



Founded 1979 Incorporation No A6677 P.O. Box 692, Shepparton 3632
November 2020

VK3RGV repeaters and transmitter operating frequencies Mt Wombat

53.725MHz (-1 MHz offset), **In Service**

146.65MHz (-600 kHz offset), **In Service**

438.2MHz (-7 MHz - offset -D-Star), **In Service**

438.650MHz (-7 MHz offset and 91.5 Hz tone access only), **In Service**

438.900MHz (-7 MHz offset- DMR repeater), **In Service**

439.775MHz (-5 MHz offset), **In Service, IRLP (node #6990)**

476.475 MHz (+750 kHz off set) CB Repeater WBT03 Channels 3- 33, **In Service**

VK3RDS, 438.7625 MHz (-7 MHz offset DMR repeater) **Shepparton on test @ VK3YNV QTH**

Access to most analogue repeaters is by sub-audible 123 Hz tone or noise/carrier mute (less sensitive).

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.

Our end of year get together & meal with the Vintage Radio Club will take place at the Royal Mail Hotel, Mooroopna (alongside the Ridley silos) commencing at noon on Saturday 5th December. Radio widows as usual are warmly invited to attend. There will be no formal meeting. See other notes.

Variations in these times, days and location are normally notified in the preceding newsletter.

Website – www.sadarc.org or www.sadarc.org.au Face book - www.facebook.com/sadarc.org

Info for the page contact - Denny French on denny3782@gmail.com

Note: Want to get your licence? SADARC has examination assessors, contact the secretary for details.

The following repeaters do not belong to our club but provide good signals for many members.

Mount Major VK3RDU repeaters, TX , 146.850 MHz and 439.875 MHz 23/11/2020

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

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.

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 Gardner	VK3YNV	ray@etheira.net

Communications Managers (External Events):- Bruce (VK3PNG) & Darren (VK3HEN) Glasson

Tech. Committee: Geoff VK3ZNA, Ray VK3YNV, Josh Gardner & Rodney VK3UG – with power to co-opt.

Newsletter: - Rodney VK3UG (Editor) rodlynn6@bigpond.com , Andy VK3AJA (Distribution)

Presidents Report November 2020

Thank you to all those who called in for our last meeting. All being well that will be the last time for a long time that we have to deal with an on air meeting. The on air meetings work reasonably well but there is nothing like a face to face chat to encourage one another in our daily lives. We all need socialisation in varying degrees and in this year it has been a difficult to accomplish that.

Our Christmas Lunch with the members of the Vintage Radio Club appears to be able to go ahead at the Mooroopna Hotel as per normal. Rodney will put in a final word on this just prior to publishing the Newsletter. It will be great to catch up with everyone.

This week has been an interesting week in the Rentsch household. A small story follows. On Saturday of our meeting in the evening our house water supply failed. We rely on a bore and pressure pump for all our water. No shower, no toilet flushes etc. Monday lunch time one of the local irrigation suppliers had arrived and repaired the issue. The pressure switch had failed. All good, a relatively easy fix if you know how. Fast forward to this last Saturday. 5.30am we lose electricity “nearly”. We have a brown out. By 9.30am we have power again but what “no water”. I immediately rang our irrigation suppliers after hours number explained the issue and the brown out and they finally got back to me Sunday morning and said they would have somebody out Sunday afternoon. Sunday evening, still no water. I called Monday morning first thing and by 9.30am we had a man on site. He had it fixed in 20 seconds. Apparently under the box the containing the switching capacitor there is a cut out switch. Its job is to cut out the pump in the case of a brown out or overload. We now know it works because he pushed it and of went the pump. We have water. Please remember I was a bookseller and not a plumber.

What I am really trying to say is listen to what people are saying. If, when I explained to the afterhours person that we had had a brown out he could have told me about the switch and all would have fixed, and if he had have passed the brown out information onto his worker he could have phoned me and asked me to try the switch and all would have been fixed and finally when I rang on Monday instead of sending a worker out who had loaded his ute with all the gear to lift the pump, he had of asked me if I knew about the switch it would have saved a lot stress, costs, time and angst amongst us all.

The cautionary tale is listen, ask questions and don't make assumptions.

