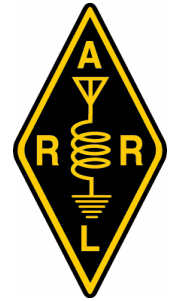




# CHEESE BITS

**W3CCX**  
CLUB MEMORIAL CALL

ARRL  
Affiliated  
Club



Volume LI

June 2010

Number 6

PREZ  
SEZ:

Welcome to June!

In just 2 short weeks the PACKRATS will be headed to Big Pocono State Park above Camel Back Ski and

Water World Resort for the JUNE VHF QSO PARTY.

By current reports we have a goodly turnout of PACKRATS and friends to help with the loading and setup for the contest. Typically we are light on the crew for take down and storage operations on Monday. **If you can help on Monday** at the operating site to help keep the take down safe let N3ITT know by phone or e-mail [alitt@epix.net](mailto:alitt@epix.net) as soon as possible.

May ended with Memorial Day.

This is an excellent time to reflect on the freedom we enjoy and the sacrifices Americans have made to ensure we have these freedoms. I personally have family that has served in WW I, WW II, Korea, Viet Nam, Iraq and currently one of my children is in Afghanistan. It is scary with the type of gruesome warfare and the political instability in the entire region. I pray for a speedy close to the fighting and the safe return of all our troops from the field of battle.

Back to June and the QSO Party. **This is a club scored event and we need you participation physically on the mountain and in lieu of that your signal on the air** logging contacts, not only with W3CCX but all the others out there trying to do their best. By all means be sure to submit your log. Here again your prayers will be

appreciated for no thunder storms and some decent 6 meter enhancement. In fact, as I am writing this, 6 meters is open to the mid west and I have monitored beacons in EN36 and EM66. I hope the band is still open when I get a chance to operate later this evening.

The W3GAD station is currently down to the bottom four as my other IF rig is currently supporting the W3ICC/W2PED Rover efforts. I also plan to move all my transverters to a 145 MHZ IF before January. Maybe the move will solve the crystal issues that have the IF wandering around all the time on 1296 . I guess I have to go there before I can find out.

Have you done your shopping on the W3KKN Estate Sale page and picked up a few of the remaining goodies? Though the "members only" offering is over there are still quite a few choice pieces available; just make an offer.

The Next GENERAL MEETING will be June 17, 7:30 pm, at the Benjamin Wilson Senior Center rather than OTTO's. We will be having the annual election of officers and directors for 2010 and a follow up on the mountain top efforts of the W3CCX team. I hope to see you all at this important meeting. It is your club and the officers you chose chart the course of action for each year. They need your support and communications to know that the MOUNT AIRY VHF RADIO CLUB is being run properly.

Also, please mark your calendar for July 15 when WA2OMY will once again host the WHITE ELEPHANT AUCTION

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**PACKRAT BEACONS - W3CCX/B**

FM29jw Philadelphia, PA  
50.080 144.284 222.064 432.286 903.072 1296.245 MHz  
2304.043 3456.207 5763.196 10,368.062 MHz (as of 1/08)

**MONDAY NIGHT NETS**

TIME	FREQUENCY	NET CONTROL
7:30 PM	50.145 MHz	K3EOD FM29II
8:00 PM	144.150 MHz	N3ITT FN20kl
8:30 PM	222.125 MHz	K3TUF FN10we
8:30 PM	224.58R MHz	W3GXB FN20jm
9:00 PM	432.110 MHz	WA3EHD FN20kd
9:30 PM	1296.100 MHz	K3TUF FN10we
10:00 PM	903.125 MHz	W2SJ FM29LW

Visit the Mt Airy VHF Radio Club at: [www.packratvhf.com](http://www.packratvhf.com) or  
[www.w3ccx.com](http://www.w3ccx.com)

starting at 7:30. Gary already has plenty of good “stuff” for the auction. Bring your donation and consignment items along. Mark the consignment items clearly as yours. More on the auction next month.

Meanwhile, “LISTEN FOR THE WEAK ONES”

**73 de W3GAD**



**Editors Column**

**Our next meeting** will be at the Ben Wilson Senior Center, 580 Delmont Avenue, Warminster PA., on Thursday June 17th 2010. The meeting starts at 7:30 pm with a pre-meeting dinner around 6:00 pm at Giuseppe’s Pizza 1523 West Street Road (at the shopping center diagonally across from our meeting site). The Packrats usually are in the back dining room.

This months meeting will include election of officers for the next year and discussion of contest results.

This month, Cheese Bits is inaugurating parallel distribution on an experimental basis. It will go out via email or postal mail as has been done for many years **and** it will also be available as a one click download from <http://packratvhf.com/Cheese%20Bits/cheesebits.html>. If you think about it, a club news letter bears a good resemblance to unsolicited commercial email (“spam”). Every month there are some copies that just don’t make it through various email servers.

A year ago I improved the situation by writing a Java program that sends Cheese Bits to each and every recipient in a separate email, instead of using a “bcc” mail list (which looks even more like spam). But having Cheese Bits available for download makes it certain that everyone will always be able to get it somehow; and in spite of the capriciousness of their internet service providers POP (email) server.

Most months Cheese Bits will arrive at your email box unhindered. If you find it’s not there, you can download it from the Packrat Web site (above) or you can contact me, and I’ll be more than happy to re-send it as many times as needed for you to get your copy. The mail must go through!

