SHEPPARTON & DISTRICT AMATEUR RADIO CLUB

Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 3632

December 21/January 22

VK3RGV repeaters and transmitter operating frequencies Mt Wombat

-

53.725MHz (-1 MHz), In Service **146.65MHz (-600 kHz), In Service**
438.2MHz (-7 MHz -D-Star), In Service **438.650MHz (-7 MHz 91.5 Hz tone), In Service**
438.9MHz (-7 MHz - DMR), In Service **439.775MHz (-5 MHz), In Service, IRLP (node #6990)**

476.475 MHz (+750 kHz) CB Repeater WBT03 Channels 3- 33, In Service
VK3RDS, 438.7625 MHz (-7 MHz DMR) Shepparton on test @ VK3YNV QTH
Mt Major VK3RDU, 146.850 MHz, 439.875MHz. Mt Bruno VK3RWC 147.325 MHz (-1.6 MHz 123Hz)
Access to most analogue repeaters is by sub-audible 123 Hz tone or noise/carrier mute (less sensitive).
Your TX offset shown in brackets
Club informal on air get togethers - Wednesday evenings. All welcome. Club call sign VK3SOL:-
2mx repeater 8.00pm 146.650 MHz, 3.63 MHz SSB ± interference 8.30pm.
The vintage radio club have a sked at 11.00am Sunday on the 2 mx repeater. All welcome.

Meetings the first Saturday of the month from 10 am for informal chats and technical talks. A BBQ follows (a gold coin donation). Business meeting 1 pm (except January when no meeting occurs) at Flexible Learning Centre, 18 Channel Road (250 metres from Archer Street), Shepparton.
Variations in these times, days and location are normally notified in the preceding newsletter.
Remember Covid rules and check the website for any changes re the meeting
Website – www.sadarc.org or www.sadarc.org.au Face book Page - Shepparton and District Amateur Radio Club Direct Link: https://www.facebook.com/groups/481867453084459
Note: Want to get your licence? SADARC has examination assessors, contact the secretary for details.

DISCLAIMER: - No guarantee is given as to the accuracy of information in this newsletter. E. & O.E.

Warning: - There is a danger of electrocution or injury when working on electrical/radio gear or working at heights doing antenna work. You do so at your own risk. 28/01/2022

President: - Peter Rentsch VK3AXI peter@rentsch.com.au
Vice-President: - Barrie Halliday VK3KBY
Secretary: - Andy Ashley VK3AJA secretary@sadarc.org
Assistant Secretary: - Geoff Angus VK3ZNA
Treasurer: -Andy Ashley VK3AJA secretary@sadarc.org
Membership Sec: - Andy Ashley VK3AJA "
Webmaster: - Ray Gardiner VK3YNV ray@etheira.net
Communications Managers (External Events):- Bruce (VK3PNG) & Darren (VK3HEN) Glasson

Tech. Committee: Geoff VK3ZNA, Ray VK3YNV, Josh Gardiner & Rodney VK3UG – with power to co-opt.
Newsletter: - Rodney VK3UG (Editor) rodlynn6@bigpond.com , Andy VK3AJA (Distribution)

From	Subject	Received	Size	Categories
Westprint Maps	Westprint Friday Five 2022.1.28	3:31 AM	110 KB	

Reminders of our end of year do. See what company you missed out on if didn't attend.

Ray VK3YNV explaining some important point.

Bob Hose VK3BLD and Ian Saunders VK3YYY in deep conversation

Anyone would think Peter VK3AXI was presenting a winning Tattslotto prize to Geoff VK3GSR

Various members discussing their latest projects, including Geoff VK3ZNA and Eric VK3BXA in the foreground

Presidents Report January 2022

Well, Christmas and New Year are done and dusted for another year, we still continue to struggle with COVID but at least we won the Ashes!

I hope all our members had a restful and happy summer break and are keen to get back to whatever occupies your time in normal circumstances. Karen and I have had a busy time with family visitors for Christmas including our son and family who lives in Singapore whom we have not seen for two years. Then we had a visit to our daughter and family (Noah's Mum of LED Christmas tree fame) who have just moved to Mt Camel near Heathcote. To top it off, we then went to Warrnambool to visit my parents who are 93 and 92 years of age and still live in their own home. Lots of travelling but good to catch up with family.