Some of you will know that there have been some issues on Mt Wombat. Some old issues, some new. The technical committee have had numerous visits to Mt Wombat and I would like to pass on my and the Clubs thanks for the work they have carried out. A special thanks to Ray and Josh who in the last month have probably lost count how many times they have been up to Mt Wombat. Thank you for your sterling work.

So, alas another year is nearly ended. A year that will go down in the history books, a year of fires, a year of floods, a year of viruses, a year a President can't face the truth and on a positive, a year the drought broke in most parts of Australia. It's also a year that we have survived, it's been hard for some but we have all made it. Let's look forward to new-year of brightness, of positivity and most of all more face to face Radio Club meetings!

From Karen and I, we wish you a Very Happy and Safe Christmas and New Year period. Enjoy whatever you do, family, friends and perhaps some time to reflect on actually how we are still the lucky country.

Cheers for now.

Peter Rentsch, President

CLUB CALLANDER

5th December – Christmas Lunch – Royal Mail Hotel, Mooroopna 12.00 noon

January 2021 – no meeting

6th February 2021 – Regular Meeting – Vision Centre BBQ if not a total fire ban.

Shepparton and District Amateur Radio Club Inc. VK3SOL

Minutes for the Meeting, 7th November 2020 held 'over the air' on the via the Mt Wombat 2 metre repeater VK3RGV.

The meeting commenced at 1.00 PM presided by the President, Peter VK3AXI (formerly VK3FPSR)

Attendance:-

The following stations were logged:-

VK2ACR, VK3FALN, VK3ZYZ, VK3ASK, VK3UG, VK3BPH, VK3YYY, VK3AFA, VK3PGK, VK3AO, VK3YNV, VK3OV, VK3KBY, VK3ZNA, VK3AXI.

Apologies received:-

VK3AJA, VK3EB, VK3FTRK

The minutes for the October meeting were accepted as read, Moved by VK3FALN Alan, and seconded by VK2ACR Rob.

Business arising from the minutes.

A request was made to Management of the Club Rooms to establish if alcohol could be consumed on the property should our Christmas Break-up be held on 5th December, on the grounds. VK3ASK, Peter advised that no reply had been received to date, but would follow up with Management. VK3AWI, Peter mentioned that Noble Monks at 120 Maude Street, has a marquee in front that can seat 50 persons.

The decision on the venue was deferred for about 1 week pending the State's Premier making further announcements on lifting restrictions across Victoria.

Moved VK3BPH, Kevin, seconded VK3ASK, Peter.

Correspondence In/Out

None on hand.

Financial Report

There has been little change in the Account Balance at the Bank from the previous month.

A payment to VK3YNV Ray was made for ongoing Internet Access on the Mt Wombat site.

Moved VK3AXI Peter, seconded VK3YYY Ian.

Technical Report

VK3YNV Ray and Josh, after power outages approximately 3 weeks ago, made a number of trips to Mt Wombat. The main 10amp breaker switch, located in a locked power cabinet on the side of the CFA hut, had tripped and was reset to restore power, this outage caused the batteries to fully discharge. Another battery was temporarily placed while the discharged battery was returned for a thorough charge/discharge test. Further outages occurred and on the Saturday 31st October, a planned trip was made to investigate the cause of the outages and proceed with the upgrading of the DC power distribution and installation of the DC Power Controller. Josh designed, assembled and programmed the DC Power Controller to allow remote access to the DC power for the repeaters and remote monitoring of the power consumption of each repeater. Congratulations Josh.

Each leg of the heavy duty DC cable is finished with a 'bootlace' ferrule; this prevents splaying of

the cable strands and provides a secure connection to the 50A Anderson connectors. The 50 amp Anderson connectors make for easy and positive connections to a repeater and allows swapping repeaters a simple process.

VK3YNV Ray and Josh carried out 1kV insulation testing of the mains cable between the CFA hut and the Amateur hut. No leakage was noted.

VK3YNV Ray has monitored the usage time of each or the repeaters on Mt Wombat using the remote monitoring facility.

VK3ZNA Geoff carried out some testing of antennas and cables to establish a reference for the antennas using a Network Analyser. This instrument can display, Return Loss, Distance to Fault, Smith Chart and VSWR.

