



NERG NEWS

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Incorporated 1985 Victoria Reg No A0006776V
Affiliated with the WIA
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NERG Net

The NERG NET will be on non-meeting Thursday evenings on the VK3RMH 70cm repeater. That is 433.325MHz repeater input with 91.5Hz CTCSS. Set your receive frequency to 438.325MHz. 8:30pm. You can also use the 9700 remote to take part.

April 2024

WHAT'S ON THIS MONTH?

Monthly meeting

Thursday 11th April

DX The How And Why – with Chris VK3IK and Steve VK3KTT – Find out what DXing is all about and how to get going.

Every Thursday afternoon – Radio Café

At the hall – Commencing at 2:00pm

Come along and play with the radios, have a chat and a cuppa.

Forth Tuesday of the month –

Gainfully Unemployed Group

Please let Jim know if you are coming to the next one on Tuesday 23rd April 2024

If you would like to be a member of the mailing list for this group please request membership on groups.io the group name is nerg-gug.

Kit Building and Testing plus Foundation Training and Assessment Day

Saturday 27th April 2024

Training commences at 9am, if you would like to attend or undertake an assessment for any licence class please let us know at vk3cne@gmail.com

Kit day starts around 10am lunch will be available.

April 2024 PLANNED DXPEDITIONS

Lots of DX around last month and a couple of beauties coming up. Conditions are great so get in there and work some DX while conditions are good.

Start	End	Entity	Callsign
Apr 04	Apr 14	Pitcairn	VP6G
Apr 05	Apr 09	Antigua	V26MN
Apr 05	Apr 20	Costa Rica	TI2
Apr 06	Apr 13	Liechtenstein	HB0
Apr 06	Apr 16	Liberia	A8OK
Apr 06	Apr 16	Maldives	8Q7HZ
Apr 07	Apr 13	South Cook Is	E51TLM
Apr 09	Apr 17	Montserrat	VP2MMN
Apr 10	Apr 12	Mayotte	TO4VV
Apr 11	Apr 16	Canada	VY0
Apr 12	Apr 14	Mayotte	TO4VV
Apr 12	Apr 15	Palau	T88PB
Apr 12	Apr 21	South Africa	ZS6
Apr 13	Apr 28	Bonaire	PJ4TB
Apr 15	May 15	Wake I	KH9
Apr 16	Apr 28	Niue	E6SP
Apr 16	Apr 30	Austral Is	TX7W
Apr 17	Apr 19	Antigua	VP2MN
Apr 18	Apr 21	Svalbard	JW8EKA
Apr 18	May 08	Bhutan	A52
Apr 22	May 04	Ogasawara	JD1BQP
Apr 23	Apr 30	Honduras	HR9
Apr 25	Apr 30	Mariana I	KH0
Apr 18	May 08	Bhutan	A52
Apr 22	May 04	Ogasawara	JD1BMH
Apr 27	May 04	Market Reef	OJ0T
Apr 30	May 13	Botswana	A25SHD
May 02	May 17	Rwanda	9X2AW

Thanks to <http://www.ng3k.com/misc/adxo.html>

April 2024 CONTESTS

Not a big month for contests the JIDX is good if you are chasing JA Prefectures. IG-RY is a popular RTTY contest and can be a lot of fun. For CW operators have a go at the CQMM Contest. There are lots of US State QSO parties on if you are interested in chasing US states and counties.

Contest	Times & Dates
JIDX CW Contest	0700Z, Apr 13 to 1300Z, Apr 14
IG-RY World Wide RTTY Contest	1200Z, Apr 13 to 1800Z, Apr 14
DIG QSO Party, CW	1200Z-1700Z, Apr 13 (20m-10m) and 0700Z-0900Z, Apr 14 (80m) and 0900Z-1100Z, Apr 14 (40m)
Yuri Gagarin International DX Contest	1200Z, Apr 13 to 1159Z, Apr 14
OK/OM DX Contest, SSB	1200Z, Apr 13 to 1200Z, Apr 14
New Mexico QSO Party	1400Z, Apr 13 to 0200Z, Apr 14
Georgia QSO Party	1800Z, Apr 13 to 0359Z, Apr 14 and 1400Z-2359Z, Apr 14
North Dakota QSO Party	1800Z, Apr 13 to 1800Z, Apr 14
Hungarian Straight Key Contest	1500Z-1600Z, Apr 14
Holyland DX Contest	2100Z, Apr 19 to 2059Z, Apr 20
ES Open HF Championship	0500Z-0859Z, Apr 20
Worked All Provinces of China DX Contest	0600Z, Apr 20 to 0559Z, Apr 21
YU DX Contest	0700Z, Apr 20 to 0659Z, Apr 21
CQMM CW DX Contest	0900Z, Apr 20 to 2359Z, Apr 21
Nebraska QSO Party	1100Z, Apr 20 to 2259Z, Apr 21
Michigan QSO Party	1600Z, Apr 20 to

