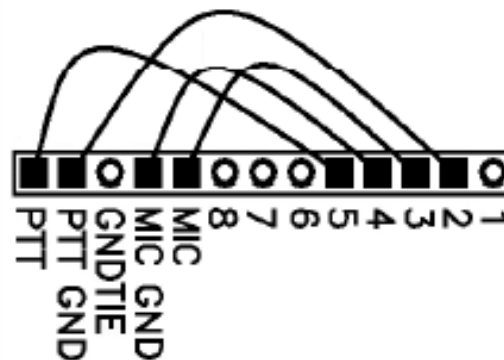
- | Pin # | Connection |
|-------|----------------------|
| 1 | not used |
| 2 | PTT common (Ground) |
| 3 | Push to talk, PTT |
| 4 | Microphone audio |
| 5 | MIC. common (Ground) |
| 6 | not used |
| 7 | not used |
| 8 | not used |



Icom® RJ45 (8 wire) Modular mic. connector radios

IC706 (all versions), and Icom FM radios

- | Pin # | Connection |
|-------|---------------------|
| 1 | not used |
| 2 | PTT common (Ground) |
| 3 | Microphone audio |
| 4 | MIC common (Ground) |
| 5 | Push to talk, PTT |
| 6 | not used |
| 7 | not used |
| 8 | not used |



Rigblaster Plus \$160

Basic station hookup diagram.

Note: This diagram is a basic sound card station hookup and does not show a keying connection for CW and/or FSK. That connection is user supplied and requires an 1/8" mini jack to connect the key out of the RIGblaster to the radio's straight key input and/or FSK keying terminals.

PTT, KEYING & SWITCHING: Supplied DB9M to DB9F serial cable connected between the RIGblaster's serial jack and computer's com port. (not needed for VOX)

TRANSMIT AUDIO: Supplied 3.5 mm, 1/8" stereo phone plug patch cord from computer's line* output to RIGblaster's audio in.

RECEIVE AUDIO: Supplied 3.5mm, 1/8" stereo phone plug patch cord from radio's speaker or line out to computer's line* input.

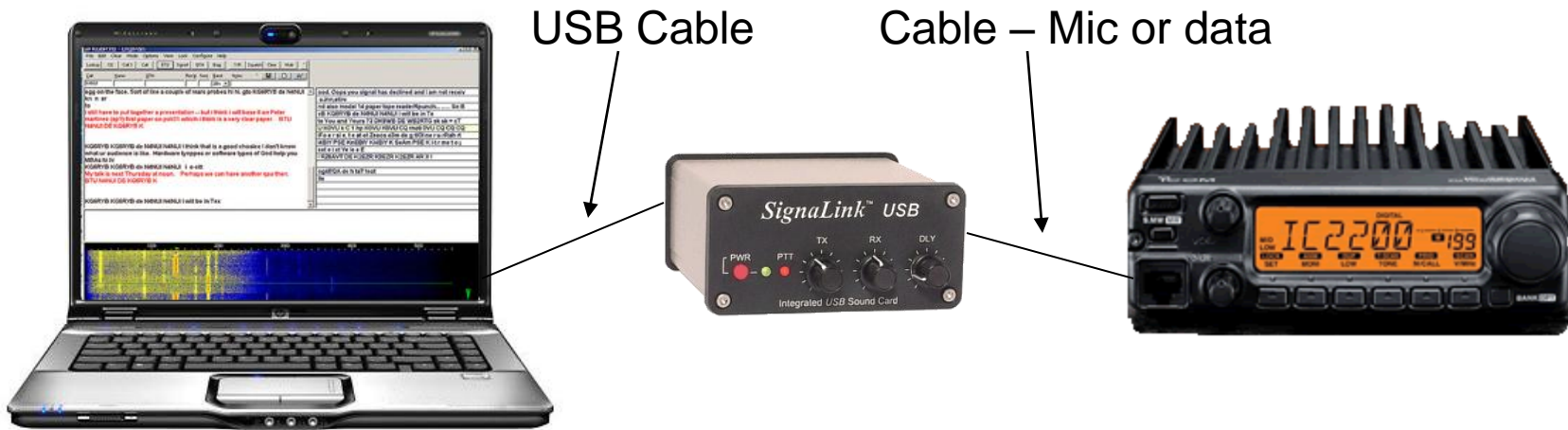


COMPUTER SPEAKER RE-CONNECT: Cable from computer speaker re-connects to RIGblaster's audio output

MICROPHONE: Mic. cable supplied with RIGblaster. Connection goes to front of RIGblaster for RJ45 modular radios.

* For laptop computers use the computer's mic. input in place of the line input and use the headphone output in place of the line output.

