

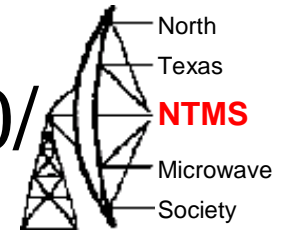
SoftRock RXTXv6.2 for 10 Meters

Al Ward

W5LUA

January 10, 2009

http://groups.yahoo.com/group/softrock40/



softrock40 : Softrock-40 Interest Group - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://groups.yahoo.com/group/softrock40/

at&t YAHOO! GROUPS Welcome, w5lua@sbcglobal.net... [Sign Out, Member Center]

University of Phoenix Thinking ahead.

w5lua2000 · w5lua@sbcglobal.net | Group Member · Edit Membership

Start a Group | My Groups

softrock40 · Softrock-40 Interest Group

Search for other groups... Search

Home Messages Post Files Photos

Info Settings

Group Information

Members: 4331
Category: Shortwave
Founded: Sep 11, 2005
Language: English

Yahoo! Groups Tips

Did you know...
Hear how Yahoo! Groups has changed the lives of others. Take me there.

Best of Y! Groups

Check them out and nominate your group.

Home

Activity within 7 days: 196 New Messages · 3 New Photos · 7 New Files

Description

The SoftRock-40 is a small, low-cost, good performing 40-meter "software defined radio" receiver that plugs into a computer USB port and delivers I-Q audio signals to the computer's sound card. It was designed by Tony Parks, KB9YIG and Bill Tracey, KD5TFD as an "SDR sampler project" for hams everywhere to easily try out software defined radio.

This is the place to express your enthusiasm, ideas, experiences, modifications, extensions and maybe more?

Announcements

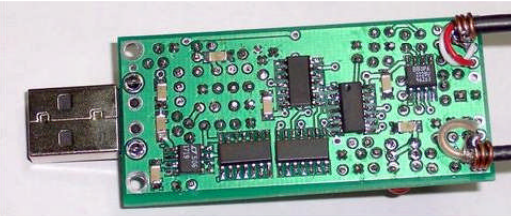
March 08, 2008 RXTXv6.2 kit
Dec 24, 2007 SoftRock Kits available into 2008
Oct 9, 2007 SoftRock RXTXv6.2 kit status [docs]
Jun 17, 2007 Rocky 3.3 released
Dec 19, 2006 v6.2 SoftRock Lite receiver [docs]

Most Recent Messages (View All)
(Group by Topic)

Re: need SI571 info
Tom, I'll take one. Will you get the COMOS or LVDS version? Mike N2MS ... From: "Tom Hoflich" <kmgh@...> To: <softrock40@yahooogroups.com> Sent: Thursday, Posted - Thu Mar 13, 2008 8:13 pm

Re: 20m RXTXv6.2 and upgraded 20m SoftRock Lite kits
Tony, If you will have a 20m kit available, please let me know and put me down for 1. I will submit money via Paypal when you say. Bill AB3DT ... From: Posted - Thu Mar 13, 2008 7:59 pm

20m RXTXv6.2 and upgraded 20m SoftRock Lite kits
Good Evening All, The 18.73 MHz crystal used in the 20m RXTXv6.2 kit and the upgraded 20m SoftRock Lite kit is again



Search: Search Advanced Start Topic

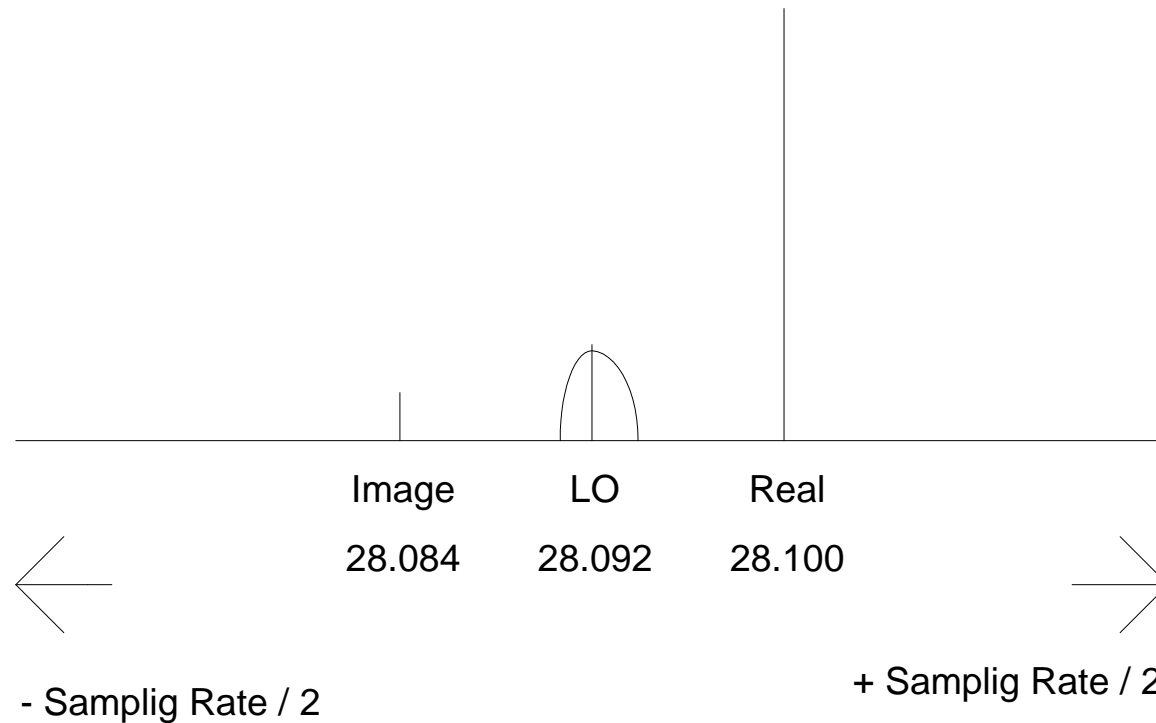
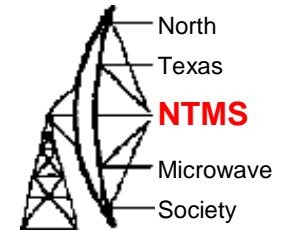
Michael St. Angelo
n2msgrp
Offline
Send Email

Bill Heverly
bill_hev
Offline
Send Email

kb9yig
Offline

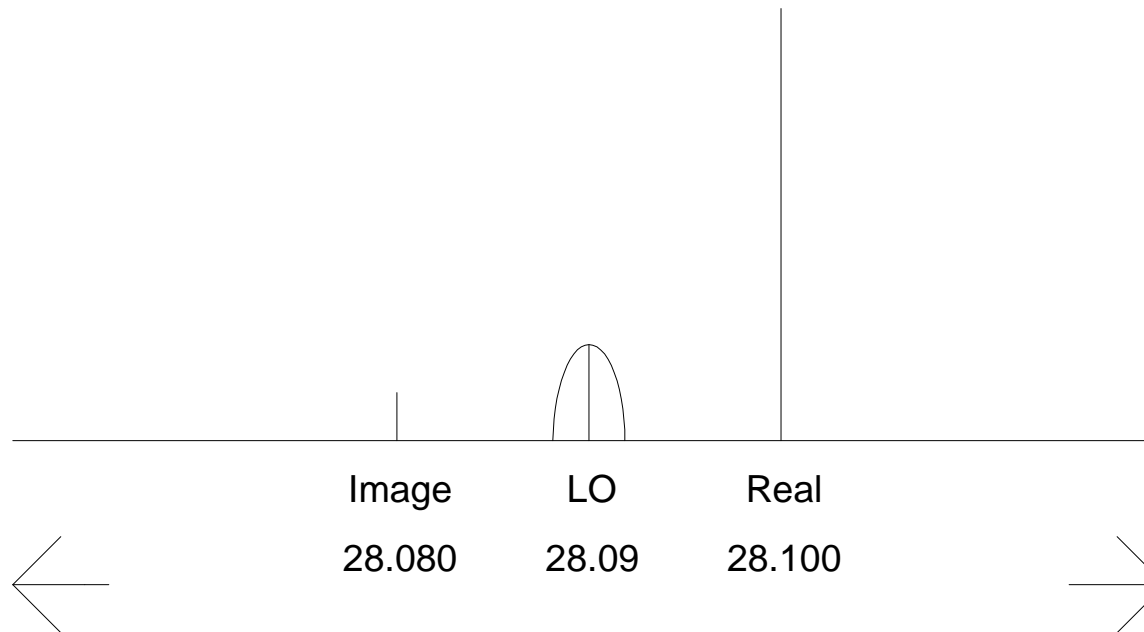
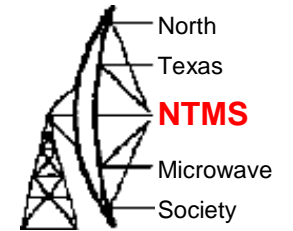
Internet