	0400Z, Apr 21
Ontario QSO Party	1800Z, Apr 20 to 0500Z, Apr 21 and 1200Z-1800Z, Apr 21
International Vintage Contest HF	0700Z-1100Z, Apr 21 and 1500Z-1900Z, Apr 21
Quebec QSO Party	1200Z-2200Z, Apr 21
ARRL Rookie Roundup, SSB	1800Z-2359Z, Apr 21
UK/EI DX Contest, CW	1200Z, Apr 27 to 1200Z, Apr 28
SP DX RTTY Contest	1200Z, Apr 27 to 1200Z, Apr 28
Helvetia Contest	1300Z, Apr 27 to 1259Z, Apr 28
Florida QSO Party	1600Z, Apr 27 to 0159Z, Apr 28 and 1200Z-2159Z, Apr 28
BARTG Sprint 75	1700Z-2059Z, Apr 28
May 2024	
10-10 Int. Spring Contest, CW	0001Z, May 4 to 2359Z, May 5

RCC Cup	0300Z-0859Z, May 4
ARI International DX Contest	1200Z, May 4 to 1159Z, May 5
7th Call Area QSO Party	1300Z, May 4 to 0700Z, May 5
Indiana QSO Party	1500Z, May 4 to 0300Z, May 5
Delaware QSO Party	1700Z, May 4 to 2359Z, May 5
New England QSO Party	2000Z, May 4 to 0500Z, May 5 and 300Z-2400Z, May 5
CQ-M International DX Contest	1200Z, May 11 to 1159Z, May 12
VOLTA WW RTTY Contest	1200Z, May 11 to 1200Z, May 12
Canadian Prairies QSO Party	1700Z, May 11 to 0300Z, May 12

Many thanks to
<http://www.contestcalendar.com/contestcal.html>

Simple FT8x7 CAT Display

Part 2 Basic Sequencer and “Thru” Switch

By Paul McMahon VK3DIP

Some Added Functionality.

One of the things I have found I have needed, especially when driving mast head preamps and similarly for Transverters, is some sort of mechanism to prevent inadvertent application of any sort of RF power, even for a few milliseconds, the wrong way, i.e. into an output. So the first extra I have added makes use of the TX_Inh input on the FT8x7's. I had built a circuit to do this previously using a small 12F675 PIC (see NERG news March 2017) that has worked well over the years so basically this is the same, with the small extension of some status LEDs, but using the spare capacity in the Arduino Nano.

I also had some questions about why I left out 1296MHz/23cm from the first version. The reasons basically being 2 pole 6 way switches are very readily available, 7 way 2 pole are not. I

already had a IC9700 with 1296MHz so I needed to leave out one of the 6 + 1thru = 7 Australian ham bands between 70cm and 12mm, so there it went. A number of people have commented that others may not be as lucky, so I have also come up with a mechanism using an additional toggle switch to effectively have 7 positions, plus give an output to control supplying power to the transverters. Have a look at the updated prototype in Figure 1 – Version 2.1. The visible additions are a toggle switch to switch between Thru and Transverter, relabelled 6way switch, and a red and green LED indicator, red is for receive, and green is for go to talk.



Figure 1 – Version 2.1

The Hardware.

The Updated schematic diagram is shown in Figure 2 - Schematic Diagram. The additional outputs each drive a pair of small signal switching transistors in parallel, one of the transistors is for the LED and one for the external output. Additional inputs are one analogue (A2) for the delay set pot, and two digital ones for TX_Gnd and the new Thru/Transverter switch.