In between all that I have replaced all the ropes with VK3AO,s help on my antennas plus built a little DIY Kit to test Crystal frequencies and oscillator frequencies. Not sure how accurate it is but more tests on the device will follow using a oscilloscope. When complete I will write up a report for the Newsletter.

As this is our first meeting for the year, we will have our regular BBQ and chin wag followed by our meeting at 1.00pm and then our AGM. (Keep in mind the covid guidelines, and check the website prior to the meeting for any changes in the conditions that may affect our meeting, Editor)

As previously mentioned, I don't wish to stand as President again. After 10 years it is time to get some other ideas into the Club. So, please consider perhaps taking on a roll within the Club to keep our great Club going.

We have a great Club where due respect is shown to all members. We also have some clever people in our group that are only too happy to help those who need it in a manner that is non-threatening and polite. They are very keen to share their knowledge and expertise.

Cheers for now.

Peter Rentsch President

CLUB CALENDAR

5th February 2022 – BBQ at 10.30am followed by our Regular Meeting and then our AGM.
5th March 2022 – BBQ at 10.30am followed by our Regular Meeting.

Editor's Ramblings

- Notice that there are no meeting minutes this newsletter as there was no formal meeting, hence no minutes.
- In the previous newsletter the second item in Editor's Ramblings I got Rob's callsign incorrect. His callsign is **VK2RK** not VK2RB.
- One or two members have commented that perhaps we should have the 2mx repeater net and the HF net on different nights. Another thought is a sked where technical questions and answers are dealt with. Something to think about, discuss and bring up at a meeting.
- The end of year Christmas get together with the Vintage radio club was held on 4th December 21. This was a social meeting in the form of a meal together at Noble Monks in Shepparton. The meals were good. The meals were served from noon and the last of the patrons left around about 2.30 pm after a good meal and chat. The only down size was that instead of around 40 attendees we had last time there were only around 25 or 28 depending on who counted the heads.
- Members had a great time discussing their radio and other activities. It was also a time for the seven radio widows present to commiserate with each other. It is always good to have the ladies come to the end of year celebrations. They are also welcome to come to our normal meetings.
- Peter VK3AXI gave his last Christmas breakup talk about the year that has been. He is stepping down as President after 10 years at the helm. There were several awards to members who have done many things for the club this year in the midst of the pandemic. Several of those who were to receive awards were absent so no doubt Peter will bring them to the meeting on the 5th of February 2022.
- In Amateur Radio Volume 89 No 6 for 2021 there was an excellent article by Rex James VK3OFon the weekend of activities at the Radio Australia site using the callsign VI3RA. If you are not a WIA member see if a member will loan you a copy to read. Better still become a member. Notice it had a significant mention of the moon-bounce experiments from the site- the first we believe in 73 years!
- In the same issue there was an article on a digital VSWR and RF power meter. This was written by Jim Tregellas VK5JST describing a microprocessor-controlled instrument he designed and built. It will read SWR and power whether constant power or for SSB PEP. His current kit is rated at 250 watts but is looking to come out with versions that will measure 500 watts and another for 1200 watts PEP. Jim has produced a number of items of test equipment over several years which have had very good reviews, including his Antenna Analyst which is somewhat like the MFJ series but noticeably cheaper. If you want more information his email is endsodds@internode.on.nrt
- The new refurbished and enlarged Museum of Vehicle Evolution (MOVE) at 7723 Goulburn Valley Highway, Kialla 3631 is now open. If you are keen on cars, trucks, bicycles, motorbikes, Furphy engineering exhibits and women's fashion through the ages this is the place to visit. If you are also interested in vintage domestic radios, televisions, and telephone equipment there is quite a bit of that. I wonder if we could get some transmitting gear onto the site too. Something to think about.
- With so many large projects coming to fruition in Shepparton - Shepparton Arts Museum (SAM). Museum of Vehicle Evolution (MOVE), The Justice (courts) system and the New Super School accommodating over 2,000 students we are nearly awash with big ticket items our governments have put money into. The thought has crossed my mind and I suspect others that our governments might be

amenable to the thought of a Communications museum. The Radio Australia site would be admirable and seeing it is an election year leaning on prospective candidates may get a positive result. If you are interested take this on board, don't leave it to the likes of Geoff VK3ZNA who has done a lot of work on this. We can all do our bit, don't leave it to the elusive THEY.

