

WELLINGTON VHF GROUP  
MEMBERS-ONLY TRADING TABLE CASH & CARRY PRICES

JANUARY 2013

Non-members of the VHF Group please add 25% to all prices

Orders should be sent to Box 12 259, Thorndon, Wellington, with an additional \$5 per order for post, packing etc., for New Zealand destinations. Prices are in New Zealand dollars. Additional charges apply to export orders. Please print your name and address clearly. Please give an email address. We reserve the right to limit the quantities supplied, and to change prices without notice. For all enquiries please email: [zl2wa@clear.net.nz](mailto:zl2wa@clear.net.nz)

Sales at meetings. It is not physically possible to bring the whole Trading Table to the meeting. Please telephone or email on the Wednesday, the day before the meeting, to ensure that the goods you want are brought.

EMAIL: [zl2wa@clear.net.nz](mailto:zl2wa@clear.net.nz)

NEW THIS MONTH

BACK BY POPULAR DEMAND RG-213/U COAXIAL CABLE          \$3.40 per metre

Improved version of RG-8/U with a non-contaminating outer jacket. Compatible with all of the connectors used with RG-8/U. Extra freight charges apply, owing to the cable's weight and minimum bending radius. Please ask for a freight quote for the particular length of cable you require. No freight charge for pick-up at our bulk store or at meetings.

NATIONAL MF4CN-100 LOW-PASS FILTER IC          \$2.50 each

Features:

5 V to 14 V DC supply

Switched capacitor 4th-order Butterworth low-pass filter

Unity gain at low input frequencies

Maximally-flat response within the passband

-3 dB at cut-off frequency

-24 dB per octave within the stopband

Cut-off frequency adjustable between 0.1 Hz and 10 kHz at 10 V supply

Cut-off frequency proportional to oscillator frequency

Add one resistor and capacitor for internal oscillator, or use external clock

Two can be cascaded for -48 dB per octave within the stopband

8-pin Dual In Line (DIL) package

Our thanks to Ted, ZL2TB, for donating the above ICs.

SURFACE MOUNT DEVICE TRANSISTORS    10 for \$1          100 for \$8

Quantities and types may be mixed for the quantity discount.

For example: 25 + 35 + 40 = 100 = \$8

BC847C          NPN, 45 V<sub>ceo</sub>, 100 mA I<sub>c</sub> max, 250 mW P<sub>max</sub>, hFE 400 to 800

FMMT2907    PNP, 60 V<sub>ceo</sub>, 600 mA I<sub>c</sub> max, 330 mW P<sub>max</sub>, hFE 100 typical

MMBT2222A NPN, 40 V<sub>ceo</sub>, 1 A I<sub>c</sub> max, 350 mW P<sub>max</sub>, hFE 200 typical

MMBT5550 NPN, 140 V<sub>ceo</sub>, 600 mA I<sub>c</sub> max, 250 mW P<sub>max</sub>, hFE 150 typical

LEDs 10 c each, \$1 for 12, \$2 for 30, \$5 for 100.

Quantities and types may be mixed for the quantity discount.

For example: 25 + 35 + 40 = 100 = \$5

3 mm Round Red LEDs 1.6 V at 10 mA

7 mm x 2.3 mm Rectangular Red LEDs 2.0 V at 10 mA

7 mm x 2.3 mm Rectangular Green LEDs 2.0 V at 10 mA

CFPS-73A 16.000000 MHz oscillator \$4 each \$25 for 10

Surface Mount 7.2 x 5.2 x 1.4 mm

+3.3 V supply at 7 mA. HCMOS output stage. +/-20 parts per million (+/-320 Hz) calibration accuracy and temperature stability.

14.4 Volt 360 mAh Nickel Metal Hydride Rechargeable Battery Pack

Consists of 12 cells each 1.2 Volt 360 mAh in a heat-shrink package \$10

NEW EPROM 27C512-12 120 ns read access time \$5

NEW RAM 4116 \$1 each 25 for \$20 50 for \$35 100 for \$60

IC SOCKETS – Similar to the Jaycar PI-6506 family

14 pin 0.3" wide 25 c each \$2.00 for 10 \$3.50 for 20

20 pin 0.3" wide 30 c each \$2.50 for 10 \$4.00 for 20

24 pin 0.6" wide 40 c each \$3.50 for 10 \$6.00 for 20

28 pin 0.6" wide 50 c each \$4.00 for 10 \$7.00 for 20

NOTE: Stocks of the 20 pin sockets are nearly exhausted.