SDR-1000



IF = 8kHz for receive
only
LO is offset to receive
frequency for transmit

RXTXv6.2



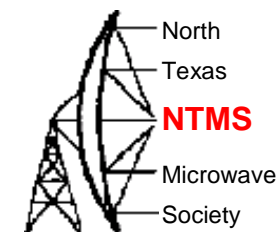
- Samplig Rate / 2

+ Samplig Rate / 2

For an LO of 28.090, to receive a signal at 28.100, requires an IF of 10kHz. IF same for transmit. IF can also be as high as samplig rate / 2

Note: Can NOT use standard Flex-Radio software

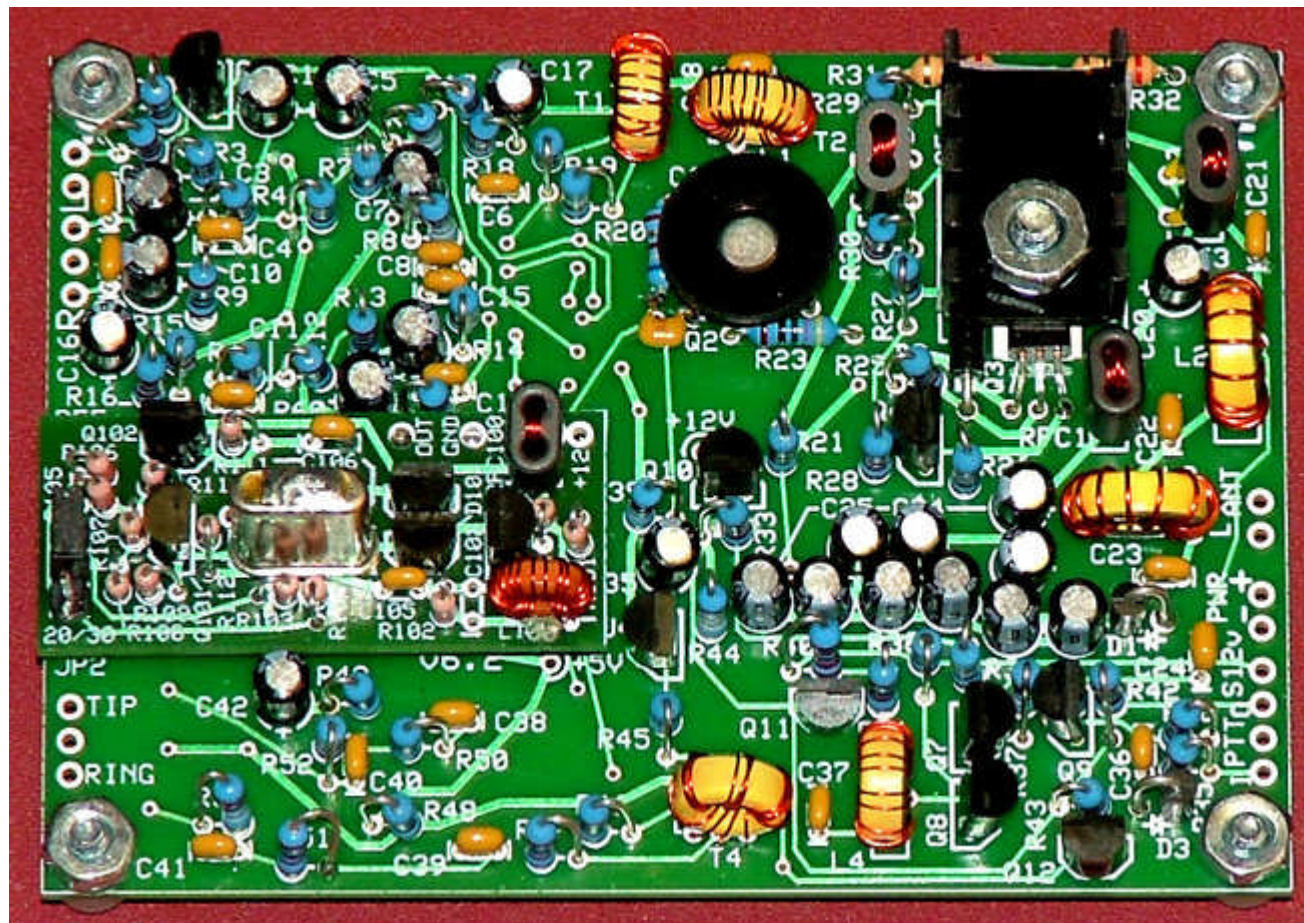
RXTXv6.2 for 10Meters



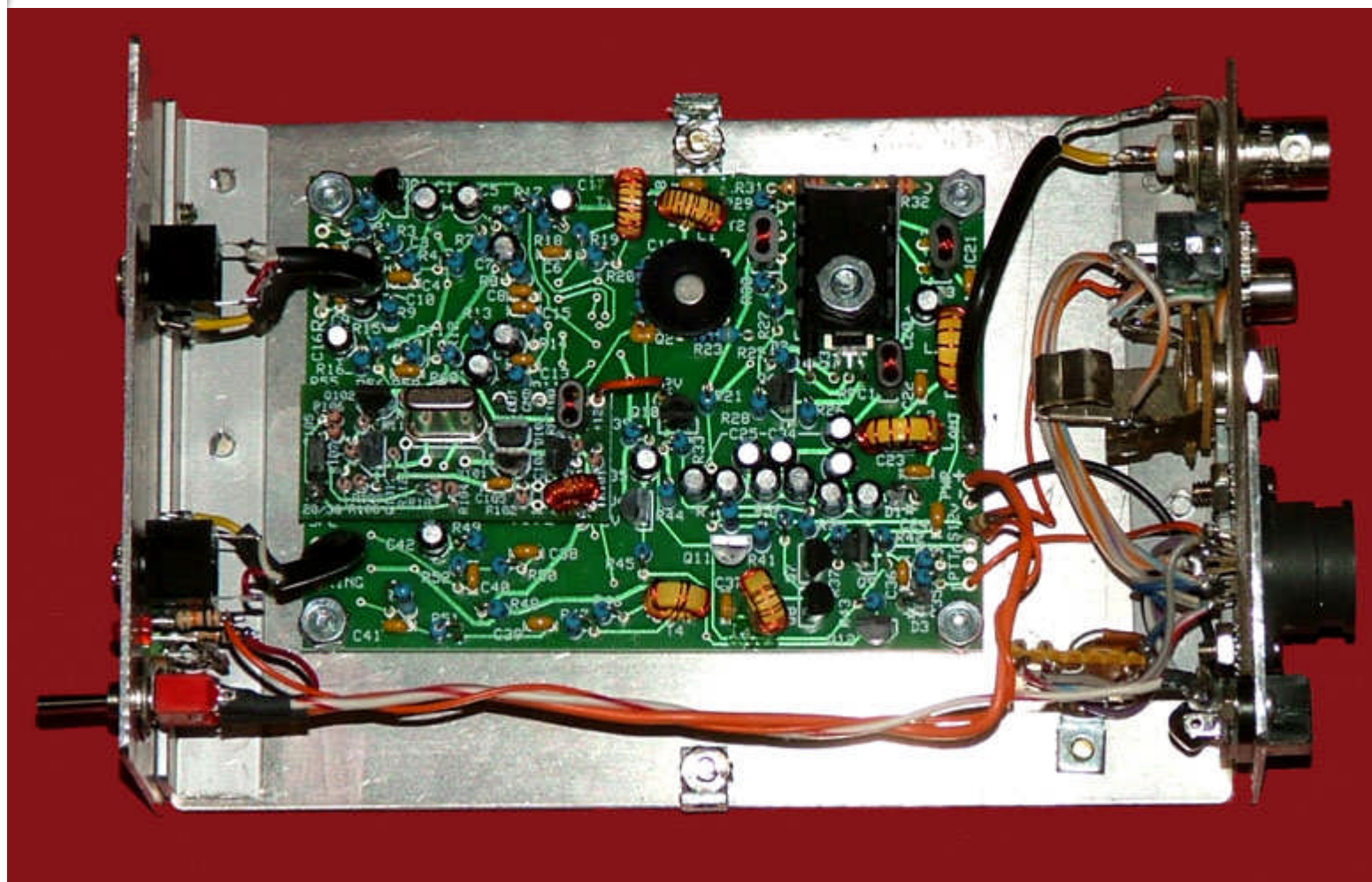
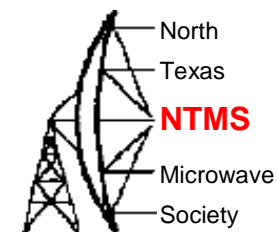
Produced by Tony
Parks – KB9YIG
Cost \$50

