

**The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum**



Klondyke Upper Mast



2m & 70cm D-Star Array

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Auckland VHF Group Inc.

Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446
Clubrooms: 30 Hazel Ave, Mt Roskill

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Klondyke Manager	Vaughan Henderson	ZL1VH	021 844 804	6625@aucklandvhf.org
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Club Web Page:	http://aucklandvhf.org			
ZL1VHD Dstar gateway administrator:	Laurie ZL1ICU	634 5130	0274 817463	perma@xtra.co.nz
ZL1VHD Dstar gateway registration URL :	http://zl1vhd.dstar.org.nz			

Club News and Net:

The combined Auckland VHF Group and Auckland Regional Branch News and Net are held on 146.625 MHz and 439.875 MHz at 8.15 pm each Sunday or after the ZL6A National Broadcast on the last Sunday of the month.

Club meetings are held at the Clubrooms at Hazel Avenue, on the second Monday of each month at 7.30 pm. For other details, listen to the News and Net each Sunday evening.

SPECTRUM is the official journal of the Auckland VHF Group Inc. Opinions expressed are those of the authors and do not necessarily reflect club points of view. The closing date for SPECTRUM articles is by the 1st of each month. Articles to be submitted to the editor Peter ZL1UKG
spectrum@aucklandvhf.org

Auckland VHF Group (Inc) Branch 66

General Meeting Notice

Monday 11th October 2021 7.30pm

At the Hazel Avenue Clubrooms, via Teams
(Located on the left at the end, 30 Hazel Avenue)

Meeting topic for October General Meeting

Programming your Hand-Held Radio

Join us on-line for a series of short presentations on programming Baofeng, Tait, and other hand held radios.

The meeting will be conducted via Teams.
There has been some discussion about a simpler method to admit members checking in but no answer yet.

Coming Events:

- Western Suburbs Market Day at Rosedale School is likely to be put back to December (Date tba).
- Field Day Contest 04-05 December, All Bands 6m and up.

Auckland VHF Group Presidents Report October 2021

There was an AREC exercise last weekend. I participated using the Rodney repeater, and we successfully passed about a dozen messages (that's 12, for you younger fellows) each way. It turned out that most of us weren't strictly adhering to the proscribed message format, so we will be receiving some retraining. I was working from my car, so I didn't have the format in front of me. I'll print it out and stash it behind the seat so it's available when reality strikes.

The committee had a good on line meeting last week. Significantly, Vaughan has had a letter back from IRD advising us our constitution amendments are OK. So once we have the club's acceptance of them at next month's AGM we can proceed with the fundraising application for the Klondyke work. On a brighter note, John Henry Wilson ZL1JHW has installed new interior lights in the club rooms. I look forward to seeing their effect when we can get back in there.

And beacons may soon be activated from the clubrooms to check out their reliability, before placing at Nihotupu.

The Clarke telescopic antenna is still parked at my old residence in Kumeu. I am vacating that place in the next few weeks, so we need to find somewhere else to park it. Anyone got a spot?

In my own world down on the farm, my HF rig failed it's swimming test in the Kumeu floods a month ago, along with several 12" stage monitors, PA amplifiers, and a good Bose stereo system. Damnation!

Here at Wainui calving has finished, so life is a little less hectic. And I see that with lockdown easing a level I'm allowed to bring the boat up to the new mooring at Mahurangi. A new bearing on the self-steering needs filing first, because it's a tight fit. The furnace is up and running again (just in time for summer!) so I'm pretty much ready to go. Wonderful!

Cheers, Matthew King 022 6493310

September General Meeting

There was no Speaker for the Meeting.

There was no one available to admit members via "Teams" to a Meeting.

The only way to notify members was via the Spectrum Newsletter.

As a result there are no Minutes from the Meeting.



State of the Klondyke Repeater Tower

The Klondyke 146.625 MHz Repeater will be off the air for some time due to wind damage to one or more of the coaxial cables up the tower. The weather recently and Level 3 lockdown has prevented us from doing any work up the tower. We have a rigging company contracted to replace the cable tray running up the tower and as part of that work, the faulty coax cable(s) will be replaced. This contract was let back in July and work did get started. Since then the Level 4 lock-down and weather conditions generally have not been favourable for spending time at the site. Now we are in Level 3 with reduced restrictions, the work can proceed if only the weather would allow!

