



Next Meeting Friday 2nd August 7.30pm

A reminder we have a door prize each meeting, but you only win it if you are there!
Its cold, wet, dark and a struggle to come to club meetings in Winter...
BUT - This month's door prize is another fantastic surprise...



The August Door Prize is by  who make Mobile's, TV & Home Entertainment, Home Appliances, Computer Products & Air Conditioning products. Remember everyone that is at the meeting gets a door ticket and each time you check in to the weekly Net you get allocated an extra ticket, increasing your chances.



A Computerised VSWR Meter, plus a whole lot more, accurate as the famous "Bird" Wattmeters
The LP-100A Digital Vector RF Wattmeter samples SWR, RL, Z, R, X, reflection coefficient and Smith Chart, amongst others...
Take a look at the review on page 11, your antenna will bare all its secrets on the screen

Last Months Meeting	2
Around the Shack	5
Review of Icom IC-7100	7
Review of LP-100A Digital Vector RF Wattmeter	11
Upcoming Radio Contests	12
WANSARC Club Profile	12

Last Months Meeting

Twenty members attended last meeting and saw a very informative and entertaining presentation on portable operations by Mark VK3PI and Ian VK3QL. Using both a PowerPoint show and equipment demonstrations, Mark and Ian spoke of successes and pitfalls of various field trips, including recent SOTA expeditions. Ian has also been doing work and research on Lithium Ion Batteries. Free stuff was on a table, the balloon launch gear payload was on display, Lou VK3ZLD had a 6 meter homebrew antenna to show and of course there was the door prize ready to be won. We also had a new member join up, Qasim, who drew the door prize raffle.

Lou with 6 meter vertical ↓



The base of the 6mx antenna ↓



Free stuff ↓



Peter VK3XCO in final stages of balloon flight preparation ↓



Mick explaining some of the features of the door prize, kindly organized by Don VK3HDX, which is a solar powered battery charger, complete with regulator, rated at 40 watts. Its a neat fold out, 12 volt, portable lightweight unit, worth several hundred dollars. ↓



Frank VK3OP holds the 'jar'...



Qasim finds a ticket...



and the winner, of ticket, Orange A47, is...





Mick VK3CH, owner of the winning ticket, holding the door prize, with club President Frank VK3OP ↑

As an incentive to get on the club Net on these cold winter nights, the club committee decided that when you attend the club on Friday night you will be given ONE ticket in the raffle draw. HOWEVER if you also come up on the club net, you will receive ONE extra ticket for the raffle draw. So over each month prior to the next club meeting, if you check in to the Net on Tuesday nights at 8pm, your winning chances improve as you get an extra ticket, for each week you check in.

Micks winning ticket was the 2nd one, (for checking into the Net), so you never know your chances → And if your still not happy that Mick won the door prize, blame Johnno, he handed the tickets out!! (hi) ↓



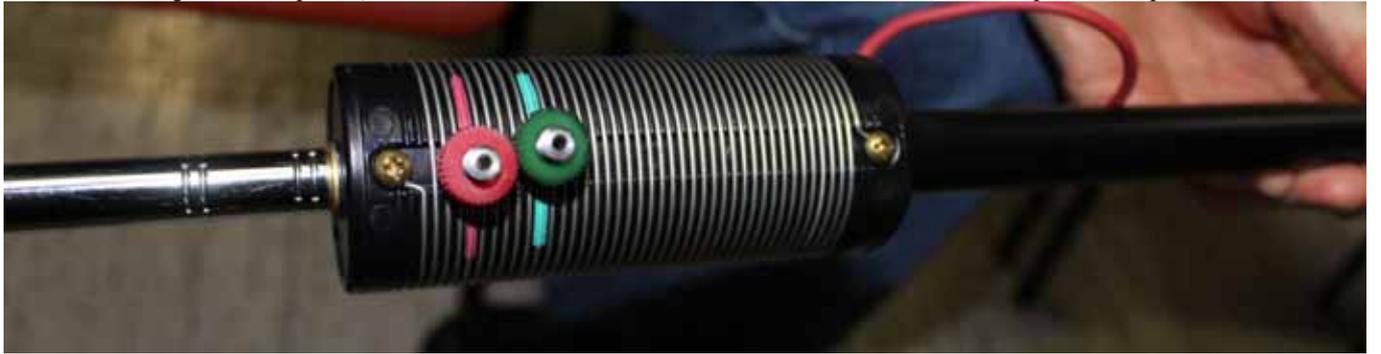
Mark explaining about the SOTA activation at VK3/VC-017, The Jim Jim ↓





Assembling the Buddipole ↑

↓ Close up of the traps



↓ Ian explaining about experiments with Lithium Ion Batteries

Mark with his "Arrow" portable beam antenna ↓



← Light and Portable HF wire antennae
Mark with the wind speed anno meter ↓



'Jim Jim' data ↓

Summit Report

The Jim Jim

Summit Name: The Jim Jim
 Summit code: VK3/VK-017
 SOTA Association: Australia - Victoria
 SOTA Region: Victoria - Central Region
 Lat., Long: -37.2994, 144.582
 MGR (MREF):
 Locator: QF7298
 Height: 744 m / 2441 ft
 Special Notes:
 Extra Info: Y3tr
 Summit Map: M3D

Scoring History

From	To	Score	Bonus
01/Feb/2012	31/Dec/2019	4	No

Activation History

No activations have been recorded for this summit

Done

Ian and Mark had a SOTA tour, 'The Jim Jim', the next day, heard on 40 meters being worked by stations all over VK.