Just add
soundcard and
computer
Runs 1 watt @ 28
MHz, all modes
supported by
software

Builders notes by
WB5RVZ on
SoftRock web site
were invaluable
during assembly

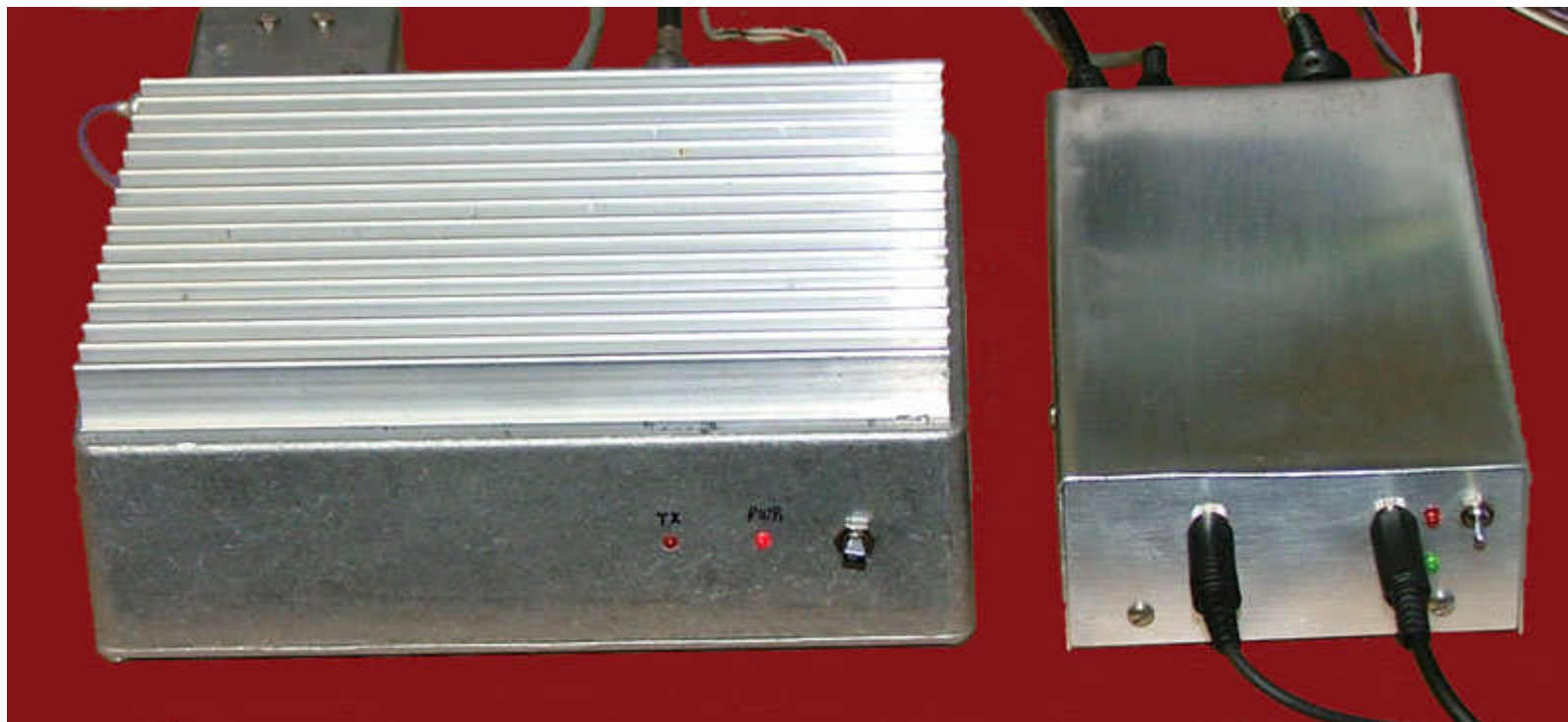
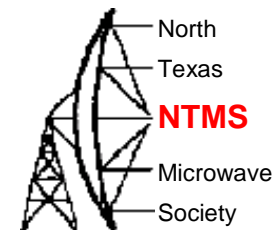


K0AWU's RXTXv6.2 Installation

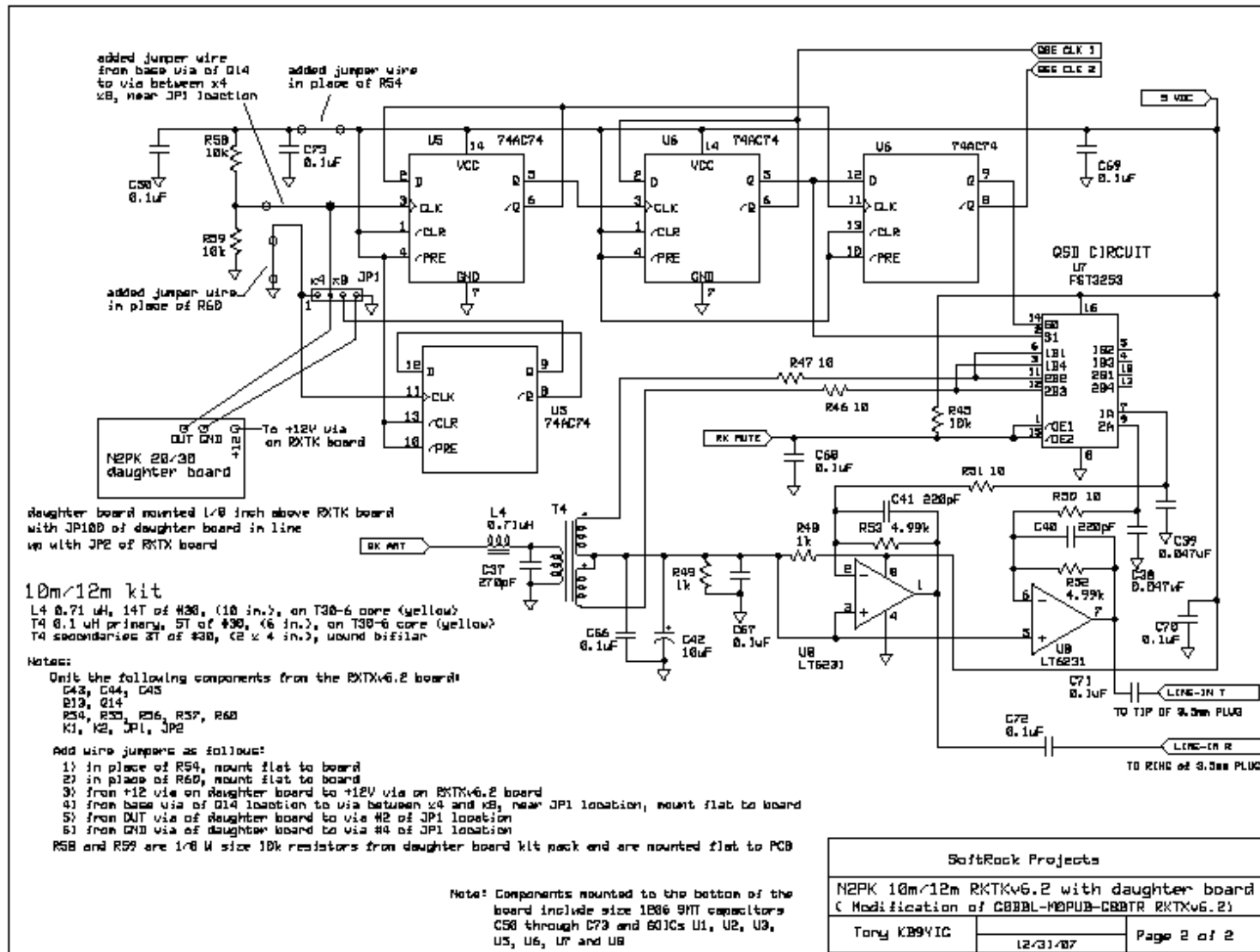
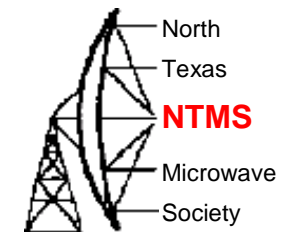