The UHF CRS (CB) repeater has a short cable between the earthed Surge Suppressor plate and the diplexer. This was found to be loose and could not be tightened. It was replaced with a heavier RG214 cable.

6M antennas

VSWR testing of the 6m stacked array, on the tower, was 1.4:1 at 50MHz and 2.1:1 at 54MHz.

As these antennas and phasing harness were purchased at differed times and not as a complete array, the lengths of each antenna could be different. These differences must be determined to expect the array to perform properly. Therefore these antennas do require disconnecting from the phasing harness, physical measuring the length of each boom and cable tails, individual antenna VSWR measurements along with the VSWR of the phasing harness.

The 6m standby antenna on the hut was tested at 50MHz 1.35:1 and at 54 MHz 1.25:1

2M antenna

The stacked Side Mount Dipole Array on the tower returned a VSWR of 1.5:1 at 146MHz and 1.2:1 at 148MHz.

No other measurements were recorded as 'on air' testing commenced with VK3UG Rodney.

On-air Testing

VK3UG Rodney was positioned around 101 km from Mt Wombat, near Rochester to carry out receiving tests with different antennas. Other stations were able to give readings; these were VK3ANP David and VK2ACR Rob.

The 6m Stacked Side Mount Dipole Array was satisfactory in some directions, but poor in others. VK3UG Rodney and VK3BPH Kevin travelled to Mt Wombat on Monday 2nd November to carry out further testing of the 6m diplexer and UHF CRS (CB) diplexer. The Tx power from the 6m Tx into the diplexer was measured at 25 watts and should be at least 45 watts. Power from the diplexer into the antenna was measured at 18 watts and should be around 30 watts taking into consideration the 6m antenna VSWR. During testing, VK3ANP David commented that the 6m repeater performance had improved considerably. The Co-axial cable between the TX and cavity appears to be the source of the fault; VK3ZNA Geoff is making a replacement.

Signal reports of the 5meg split and 7meg split UHF 70cm repeaters indicate, little difference between the two.

VK3UG Rodney reported that a Surge Suppressor should be placed at the CFA hut and upgrade the breaker.

With the discharge of the batteries during the power outages, the batteries are now in a 'stressed' condition. These should be removed for thorough testing to determine capacity and a decision on the outcome of the testing would be made by the Technical Committee.

VK3VNV Ray expressed a desire to swap the batteries on the 2m repeater with recently tested batteries. Moved VK3ZNA Geoff, seconded VK2AVR Rob, and carried.

VK3UG Rodney indicated he has sufficient articles for newsletters into early next year, but requires more to ensure sufficient articles for months to come.

General Business

RA Weekend QSL Cards. A letter has been sent to the WIA QSL Bureau for card distribution. We are awaiting a reply.

The 1000+ QSL Cards are to be hand written before despatch.

Letters of thanks to BAI management and Staff, ICOM and the many helpers are to be finalised along with the inclusion of a QSL Card with each letter, prior to despatch.

VK3UG Rodney commented that the Club website only gives VK3PNG Bruce as the only telephone contact for Mt Wombat repeater issues and faults. VK3PNG has his phone number listed as a contact for the Murray Quad.

VK2ACR Rob suggested a dedicated email address to contact the Club to lodge an issue. Suggested was: - repeater@sadarc.org.au

Moved VK3YYY Ian seconded VK3FALN Alan, carried.

As there was no further business, the meeting closed at 1.56 PM

Further discussions took place regarding replacement co-axial cable for the 6m repeater.

VK3ZNA Geoff
Assistant Secretary.

Repeater Information (Summary)

The Technical Committee who predominantly look after our repeater site on Mt Wombat consist of Ray (VK3YNV) and Josh Gardner, Geoff Angus (VK3ZNA), and Rodney Champness (VK3UG). We often co-opt other members to assist and both Phil VK3ELV and Kevin VK3BPH have been of continued assistance for quite some time. We also like to let members know how our various repeaters are working and any work we need to do to have them consistently working well. Our repeaters are some of the best operating repeaters in Victoria – at least - maybe Australia. Due to our height advantages over Mt Major the Mt Wombat repeaters do outperform the VK3RDU repeaters. We are looking at providing a contact email address for repeater faults. A work in progress.