- It would seem our 6 metre repeater is not heard in some locations whilst the 2 metre repeater is. Rob VK2RK with 25 watts cannot open the 6 mx repeater nor can he hear it, whilst I only use one watt and it is noise free. The repeater is capable of 50 watts but is only giving out 25 watts. Someone with more knowledge than I of the current repeater or of the proposed 50 watt Tait repeater may be able to assist. With getting a bit more grunt out of the system. Checks could be done at the next trip to Mt Wombat to compare the main 6 metre antenna coverage with the standby antenna on the hut.
- We received notification too late for the last newsletter that the Scout Jamboree on the Air was to take place in early January. I understand that at least one group made an attempt come up on our weekly HF sked. They didn't really get much of a chance because signals from them were weak and amongst the static so I believe. This would have been a good opportunity to encourage them to take an interest in amateur radio. Was an opportunity missed.?
- Following is an article by Rob VK2RK on 10 MHz standard oscillators. For more information and boards contact Ron VK2RK
- I am always looking for articles such as what Rob has supplied or even much simpler articles.

10 MHz OCXO with or without GPS lock

In 1984 Hewlett Packard added to their instrument range two frequency counters the 5384 (225MHz) and the 5385 (1GHz).
At the time these instruments presented the latest technology in frequency measurement offering up to eleven digit display.
The in the 80's to 90's the purchase price ranged from $1700.00 to $1900.00, not a small sum as petrol then cost around 70 cents a litre.

With the ability to measure to a very high resolution, the accuracy of such measurement was limited by the oscillator used in the instrument.
Back then as is the case today, oscillators came in three flavours, a plain crystal, a temperature compensated crystal and an oven temperature controlled crystal, only the oven controlled oscillator came close to the kind of accuracy that the instrument could provide with the eleven digits, even then to make use of the resolution available accuracy with certainty could only be obtained with the use of an external reference.
These external references come in two kind a rubidium or caesium, not cheap devices.

Today these counters appear on the second hand market for a reasonable prices, providing excellent value with no concerns as to the age of 30 years plus, the build is such that there are many more years left of operation, the components used then had very high quality assurance (Mil Spec), giving these components a long life.

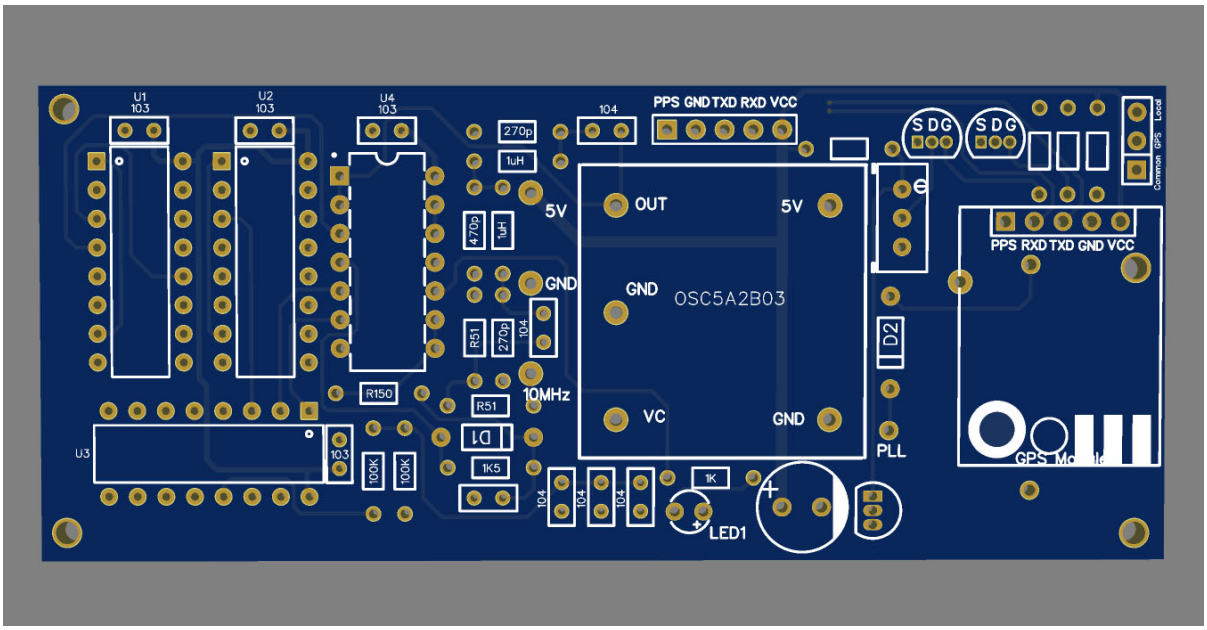
Back to accuracy, even a rubidium references can be had on the second hand market, the prices are as high or as low as you are willing to pay, but the problem is that the life is short and must be kept powered on all the time to insure the short term accuracy.
The only reference that assures both long and short term accuracy is the caesium beam, (Not many on the second hand market for any price)