Bill's
assistance
was also
invaluable
during
assembly

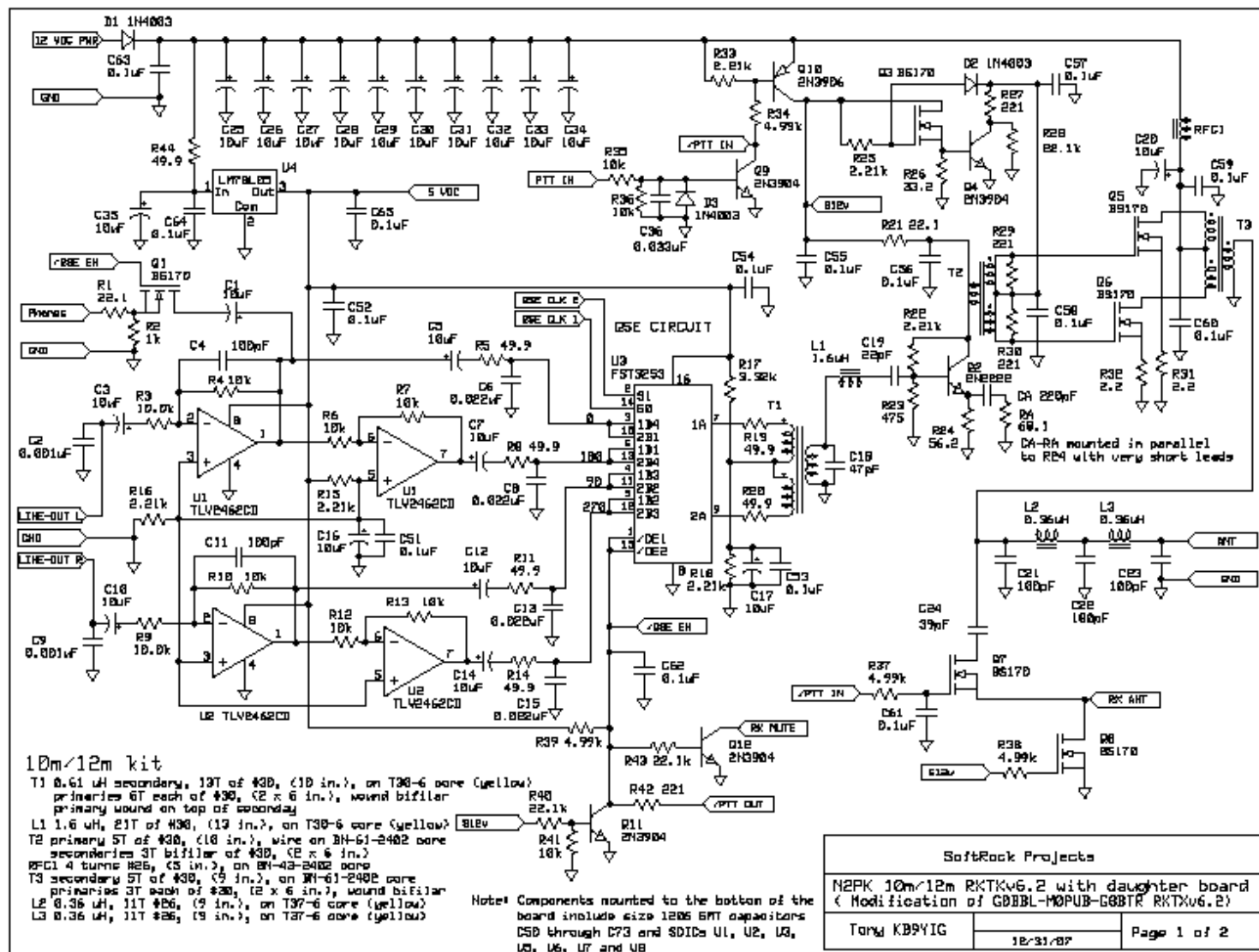
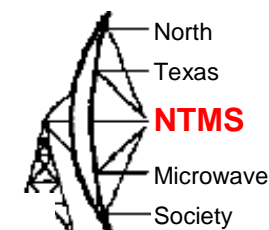
K0AWU's Setup for 2M/MW IF Using RXTXv6.2 from KB9YIG



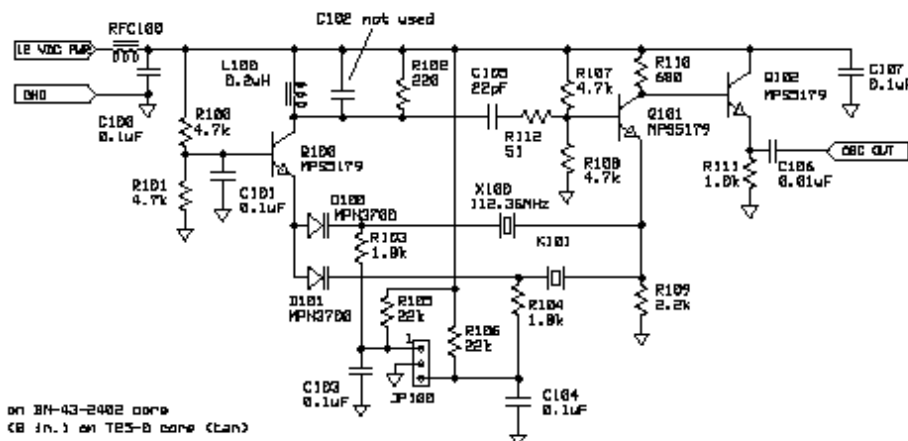
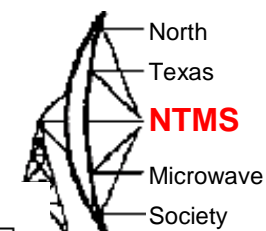
RXTXv6.2 Receiver Section



RXTXv6.2 Transmitter Section



RXTXv6.2 LO Daughter Board



RFC1 4T of #30 (3 in.) on BN-43-2402 core
L100 0.15uH, BGT of #30 (3 in.) on T25-B core (tan)

Bill of Materials for N2PK 10m-12m Daughter Board

Resistors	Used where	Quantity
4.7k 5%	R100, R101, R107, R108	4
220 5%	R102	1
1.0k 5%	R103, R104	2
22k 5%	R105, R106	2
2.2k 5%	R109	1
680 5%	R110	1
1.0k 5%	R111	1
51 5%	R112	1
10k 5%	R59, R59 (both on RXTX board)	2

