



# N.E.W.S. LETTER



**The Publication of the North East Weak Signal Group**

NOV 2006

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V P: N1JEZ, Michael Seguin

CURRENT OFFICERS

Secretary: W1GHZ Paul Wade  
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**

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**PREZ SEZ**  
**DE KA1OJ**

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 it's 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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# LOWER POWER MOSFET POWER AMPLIFIER MODULES

## PAUL WADE W1GHZ ©2006

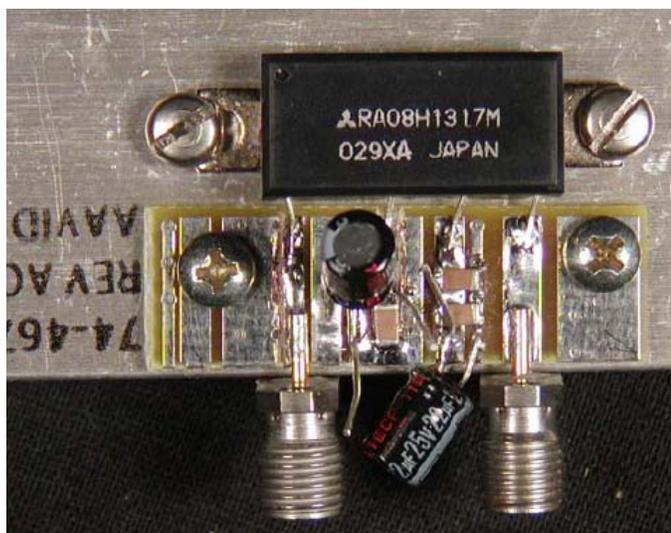
### W1GHZ@ARRL.NET

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 transverter1 for the FT-817 is higher power, 5 watts, and rather expensive.

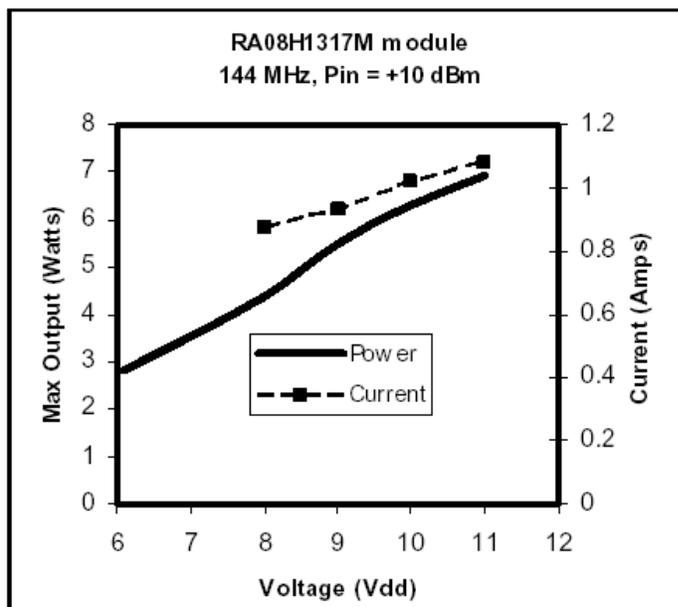
A perusal of the RF parts webpage ([www.rfparts.com](http://www.rfparts.com)) revealed some "New Series Mosfet Power Modules." I knew that Down East Microwave is using some of these in new transverter designs for higher power, but there are also lower power versions, listed for about one-third of the 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.

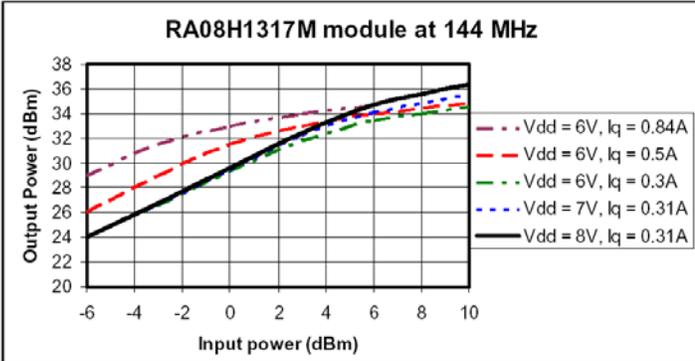
The only problem is a vastly different pinout than the older bipolar modules, with no ground pins to connect to the PC board, only the flange on the bottom. I made up the test amplifier shown in Figure 1 by hacking up an old 222 MHz transverter PCB and bolting it and the module on a scrap of heat sink with two SMA connectors, and adding some bypass caps on the voltage pins, with platedthru 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 misconnected 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.



1. P. Wade, W1GHZ, "A 222 MHz transverter for the Yaesu FT-817," QST, January 2003, pp. 31-38.

**CONFERENCE PHOTOS BY WZ1V**



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**North East Weak Signal Group**

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