Four new Ham radio CubeSats deployed from ISS include one on 76 GHz

Four new CubeSats carrying amateur radio payloads were successfully deployed from the International Space Station (ISS) on the morning of Wednesday, October 6.

The deployment was coordinated by the Japan Aerospace Exploration Agency (JAXA). The actual launch of the CubeSats was done using something called the JEM Small Satellite Orbit Deployer, a mechanism developed by JAXA specifically for launching CubeSats from the ISS.

The our CubeSats are Binar-1, Maya-3, Maya-4 and CUAVA-1. All the satellites operate on amateur band. The deployment was live on the JAXA YouTube channel (Google JAXA YouTube to see the videos).

Binar-1

1U CubeSat Australia

Downlink 437.292 MHz, 435.810 MHz 19k2 GMSK

Uplink 435.810 MHz

http://www.amsatuk.me.uk/iaru/finished_detail.php?serialnum=730

<https://www.binarspace.com/>

Maya-3/4 - part of the BIRDS Project 1U CubeSat Philippines

Downlink 145.825 MHz APRS, 437.375 MHz CW, 4k8 GMSK

http://www.amsatuk.me.uk/iaru/finished_detail.php?serialnum=711

http://www.amsatuk.me.uk/iaru/finished_detail.php?serialnum=712

<https://stamina4space.upd.edu.ph/upcoming-satellites/maya-3and4/>

CUAVA-1 3U CubeSat Australia

Downlink 437.075 MHz 9k6 GMSK, 2440.000 MHz, 5840.000 MHz, 76.750 GHz high speed

Uplink 145.875 MHz, 2404.000 MHz, 5660.000 MHz, 76.750 GHz

http://www.amsatuk.me.uk/iaru/finished_detail.php?serialnum=671

50 Years Ago in Spectrum

October 1971 Spectrum – The results of the first ever 6m only contest was given – four stations submitted logs with ZL2AQV first, ZL2CD second and ZL1AMN third.

Northland Branch (Whangarei) were congratulated on getting their “Channel B” FM repeater going. The “Stickybeak” column noted that Mac ZL1TAA in Surfdale, Waiheke Island was heard working Ralph ZL1TFE through the repeater. The same column reported a rumour that the Auckland VHF Group was about to get a Channel A repeater on the air.

The Auckland 2m beacon was on the air thanks to good work by ZL1AGU and ZL1AMN, although it was located a bit too close to ZL1AMN’s QTH for Dave’s comfort! Two pages were given over to the final FM repeater band plan and a map of NZ showing the Channel A, B, C and D repeater allocations.

Page four was devoted to a full page programme for a “VHF Weekend in Auckland”. Scheduled for the weekend of November 13 and 14, the programme started with bringing the family to the Farmers Santa Parade. In the afternoon, a mobile rally starting from the Manukau Branch Clubrooms and covering about 75 miles in the South Auckland area, ending up back at the Manukau Clubrooms for afternoon tea. The optional evening entertainment was a dinner and dance at the Turquoise Room, located in the Monument Travel Lodge, Otahuhu starting at 8pm. To round out the weekend, Sunday morning was a junk sale at the Modellers Club Rooms, 24A Bremner Avenue in Mt. Roskill – members were urged to bring along their “goodies” and have a clean out...also not to forget to give the XYL or YL a good time out the night before so your purchases will then be overlooked!

ZL3TFL sent in a report from the West coast, South Island where he was working until Christmas. He reported that 2m activity was non-existent and that he was the only operator in the area with his 2m mobile setup.