What we have today that we did not have in the 80’s is the availability of cheap GPS modulus, some of these units can be programmed to output a selected frequency that is locked to the GPS satellite signal.
Note that this technology was and is used in telephone towers providing precise timing for diversity measurements.

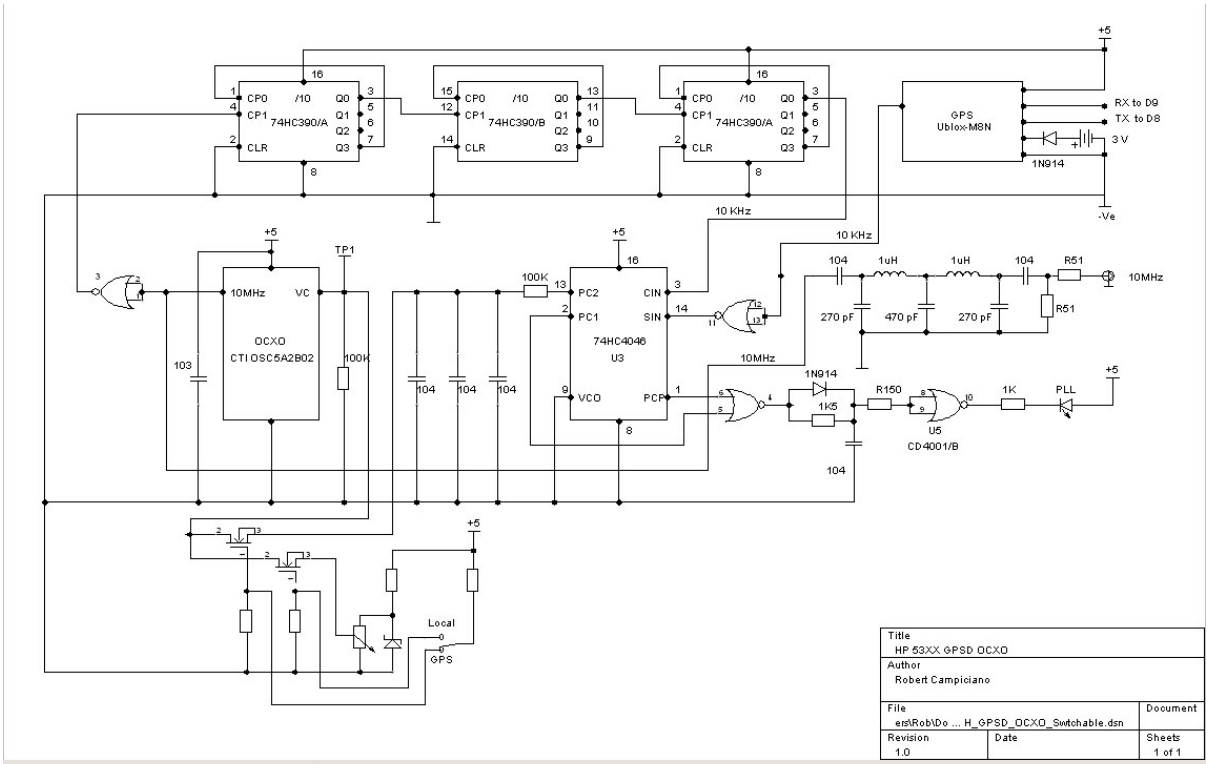
In simple terms telephone towers use Oven Controlled oscillators that are phase locked to a GPS signal, as long as all the towers use the same system the timing will be exactly the same no matter of any variation in the GPS signal intended or due to path variations.

