Inside Story:

Celebrating the Centenary of Broadcasting in South Australia

100 years – 100 radios

As featured in the last edition of this Newsletter, we would like to once again, highlight *The National Film and Sound Archive* **in Canberra's celebration of 100 years of radio broadcasting in Australia. They have developed a series of web-pages entitled, not surprisingly, [100 YEARS IN 100 DAYS](). *(You can safely click on this link.)**

The National Film and Sound Archive also presents *Who Listens to the Radio?* - a podcast about technology and culture. The story of radio is not what you might expect.

Radio 100 tells many stories, and all five chapters are available to explore. Click on the link above to go directly to the NFSA website and explore the 5 webpages. There is more detail about this special Centenary of Broadcasting website inside this Newsletter.

Historical Radio Society of Australia Inc. – S.A. Group

Web Site: www.hrsasa.asn.au
All correspondence should be addressed to the Secretary, HRSA-SA Group, 2-13 Chester Street, Glenelg South, S.A. 5045.

Committee for 2023-24

President:	Graham Dicker	0414 323 099	pres@hrsasa.asn.au
Vice President:	Keith Ellison	0407 304 028	vicepres@hrsasa.asn.au
Secretary:	Ian Smyth	0488 488 776	sec@hrsasa.asn.au
Treasurer:	John Crawford	8344 4978	treas@hrsasa.asn.au
Public Relations:	Alan Taylor	0417 859 074	alantaylor47@bigpond.com
Committee Member:	Warren Lane	0400 272 556	warren@hrsasa.asn.au
Committee Member:	Peter Howard	0424 563 732	peter@hrsasa.asn.au
Committee Member:	Tony Bell	8269-4095	antony.k.bell@gmail.com

Co-Opted Additional Members/Responsibilities:

Shop Keeper:	Alan Taylor	0417 859 074	shop@hrsasa.asn.au
Valve Bank Manager:	John Crawford	8344 4978	vbm@hrsasa.asn.au
Newsletter Editor:	Ian Smyth	0488 488 776	sec@hrsasa.asn.au
Website Editor:	Ian Smyth	0488 488 776	sec@hrsasa.asn.au

Planned meetings for the next few months:

Sunday 30 June
12noon to 5:00pm
Group Visit to "Old Tailem Town"
NOTE: Earlier starting time. Possible ongoing relationship with them re "Radio Room" collection. This event is confirmed but we will keep you informed as we progress, especially with Bus details. Families welcome to join us.
Assembly point: Carpark of Arkaba Hotel, Fullarton Road at 12 noon – Driving in convoy to Tailem Bend.
To be held at:
Old Tailem Town,
Princes Highway, Tailem Bend, SA.

Wednesday 10 July
12 noon for a 12:30pm start
MEMBERS LUNCHEON
Formerly known as the "Retirees Luncheon" it is open to all members, partners, and guests.
To be held at:
The Reepham Hotel
273 Churchill Rd, Prospect, SA, 5082

Sunday 28 July
1:00pm to 4:00pm
AGM and AUCTION
As in previous years, we will be holding the AGM of the Association, including the election of Office Bearers for 2024-25. This will be followed by our second Auction for this year. Members can book a table and sell up to 20 items each. Please contact the Secretary ASAP to book your table.
To be held at:
St. Cyprian's Church Hall
70, Melbourne Street, North Adelaide, SA, 5007

Sunday 25 August
1:00pm to 3:30pm
Philips Radio & TV "Show & Tell" Day
Members bring restorations, as per the Eddystone, Astor & AWA days we conducted in 2022-23. Will also include any products made by Philips (eg/Mullard.)
Also including TV sets and Test equipment
To be held at:
St. Cyprian's Church Hall
70, Melbourne Street, North Adelaide, SA, 5007

Wednesday 11 September
12 noon for a 12:30pm start
MEMBERS LUNCHEON
Formerly known as the "Retirees Luncheon" it is open to all members, partners, and guests.
To be held at:
The Earl of Leicester Hotel
85 Leicester St, Parkside, SA, 5063

