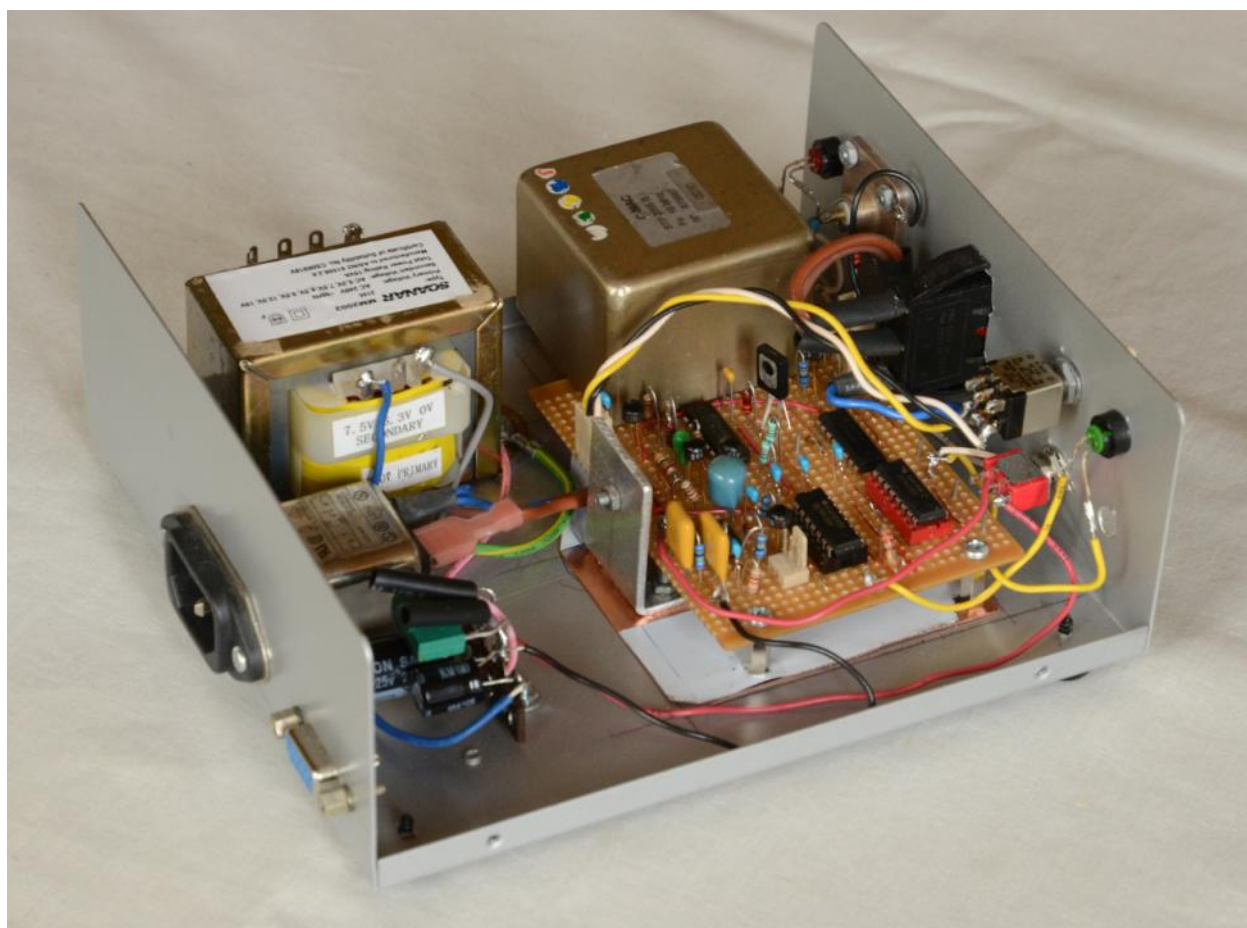


The Official Newsletter of the Auckland VHF Group Inc. Spectrum



Long live home brew — a 10 MHz reference is reborn

The first Hamfest for the year

See page 4



Auckland VHF Group Inc.

