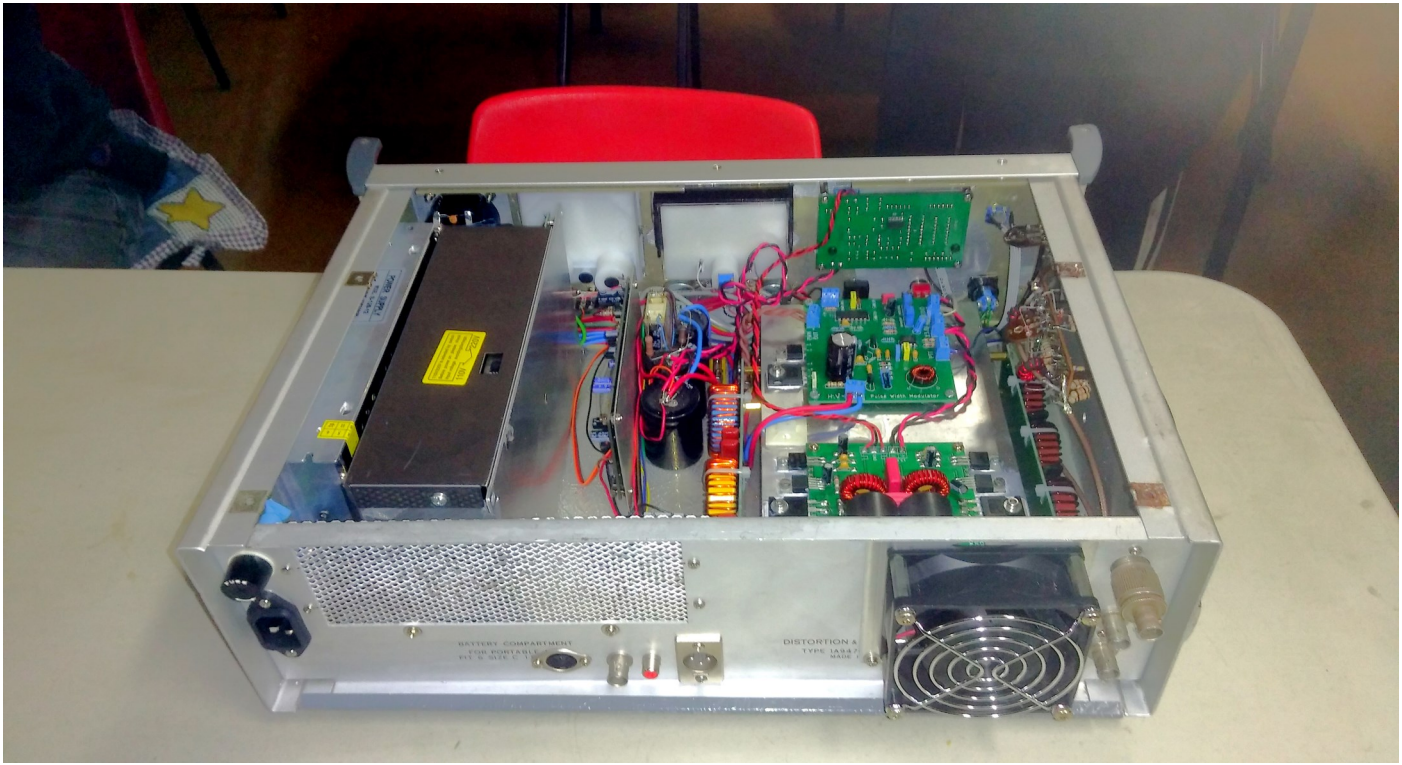
APC NEWS

70th Anniversary Year

Invitation to our Anniversary Dinner inside



160 m 120 W high fidelity AM transmitter built by Ian VK3XI.

QTC and QRT?

This issue contains an invitation to our Anniversary Dinner and advice on payment methods. Invitations have ben emailed. Please book early as the seating will be limited.

Books are apparently inconsequential as far as Club members are concerned. I have had **no feedback** on the purpose of the library so will be recommending to the committee that it be disposed of. The bookcase could be used to house some exhibits in our ever growing museum.

It also seems that the readership of the magazine consists of the Editor and the Proof Reader. And it is no longer relevant to members.

I took this job on because I believed a Club Newsletter helped keep the members connected. For a while it may have been read by most members. Then we went on-line. The readership has progressively fallen as far as I can tell. Times change. Email, Facebook and the like are used more and more. It seems our newsletter is now redundant. Would it suffice to email out a "what's on" list? What would we lose? Well a record of speakers and events and an occasional article. Does anyone care about these? What does the Club want? You are part of the Club so you need to respond if you want to see the newsletter continue.