Around the Shack

VK3RTV PA IMPROVED

VK3RTV PA has a new module and it seems to be running very well. The received signal strength here is at least 3 – 4 dB higher than measured before the last fault condition occurred with PA failure. Peter Cossins would be interested to hear from more distant stations to see if you are getting a stronger signal.

EMR CALCULATOR

From Trevor VK3ATX here is a link to the very useful and ACMA approved EMC calculator, good for HF/VHF/UHF/SHF.

Link is here http://www.vk3um.com/emr_calculator.html

FOUNDATION & STANDARD LICENCE TRAINING

Foundation Licence training and assessments will be held on August 24-25, at the Amateur Radio Victoria office 40g Victory Boulevard, Ashburton. <https://www.amateurradio.com.au/>

A Standard Licence theory bridging course begins in October.

Further information about both education opportunities are now on the website, contact Barry Robinson VK3PV 0428 516 001.

WANSARC NET



TUESDAY NIGHT

Note the New Club Net Starting Time of

8.00 PM

146.450 MHz FM

NET CONTROL STATION

VK3AWS

Join the Net, Keep up to date with news from club and members

Don't forget, each week you check in to the Net, you get an extra ticket for the clubs monthly great door prize!!!

BAOFENG UV-5R

A HANDHELD RADIO

FOR ≈ \$50

Interested in a handheld, landed to your letterbox for just under \$50? Take a look at <http://uv5r.net>

The Baofeng UV-5R can transmit on both VHF and UHF.

It even has an FM radio.

At its price it's worth a look...



UV5R.net

HAARP FACILITY SHUTS DOWN

The High Frequency Active Auroral Research Program has closed. HAARP's program manager, Dr James Keeney at Kirtland Air Force Base, told ARRL that the sprawling 35-acre ionospheric research facility in remote Gakona, Alaska, has been shuttered since early May. "Currently the site is abandoned," he said. "It comes down to money. We don't have any." Keeney said no one is on site, access roads are blocked, buildings are chained and the power turned off. HAARP's website through the University of Alaska no longer is available. ~Internet

MOBILE PHONE / GPS JAMMER CRACKDOWN



Australia's communications regulator has destroyed nearly 100 illegal signal jammers that stop mobile phone and GPS devices from working correctly after seizing them in the mail.

The jammers were found in intercepted international mail parcels between November 2011 and mid June 2012 after an Australian Communications and Media Authority (ACMA) crackdown.

Jammers are illegal in Australia and the operation, possession or supply of such a device can attract a two-year prison term. Body corporates may receive a penalty of up to \$255,000. A five-year prison sentence or penalty of up to \$850,000, for causing substantial interference to radio communications used by emergency services, can also be imposed.

The ACMA is typically given the jammers to destroy after Australia Post and the Customs and Border Protection Service seize them from international packages. The ACMA then sends the addressee a letter warning them against importing a similar device again. The ACMA's field staff can also seize jammers by tracking them using special equipment, but most are found in the international mail stream before they can be used by their purchaser. According to the ACMA, jammers are typically used by those who want to stop mobile phone calls from being made or received in a certain vicinity. Others just use them to cause a nuisance. In one example several years ago, the regulator found an imam at a Western Sydney mosque using one during prayers to ensure there was silence. In another, a company installed one in its boardroom after getting advice from a security expert.

Mr Loney said international mail packages were inspected by a sophisticated x-ray machine that can automatically detect devices by shape and then alert mail-sorting staff to take a closer look if necessary. "With the jammers some of them have quite distinctive shapes," he said. "They have tri-band antennas that stick up, which you don't see on a normal mobile or any sort of small electronic device. And when mail staff see something like a jammer it gets pulled off and they look at it."

Despite this, Mr Loney admits that some can still slip into the country. This is where the ACMA works with telcos including Telstra, Optus and Vodafone which sometimes receive reports from customers about mobile phone interference. ACMA's staff then go out and attempt to track suspected jammers with specialised radio equipment.

Of the 211 jammers confiscated since July 2011, 190 were found in the mail stream, 19 were seized by police and two by ACMA's field staff.

Jammers can, however, be operated if an exemption is granted by the ACMA.

The NSW Department of Corrective Services is the only approved organisation in Australia to be granted an exemption. In February this year it tendered for the installation of a mobile jamming system for use at Lithgow jail, about 141 kilometres west of Sydney, as part of a trial.