Branch 66 NZART

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

Office	Name	Call sign	Home	Work / Mobile	E-mail
President	Vacant				
Vice President	Dave Dingley	ZL1TIA	828 9394		marday@ihug.co.nz
Secretary	Marlene Matthews	ZL1MYL	634 5130		perma@xtra.co.nz
Treasurer	Doug Cooke	ZL1TTE	846 6075	0274 978 121	d-jcooke@ihug.co.nz
Committee	George Raffles	ZL1TUX	626 6944	021 735 361	graffles@xtra.co.nz
	Brendon Reid				brendon@aa.net.nz
	Peter Loveridge	ZL1UKG	377 3398		peterlov@ihug.co.nz
	Greg Storz	ZL1GSG	849 2878		
	Darryl Grange	ZL1TCI	817 4553		
AREC Section Leader	Laurie Mathews	ZL1ICU	634 5130	0274 817 463	perma@xtra.co.nz
Deputy Section	George Raffles	ZL1TUX	626 6944	021 735 361	graffles@xtra.co.nz
ZL1BQ Trustee	Vaughan Henderson	ZL1VH	418 1071	021 844 804	vaughanh@vodafone.co.nz
Repeater Trustee	Vaughan Henderson	ZL1VH	418 1071	021 844 804	vaughanh@vodafone.co.nz
Klondyke Managers	ZL1VH / ZL1BK				
690 Manager	Dennis Seymour	ZL1UET	532 8666		
850/670 Manager	Vaughan Henderson	ZL1VH	418 1071	021 844 804	vaughanh@vodafone.co.nz
ATV/Beacons					
Spectrum Editor	Peter Loveridge	ZL1UKG	377 3398		peterlov@ihug.co.nz
Trading Table	Vaughan Henderson	ZL1VH		tradingtable@aucklandvhfgroup.org.nz	
Hon Auditor	Raequel Probine		630 8044		
Webmaster	Terry Corin ZL1BPA			z1bq.webmaster@gmail.com	
Club Web Page				http://www.gsl.net/z1bq	
ATV Interest Group				http://www.gsl.net/z1qf/atvug/ATVusers.html	
ZL1VHD Dstar gateway administrator; Laurie ZL1ICU			634 5130	0274 817463	perma@xtra.co.nz
ZL1VHD Dstar gateway registration URL :				http://z1vhd.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 peterlov@ihug.co.nz

Auckland VHF Group (Inc) Branch 66

General Meeting notice

13th February 2017 7.30pm, Hazel Avenue Club Rooms

(Located on left at the end of Hazel Avenue)

The Evenings Subject:

"Dr Gary Bold"

Gary Bold is a well known performer with wide experience of all sorts of topics.

His latest interest is *"The strange case of the speed of light"*.

This starts with Einstein, has some good explosions, and even includes the Mythbusters. Gary is an excellent speaker and presenter, so even if you aren't interested in the speed of light, do come along as you'll find something of interest in Gary's presentation.

Another meeting not to be missed!

Wanted

When the Ionosphere is mis-behaving line-of-sight still works

VHF/UHF LEO hand held satellite antenna wanted. This is probably a 3 element 2m yagi crossed with a 5 or 6 element 70cm yagi. Would like an Arrow, but a DIY one would be fine. There are a few satellites passing over NZ for about 10 minutes at a time, and the footprint should include some of Australia, but whether anyone is listening will be interesting. Should also be able to talk to the ISS station, when they are free.

Contact Jim, email ZL1LC@arri.net or phone 021-992-290.

The December General Meeting

General Business

No official business was discussed.

Christmas wishes to the members was followed by a supper contributed to by the VHF Group and members. There was enough food such that not all of it was eaten by the end of the evening.

The new Vice President indicated that his health may limit his ability to carry out the role into 2017. Expect to see invitations to members to take over from him next year.

Papakura Radio Club is holding the first '65 HAMFEST' on
Saturday March 11th 2017.

The venue is the Papakura Clubrooms, Wellington Park,
1 Great South Road, Papakura.