So maybe this should be the QRT issue or maybe it's time for a new Editor who can get peoples attention.

73
Ron
VK3AFW, APC News Editor.

COMING UP

11th November 2018 VI6PAX Armistice Day Centenary plus week before and after.
18th November 2018 SPARC Radio fest
15th December, 2018 Saturday, 12:00 for 12:30 M&DRC 70th Anniversary luncheon
8th February 2019. First Friday Meeting for the year. Speaker to be announced.
VK3 SOTA Conference. Date to be confirmed.

Updated 10h November 2018

OCTOBER MEETING

Antenna Analyzers

Terry VK3YX

Ron VK3AFW started the evening with a description of the various types of antenna analysers, from SWR meters, basic bridges, R/C bridges and three voltmeter method impedance meters.

Terry then proceeded to talk about his Mini60 analyser (see left) and demonstrate it on a dummy load and a simulated aerial.

Apart from measuring impedance from 1 to 60 MHz it is capable of measuring resistance, capacitance and inductance at any frequency in this range. See following spec from the website.

The current street price is only $100 US, about half what it was recently. This is a great bargain.

OCTOBER MEETING cont'd

Mini 60 Automated antenna SWR analyser Specification

Hardware:

Precise and self-calibrating reflectometer design measures forward and reflected signals and impedance data

Display 2x16 with optional backlight

Precision DDS signal generator (AD9851) used as signal source

USB port only for battery charging

Buzzer

Operation:

Manual control option displays SWR and complex impedance at selected frequencies

Automatic scanning results displayed as frequencies of lowest SWR and complex impedance

Battery operated for field use or use external 13.8V wall adaptor

Power saving modes

Multi-point calibration for better accuracy

Instrument Capabilities:

Measure antenna electrical parameters: SWR, impedance (resistance + reactance), capacitance, inductance

Measure feed point impedance

Measure ground loss

Adjust antenna tuners and determine loss

OCTOBER MEETING cont'd

Measure inductors and capacitors
Measure coax transmission line (SWR, length, velocity factor, approximate Q and loss, resonant frequency, and impedance)
Measure and determine optimum settings for tuning stubs: SWR, approximate Q, resonant frequency, bandwidth, impedance
Determine characteristic impedance of transmission line
Determine length of ¼ and ½ wave phasing lines
Coaxial Cable Loss
Determine antenna tuner loss
Measure balun loss
Measure inductor Q
Estimate quartz crystal parameters
Measure magnetic loop resonance and SWR

Specification:

Frequency Generation & Control:

1 - 60 MHz
Source impedance: 50 Ohms
Stability: +/- 100 ppm
Spectral Purity: Harmonics down >- TBD dB beyond 60 MHz
Step Size: User configurable increments of 100 Hz, 1 kHz, 10 kHz, and 100 kHz

OCTOBER MEETING cont'd

Usable Measurement Range:
SWR: 1.0 to 9.99
Impedance: approx. 5 to 2000 ohms
Adjustable: 2.0 Volts pp (typ)
3.7v li-on battery
External: 12 to 14 Volts DC, 500mA
Size: about 9.1*5.3*2.5cm
With 3.7v li-on battery (rechargeable)
Support for Android 2.2 -4.0 or new version, supports 3--10 inch mobile phone and tablet
Controls:
Pushbuttons (5): "Mode", "Band", "Config", "Scan", "Up", "Down"
Switch: "Power On"
USB: Mini-B receptacle
External power: 2.1mm Power Jack (centre pin positive)
Initiation method:
1) install software Andrews
2) press the SET button to open the talent PC link
3) press the DOWN button to confirm dc plug in the Bluetooth antenna head
4) open the Bluetooth phone paired with the day assigned for 1234
5) open Android software click the link prompts the connection point of the scan is completed successfully.

OCTOBER MEETING cont'd

These modern analysers use the power of cheap microcomputer chips with built in A-D functions and the DDS chips. Some amateurs take these light weight analysers into the field to check or adjust their antenna system.

Thanks Terry.

Terry VK3YX

NOVEMBER MEETING

A Modern 160 m AM transmitter by Ian VK3XI.

Ian enjoys developing and building projects. This transmitter is his latest foray and employs design features that mimic a modern broadcast band transmitter.