If the trial is successful, the department hopes to roll out jammers to other prisons in NSW. The idea for a jammer trial at Lithgow jail was first floated after a prisoner was found to have smuggled a mobile phone into their cell in 2008 to run a drug ring operation on the outside. ~Internet

TAKE A LEAK - RECHARGE YOUR PHONE

Researchers from the University of the West of England have invented a method of charging mobile phones using urine.

Key to the breakthrough is the creation of a new microbial fuel cell (MFC) that turns organic matter – in the case, urine – into electricity.

The MFCs are full of specially-grown bacteria that break down the chemicals in urine as part of their normal metabolic process. The bacteria produce electrons as they consume the matter and it is this natural process that creates a small electrical charge to be stored in the MFC.

"No one has harnessed power from urine to do this so it's an exciting discovery," said Dr Ioannis Ieropoulos, an engineer at the Bristol Robotics Laboratory where the fuel cells were developed.

"The beauty of this fuel source is that we are not relying on the erratic nature of the wind or the sun; we are actually reusing waste to create energy. One product that we can be sure of an unending supply is our own urine."

After the urine has been processed by the MFCs the electrical charge is stored in a capacitor. In the first test of the new invention, researchers simply plugged in a commercial Samsung phone charger and were able to charge up the handset.

Although the amount of electricity produced by the fuel cell is relatively small – only enough for a single call on the mobile – researchers believe it might be installed in bathrooms in the future, helping to power electric razors, toothbrushes and lights.

The device is about the size of a car battery, but engineers believe that future versions will be smaller and more portable. With each fuel cell only costing around £1 to produce such devices could provide a new, cheaper way of generating power.

The research was sponsored by public money from the Engineering and Physical Sciences Research Council and the Gates Foundation (the charity run by Microsoft-founder Bill Gates), with the scientists hopeful that the technology could be beneficial in developing countries.

"One [use] would be to put these into domestic situations or it could be used in remote regions of the developing world," said Dr Ieropoulos.

"The fuel cells we have used to charge a mobile phone with hold around 50ml of urine but the smallest we have had working in the laboratory hold 1ml, so we can make them a lot smaller. Our aim is to have something that can be carried around easily."

"The concept has been tested and it works – it's now for us to develop and refine the process so that we can develop MFCs to fully charge a battery."
~Internet

WANSARC NEWS YOUR MAGAZINE

Got a story to tell?

Working on a project that is of interest to others?

Got gear to sell, buy, swap?

Looking for that hard to get part or information?

Seen something interesting that others should know about?

WANSARC Editor is always looking for stories from members.

Send any news to Mick, VK3CH,
at vk3ch@wia.org.au

Don't think you're a good writer, or "time poor", or lazy?
Just email photos and text to Mick and he will write it up for you.

CRANBOURNE HAMFEST

At least a half dozen club members attended the Hamfest at Cranbourne. Dan VK3DWH won third prize in the raffle draw, a very handy PK Loop Antenna. Attending were Mark VK3PI, Ian VK3QF, Greg VK3CN, Lou VK3ZLD, Don VK3HDX, Guy VK3GUY & Frank VK3FADI.

ALBURY HAMFEST

Half a dozen WANSARC members went to the Albury Hamfest, four of our club had tables so WANSARC was well represented. Quite a lot of gear was on sale with every table laden with stuff.



The choice of books was impressive and the sheer amount of pre-loved radio gear on sale was huge, with transceivers, receivers, powerful PA's, ATU gear with the usual assortment of cables, spare parts and accessories. The weather was good.

Some great places to eat in Albury as well, the Kinross Woolshed was good with your editor having a triple egg and bacon sandwich (hold the bread) and going back after the Hamfest for lunch, baby back pork spare ribs... they also supply a bib to wear.



Sam, Peter and Lou hunt for bargains...



Guy with his table of goods for sale...



Peter VK3XCO also said that the high altitude balloon from Bendigo launch on 6th July was a great success with a perfect flight tracking over the expected path. Don VK3HDX said he tracked it in real time, as did others, as it crossed over the state. See pictures and more at <http://projectspaceballoon.net/>

Review of Icom IC-7100

This radio is different in many ways. The radio control head features a large, multi-function, "touch screen" DOT-Matrix LCD display that is positioned for easy view and operation. This is an important feature as the controller display not only provides information, but is your control to the IC-7100's feature settings and menus.

No need to buy upgrades or optional stuff; D-Star is included, all WARC bands from 160 meters to 70cm, all mode (AM only on HF).

Low speed digital data communication with D-Star also included, the DV mode works on ALL bands, just like the IC-9100.

32-bit floating point DSP supports digital processing features such as digital IF filter, twin PBT, manual notch filters, these high grade digital processing features work on all ham bands, from HF to the 70cm band.

The only real optional extra is the suction type mounting bracket, MBF-1 to install the radio head at any angle, either base or mobile.