Sunday 29 September
1:00pm to 3:30pm
AMPLIFIERS DAY (Part 2)
Following on from the first workshop in back February, Members taking part in the *"Centenary of Broadcasting amplifier design and building competition"* can get help/assistance from the judges of the competition as we get closer to the finishing date. This meeting will be open to radio amateurs from other clubs who have joined us for this event.
To be held at:
St. Cyprian's Church Hall
70, Melbourne Street, North Adelaide, SA, 5007

Sunday 27 October
12noon to 4:30pm
HOME VISIT
A bus trip, BBQ lunch and a visit to Alistair Craill's home at Lyndoch in the Barossa Valley. More details as we get closer to the date.
To be held at:
Alistair Craill's Home, Lyndoch, SA

Wednesday 6 November
12 noon for a 12:30pm start
MEMBERS LUNCHEON
Formerly known as the "Retirees Luncheon" it is open to all members, partners, and guests.
To be held at:
The Reepham Hotel
273 Churchill Rd, Prospect, SA, 5082

Sunday 24 November
1:00pm to 3:30pm
TWO CONCURRENT WORKSHOPS
(A) Bakelite and plastic repairs
(b) Practical Soldering – Do's and Don'ts, Tricks & Tips.
One workshop in the Hall and one in the smaller Meeting Room.
To be held at:
St. Cyprian's Church Hall
70, Melbourne Street, North Adelaide, SA, 5007

Friday 13 December
NOTE: Not on a Saturday this year
12 noon (for 12:30 start)
CHRISTMAS LUNCH
Our annual celebration of the year's activities and Christmas. (To avoid the second Saturday of the month for our joint AHARS members!)
To be held at:
The Maid of Auckland Hotel
926 South Rd, Edwardstown, AU 5039

Component Corner

Many new members are probably wondering where to obtain components and valves. The following is a list in order of preference:

HRSA-SA Group Shop: We now have a new arrangement for our store. Please contact our Liaison Officer, Alan Taylor on 0417-859-074 to enquire, or place an order. Alan's email address is: shop@hrsasa.asn.au

AZTRONICS, 170 Sturt Street, Adelaide. Houses the HRSA-SA Group valve bank and modern components. They will source components for members. Great supporters of the HRSASA.

HRSA Melbourne (see *Radio Waves*) Houses the Victorian HRSA valve bank and odd passive components and kits, plus resource books written especially for members.

WES Components, Sydney. The catalogue is viewable on-line, and orders can be placed through the Shop Keeper/Secretary, as the SA Group has an account, through which we get "trade discount". Go to: https://www.wes.com.au to see all their products.

ITEMS, and or HELP STILL WANTED BY FELLOW MEMBERS:

1.**WANTED:** Mobile H.F. + V.H.F. + U.H.F. Transceiver
Contact: Barry Chammen on 0409-061-560

2. **WANTED:** Philips Transistor Radio – Model No. 198
Contact: Tony Bell on (Home) 8268-4095

3. **FREE GIVE AWAYS!**
Two 1962 Operatic Black & White TVs. Both designed to switch between 32volt DC and 240V AC supplies. Very forward thinking by Bland. Some members would have seen both working at an HRSA meeting years ago.

Pick up from Greg Lamey's home at Cudlee Creek.
Contact: Greg Lamey, Phone: 0455 349 304 or email: gnjlamey@gmail.com

4. **For Sale:**
Yeasu FRG7 receiver - in good working condition

Price reduced from $400 to $320.00
Pick up from Greg Lamey's home at Cudlee Creek.
Contact: Greg Lamey, Phone: 0455 349 304 or email: gnjlamey@gmail.com

5. **HELP WANTED**: We have discovered two long-forgotten VHS Video-tapes at the valve bank that once belonged to the HRSASA Library. We would like to have them transferred to digital files so they can be placed on the HRSASA website so they can be enjoyed by us all. If you, or anyone you know, has the equipment to do such a transfer, could you please contact John Crawford at the address below..
Contact: John Crawford, (Treasurer and Valve-Bank Manager).
Ph: 0402 710 291 or by email at: johncraw@internode.on.net

6. **WANTED TO BORROW**: A 12-volt power supply for National Panasonic Reel-To-Reel Video Tape Recorder, Model NV-3085A – Has a 4-pin din plug with a groove (see photos below) – *Contact:* Ian Smyth on 0488-488-776
This unit belongs to a local Primary School, we only need to borrow a power-supply to dub some old tapes.