It uses a digital VFO that drives a pair of driver chips. These provide the correct drive and phase relationship to hard switch two FET transistors. That is the final amplifier is operating class E. A ferrite cored transformer couples the output into a filter to suppress the harmonics to commercial levels of suppression. Two switch mode power supplies are used, one 12 v nominal and the other 46 v nominal piggy backed on top of the 12 V one. This gives close to 60 V supply for the final which achieves over 90% efficiency. Up to 200 W of carrier can be obtained.

To modulate that a pulse width modulator is used. This too gives very high efficiency as the transistors in it are also hard switched. To recover a clean sine wave for impressing on the PA a low pass filter is used.

NOVEMBER MEETING cont'd

Right: View of inside the transmitter case. The VFO is in the bottom right corner and the SMPS are at the back. The PA is in the bottom left corner and the modulator and filter is in the middle..

NOVEMBER MEETING cont'd

Above: View of the front panel with the rig operating. The blue display is the VFO, The VU meter monitor's the audio, the twin needle SWR meter, well it measures the SWR and the meter at the right measures the PA current.

NOVEMBER MEETING Cont'd

To comply with our regulations and to allow good quality modulation the carrier power is set to 120 W. The frequency response extends to 8 kHz so it is a Hi Fi transmitter.

After describing the theory and showing where in the box all the functional bits were Ian powered it up with a dummy load absorbing the power.

An impressive bit of engineering all fitted neatly into a recycled instrument case.

Thanks Ian.

Ian VK3XI

M&DRC 70th ANNIVERSARY LUNCHEON

An invitation is shown on the next page for those who did not get one by email. Please print and pass on to any past or present members that have not received an invitation.

For payment for the Luncheon, please make payment as you would your subscription. See page after Invitation.

The treasurer's email address is:

bcmcdermott@tpg.com.au

M&DRC 70th ANNIVERSARY LUNCHEON

INVITATION

TO

70TH ANNIVERSARY LUNCHEON

The M&DRC was founded in 1948 and this year marks the 70th anniversary. We are celebrating this with a luncheon on **Saturday, 15th December at the Bentleigh Club**
Yawla St., Bentleigh, Victoria at 12:00 noon for 12:30 PM.

There will be a slide show plus presentations by the President Lee Moyle VK3GK and the Secretary Ken Millis VK3KIM.

The luncheon comprises a three course meal with linen and table service in a private room. There will be a limited amount of complimentary drinks on each table. The cost is $45 per head. Additional drinks will be available from the bar.

Members are welcome to bring a friend, past members are also very welcome.

We must have payment to confirm bookings by 4th December - please pay via electronic deposit as per our web site information on payments or cheque to PO Box 58, Highett, Victoria 3190, Australia no later than Monday 10th DECEMBER 2018.

An early response will be appreciated.

PAYING SUBSCRIPTIONS

Paying by computer.
Go to **Internet Banking** on your computer and select the account from which you want to make the funds transfer. Do not select a Credit Card Account. In the "Transfer Money" screen enter the following.

1. In the ACCOUNT NAME box to which the funds are to be transferred, enter MOORABBIN AND DISTRICT RADIO CLUB INC
2. In the BSB box enter the number 033-385
3. In the ACCOUNT NUMBER box enter the number 77-4955
4. In the TRANSACTION DETAILS or ACCOUNT DESCRIPTION box enter your name or Callsign in uppercase.
5. Email the treasurer to advise of your payment.

Paying by cash over the counter at the bank
Go to **a Westpac bank** and fill out a deposit slip as below. Take this plus the necessary cash to the teller.

1. In the FOR CREDIT OF box enter MOORABBIN AND DISTRICT RADIO CLUB INC
2. In the BSB box enter the number 033-385
3. In the ACCOUNT NUMBER box enter the number 77-4955
4. In the TRANSACTION DETAILS or ACCOUNT DESCRIPTION box enter your name or Callsign in uppercase.
5. Collect the receipt and email the treasurer to confirm payment.

TRADE DISCOUNTS

FOR CLUB MEMBERS at ALTRONICS and JAYCAR.

Moorabbin and District Radio Club Inc. members can now buy over the counter at **Trade prices** from both **Altronics and Jaycar.** When making a purchase ask for **Trade Discount** and for **Altronics** quote the Club's Trade account number **32323** and your **call sign** or for **Jaycar** quote Customer Number **45400209. This is NOT a charge account so you use your money**.
Note: Minimum purchase of $20 may apply.

Check out these companies at their websites.

http://www.altronics.com.au

Jaycar Electronics
Better, More Technical

Get your Club photo ID discount card NOW

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