----- Official Programme -----

0830 Registration.

0945 Official Opening by Richard Gamble ZL1BNQ, Br 65 President.

1000 HF 'Digital' Radio Dave Wilkins ZL1MR

1100 Murrays bit Murray Greenman ZL1BPU

1200 Break for lunch

1300 Allstar Link Simon Keys ZL1OE

1400 Digital Mobile Radio Simon Watt-Wyness ZL1SWW

1500 Break for afternoon tea

1530 Mesh Network Robert Moody ZL1FLY

1630 End of '65 HAMFEST'

These topics are all current technology and will provide an overview of their implementation with links to further your search.

This '65 HAMFEST' is open to all interested in Amateur Radio and admittance is free to all, so come along and enjoy the show.

VHF-UHF-SHF-EHF Contest Dates 2017

DX Weekend Contest

All bands 6 m and up. Saturday Feb 11 and Sunday Feb 12.

Low Band Contest

All bands 6 m up to and including 70 cm. Saturday 1 April and Sunday 2 April.

Hibernation Contest

All bands 6 m and up. Saturday June 10 and Sunday June 11.

Brass Monkey Contest

All bands 6 m and up. Saturday August 5 and Sunday August 6.

Microwave Contest

All bands 32 cm and up. Saturday 7 October and Sunday 8 October.

Field Day Contest

All bands 6 m and up. Saturday December 2 and Sunday December 3.

For all contests, the operating periods are 5 pm to 11 pm on the Saturday,
and 7 am to 1 pm on the Sunday, NZ local time.

STOLEN RADIO EQUIPMENT

Over the December 2016 / January 2017 holiday period there was been a significant theft of commercial radio equipment in the Waikato area. The Meridian shed at the Te Uku wind farm was broken into and a lot of TP8110 handhelds (UHF) were stolen.

Probably the same people broke into the Chorus owned Te Uku radio site nearby and took almost everything they could move. The Police lost a special portable repeater in a Pelican case with two very large batteries and power supply.

Teamtalk lost all their Fleetlink extender equipment.

The Waikato VHF Group lost their 5675 repeater, part of the WaiPlenty network, an Icom FR5000 shelf with VHF and UHF modules. More details on this equipment here : <http://zl1is.info/>

If you hear of or see any of this gear please report it to your local police.

Te Puke Amateur Radio Club Inc.

March 4th 2017 "Junk Sale" Vendors Registration Form

Call Sign: _____

Name: _____

Address: _____

_____ **Post Code:** _____

Phone Number : () _____ **Mobile** _____

Email Address : _____

1.8m Tables Required @ \$20.00 _____ **= \$** _____ **:00**

\$25.00 on the day

½ Tables Required @ \$15.00 _____ **= \$** _____ **:00**

\$20.00 on the day.

Total _____ **= \$** _____ **:00**

Please return form with remittance to :

Te Puke Amateur Radio Club Inc.

C/- S.J. Rowe

223 State Highway 33

RD 9

TE PUKE 3189

Or by direct deposit to our ANZ Bank Account:

Te Puke Amateur Radio Club Inc.

01 0451-0065145-11 Reference "Table Registration"

For Further enquiries :

Phone (07) 533 1029, **Mobile** 0272488664

Email: sydrowe@xtra.co.nz

Postal address: 223 State Highway 33, RD9, Te Puke 3189

The following report shows that experimentation is alive and well across the ditch.

From: VK-Microwave@yahoogroups.com [mailto:VK-Microwave@yahoogroups.com]
Sent: Sunday, 15 January 2017 9:30 PM
To: VK-Microwave@yahoogroups.com
Subject: [VK-Microwave] Digest Number 769

Australian Amateur Radio Microwave Group [Group](#)

Messages

Advisory : New National Records - 47 GHz.

Sat Jan 14, 2017 10:08 pm (PST) . Posted by:

"Alan" rfresale

Giddy All,
this to advise the 47 GHz VK National Records on both SSB and Digital Modes were extended by VK3 Operators on Wednesday, January 11. The new Distance Records for both these Modes on 47 GHz are now out to 177.9 km.

