



# NERG NEWS

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Incorporated 1985 Victoria Reg No A0006776V  
Affiliated with the WIA  
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## ADVANCED TRAINING COURSE

Commenced on Tuesday 11 Feb 25 at 19:30 in the hall. Will run every Tuesday for around 14 weeks. Register with Phil VK3BOY at [training@nerg.asn.au](mailto:training@nerg.asn.au)

## March JMM Field Day

The John Moyle Memorial Field Day will be held on the 16<sup>th</sup> & 17<sup>th</sup> March 2025. The club is planning some activity on this day. If you would like to take part contact us at [vk3cne@gmail.com](mailto:vk3cne@gmail.com)

To get an idea of how much fun a field day can be have a look at the video of one our previous efforts from Mount Macedon on - [https://www.youtube.com/watch?v=oJKa\\_yzL-Zc](https://www.youtube.com/watch?v=oJKa_yzL-Zc) and [https://www.youtube.com/watch?v=XEitSzI\\_9D8](https://www.youtube.com/watch?v=XEitSzI_9D8)

# February 2025

## WHAT'S ON THIS MONTH?

### Monthly meeting

Thursday 13<sup>th</sup> February - 8:00 PM

TBA

### 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, bring your favourite nibbles. Last one for the year on Dec 19<sup>th</sup>.*

### Forth Tuesday of the month - Gainfully Unemployed Group

*Tuesday February 25<sup>th</sup> 11:00am for coffee lunch 12:15 at the Greensborough RSL, please let Jim VK3KE know if you are attending.*

*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 General Assessment Day

Saturday 22<sup>nd</sup> February 2025 Training commences at 9am, if you would like to attend or undertake an assessment for any licence class please let Phil know at :

[training@nerg.asn.au](mailto:training@nerg.asn.au)

*Kit day starts around 10am lunch will be available.*

# Distracted by a new toy

By Paul McMahon VK3DIP

Sorry everyone expecting another part of the 6cm Transverter saga, I have been distracted over Christmas. The delay is not caused by David telling me that SG Labs have released a 5760MHz Transverter, though it is undoubtedly going to be smaller and easier to get going than my version, it was instead caused by Santa delivering a shiny new (well second hand) toy, a CMU200.

## What is a CMU200?



Figure 1 - The CMU200

As the photo above (Figure 1 - The CMU200) implies the CMU200 is a so called Universal Radio Communications Tester from Rohde and Schwarz. The CMU 200 was for quite some time the benchmark standard piece of test equipment for anybody who wanted to do Mobile Phone handset testing. Basically the CMU200 (for quite a steep price) was capable of being optioned to be able to talk/test any of the various Mobile Phone standards worldwide, including CDMA, WCDMA, GSM(400-1900), TDMA, EV-DO, AMPs, Bluetooth etc. etc.. Unfortunately for many carriers etc. worldwide that own large number of CMU200's it cannot be optioned for the latest standards (4, 5G, etc.) so many CMU200's are now appearing on the second-hand market on eBay etc. at a small fraction of their initial price tag.

## Why should Hams be interested in a CMU200?

No we don't want to test old Mobile Phones, and while there may well be many good bits in them, the main reason for a Ham to want one is because they also have a general purpose (protocol non-specific) mode. In this mode the CMU200 can (simultaneously if need be) be usable as:

- A 100kHz to 2.7GHz signal generator (Continuous Range)

- Common option is a second independent generator ( mine has this), frequencies of secondary generator limited to nominal mobile phone bands.
- With many different modulation options including CW, AM, DSB, USB, LSB, FM, FM Stereo, etc.
- The generator does not have a sweep function, but can be given a list of up to 100 frequencies to step through to simulate a sweep.
- 10MHz to 2.7GHz spectrum analyser (Continuous Range)
  - Standard SA functions including markers etc.
  - Front end has about 10dB noise figure.
- 10Mhz to 2.7GHz power meter. (Continuous Range)
  - Two versions as standard, Tuned or Wide Band.
  - The tuned version operates down to below -80dBm.
  - Can give a single number or graph of power over time.
  - The wideband version has slightly faster response times etc.
  - The Power meter handles inputs natively up to 2W (there is a 50W native option with internal cooling) but can be configured to work with an external power attenuator to any power level that attenuator can handle.
- The tuned power meter function incorporates a frequency counter with 11 digits resolution up to at least the 2.7GHz region.
- There is an optional Audio board enabling full Audio Analyser functions, including off air monitoring, distortion etc..
- There is an optional IQ board which can do IQ testing (Gen or Recv.) for those into digital radio.
- Four distinct N connectors on the front panel that can be independently allocated to each of these functions two both in and out, and one each in or out only. Useful for stimulated measurements, eg. Frequency response of a filter.
- The price can be very competitive with respect to equivalent new test equipment.

### Why shouldn't Hams be interested in a CMU200?

- They are not small, and weigh quite a bit, very important when considering postage on eBay etc.
- Many have been around for many years in continuous service.
  - The internal disk drive can get flaky over time.
  - The front panel display can get LCD ageing/burn in.
- Unless you are very lucky, including postage prices for a known good one will be somewhere around \$1K-\$2K

### My CMU200.

As it turns out I was very lucky, I had the assistance of my brother-in-law Charles (VK3CLE) who has had a lot of experience with buying etc. these sorts of things, and we took a bit of a risk buying a "for repair" version.

First a bit of background, the CMU200 is basically a MSDOS ( 6.22) computer/ display/ back plane with a number of slots for the optional units that for the main part (running their own Linux OS) do the various protocols and RF/Audio functions. The DOS part has come in various configurations over the years the latest version ( with the newest processor/most memory etc.) is known as FSM-07 (Front System Module V 7) because it is in the front of the box I suppose. This is the equivalent of a PC

motherboard running a standard BIOS just with a proprietary buss slot setup. Most systems came with at least the optional modules to do testing for one of the common networks CDMA, or GSM etc. In my case the particular unit came with, as mentioned, a “for repair” description and apart from the screen shot in the advert had little other information See Figure 2 - Initial Error ( This was on eBay from a Korean seller who had another 49 CMU200’s most with various options in supposed working order, so understandable they hadn’t wasted too much time on a unit that didn’t boot straight up).