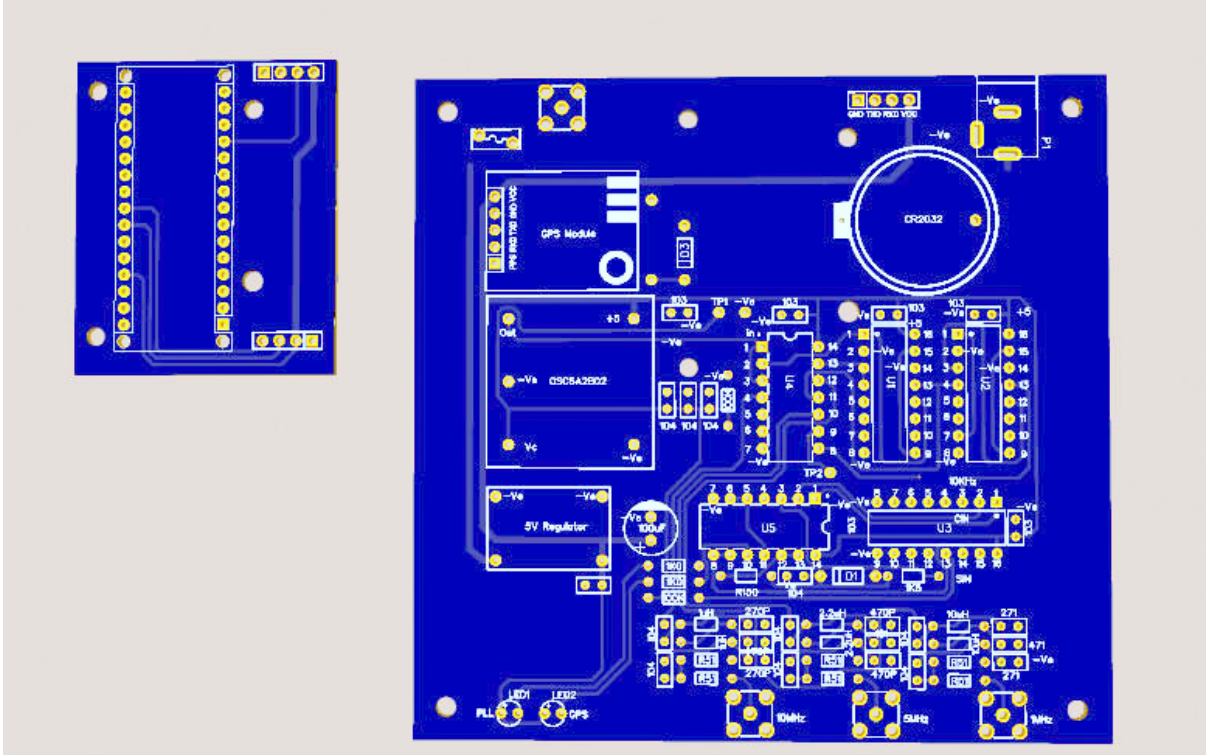
Now as the old telephone towers get decommissioned for upgrades many of the Oven Controlled oscillators appear on the second hand market, further providing an opportunity along with a 30 year old counter to have a very precise frequency and time measuring system, only thing to do is to combine a GPS module with an Oven Controlled oscillator and create a reference unit to either be used as an internal or external time base signal.

I have now designed three units, two as a standalone unit’s one providing a 10 MHZ, 5MHz and 1MHz signals, with or without a LCD display, the other with a single 10 MHz output.
The third unit is designed as an internal replacement of the oscillator in the HP 53XX counters, providing an internal selectable reference of GPS locked or Oven Controlled should a GPS signal not be available.