**Many thanks to Ron W3RJW** for doing the Web work!

Please let me know what you think of parallel delivery and enjoy this months issue.

**73, Lenny W2BVH**

# Move, Shoot, Communicate

## Limited Rover Operations by an Old Field Artilleryman-NE3I

Here's a narrative of some of the trials, tribulations and triumphs of NE3I in the January Contest. There are probably similar adventures awaiting at least some of our rovers in a couple of weeks. --Ed.

Every year I say, "I'm not going to do this again" and then, I get the bug to approach the January VHF SS like guerilla warfare operations. I am not technically adept. I have very little patience if I push a button and it does not work. I have made serious efforts, (at least in my own mind), to wire up stuff to switch transverters to an IF rig, to switch antennas back and forth from the receive and transmit side, to attenuate one and amplify the other and, I have almost successfully connected microwave transverters to a DC source using the correct polarity. Moving from location to location, erecting multiple directional antenna systems with multiple feed lines, in the cold, in the dark and probably in some unhappy State Trooper's backyard, (who typically arrives immediately after everything is finally patched together), tests the limits of my sanity. --And we certainly are not going to talk about low hanging tree branches over an otherwise perfectly fine right of way.-- Enough is enough.

This year, I set out to keep it SIMPLE and EASY. Naturally, it didn't work. For some unknown reason, my 2 meter squalo and PAR 6 meter omni, raised carefully atop a German made fiberglass telescoping mast, did not like each other, and my IC-706 didn't like either of them. One hour into the contest, I broke it all down and operated a few hours from home.

And another thing, what is it about contest weekends? Somebody always seems to schedule a party requiring a command appearance, a long lost relative or sorority sister's family decides to visit or, there is a funeral. This year, it was the 50th birthday party for a very good friend of a very good friend. I had to go. Forget the activity hours and, after a few compulsory cocktails, forget the rest of the evening operating from the rover **or** from home.

Sunday, 7:30 AM, ohhh man, where is the coffee? Undaunted, your hero managed to rally and get on the Road by 8:15. That's 1315 Zulu, contest time. I headed west toward the four corners near Gap, PA using Route 23. I knew from past explorations with Dr. Rick that Len was out there somewhere by a little red school house. Anyway, by 1325 I was operating on the ridge about 5 miles west of Phoenixville, in a cemetery, by a church. A little more than an hour and I had 32 Qs in the log. I ran WA3YUE on my four bands but, had problems working out on 6. Nonetheless, I worked W3RJW, N3NGE, WA3DRC, K1DS/R/FN20, W3ICC and WA2OMY on 2, 223.5 and 432. Time to go. I arrived at Len's at 1510, closed out N3NGE on 6 and worked a few local QRP portables who were using HTs. (My mobile operating apparatus consisted of the IC706 running 10 watts. On 2 meters and 432, (following the 40 meter dipole principle), I used a 2 meter squalo mag mount on the roof of the Saab 9.3. A 4 watt 220 HT with a 5/8th wave mag mount on the trunk, provided all contacts on 223.5 FM. An Icom AH4 long wire tuner in the trunk connected to a unknown (20 meter?) loaded whip provided initial (but, very few) contacts on 6. At Len's, I replaced the loaded whip with an MFJ 10 foot telescoping whip, (hereinafter, the "TeleW"). The TeleW worked much better.

I just needed to remember to de-telescope TeleW before moving.) With the TeleW collapsed, I moved down the road to the Little Red School House for a clean sweep with K3TUF. (Remember, we are only talking about 4 bands.)

After school, I headed for the Shady Maple. I needed a pit stop before commencing operations from FN10. Ohhh no, it's Sunday. The Shady Maple and, most everything else in the neighborhood, **IS CLOSED**. I put 15 contacts into the log including clean sweeps again with NGE and TUF from Blue Ball Elementary. I even managed to work K3EOD on 2. On to FM19 via 897. Fortunately, Gap was not very far and the McDonald's there had an unoccupied latrine. (They also put too much mayo on my Angus Burger but, what the hell.) Arrived on objective in FM19wx at 1746. I found this spot a few years ago. At a point where 896 crosses the ridge line south of Strasburg, I can park in a little cul de sac on the side of the road. Across the street there were a few acres for sale so, that was my alibi in case the local trooper showed up. (2.19 wooded acres, Pequea Valley Schools, \$199,900!) In about 45 minutes, I made 19 Qs running all bands with W3HZU, N3NGE and K3TUF. I was also able to work K3EGE QRP portable, despite his being behind at least one ridge line and at a distance of 10 miles. W3SO in FN00 was worked on 2 meters. This was the second time that I was able to work W3SO from that location using low power and a modest antenna. There must be a pipeline that way.

I headed back through Gap and, after a short half hour drive, was up the hill on Route 30 just inside a new grid at FM29ax. On the right side of the road, just as you get to the top of the hill, (before you reach the garage), there is just enough room to pull off of the shoulder. It seems to be a rugged "drive way entrance" to a cell tower that is about 100 yards into the field on the right.) Anyway, this is a very good location for working back into FN10 and FM19 and into FM29. From this location, I ran the bands with K3TUF, KA3TUF, N3NGE, W3HZU, WA3RLT and KA3BBR. Also worked QRP Portable K3EGE again on 2, 223.5 and 446! Before moving on and, in only about 45 minutes, I was able to make 36 Qs in grids FN20, FN10, FM29 and FM19.