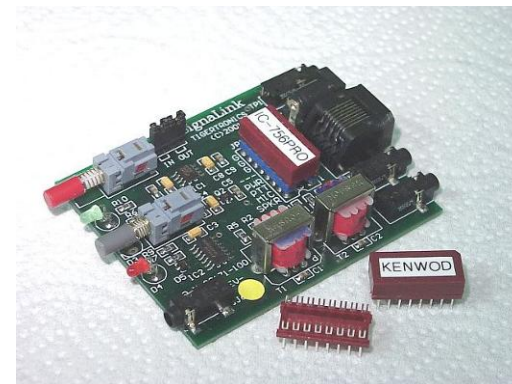
TigerTronics SignalLinkUSB \$100-105



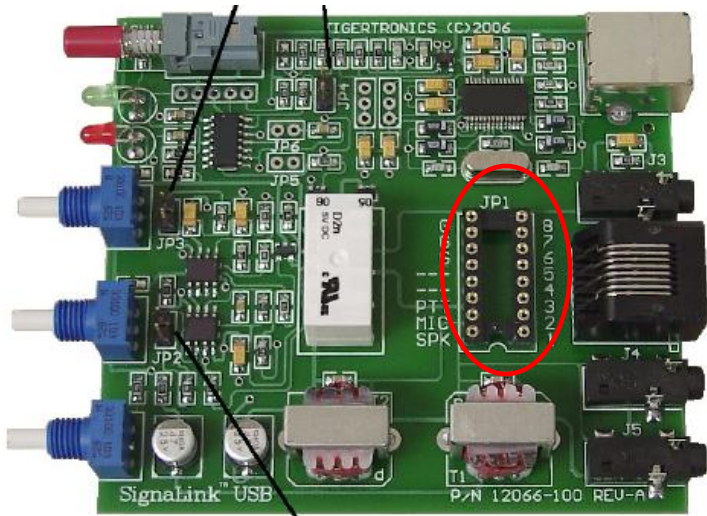
Built in sound card
 Uses only 2 cords
 Power from USB
 May use data port

RJ-45 Mic Connector (use SLUSBRJ4, SL1+RJ45, SL1-RJ45 or SLCABE)

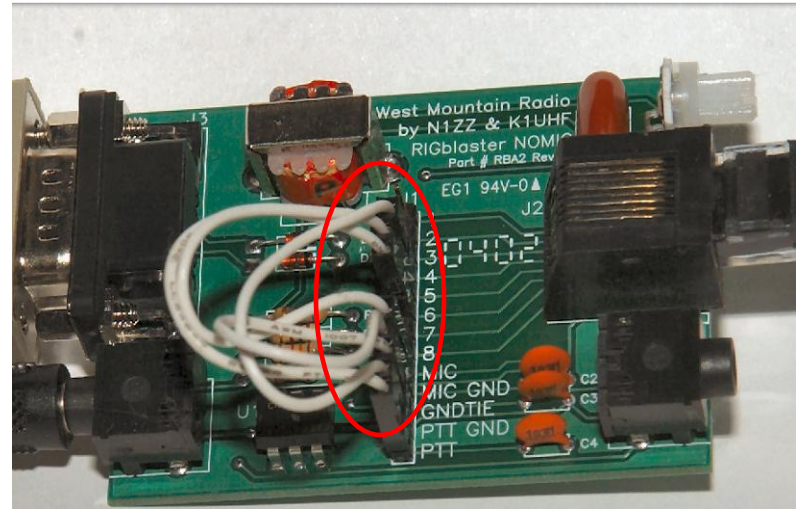
JP-1		Pin-out	Radio Models
G	8	Pin 1 – +8V**	IC-207H**/208H**
G	7	Pin 2 – N/C	IC-281A/281E/281H
G	6	Pin 3 – Speaker**	IC-703/706/706MKII
---	5	Pin 4 – PTT	IC-2000
PWR	4	Pin 5 – GND (mic)	IC-2100H**/2200H**
PTT	3	Pin 6 – Mic Input	IC-2700**/2720H**
MIC	2	Pin 7 – GND	IC-2800**/2820**
SPKR	1	Pin 8 – N/C	IC-7000**
			IC-V8000**
			ID-800H**



MFG. / INFO.	West Mountain Radio	West Mountain Radio	West Mountain Radio	West Mountain Radio	West Mountain Radio	Tigertronics	Tigertronics
MODEL	RIGblaster Duo	RIGblaster Pro	RIGblaster Plus	RIGblaster Data Jack	RIGblaster NOMIC	Signalink SL1	Signalink USB
PRICE	\$349.95	\$299.95	\$159.95	\$119.95	\$59.95	\$70	\$100
EASILY PLUG-IN SWITCHABLE BETWEEN DIFFERENT RADIOS	YES 8pin&RJ45 OVER 2000 USES any 8 pin round mic	YES 8pin&RJ45 OVER 2000 RADIOS AS SUPPLIED	YES 8pin&RJ45 OVER 2000 RADIOS AS SUPPLIED	10 RADIOS AS SUPPLIED, 20 OTHERS WITH ADAPTER	YES 8pin&RJ45 UNIVERSAL AS SUPPLIED	YES but only one cable type supplied	YES but only one cable type supplied
DETACHABLE QUICK CHANGE RADIO CABLE	YES, 2	YES	YES	NO	YES	YES	YES
USB Interface	YES Dual USB	YES ⁴	YES ⁴	YES	YES ⁴	NO	YES