Over the last month or so a number of visits to the Mt Wombat repeater site have taken place mostly by Ray VK3YNV and Josh. The first series of visits were to reset the IRLP on the 5 MHz split repeater. Lock ups with the IRLP can occur under certain circumstances. The next series of problems were complete loss of power with the mains breaker at the fire spotting tower tripping for no apparent reason (we have our thoughts though).

More recently it was decided to do a series of station checks, antenna performance on site by Geoff VK3ZNA and at a distance by Rodney VK3UG. The tests revealed that some services were well below par (e.g. 6mx) and that the top of the mast 2mx antenna has more than a suspected cracked soldered joint in it (that is one of the reasons for its forthcoming replacement) as its performance on transmit was poor. The UHF 70cm

antenna systems were working well although the 7 MHz split repeaters did not have as good a signal at a distance as the 5MHz split repeater.

On the same day Ray and Josh worked on upgrading the DC power distribution system to the various repeaters. This was a lengthy job as there isn't a great deal of room in the hut. Josh's DC controller was installed and its features are many. It is possible to monitor instantaneous current drains, period of use of each item, turn on or off repeaters which may save a trip to the repeater site to correct something that in the past necessitated a trip to Mt Wombat. Keep in mind that a trip to Mt Wombat can cost over the \$100 mark if various running costs etc are taken into account.

Since that day Kevin VK3BPH and Rodney went to Mt Wombat to see if the reason for the 6 mx repeater poor performance could be found. Various tests were conducted with no conclusive reason found for the poor performance. However, later in that day a couple of amateurs reported that the repeater was working really well. It was believed that there is an intermittently faulty coaxial cable from the transmitter to the cavities which will be replaced. A further series of tests will be done on it shortly.

That further visit (17/11) revealed that one coaxial connector was faulty. Nasty little beast. There was a problem with a clamp which allowed the earthing of a cable to be intermittent, and cause a variety of problems which the 6 metre repeater has been plagued with since the new tower was installed. A temporary fix has been done and this should last for quite some time. The cavities were retuned although they were not far out and some of the detuning was due to the faulty coaxial connector. The output power was not able to be increased on site, but soon the replacement KL-70 repeater will be installed (once one or two technical problems are ironed out) and the existing FM814 will be given a long overdue birthday. The low power may have been due to the problems caused by the faulty connector damaging the PA of the repeater.

A check of the UHF CB repeater cavities revealed that the transmit cavities were on frequency but the receive cavities were well out of tune. They were brought off the mountain for some TLC as they are a touchy batch of cavities to tune. These were tuned by Ray and Josh and on Saturday 21/11 they took a couple of trips up the mountain to deal with another power supply problem and the reinstall the CB repeater. A problem with the CB RF connections was also found. Ray is not sure that the CB repeater is performing as it should yet, although to me (Rodney) it appears to be as good as we have had for some time. Further tests may be needed, and about the only thing left is the antenna. The CB repeater is now available for use during the fire season – hopefully it won't be needed but it is there. As many will remember it has been the club's desire/policy to have two services available for emergency services if required – the UHF CB repeater and the 2 metre repeater. Other services are considered secondary in an emergency. Josh's DC controller makes controlling this much easier.

A lot of work has been done this year despite the Covid 19 restrictions and we do have a good repeater system. One of the main areas of problem is power supplies, either in the hut or its supply from the fire spotters hut. Lightning easily damages equipment. It is intended that further protection will be fitted to the site to make it more reliable.

Enjoy the repeaters and wait for the further works to be done – 2 mx and 6 mx antennas in particular, and some of the batteries are getting near the end of their life. Some of this information duplicates some items in the minutes as taken by Geoff. They have been done independently of each other. As you gather from reading both reports we still have a number of things to do to make them how we believe they need to be for good and trouble free operation.