The following is a brief summary of our activities and the equipment used.

Our initial activities started on Tuesday, Jan 10th with the team of David - VK3HZ and Peter - VK3APW setting up at the Mt Dandenong Observatory, East of Melbourne.

Alan - VK3XPD drove to a spot near Mt Cottrell, west of Melbourne. This site delivered a Line Of Sight (LOS) path of 64.2 km. Crushingly strong signals were experienced on both 47 GHz and 78 GHz over this somewhat modest path.

Alan subsequently drove (and operated) further west at Myrniong (90.2 km) and finally Mt Buninyong (127.1 km) where he was visited by Ian - VK3AXH as an interested observer. These progressively longer QSO's were a "shakedown run" for the main event planned for the next day.

To avoid excessive driving on his part, Alan then drove further west and stayed overnight in a Motel in Stawell. Next day - Wednesday, it was only a relatively short drive to the Summit of Mt William, south of Halls Gap. David and Peter took a little longer driving from Melbourne to Colac. The team of David - VK3HZ and Peter - VK3APW initially drove to a location south of Colac from which both the SSB and DIGI Records were extended to 149.6 km.

At around 1030 Hrs, Alan - VK3XPD arrived at the 1158 metre summit of Mt William in western Victoria. Visibility was only a few metres due heavy misty clouds and there was (initially) no Cell coverage.

Later the same day, David and Peter relocated to Mt Sabine in the Otways, east of Beech Forest from where these new National Distance Records were further extended to 177.9 km.

Equipment:

VK3XPD/3 - Homebrew OCXO-Locked Transverter, 20mW output, 300mm dish, FT-817 IF.

VK3APW/3 and VK3HZ/3: - Kuhne OCXO-Locked Transverter, 80mW output, 300mm dish, FT-817 IF.

QSO's on 78 GHz were also attempted and although we did detect very weak "Ident" signals albeit briefly, we were ultimately unsuccessful due to poor propagation (high path losses) on this band.

At the end of this very long day, we all headed home - sunburnt and rather tired but pleased our significant efforts had been rewarded !

Cheers,

Alan - VK3XPD

For and on behalf of David - VK3HZ and Peter - VK3APW.



Amateur Radio Emergency Communication.
Volunteers in radio communications.
Using our resources to help the community.

INFORMATION

The Auckland VHF Group has an active AREC section that works closely with Auckland City Civil Defence. They provide advice, resources and manpower to assist in times of need. The Auckland VHF Group clubrooms provide a backup system to complement the existing systems maintained by Auckland City Council Civil Defence.

The AREC section is headed by Section Leader Laurie Mathews ZL1ICU.

From time to time the VHF Group has training sessions and exercises. Members also assist with sports events, parades and Rally NZ.

For further information about AREC please see the NZART web site.

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 Section Leader or his Deputy.

AREC:

Section Leader; Laurie Mathews ZL1ICU 634 5130 0274 817 463 perma@xtra.co.nz

Deputy Section; George Raffles ZL1TUX 626 6944 021 735 361 zl1tux@xtra.co.nz



AUCKLAND VHF GROUP (INC)

**SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR
SUBSCRIPTION**

SUBSCRIPTIONS FOR 2017

THE SUBS GO TOWARDS;

- Maintenance and on-going improvements to beacons, repeaters and linking systems for the national system, including the Klondyke repeater site.
- Provides on-time and free access to spectrum magazine as soon as it is available.
- Provides 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 **\$45.00**

ASSOCIATE MEMBERSHIP **\$40.00**

FAMILY MEMBERSHIP ADDITIONAL **\$10:00**



SEE ATTACHED MEMBERSHIP RENEWAL FORM (next page)

REMEMBER TO KEEP US INFORMED OF YOUR INTERNET ADDRESS!

OTHERWISE WE CANNOT SEND YOU SPECTRUM!