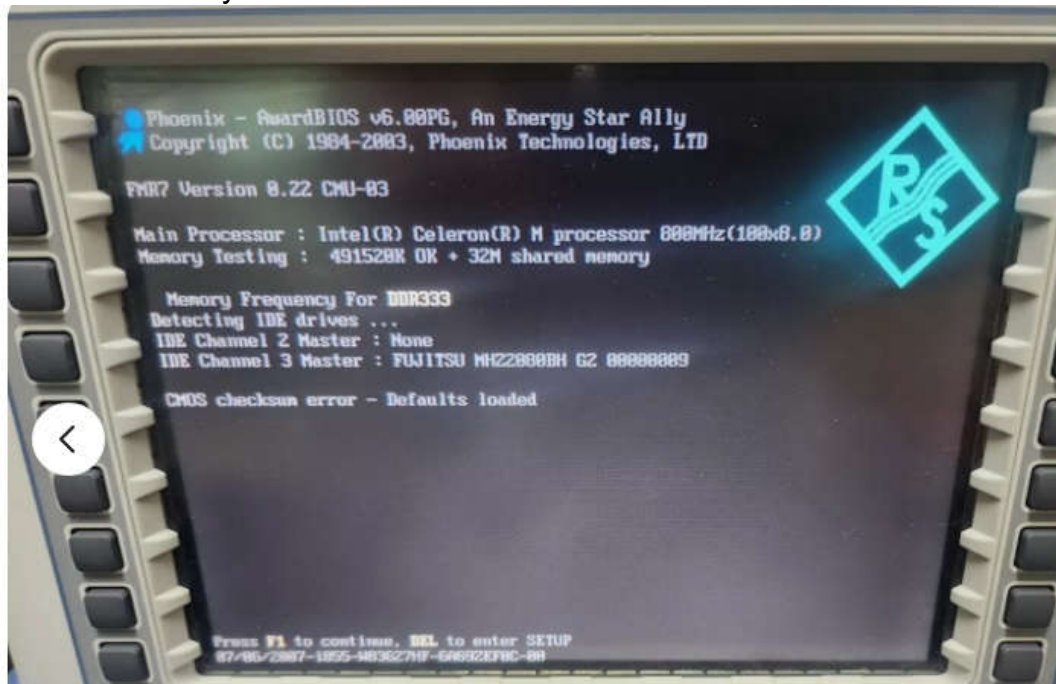


Figure 2 - Initial Error

As many people who lived/worked through the days of DOS might be already shouting, my guess was that this error was no more than a flat BIOS battery. The other bits of info given, and the fact that the screen was readable, suggested a reasonably late model FSM (subsequently turned out to be FSM-07) and we took the punt that the rest of the system would have the basic common options, which would work fine once the battery was replaced. The ebay auction unit was won for about \$300US with a similar amount for pack and post. Just over \$700 AUS all up delivered.

Once the unit was delivered, it only took connecting a PC keyboard to the, in this case USB connector on the back, ( older FSMs have a PS2 Connector) and hitting F1 and the unit continued to boot up with the defaults, which apart from the wrong time and date of course showed as hoped the unit had the basic modules (in this case for CDMA and GSM) and seemed to be more or less functional.

### Replacing the BIOS Battery.

The service and operations manuals were readily available on the web and were downloaded. The only real problem was that the manuals dealt with a wide range of possible modules etc. and need some interpretation which would be a lot easier for someone who has worked with one of them before. Anyway, seeing as there were no guarantees etc. on a for repair, I (carefully) removed the half a dozen or so calibration void if removed stickers. As it turned out the care was wasted as these were posh stickers of the type that you cannot remove without leaving the word void in there place. A large number of in some cases quite small screws later I had disassembled the unit enough that I could see the battery which in my case was a standard CR2032 lithium coin cell in a holder. In some of the older FSM versions ( like older PC mother boards) the battery was a rechargeable lithium soldered to the board ( looks a bit like a short AA cell). The older versions would have some advantages as long as the battery was not completely stuffed it would charge up a bit if left on, but the big disadvantage that you have to take the board all the way out to get at the back, and replacements

can be costly and difficult to find. Anyway in my case a new CR2032 was purchased ( very readily available) and carefully replaced in the holder. The unit was reassembled (wonder of wonders after only one hands and knees effort on the floor looking for the last screw) and it ran/booted up ( firstly into the bios setup where I set the date etc.) and ultimately directly into the CMU200 application.



Figure 3 - Warning on Splash Screen

You will see in Figure 3 - Warning on Splash Screen there was a transitory warning on the Splash screen something about not being able to create a ram disk, but all functionality seemed to pass the self tests.

### **Replacing the Harddrive with a Solid State Drive.**

A search on the web showed that one of the common things people did to CMU200's was to replace the mechanical hard drive with a Solid State Drive (SSD) version. The reasons given for this were reliability ( one less mechanical moving part) and boot speed. So given I had what I believed to be a suitable SSD on hand I thought I would give it a go. Removing the many screws once again ( this time putting them in a small snap lock plastic bag) I soon had the current Hard Drive in sight. (See Figure 4 - Original Hard Drive..)



Figure 4 - Original Hard Drive.