Rodney VK3UG

for the Technical Committee. 23/11/2020

Editor's Ramblings

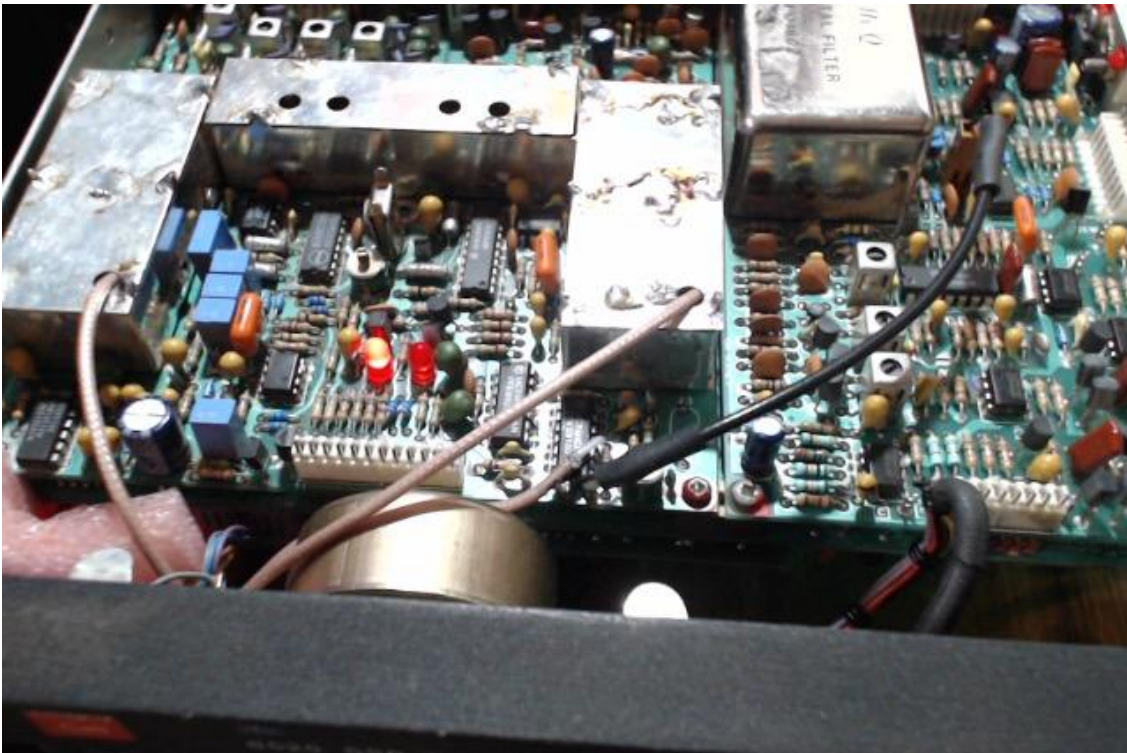
- Things are starting to ease in the pandemic and members are visiting one another and doing all sorts of things either in upgrading their stations or doing extra operating. So happy operating over the Christmas and New Year period.
- On 23/11 Andy confirmed a booking for the end of year luncheon with the Vintage Radio Club at the Royal Mail Hotel, Mooroopna, (next door to Ridley's silos) commencing at noon. This is not a formal meeting, more a chance to sit down have a meal and a chat with other members either in SADARC or the vintage radio club and with the radio widows who attend. As normal we hope that many of our family members will attend.
- At this stage up to 50 people are able to be in attendance inside the part of the venue we congregate in and our usual gathering is around 40. If we find out that circumstances change so that we cannot meet at the Royal Mail, every endeavour will be made by Peter and Andy to resolve the problem. This may involve an email to members to advise us of any changes.

This is part 3 of Denys's article on the Codan 8525 modifications to make it quite versatile. Please note that the information follows on directly from last month – my splitting of the article in several parts could have been better – Sorry Denys (Editor)

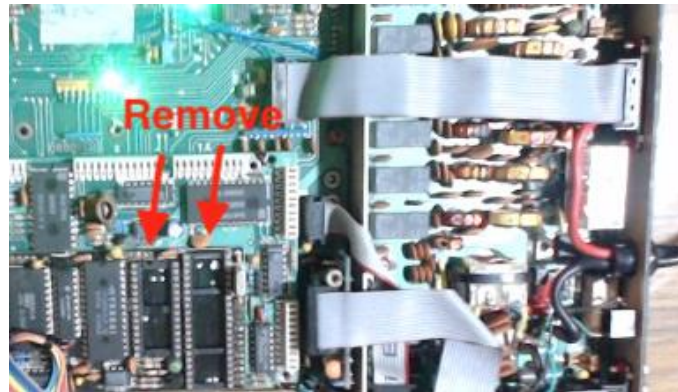
Or to IC10 pin7 if you prefer.