LIGHTNING ARRESTOR

N female input and output connectors, 70 V breakdown voltage. \$25

MICREL MIC29302BU

3 Amp, low-drop-out, adjustable (1.25 V to 26 V) voltage regulator. \$1

Telephone loading coil. Bifilar wound on a toroidal core. \$1

One coil: 11 mH, 2 ohm DC resistance.

Both coils connected series-aiding: 44 mH, 4 ohm DC resistance.

2-TERMINAL CERAMIC RESONATOR

3.58 MHz ceramic resonator for Alivo transceiver \$2.50

Used in ZL2AMJ Alivo 80 metre transceiver VCXO, as described in April 1998 and May/June 1999 Break-In.

### 3-TERMINAL CERAMIC RESONATOR

3.58 MHz ceramic resonator. 3-terminal. \$2.50

This is a 2-terminal resonator, plus two internal feedback capacitors connected to the centre (grounded) pin, to simplify oscillator construction. An oscillator using a CMOS inverter requires just the resonator and a 1 Meg bias resistor.

UHF F+M+F Tee connector, poly insulator. \$5.00

SO-238 Female-Female barrel connector, for joining two PL-259 cables. \$2.50

BNC male crimp connector Radiall R 141075 for RG-174/U cable.  
Farnell sells them for \$20 EACH. Our price is \$2.50 each or 10 for \$20

Belling-Lee TV antenna female chassis-mount connector. Insulated mounting flange.  
Photo in June 2009 Q-Bit. \$2.50 each or 10 for \$20

F Crimp Connector for Quad Screened RG-6/U 75 ohm TV coax.  
Similar to Jaycar PP-0704. \$1.20 each or 10 for \$10

Custom-made leads, using quad-screened RG-6/U, with the above connector on each end.  
Pricing: \$6.00 plus \$1.50 per metre.

10 GHz MICROWAVE DETECTOR KIT \$20

As described on pages 10 to 16 of October 2006 Q-Bit.  
Contains all the necessary components, including the gold-plated SMA connector.

STAINLESS STEEL 2 mm diameter antenna wire.

Only the wire is supplied, complete with pre-formed anti-eye-poking loop at one end.  
The purchaser supplies the mounting base. The wire is cut to 5% over length so that the purchaser can trim the length for minimum SWR, to compensate for stray inductance or stray capacitance in the mounting base.

|                          |     |
|--------------------------|-----|
| 2 metre quarterwave whip | \$1 |
| 70 cm 5/8 wave whip      | \$1 |
| 70 cm quarterwave whip   | 50c |

HIGH PERFORMANCE 10 MHz CLOCK SOURCE/COMB GENERATOR KIT

As described in February 2009 Q-Bit. \$25

HIGH PERFORMANCE 20 MHz CLOCK SOURCE \$25

TINPLATE SHIELDS (or component trays)

Idea for stopping radiation out of, or into, stripline circuits.

|                             |     |
|-----------------------------|-----|
| 76 mm x 41 mm x 10 mm high. | 10c |
| 92 mm x 41 mm x 10 mm high. | 10c |

Aluminium rod 295 mm long by 8 mm diameter  
Ideal for Uda-Yagi antenna directors at 70 cm and all elements at Channel 39 ATV.

15c each      10 for \$1      (less than the scrap metal value)

Aluminium rod      370 mm long by 8 mm diameter  
Ideal for Reflector of 70 cm Uda-Yagi antennas. Limited quantity, each one sold with nine of the 295 mm rods. 9 + 1 rod kit for \$1

Single-hole HF-VHF powdered iron core      60c each      \$4 for bag of 12  
9.5 mm OD    4.0 mm ID    12.7 mm Long  
 $a = 23 \text{ nH}$   
Inductance =  $n^2a$       Therefore 12 turns = 3.3 uH

#### BROADBAND (40 TO 860 MHz) CLASS-A LINEAR AMPLIFIERS

PHILIPS BGX885N TEST AT 615 MHz    Requires +24 V at 230 mA      \$39.60  
50 ohm test: Gain 16.5 dB    280 mW CW output at -1 dB gain compression