Once again I was lucky, with the later model FSM-07 the interface was a standard SATA, older versions use a PATA style which would need a (readily available) adaptor PCB to convert to a modern SSD. Note in this case the original drive was a native 80GB model (actually configured to 40GB), most of which is wasted/unused. The biggest single drive that DOS6.22 (the OS running the main CMU200 app) can use is 2GB, so our C drive can be no larger than 2GB's. Even in the days that this machine was originally built you couldn't buy that small a capacity 3.5 Inch drive so they had taken the smallest they could get 80GB and only used 2GB's of it. Yes you could configure a number of other 2GB drives (D, E, F etc.) on the same physical drive but the CMU200 app couldn't easily use them, and besides all the manuals etc. talk about the removeable (Compact Flash) drive as drive D.

The SSD that I had has a SATA interface and was 8GB in size, ( I don't think you can buy them that small these days, I think these were originally spares for an old photocopier, bought back in the days of computer swap meets) .

Getting the information transferred from the old drive to the SSD turned out to be really simple. Firstly, though it subsequently turned out I didn't need to do this just for this transfer, I put together a separate PC and loaded it with Windows 7, and spent some hours doing all the updates etc. While this was wasted time for this transfer, it came in real handy when later trying to format CF cards for the CMU200 to read. I then downloaded a copy of the HDD Raw Copy Tool ( Freeware from <https://hddguru.com>) connected the original drive to the Win7 PC using a usb to SATA adaptor, and told HDD Raw Copy to save a copy/drive image to the PC Hard Drive. It uses ".imgc" format for this. As an aside yes the hard disk disk was perfectly readable under windows 7 ( as a 2gB drive), and I did take copies of all of the files and could possibly have built a clean version directly onto the SSD, but I was worried that there may have been some hidden embedding of serial numbers, or magic order required of files, or special boot sector/ partitioning /formatting, etc so a low level/raw disk sector by sector copy seemed the best bet to work first time. The donor disk was safely ejected, and the SSD connected (using the same USB/SATA adapter) to the PC. HDD Raw copy was then told to copy the saved "imgc" file to the SSD . While the two drives had totally different sizes and configurations HDD Raw Copy didn't say boo. It just ran for effectively the first 8GB of the image and then just gave up when it ran out of space. Luckily in the old DOS world disk storage/boot sectors/partitions/ etc. had to start from the first sectors on the drives so the stuff in the image post the 8GB (really post about 2GB) is all junk and can be ignored. I ended up with a (2GB) drive(SSD) formatted for DOS with what appeared to be the same files as the original disk.

I fashioned a small mounting bracket from scrap PCB to adapt between the mounting holes on the SSD and the CMU200, and mounted the SSD in the CMU200. Turned on and Tah Dah, it all worked fine and did boot up somewhat faster, see Figure 5 - SSD in place.. The screw plastic bag was found (after a short search) and the unit reassembled.

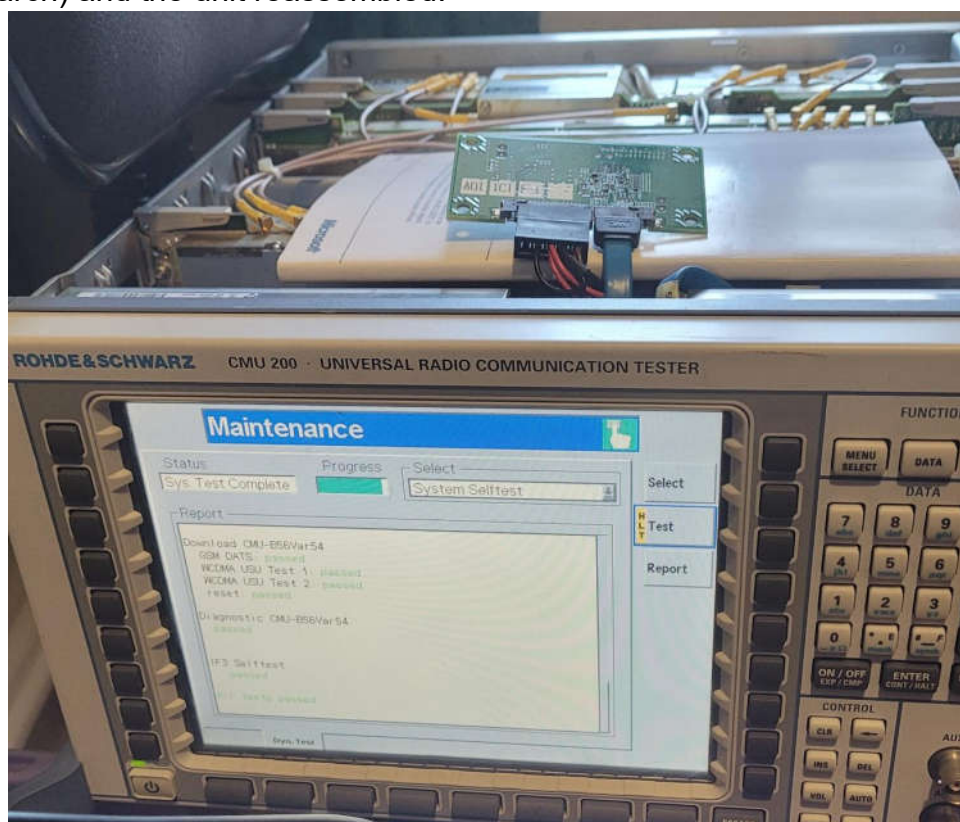


Figure 5 - SSD in place.

Very conveniently the unit has all sorts of self-tests and self-calibration built into the software, so you can quickly determine that all is working as it should.

## Upgrading the CMU200 Applications (AKA Firmware)

The next thing attempted was to upgrade the various CMU200 applications to a later (the latest) version. Unfortunately, R&S no longer provide wide access to their download servers. To get access these days you need to be a recognised “major” customer. Luckily before this lockdown took place several enthusiasts downloaded copies which have been made available in a number of places such as the files section of the R&S group on Groups.IO. From this location I downloaded the version 5.21 files (my CMU200 came initially with V5.11) .

