

VK3AWS



WANSARC NEWS June

Western and Northern Suburbs Amateur Radio Club
(WANSARC)
Incorporated in Victoria

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A WIA Affiliated club

A NEW POTENTIAL MEMBER FOR THE CLUB

News and views from the Western and Northern Suburbs Amateur Radio Club VK3AWS—JUNE 2007



Never before has the club magazine featured not only a prospective new member, but one just born!!!

Congratulations to Chris VK3FY and Deeny (XYL) on the safe arrival of CHRISTYANA MARIE DIMITRIJEVIC.

Christyana entered our world at 2.42am on Thursday 3 May 2007, with mother and baby doing well.

What size you say? In the old scale 9 pound 1oz. (4.12kg) —not a small fish!! Proud Dad can give you the exact readings.

Best wishes Chris and Deeny and the boys from all of WANSARC.

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FACE BOARD** by
Peter VK3YSF

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from members

Editor—**Mark**
VK3PI.....thanks
to members for
their contribu-
tions...**keep them**
coming!

Sound Card interface by Peter Miles VK3YSF

Presented here is a transceiver to computer sound card interface complete with automated transmit key function. A sound card interface is simply the audio coupling of a computer soundcard and a transceiver to allow various computer applications that send and receive SSTV, RTTY, PSK31 and other modes based on soundcard generated signals.

The interface is designed be left inline with the ability to easily be switched between phone and data operations. This version is my first attempt to interface a computer soundcard with my Kenwood TS-430 transceiver and has proven to be very successful and easy to operate.

While designed specifically to be connected to a Kenwood TS-430 transceiver the design should suit many other Kenwood radios with little, if any modification, and should be in principle adaptable to many other radio types.

Design

The design has evolved from research of similar circuits on the Internet.

One of the main aims of this circuit was to develop a simple method of switching too and from normal voice communication and a range of digital modes at the flick of a switch.

The circuit design is however fundamentally about transferring a clean and undistorted signal between computer and radio. Preventing unwanted signals, noise and even damaging voltages passing between the computer and the moderately powerful HF transceiver can be quite difficult. At 100 Watts the Kenwood TS-430 may introduce RF feedback into sensitive audio circuits within the radio via connecting leads and other attached equipment and the computer may find a path to introduce noise into the sensitive HF receiver.

Audio isolation transformers are placed in both, transmit and receive audio circuits to eliminate the possibility of ground loops. All cabling between equipment is shielded audio cable and small value capacitors are place around the circuit to suppress any stray RF that may have been picked up. An Optical coupling IC package is used to isolation the transmit PTT keying circuit and the DB9 comms port.

The types of transformers are determined by the source of the audio. The radio's microphone and the computer soundcard output will use a 3k to 3k Ohm (1:1) transformer due to the similar impedance. The radio's speaker jack (8 Ohm impedance), will use a 1000:8 transformer to step up the 8 ohm speaker output to the higher impedance sound card AUX input. Simple resistor and trim pot networks are used reduce and adjust the signal levels.

The transmit key function requires that the RTS (Request To Send) Pin 7 and Ground Pin 5 from the computer com port be relayed via a 4N25, or 4N32 Optocoupler chip to the transceiver PPT pins for additional isolation. Also included is LED transmit key indicator.

Construction

The unit's components have been laid out on a section of versa strip board and assembled in a sealed polycarbonate box, size 115 x 90 x 55 (Dick Smith H2863) which is a nice quality box. The positioning of the components is not critical, but as always neatness counts and makes it easy to keep track of where you during assembly. Internal signal wire pairs are twisted to further reduce unwanted signal pick up.

Short screened leads connect the computer to the interface and the location of the device in relation to other station equipment like the ATU, power supply etc. are all crucial to mitigating stray signal pick up.

The computer's CRT screen is a bad source of radio hash and while I have operated these modes with a CRT screen its replacement with a new LCD display removed near all the noise from the shack.