Bill ZL2CD reported on 6m activity in Wellington, and 6m contest. Bill set up on Hawkins Hill, 1400 feet above Wellington with a 4 element beam and 35 watts AM. His best contact was with ZL2AQL on East Egmont. George ZL2CT operated from Quartz Hill, Makara and enjoyed the day. Perfect weather and operations only marred by WNTV1 starting the day’s transmissions at 1.30pm. When this started, he could only copy stations that were registering 59 at his receiver. The lack of Auckland and Christchurch stations in the 6m contest was noted.

The AM v. FM debate continued with Vic Stagpoole ZL2ACF penning a lengthy item on the differences between AM and FM modulation. He concluded that the differences between AM and FM was such that a theoretical comparison between them was meaningless and the only sensible way was to carry out practical tests to see what happens. He wished that VHF hams would put half the effort into FM development that HF men had put into SSB, and there ought to be a law about people who transmit FM, but don’t have an FM detector!

There were many more reports in the October issue, but no space to report on all of them here. Morris ZL1TAQ gave details of a voltage reference unit giving 5.6V out, intended to be used as a reference for testing voltmeters, etc. Design offered very good temperature stability (+/-3mV for a 34-degree temperature change) and could operate anywhere from 10V to 20V input.

Part Four of the Waikato VHF Group’s FM repeater design was presented – the TX exciter board and TX power amplifier. The article accompanied by the usual excellent circuit description and pcb layouts. Further on in the issue was more details of the Log Periodic Yagi antenna for 2m and Peter ZL1BFA described the features of the Northland Channel B repeater on Mt. Parahaki.

Past AMSAT President and Director, and Amateur Satellite Pioneer

Tom Clark, K3IO, SK

AMSAT-NA Past President and ham radio satellite and digital pioneer Tom Clark, K3IO (ex-W3IWI), of Columbia, Maryland, died on September 28 after a short illness and hospital stay.



An ARRL Life Member and ARRL Maxim Society and Diamond Club member, he was 82. Clark's accomplishments are legendary, and he left a lasting footprint on the worlds of amateur radio satellites and digital techniques.

"His longtime technical achievements, mentoring to others, and technical leadership will be missed by his many peers and friends the world over," said Bob McGwier, N4HY.

To honor Clark, AMSAT has rebranded its upcoming annual gathering as The 2021 AMSAT Dr. Tom Clark, K3IO, Memorial Space Symposium and Annual General. It will take place on October 30 via *Zoom*. (AMSAT members may [register](#) to attend via AMSAT's Member Portal.) The event will be [livestreamed](#) on AMSAT's

YouTube channel.

A founding member of Tucson Amateur Packet Radio (TAPR), Clark was a cofounder of the TAPR/AMSAT DSP Project, which led to software-defined radio. He was a leader in the development of the AX.25 packet radio protocol. Clark served as AMSAT's second president, from 1980 until 1987. He also served on the AMSAT and TAPR Boards.

In concert with McGwier, Clark developed the first amateur DSP hardware, including a number of modems. He developed the uplink receivers and the spacecraft LAN architecture used on all the Microsats (Oscars 16, 17, 18, 19, 26, 27, and 31). McGwier said it was Clark who convinced him in 1985 that the future lay in DSP.

"We started the TAPR/AMSAT DSP project, and it was announced in 1987," McGwier recounted. "We showed in our efforts that small stations with small antennas could bounce signals off the moon, and using the power of DSP, we could see the signals in our computer displays." This led to the software-defined transponder (SDX) for satellite work, including ARISSat and AMSAT's Phase 3E.

Clark received a doctorate in astro-geophysics from the University of Colorado. He went on to serve as Chief of the Astronomy Branch at NASA Marshall Space Flight Center and was a Senior Scientist at NASA Goddard Space Flight Center, where he was principal investigator for the Very Long Baseline Interferometry (VLBI) activity.

In 2005, he became the first non-Russian to be awarded the Special Medal of the Russian Academy of Sciences for his



contributions to the international VLBI network. He is a member of the 2001 class of *CQ Magazine's* Amateur Radio Hall of Fame.

In 2016, ARRL awarded Clark with its President's Award, to recognize his 60 years of advancing amateur radio technology. On that occasion, McGwier said, "There would be no AMSAT to inspire all of this work without Tom Clark. Tom...saved the organization and inspired all of us to look to the future and aim for the stars," McGwier said.