Socket for 12volt push-in power lead.

From the John Wagener Collection: A His Meowsters Voice 101 wind up Gramophone

Also from the John Wagener Collection: A Katwater Kent model 30 radio from 1926.

HRSA MEMBERSHIP RENEWAL 2024-25

Membership fees are due by 30 June 2024. Please note that your new Membership Card will be sent out automatically from Melbourne with the July issue of "Radio Waves". However, it is not valid until payment has been made. Renewal enquiries should be made to the Membership Secretary in Melbourne, or by email to Jim Greig at: jjgreig@bigpond.com, or phone: (03) 5441 3072. If you are unsure of your payment status, please contact the Membership Secretary before paying for 2024-25.

Build Your Own Continuity Tester

This very useful tool was demonstrated by John Crawford at the March "Quick and Dirty" themed meeting, where several members shared hints, tips, short-cuts and secrets from their workshops.

This simple tool can be used for:
1. Testing valve filament continuity
2. Checking diodes for polarity: ie/ LED lights with Red to Anode
3. Checking switches for contact continuity
4. Checking filaments of incandescent lightbulbs
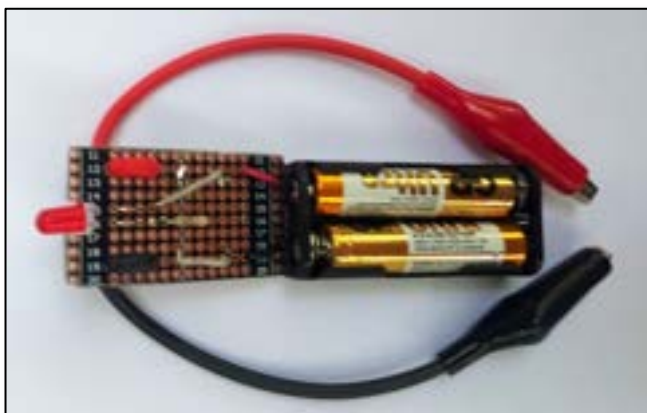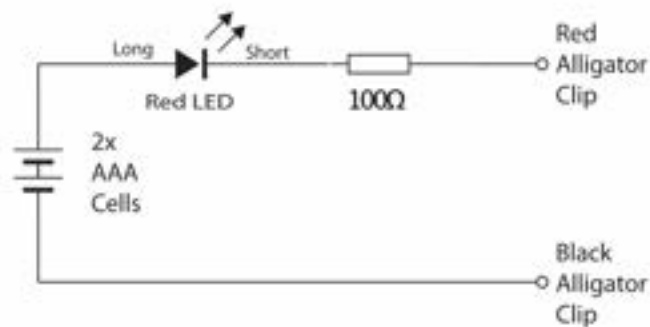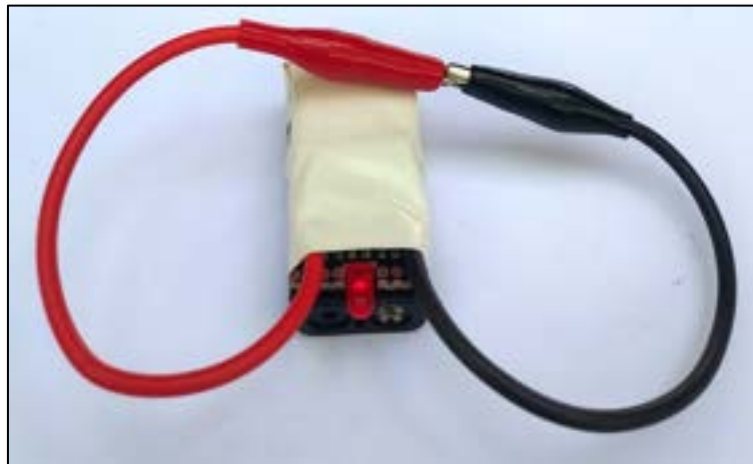
Above: Assembly – Battery Side
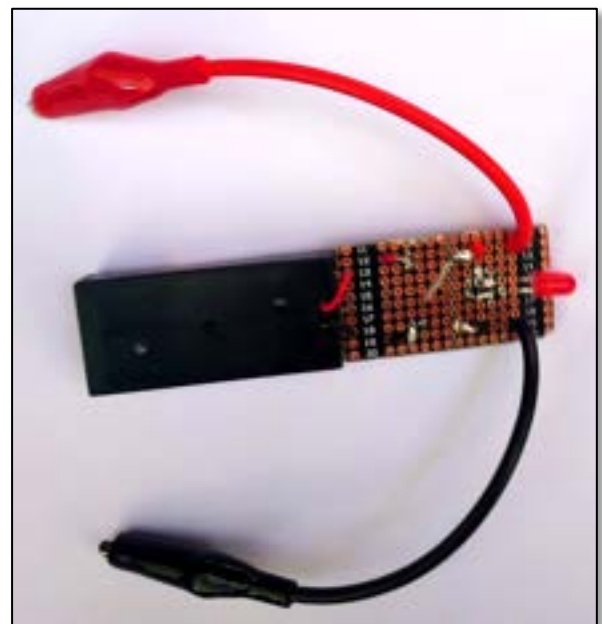
Right: Assembly – Front side