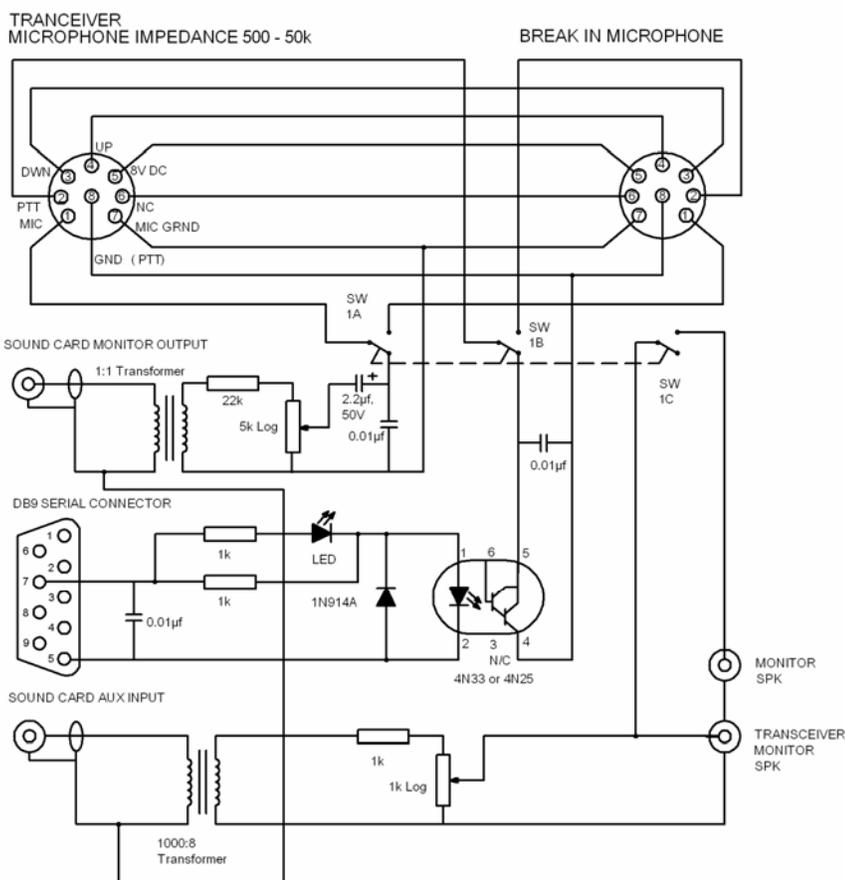
Operating

Once the interface is inline the first thing to do is set the trim pots to a useful level with the mic gain and the AF gain in the nominal position so that when switching from phone to data the levels will be about right.

The mic gain will still need to be adjusted to achieve the final transmitter output power level. This is critical for if the transmitter is over driving it will result in a lot of adjacent channel interference and possibly damage to the transmitter.

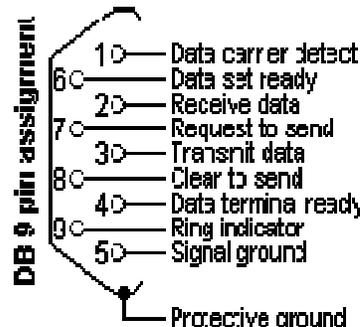
For SSTV, the generated signal is a frequency modulated tone causing the transmitter to work hard. Therefore it is recommended that the transmit power be wound back to around twenty watts for the average 100W HF SSB transceiver or to about the AM rating of the transceiver. Be conservative!

With everything adjusted, the interface can be left switched to phone for normal voice operations where the microphone controls the PTT



Sound interface circuit diagram (above).

At left a photograph of the completed sound interface module and at right pinout diagram for the DB9 connector.



function or switched into the data mode where the monitor speaker is switched out (No noise) and the computer software operates the PTT function. Even in the phone mode the soundcard is monitoring the audio, which can be useful.

