

AmQRP.ORG HOMEBREWER

The Journal of the American QRP Club

... for builders, experimenters, ham radio operators and low power enthusiasts everywhere.

Welcome to issue #7!

Contributing authors from all over the world have once again provided us with great material and we are excited to present you with this next issue of Homebrewer Magazine. It is another exciting issue containing more than thirty unique homebrew construction projects and even more great material in the form of reviews, contesting results and contributions from our regular columnists. The issue contains almost 400 pages of full color, high resolution graphics, in a blend of easy and complex, quick and extended, antennas and radios, digital and analog ... something for everyone to build, and educational for everyone even if you don't construct a single project.

Issue #7 Spring 2006

AmQRP.ORG HOMEBREWER
JOURNAL OF THE AMERICAN QRP CLUB

OH2NLT
OH7SV

JUMA TX1 Transmitter

The "mate" to the JUMA RX1

Feature Projects:
JUMA Transmitter, PNW15 Transceiver, Using Power Supplies, GPS & Morse Code, PipeVert Antenna, The Best Antenna, Measuring Crystals, 80m SSB Rx, A Better Crystal Set, Transformer Checker, OctaRing Antenna, Gonilla Coil Design, MicroVert AntennaEL, HamCalc83, QuickieLab, Tilt-Over Antenna, Human Power, Squirt 80m Antenna, Warbler Deluxe

Also included:
QRP Operating, Tuning Up, QRP Contesting, Test Topics & More, Handyman Guide

and - **SOLDERSMOKE!**

For electronic builders, experimenters, radio operators,
and low power enthusiasts everywhere.
www.amqrp.org

SPECIAL FEATURE ... SOLDERSMOKE!

We again have a special bonus feature for readers, and in this issue we are pleased to present **SolderSmoke**, a large collection of audio MP3 files representing the recordings of Bill N2CQR and Bill K7LR as they discuss homebrewing topics in a podcast format. The topics range from Manhattan homebrewing, to component selection, to tool availability and usage, to QRP operating, and lots more. The listeners to this popular ongoing broadcast series say that they like to load up the files on their iPod and listen in the car during rides to work or as alternatives to late-night TV viewing. Anyway you listen to it, it is a resource we all are thankful to have ... and we're pleased to present this selection in the "pages" of Homebrewer Magazine.



SOFTWARE on CD

There is a ton of software programs, source code, and other files relating to the articles and projects presented collectively in the issues of Homebrewer. You can see the list of it all in the section called SOFTWARE further down on this page. The best way to see and use these files is to **use your file browser to navigate to the Software folder on the CD drive**. You will either see a folder with the name of the individual software program, or a zip file that contains a compressed file of all the related files for that named topic. These files will best operate when copied to your computer's hard drive. (Also, you should not attempt to run a program while it is still contained in the compressed zip file container – you will get unexpected results.)

Notable programs and files included in the Software folder this time include: HAMCALC 83, PIC-EL design and software files, GCGC (Great Circle), WA0SVL Conversion utilities, AA-908 Plot Gen, source code from all the PIC-WX articles, Serial DDS source code, Micro908 and Link908 source files, SoftRock-40 and PowerSDR source and installation files, software files for the JUMA-RX1 Receiver controller, TC908 Temperature Controller software, ... and more. This folder is a software homebrewer's treasure trove.

Lastly, the **Why QRP?** presentation is included for your use at local club meetings, and as before we have included the detailed Kits folders including all manuals, schematics, software, pcb layouts, etc., for current and popular QRP kits that have been produced over the years. This is a great reference bank of technical homebrewing information!

THE FINAL WORDS ... *This is our Farewell Issue*

If you are a subscriber, you might have noticed in the previous issue that I needed to step down from editing Homebrewer Magazine because of new job and education commitments, and as a result the future of the publication was in jeopardy. Since then, several volunteers stepped forward to edit and publish this current issue (#7) and indeed have done a magnificent job doing it. However even with this help, we are still unable to collectively devote the time required to reliably produce a good quality publication on a regular schedule. Therefore it is with a heavy heart that **we must close the doors on Homebrewer Magazine**.

All subscribers with issues remaining in their paid subscriptions will receive a pro-rated refund corresponding to the number of issues noted in the [Subscription Refund Status](#) web page. US-based subscribers will receive a check for this amount. We are still trying to determine an effective refunding method for foreign-based subscribers.

