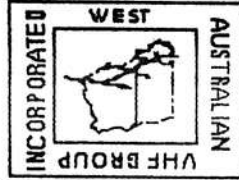


OFFICIAL NEWSLETTER FOR THE WEST AUSTRALIAN VHF GROUP (INC)  
P.O. BOX 189, APPECROSS WA 6153.

MEETINGS ON THE FOURTH MONDAY OF EACH MONTH AT WIRELESS HILL  
TELECOMMUNICATIONS MUSEUM, ALMONDBURY RD, ARDROSS

VK6WH



VK6WH

PATRON MR. F.V. DAYSON

PRESIDENT	BOB BLINCO	VK6KRC H 277 7049	SECRETARY	BOB PINE	VK6ZFY H 339 3273
VICE PRES.	PETER TAIT	VK6ZPT	TREASURER	BERT MEUWISSEN	VK6ME H 457 3892
COUNCILLOR	TERRY LEITCH	VK6ZLT H 332 7008	BULLETIN ED.	COLIN MURRAY	VK6ZCR H 331 1398
COUNCILLOR	PETER MARTIN	VK6JAE	MUSEUM REP	BOB PINE	VK6ZFY
COUNCILLOR	COLIN MURRAY	VK6ZCR	MUSEUM REP.	TOM BERG	VK6ZAF
ACTIVITIES	TERRY LEITCH	VK6ZLT	PUBLICITY	PETER MARTIN	VK6JAE
MATERIALS	COLIN MURRAY	VK6ZCR	LIBRARIAN	ILMAR BELTS	VK6AIB

\*\*\*\*\*  
CALENDAR

JANUARY 21 COMMITTEE MEETING  
26 FOX HUNT  
28 GENERAL MEETING

MARCH 18 COMMITTEE MEETING  
23 FOX HUNT  
25 GENERAL MEETING

FEBRUARY 18 COMMITTEE MEETING  
23 FOX HUNT  
25 GENERAL MEETING

APRIL 15 COMMITTEE MEETING  
20 FOX HUNT  
22 GENERAL MEETING

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# JANUARY 1991

## Further Adventures in Microsats

As you remember from my last article I was receiving all the microsats with my slim jim on 70cm into a 471H lcom with good signal levels.

My next requirement was to connect to them. This I have done many times now using my 290H into a quarter wave antenna. I have tried a slim jim on 2 meters but could not get into the satellites with this.

There are two satellites that are reasonably easy to get into

1. AO-16 PACSAT-1 uplink 145.960 FM PSK 1200 BAUD  
downlink 437.025 +/- doppler (+15kHz to -15kHz)  
LSB PSK 1200 BAUD
2. LU-19 LUSAT-1 uplink 145.880 FM PSK 1200 BAUD  
downlink 437.125 +/- doppler (+15kHz to -15kHz)  
LSB PSK 1200 BAUD

NOTE PSK Modem Board available from Blamac or AMSAT

This modem is connected to a FLASH PACKET board from the local supplier.

I am able to access each of these using 25 watts into a quarter wave on 2 meters and receive using a 70 slim jim.

This means that I have no need to track the satellites as my antennas are omni-directional.

Both of these satellites will be flying mailboxes by the end of 1990. At the moment they are just digipeaters.

After connecting only with myself for months I have at last had three contacts with another amateur VK6VV who has a very fine setup that can access FO-20 as well. I do not have enough power to reach FO-20 and I can only receive it when it is more than 30 degrees above the horizon.

If you have decent antennas you could point them up permanently at about 30 degrees and track with your ordinary rotator. Then I am sure that you could access all three satellites.

Satellite tracking software is available from VK5AGR for a small donation to AMSAT see AR for the address.

The fourth microsat UO-14 is transmitting 9600 baud. My 9600 baud modem works fine but the signal strength is too low for my slim jim. This also requires you to directly receive from your discriminator and to transmit by exciting your varactor. The information is easy to obtain from the bulletin boards for the Kenwood, Yaseu and Icom sets.

UO-14 UOSAT-3 uplink 145.975 FM AFSK 9600 BAUD downlink 435.025 +/- doppler FM AFSK 9600 BAUD

The fifth microsat is transmitting pictures taken from space of the earth This requires KISS and a program available from AMSAT (VK5AGR) called Weberware 1.0 and the PSK modem with the FLASH packet board.