NAME	Mr/Mrs/Miss/Ms	Christian or given	Surname
	Mr		
Address			
		Phone: (home)	
		Phone: (work)	
		Phone (Cell)	
		Email	
Occupation:		Callsign	
NZART Member		Branch assigned	
AREC Member		Branch assigned	
Category			To pay
Membership	Full	\$45:00	\$
New/Renewal/Change	Associate	\$40:00	\$
Receipt #	Family Add	\$10:00	\$
Donations	Auckland ATV		\$
	Auckland/Klondyke		\$
	Brynderwyn		\$
	Data/D-Star		\$
	IRLP		\$
	Beacon/Repeater/Links/ATV Licences		\$
	Other		\$
		Total	\$
Payment			
Circle one -->	Cash	Cheque	Internet deposit
Invoice/Statement re-quired	Please Advise Treasurer		
Internet	To account ASB 12-3020-0473626-00. Account name is: Auckland VHF Group Inc. Include your Name/Callsign for us to track. Note: this form needs to be returned to update records. FAX to 028 25544801 or Email d-jcooke@ihug.co.nz		
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 last Monday of the month.		

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 2017

<u>Repeater frequency</u> and name	Repeater location	Sponsorship advised for 2017	Amount paid
53.725 Repeater	Klondyke Road		
144.253 Beacon	Nihotupu		
145.625 Data Rptr	Klondyke Road	NON-operational	
145.650 Dstar repeater	Klondyke Road		
146.625 Repeater	Klondyke Road		
146.700 Repeater	Ruaotuwheua		
146.900 Repeater	Mt Puketutu Radio		
432.253 Beacon	Nihotupu	Under repair	
438.175 Dstar repeater	Klondyke Road		
438.500 Repeater	North Head		
439.850 Link Tx to Kaimai	Klondyke Road		
439.875 Ak Nat Sys Rptr	Klondyke Road		
439.900 Link Tx to Egmont	Klondyke Road		
439.950 Link Tx to Brynderwyn	Klondyke Road		
1291.9 Repeater	217 Glenfield Rd		
		Total Sponsorship	\$0.00
NZART Inc: Branch/Personal donations			
Franklin Radio Club. Br: 10		\$	
Papakura Radio Club. Br: 65		\$500.00	
Auckland Radio Club. Br: 02		\$	
Manukau Radio Club. Br: 21		\$	
Martyn Seay ZL3CK donation		\$	
	Donations	\$500.00	
Prepared by Merv Thomas ZL1SK and current as at 31/01/2017			

The Auckland VHF Group, Branch 66, would like to thank all those who came forward to sponsor the licence fee for our Beacons, Repeaters or Fixed Links for the year 2017 or donate towards the Group's repeater Operations.

Merv ZL1SK – m.r.thomas@vodafone.co.nz

TRADING TABLE

Currently our Trading Table is only open on meeting nights. Opening on Saturdays may resume later in the year so keep an eye out for announcements in Spectrum.

NEW – NEW - NEW

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



And there's

more....



More from the Trading Table: Surplus filters from analogue TV



Motorola Oncore VP GPS Receivers

The VP Oncore is Motorola's original credit card-sized 8-channel GPS receiver. It measures just 2" x 3 1/4" x 1/2", has very low power requirements, and is well suited for embedded applications. The VP Oncore has the capability of acting as a DGPS reference station for greater position accuracy.

The units on offer have been in storage for some time, and the tinplate screen covers show some signs of corrosion – see photo. Most of the units have a sticker attached saying "Prog NMEA" and are likely to output data in NMEA V2.0 serial format.

Interface is via a 10-pin board header – see reference below for pinout details. Power supply is 5.0v +/-0.25V. Module requires an external active GPS antenna (5V power supplied by receiver module). GPS connector is a snap-on type OSX. Output data includes a 1PPS (one pulse per second) output and TTL level Tx and Rx data lines.

More details can be found at : <ftp://ftp.tapr.org/gps/motorola/oncore.eng.notes.pdf>



\$20.00 each – limited quantity.