But if you happy with the head display sitting flat then you all ready to go. Its very easy to see with a large display screen.

Other features include, Built-in SD Card Slot for voice storage and data cloning, Dual DSP chips deliver versatile digital processing performance, Built-in RTTY demodulator and decoder, Multi-function meter, SWR graphic display, DSP controller RF speech compressor, Total of 505 memory channels, Voice recording and playback functions, ± 0.5 ppm high frequency stability.

Optional RS-BA1 IP control remote control software allows you to connect to the radio via a LAN or the internet.

Supplied accessories include Hand microphone, DC power cable, Electronic keyer plug, Spare fuses, Key plug, ACC cable and a Separation cable for the radio 'body' and front control panel.

The optional RS-BA1 software allows you to operate the IC-7100 from a remote PC over the Internet or local home network.

When used with an SD card, the SD card can store various contents including voice memory, memory channels, D-STAR repeater memories and other personal settings can be saved to the SD card and can be loaded to the transceiver.

Optional CS-7100 Cloning Software saves typing in all the memories and can also clone radios. But the raw "icf" files are not transportable from other Icom radio versions like the 2820H, or IC-9100, due to different data structures, which is annoying.

The DC lead and plug are unique to this radio as well.

Its completely pager proof on 2 meters. First signs of de-sensing starts at 148.055 and the first noise breakthrough starts past 148.090, all outside of our allocation - absolutely perfect, much like the IC-9100. This is due to full digital processing throughout, TX & RX.

All modes are produced digitally, AM, CW SSB, FM, DV (D-Star) even WFM (RX Only) the lot. RTTY is displayed "on screen".

No break through with this transceiver. Perfect for suburban hams... All Icom software now supports 64 bit OS computers.

The supplied HM-198 microphone is bad, its big, clunky, hard to key, especially for long overs; a smaller microphone like the one that used to come with the IC706iiG would have been better. That is about the only item to be annoyed about, the rest is great.

23cm would have been nice, but for the price its still a great transceiver. The receiver is sensitive, stable and quiet, due to DSP use. For what the radio can do and for the price, Icom are going to sell lots of these worldwide, once the word gets out.

The only real option needed is the suction cup mounting bracket for the car or desk, but the front control panel can sit on a desk easy.

The front panel is easy to see, easy to use. I printed out the instruction manual but have hardly looked at it, just the specifications.

Memory channels total 505 (495 regular, 6 scan edges and 4 call) ; 700 (D-STAR) repeater channels.

Output power is adjustable with 100 watts HF and 6 meters, 50 watts 2 meters and 35 watts 70cm.

Your going to need a 13.8volt regulated supply that can handle 22 amps if you want to drive it at full power, weight 2.8kg total.

I installed mine in the car, the only time interference was heard was when stopped next to a bus, with all its digital 'rubbish' they radiate.

The microphone can be plugged either to the radio head or the transceiver unit. I chose the transceiver unit so no pulling or stress was put on the display head unit when using the microphone, less lead tangle as well and one less messy CAT5 cable to look at.

As the control unit is a bit back from reach, for safety the optional HM-151 microphone purchased, allows majority of functions at your fingertip's "on the fly", including DTMF for IRLP / Echolink.

Only really be used if changing frequency or operating HF. Chatting on club 2 meter 'slot' does not need attending, just power on and go...



CS-7100 Software ↑



↑ Radio mounted in the car, (still with protective cover)

Straight Forward Operation, just tap the mode, filter, function etc, you need to change. The touch screen responds naturally, changing your settings. Entering frequency, call sign or editing memory channels has never been this easy. The software keypad on the touch screen allows you to input alphanumeric characters incredibly quickly.

Getting a mobile HF whip on the car will be the next job to do.

Priced at around \$1750, for the IC-7100 features you get, expect to see a lot more of them.

23cm would be a great addition and a colour display screen, maybe in the next version?

I bought mine from Ross at Strictly Ham, in Bayswater, great technical advice and swift service as usual...

When your spending this much money, buying from a authorised dealer, with all your genuine VK warranty entitlements is a must.

An instruction manual comes with the radio with an extra "advanced features" manual on a CD.

Like most Icom manuals of late, whole sections on programming and Dstar use are included.

If you have ever read these, then you have already covered nearly 35 % of the book.

After installation the next job was keying in all the memories and repeater settings. A few of the repeaters that should be in range, on the IC-9100 house rig, have been silent of late. Looking up the latest WIA list on the wia.org.au website had a quite few repeaters where my IC-9100 CTCSS settings were either missing or wrong, due to changes made to the repeaters over time.

When updated settings done, the repeaters (that were always there) came to life, "reclaiming" nearly ten of them, most on 70cm.

Some of the Dstar repeaters have interesting splits, some 6kHz, some 5.4kHz and others 5kHz, concentration needed when typing.