This simple but effective means of interfacing radio and computer and the related software may open up a whole new radio communication world for you – so give it a go!!

If you need some further advice call me on 146.450MHz most evenings.

73 de Peter VK3YSF

**IAN VK3XIJ
WANSARC
WORD OF THE
MONTH**

“MALIGN” - hurtful, slander, misrepresent....

Can't think how this came into our post meeting discussion at TINA's, however it does SOUND a very POWERFUL word.....

And from President Graeme VK3NE....

“When you are up to your arse in alligators it's hard to remember that the original idea was to drain the swamp”

**WANSARC
WINNERS AT
MOORABBIN
HAMFEST**



Well, winners are grinners! Have a look at Rod VK3FRMT who had just scored himself first prize in the Moorabbin HAMFEST raffle.



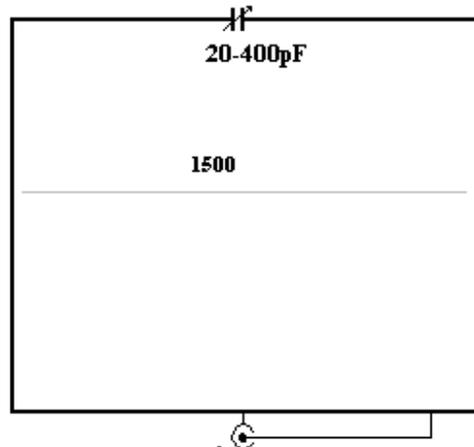
And Johnno VK3FMPB won a commercial dipole antenna—how lucky were the WANSARC boys! Johnno seen negotiating the best price for another box of tricks....Go Johnno!!!

A MAGNETIC LOOP—Peter VK3YE

Magnetic Loop for 40 and 80 Metres

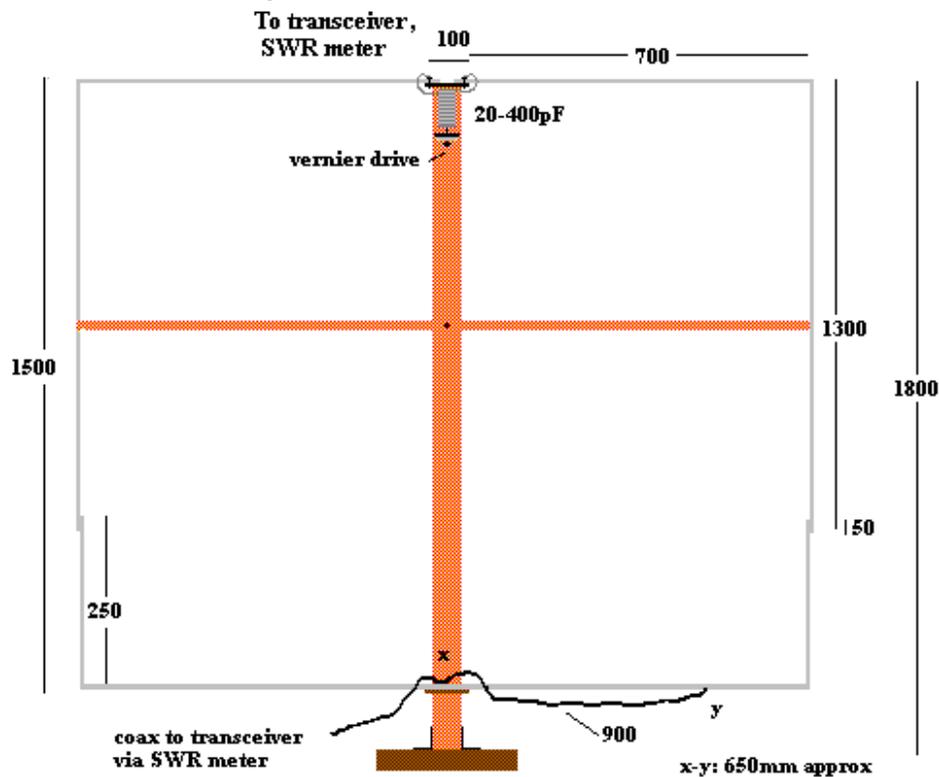
(c) VK1PK 1998

Dimensions in millimetres



Notes:

