The Publication of the North East Weak Signal Group

CURRENT OFFICERS

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Treasurer: K5GMX Bill Conner

NEXT MEETING
SATURDAY NOV 4TH AT THE NEW MEETING PLACE
THE LIBRARY IN LONGMEADOW, MA
VARIOUS TOPICS INCLUDING THE EME CONFERENCE IN GERMANY

IN THIS ISSUE

PREZ SEZ DE KA1OJ
SECRETARY'S REPORT NEWS MEETING MAR 2006 DE W1GHZ
NEWS GROUP MEETING SITE CHANGE DE K1MAP
K3MQH SILENT KEY DE WA1HHN
DASH SENDER DE W1AUV
MOSFET POWER AMPLIFIER MODULES DE W1GHZ
CONFERENCE PHOTOS DE WZ1V
SPONSORED ADS

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PAGE 1
Our next meeting is on November 4th from 1-4pm. We have a new meeting place, the library in Longmeadow, Ma. Looking at Google Maps I see that the library can be reached two ways -

From the south: Take the Enfield exit off I91, drive about 2 miles North on Rt 5 and the library is on the left.

From the North: Take the Springfield Rt 5 exit off I91, drive about 1 mile south on Rt 5 and the library is on the right.

The tentative meeting agenda has three main items
1) Stan, W1LE, wishes to amend the constitution to include weak signal experimenters below 50 MHz.
2) Henry, KT1J, has produced draft changes to the rules for the Worked All Bands award.
3) Trip report from several of our members that attended the EME conference in Germany

I see a report on the reflector that K1NCO is a SK. Joe was a long-time NEWS Group member.

With Xmas only about 9 weeks away it is time to start dropping hints for those gifts that need to be shipped from Germany.

Who needs another sweater when you could have a shiny DB6NT gadget under the tree.

73
KA1OJ

SECRETARY'S REPORT OF THE NEWS
MAR 18TH 2006 MEETING
DE W1GHZ

Re: NEWS Group meeting minutes from Aug 26

The meeting was held at the 2006 ARRL NE Division convention in Boxboro, Mass.

The meeting began at 9:15 AM
- K1MAP presented the results of his investigation into alternate meeting places.
He recommended that the next meeting (Nov 4th) be held at a library meeting room at a site near Enfield, Ct. The library is located several miles from the Crowne Plaza Hotel in Longmeadow, Ma the name of the library is the Storrs library. (note: the library is NOT in Storrs Ct.). Mark listed the following:

fee is $40, insurance is not required, the meeting room is large, access is good, located on Rt 5 easy to find, and ample parking. The motion was approved unanimously. Maps to the meeting site will be posted on-line and inserted into the next newsletter.

Meeting will be 1:00 - 4:00 at the library. The Directors meeting will be at the Friendly's restaurant in Enfield, Ct at 11:30 am, in booth 5.

- WAB: Henry, KT1J has produced a draft of changes to the rules for the Worked All Bands award. There was a discussion with several changes suggested. Tabled until the Nov 4th meeting.

- Stan, W1LE wishes to present a change to the Constitution to lower our frequency range to cover weak signal experimenters in lower bands (eg, LF). It will be placed on the agenda for the Nov 4th meeting.

- Treasurers report: Tom, WA1MBA is the new treasurer. The signature authority for the checking account will be transferred soon. Enough funds to cover expenses though not enough to run off with.

- VP report: Mike, N1JEZ, I got up at 3:00 am to get to the meeting. Need caffeine.

Business meeting ended at 9:45am.

Presentation by Tom, WA1MBA. Tom showed his operations during the first half of the 10GHz contest. He used Google Earth to show 3d paths of his various contacts together with a audio/visual extravaganza of light and sound.

Three new NEWS Group members were signed up.
Meeting ended at 10:30 am.

73
-Mark KA1OJ

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NEWS GROUP MEETING SITE
CHANGE:

The NEWS Group is changing its meeting site. We had been meeting at the (Harley-Radisson-Crown Plaza) Hotel in Enfield, CT., but the room price has skyrocketed. At the last meeting, the members voted to move the meeting to the Betty Anne Low Meeting Room at the Richard Salter STORRS LIBRARY in LONGMEADOW, MASS.