Of course I used the CS-7100 software as a computer keyboard is faster to use than the radio screen and the data sent via USB cable to the radio. Any and every setting can be done this way, idle shut down, DV messaging, GPS settings, display settings, etc.

With an SD card more settings and pre-recorded voice segments can be done, great for contests, or capturing received audio, also good if in a contest and you did not quite catch a locator or other important parts of the over due to QRM/QRN.

The specs say the IC-7100 does DV (Dstar) mode on all bands 160 meters all the way up and this was confirmed.

DV operation on HF should only be used in the digital portion of each band. Audio reports from stations were good and received audio is clear, but a separate speaker would be better than the speaker in the radio head, but it is good considering its size, depends on the internal noise of your vehicle I guess and where you choose to mount the radio head.

This radio only has the one VHF/UHF antennae connector, not the usual two used for diversity reception of Dstar.

So if you use the DV mode mobile you may cop some "R2-D2" speech at times, but DV is quite robust most of the time.

DV Repeater contacts on both 2meters and 70cm have that typical Dstar audio sound, as does HF, with no change regardless of band.

HF tests done, with another station using a IC-9100 had perfect audio copy as tested briefly on the following frequencies;

6 meters,	with a Dstar test QSO on 53.080
10 meters,	with a Dstar test QSO on 28.100
12 meters,	with a Dstar test QSO on 24.928
15 meters,	with a Dstar test QSO on 21.100
17 meters,	with a Dstar test QSO on 18.105
20 meters,	with a Dstar test QSO on 14.080
30 meters,	with a Dstar test QSO on 10.145
40 meters,	with a Dstar test QSO on 7.035
80 meters,	with a Dstar test QSO on 3.630
160 meters,	with a Dstar test QSO on 1.810



IC-7100 Rear Connections ↑

With HF available, antennas for that were the next job, many solutions and expense choices awaited, days spent looking at ideas.

The FAMPARC whip is an option, cheap too, only need to get out of the car and change the 'wander' lead to change bands.

But unfortunately these are no longer being made or sold by FAMPARC, but I did pick up a second hand one for \$50.

For more money, about \$850, there is the Diamond SD330 Screwdriver HF Mobile whip, fully auto tuning covering 3.5 - 30 MHz.

If I was going to use HF a lot then that would be the best option, but most hams say the main HF mobile activity sits around 40 meters and 10 meters, with other bands only getting use depending on propagation conditions or contests.

After mulling the options and deciding against making up mounting brackets for the car, or drilling more holes in it, using the existing mobile VHF/UHF mount was chosen.

To save running more coax a Diamond MX62M duplexer was used to combine the two IC-7100 transceiver HF/VHF/UHF outputs.

Antenna coverage (without any ATU) now provided by;

Diamond HM-6, 20m/17m/15m/12m/10m (*needs selection of the sliding match to change bands*)

Diamond HF40CL, 1/4 wave centre loading 40m, (*being centre loaded it gives the most gain for its size and cost*)

Diamond CR8900 28(SSB) 29(FM) 50(FM/USB) 10m/6m/2m/70cm. (*traps auto select the band being used*)

With just three whips the transceivers **available TX bands** are highlighted (MHz); 1.8, 3.5, **7**, 10, **14**, **18**, **21**, **24**, **28**, **50**, **144**, **440**

Adding a three way coaxial switch from the duplexer feeding into three antenna mounts, all three whips on the car, means no stopping the vehicle to change bands, well most of them anyway...! The longer 40 meter whip was put at the front, with the others to the rear.

Of course having to lower the three of them if using underground parking at shopping centres will annoy.

All the whips have a lift up lock that allows them to be quickly lowered down, just lift the whip a few centimetres and tilt it.

The whip covering 10 meters will cover only one MHz, so either 28MHz USB segment or the 29MHz FM repeater segment can be used, unless a mark was put on the tuning steel and adjusted prior to your journey. For now, with mostly local driving it will be FM.

Tuning the whips was simple using the You Kits FG-01 Handheld SWR Analyser, all done in under an hour.

The 40 meter whip came in at 6.900 MHz, so bits of the top steel whip were cut off, bit by bit, until an acceptable VSWR was obtained over 7040kHz to 7120kHz. 10 and 6 meters required a half centimetre cut off the very tip piece and was adjusted to tune centred at 29.55MHz to cover the FM repeater segment.

Before cutting the top steel piece a little it was resonant in the 27.88MHz Marine band!

All of 6 meters is nearly of a low VSWR but it was set for the higher end of the band, also to cover the FM repeater segment.

A contact with Don VK3HDX on 40 meters was made with fair to good copy each way, not much noise. Considering I was parked only forty meters away from a major metropolitan power distribution sub-station and surrounded by high brick buildings, not bad... Driving home later that day, stations clearly heard on 7060kHz in VK1, VK2, VK3 and VK7 in a local chat group, no fading or QRM.