1. Use coaxial cable braid for connections to variable capacitor and between the feedline and point 'y'.
2. Use a good insulator at the top of the antenna (bakelite used in the prototype).
3. Ensure all electrical connections are low resistance. Sand aluminium and other surfaces at all connection points. Electrical conductive paste would be desirable at these points.
4. 3x20mm flat aluminium was used for the prototype. However 12 or 20 mm copper tube would be better.



Description

Able to cover all frequencies between 3.5 and about 10 MHz, the loop described here is directional, does not require a radial system, and stands just 1.8 metres tall. Most parts needed can be purchased at a hardware shop. The antenna can be put together in an afternoon and requires only hand tools to assemble. It should cost less than sixty dollars to build.

Shown above is the schematic diagram for the loop. Note that the element is continuous except for a gap at the top across which the variable capacitor is wired. The feedline is connected to the bottom of the loop. Also shown is the physical construction of the antenna. The loop element is 1.5 metres square and is supported on a wooden cross.

To minimise losses, thick aluminium strip is used for the element. At the top of the loop is a high-voltage variable capacitor. This is used for adjusting the antenna to the operating frequency. Because of its narrow bandwidth, the tuning is very sharp and a vernier drive has been added to make tuning easier. Dimensions are not particularly critical, provided it is possible to bring the loop to resonance on all operating frequencies with the variable capacitor used.

Parts needed

The following materials are required to build the antenna:

- 3 2m lengths of 3×20mm aluminium strip
- 1 1.8m length of 20×44mm pine
- 1 1.5m length of square (12×12mm) wood
- 1 polyethylene chopping board (medium or large size)
- 1 150 x 80×4 mm piece of stiff high-voltage insulating material (eg bakelite)
- 2 right angle metal brackets
- 1 20-400pF high voltage variable capacitor
- 1 6:1 vernier reduction drive (Dick Smith No P-7170)
- small length of coaxial cable braid
- RG58 coaxial cable (any length) and PL259 plug

screws, nuts and miscellaneous hardware

Construction

The first step in assembling the loop is to make the wooden cross that supports the aluminium element. This is done by bolting a 1.5m horizontal cross piece to the 1.8m vertical section. A white polyethylene chopping board is used for the antenna's base. The two right-angled brackets are used to attach this to the vertical section. The next step is to bend the three lengths of aluminium so that they form a 1.5 metre square loop able to fit on the frame when bolted together. As is visible in Figure Two, two pieces are "L" shaped, while the other is bent into a shallow "U". Note that the two L-shaped pieces are about 10cm apart at the top of the loop. These are physically joined by the bakelite insulation block that is attached to the top of the length of pine. The upper L-shaped pieces meet with the lower U-shaped piece at points 'v' and 'w'. The overlap is about 40-50 millimetres. Make the electrical connection at these points as good as possible. To achieve this, sand the aluminium at the point of contact and use two or more small bolts to hold the pieces together. Use special conductive paste if available. The variable capacitor is mounted on a home made metal bracket so that its shaft faces downwards. To the shaft is attached a vernier reduction drive. Use either small brackets, fishing line or glue to fasten the frame of the reduction drive to the 1.8 metre vertical section. Note the thick, low-resistance conductors between the end of the loop and the tuning capacitors. Braid from a length of coaxial cable was used in the prototype. Make these connections short to minimise losses.

The loop is fed at the bottom. The braid of the feedline connects to the centre of the lower horizontal element (see diagram, point 'x'). The inner conductor connects to the loop at point 'y' via a 900mm length of coaxial cable (inner and braid soldered together). At both 'x' and 'y', a small bolt, nut and eye terminal connector is used to make connections to the aluminium element. The distance between 'x' and 'y' and the length of the coaxial cable may both have to be varied for proper matching.