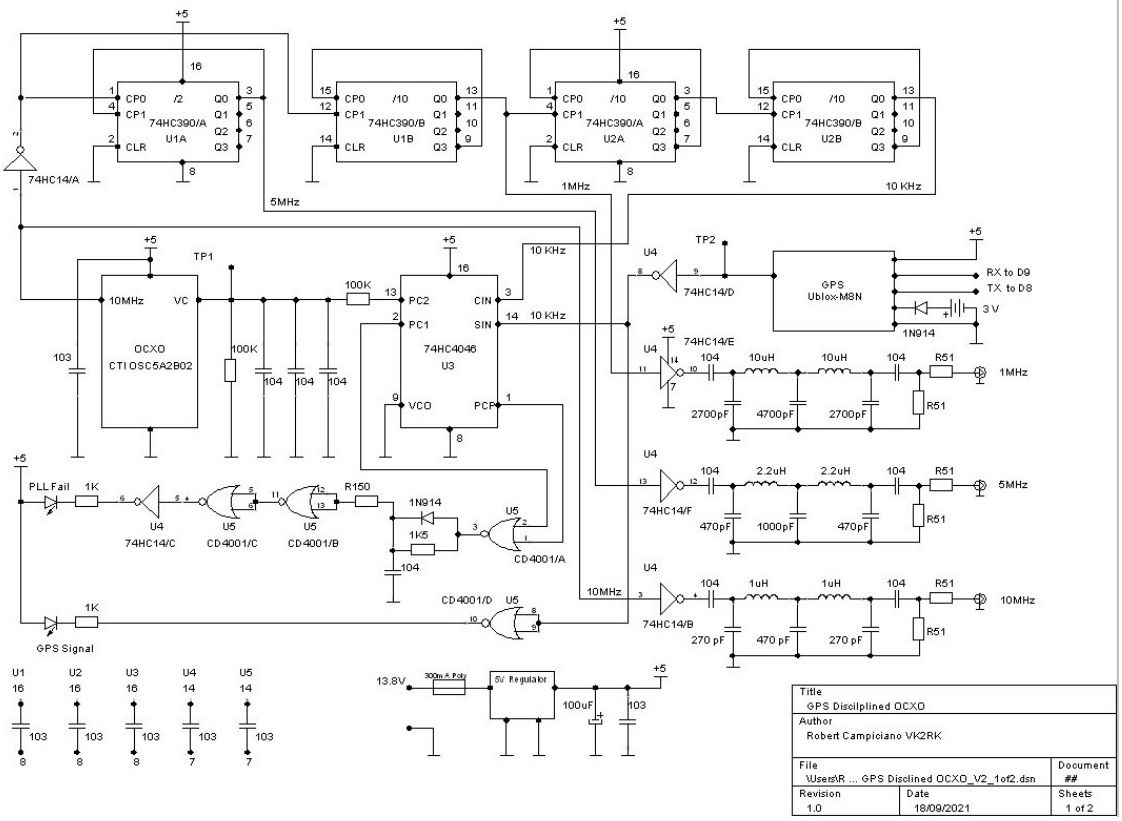


HP-53XX Internal Unit





3 Port with or without Arduino LCD display



Title	GPS Disciplined OCXO
Author	Robert Campiciano VK2RK
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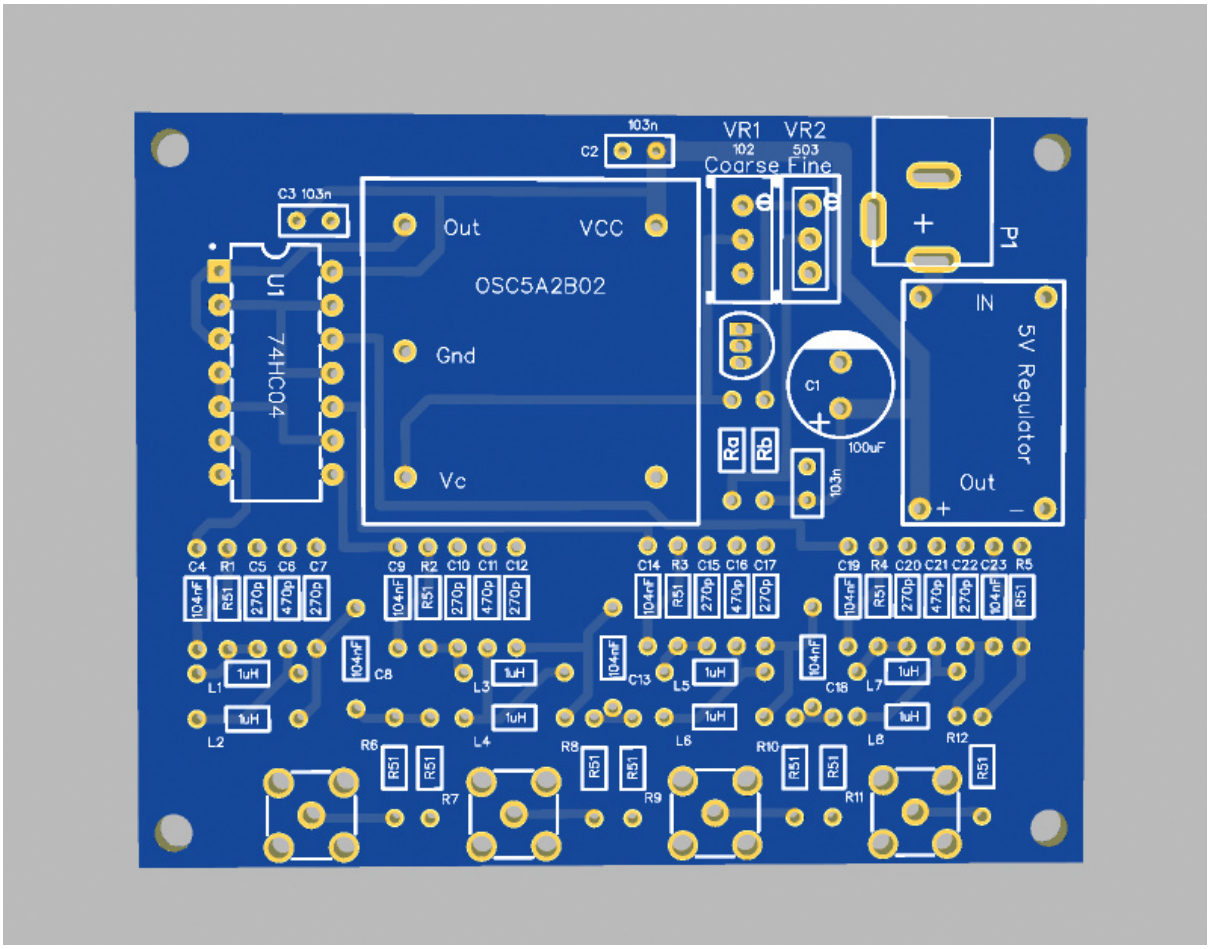