FRONT COVER STORY: 100 Years – 100 Radios

Celebrating the Centenary of Broadcasting in South Australia

100 years – 100 radios

As seen on the front cover, The National Film and Sound Archive in Canberra's is celebrating of 100 years of radio broadcasting in Australia with a series of web-pages entitled, 100 YEARS IN 100 DAYS.

The NFSA is also presenting "**Who Listens to the Radio?**" - a series of web pages about technology and culture. The story of radio is not what you might expect. Have you ever wondered *how radio moved from furniture to fashion? Why video never actually killed the radio star? How a tech evolution spurred a cultural revolution?*

Radio 100 tells these stories, and all five chapters are available to explore.
Start your adventure through 100 years of Aussie audio history now.

- Chapter 1 – **"New Waves – 1923 to 1935"** - Origin stories, early experiments, uncanny possibilities.
- Chapter 2 – **"Golden Days – 1920's to 1960's"** – Radio becomes a "must-have". Hear radio serials, meet pioneering women and more.
- Chapter 3 – **"Youthquake – 1950's to 1980's"** – Radio's role in the invention of youth culture.
- Chapter 4 – **"All the Voices – 1970's to now"** - Finding community through radio.
- Chapter 5 – **"Let's Get Digital – 1990's to now"** – As the technology shifts, radio persists.

You can either click on this link, or copy and paste this address into your web browser:
https://www.nfsa.gov.au/collection/curated/radio-100

There is such a strong connection between **radio** and **memory** and the **social history** of Australia.

Re-Wiring an old Chassis?

Safely??? How?? Are there any rules, or protocols??? AGAIN??

As with the Continuity Tester (above) from the March HRSASA Meeting, the topic that raised a bit of active conversation was that of wiring protocols for radio chassis, especially regarding the colour-coding of wires. *Do such protocols exist?? Are they part of the Australian Standards??*

In the last edition of this Newsletter, the above questions was answered….. HOWEVER, the conversation has continued!! One of our members has found the following official document from the Post Master General's office – dated May 1958 - which is worth re-reading today! It is reproduced here on the following three pages:

COLOUR CODE FOR WIRING IN RADIO
AND ALLIED ELECTRONIC EQUIPMENT.

1. INTRODUCTION.

   1.1 This E.I. which describes a wiring colour code for all departmentally constructed radio and allied electronic equipment shall be included in specifications for this type of equipment. The code does not apply to transistorised applications, Long Line, Telegraph and Telephone Equipment.

2. GENERAL.

   2.1 A colour code system for chassis wiring makes it possible to distinguish the connections in radio and electronic equipment. It is very helpful not only at the initial wiring stage of the equipment but also in assisting maintenance and servicing.

   2.2 There are two methods by which a colour code system can be applied to the wiring; one is a functional code, and the other a wire identification code. The former will be adopted for all Departmental radio and allied electronic equipment.

3. FUNCTIONAL COLOUR CODE.

   3.1 System. In this code, coloured wire coverings or coloured markings are used for the connections to the various electrodes of electron tubes, with the addition of other colours to denote certain general circuit positions. The number of electrical functions that can be denoted by means of this scheme is of course limited by the number of mutually distinguishable and stable colours that are available. Miscellaneous wiring and repair wiring may also be denoted by the use of other colours not contained within the functional list.