Re-install the board, but take care to get the pins into the holes from under the PCB. It can be a bit tricky.

The board will now look like this.



Now, remove the CPU and EPROM if you have not already done that, and store them in some anti static foam in a safe place.



Also, remove the front panel so the original display board can be discarded (in the safe place with the CPU and EPROM).

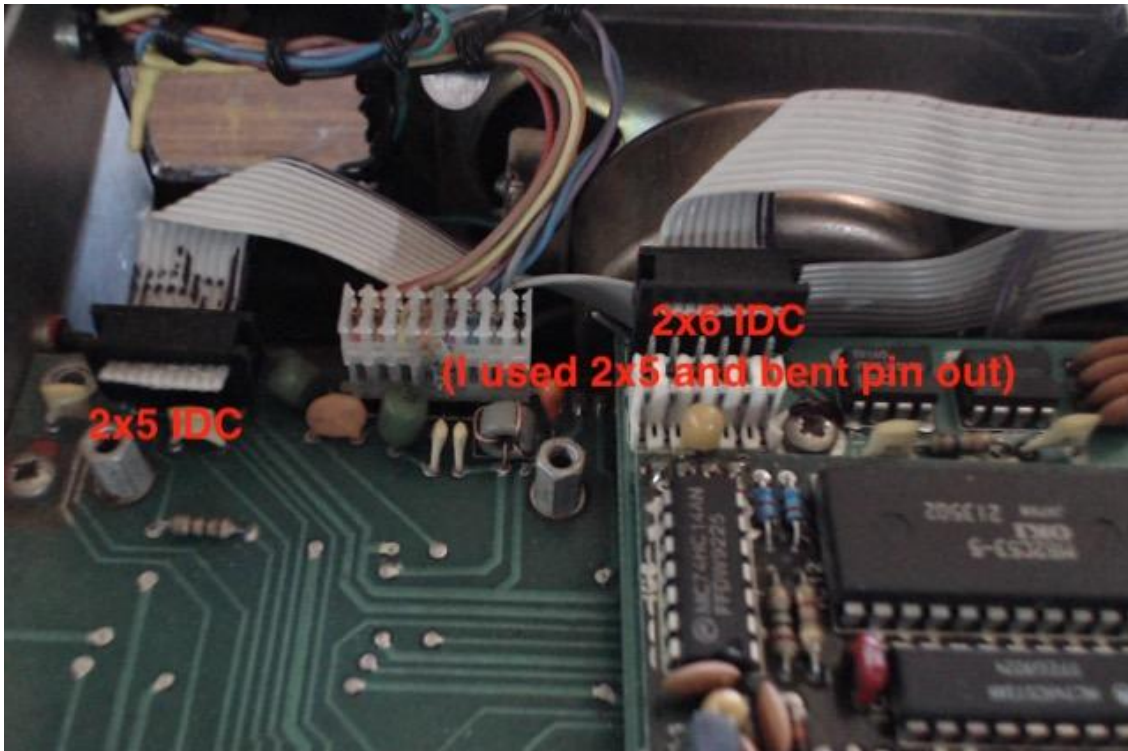
The VFO PCB mounts in place of the old front panel, and has the Arduino Nano with the Si5351 VFO board on one side, and the OLED display and indicator LEDs on the other.



There is wire running from the VFO to the Codan controller board for the Tune signal. It is just pushed into the connector as below.



Connections from the VFO board back to the Codan are all on the 2x10 IDC lead. This is split to one 2x5 IDC plus that goes to the Codan main board "P5", and a 2x6 IDC plug for the Codan "P1" (The picture shows a 2x5 and one pin bent out off the way as I did not have a 2x6 IDC plug handy).



Here is the overall view, showing the 2x10IDC and the Codan keypad connections. **The final part of Denys's article will follow in the January issue of the newsletter.**