Clark was a Fellow of the American Geophysical Society and the International Association of Geodesy.



Amateur Radio Emergency Communication.

**Volunteers in radio communications.
Using our resources to help the community.**

INFORMATION

The Auckland VHF Group has an AREC Group that works closely with Auckland Council Emergency Management. They provide advice, resources and manpower to assist in times of need.

The AREC section is headed by Group Leader Matthew King ZL1YOT.

From time to time the VHF Group has training sessions and exercises. Members also assist with sports events, parades and other community activities. For further information about AREC please see the NZART web site: <http://www.nzart.org.nz/arec/>

JOIN BRANCH 66 AREC

All members of the Auckland VHF Group are encouraged to join the AREC section. Your contribution, large or small is appreciated by all involved. For further information about joining Branch 66 AREC contact the Group Leader:

Matthew King ZL1YOT

022-6493310

mattking@gmail.com

The Deputy Leader position is currently vacant

AREC News:



AUCKLAND VHF GROUP (INC)

SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR
SUBSCRIPTION

SUBSCRIPTIONS FOR 2021

THE SUBS GO TOWARDS;

- Maintenance and on-going improvements to beacons, repeaters and linking systems for the national system, including the Klondyke repeater site.
- Providing on-time and free access to spectrum magazine as soon as it is available.
- Providing facilities for good speakers and lecturers at our general meetings.
- Discounted access to our trading table goodies.
- Access to test equipment and technical help when needed.

FULL MEMBERSHIP **\$55.00**

ASSOCIATE MEMBERSHIP **\$50.00**

FAMILY MEMBERSHIP ADDITIONAL **\$20:00**

SEE ATTACHED MEMBERSHIP RENEWAL FORM (next page)

**REMEMBER TO KEEP US INFORMED OF YOUR EMAIL
ADDRESS!**

OTHERWISE WE CANNOT SEND YOU SPECTRUM!



Thought for the month:

“The most difficult thing is the decision to act. The rest is merely tenacity.”



AUCKLAND VHF GROUP INC.

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 30 Hazel Avenue, Mount Roskill, Auckland,
 Web: <http://www.aucklandvhf.org>
 NEW ZEALAND



NAME				
Mr/Mrs/ Miss/Ms	Christian or given		Surname	
Address		Date:(dd/mm/yy)		
		Phone: (home)		
		Phone: (work)		
Email		Phone (Cell)		
Occupation:		Callsign:		
NZART Member	Yes/No		Branch assigned	
AREC Member	Yes/No		Branch assigned	
Family Member 1	(Name)	(Call)	(Email)	(Mobile #)
Family Member 2	(Name)	(Call)	(Email)	(Mobile #)
Family Member 3	(Name)	(Call)	(Email)	(Mobile #)
Category				To pay
Membership	Full		\$55.00	\$
New/Renewal/Change	Associate		\$50.00	\$
Receipt #	Family (per member)		\$20.00	\$
Donations	Klondyke Refurbishment			\$
Auckland/Brynderwyn/ Klondyke/670/690	Repeater Maintenance			\$
	Data/D-Star			\$
	Beacon/Repeater/Links/ Licences			\$
	Other			\$
			Total	\$
Payment (Mark One →)		Cash <input type="checkbox"/>	Cheque <input type="checkbox"/>	Internet deposit <input type="checkbox"/>
Invoice/Statement required		<i>Please Advise Treasurer</i>		
Internet	To account ASB 12-3011-0830580-00. Account name is: Auckland VHF Group Inc. Include your Name/Callsign for us to track. Note: this form needs to be sent to us to update records. Email to: treasurer@aucklandvhf.org .			
Post	The Treasurer, Auckland VHF Group Inc., PO Box 10138, Dominion Road, Auckland 1446.			
In Person	Bring this form and payment to the next club meeting, 2 nd Monday of the month or to the Committee meeting the 4 th Tuesday of the month.			
Privacy	Unsubscribe from Email Notifications <input type="checkbox"/>		Do Not disclose contact Information <input type="checkbox"/>	