This is where the windows 7 PC came in handy, recall DOS6.22 can only handle/address a 2GB disk and nobody has 2GB anything these days, USB flash drives or anything. Further the drive must be formatted in the original FAT format ( now called FAT16). This is where the Win7 comes in, this was about the last windows OS that will format a true FAT format disk. For reasons best known to Microsoft the later versions of Windows will say they are formatting something FAT16 but it is not the same as DOS expects, so the CMU200 will not recognise a 2GB formatted FAT16 Compact Flash but it will recognise one formatted using Windows 7. For the interested this is because the later versions of windows for some reason use a different MBR type value to indicate FAT16 to that used till then in DOS etc. You can “fix” a CF card formatted in later versions of windows to be recognised by DOS and the CMU200 using the Set-Partition command in a command window. For reference the appropriate command line (assuming the target CF drive was mounted as “F” ) would be ”Set-Partition -DriveLetter F -MbrType 06”. Once you have done this in Windows 11 for example a 2GB CF card formatted ( and then Set-Partitioned) in Win11 will be recognised and be readable in both Win11 and the CMU200. You don’t have to worry about any of this stuff if using Win7.

So you format your CF card correctly and copy (expand actually because in this case it was in a zip file) the various firmware updates to the CF. There are actually many files because the updates have to be not just to the main DOS CMU200 program, but also to all of the optional (linux based) programs running in the option cards.

Having made the copy, and safely ejecting the CF from the PC. The CMU200 can be turned off, use the front panel power button and let it shut down by itself, don’t just turn it off at the rear power switch. The CF card is inserted into the CMU200 and the CMU200 powered back up and allowed to boot. Note this is because DOS being old and cranky it only looks for drives at initial boot. Anyway, you let the CMU200 boot until in the splash screen you hear three beeps, at this point ( not before and not after boot has finished) as it says on the splash screen you press the “Menu Select” button on the CMU200 front panel and the CMU200 will instead of starting normally go into the Version Manager Application. Within the Version Manager app you can do a number of tasks such as scan the hard drive for errors or defrag the disk (remember having to do that in the dark ages) with a SSD most of these are irrelevant. For us the options we want to select is to upgrade the firmware. Once selected (easiest if you still have the Keyboard connected) the CMU200 will scan the CF for upgrade files and hopefully find several. You then basically select and install them one at a time. You obviously don’t need to install updates for options you don’t have the hardware for. Once you have done all the files you want, you then finalize the upgrade, and the CMU200 will sit there and chug away actually applying the updates, this includes re-calculating and storing calibration tables as required for all the updates you selected. This takes quite some time and lots of messages will scroll past on the screen, I hate to think how long it would take without the SSD, don’t worry about it, go away and come back later and it will all be finished. Once finished you can reboot the CMU200, and once back up run the various diagnostics etc. to confirm all has gone OK and you now have the expected versions of all the programs.

By the way, if you don’t want to bother with this, in the update file you download you will find a text file which lists all the releases up to that point, and what each one fixes/adds. If there is nothing added or fixed that you are interested in then don’t waste time (and it is quite a bit of time) updating.



## Hacking the CMU200.

Because the CMU200 has been out amongst Hams etc. for some time a number of people have done various hacks and unofficial upgrades, many of these are documented on the web. One of the simpler ones of these I have tried, is to add software as opposed to hardware licences. In my case I wanted to add the licence for FM stereo modulation type in the Signal Generator application. R&S call the FM Stereo Option B14. Obviously adding a software licence without any additional hardware cards etc. needed by that application won't work, you can't for example add the audio analyser functions without the Audio hardware option being installed. Anyway FM Stereo doesn't require any additional hardware over the usual basic, and it might be useful one day to have that capability in the sig gen.

Step 1. Find your full serial number.

The first part of your serial number will be on the back of the CMU200 and show on the main menu screen. To generate a licence key you however need the full serial number which includes the bit after a slash. To get this connect your Keyboard and boot the CMU200 all the way. Press Menu select,( to get the main menu if not already there) and select the base maintenance function and System Info function, hit run start button. This will generate a file called "identity.dat" and store it in possibly two places. One place is C:\INTERNALLOG and the other (if you have a CF card loaded) is the root of the CF card.( typically D: ). Now either stop the CMU200 and remove your CF and read it on a PC, or with no CF hit Alt-F4 on the keyboard to shut down the CMU200 app and get a DOS prompt on the CMU200 screen. CD to C:\INTERNALLOG and "edit identity.dat" the full serial number will be found at the beginning of the file. See Figure 6 - Edit the identity.dat file.. Note I have obscured my serial number but you will find it easily on that first page.