WO-18 WEBER-1 437.075 PSK 1200 BAUD

I have built a 9 element 2 meter yagi and am in the process of building a 19 element 70 cm for accessing the other satellites. However my success with simple equipment will enable anyone who is not wanting to invest in rotators and long yagis to have a go.

73 Bruce VK6BMD

**747 radio for sale \$20. PHONE BOB VK6KRC, OR BOB VK6ZFY, OR COME ALONG TO THE NEXT MEETING AND FIND OUT FOR YOURSELF.**

I WAS HANDED SOME INFORMATION ON SOME COAX THAT MAY INTEREST SOME OF YOU OUT THERE. TYPE CC-213-A-L-L (SPECS VERY SIMILAR TO 9913) PRICE CHEAP I THINK.

INNER CON : SINGLE COPPER / 2.74mm.  
 DIELECTRIC : POLYETHYLENE & AIR SPACED / 7.30mm.  
 SHIELD : ALFOIL + 88% TINNED COPPER BRAID.  
 SHEATH : BLACK PYC 11 A O 10.30mm.  
 IMPEADANCE : 50+- 2 OHM.  
 CAPACITANCE : 78PF/M.  
 VEL. FACTOR : 0.84.  
 NOMINAL ATTENUATION @ 20 DEG/ 100MTR..  
 40MHz 2.6db, 100MHz 4.5db, 200MHz 6.0db, 300MHz 7.5db, 450MHz 9.5db,  
 600MHz 11.0db, 750MHz 12.5, 900MHz 14.5db.  
 AVAILABLE FROM ROJONE PTY. LTD.  
 A.P.IMPORTS P.O. BOX 1231 WANGARRA W.A. 6065.

This program calculates the erp. & eirp. for any quantity of aerials providing they are in phase and spaced for maximum gain.

By G4JUJ 4th January 1989.