The Auckland VHF Group Inc Branch 66 NZART
*gratefully acknowledges the sponsorship of Branch 66 Beacons, Repeaters and
 Fixed Links license fees and the Group's repeater operations by the following
 radio amateurs and NZART Branches for 2021*

2021-04-13, Donations for Repeater Licences and Klondyke Refurbishment

Frequency + Operation	Location	Donation	Donor Name
53.725 Repeater	Klondyke Road	\$50.00	Gwynne Rowe
144.253 Beacon	Nihotupu		Waiting for Antenna
144.575 Digipeater	Whitford		
145.625 Data Rptr	Klondyke Road		
145.650 D-Star Rptr	Klondyke Road		
146.625 Repeater	Klondyke Road	\$50.00	David Wilkins
146.700 Repeater	Ruaotuhenua	\$50.00	Dennis Thornton
146.900 Repeater	Mt Puketutu	\$50.00	David Wilkins
432.253 Beacon	Nihotupu		Stability testing
438.175 D-Star Rptr	Klondyke Road		
438.450 Repeater	Klondyke Road		
438.500 Repeater	North Head		
439.850 Kaimai Link	Klondyke Road	\$50.00	George Marr
439.875 Nat System Rptr	Klondyke Road	\$50.00	Soren Low
439.900 Egmont Link	Klondyke Road		
439.950 Brynderwyn Link	Klondyke Road	\$50.00	Kylie Peterson
1291.900 Repeater	217 Glenfield Rd	\$50.00	Michael Sheffield
DMR Rptr (Waitakere)	Quinns Rd	\$50.00	Auckland Area AREC
		\$450.00	

2021-04-13, Donations for Refurbishment

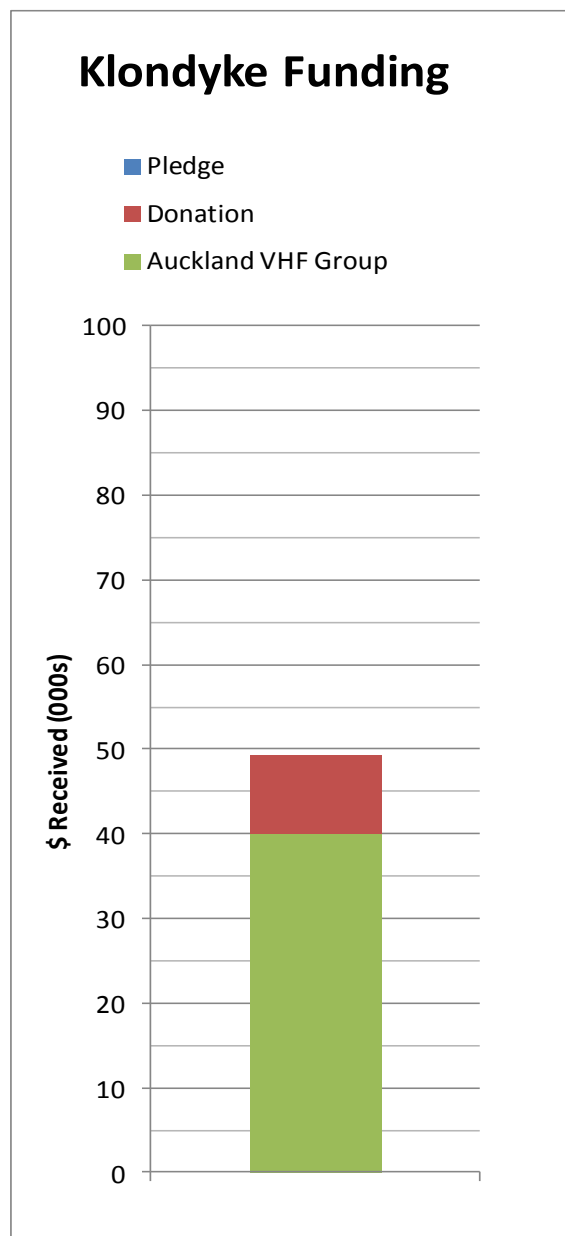
Auckland Branch	\$100.00
Manukau Radio Club	\$100.00
Brenton Faithfull, ZL1BBF	\$50.00
Papakura Radio Club	\$500.00
Ann Walker ZL1BFB	\$100.00
Soren Low ZL1SLK	\$100.00
	\$950.00