I made my way back into FN20 and parked on friend's hilltop near Marsh Creek Lake State Park. In an hour of casual operating, I put another 18 Qs, including multiple Packrats, in the log. Ran the bands with KB3BBR and WA3RLT and managed my second Q for the day with FN31 (K1TEO and WZ1V) on 2. Probably not surprising but, not a bad haul for 10 watts and a squalo on the car roof.

My final score in the rover this year was 4466, i.e. 136 Qs, 203 QSO points with 18 plus 4 grids. Down about 800 points from last year, my shortfall was undoubtedly due to being deprived of potential Qs with K1DS/r during his Saturday tour of the Gap area. Notwithstanding the depressed point total, I accomplished what I set out to do. The mission was to activate FN20 and the Gap four corner region to provide 16 potential rover Qs and 5 home station Qs to as many stations within the sound of my voice (and key). Such deployments do not touch the cosmic regions nor dazzle the ultimate contest operator. Nonetheless, and as usual, all stations contacted seemed appreciative. We'll see, maybe again next year.

73, Griff NE3I

# Converting a Commercial TV Transmitter's Driver Amp for Ham Use --Part 2

By John Sortor, KB3XG

## Introduction:

Last month we discussed the performance of a single module to get an idea how much power we might expect out of 4 combined modules. Based on the single module data we should be able to see full legal limit power on 6 meters but first there is some mechanical work that must be done before testing the amplifier with RF.

## Plug-In Module Circuit description

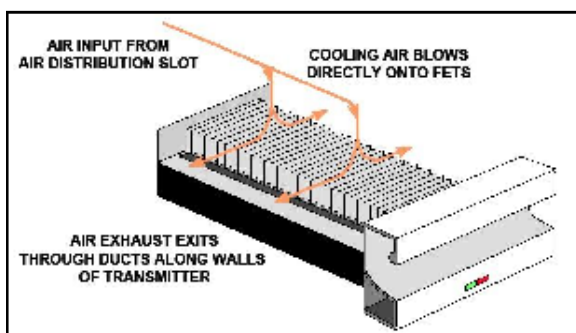
A single Harris plug-in module consists of four  $\frac{1}{4}$  modules each conservatively rated at an output power of 275 Watts for a specified combined output power of 1000 Watts. The  $\frac{1}{4}$  modules are split and combined using a network of 3 printed Wilkinson 2-way combiners. A high power output coupler provides protection against excessive reflected power. A high current FET switch also provides protection against over voltage, over drive, and high VSWR. A control circuit board determines if the amplifier operating conditions are safe based on all of the **alarm outputs** and **status inputs**.

## Cooling:

Removing heat from high power semiconductor devices is always a technical challenge when designing a power amplifier. As power densities increase more exotic methods of cooling must be employed. I had to decide on a cooling method before recording any high power data.

## Impingement Cooling:

I found a diagram from Harris that shows how the air passes from the distribution plenum through the heat sink fins. Another amateur channel 2 conversion article (sorry I do not know the source) shows a series of fans on top of the heat sink fins. (Impingement or jet cooling) This cooling method is commonly used on computer CPU's with a pin fin heat sink. The pin fins allow the air to flow in all directions. I did not see any thermal data attached to the photograph but it appears that the hub of the fan blades is blocking airflow to the 2 inside devices. Heat flows directly out of the device in a 45 degree cone into the heat sink. Lateral heat flow in a heat sink is highly inefficient. I do not have any thermal analysis tools to



Harris Airflow Diagram



Impingement / Jet Cooling

arrive at a calculated temperature, and impingement cooling may work well for this application, but the thermal data should be recorded on all devices to ensure a flat thermal profile across the heat sink.

## Plenum / Forced Air Convection Cooling:

I decided to take the conservative approach and build an air plenum to cool the four  $\frac{1}{4}$  modules. This cooling method was a little more work but it allows for an even laminar air flow through all of the heat sink fins. The fans were oriented to produce a negative pressure inside the plenum. I do not have the software to analyze the difference between negative and positive pressure but in general it is best to minimize the turbulence. I wanted to mount the unit in a 19" rack. I limited the width of the amplifier and plenum to 15" to give at least 2" on either side for intake and exhaust air. The fans blades are not designed like an airfoil so there is a large amount of "prop wash" introduced. There is also an abrupt angle on one side of the air plenum. Under positive pressure this creates unwanted turbulence before the air enters the heat sink. With negative pressure the heat sink fins come in contact with smooth air first. Turbulence on the exhaust side of the plenum is not a concern. I have seen this negative vs. positive pressure temperature difference in practice while testing extremely high power amplifiers at work. A negative aspect of negative pressure is dust and dirt accumulation.

The plenum also cools the  $\frac{1}{4}$  module components. There are 3 evenly spaced holes on either side of each  $\frac{1}{4}$  module. The photograph shows the holes passing through the power combiner PC board. With no airflow the temperature of the  $\frac{1}{4}$  module ferrite transformer cores exceeds +60degC after 10 minutes of full power CW operation. With the bottom cover in place the airflow through the cooling holes drops the core temperature to +40degC.