MOTOROLA CA922A TEST AT 615 MHz      Requires +24 V at 400 mA    \$49.70  
50 ohm test: Gain 16.5 dB    830 mW CW output at -1 dB gain compression

PHILIPS BGD802 TEST AT 615 MHz      Requires +24 V at 400 mA      \$59.80  
50 ohm test: Gain 17.5 dB    1.5 W CW output at -1 dB gain compression

The heat sink for the BGX885N should have a thermal rating of 8°C/W, or less. The heat sink for the CA922A and BGD802 should have a thermal rating of 5°C/W, or less.

Eddystone diecast aluminium boxes, including free pre-drilled holes.

120 mm x 94 mm x 29 mm      \$4  
120 mm x 94 mm x 56 mm      \$6  
187 mm x 120 mm x 56 mm      \$10

75 ohm BNC female 4-hole panel mount connector      \$2  
50 ohm TNC female single-hole (9.5 mm) panel mount connector      \$2

2500 ohm linear mini pre-set pots. Single-hole (6.3 mm) panel mount, complete with mounting nut, knob and 0 to 10 scale. 12 mm diameter by 12 mm long body.      \$1

Extruded Heatsinks  
221 mm H x 100 mm W x 23 mm D (568 g) 1.8°C/W      \$5  
116 mm H x 295 mm W x 48 mm D (735 g) 1.3°C/W      \$7

The 1.3°C/W heatsink is ideal for the output stage of a 100% duty cycle 25 Watt RF output transmitter, 50% duty cycle 5 Watt RF output transmitter, or 25% duty cycle 100 Watt RF output transmitter.

10-piece trimming tool set      \$7

Hippo clip (wider mouth than crocodile clip)      20c

7809 9 Volt 3 terminal regulator TO-220      \$1.20  
Bias regulator for Mitsubishi RF power modules.

|  |      |
|--|------|
| Ex-equipment SBL-1 economy double-balanced mixer up to 500 MHz | \$5  |
| Ex-equipment SRA-1 premium double-balanced mixer up to 500 MHz | \$15 |
| NJ8820B Plessey synthesizer IC                                 | \$3  |

5-40 pF compression mica trimmers by Hunts. Bag of five. \$1  
 Suitable for 2 metre RF power amplifiers.

AWA B-Band 88-108 MHz AM Receiver module Type 2281. \$10  
 AWA modulator module Type 2285 for the 2284 module. \$10  
 Modules are supplied with a re-print from December 1996 Q-Bit.

TNC male crimp connector for RG-316/U cable. \$4  
 Telegärtner J010B0007.

Chassis-mount square-flange BNC female connector. Kings KC-79-289-MC7.  
 \$2.50 each or 10 for \$20

### MACHINE SCREWS

All screws are 10 for 20c, 50 for 70c, 100 for \$1, 250 for \$2, 500 for \$3.

Mixed pricing applies. For example, buy a total of 100, say 10 of one size, 20 of two sizes, and 50 of another size, and pay only the 100 price.

### SILVER-PLATED MICROWAVE CAVITY TUNING SCREWS – USA THREADS

Complete with lock nuts

2-56 (2.1 mm diameter) by 6 mm long with 5/64" A/F hex socket head  
 4-40 (2.8 mm diameter) by 6 mm long with 3/32" A/F hex socket head  
 4-40 (2.8 mm diameter) by 11 mm long with 3/64" A/F hex socket end  
 1/4" diameter by 9.4 mm long 36 threads per inch with screwdriver slot

### STAINLESS STEEL MACHINE SCREWS – USA THREADS

Complete with spring washers

2-56 (2.1 mm diameter) by 4 mm long with Phillips head  
 2-56 (2.1 mm diameter) by 9.5 mm long with 1/16" A/F hex socket head  
 2-56 (2.1 mm diameter) by 12 mm long with 1/16" A/F hex socket head  
 4-40 (2.8 mm diameter) by 9.5 mm long with 5/64" A/F hex socket head  
 4-40 (2.8 mm diameter) by 16 mm long with 5/64" A/F hex socket head  
 6-32 (3.4 mm diameter) by 9.5 mm long with 3/32" A/F hex socket head  
 6-32 (3.4 mm diameter) by 12 mm long with 3/32" A/F hex socket head

### DIGITAL 3 mm LEDs.

These LEDs include internal current-setting resistors, for direct connection to 5 V, where they draw 10 mA. The LEDs can be used on a higher supply voltage, or at lower currents, by the addition of an external resistor. Three colours available: red, yellow and green. 10 c each.