Total \$1,400.00

**Klondyke Tower
Donations towards Maintenance**

Target 100,000

Name	Donation	Pledge	Tower	Other
Donations 2018 - 2020	8444.00		63,245.00	27268.25
			GST 9,486.75	
Margaret Dingley ZL1AYV	100.00			
David Dingley ZL1TIA	100.00			
Jennie Dingley, ZL1TDB	100.00			
Yuri Muzyka ZL1GYM	50.00			
Martyn Seay ZL3CK	500.00			
Martyn Seay ZL3CK \$100				
Yuri Muzyka, ZL1GYM \$50				
			Total 72,731.75	Total
			Auckland VHF Group 40,000.00	40.00



Total	9444.00	-
Percent	9.39	0.00

TRADING TABLE

Currently our Trading Table is only open on meeting nights.

NEW – Printed Circuit Board. Thanks to a generous donation from N.Z.'s last circuit board production company (now closed down), we have a large quantity of single sided fibreglass printed circuit board material in sizes ranging from 1200 x 600 down to smaller pieces. There's some double sided board as well. Come along to our May meeting if you want some – prices can be negotiated!

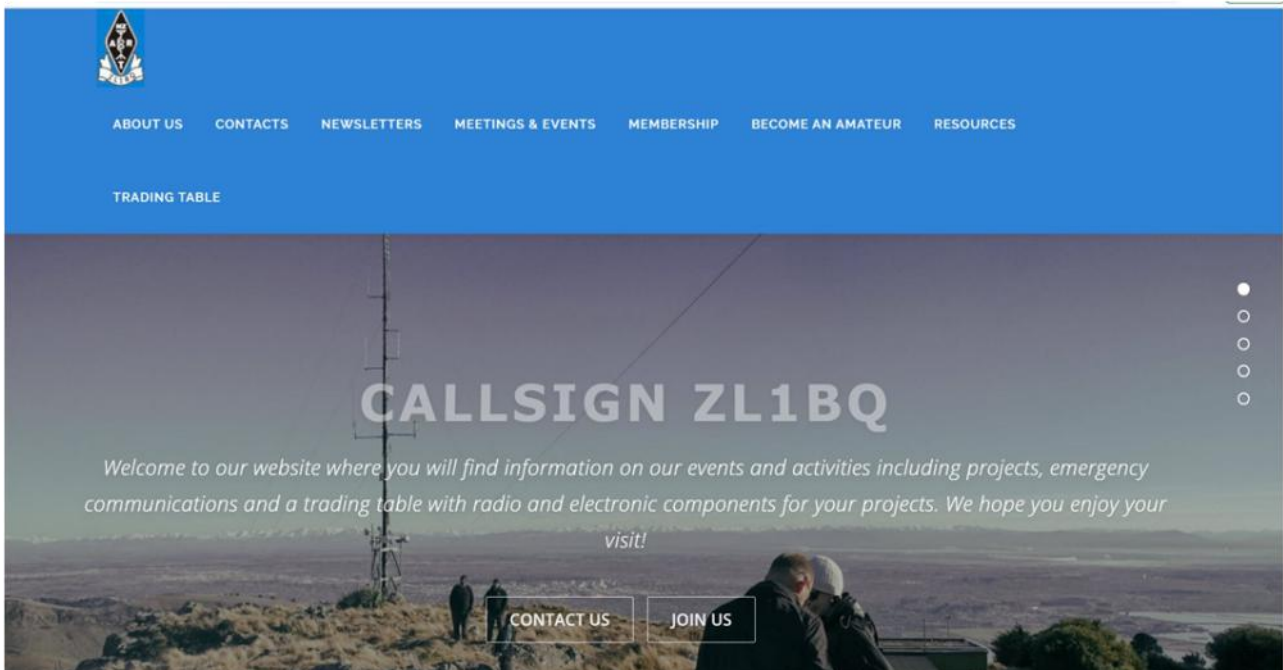
NEW – RG58C/U 50 Ohm Coaxial Cable. Thanks to a bulk purchase we are able to offer this good quality coax at a competitive price. The cable has tinned centre conductor and screen braid making it resistant to long term corrosion. The price is \$2.00 per metre with a discount for purchases of 20m or more. See Vaughan ZL1VH on meeting nights to get this quality coax cable.