   3.2 Method of Marking. The colours may be shown by coloured covering of the wires, by coloured markers or by any other convenient (but permanent) method.

   3.3 Coding. The colour coding shall be in accordance with Table 1 —

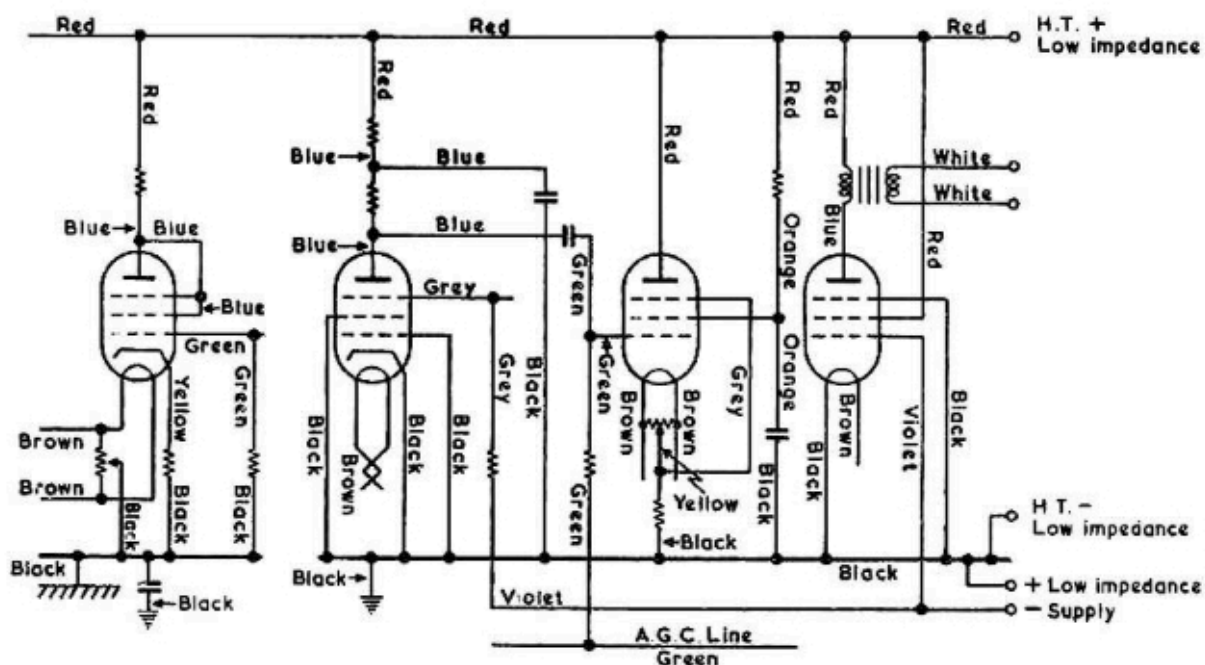| Circuit Function	Colour
Tube electrodes	
Anode	Blue
Cathode	Yellow
Control Grid	Green
Screen Grid	Orange
Suppressor or Modulator Grid	Grey
Heaters	Brown
D.C. Supplies	
Chassis	Black
Positive to Chassis	Red
Negative to Chassis	Violet
A.C. Supplies	
Single Phase — Line	Red
Neutral	Black
3-phase — Line	(Red
	(Blue
	(Yellow
Neutral	Black
In flexible cables or cords — Earth	Green

TABLE I. COLOUR CODE.

8

When a wire is covered with a transparent material the colour tint shall be as near as possible to the appropriate colour match. A.C. power supply leads which may be connected either to line or to neutral (e.g. in portable equipment), and therefore presumably switched and fused in both leads, should both be classed as "line" and red-covered wire used. For technical reasons such leads will usually be twisted or run close together, which also assists in distinguishing them from D.C. leads.

3.4 <u>Choice of Alternatives</u>. In some circuit applications the list in the table is sufficiently wide to allow one of two or more alternatives to be possible. The most readily visualised examples are listed below, and the standard method indicated –

    (i) <u>Strapped Electrodes</u>. Where electrodes, other than the cathode(s) of a tube or tubes are strapped together, the colour appropriate to the electrode furthest from the cathode shall be used. Where a cathode is involved in strapping, the colour used shall be yellow.