NEXT MEETING: Saturday, Nov. 4, 2006
General Meeting: 1pm at the Richard Salter STORRS LIBRARY, 693 Longmeadow St. (Rt.5) in Longmeadow, Massachusetts. (This location is only 2 miles North of our old meeting site at the Radisson-Crown Plaza, and it's on the same road!-Route 5)
Board of Directors Meeting: 11:30am, over lunch at the Friendly's Restaurant that is next to our old meeting site near the Radisson-Crown Plaza Hotel. Address: 89 Enfield St., ROUTE 5, Enfield, CT.

LOCATION: 2 miles north of the Radisson on the same road (Route 5), or 1.5 miles south of exit 1, I91 in Springfield/Longmeadow. Just north of the intersection of Route 5 and Rt 192.

DIRECTIONS: (basically the same from the South, except 2 miles north on Rt 5 instead of 1 block north)

From the South (or North if you miss Exit 1 or You are going to the BOD Meeting):

I-91 EXIT 49, Longmeadow/Enfield. Take a RIGHT at the end of the ramp, (If you are coming from the north take a left at the end of the ramp) then NORTH on ROUTE 5, approx 2.1 miles. The Library has a very small sign and is the second driveway past the intersection of Rt 192.

From the North:

I-91 EXIT 1, Longmeadow puts you right on ROUTE 5, SOUTH, then about 1.5 miles south past a CVS on RIGHT. Watch for library on your LEFT just before Rt 192 intersection.

From East or West:

Take the Mass. Turnpike, or I-84 to get to I-91. This location is between Hartford, CT and Springfield, Mass

Details: The STORRS LIBRARY is a white building set back from the road. The Library has a very small sign on ROUTE 5. Parking on the side and rear of the building. Walk-in Entrance on the side you pass driving in. When inside the building take a right into Children's Library/Discovery Room, then a left just before the Children's info desk to the room.

This is a very nice facility. The Betty Anne Low Meeting Room is large, very clean, and will hold 70+ persons, about 6+ tables. There is a built-in pulldown screen, so if you are making a presentation, you only need to bring some type of projector. We are responsible for keeping the room clean, and keeping the noise at a reasonable level, and no materials or signs may be affixed to walls, or doors. There is no smoking inside the building, and no alcoholic beverages are allowed on the property.

73
Mark Casey,
K1MAP

K3MQH SILENT KEY

From an email dated: 8/12/2006

Early this past week Dick Balou, K3MQH now of Sarasota, Florida passed away. I will be getting more information on the circumstances from my relatives that live in the Sarasota area.

For now, let us pay our respects to Dick and hope he has found peace after all.

Best 73's to K3MQH. The Legend will live on.

Walt Nero
WA1HHN

UPDATED WEB PAGES

http://www.newsvhf.com/
http://www.newsvhf.com/events.html
http://www.newsvhf.com/meet1106.html
http://www.newsvhf.com/newsapp.html
http://www.newsvhf.com/newsbod.html
http://www.newsvhf.com/ngsr.html

Hopefully I got most of it right, let me know otherwise. Looking forward to checking out our new meeting place!

73
Ron WZ1V

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I wanted to solve a problem that I have for contests. I frequently have to send dashes on my 10 GHz rig to allow another station to find me and peak my signal. For the last few years I have done this by hand with a straight key. Often, I have to communicate on the liaison radio while still sending dashes. This is difficult because the microphone for the liaison radio is usually too far from the key to do both. I needed a way to send dashes automatically.

In my career as an engineer or with my hobbies, I have never turned away from a chance to apply a microcontroller to solving a problem. I thought about using a 555 timer for this project but during contests many other hams have asked me to send a letter instead of a dash: a 'V' for example. This would be hard(er) for a 555 timer to do. Besides, I could use an 8 pin microcontroller which is the same size as a 555 timer and far more flexible.

I threw together a circuit and had a PCB made in time to be ready for the second weekend of the 2006 10 GHz and up contest (see Figure 3). The design is simple: I allow the straight key to drive my FT-817 or the output of a NPN transistor of the keyer. The microcontroller has a two position switch: one position sends dashes and the other position sends faster dashes. Alternatively, one position can send a single letter. I have added two dip jumpers which are optional but will provide a way to select up to four different transmit sets. This will allow different transmit options for symbols and speed.

The schematic can be seen in Figure 1. When the keyer is powered off, the straight key will key the rig. If the Dash-Sender is transmitting, the NPN output transistor keys the rig. This is like the open-collector approach of ORing multiple outputs.