The Trading Table is now on line. Navigate your way to our new look web site at <https://aucklandvhf.org/> and click on TRADING TABLE (the most right hand tab).

Wait a few seconds and the on-line version of the Trading Table will pop up. From here you can browse the various sections, dig deeper to look at what's available and even place your order online.

If you prefer to just look at the Trading Table List, just hover your mouse pointer over the TRADING TABLE and a pull down list will appear. From this you can access the full trading Table list and download it in .PDF form.

We also have heaps of parts from dismantled commercial analog TV gear – transmitters, filters, circulators, patch panels, power supplies. Too much to list individually, so come along to the clubrooms and have a look.



Recent Additions to our Trading Table Stock

Electrolytic Capacitors SMD	(Packed in bags of 10 for 50c):	
10uF 16V electrolytic	47uF 16V electrolytic	100uF 16V electrolytic
Resistors:		
50 Ohm 0.4W +/-1% tolerance.		10 for 50c
0.25 Ohm 5W wire wound		
0.27 Ohm 3W Wire wound vertical pcb mount		
Siemens Gas Surge Voltage Protection Tubes:		
SVP Tube type B13-A230. 230V D.C. minimum strike voltage.		\$1.00 for 10
2-electrode type with wire leads, pre-bent for 10mm hole spacing.		
ETAL P1200 600:600 Ohm line matching transformer		\$3.00 each
Quartz Crystal: 6.000 MHz HC49SMD package marked CQ6.0000		\$1.00 each
BNC plugs 50 ohm R/Angle for RG58 coax (solder/clamp type)		\$2.50 each
Relays:		
12V coil, DPDT 1A non-latching (EB2-12NU) SMD package		\$2.00 each
12V coil, DPDT 1A 2-coil latching (EB2-12TNU) SMD package		\$2.00 each
LED Holder panel mount 5mm Kingbright nylon in bags of 50		\$3.00 per bag
Lacing Twine black plastic, in 10m rolls.		\$1.00 each
Ceramic feed-thru insulators, 500V rating, solder in.		50c bag of 10
Semiconductors:		
RURP30120	1200V 30A ultrafast switching diode	\$1.00 each
1SS55	Silicon switching diode. 70V 100mA DO-35	10/\$1.00
2N5777	NPN Light detector, Photo-darlington 45V TO-92	\$0.50 each
2N6027	Programmable Unijunction Transistor 40V 300mW	\$0.10 each
2N6122	NPN TO220 60V 4A 40W GP amplifier	\$0.50 each
2N6292	NPN TO220 70V 40W GP amplifier	\$0.50 each
2N6609	PNP TO3 140V 16A 150W audio/driver	\$1.00 each
BUK457-500B	Power MOSFET 500V 9A 150W TO-220	\$2.00 each
SGP15N60	NPN IGBT 15A 600V fast switch TO-220	\$1.00 each
SGP20N60	NPN IGBT 20A 600V fast switch TO-220	\$1.00 each
UDN2965W-2	Dual high power stepper motor driver. 20 to 50V out at 4A SIP package.	\$1.00 each
LM3909N	LED driver/flasher. 8-pin plastic DIL package.	\$0.5each
LM3911N	Temperature Controller IC. 8-pin plastic DIL package.	\$10 .00 each
LM3914N	LED Bar-graph driver. 18-pin DIP plastic package.	\$5.00 each
PIC16C54B	8-Bit CMOS Microcontroller. 18 pin SOIC SMD package Limited quantity	\$2.00 each