So give it a go and report your findings back to your humble editor and other members!

CLUB NET TRHIVES

Bob VK3EL is doing a marvellous job as the NET CONTROLLER of the WANSARC weekly net.

The net is on each TUESDAY NIGHT at 1930 hours local on 146.450MHz FM.

Last week club members included VK3NE, VK3HGX, VK3XLC, VK3BMR, VK3AOF, VK3ZO, VK3YSF, VK3FMPB, VK3DPF, VK3BMR and VK3PI.

So what are you waiting for? Make a note to join next weeks club net and call VK3AWS

HEALTH QUESTIONS AND ANSWERS FOR RADIO HAMS contributed by Ian VK3XIJ

Q: I've heard that cardiovascular exercise can prolong life; is this true?

A: Your heart is only good for so many beats, and that's it... Don't waste them on exercise. Everything wears out eventually. Speeding up your heart will not make you live longer; that's like saying you can extend the life of your car by driving it faster. Want to live longer? Take a nap.

Q: Should I cut down on meat and eat more fruits and vegetables?

A: You must grasp logistical efficiencies. What does a cow eat? Hay and corn. And what are these? Vegetables. So a steak is nothing more than an efficient mechanism of delivering vegetables to your system. Need grain? Eat chicken. Beef is also a good source of field grass (green leafy vegetable). And a pork chop can give you 100% of your recommended daily allowance of vegetable products.

Q: Should I reduce my alcohol intake?

A: No, not at all. Wine is made from fruit. Brandy is distilled wine; that means they take the water out of the fruity bit so you get even more of the goodness that way. Beer is also made out of grain. Bottoms up!

Q: How can I calculate my body/fat ratio?

A: Well, if you have a body and you have fat, your ratio is one to one. If you have two bodies, your ratio is two to one, etc.

Q: What are some of the advantages of participating in a regular exercise program?

A: Can't think of a single one, sorry. My philosophy is: No Pain...Good !

Q: Aren't fried foods bad for you?

A: YOU'RE NOT LISTENING!!! Foods! are fried these days in vegetable oil. In fact, they're permeated in it. How could getting more vegetables be bad for you?

Q: Will sit-ups help prevent me from getting a little soft around the middle?

A: Definitely not! When you exercise a muscle, it gets bigger. You should only be doing sit-ups if you want a bigger stomach .

Q: Is chocolate bad for me?

A: Are you crazy? HELLO ! Cocoa beans! Another vegetable!!! It's the best feel-good food around!

Q: Is swimming good for your figure?

A: If swimming is good for your figure, explain whales to me.

Q: Is getting in-shape important for my lifestyle?

A: Hey! 'Round' is a shape!

Well, I hope this has cleared up any misconceptions you may have had about food and diets.

And remember:"Life should **NOT** be a journey to the grave with the intention of arriving safely in an attractive and well preserved body, but rather to skid in sideways - Chardonnay in one hand - chocolate in the other – body thoroughly used up, totally worn out and screaming "WOO HOO, What a Ride"



**CLUB
FEES DUE**

Club fees remain the lowest of any club at \$10 for students/ pensioners and all others \$20. For those who have renewed thanks. For those who have not, please remit your fee to the Treasurer, Gordon VK3YOD or send to WANSARC, PO Box 336,



New safety footwear for the workplace

**THE
STEELCAP Thong**

Designed in Australia
for
Australians

Available from all good Aussie owned safety shops
Proudly designed and manufactured by Blundisi Boots
Also available for New Zealand use as "Jandols Bro"



GET WELL SOON

Max VK3ZCW

has recently had some surgery and is recovering—must say it is quiet on 146.450 in the afternoons so let's hope your tones are heard again soon, Max.