TigerTronics Signalink USB



WMR RigBlaster Nomic

PSK31

2 Meter Band FM: 145.55

2 Meter Band SSB: 144.144

6 Meter Band: 50.125

10 Meter Band: 28.110 - 28.125 Mhz

12 Meter Band: 24.920 - 24.930 Mhz

15 Meter Band: 21.060 - 21.080 Mhz

17 Meter Band: 18.100 - 18.110 Mhz

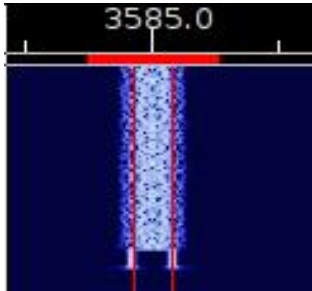
20 Meter Band: 14.060 - 14.080 Mhz

30 Meter Band: 10.130 - 10.145 Mhz

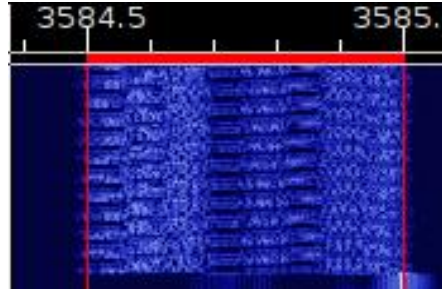
40 Meter Band: 7.060 - 7.080 Mhz

80 Meter Band: 3.620 - 3.640 Mhz

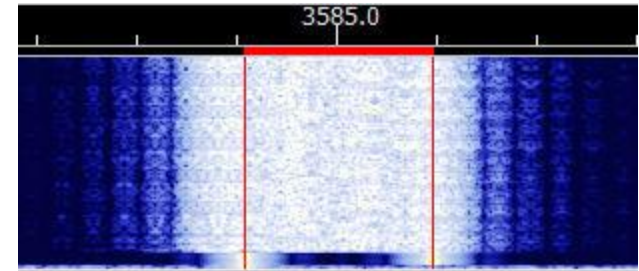
Digital Modes



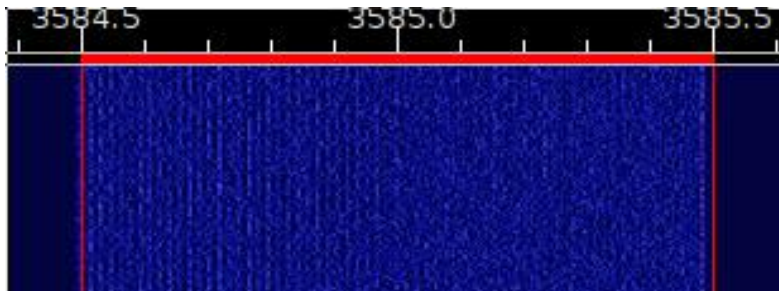
BPSK31



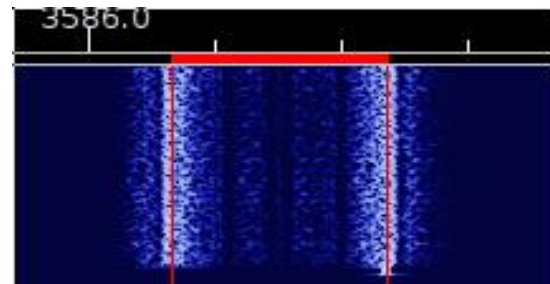
Olivia 8-500



Contesia 4-250



MT63-1000



RTTY

Digital Software

The screenshot displays the fldigi software interface for a QSO. The window title is "fldigi - KC8TVW". The menu bar includes File, Op Mode, Configure, View, Logbook, and Help. The status bar shows Spot, RxID, TxID, and TUNE. The main interface is divided into several sections:

- Frequency and Mode:** Enter Xcvr Freq is 147270.000. QSO Freq is 147271.007. Mode is FM.
- Call and Name:** Call is 0014. Name is blank.
- QTH:** QTH, St, Pr, Cnty, Loc, and Az are all blank.
- Text Area:** Contains the following text:

```
o U FT2000D running 40 watts  
ANT is a W5GI Mystery antenna at 30+ feet  
Antenna Tuner : Palstar AT1500CV  
Interface : RigExpert Plus USB  
Software : MixW 2.19 [Registered] + 4WINLog 8.05  
Operator: 1953 Vintage, Licensed 1999  
BTU John, KF5FEI DE VA3MJR KN
```
- Control Panel:** Includes buttons for C Ans, C rpt, C Rep, C Incr, C Decr, Log QSO, CQ, CQ +, CQ-ID, Macro txt, CQ X|R, ANS CQ X|R, QSO X|R, BTU |R, My Turn T, Me/Qth |, Brag |, Clear Rx, Hobbies, BPSK31, MT631K, SK |R.
- Frequency Scale:** A scale from 500 to 2500 kHz is shown with a red vertical line at 1000 kHz.
- Bottom Panel:** Includes buttons for WF, -19, 70, x1, NORM, 1007, QSY, Store, Lk, Rv, T/R, BPSK31, s/n 4 dB, imd -14 dB, AFC, and SQL.

Screen From Actual QSO - BPSK31