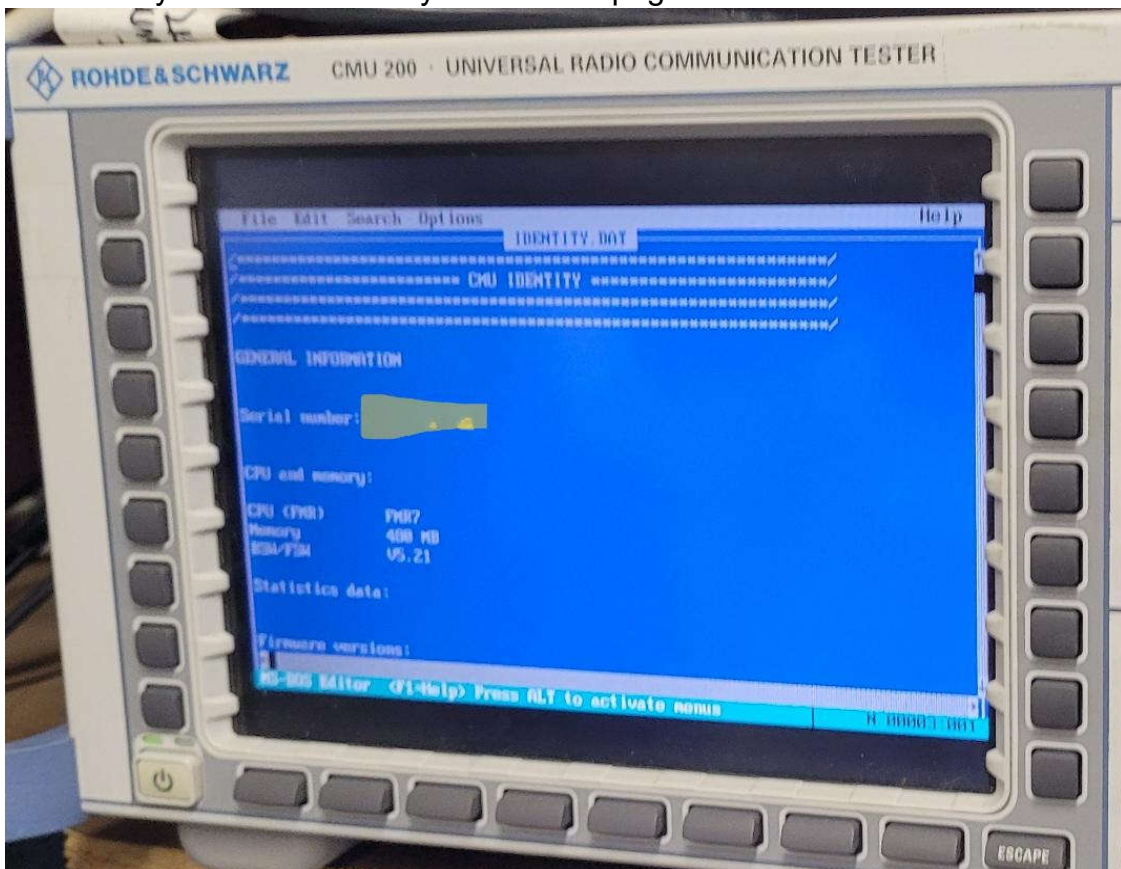


Figure 6 - Edit the identity.dat file.

Step 2. Generate the required Key/Keys.

You can find and download the magic options keygen from the same place you got the firmware upgrade files. If however like me you are a bit wary of exe files with keygen in their names , you can get it as a python script. Alternately, which is what I did you can go to the web site

<https://rohde.nonexistent.ca/> and some kind person is hosting a version of this python script. On this page you enter your full serial number, and then select the options you want. I left all selected. Then you either select to save the SWOPT.DAT file or copy the generated keys from the page text. Note the format shown on the page will be option Number eg K001 – nnnnnnnnnnnnnnnnn ( n = 16byte Hex number). You can either keep the generated SWOPT.DAT file or just copy the screen copy to a text file and save. Which ever way FM Stereo is option K014 and in my example here that is the only number you need.

Step 3. Add the Extra Key to your SWOPT.DAT file.

As in step one boot the CMU200 and alt-F4 exit to DOS. CD to the C:\CMU\DATA folder and “edit SWOPT.DAT”. In this file you should find a list of 16byte Hex numbers one per line. These are your allowed licences in option number order, ie. if you had K001 it would be the first etc. You can decode /check this file against the numbers you generated/saved in Step 2, you should end up with the options you already have. Now you just edit in (inserting lines as necessary) your new licence keys in the correct order. In my case K014 (in R&S doco this is called B14) would be the first ( i.e. smallest numbered) option so I just add the 16hex digit number obtained for K014 in step 2 to the start of the file, and say save.

Step 4. Reboot the CMU 200.

You should now find when you go to the Generator APP that FM Stereo is now included in the modulation types options. You can also re-run the system info maintenance function and further down in the file you should find a man readable list of your licences which should now include FM Stereo.

All software only licences should be able to be added using these 4 steps. You can also obviously get additional separate option boards etc. from online/ebay or junked CMU200’s and physically install them into your unit. Be aware however you will need to run the appropriate “update firmware after adding new options” menu item in the version manager before it will be recognised/work.

### **Some Pictures to Finish.**

Just to finish off here are some screen pictures of the various generic CMU200 functions.