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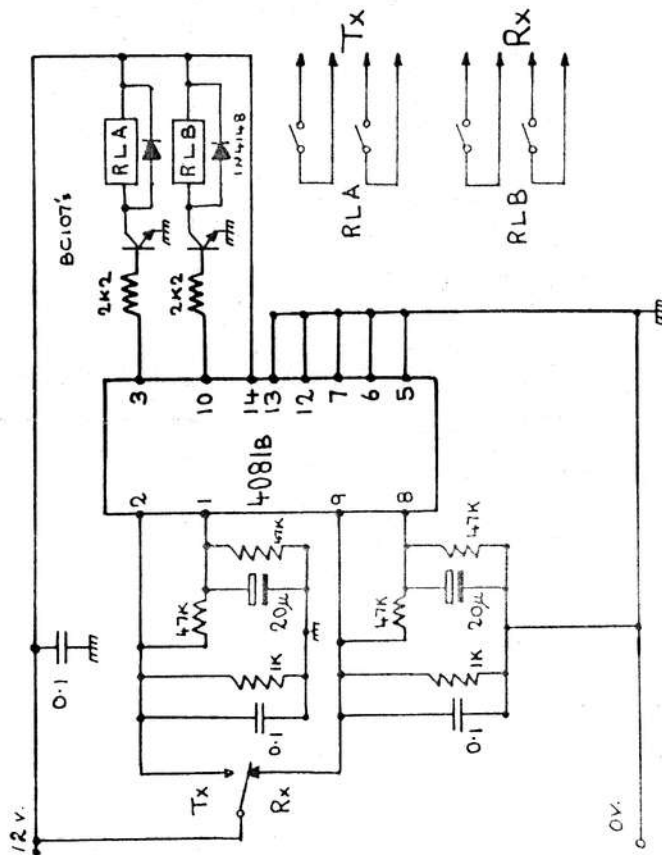
10*K. 100. 1MRUNIM
20CLS
30PRINTTAB(0,2)"This program calculates the erp. & eirp."
40PRINTTAB(0,3)"for any quantity of aerials providing"
50PRINTTAB(0,4)"they are in phase and spaced for maximum"
60PRINTTAB(0,5)"gain."
62PRINTTAB(5,7)"By G4JUJ 4th. January 1989."
65PRINTTAB(5,8)"-----"
70PRINT
80INPUT"Aerial Gain dB. ",GN
90INPUT"Quantity of aerials ",QTY
100INPUT"Feeder Loss dB. ",FL
110INPUT"Power W. ",PWR
120PRINT
130Q=LOG(QTY)*10
140X=(GN+2.15+Q-FL)/10:X=10^X:Xi=(X*PWR):Xe=Xi/1.640589773
150PRINT"Ans= "Xe" W. erp."
160PRINT
170PRINT"Ans= "Xi" W. eirp."
180IFXi<1667THENPRINTTAB(4,19);CHR$(129);CHR$(136)"NOT
ENOUGH FOR RELIABLE PH3."
190IFXi<1667THENPRINTTAB(4,20);CHR$(129);CHR$(136)"-----"
200PRINT
210PRINT"Another? Y/N"
220IF GET$="Y"THEN GOTO 20

```

Some of you will have seen "Popular Communications" ( USA ), a very fine publication, full of hints and tips. In the December issue, and repeated with variations in "Radio Communications", the subject of Low priced cable connectors for Helical feedline. You will also know that although you can purchase Helical cable for a peanuts at Rallys, you will pay £20 for the connectors. As will be seen in the above magazines, the connectors can be home-brewed for a lower cost. In my own case, the cost was £3.05 for the N connector ( New ), Junk box for the PL259. ( you only use the middle bit ) £1.55 for three various lengths of copper and brass tube from the local Model shop. MODEL LAND. 219, New North Rd, Hainalt, Essex. 01 500 3891. Sizes one eighth, three sixteenth and five sixteenth of de inch. A 25W soldering iron, small hacksaw, and a little patience are all that is required. I did a variation on the theme which I think makes for a neater job, but that is your choice. If there is room I will include a photo or two. Mismatch?, none discernable on a Thruline at 437 Mhz against the high priced product, 30 ft. of cable from the PT726. I did climb on the roof to check it.

A TX/RX CHANGEOVER TIMING SYSTEM  
 By I.M. Waters G8HDE

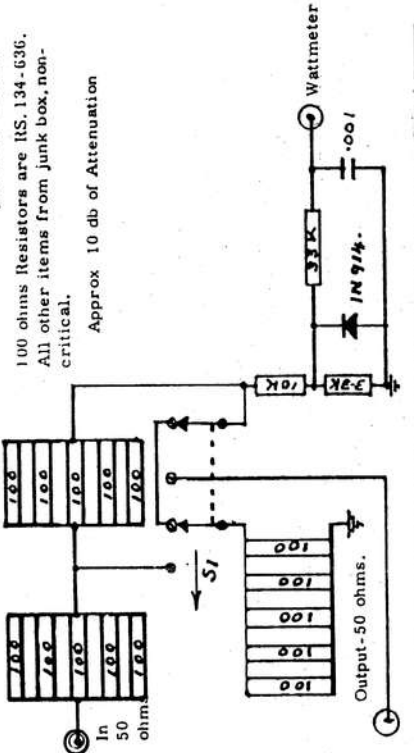
Those who use mast-head preamplifiers with exotic expensive transistors, need to be careful about the timing of events when changing from receive to transmit and vice-versa, if damage is to be avoided. I have seen various circuits advocated for this purpose but, since all of them use slugged magnetic relays, it was thought that something better could be done. The circuit shown ensures that, when going to transmit, the head amplifiers and converters are off and aerial relays changed over before any RF is generated. Conversely, the RF is shut off before the head amplifiers and relays etc. are energised for receive.



CIRCUIT DESCRIPTION

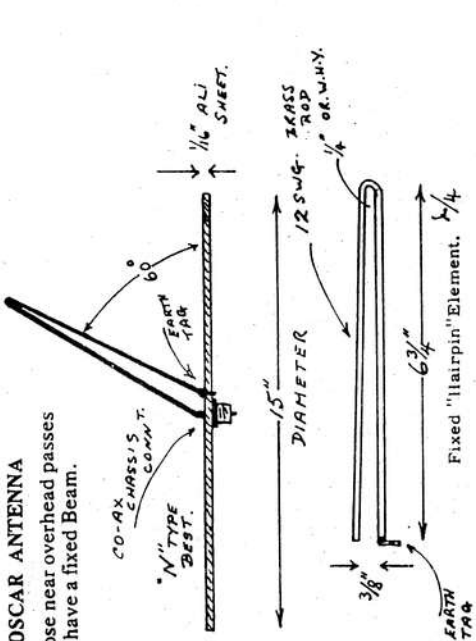
Assume that the station is on receive. Upon operating the TX/RX switch, pin 9 of IC1 (a quad 2 input AND) goes low, pin 10 goes low. RLB opens and all converters are shut off. Almost instantaneously pin 2 goes high but pin 3 will not go high until a time delay, determined by a 47K resistor and 20µF capacitor, has charged up allowing pin 1 to also go high. RLA then closes and transmitters come on. The delay can of course be adjusted by the values of the R-C time constant. On returning to receive, pin 2 goes low, pin 3 goes low instantaneously. RLA opens and the transmitter shuts down. Pin 9 goes high but RLB will not close until the receive RC time constant on pin 8 has charged up. There is thus a separately adjustable delay introduced in both directions. The 47K resistors in parallel with the 20µF capacitors discharge them after a change in either direction. ACKNOWLEDGEMENT. BRITISH AMATEUR TELEVISION CLUB. CU-1V MHBALINE