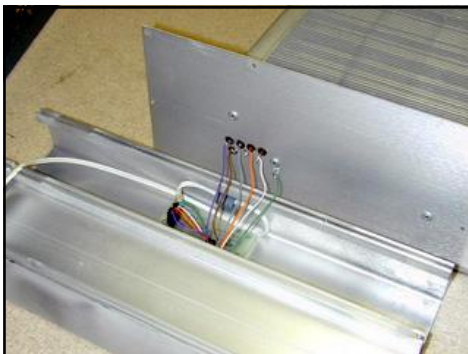
Completed Air Plenum



1/4 Module Component Cooling Holes

## Front Panel Modifications:

The front panel was removed from the unit so the air plenum could be installed. The front panel has an interlock switch (2 white wires) to allow hot swapping of modules. When you grab the front panel handle the interlock switch closes which shuts down the amplifier. For ham use, the 2 white wires can be removed and the interlock switch discarded. The front panel also contains a small PC board with 2 LED's. The LED's provide operation status and error indication through a series of **Fault Blink Codes**. (More details on this later.) Document the wire colors and location and unsolder the wires. Use a drill to remove the pop rivets that hold the sub panel to the heat sink assembly.



Front panel & subpanel removal



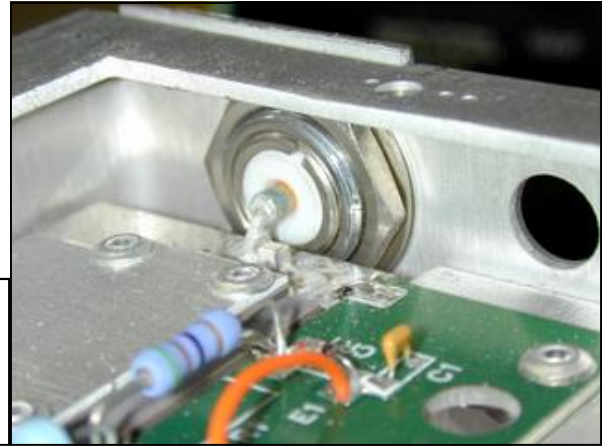
Front Panel LED Blink Code Wires

## Rear Panel Modifications:

Cut the RF and DC wires leading into the **black** rear panel connector and remove the connector. Use 2 soldering irons to remove the ATC "B" size tuning cap at the output RF connector. Note the capacitor value in case the capacitor is damaged. The value of the cap in the unit I have is 2.4 pF. Remove the heavy duty buss wire between the connector center pin and the output coupler. Remove the quick disconnect output RF connector using a pair of needle nose pliers. **Be careful** not to damage the large solder tab soldered directly to the coupler board.

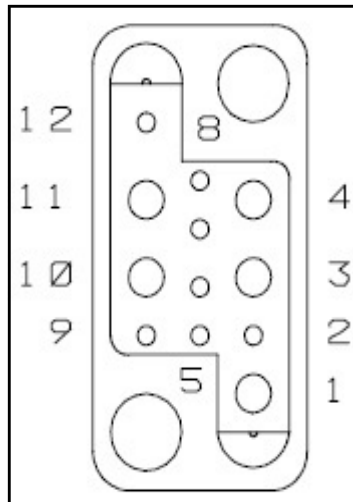


Original rear panel DC and RF input connector



Original RF output conn., tuning cap and coupler

Pin	Function	description
#1	RF input	RG-316 cable
#2	N/C	
#3	+50 VDC	red Teflon wire
#4	+50 VDC	red Teflon wire
#5	fault output	white Teflon wire
#6	enable/reset	purple wire (PTT)
#7	N/C	
#8	N/C	
#9	N/C	
#10	DC ground	black Teflon wire
#11	DC ground	black Teflon wire
#12	N/C	



<<< Special note on pin 5:  
If a fault in any of the four 1/4 modules is detected, the white wire (Pin 5) is grounded through Q6. It is not necessary to use this error signal.

DC / RF **input** connector (J2) signals

Front view of J2

The hole in the rear panel for the original quick disconnect RF **output** connector is the perfect size for a standard "N" connector flange (the kind with 0.75" hole spacing). I drilled and tapped the top 2 holes for #4-40 screws since the output directional coupler leaves no room for nuts. On the bottom, I drilled through holes for the other 2 screws so I could use over sized washers to clamp the original ground solder tab. Once this was done I could re-install the buss wire between the new "N" connector and coupler. Be sure to re-install the ATC cap at the "N" connector pin.



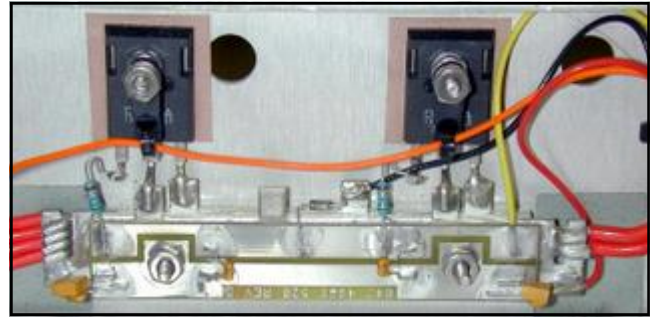
New RF output connector on chassis

New RF output connector inside view. Note only 2 nuts used.