New clean antenna base



When not in use can cap it



3 way coax switch to swap bands



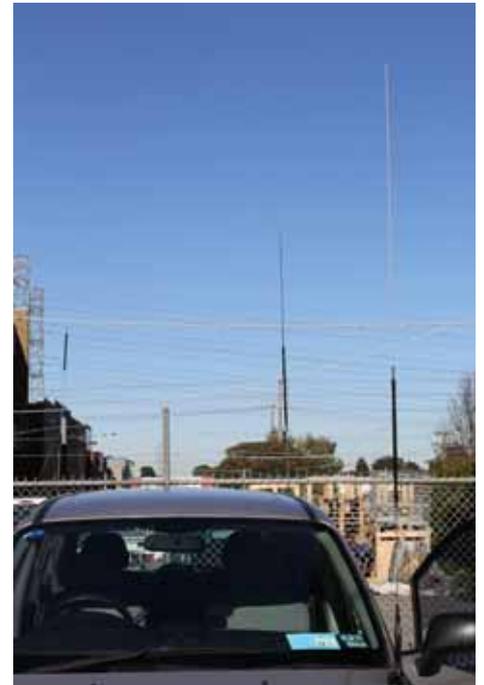
40 meter stainless steel is so hard that bolt cutters were used to cut it to tune, the pliers and hacksaw did not make a mark on the steel. Three bits cut off and resonance tested until VSWR was OK → Each piece removed brought centre frequency up around 50kHz, so >150kHz needed to set it up.



HM-6, 20m/17m/15m/12m/10m
Clever trap tapping arrangement ↑



CR8900 10mx, 6mx, 2mx & 70cm at rear,
HM-6 on the other side at end of the car ↑



Finished job, with 40 meter whip at front

Optional HM-151 Microphone ↓

CR8900 only covers (without alteration, after tuning) the FM part of 10 meters, not the SSB allocation lower down the band. SSB at around 28.47MHz is provided by the HM-6 as it also covers 10 meters. Without stopping the car, 10 meter USB/DX or FM chatting /repeaters can be used, at a flick of the coaxial switch - so convenient. When tuned to their respective centre frequency spot, the VSWR remains acceptable (*1.7 : 1 is my own considered safe borderline*) over the entire band allocation that is used for either SSB or FM, no risk of damage, saves the need for an ATU.

The only "tight" band is 40 meters, but another top whip section length could always be cut and an Allen key carried in the glove box. The section could then be changed over if another part of the band higher up was to be used that day, not a big expense either.

The manual says *"When the SWR is higher than approximately 2.0:1, the transceiver automatically reduces the transmit power to protect the final transistors."*

The transceiver has an in built VSWR meter that is quite accurate and gives either spot measurement (where you currently are), or a sweep feature so you can plot a chart of the VSWR over a range of frequencies.

Tips of HM-6 and 40 meter whip are about 30cm higher than the previous VHF/UHF antenna, need to remember that on my travels, 2.5 meter roof car parks are just OK. HF performance is excellent, strange to hear SSB in the car again after so many years.



A week later the coax switch was replaced with a four way and another dedicated 2 meter whip added, Diamond DP-NR22LH, that is two lots of $5/8 \lambda$ with about 6.5dB gain, 2.52 meters length. Should get heard around town with that... The extra receive gain is OK as the radio is pager proof, drove right past the Austin Hospital a few times, a notorious pager area, not a single breakthrough on the radio, not even up closer to the high end of the band while on the ATV liaison spot of 147.400

Last thing to do was adjust the microphone gain, most settings are default at 50% out of the box. Setting microphone gain to 85% got the best reports for both FM and SSB when mobile without internal noise heard. Using speech compression and raising it from default level 5 to level 8 had improved speech "punch" reported by others on air. You can set the TX width and tone and bass also. After learning about more features, a VSWR sweep of some bands revealed identical plots to the You Kits FG-01 Handheld SWR Analyser. All the bands checked matched what the Analyser had found, EXACTLY what the Analyser displayed!!! But not limited to HF as the Analyser is, all bands can be swept.



Flat VSWR scan of 2 meters ↑ VSWR sweep of 6 meters ↑

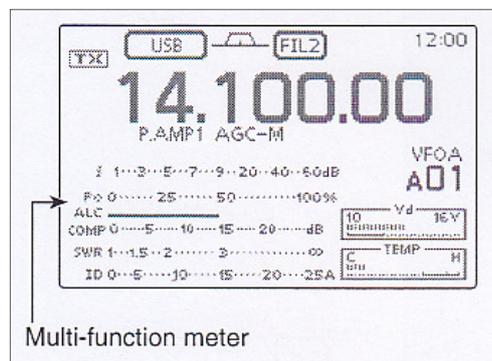


Sweep of 40 meter whip, ▲ is centre frequency, (each bar contains highest VSWR in its 10kHz sample range) 7055 to 7100 low VSWR, as FG01 Analyser said ↑ Actual usable range of 40 meter whip is 7040kHz to 7120kHz, if you 'allow' VSWR up to 2:1, then its another 50kHz either side.