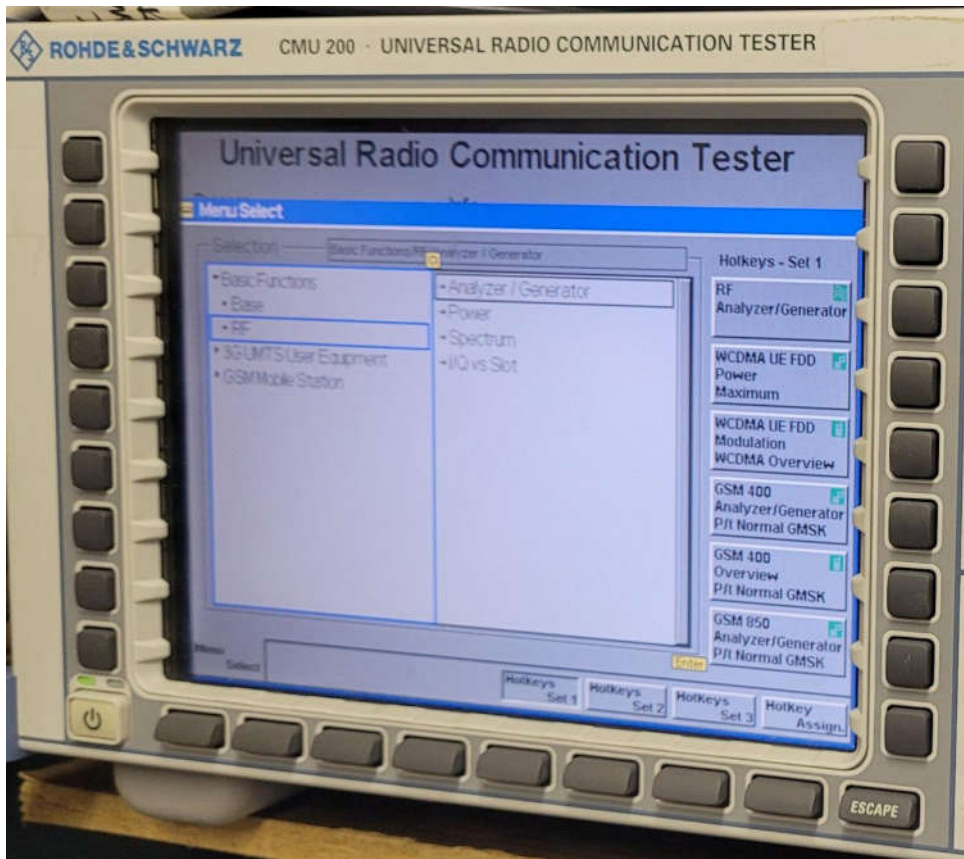


Figure 7 - Main Menu

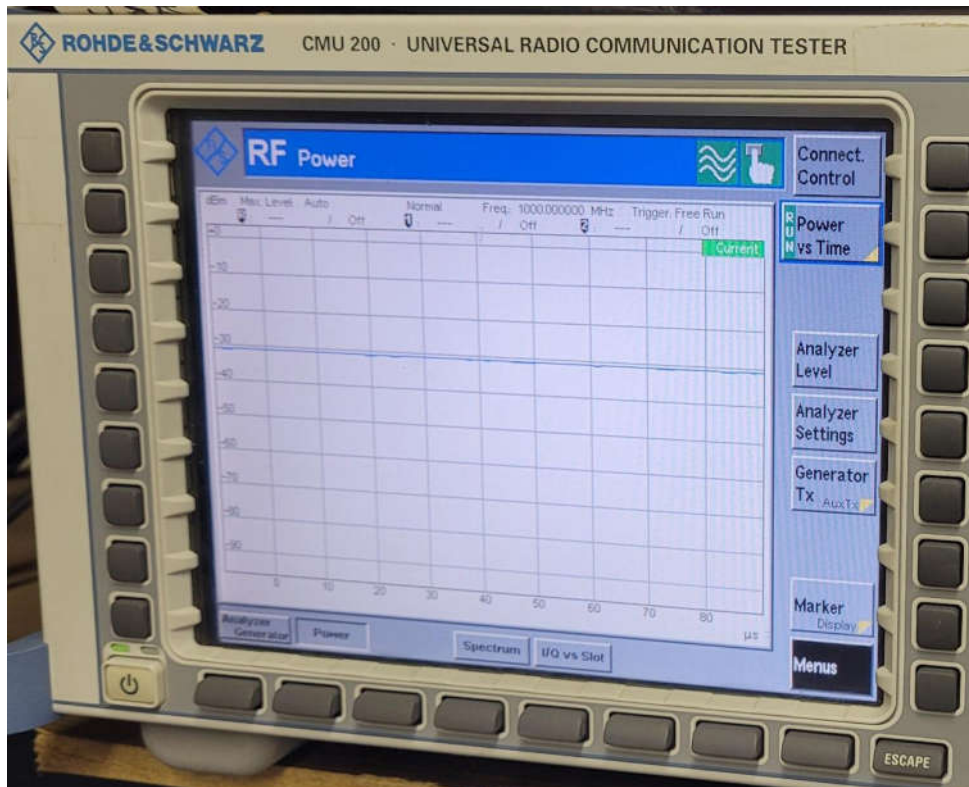


Figure 8 - RF Power Verses Time

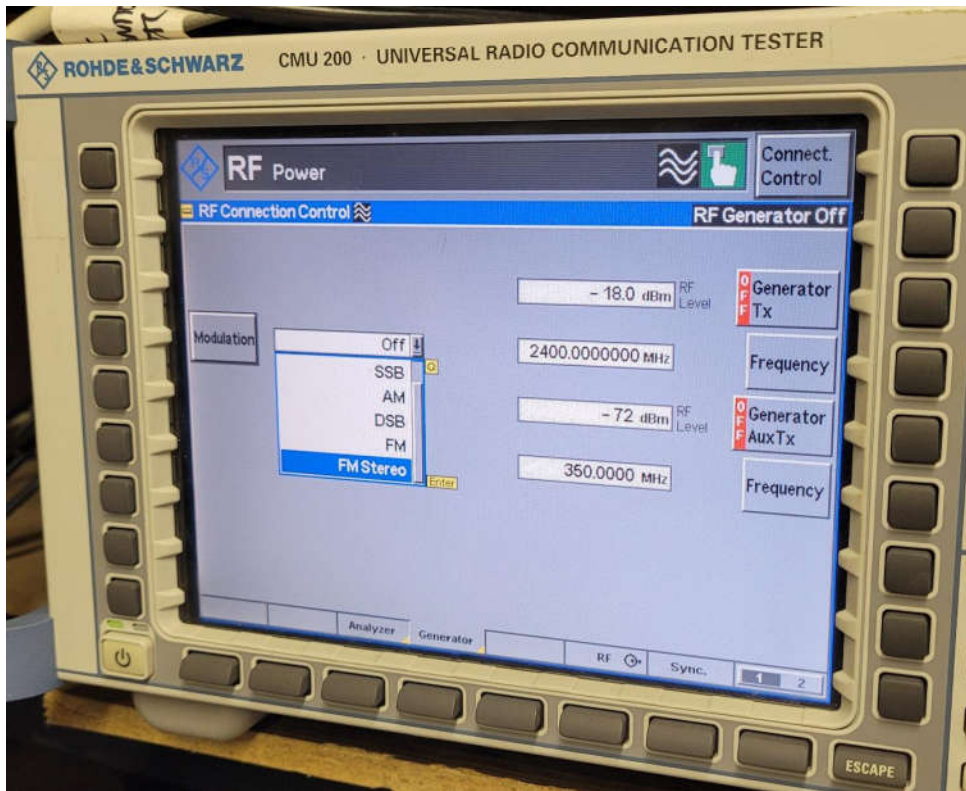


Figure 9 - Sig Gen showing modulations.