### Note on FET Switch:

The FET switch is a pair of 60 Amp 100 volt switching power supply FET's mounted to a heavy duty buss bar located on the inside of the rear panel. This switch circuit is capable of passing the full load current (>40 Amps) of the +50 volt power supply. Turn on and turn off time is in the 100 nSec range which hopefully will prevent damage to the amplifier if an error or fault is detected. The FET switch is cycled every time you press the PTT switch. **If a fault occurs** it is reset by opening the PTT wire (opening the FET); thus removing the +50 volts for several seconds. This allows the storage caps on the control board to discharge.

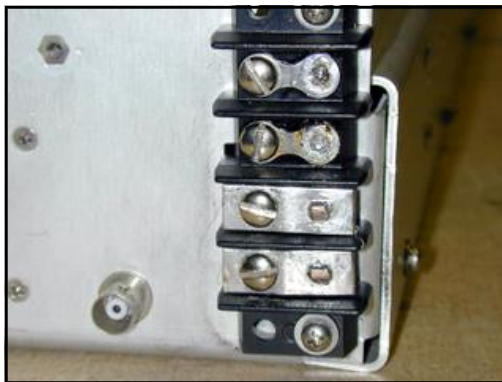


FET DC Switch and Buss Bar

### Rear Panel mods continued:

There is an unused 3/8" hole situated between the old DC connector and the FET switch which is the same diameter as a standard BNC connector. I soldered the center conductor of the RG-316 **RF input** cable directly to the new BNC connector and used a 3/8" solder tab to provide strain relief for the cable. This is now the amplifier input connector.

Replace the original black connector with a heavy duty Cinch-Jones type terminal block. Keep in mind that this connection will be carrying 40+ Amps at 50 volts. I removed the screws from one side of the terminal block and cut a piece of copper strap to further insure a good electrical connection. I fed the heavy duty black and red Teflon wires up through the back of the terminal block and soldered the wires directly to the copper strap. I soldered the PTT wires to the top 2 terminals.



RF input connector & Cinch Jones terminal block modified for heavy DC input

Internal wiring of Jones strip and new RF input connector



As a side note you may notice that the purple PTT wire which is bundled to other wires is covered in white heat shrink. All of my transverters have a sequenced +12 volt output to apply bias to my homebrew power amplifiers for the PTT function. The heat shrink contains a simple 2N2222 transistor switch which inverts the logic (just a transistor and base current limiting resistor) . If your system uses ground for PTT, connect the purple wire to the terminal block directly.

### Control Board:

The control board is located near the rear of the unit under a shielded cover between the FET switch and the 1<sup>st</sup> quarter module.

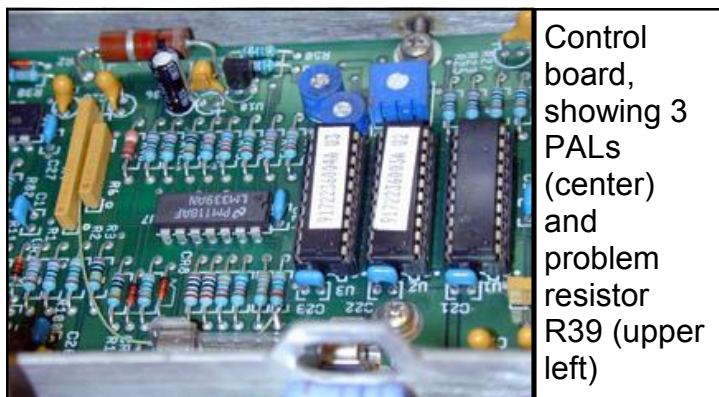
The control board **monitors**: 1) Temperature of each ¼ module, 2) Balance output power from each push pull pair, 3) Input DC voltage level, 4) Level of reflected power. (VSWR) and 5) Input RF power level



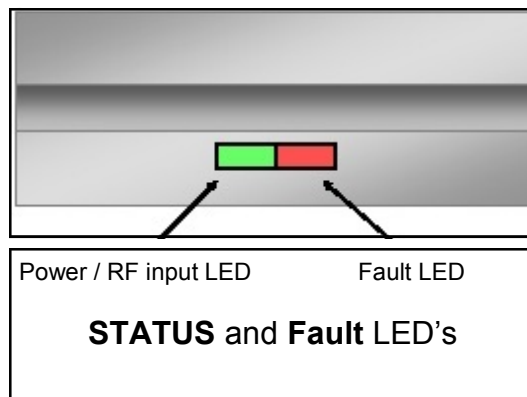
The control board **controls**: 1) the FET switch (amplifier shut down), 2) PTT command, 3) RF transistor bias sequencing, 4) LED fault blink codes

The control board contains relatively simple logic but it is implemented with 3 PAL's (Programmable Array Logic chips, U1, U2, U3) The control board is great if everything is working but if one of the PAL's is defective I'm not certain how to find a replacement. **If there is a problem with the control board** you can bypass the FET switch and all of the control and safety features and key the +15 volt bias line with your PTT line. Note: I had a self inflicted problem with the control board in my unit. There is a screw behind the 1 kOhm 1 Watt resistor (R39) in the upper left side of the control board (see picture). I used a screw that was a little too long when installing the plenum. The screw severed a trace on the board feeding 50 volts to the bias regulator (U10) and the control board would not allow the FET switch to turn on. The board was repaired with a short length of wire wrap wire.

A complete schematic of the control board is available from the author or from the editor. In addition, we hope to have the schematics available for download from the Packrat web site soon after this issue of Cheese Bits is delivered.