Capacitors	Used where	Quantity
0.1 1206 SMT	C100, C101, C103, C104, C107	5
not used	C102	
22pF ceramic	C105	1
0.01 ceramic	C106	1

Coils and wire	Used where	Quantity
BN-43-2402	RFC100	1
T25-B	L100	1
#30 magnet wire for RFC100, L100		15 inches

Diodes	Used where	Quantity
MPN3700	D100, D101	2

Transistors	Used where	Quantity
MP55179	Q100, Q101, Q102	3

Crystals	Used where	Quantity
112.36 MHz	X100	1

Connectors	Used where	Quantity
Three-pin header		
0.1 inch centers	JP100	1
jumper plug	JP100	1

Circuit board		Quantity
N2PK 20-30 daughter board		1

SoftRock Projects

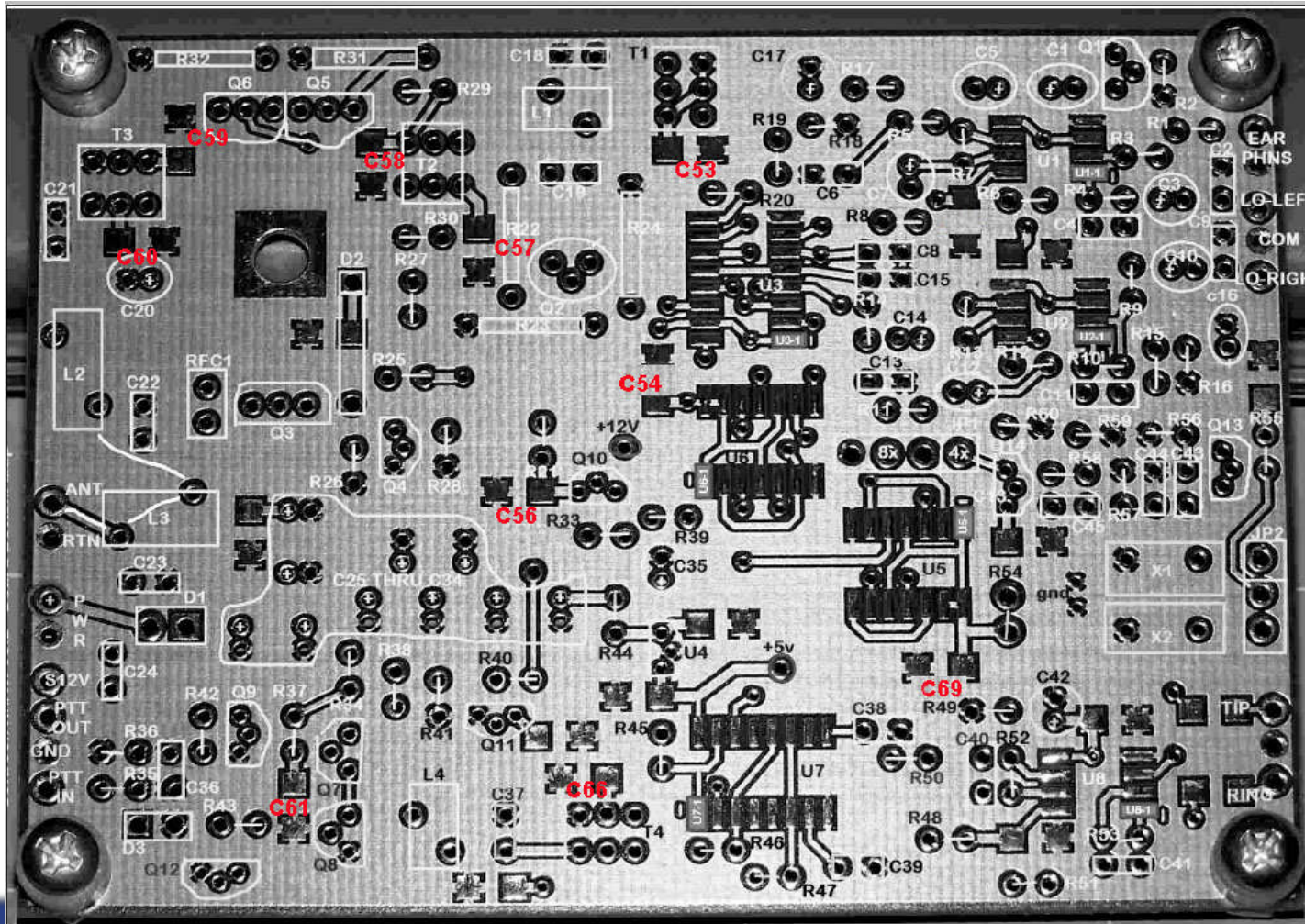
N2PK 10m-12m RXTXv6.2 Daughter Board

Tony KB9YIG

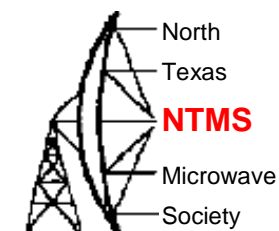
12/31/87

Page 1 of 1

Location of 10 .01uF chip capacitors on 10M version



K0AWU's Web Site



K0AWU 52 Years On The Air (April 8, 1955-2007) - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History RSS Feeds

Address <http://www.geocities.com/patbilldavis/Radio.html> Go Links McAfee SiteAdvisor

K0AWU's Amateur Radio Web Page



52 Years On The Air, VHF/UHF Weak Signal Operations From EN37ed

K0AWU Pages	K0AWU Activity	Weak Signal Links
Who Is K0AWU ?	Updated Recent K0AWU News 02/17/08	Ping Jockey WSJT Chat
K0AWU Past & Present	Updated 144 Meter Grid Map 01/04/07	50 Mhz Prog Logger
K0AWU's Station Equipment 01/23/07	Updated 222 Mhz Grid Map 10/15/06	2 Meter Prog Logger
K0AWU Tower & Antennas	Updated All Grid Maps 07/18/07	Tropo Map Live
K0AWU Family Page	Updated 2 Mtr & Above Activity 6/13/06	Tropo Forecast Map
K0AWU Amplifiers 4/17/03	WSJT EME	K-Index & AU Circle
K0AWU 10Ghz Stations 9/25/06	WSJT Meteor Scatter	Misc. Links
K0AWU SDR Pages	10Ghz Rainscatter/Tropo 06/26/07	The DXer

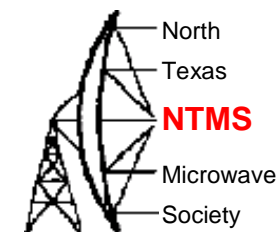
6 Meters VUCC 2 Meters VUCC
6 Meters WAS 432Mhz VUCC

CQbilld@msn.com

Mail K0AWU

K0AWU's Web Site



K0AWU's -- Software Defined Radio Pages -- - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print W Go Links McAfee SiteAdvisor

Address <http://www.geocities.com/en37ham/>

K0AWU's Software Defined Radio Pages

52 Years On The Air, VHF/UHF Weak Signal Operations From EN37ed

K0AWU Main Pages	K0AWU SDRs	SDR & Misc Links
Who Is K0AWU ?	Updated SoftRock 144Mhz IF 05/06	SoftRock Yahoo Group
K0AWU Past & Present	SoftRock 80/40m RxTx 02/07	SoftRock SDR Blog
--	SoftRock 40/30m RxTx 07/07	M0KKG SDR Software
--	SoftRock 10m RxTx 02/08	SoftRock RxTx PowerSDR
K0AWU Home Page	SoftRock 144Mhz Rx/Tx 03/08	Rocky SDR Software
---	SoftRock Interface 02/08	HighPeformanceSDR
---	SDR1000 - 2 Meters 02/08	FlexRadio SDR5000 etc
---	SDR1000 - VHF/UHF Future	Misc. Links

6 Meters VUCC 2 Meters VUCC
6 Meters WAS 432Mhz VUCC

CQbilld@msn.com

Mail K0AWU

YAHOO! GEOCITIES

SPONSORED LINKS

[We Sell Data Collectors](#)
Survey and Construction Collectors TDS, Carlson, Sokkia and more.
www.advpossys.com