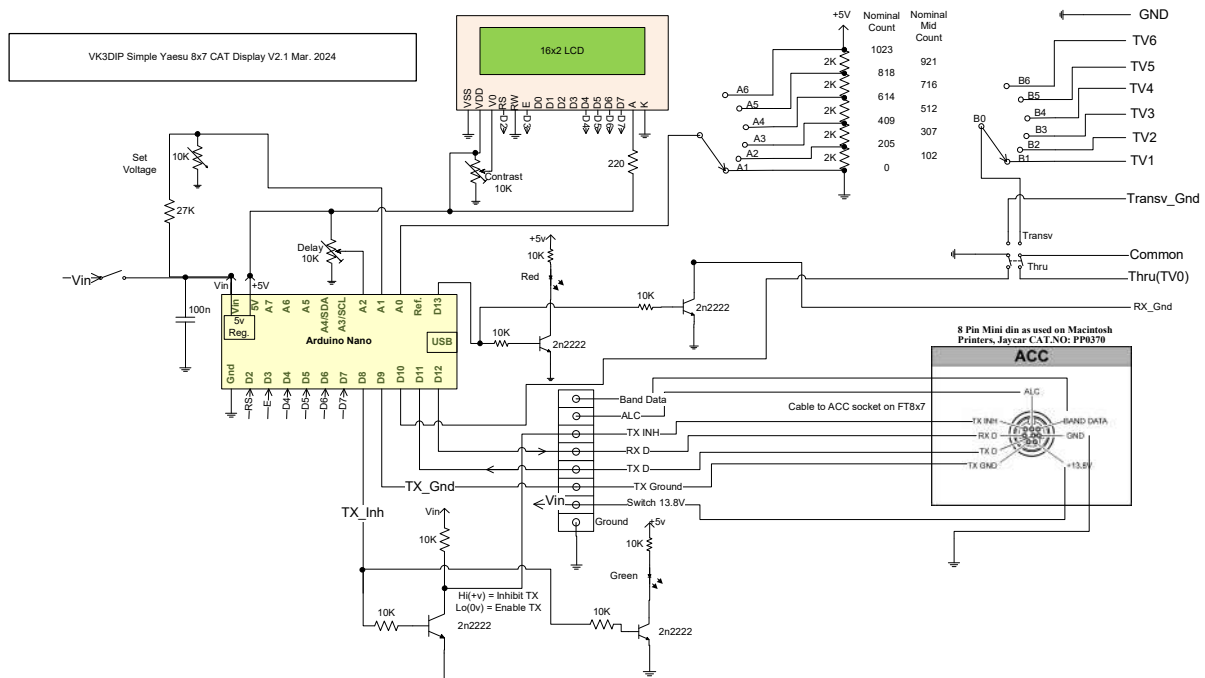


Figure 2 - Schematic Diagram

This schematic also shows the outputs etc. that are coming out for future extensions. Note the DPDT switch is actually doing three jobs; providing the 7th transverter position, indicating this to the Nano, and providing a Transverter on ground to other circuitry. Once again The layout I used is shown in Figure 3 – Protoboard getting a bit full., with the actual version not looking quite so neat in Figure 4 - Real Life but not quite right., in fact figure 4 is actually my initial attempt at wiring this up where I managed to get the two lots of output transistors confused, so if you are trying to duplicate this use Figure 3 – Protoboard getting a bit full. not Figure 4 - Real Life but not quite right..

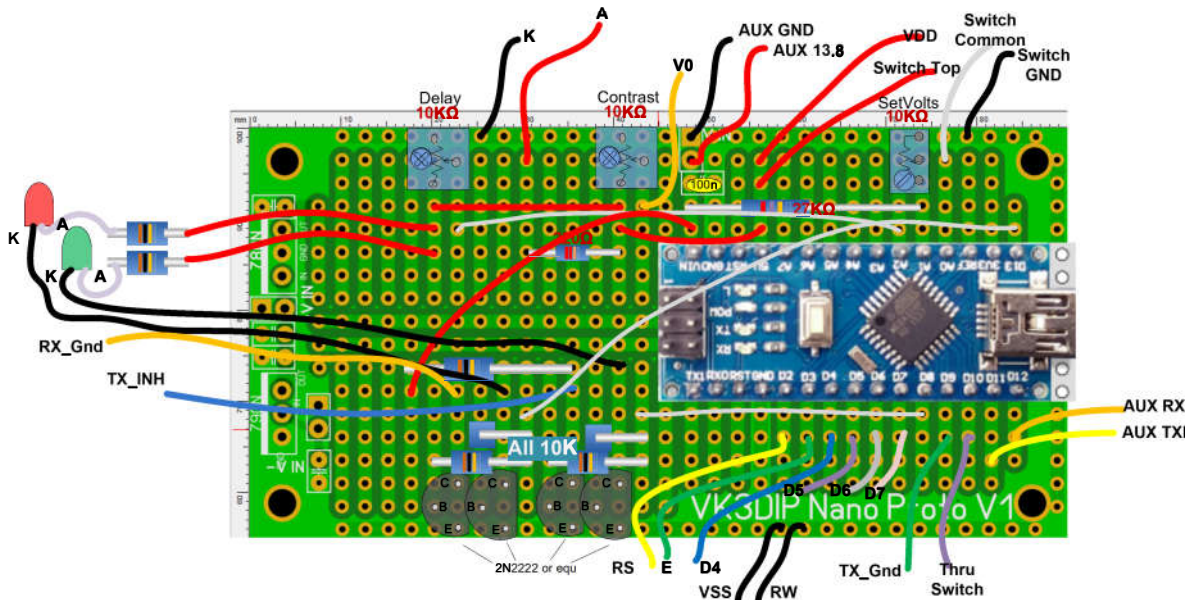


Figure 3 – Protoboard getting a bit full.