Control board, showing 3 PALs (center) and problem resistor R39 (upper left)



**Fault and Status LED's and their blink codes:**

Here are the statuses and faults indicated by the LEDs with additional explanation of their meaning.

Status /Fault	Indicated by
Reflected Power Fault (VSWR)	1 Blink
Input Overdrive (>3 dB)	2 Blink
FET Amplifier Imbalance (ISO)	3 Blink
+50 VDC Over / Under Voltage	4 Blink
Over Temperature Fault	5 Blink
FET Switch Failure	6 Blink
No LED's illuminated	+50 Volts not reaching the modules
Steady red LED	+50 Volts is applied but module is not enabled
Dim Green LED	Module is enabled but there is no, or little rf drive
Full green LED	Normal operation

- **Reflected Power Fault (VSWR):**

There is a directional coupler connected directly to the RF output connector. The forward port is unused and is terminated with a 50 Ohm resistor. The reverse port uses a detector diode to measure the amplitude of the reflected power. With this configuration it is not possible to measure or calculate VSWR. But if the reflected power exceeds a predetermined level the control board will shut the unit down by turning the FET switch off. This fault level must be adjusted if operation at 1500 Watts is desired.

- **Input Overdrive (>3 dB):**

There is a printed coupler and detector diode at the sum port of the input splitter which is used to measure input power. If the input power exceeds the predetermined level, the control board will not allow the dc power FET switch to turn on. If the input power exceeds the predetermined level during operation the control board will turn the dc power FET switch off. This fault limit must be adjusted if operation at 1500 Watts is desired.

- **FET Amplifier Imbalance (ISO):**

There is a balance transformer on each ¼ module. (See photograph of RF balance transformer from last month's article.) During operation if the power output of one of the two push pull pairs decreases, the control board will turn the dc power FET switch off. For normal operation the output voltage of the balance transformer (Pin 2 of J1 on each ¼ module) should be +0.3 volts or less. The module will trip off between **1.7 and 2.1 volts**.

- **+50 VDC Over / Under Voltage:**

If the input power supply voltage is not within the correct operating window (approximately **44 to 54 volts**) the control board will not allow the dc power FET switch to turn on. If a voltage transient occurs during operation the control board will turn the dc power FET switch off.

- **Over Temperature Fault:**

During operation if the temperature of any of the four ¼ modules exceeds a predetermined limit the control board will turn the dc power FET switch off. The temperature sensor on each ¼ module is factory adjusted for 5.3 volts when the heat sink temperature is +25degC. A fault will occur if the temperature exceeds **+80degC**.

### **Conclusion:**

I promised last month that I would discuss the performance of 4 combined modules. I have presented this information instead. High power testing will be discussed next month.

Based on the fact that the active devices are no longer available I felt it was important for you to understand how the amplifier works before applying power. In addition, next month I hope to have the settings for adjusting the reflected power fault trip point, and the input overdrive trip point for 1500 watt operation. --xg

# Arecibo EME in April

Hams were afforded a **rare opportunity** to work EME in April when KP4AO was QRV from Arecibo off the moon with the 1000 foot (60 dBi) Arecibo dish. Operations took place between 432.045 and .060, April 16-18. It was theoretically possible to work EME with 50 watts and a short yagi.

Last month we presented feedback from WA3NUF and K1DS on their KP4AO ops. Here is some additional feedback.

Lets hope Arecibo will be doing this type of operation again some time.

--W2BVH

4.16.10 -- Report from FM29gv. About 1/2 hour in I finally heard weak CW thanks to someone on the reflector clueing us in on the on the RX frequency. The signal was weak as I peaked the antenna to confirm my aiming calibration. It remained constant for the entire time with slight QSB peaks. I am using a 40 element circular polarized antenna with an SSB preamp and a Yeasu FT-847. The signal was too weak to get a good consistent copy. I did get the call every now and then. Better luck tomorrow.

Paul WA3GFZ

There is a message on the moon net reflector that they blew up their amp and are only using 20 -30 watts, but will have more power tomorrow. Boo-hoo. Time to open the 807s.

--Paul

Congrats to Paul on his first 432 EME QSO! I heard his call and report from KP4AO on CW while listening to them today. CW sigs were better copy than the SSB. I will try to QSO them again tomorrow, but only using 100W and single long yagi here.

Despite earlier claims that a small hand-held yagi and a receiver could hear them, most of the folks who tried smaller antennas or who lacked a decent preamp heard little or nothing.

...GFZ qso cont'd

Considering they worked a new station about once a minute, there are probably far more callers than they have time for. JT mode will even be slower tomorrow as each QSO will take at least 4 minutes for 2 exchanges each--they are eliminating the 73's. K1DS

We are hearing them too at NA6MF, at Moffett Field, CA. They are running with only 20 watts into the dish, and of course we blew-up a pre-amp.

AF6KD

-- Dave

Dave....the blown preamp means it's an "official" event hihi... 73...Jordan...

I listened to KP4AO with just a single M2 9WL432, and the KP4AO signal was huge. I recorded the whole thing with Linrad, and made a wave file recording of the first few minutes of my monitoring their CW signal using an SSB filter [2.5 kHz] to show just how strong the signal was.

--W3SZ

I'm home again, but not yet unpacked and re-organized...