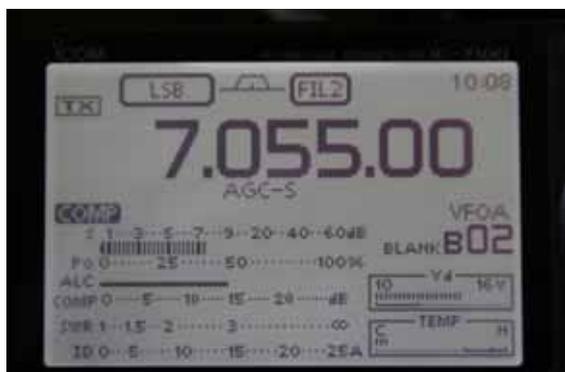
Another great feature is the multi function meter display. If you touch on the meter it toggles between functions, but if you press and hold on it for one second then it displays a MULTI function meter and in "real time" (apart from "S" points) displays;

- RF power output
- SWR
- ALC
- Voice Compression
- Car battery voltage into radio
- Current radio is drawing from battery
- Temperature of the PA finals

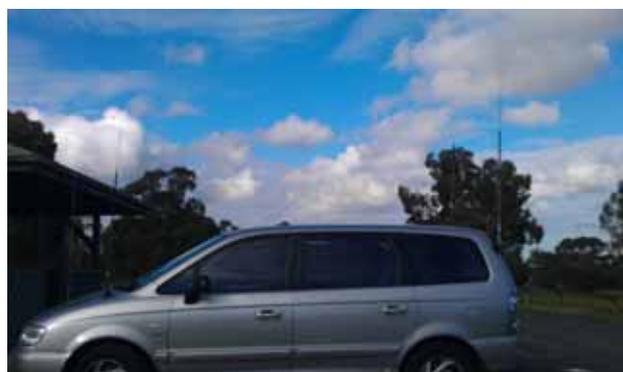
Meter displaying Multi mode →



An optional SDHC 32 GB SD card was inserted and formatted OK and copied settings OK, it does not take long at all, just seconds. No need for fancy costly "Extreme" speed type cards used in photographic equipment, plain SD cards are more than enough. After that it says room for about 553 hours of captured audio, that's around 69 days!! 32 GB is the largest size supported. Multiple voice files can be recorded such as for contests etc. The radio formats the card! *Is the 7100 a micro 'PC' that transmits ???*



Front panel with expanded meter display ↑
Microphone Gain & Power Settings ↓



At the park, four whips installed, extra 6.5db on 2mx ↑
Fully adjustable band pass settings ↓



After adding the high gain, 2 meters whip, from the park, Shepparton repeater was S3 on the small whip and S6 on the longer one. Where the "metal" of the car favours the signal an extra three 'S' points are obtained and two 'S' points otherwise, worth having. The instructions warned that lengths needed cutting to tune, but it was no more than VSWR of 1 : 1.3 over entire band - good one. Receiver performance is on par with the IC-9100, considering the mobile size of this radio, its amazing. Its easy to use, great value for the money. Be warned, if you use one for while, you will go and buy one - consider yourself told! ~Mick VK3CH

Review of LP-100A Digital Vector RF Wattmeter

A serious meter, a precision tool for any shack. Don VK3HDX says this VSWR meter is as accurate as the famous 'Bird' meters.

Its features include,

Fast, high contrast display with bar graphs for power and SWR, along with numerical readout for both

Bar graphs customizable for style, decay, behaviour and range

dBm / Return Loss display

50 mW to 3000W with three auto ranging scales (options for 5 & 10KW)

Power display resolution of 0.01 to 1W depending on scale

Frequency coverage of 1.8-54 MHz, with automatic per-band correction

Z, R, |X| display from 0-999.9 ohms each

Separate coupler with 50 ohm ports for uncluttered desktop

Peak-hold numerical power readout with "hang" characteristic for power and SWR

SWR accuracy < .15 (5%) from about .1W to 3000W, .05 typical

Power accuracy is 3% typical at any rated power level or frequency from 1W to 3000W after calibration, usable to 0.05W

Can be easily matched in the field to external standard to within 0.1% on each band

Power display is Fwd or Net power delivered to the load (Fwd minus Ref power).

SWR Alarm system with set points for Off, 1.5, 2.0, 2.5, 3.0 and user setting.

Includes "snooze" button for tuning, and power threshold.

Windows freeware Virtual Control Panel for software / remote control

Support within TRX-Manager for direct remote monitoring

Advanced automatic charting capability for SWR, RL, Z, R, X, reflection coefficient and Smith Chart

Built-in boot loader to allow for firmware upgrades to be downloaded and installed.

Call sign screen saver to extend life of display, scrolls a full screen call sign across the screen. Call sign is set in Setup screen.

Direct input for bench testing & field strength measurements, -15 to +33 dBm.