And long time member **Bert VK3BH** has been ill for some time and the thoughts of all members are with you Bert!

Your magazine contributors this month include—**Peter VK3YSF, Ian VK3XIJ, Graeme VK3NE, Mark VK3PI, John VK3FPRC and John VK3FMPB.**

Thanks folks—you are making the task of producing the monthly magazine much easier!!

WHAT ABOUT THIS ? Contributions from members

Tips when travelling overseas (particularly the U.S.) from John VK3FPRC

Don't take an all-band receiver or scanner in carry on luggage. I have an Icom IC-R2 and it was in carry-on bag. They saw the antenna and went looking for sharps, discovering the receiver. I had to surrender it to security, contact the airline, who then arranged to put it in checked baggage at the terminal lounge. Carry a copy of your ham license, especially if you have a transceiver with you.

Also my little torch on my key ring was seized, could be a laser! I showed it wasn't, then they said it looked like a bullet. Only cost \$2 but it was real handy.

Cheers from Los Angeles at present.

Describing how radio works from Peter VK3YSF

Albert Einstein, when asked to describe radio;

"You see, wire telegraph is a kind of a very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. Do you understand this? And radio operates exactly the same way: you send signals here, they receive them there. The only difference is that there is no cat."

Marinade heaven from Mark VK3PI

One of the pure joys of each day is to experience the delights of cooking, or eating, or preferably both!

Here is a recipe for **MARINADE a la PI**, designed to add an exquisite twist to any of your meat and fish dishes.

Here is the recipe:

- quarter of a standard bottle of soy sauce;
the same amount of dry sherry, good wine or a nice tawny port;
2-3 cloves of garlic (crushed);
about the same amount of ginger;
a pinch of chilli flakes;
1 heaped tbsp of honey or brown sugar;
garlic salt & pepper;
half a finely diced onion.

Marinate red meat for 4-6 hours or fish for about 3 hours.

You will not be disappointed!

Icom releases new rig—from Chris VK3FY

Like new toys? Check out the new ICOM box at:

<http://www.ab4oj.com/icom/ic7700/main.html>

Think it may be a contest to see who can work out how to drive it!!! - Ed





WANSARC is at www.wansarc.org.au



This month we feature Dan VK3DWH (on the right) and his good lady Helen. Dan is our "snag" man on field days but let me tell you Helen is a pretty mean cook as well, having fed the masses at Kinglake. Thanks for supporting WANSARC folks!



4 channel microphone mixer, new with connectors. Only \$10 donation to club—handy for audio application in the shack.....be quick!!!!



WANSARC VK3AWS

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SECRETARY: Mark Stephenson VK3PI Telephone: 0400 443 218
vk3pi@optusnet.com.au

All correspondence to be addressed to the **SECRETARY: PO Box 336**

RESERVOIR 3073

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.

Meetings

Building K, Northern Metropolitan Institute of Technology (NMIT), St. Georges Road, Preston (Western side between Bell Street and Cramer Street) Melway 18 E12 *PARKING at NMIT-Members please note that parking adjacent to the club room building K is illegal and NMIT staff WILL book any cars which are parked in that area. ALL members must park cars in the main car park to the WEST of building K. Just look for vehicles with lots of aerials!* Meetings held 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 like minded 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, WIA, ACMA, Melbourne Clubs, VK and Worldwide.

Club Nets

146.450MHz FM each Tuesday evening commencing 7.30pm local time.

More Information: Website: www.wansarc.org.au Email: wansarc@wia.org.au

Postal: WANSARC PO Box 336 RESERVOIR 3073

NEXT MEETING FRIDAY JUNE 1, 2007

**Australia Post
stamp here**

MINI INTERNAL HAMFEST—bring along your goods for sale, swap or disposal.....more good club disposals also available with nothing over \$10. See you on the night. 7.30pm NMIT St. Georges Road Preston.

If not delivered within 7 days please return to

WANSARC PO Box 336 Reservoir 3073