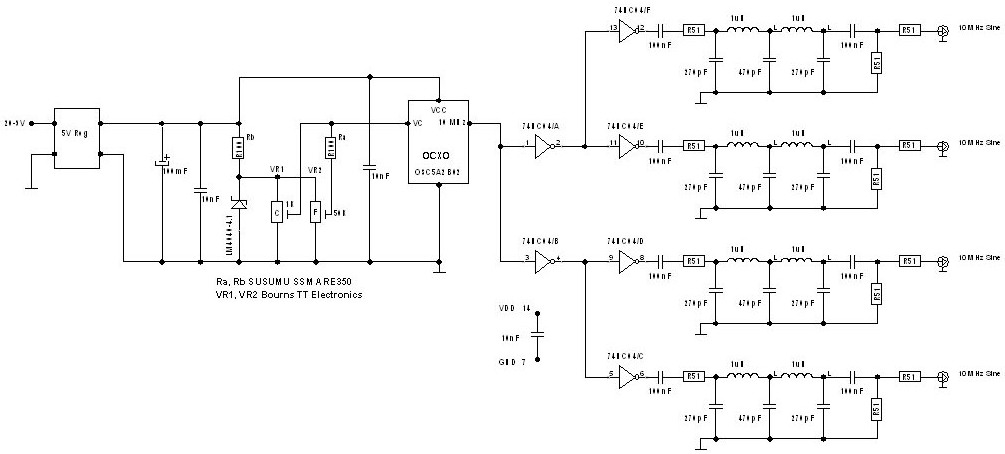
Revision	1.0
Date	18/09/2021
Sheets	1 of 2



3 10MHz ports



Title	10MHz OCXO 4 CH
Author	R. Campiciano VK2RK
File	Users\Rob\Documents\TinyC ... OCXO 4CH.dsn
Document	
Revision	1.0
Date	
Sheets	1 of 1

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