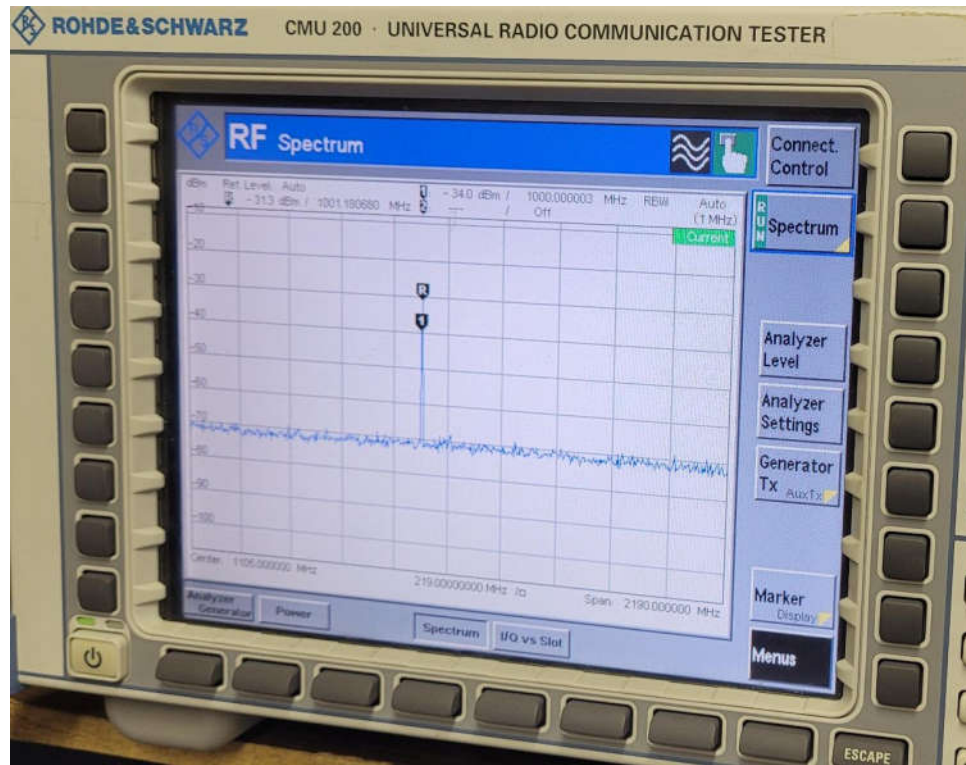


Figure 10 - Spectrum Analyser

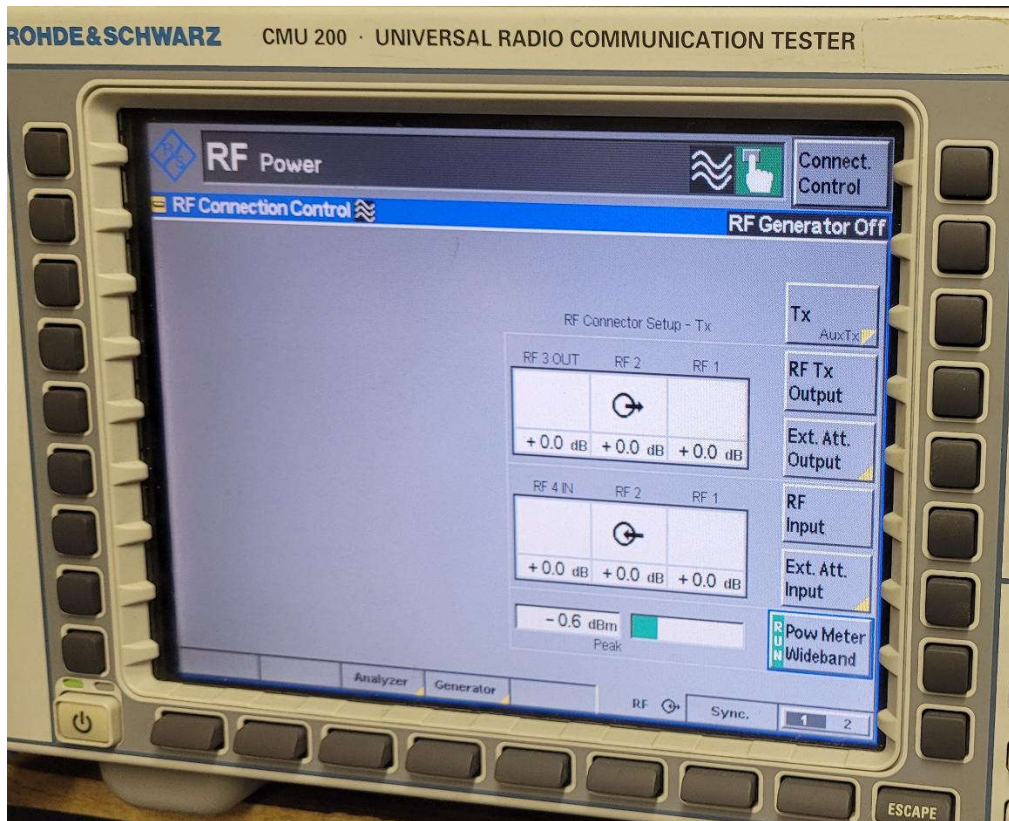


Figure 11 - Connection Control (what is on what connector) and WideBand Power

Anyway, enough for the moment. Next time back to the 6cm Transverter.