[Software Defined Radio - JTRS, SCA](#)
Distributed and wireless software infrastructure for SCA/JTRS...
www.prismtechnologies.com

[ARIS Software](#)
Convergent GSM billing, CRM, POS, post pay, prepay, WNP, mediation,...
www.billwireless.com

[Top Music Downloads Sites](#)
Top 3 Music Download Sites Reviewed. Unlimited, Legal Music Downloads.
www.MusicDownloadSource.info

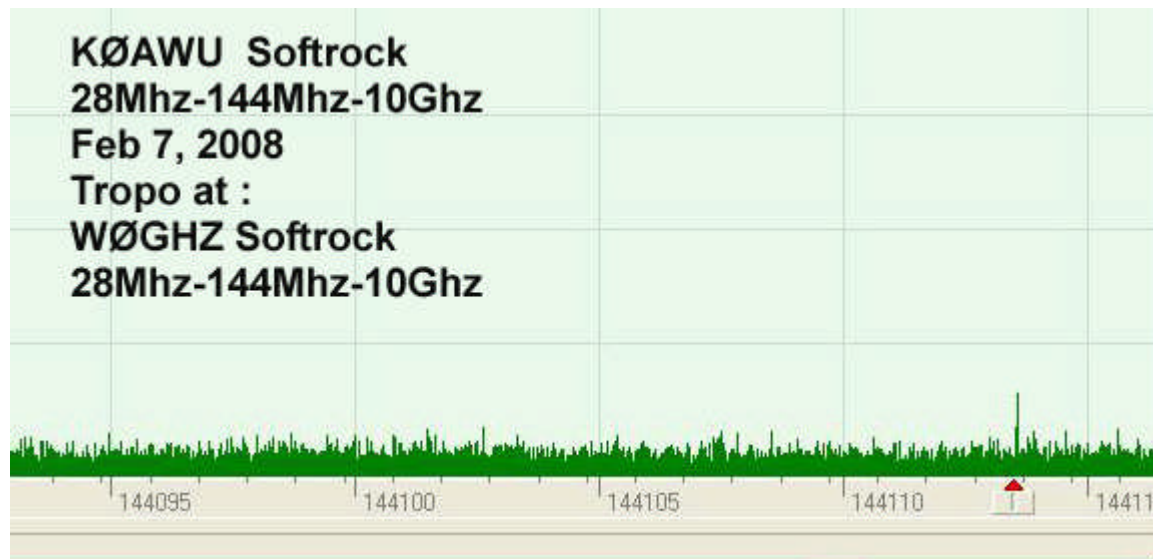
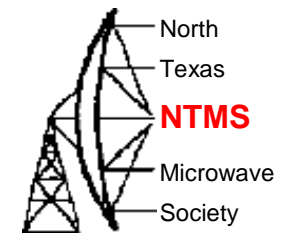
[See your message here...](#)

Search the Web:

HOSTED BY **YAHOO!**

Get a [free web site](#) or [business web hosting](#) with Yahoo!

Using Rocky to drive RXTXv6.2



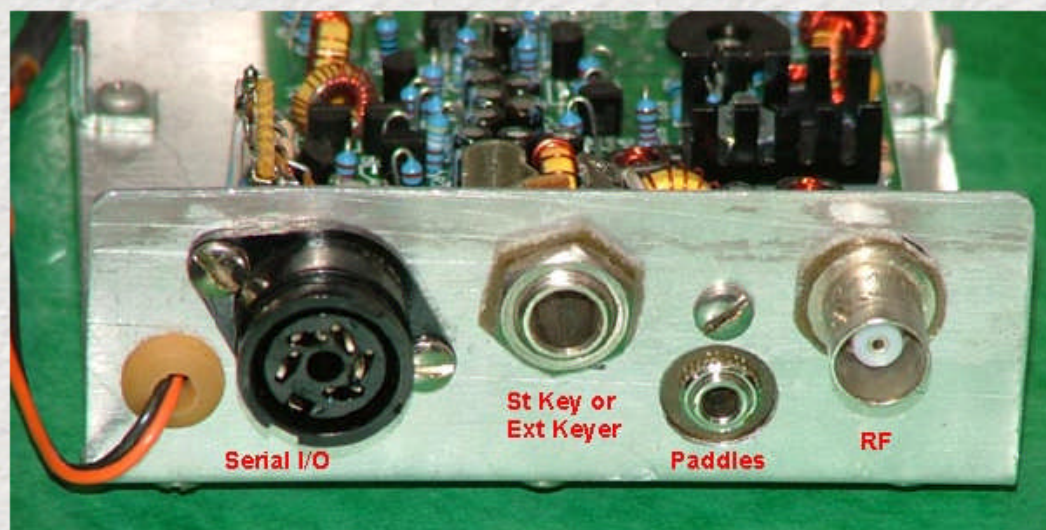
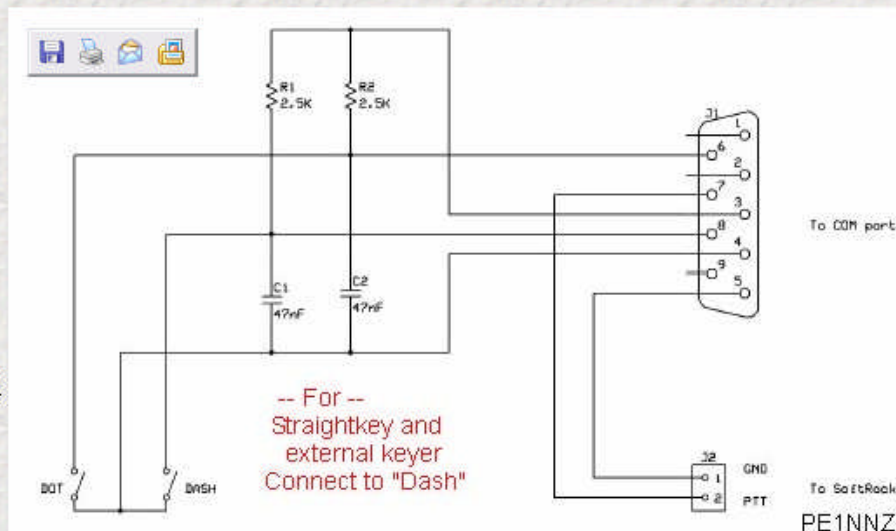
Rocky does not support SSB on transmit

KØAWU's SoftRock Interface

Feb 2007 - Softrock Universal Interface

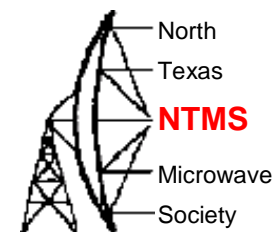
When I first started testing my 80/40m Ver6.1 RxTX I was using MØKGK's Transceiver 1.1 software. Once I had things running I wanted to try some of the other software. I liked Rocky for weak signal operations plus Rocky now has integrated PSK31 which would be fun. PowerSDR has just an outstanding sound to it, I wanted to be able to run it as well.

Some software had a integrated keyer and some require a separate keyer. I needed a universal Softrock-Computer interface. Fortunately that was not difficult and the MØKGK software could be configured to where all three programs would be compatible.