DUMMY LOAD/ATTENUATOR for those who cannot reduce power at the Tx.  
 (this goes between Tx and the "I've got one bigger than you have" Linear.



100 ohms Resistors are RS.134-636.  
 All other items from junk box, non-critical.  
 Approx 10 db of Attenuation

432 MHz OSCAR ANTENNA  
 OK for those near overhead passes when you have a fixed Beam.



## THE TWELVE COMPUTERIZED DAYS OF CHRISTMAS

On the first day of Christmas, my computer gave to me  
A glitch on the video screen.

On the second day of Christmas, my computer gave to me  
Two keyboard bounces, and a glitch on the video screen.

On the third day of Christmas, my computer gave to me  
Three loose plugs,  
Two keyboard bounces,  
And a glitch on the video screen.

On the fourth day of Christmas, my computer gave to me  
Four garbled SAVE's,  
Three loose plugs,  
Two keyboard bounces,  
And a glitch on the video screen.

On the fifth day of Christmas, my computer gave to me  
Five blank cassettes,  
Four garbled SAVE's,  
Three loose plugs,  
Two keyboard bounces,  
And a glitch on the video screen.

On the sixth day of Christmas, my computer gave to me  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE's,  
Three loose plugs,  
Two keyboard bounces,  
And a glitch on the video screen.

On the seventh day of Christmas, my computer gave to me  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE's,  
Three loose plugs, Two keyboard bounces,  
And a glitch on the video screen.

On the eighth day of Christmas, my computer gave to me  
Eight worthless printouts,  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE's  
Three loose plugs,  
Two key bounces,  
And a glitch on the video screen.

On the ninth day of Christmas, my computer gave to me  
nine burnt-out fuses  
Eight worthless printouts,  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE'S  
Three loose plugs,  
Two key bounces,  
And a glitch on the video screen.

On the tenth day of Christmas, my computer gave to me  
Ten disk-drive lockouts,  
nine burnt-out fuses  
Eight worthless printouts,  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE'S  
Three loose plugs,  
Two key bounces,  
And a glitch on the video screen.

On the eleventh day of Christmas, my computer gave to me  
Eleven damaged diskettes,  
Ten disk-drive lockouts,  
nine burnt-out fuses  
Eight worthless printouts,  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE'S  
Three loose plugs,  
Two key bounces,  
And a glitch on the video screen.

On the twelfth day of Christmas, my computer gave to me  
Twelve blown-out circuits,  
Eleven damaged diskettes,  
Ten disk-drive lockouts,  
nine burnt-out fuses  
Eight worthless printouts,  
Seven system resets,  
Six I/O spasms,  
Five blank cassettes,  
Four garbled SAVE'S  
Three loose plugs,  
Two key bounces,  
And a glitch on the video screen.

**THIS PAGE INTENTIONALLY  
LEFT BLANK AS THERE  
SEEMS TO BE SOME BIG  
BLOTCHES COMING OUT OF  
MY COPIER, AND I  
APOLOGISE AS THERE IS  
NOT ENOUGH TIME TO RIP  
IT APART TO GIVE IT A  
SERVICE.**

**YOUR BULLETIN EDITOR.**

**VK6ZCR. 20/1/91**

THE WEST AUSTRALIAN V.H.F. GROUP BULLETIN

JANUARY 1991

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