N-Type connectors for LMR-400

Crimp-on only. \$5.00 each

Other coaxial connectors available from the Trading Table:

Please note we have sold out of TNC connectors – these are no longer available.

BNC plugs 50 ohm for RG58 coax (solder/clamp type)	\$2.50 each
BNC plugs 50 ohm for RG58 coax (crimp on type)	\$2.50 each
BNC sockets 75 ohm – single hole mounting	\$1.50 each
N Type male solder on suit RG213 coax	\$4.00 each
N Type male right angle, suit RG213 coax	\$4.00 each
N Type male crimp on suit RG213 coax **	\$3.00 each
N Type socket crimp on suit RG213 coax **	\$3.00 each
N Type male right angle, solder on suit RG213 coax	\$4.00 each
N Type male silver plated solder/clamp on suit RG58 coax	\$3.00 each
N Type male crimp on suit RG58 coax **	\$2.50 each
N-Type adaptor Male to Male	\$3.00 each
Adaptor TNC Male to UHF Female	\$3.00 each

** Crimping service available for these at club meetings.

Need Crystals for your next project?

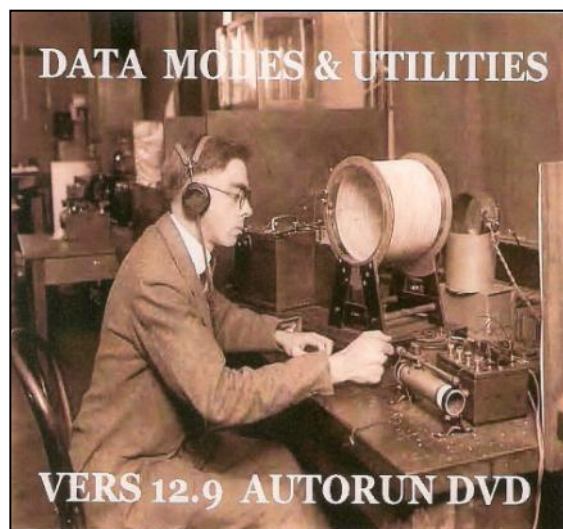
3.579545 MHz HC18/U wire ended holder	
4.194304 MHz HC18/U wire ended holder	\$1.00 each
4.1952 MHz HC18/U wire ended holder	\$1.00 each
4.33618 MHz HC18/U wire ended holder	\$1.00 each
6.000 MHz HC49/S SMD package 20pF load capacitance	\$1.00 each
8.000 MHz HC18/U wire ended holder	\$1.00 each
8.192 MHz HC18/U wire ended holder	\$1.00 each
8.867238 MHz HC18/U wire ended holder	\$1.00 each
10.000 MHz HC18/U wire ended holder (KDS Brand)	\$1.00 each
13.875 MHz HC18/U wire ended holder	\$1.00 each
14.31818 MHz HC18/U wire ended holder. Rakon J30G-4H spec	\$2.00 each
14.7456 MHz HC49/S SMD package	\$1.00 each
17.472 MHz HC18/U wire ended holder	\$1.00 each
18.432 MHz HC18/U wire ended holder	\$1.00 each
20.0000 MHz HC49S SMD package P/No.7D20000183BSAF25Q3	\$1.00 each
24.567 MHz HC18/U wire ended holder	\$1.00 each
45.600 MHz HC18/U wire ended holder	\$0.50 each