I would like to sincerely thank the editing staff of Homebrewer magazine for great and valiant effort in trying to keep us going beyond issue #7. That team was Alan Minor WA1CZG, Nancy Feeny NJ8B, Carl Hyde W2CSH, and Jim Miller AB3CV. I think readers will agree that this last issue is yet another super collection of homebrew projects and we are all proud to present it as our farewell publication.

And I thank from the bottom of my heart the authors and regular columnists who have contributed freely of their "intellectual property" over the years and shared with over 2,000

subscribers in each issue the fruits of their labors - the personal projects, techniques, tricks, software, tools and collective wisdom of their QRP and homebrewing experiences. Without this altruistic contribution, there would be no magazine and the homebrewing community would be the poorer for it.

So please sit back in your computer chair and enjoy digging through this final issue of Homebrewer Magazine. Print out selected articles for use in the "reading room" or put the files on your PDA for remote study. We believe Homebrewer CD Magazine is a unique and valuable contribution to our hobby and all of us writers and editors are very proud to produce it for you. We hope you enjoy it.

**72, George N2APB n2apb@amqrp.org
Managing Editor, AmQRP HOME BREWER Magazine
www.amqrp.org/homebrewer**

Homebrewer #7 Articles

Click the cover image below to enter the magazine.



[Homebrewer #7](#)

SolderSmoke Audio Files

Just click on these titles to listen to each hour-long MP3 audio file using your Windows Media Player application. Or, how about loading the files onto your iPod to listen while on the road!

SolderSmoke 1

Tech talk of two radio amateurs. Bill in London and Mike in Juneau meet on the ECHOLINK VoIP system and discuss their homebrew radio projects.

SolderSmoke 2

Discussions between two amateur radio experimenters about what is currently on our benches.

SolderSmoke 3

This issue: "rubbering" ceramic resonators and the "DC to Daylight binaural receiver"

SolderSmoke 4

This issue : ladder filters, binaural receiver, test equipment

SolderSmoke 5

Binaural Receiver Crystal ladder filters. 17m DSB xcvr

SolderSmoke 6

Ham radio discussions of RF projects that are on our benches.

SolderSmoke 7

Discussions between two ham radio operators/experimenters about projects we have currently on our benches.

SolderSmoke 8

Discussions between two ham radio operators/experimenters about projects we have currently on our benches.

SolderSmoke 9

This week - Mars Rovers - nano wattmeter - xtal radios - QRP news

SolderSmoke 10

This week "Einstein's Heroes" - PCB prototyping - Atmel butterfly - respect for those who do with less.

SolderSmoke 11

Two amateur radio experimenters discussing workbench radio projects.

SolderSmoke 12

This week Dobsonian reflector telescopes. Class A amplifier design spice vs spreadsheet. Christmas.

SolderSmoke 13

This issue: Happy New Year 2006, Transistor RF amp design using Spice and spreadsheets. Multistage amplifier feedback mechanisms. PopCorn QRP. Burning DVDs. MP3 Players. Online and published technical magazines. The value vs price of technical publications. Experimental Methods. The 2006 Handbook. Solid State Design.

SolderSmoke 14

This week: curry toast and tea satellite tracking and worried neighbors. Stardust probe. Whale on the Thames river. HCJB Soundcard Modes

SolderSmoke 15

This Week: SuitSat. Jupiter's moons. Back yard telescopes. Trip to Pluto. TimeDomain Reflectometer. KX1 high power mod. DC-DC converters. Good Jobs. Movie Review: "The Dish". Book Review: "First Light".

SolderSmoke 16

Two ham radio operators discuss workbench radio projects. This week: Desitin as heatsink compound and bottom paint. Supermodulation. Mixers / ne602 spice models. Soldersmoke in space. Website review: revver.

SolderSmoke 17

Two amateur radio experimenters discussing workbench radio projects. This week K1 receiver/receivers in general. The "feel" of programming languages/rigs. NE602 Spice model. Blue sun. Green flash. Receivers made from tooth filling detectors. Ejection seat HF radios. Saturn. Book review: "Technical Topics". Websites of the week: www.theregister.co.uk, www.spaceweather.com. Cracking Enigma. SETI at home.

SolderSmoke 18

Two amateur radio experimenters discuss workbench radio projects. This week: New Bench and Shack wiring. Using a hot screwdriver as a soldering iron. VW solar panels. Class AB Amps. Saturn's watery moon. Mars Recon Rover. The next SolarMax. Heliosismology. Aurora in NY. DX during a solarmax on the Azores.

SolderSmoke 19

Two amateur radio experimenters discuss workbench radio projects. This week: Easter edition. Experimenter vs Tinkerer. NTP3055v FET amp. Apr 2006 Bacon Bits. Ham radio software. Soundcard software. IQ receivers with soundcard software. MMANA 4nec2. Michigan Mitey Mite Transmitter.