While I was at the New England Convention in Boxboro this year, just before the contest, I was at a QRP booth. I was shown a switched capacitor filter project that was available in kit form. One of the guys at the booth showed it to me and said, "It's easy to build and test…and of course, you have to put it in an Altoids box." The Altoids box has in fact become useful as an enclosure for small projects (and I may be the last to know about this). Other boxes could have worked but I used one for the Dash-Sender because, well, "you have to." It's also smaller and lower profile than most commercial aluminum enclosures.

As I write this it is the Saturday night between the last two 10 GHz and up contest days. So far the little Dash Sender has worked out very well. I can send dashes while I wander around waiting for a reply on the 2M liaison or take a sip of a soda or eat a sandwich. Very helpful.

If anyone is interested in a programmed chip for this project send me an email at w1auv@arrl.net.

Tommy
W1AUV
9-16-2006
I’ve recently been thinking about a two-meter transverter for my SDR-1000 transceiver, to drive microwave transverters. Down East Microwave does offer a nice one which fits neatly into the transceiver cabinet, but the output is only 100 milliwatts, not compatible with all my microwave gear.

All my microwave transverters are set up for about 2.5 watts input power, to be compatible with the output level of many IF rigs: originally the IC-202 or IC-402, later the FT-290, both Mk I and Mk II, and finally the FT-817. While the FT-817 may be set for lower output power, the power reduction uses the ALC circuitry which produces some spurious outputs at the lower power levels. Having this flexibility has proven valuable, both for backups and for lending out spare rigs.

To maintain compatibility, particularly for rover operation – I haven’t figured out a good way to make the SDR portable – I want to have the same 2.5 watt output level. The readily available choices for an output device aren’t particularly obvious, either for a discrete transistor or for an amplifier module. A 2-meter version of the module I use in my 222 MHz transverter for the FT-817 is higher power, 5 watts, and rather expensive.

A perusal of the RF parts webpage (www.rfparts.com) revealed some “New Series Mosfet Power Modules.” I knew that Down East Microwave is using some of these in new transverter designs for higher power, but there are also lower power versions, listed for about one-third of the cost of the 222 MHz module. At around $20, this is competitive with discrete transistor solutions and probably requires much less design effort.

I ordered the Mitsubishi RA08H1317M, rated for 8 watts at 12.5 Volts from 135 to 175MHz. One attractive feature was that the data sheet curves showed operation at much lower voltage for lower output power – perhaps 6 to 8 volts for 2.5 watts output.

The only problem is a vastly different pinout than the older bipolar modules, with no ground pins to connect to the PC board, only the flange on the bottom. I made up the test amplifier shown in Figure 1 by hacking up an old 222 MHz transverter PCB and bolting it and the module on a scrap of heat sink with two SMA connectors, and adding some bypass caps on the voltage pins, with plated thru holes in the PC board to ground the other side of the bypass caps. It looks crude, but if this works, the part is easy to tame.

Figure 2 and 3 show my test results at 144 MHz. Figure 2 shows the maximum output power increasing steadily with drain voltage Vdd toward the rated 8 watts; only 6 volts is needed for 2.5 watts out. In Figure 3, we can see that the gain is controlled by varying the idling current Iq, controlled by the gate voltage Vgg. The best operating point seems to be at 8 volts with about 0.3 amps of idling current (Vgg = 3.1 volts); the output power is about 4 watts max, but pretty linear up to 2.5 watts, with about 30 dB of gain. The required drive power is only about 3 milliwatts, or +4.5 dBm, easily achieved with a MMIC. At 2.5 watts out, the maximum current at 8 volts should be about 0.75 amps, easily obtained from a 7808 3-terminal regulator with a heat sink.

I didn’t push the output power beyond 7 watts at 11 volts, but I expect that 8 or 10 watts is available at full voltage. At the 3 watt level, output was steady for several hours, and the heat sink didn’t warm significantly. Also, the part is rated for 20:1 VSWR without damage at full power, so it is probably fairly bulletproof at the lower voltage. Cables occasionally do get disconnected or forgotten.
If you have a need for modest output power in a homebrew rig, consider one of these modules. Versions are available for 144, 222 and 432 MHz. The 222 MHz version would be ideal for my 222 MHz transverter, except for the different footprint. If I were re-designing it, I would certainly use this module.


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