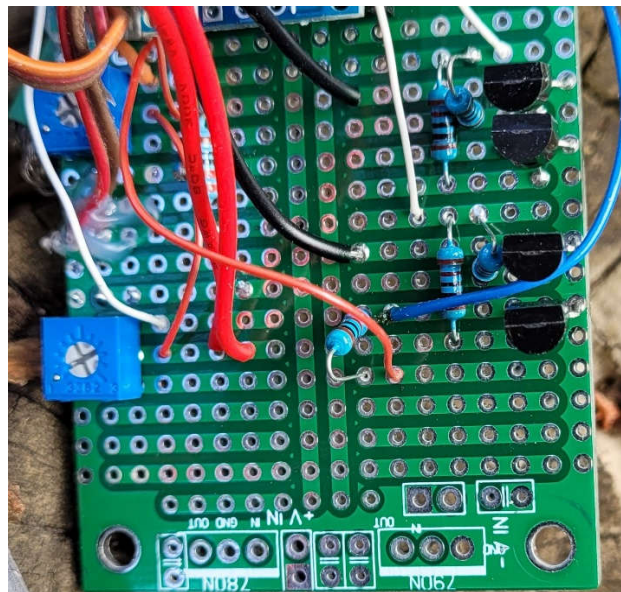


Figure 4 - Real Life but not quite right.

The Protoboard is now getting a bit full, and probably just about justifies a special PCB which I will possibly do if I come up with the need to do further work on this portion of the system. As a note I used 2N2222 transistors because I happened to have a lot of them, but just about any general purpose switching transistor will do just as well. Also to note I used LED bezels with pre-built-in resistors so didn't actually use the 10K resistors shown, basically don't use two lots of current limiting resistors, either have them built in as I did, or use external ones. The actual values of these

resistors may need to be adjusted also to suit the particular LEDs used and the currents they require.

The Software.

The current version (2.1) of my Arduino INO file (i.e. the source) I used can be downloaded from here: http://www.yagicad.com/Projects/VK3DIPCATDV2_1.zip. There are a few changes and additions since the previous version. The first change is that rather than inferring the TX state from a command/response I am using the TX_Gnd input to indicate this and then doing either the RX state or TX State command/response as appropriate to get the relevant meter value.

The second change is the sequencer logic. Basically, I detect the request to go to transmit, ie. PTT press, via the TX_Gnd going low. Immediately this happens the code drops the red RX LED (and RX_Gnd out can float high). If previously the state had been RX I start a delay of a value in milliseconds based on the value read from the delay trim pot. This will be a value from 0 to 1023 to which I add 10 just so that the minimum delay will be 10 milliseconds and the maximum 1033 milliseconds. After the delay the TX Inhibit is lifted, the green LED is illuminated, and you are good to talk. There is no delay when going back from TX to RX.

The third change is for the now seven possible different transverters. I have added one more frequency to the offset array, the thru offset of zero is still element zero but element 1 is now an offset for 23cm. The value of the rotary switch is still read in six levels but now only if the toggle switch is in the transverter position. So offset zero is the toggle switch in the thru position, and 1 to 6 is on the rotary switch. In my case I assumed a 144mhz IF for the 23cm, but again this is just set in the initial define of the offset array.

One more note here, it is not really software but it is related, in that as you can see from the schematic I have now used all the nominally digital pins on the nano. That of course now includes D13, which in the Nano case has the on-board LED connected to it. In the case here I use it as an output so that I don't have to remove the LED. Again, just remember that D13 won't work as an input unless you do.



Figure 5 - Works in TX Also

Using It.

Figure 5 - Works in TX Also shows the display in TX mode. In practice you press the PTT, the red light goes out on the display (and comes on on the FT817) immediately, some small time later the green light goes on on the display and you can talk. Until the green light goes on there is no power going out. The delay time is adjustable with the delay pot up to about one second.

What's Next?

Next time I will be hopefully doing the relay switching bits, I have got one six-way relay PCB back, but now that I have added another transverter option I need a seventh output, so I am waiting again. Rather than do a seven-relay board, I am trying for an additional single relay (two output) PCB that can add the seventh path as well as be a TX/RX separator using another instance of the same PCB.

I have also started looking at a version for the ICOM IC705 (because Ed asked very nicely) which will probably be along after the relay switching version.