SolderSmoke 20

Two amateur radio experimenters discuss workbench radio projects. This week: 80 meter qrp ssb and dsb transceiver circuits.

SolderSmoke 21

This week: First Light for QRP rigs, Final amplifier voodoo/ quantum mechanical necromancy, ne612 carrier balance, Transmitter lowpass filters, The sweet sound of DC receivers, Slinky verticals, LC tuners, TiddlyWiki, VMWare and AFUKnopix.

SolderSmoke 22

Two amateur radio experimenters discuss workbench radio projects. This week: How to get more than a watt out of a 12volt/50ohm amplifier. Wb7aei lowpass filters. Passive and active mixers. The binaural receiver. UK vs US hamfests.

SolderSmoke 23

Two amateur radio experimenters discuss workbench radio projects. This week: Taming HF amp self-oscillation. Output broadband transformers. DSB transmit on both usb and lsb at the same time. Adjusting LSB ladder filters. The "SSB advantage" vs the "CW advantage". Satellite Oscar 52. Using jet wings as topband and magic band passive reflectors.

SolderSmoke 24

This week: Two-Tone Test mp3 file. Review online book "crystal sets to sideband". Doubly rockbound SSB TX. HF Packer SlimGem amps. Push Pull IRF510 Mosfet amps. W1FB 40 db wide band general purpose amp. HF amplifier degeneration. Hf+6 diplexer.

Why QRP?

A [presentation](#) on the joys of low power amateur radio. This is a series of about 50 slides in PDF format that may be used as the basis for a presentation at one's local ham club or hamfest describing what QRP is and the fun that can be had by all.

K7QO Code Course

We are very grateful to Chuck Adams, **K7QO** for once again allowing us to include his comprehensive **Morse Code Training Course** files in this issue of Homebrewer Magazine. Chuck is actively involved in training ham clubs in the proper learning and use of Morse code, and he is quite an accomplished in this communications mode.

Click [here](#) to read the manual for the K7QO Code Course. There are 149 MP3 sound files referenced in the manual, and these files are located in the MorseCourse folder on the CD. Use your File Explorer program (or equiv) to navigate to that folder and double-click on the MP3 file to begin playing that code segment.

(If your audio player does not automatically launch when clicking on an MP3 file, manually start the audio player and point it to the MorseCourse folder on the CD. If you do not have an MP3 player on your PC, you may use Windows Media Player (or equiv) to play the audio file.)

Software

The software presented in this section will best operate when copied to your computer's hard drive. To do this, you could right-click on the link and "Save as ..." a file on your computer. Otherwise, for software programs with many associated files (like HamCalc), you could use your file browser (like Windows Explorer, etc.) to navigate to the Software folder on the CD-ROM and copy the whole folder containing the software you want to use and place it onto your computer's hard drive.

HamCalc 83... software utilities for Ham Radio, by George Murphy VE3ERP

GCGC "Great Circle" ... software utilities for computing great circle directions & distances (and more!), by Ron McConnell W2IOL

Conversion Utilities ... Visual BASIC programs by Doug Wilson WA0SVL: P-PVolts-Watts, SWRbyPWR2 and Xc_XI_Reso.

PC Signal Generator ... PC software application called "DDS Freq" controls the DDS Daughtercard over the parallel port, by Mike Hasenfratz, WA6FXT

PC DDS VFO ... PC software application to control the DDS Daughtercard over the parallel port, by Bob Hillard, WA6UFQ

CAPL ... software for the PIC-EL to measure capacitor values, by Ron Carr WA1VGB

Link908 ... software program for PC that collects Micro908 Antenna Analyst data files and plots the curves for SWR, R and X ... by Mike Hasenfratz, WA6FXT. **Source code** also provided.

AA908 Plotter ... Excel macro (and example data files) for taking Micro908 Antenna Analyst data files and plotting them in a colorfile chart format. (Result shown on cover of this issue.) ... by Al Gerbens, K7SBK

Palm-Link908 ... plink.prc is a program for the Palm PDA that collects Micro908 Antenna Analyst data files and plots the curves for SWR, R and X ... by Ron Pfeiffer, N1ZSW

PIC-WX... PIC software and source for all existing parts of the PIC-based APRS Weather Station article series ... by David Ek, NK0E.

Serial DDS ... PIC software and source to allow the PC to control a DDS Daughtercard, by N2APB, NK0E and AA0ZZ.

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