My rear panel contains a DIN connector that I use for my serial connections where I can change to various SoftRocks I use, without having to change cables on the back of the computer. The "key common" must be above ground, so both the paddle connector (1/8" stereo connector) and the straight key/keyer connectors are isolated from chassis ground. I did that with a piece of glass circuit board. As long as I was isolating things from ground, I

Special Flex Radio Software by PE1NNZ to run RXTX Boards



FlexRadio Systems PowerSDR v1.9.0 sr40 SVN: 981

Setup Memory Wave Equalizer XVTRs CWX Report Bug

Standby

MON TUN
MOX
MUT X2TR

AF: 28
RF: 90
Drive: 100
AGC Preamp
Fast Med
SQL 66

VFO A
28.110 200
10M RTTY
VFO Lock
Tune Step: - 100Hz +
7.000000 Save Restore

VFO B
10368.316 927
Out of Band

Display

	28.060	28.070	28.080	28.090	28.100	28.110	28.120	28.130	28.140
-20									
-30									
-40									
-50									
-60									
-70									
-80									
-90									
-100									
-110									
-120									
-130									
-140									

Pan: Center Zoom: 0.5x 1x 2x 4x

VFO
SPLIT A > B
0 Beat A < B
IF->V A < B

DSP
NR ANF
NB NB2
SR BIN

Display Mode
Panadapter
AVG Peak

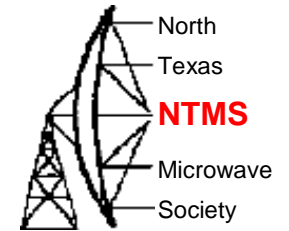
Mode Specific Controls - Phone
Mic Gain 10
COMP 3
CPDR 3
VOX 200
GATE 40
Transmit Profile: Conventional
Show TX Filter on Display
RX EQ TX EQ
VAC

Sub RX
Sub RX
Swap

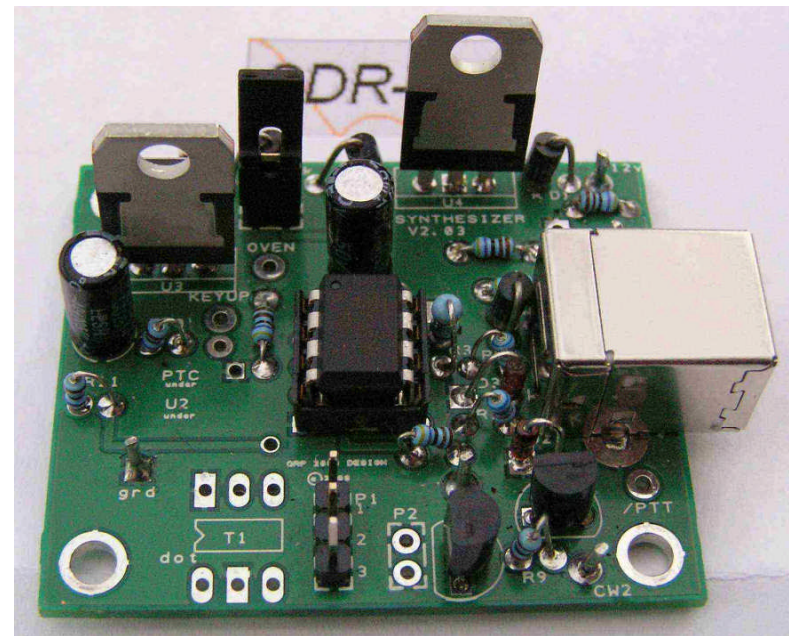
Date/Time
3/15/2008
UTC 04:21:30
CPU %: 4.7

RX Meter TX Meter
Signal Mic
1 3 5 7 9 +20 +40 +60
Band - HF
160 80 60
40 30 20
17 15 12
10 6 2
VHF+ WWV GEN
Mode - USB
LSB USB DSB
CwL CwU FMN
AM SAM SPEC
DIGL DIGU DRM
Filter - 2.9k
5.0k 4.4k 3.8k
3.3k 2.9k 2.7k
2.4k 2.1k 1.8k
1.0k Var 1 Var 2
Low 150 High 3050
Width: Shift: Res

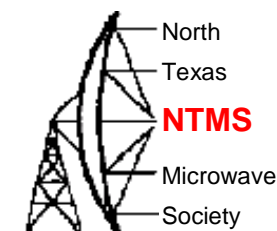
USB Synthesizer PCB



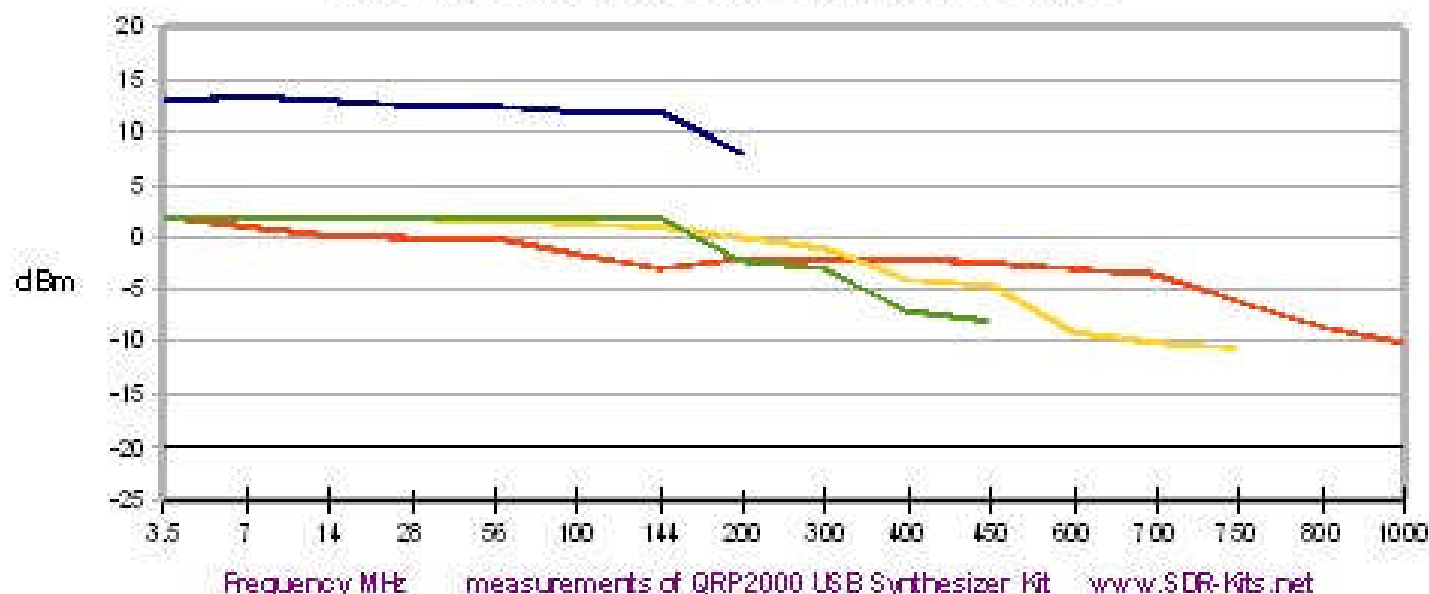
- www.sdr-kits.net
- Developed by the QRP2000; group DG8SAQ, G8BTR, M0PUB, PE1NNZ, G0XAR, G0BBL
- Uses Silicon Labs Si570 chip
- Internal ref osc
- CMOS chip provides >10dBm at over 100 MHz
- Great for 4X LO input for 10M soft-rock radios
- Link to KM5H for US orders
- CMOS version with Si570 \$37
- Software available for controlling frequency