    (ii) <u>Anode</u>. Blue shall be used for all anode circuit connections, except for connections direct to a low impedance supply, for which red shall be used.

    (iii) <u>Screen-grid</u>. Orange shall be used for all screen-grid circuit connections, except for connections direct to a low impedance supply, for which red shall be used.

    (iv) <u>Control-grid</u>. Green shall be used for all control-grid circuit connections, except –

        (a) for connections direct to a low impedance supply negative to the chassis, for which violet shall be used.

        (b) when the control-grid is strapped to the chassis, for which black shall be used.

    (v) <u>Suppressor or Modulator-grid</u>. Grey shall be used in all cases analogous to the use of green in (iv). Black or violet shall be substituted under the same conditions as quoted therein.

    (vi) <u>Cathode</u>. Yellow shall be used when the cathode is not at chassis potential. Black shall be used when the cathode is strapped to the chassis.

    (vii) <u>Heater</u>. Brown shall always be used. Where the heater serves as the cathode, the cathode-circuit wiring connected to the heater-circuit shall be yellow. Where the heater is connected to the chassis, black shall be used for the connection from the heater circuit to the chassis.

    (viii) <u>Chassis</u>. Black shall be used for any lead connected to the chassis, whether the latter is earthed or not.

    (ix) <u>Miscellaneous wiring</u>. Miscellaneous wiring not part of any tube-electrode circuit or supply circuit shall be white or a colour or combination of colours not covered by Table 1.

4. EXAMPLE OF FUNCTIONAL COLOUR CODE SYSTEM.

NOTE   This diagram has no operational significance.

CIRCUIT DIAGRAM ILLUSTRATING USE OF THE FUNCTIONAL COLOUR CODE
SPECIFIED IN PARA. 3.3.

FIG. 1.

END.

10

From our President,

Graham Dicker.

President's "Banter"!

**President's monthly stories from the past (and other ramblings)**

In the last edition of this Newsletter, I included the plans for an AM transmitter that I designed back in 1988, plus an article that I wrote that same year about Local Area Broadcasting Techniques.

The AM transmitter I designed and kitted up back then has proven to be of interest to members as after publication, we received several requests for copies of the PCB so members could assemble one of their own.

As a result, I have re-drawn the circuit and made a couple of changes. I have also identified a freely available OP-AMP module and have incorporated that into the new design. Here it is…. and we would appreciate your feedback:

A simple AM HI-FI transmitter for 2024   by Graham Dicker

As was promised, here is the latest development in a simple to build no coils or alignment needed HI-FI grade AM transmitter not only for the test bench but you can use it to transmit music for a few 100 meters using a long wire antenna under the LPID licensing rules, great also for club demo days.
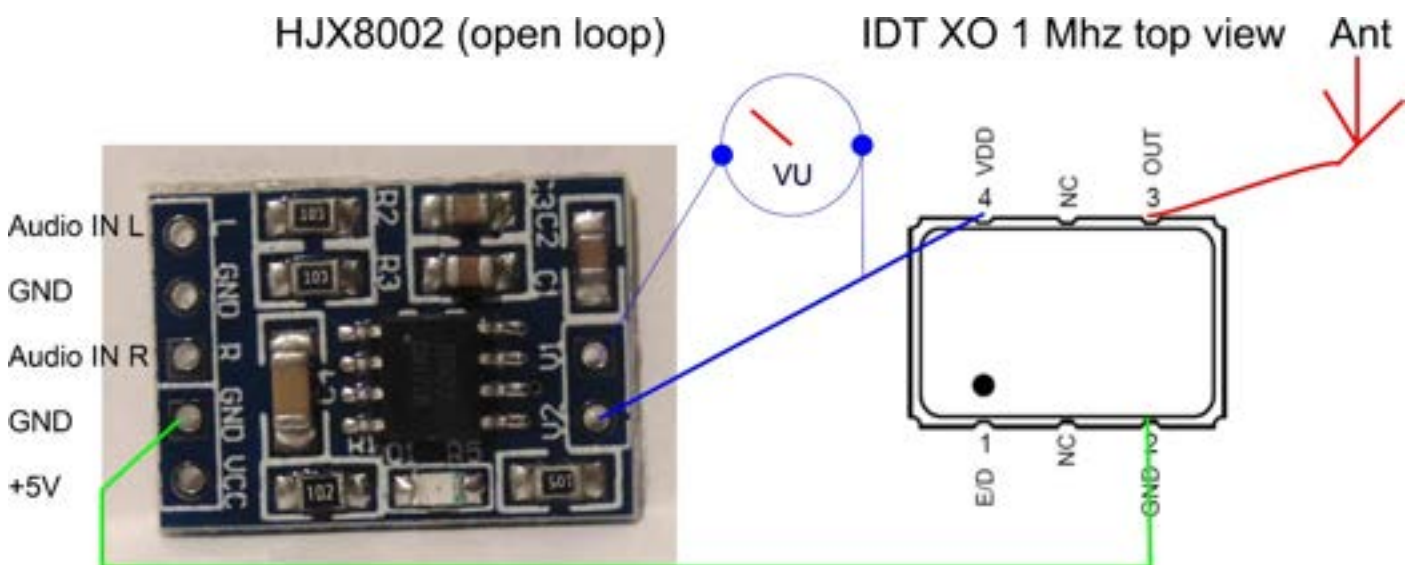
The key to this project is a **class AB analogue OP amp the HJX8002**, these come from China and able to be purchased for around $5 each on eBay. These boards come stock standard with unity gain *which is not of much help*. You can manually change the SMD 10k feedback resistor on the PCB yourself if you are good at working with SMD parts, or I have a shortform kit available for $10 (including postage) which includes a modified PCB, the XTAL oscillator and a 100uf/10vw electrolytic to save you the trouble.   The resistor in question is at the lower right-hand side of the PCB and in the modified board this is now a 1megohm.

The change of the feedback resistor takes the op amp to full open loop gain with an input sensitivity of 10mv RMS, which is sufficient to drive it from a dynamic microphone or, as there are two inputs, from a stereo audio source. You can add an optional preset or variable gain control as shown on the circuit diagram below. The amp module is a BTL design, so with some coupling capacitors, you can send the output to an XLR male plug as an unbalanced to balanced mono converter. The same output connections can also drive an industry standard +8dbu VU meter. When displaying 0VU you have 100% modulation, if using a +4dbu VU meter +3dbu (end of the red scale will indicate approximately 100% modulation.

The performance of the transmitter is in the HI-FI grade with the frequency response from 50hz to 20kz -3db points.

The transmitter takes around 15 minutes to wire up and get going and runs from a 5V supply easily provided by any USB port or if you wish, 3 x 1.5v batteries.

Place you order with:
Graham Dicker at **ROLA AUSTRALIA Ltd**: Ph: 0414 323 099 or Email: graham@rola.net.au

Photo Gallery:

A selection of photos from our May "Club Auction" which was very well attended and produced some spirited bidding between members!!

Above: "Airscout" Mantle radio

Above: Almost at the end of the Auction

Above: ASTOR Black & white TV

Above: Byer 66 Tape Recorder

Above: Classic Philips 1940's radio

Above: LEAK Tuner

CENTENARY OF BROADCASTING IN SOUTH AUSTRALIA
HRSASA & AHARS Celebrate with a Valve Amplifier Building Competition

The 3 aims of this competition are (a) to foster community interest in the 100th Anniversary of Broadcasting in South Australia, (b) promote home construction of valve Hi-Fi amplifiers, and (c) raise awareness of the Historical Radio Society of Australia, South Australian Branch, and its activities.

The competition is open to any South Australian resident who has constructed his, or her own amplifier, or one made by a relative who is, or was, a South Australian resident.

There are several different categories each of which will have several rounds to find both the *judging panel award winners* and the *listener panel award winners*. The judging panel awards will be based on technical as well as sonic character to find the winners. The listener awards are purely based on the preference of sonics. Pre-printed scorecards will be made available to all registered listeners/voters and the judging panel.

Depending on the number of entries there may be more than one round for each category eventually ending up with the top three amplifiers for placement as first second and third place in each category and grand overall winners. The HRSASA reserves the right to publish all findings and entrants' circuit diagrams over the 12 months following the competition.