Conforms to FCC Part 15 A & B, ICAS and CE radiated emission limits, tested and verified by accredited lab

For VSWR measurements reading one page of the manual is enough and it comes with a very quick start guide with a thirty odd page

on line PDF manual to study if more complex functions such as VSWR plotting or polar plotting (using a PC) are to be done.

Doing tests on the whips installed on the car were quick and simple. Alarm can be set when VSWR reaches a set point.

Current & Voltage Sensing coupling unit ↓



Rear connections to the display unit ↓



Real time VSWR and power testing, it actually moves with your modulation - incredible to watch, so accurate ↓



Above is actual AM carrier into the 40 meter whip on the car at 7070kHz, where along with my other tests is centre tune ↑

The "meter" covers 160 meters to 6 meters, but an optional coupler for 2 meters / 70cm is coming out very soon.

If you want an accurate, easy to use, laboratory grade VSWR Meter, then take a look at <http://www.telepostinc.com/lp100.html>

LP-100A has additional modes no other wattmeter has; vector impedance, dBm/RL, calibrated field strength and compression ratio.

Simple yet highly customizable... all functions and user preferences can be set from the Setup display. Plus supplied Windows® software for extended capabilities like automated SWR and Impedance plotting, antenna pattern plotting, internet remote control and more when connected to a PC. Latest software downloadable from their website.

Don VK3HDX says its one of the most amazing bits of kit he has seen in ages, Mick VK3CH agrees, after seeing it at Don's place, Mick now owns one. And no, its not for loan, buy your own!!

~Mick VK3CH

International Lighthouse Lightship Weekend

*AN ANNUAL AMATEUR RADIO WEEKEND EVENT.
CONDUCTED UNDER THE SPONSORSHIP OF THE AYR AMATEUR RADIO GROUP, (AARG), SCOTLAND.
HELD ON THE THIRD FULL WEEKEND IN AUGUST.*

<http://illw.net/>

This year's event - 17-18 August - Duration 48 hours from 0001 UTC 17.8.2013

Remembrance Day Contest

August 17th and 18th

Sat 17th August, 0300 UTC to 0259 UTC Sun 18th August.

This contest is held every year on the anniversary of the end of World War II, in honour of the Australian amateurs who lost their lives in wartime.

This contest is unusual because the trophy goes to the Australian state or territory that scores the highest level of activity.

<http://www.wia.org.au/members/contests/rdcontest/>

ALARA Contest August 24 and 25

Inviting OMs and YLs on the air waves

Saturday August 24th and Sunday August 25th 0400 to 1359 UTC each day

This is the weekend after the Lighthouse Weekend & Remembrance Day Contest

WANSARC VK3AWS

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WANSARC CLUB PROFILE

History

The Western and Northern Suburbs Amateur Radio Club (**WANSARC**) was first formed in 1969 and since then has served the needs and interests of amateur radio operators, short wave listeners and those interested in hobby radio and electronics. The club is not gender specific, having both female and male members. Members come from all walks of life with a mix of experience, young and mature, novice and technical. The most important aspect of the club is the willingness of all members to share their knowledge for the benefit of others. Members mainly reside in the west and north of Melbourne; however membership is encouraged from all interested. **WANSARC** is an affiliated club of **The Wireless Institute of Australia**.

Meetings

Meetings held at the **Ern Rose Memorial Pavilion, SEAVER GROVE, RESERVOIR** (Melway Map 18 D5) on the **1st Friday of each month** (excluding January) commencing at **7.30pm local time**. Talk in on **146.450MHz FM**—call club station **VK3AWS**.

Benefits

Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts, excellent club facilities and environment plus an informative monthly newsletter for members to post articles, news, classifieds for all radio, test equipment, etc, featuring Amateur Radio news from WANSARC, ARV, WIA, ACMA, Melbourne Clubs, VK and Worldwide.

Club Nets

146.450MHz FM each Tuesday evening commencing **8.00pm local time**. Net Control Station - **VK3AWS**

Website: www.wansarc.org.au

Postal: **WANSARC PO Box 336 RESERVOIR 3073**

A proud tradition of supporting hobby radio and electronics enthusiasts since 1969

All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of **WANSARC**, but are published in the spirit in which they were submitted; in any case anything stated is to promote interest and active discussion on club activities and the promotion of Amateur Radio in general. Contributions to **WANSARC** are always welcome from any part of the world. Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable. You can either post material to the Post Office Box address at the top of this page, or email your submission to the editor direct at vk3ch@wia.org.au

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While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles. Any dates, times and locations given for upcoming events should always be checked with a reliable source closer to the event – coming up on the **WANSARC Tuesday evening NET** on **146.450 MHz** starting at **8:00 pm Local** is recommended to discuss and confirm information and any dates.

The club website has current information on planned events and scheduled meeting dates. **WANSARC** News written with Word™ 2007, published with Adobe Acrobat™ 10. You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at www.wia.org.au. The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This service is FREE.