### TV CHANNEL CHANGE PUSH BUTTONS

Made by Mitsumi of Japan. Spring loaded SPST switch. Ideal for driving CMOS and other low-

current applications. Set of four complete with mounting bracket. \$1.50

Second-hand BNC 50 ohm female panel socket – single hole mount \$2  
Complete with earth tag and back nut KINGS KC-79-139

#### MONOLITHIC MICROWAVE AMPLIFIER (MMIC)

|           |   |        |
|-----------|---|--------|
| ERA-2     | DC to 6 GHz 25 mW 15 dB gain @ 1 GHz +5 V 80mA      | \$4.90 |
| INA-03184 | DC to 3 GHz 1 mW 25 dB gain @ 1 GHz +4 V 10 mA      | \$3.30 |
| INA-10386 | DC to 2 GHz 10 mW 26 dB gain @ 1 GHz +6 V 45 mA     | \$3.30 |
| MAR-3     | DC to 2 GHz 10 mW 12 dB gain @ 1 GHz +5 V 30 mA     | \$2.50 |
| MAV-11    | DC to 1 GHz 50 mW 12 dB gain @ 500 MHz +5.5 V 60 mA | \$6.60 |

#### MINI-CIRCUITS LABS VOLTAGE-CONTROLLED OSCILLATORS

| MODEL    | TUNING RANGE    | OUTPUT  | PRICE   |
|----------|-----------------|---------|---------|
| POS-75   | 37.5 to 75 MHz  | +8 dBm  | \$31.10 |
| POS-200  | 100 to 200 MHz  | +10 dBm | \$31.10 |
| POS-400  | 200 to 380 MHz  | +9 dBm  | \$36.40 |
| POS-535  | 300 to 525 MHz  | +8 dBm  | \$36.40 |
| POS-1060 | 750 to 1060 MHz | +12 dBm | \$39.00 |

POS-75 to POS-535 require +12 V DC power at about 20 mA, and +1 V to +16 V tuning voltage.  
POS-1060 requires +8 V DC power at about 30 mA, and +1 V to +20 V tuning voltage.

#### TYPICAL FREQUENCY VERSUS TUNING VOLTAGE

| MODEL    | 1   | 2   | 4   | 6   | 8   | 10  | 12  | 14  | 16   | V   |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|
| POS-200  | 90  | 99  | 114 | 129 | 145 | 161 | 176 | 192 | 208  | MHz |
| POS-400  | 185 | 202 | 230 | 259 | 289 | 322 | 351 | 382 | 407  | MHz |
| POS-535  | 279 | 305 | 347 | 381 | 421 | 460 | 488 | 524 | 556  | MHz |
| POS-1060 | 675 | 697 | 737 | 784 | 834 | 887 | 942 | 997 | 1045 | MHz |

#### SUGGESTED USES

POS-200 is useful for testing: 2-metre Amateur equipment, and Channel 4, 5, 6 and 7 TV antennas.

POS-400 is useful for testing: Channel 6, 7, 8, 9, 10 and 11 TV antennas.

POS-535 is useful for testing: 70-centimetre Amateur equipment, UHF Communications, and UHF PRS.

POS-1060 is useful for testing: 32-centimetre Amateur equipment, Channel 46 through 62 TV antennas, and UHF Communications.

#### MICROWAVE COMPONENTS

Microwave dummy load inserts. These consist of a graphite-composite cone, to be inserted in a suitable length of waveguide. Be careful, the pointed end is VERY SHARP.