73 Paul VK3DIP

## TRAINING News

Here is a summary of the training the NERG has conducted over the last year.

- 25 training attendees sat 20 Foundation and 5 Advanced exams
- 18 Foundation and 5 Advanced passed. Unfortunately, 2 Foundation failed by the barest of margins.
- Approx 20 new members to the club (some people sat Foundation and Advanced exams)

Our ever popular and successful Advanced course commenced on Tuesday 11 Feb 25 at 19:30 in the hall.

The next Foundation training and exam day will be Saturday 22<sup>nd</sup> Feb 25.

Big thanks to Greg and David for their assistance during the year to make sure the training and assessments were carried out

efficiently, and all were provided a very satisfying lunch.

73

Phil VK3BOY

## Feb 2025 PLANNED DXPEDITIONS

Remember the NERG is trying to improve on our 13<sup>th</sup> place in the world club ranking in the DX marathon, we need your score to help us.

Start	End	Entity	Callsign
Jan 23	Feb 28	Turks & Caicos	VP5
Jan 26	Mar 01	Guinea Bissau	J52EC
Jan 27	Feb 15	Rwanda	9X2AW
Feb 02	Feb 28	Senegal	6W7
Feb 04	Feb 18	Anguilla	VP2ECV
Feb 04	Feb 20	Seychelles	S79

Feb 05	Mar 13	Dominican Republic	HI7
Feb 05	Feb 18	Cape Verde Is	D44OA
Feb 06	Feb 14	Togo	5V0DX
Feb 07	Mar 11	Aruba	P4
Feb 07	Feb 19	Mar quesas	FO
Feb 08	Feb 15	St Helena	ZD7KYD
Feb 10	Feb 15	Cape Verde Is	D4DCX
Feb 11	Feb 16	Cayman Is	ZF2EZ
Feb 11	Feb 16	Nicaragua	H7RRC
Feb 11	Feb 16	Nicaragua	YN6RRC
Feb 11	Feb 17	Bangladesh	S21ZN
Feb 11	Feb 18	Cocos Keeling	VK9
Feb 11	Feb 23	Mar shall Is	V73WW
Feb 12	Feb 16	Bahamas	C6ADA
Feb 12	Mar 04	Mali	TZ1CE
Feb 14	Feb 21	Gambia	C5DX
Feb 16	Mar 04	Sint Mar tin	PJ7
Feb 16	Feb 25	St Pierre & Miquelon	FP
Feb 16	Mar 01	Sri Lanka	4S7SPG
Feb 16	Mar 04	St Mar tin	FS
Feb 18	Mar 04	Christmas I	VK9XU
Feb 19	Feb 25	Costa Rica	TI1RRC
Feb 19	Feb 27	St Mar tin	FS
Feb 20	Mar 06	Tanzania	5H3DX
Feb 26	Mar 03	Panama	3F3RRC
Feb 26	Mar 06	Maldives	8Q7FL
Feb 27	Feb 27	Dominican Republic	HI2LD
Mar 01	Mar 01	Antigua & Barbuda	V26MN

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

## Feb 2025 CONTESTS

*Not much on this month, last weekend was the CQWPX RTTY which was great fun. The ARRL DX CW is on this weekend but remember that it is North America works the world and so stations in other parts of the world will not want to work you as they get no points for the QSO.*

*The phone version is on in March. A number of rare DX stations are on at this time and can*

*be worked on the days before and after the contest.*

*The BERU or Commonwealth contest in March is a chance to work some of the rarer Commonwealth countries as they are looking to work other Commonwealth countries.*

<b>Contest</b>	<b>Times &amp; Dates</b>
ARRL Inter. DX Contest, CW	0000Z, Feb 15 to 2400Z, Feb 16
Russian PSK WW Contest	1200Z, Feb 15 to 1159Z, Feb 16
CQ 160-Meter Contest, SSB	2200Z, Feb 21 to 2200Z, Feb 23
UBA DX Contest, CW	1300Z, Feb 22 to 1300Z, Feb 23
South Carolina QSO Party	1500Z, Feb 22 to 0159Z, Feb 23
North American QSO Party, RTTY	1800Z, Feb 22 to 0559Z, Feb 23
World Wide Patagonia DX Contest	0000Z-2359Z, Feb 23
North Carolina QSO Party	1500Z, Feb 23 to 0100Z, Feb 24
<b>March 2025</b>	
ARRL Inter. DX Contest, SSB	0000Z, Mar 1 to 2400Z, Mar 2
Open Ukraine RTTY Championship	1800Z, Mar 1 to 1359Z, Mar 2
<b>Commonwealth (BERU) Contest</b>	<b>1000Z, Mar 8 to 1000Z, Mar 9</b>
South America 10 Meter Contest	1200Z, Mar 8 to 1200Z, Mar 9
Stew Perry Topband Challenge	1500Z, Mar 8 to 1500Z, Mar 9
Oklahoma QSO Party	1500Z, Mar 8 to 0200Z, Mar 9 and 1500Z-2100Z, Mar 9
Idaho QSO Party	1900Z, Mar 8 to 1900Z, Mar 9
YOTA Contest	1000Z-2159Z, Mar 9

Many thanks to

<http://www.contestcalendar.com/contestcal.html>

## 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.

**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. **NO TX on 30M at this time.**

This is only available to members, you will need:

- An Amateur Radio Licence – any grade – Remember you can only use the bands and power you are licenced to use.
- 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 free 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

<b>President</b>	Anthony VK3YH/BNR
<b>Vice President</b>	Greg VK3VT
<b>Secretary</b>	Peter VK3PCC
<b>Treasurer</b>	Mick VK3PRR

### Committee Members

Mark VK3BYY	Ash VK3HAG
Phil VK3RP/BOY	Chris VK3IK/AWG
David VK3UQ	

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.

## 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](mailto: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

## 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](#)