Si570 Power output vs Frequency

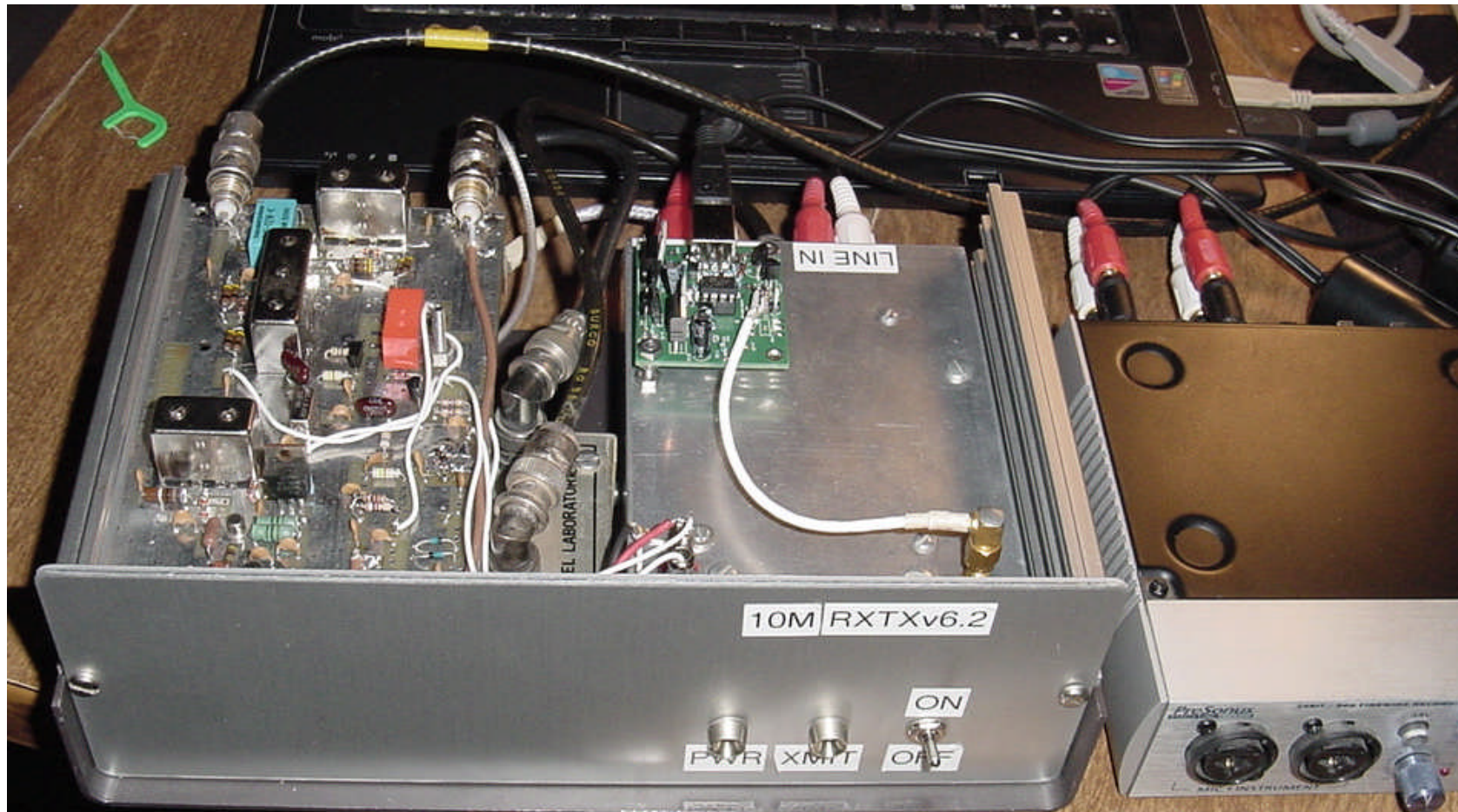
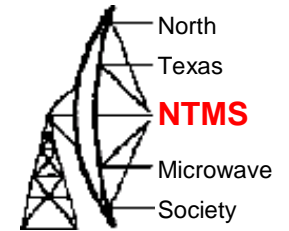


Si570 LVD S and CMOS RF Output into 50 Ohms -

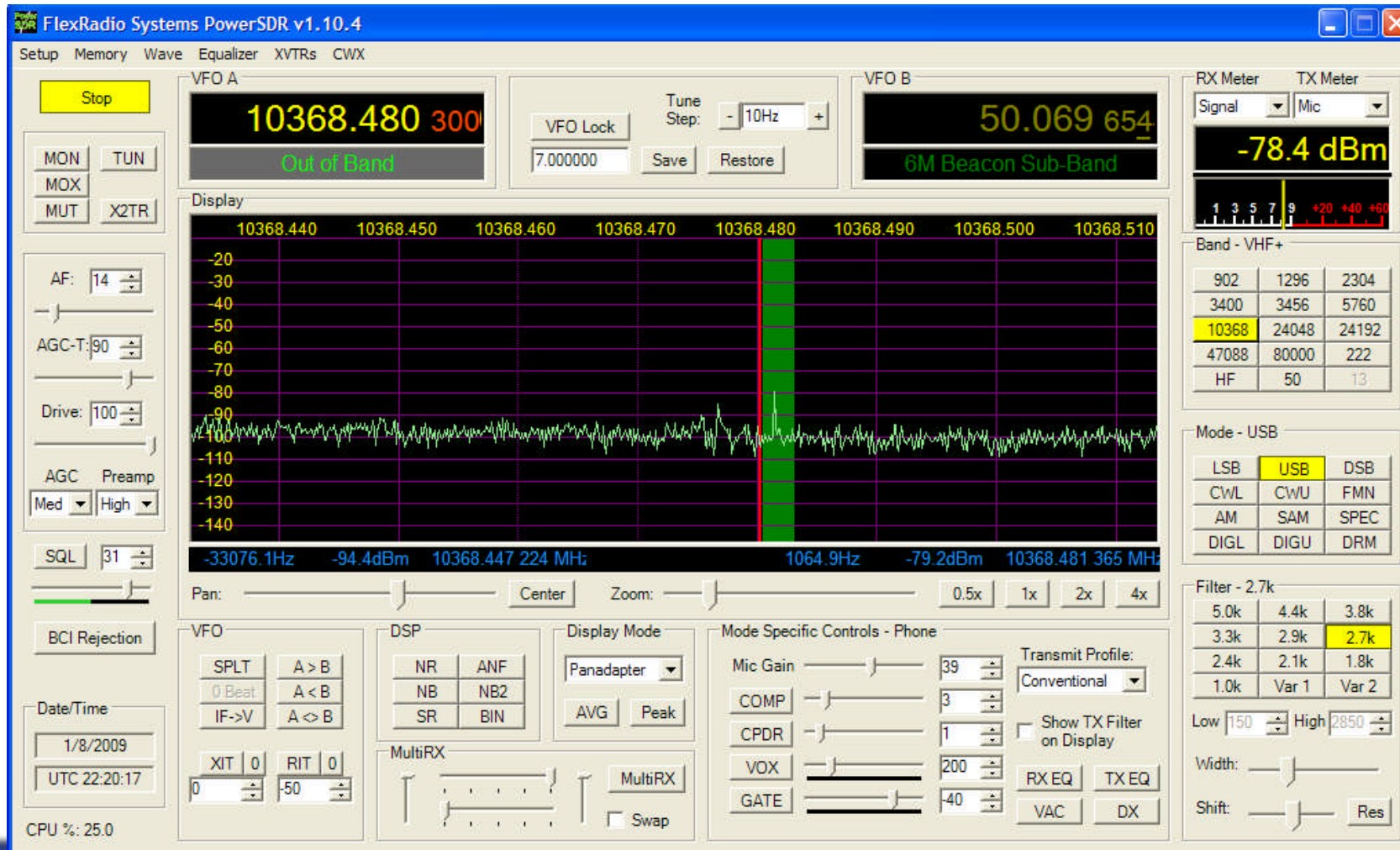
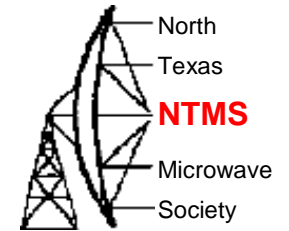


— Si570BB C000141 DG —	— Su570BB C000141 DG	— Si70B BC000141 DG	— Si570C AC000141 DG
Direct Single Ended	LVDS with Mini Circuits	LVDS home brew 5	CMOS with 4:1
LVDS output into 50	T822-Differential ->	turns trifilar on 43B -	homebrew transformer 5
Ohms	Single ended into 50	N2402 core Differential -	turns trifilar on 43B -
	Ohms	> Single ended into 50	N2402 core into 50
		Ohms	Ohms

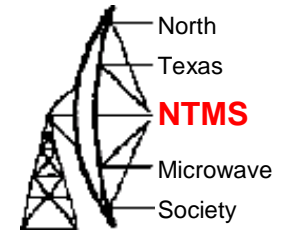
RxTx6.2 with Si570 Synthesizer run with Compaq nc8230 and PreSonus Firebox



10 GHz W5HN/B from TWU as received on Rover 10 GHz XVTR into RxTx6.2 with Si570 Synthesizer



SoftRock RXTXv6.2



- Thanks to K0AWU for his support during the assembly of my SoftRock!
- Now for a live Demo!
- 73 de W5LUA