Radio Frequency Transistors

ATF55143	Low noise E-PHEMT 0.6dB noise figure.	\$1.00 each
	Low noise amp for frequencies between 450MHz and 6GHz. SMD package SOT343 (4 lead).	
MGF1302	Low noise GaAs FET Nf = 1.4dB @ 4GHz, 4dB @ 12GHz.	\$5.00 each
BFR91	NS RF Amp. 5GHz 1.9dBnf @ 500MHz	\$2.00 each
BFY90	NS 30V 50mA 2.5dBnf @ 200MHz TO72 VHF/UHF	\$1.50 each
MFE121	Dual gate N-MOSFET 20V 5mA VHF Amp BF352 equiv.	\$0.50 each
MPS5179	NS TO92 12V 50mA 200mW ft 2000MHz Nf 5.0dB	\$0.50 each
	RF Transistor. Use in UHF/VHF amplifiers with collector currents in the 100 μ A to 30 mA range, and in low frequency drift, high output UHF oscillators.	
BFG67	NS 8GHz 50mA rf amp/preamp SOT143B package	\$1.50 each
MPS5172	NS 25V 100mA Ft 120MHz	\$0.10 each
MPS6507	NS, VHF Mixer, 20V, 100mA, Ft 700MHz [data]	\$0.20 each
MRF237	NS RF Pwr. VHF 4.0W 12V TO39	\$3.00 each
MRF559	NS RF Pwr. 806-960MHz 0.5W 12.5V	\$0.50 each
MRF904	NS RF Small signal amp. Ft 4GHz 15V TO206	\$3.00 each
2SC908	NS TO39 RF Amp 1W @ 500MHz 13.6V [data]	\$1.00 each
	Designed as driver and RF power amplifier.	
	0.5 to 0.8W output at UHF land mobile band.	
	Gain 15dB (Vce=6.0V, Ic=5mA, ft=2000MHz)	
3SK45	Packaged as ECG221, dual-gate N-channel MOSFET	\$0.75 each
	for vhf amp and mixer applications.	
3SK73GR	Dual-Gate MOSFET N-channel 30V 7mA	\$1.50 each
3SK74L	Dual-Gate MOSFET N-Channel 20V 25mA(max)	\$1.00 each
3SK192GR	Dual-Gate MOSFET 15V 30mA(max)	\$1.00 each
2SC5488	NS 30V 70mA low noise rf pre-amp	\$0.10 each
BF199	NS 25V 25mA, 500mW ft = 550MHz TO92	\$1.00 for 10
BF494	NS 20V 30mA Low noise mix-osc/ IF amp TO-92	\$1.50 for 10
40673	Dual-gate N-Mosfet – See MFE121	\$0.50 each

DATA MODES & UTILITIES CD

Version 12.09 has even more updates and new programmes on this latest release. This is an excellent selection of software, notes, links to web sites compiled by the late Doug ZL1AVY and this latest edition has over 300 applications, references and notes. These cover all digital modes, useful software applications for your pc, contest logging and e-qso programmes, radio interfaces, software defined radio information, slow scan tv software, test equipment utilities, satellite tracking software, and much, much more. **Still only \$10.00**



SMD Quartz Crystals: In addition to our selection of leaded holders, now have 6MHz and 20MHz crystals in SMD style housings:

6.0000 MHz HC49S SMD package 20pF load capacitance \$1.00 each

20.0000 MHz HC49S SMD package P/No. 7D20000183BSAF25Q3
1.00 each



Capacitors, Surface Mount – most are 1206 size.

Packed in bags of 10 for 50c

NPO 50V working: 0.68pF, 1.2pF, 1.8pF, 2.2pF, 5.6pF, 6.8pF, 8.2pF, 10pF, 15pF,

22pF, 33pF, 68pF, 82pF, 270pF, 470pF, 100nF.

63V working: 10pF, 47pF, 100pF, 270pF, 330pF, 470pF, 1nF, 1.2nF, 2.2nF, 4.7nF, 10nF
10uF 25V electrolytic

Capacitors, Metal Clad Mica (Unelco, Semco)

\$2.20 each

Values (in pF):

Or 10 up for \$2.00 each

3.9, 4.7, 6.8, 10, 12, 15, 20, 22, 24, 27, 30, 33, 34, 47, 51, 62, 82,

100, 120, 130, 150, 220, 240, 300, 360, 680pF

Most are rated 350V working $\pm 5\%$ tolerance.

Similar to illustration, tab does not have hole:



Mixers:

Mini-Circuits Model TFM-2-408-1:
+17dBm LO drive, 40dB isolation
\$25.00 each



5 – 1000MHz 6dB insertion loss,

Note: some of these mixers are labeled TFM-2-408-2. They are identical to the TFM-2-408-1.