Each entry will be by way of the prescribed entry form (see below.) General members of the public and HRSASA members who would like to join the *listener audience and judging panel* will be required to make an online booking for audience seats on the testing days.

Adelaide radio station involvement, both commercial and non-commercial, to promote and be involved with these activities will be most welcome.

The judging panel will arrange for 5 x 2-minute "test grabs" of music as a standard reference point. The same set of speakers and programme source will be used for every amplifier under test. The nominal speaker impedance will be 8 ohms. The programme source will be + 8 dbm, balanced line 600 ohms. Adapters and attenuators will be provided to accommodate 500 mv p-p input and unbalanced amplifiers.

Judged panel prizes will be awarded for each category as follows:
First, second and third place winners (ie/ 3 awards x 6 categories =18 awards)
There will be a judge's award to the **Best Overall Amplifier** (one award) plus the judge's **Best Technical Achievement** (one award)
The **listener award** will be for first place in each category (6 awards) plus an overall **Best Amplifier** (one award.)

Categories:
1. Single Ended
2. Less than 17 watts (push-pull)
3. OTL Amplifier (Output transformerless)
4. Hybrid amplifier
5. More than 17 watts push-pull
6. Open section (including solid state)

Prizes donated by Rola Australia:
1. **Best overall amplifier based on sonics**
   One pair of ROLA OPT-50 Ultra linear push-pull output transformers valued at $800.00

2. **Best Technical Achievement based on construction and circuit diagram**
   One pair of Rola OPT-15 Ultra linear push-pull output transformers valued at $400.00
3. **Listener Award – Best overall amplifier based on sonics**
   One pair of Rola OPT-10SE Single-ended output transformers valued at $140.00

All other awards – A Certificate of Achievement.

Cost of entry is free to all HRSASA members and the public. Closing date for judging to be announced.

COMPETITION RULES:

1. All entries may be either mono or stereo. Those with an internal pre-amp with equalisation will need to be tested in the flat EQ position.
2. All amplifiers must be entirely valve designs (solid-state rectifiers permitted.) There will be two additional categories: Hybrid and fully solid-state (Open category) to accommodate other designs.
3. All entries must be the applicants own work, or that of a DIRECT relative and must be an SA resident. (Deceased direct relative who contributed is permitted.)
4. Modified or commercially built equipment is not permitted.
5. Each submitted amplifier should include a schematic diagram (hand-drawn is O.K.) and should include a paragraph highlighting "clever" or "novel" aspects to its design or construction.
6. Credit will be given to other information supplied, such as photographs taken during construction, test results, notes on what worked and what didn't during construction process.

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HRSASA VALVE AMPLIFIER BUILDING COMPETITION 2024

ENTRY FORM
Please email all entries to: pres@hrsasa.asn.au

ENTRANT DETAILS:	
Name:	
Address:	
Phone number:	
Email address:	
HRSA Member No:	
Amplifier Description:	
CATEGORIES: (Circle one) 1. Single Ended 2. Less than 17 watts (push-pull) 3. OTL Amplifier (Output transformerless) 4. Hybrid amplifier 5. More than 17 watts push-pull 6. Open section (including solid state)	

HRSASA VALVE AMPLIFIER BUILDING COMPETITION 2024

ENTRY FORM

Please email all entries to: pres@hrsasa.asn.au

ENTRANT DETAILS:	
Name:	
Address:	
Phone number:	
Email address:	
HRSA Member No:	
Amplifier Description:	
CATEGORIES: (Circle one) 7. Single Ended 8. Less than 17 watts (push-pull) 9. OTL Amplifier (Output transformerless) 10. Hybrid amplifier 11. More than 17 watts push-pull 12. Open section (including solid state)	

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AZTRONICS – RELOCATED AND NOW OPEN

HRSA-SA Group Valve Bank:

The SA Group Valve Bank, containing our stock of over 20,000 valves has been relocated from the old AZTRONICS Store where it has been since February/March 2015.

Entry to the new shop is via Frederick Street.

The new AZTRONICS Store, is located right next door in the red brick building. However, there is not enough room to house the whole collection nor provide us with a room where we can sort and test the valves we sell.

AZTRONICS will continue to be our "retail outlet" (and point of collection) for valve sales to members and the public. The stock held at the shop will be topped up from the reserve stock that is now being sorted and collated at a couple of different locations.