Many thanks to all stations we worked from KP4AO -- and our apologies to the many more who called without completing a QSO. The Arecibo telescope's short moon windows were frustrating for all, ourselves included. The "wall" of stations calling was simply incredible. A rough estimate suggests that we may have worked something like 20% of the callers potentially workable on SSB, 10% of those workable on CW, and only a few percent of those workable on JT65. I guess we'll have to do it again, in due course...

--Joe K1JT

**Arecibo Ham Ops & Staff:** Angel, WP3R  
Pedro, NP4A, Angel, WP4G, Jim WA3FET  
Joe, K1JT

## Some Pix from the Cleanup at W3KKN's



Pix by WA3NUF



We want to thank all of the Pack Rats for the amazing job and hard work that was done in helping us empty out W3KKN's basement and ham shack. The icing on the cake was the "Tower Party". We were born in the house with the antennas already there and being so much a part of our lives, it was an emotional time in seeing them removed. Dad had previously told us that the club would take expert care of his antennas, and he was right. We know Ernie would be very pleased that the Rats had dismantled them with such care and respect, and how the "vintage" equipment will be redistributed throughout the club.

We know Ernie enjoyed and was very proud to be a member of the Mt. Airy VHF Radio Club and cared about each and every one of you.

Again, thank you so much, we could not have done it without you.

Susan Kenas Capindale     Joe Kenas

# ....And some from the January Contest Wrap Up Meeting



Pix by WA3BZT

# The Wayback Machine

Gleaned from the pages of  
Cheesebits, June, 1960

de K3IUUV

*(author's comments in italics)*

President Harry Stein (W3CL) summarized the highlights of the past year. **These included the following:**

- The club call (W3CCX) was applied for and received, as a memorial to deceased member Matt Gelardi.
- The club operated a maritime mobile station on the boat of member Doc, W3IHT. Operations ranged from the Chesapeake Bay through the Delaware River. Lots of contacts made.
- Over 300 people attended the club picnic. *(what a change!)*
- 86 people attended the Ladies Night dinner. *(why don't we do this anymore?)*
- Cheese Bits purchased an "Electric Mimeograph machine".
- Hidden Transmitter Hunt. Big success, although no one found it (hidden in Newtown). Another one will be planned!

**Other tidbits sprinkled through the paper included:**

- Detailed discussion by the editor/printer, Helen, xyl of W3SAO, about the tribulations of the ink feed for the new AB Dick printing machine. *(now I understand why some sheets of the old issues have light printing on one side!)*
- Frankie (W3SAO) reports that the number of amateur licensees in the US now exceeds 200,000.
- "Smel-a-Rhat" reported on some aurora openings, with South American stations heard. Also a few California contacts on double hop.
- Ladies night held at the Southwark A.C (near

Cottman St). Favors for the ladies were ceramic cheese trays with a small rat eating cheese. They were inscribed "PackRats Ladies Nite, May 7<sup>th</sup>, 1960". *(anyone still have one of these mementos?)*

- 2<sup>nd</sup> Transmitter hunt (50.7 MHz) announced for June 4<sup>th</sup>, 1960. Starting point Street and York Rds, Warminster. *(near current meeting room!)*
- New members voted in: Jack Power, W2AXU, & K3LBT, Al Obenland.
- Meeting speaker was W2AXU, topic "SSB and its application to VHF"
- June QSO party (June 11/12) plans announced. Club will operate in Solebury, on property of member Brad Algeo (W3EM).
- Notice of elections to be held in June. Club meetings are held at the West Oak Lane Jewish Community Center, in Mt Airy *(that's how we became the "Mt Airy VHF Radio Club" in case you didn't know).*

## STRAYS

Hi Lenny attached is photo I took yesterday when Bob (W2SJ) and I went to visit K3EOD. He is out of the wheelchair. PROGRESS!! ---E! K3JJZ



## Events

For inclusion, please direct event notices to the editor.

### **ARRL June VHF QSO Party Contest** -

Jun 13-14, 2010 Details at <http://www.arrl.org/june-vhf-qso-party>. Come join the fun at Camelback!

### **Valley Forge Hamfest and Computer Fair Hamfest** -

July 18, 2010. See <http://www.marc-radio.org> for details

### **W2QW Techfest - Hamfest** -

June 19, 2010. See <http://www.w2qw.org/hamfest.htm> for details

### **CQ WW VHF Contest**—

July 17-18, 2010. See <http://www.cqww-vhf.com/> for details.

### **Central States VHF Conference** -

July 22-24, 2010. Bridgeton MO. See <http://www.csvhfs.org/conference/index.html> For details

### **ARRL UHF Contest** -

Aug 1-2, 2010. See <http://www.arrl.org/august-uhf> for details

### **JSARS Hamfest** -

Aug 8, 2010. See <http://www.jsars.org/?q=node/50> for details

### **ARRL 10 GHz and Up Contest**—

Aug 15-16, 2010. Details to follow

### **Pocono Area Hamfest** -

Sept 11, 2010. See <http://www.qsl.net/n3is/hamfest/index.html> for details

### **ARRL September VHF QSO Party Contest** -

Sept 12-13, 2010. Details to follow

### **Mid-Atlantic States VHF Conference** -

Sept 25, 2010. See add, this page. Additional details to follow.