73 Paul VK3DIP

March round up

The monthly meeting was a wrap up of the Bouvet DXpedition with a look at their video along with a video of a previous DXpedition where a helicopter was used to access the island. Both demonstrated the difficulty in accessing this remotest of locations.

On Saturday 23rd the 160M antenna was repaired and the first assessments under the ACMA system took place. All 6 Foundation candidates were successful, congratulation to Steve, Brian, Neil, Mark, Susan and Angelo.

There have been good attendances at Radio Café throughout the month with lots of interesting conversations and a bit of DX working by the club station.

Discounts from Suppliers

Club members can get discounts from two suppliers:

Altronics. (Australia Wide), Mention you are from the North East Radio Group or give our customer no - 64429. Discount will be minus 10% up to 45% off depending on the item. (Actual discounts depend on the product type and quantity purchased). There is No Minimum Spend in store to receive the discount. For on-line or phone Sales there **IS** a Minimum spend of \$25.00 inc GST but **NOT** including Freight. In the comments section put "64429" to receive the discount.

We have discovered that David VK3UQ gets an email, that you may not get, detailing delivery of your order. So pop him an email when you order and he will be able to track which email belongs to you. We hope to have a method of dealing with this soon. President at nerg.asn.au

Jaycar Electronics stores by mentioning you are from the "NERG" no spaces quotes or dots etc, Account code is 44700493. You need to spend a min \$25.00 to receive a 10% discount. <http://www.jaycar.com.au/>

VK3CNE REMOTE STATION



Can be used for receive on all HF bands. Provides transmit on 160 metres using a dipole, 80 and 40 metres using a trapped dipole and a Spiderbeam for 20 through 10 metres.

This is available to members, you will need:

- An Amateur Radio Licence – any grade.

- A windows computer with sound card connected to a speaker and a microphone. A PC headset is ideal.
- OR an android tablet or phone and are prepared to pay for the app (less than \$20)
- Download the client from RemoteHams.com install it on your machine and register with RemoteHams.com using your **callsign**. The android app is called RCForb and is available on google play.
- The NERG station is "VK3CNE" Connect to it and request "club" membership and TX capability. Then wait until your membership is approved and away you go!
- Usage privileges are only available to financial NERG members with VK callsigns.

VHF / UHF Remote

The VHF/UHF remote operates exactly the same as the HF version, the Station is "VK3CNE – 9700"



About the NERG

The NERG Inc. Reg No A0006776V <http://nerg.asn.au> The North East Radio Group, Inc. is an amateur radio club devoted to encouraging members and others to enjoy the hobby of amateur radio. It tries not to hang on ceremony and endless reporting but rather participate in the fun aspects of this fascinating hobby.

MEMBERSHIP FEES

Due in August: Full: \$35 Family: \$50 Remote Member: \$50 Concession: \$25 You will get a renewal notice please wait for this before you pay.

COMMITTEE

President	David VK3UQ
Vice President	Greg VK3VT
Secretary	Anthony VK3YH/BNR
Treasurer	Greg VK3VT

Committee Members

Mark VK3BYY	Ben VK3UW/SWK
Phil VK3RP/BOY	Chris VK3IK/AWG
Peter VK3PCC	Ed VK3BG

NERG NEWS ARTICLES

The NERG is always happy to receive news, articles, and member's wanted or for sale advertisements for inclusion in the newsletter. Please contact the editor at news@nerg.asn.au

NETS

NERG NETS run on the club's 70cm repeater VK3RMH TX 438.325MHz and RX 433.325MHz both C4FM and analogue. **That means you RX on 438.325MHz and TX on 433.325MHz.** You will need a 91.5Hz CTCSS tone on your analogue FM TX and if you don't want to be bothered with listening to the C4FM digital signals on the output then set your radio to 91.5Hz CTCSS tone on RX as well.

(8.30 – 9.30 pm Non-meeting Thursdays). Feel free to join the discussions.

146.575MHz is used as a general Net frequency by a number of NERG Members and is often used by the DX chasers in the club while hunting DX. Foxhunters use this channel for liaison as well on the third Friday of the month.

Club Sponsor



Margherita Pizza ph 9434 4980

89 Main Road, Lower Plenty, Vic 3093

[web www.margherita.com.au](http://www.margherita.com.au)

Margherita's Still Sponsor the NERG and provide the excellent suppers that we have come to enjoy. Order your next Pizza dinner from them and tell them you appreciate their support of the club.

Facebook

The NERG is on Facebook – A group has been established and can be found at

<https://www.facebook.com/groups/nergamateur/>

Members are encouraged to join this group