### **ARRL 10 GHz and Up Contest**—

Sept 19-20, 2010. See <http://www.arrl.org/10-ghz-up> for details

## **Mid-Atlantic States VHF Conference**

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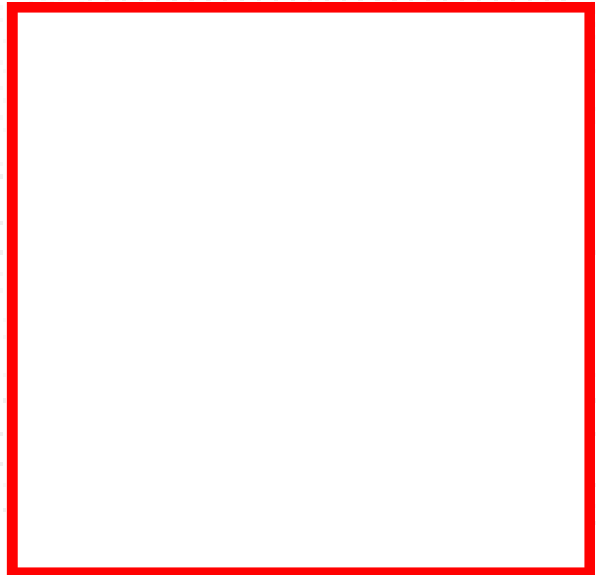
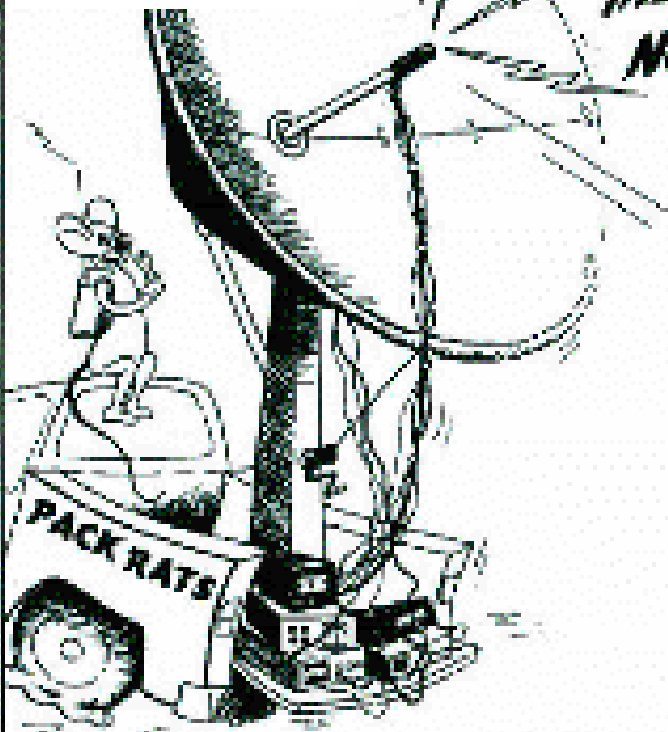
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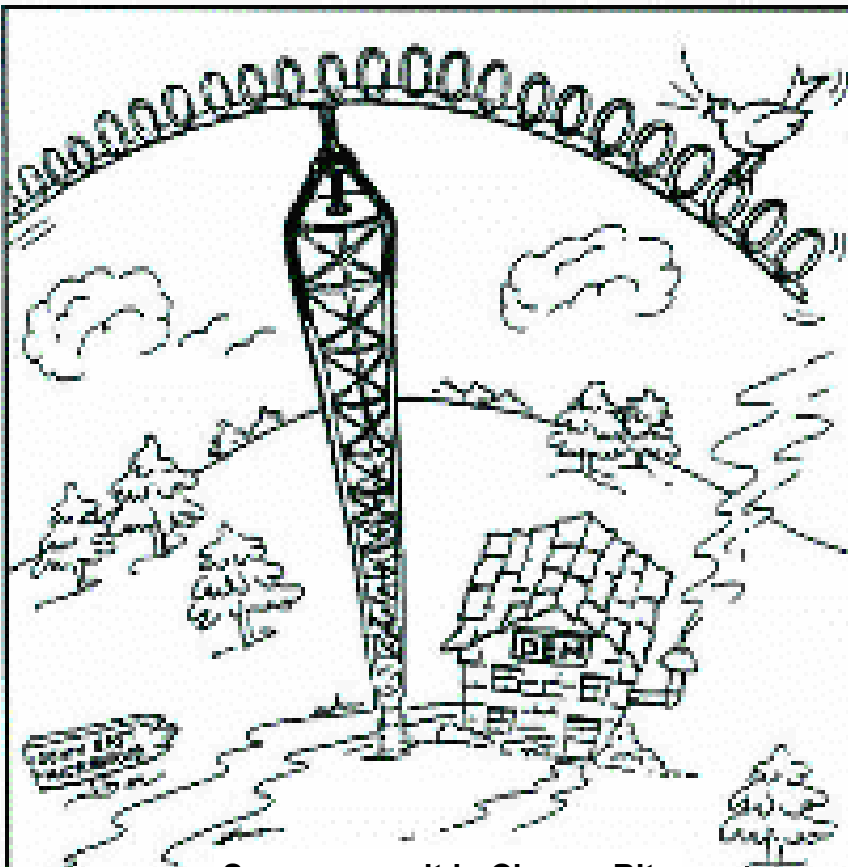
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