The diameter, of the large end of the cone, is almost equal to the narrow dimension of the

waveguide, so the large end can be fixed in a central position by two “blobs” of silicone rubber. Alternatively, the large diameter end has a tapped hole (used during manufacture of the conical shape), so the cone can be mounted centrally on a waveguide end wall with a suitable bolt. Three sizes are available: \$5

7.6 mm diameter by 73 mm long, for 10 GHz

4.2 mm diameter by 56 mm long, for 24 GHz

3.3 mm diameter by 40 mm long, for 47 GHz

Waveguide O-rings, to waterproof the joint between waveguide flanges. Three sizes available:

30 mm OD by 3.2 mm diameter 50c each

19 mm OD by 1.6 mm diameter 50c each

14 mm OD by 1.6 mm diameter 50c each

SMA female stainless steel connector \$2.50 each, 10 for \$20, 30 for \$50

SMA male to SMA male 0.14” Succoflex™ flexible cable. The SMA connectors have gold-plated RF mating surfaces and stainless steel threaded body. 0.14” Succoflex™ has the same electrical properties as 0.14” semi-rigid, but is much more flexible. Insertion loss at 24 GHz is 3 dB per metre, or 0.3 dB per 100 mm. Available lengths: 115 mm, 120 mm and 150 mm. Most lengths are in short supply, please give alternatives. \$10

WG20 19 GHz 5-pole bandpass filter. This can be modified for 24 GHz, by reducing the size of the resonant cavities. The filter features a WG20 flange and waveguide elbow, at one end, and a SMA connector to WG20 transition, at the other end. \$8

WG20 waveguide 250 mm long.

WG20 flange at each end. There is an E-plane bend near one end. \$10

103.33333 MHz, 5th overtone, series resonant, HC49/U holder (wire-ended cold-weld equivalent of HC-18/U). Useful for microwave frequency markers or injection frequencies, such as: 310 MHz, 620 MHz, 930 MHz, 1240 MHz, 2480 MHz, 3410 MHz, 5580 MHz, 10230 MHz, 24180 MHz. The crystal can also be used on 20.67 MHz fundamental, or 62.00 MHz 3rd overtone, in an appropriate oscillator circuit. \$5 each, \$8 for two, \$10 for three, \$25 for ten.

1N5242B 12 volt 500 mW zener diode. 10c each, 70c for ten, \$1 for twenty, \$3 for a hundred.

74LS05M SMD 20c each, six for \$1

3-pin DIN cord audio plug (Jaycar catalogue PP-0302, usually \$1.45) 50c

12 V 0.5 A plug pack power transformer (Jaycar catalogue MP-3026, usually \$24.95) \$12

12 V 0.5 A + 12 V 0.5 A power transformer (RS catalogue 207-699, usually \$21.60) \$7.50

Bolt-in feed-through pi-section (C-L-C) low pass filters ERIE \$1

3.15A 20x5 fast-blow fuse 20c ea

5A 20x5 slow-blow fuse 40c ea

4-cell AAA cell holder \$1

|   |          |            |
|---|----------|------------|
| ABS black plastic project box 82 x 53 x 30 mm.        |          | \$2.50     |
| 2.1 mm DC power connector PCB-mount                   |          | \$1        |
| 300 ohm balanced to 75 ohm F coax VHF/UHF TV/FM balun |          | \$3        |
| 1 uF 50 V bi-polar electrolytic capacitor             | 40c each | 10 for \$3 |
| 22 uF 16 V tantalum bead capacitor                    | 70c each | 10 for \$5 |

## SECOND HAND ITEMS

The following surface-mount ICs are ex-equipment, and are supplied mounted on a double-sided G10 printed circuit board.

|              |  |        |
|--------------|--|--------|
| IAM-81008    | VHF/UHF (to 5 GHz) active double-balanced mixer      | \$1.50 |
| PCF8591T     | A>D and D>A converter                                | \$2    |
| SA630D       | Small-signal SPDT RF switch                          | \$1    |
| UMA1014T     | 50 MHz to 1.1 GHz frequency synthesizer              | \$5    |
| 33072, 34072 | Dual op amps   | 20c    |
| 74HC4066D    | Quad CMOS transmission gate                          | 20c    |
| VAM-6        | Low noise amplifier - surface-mount version of MAR-6 | \$2.50 |
| MAR-8        | Low noise amplifier                                  | \$2.50 |
| BC149B       | NPN low noise AF                                     | 10c    |

## TV TRANSMITTER SAW FILTER

You should consider using one of the following filter modules, if you are building a 431.25 MHz Vision Carrier ATV transmitter. VSB filters are described in April 2002 Q-Bit.

Vestigial Sideband (VSB) Surface Acoustic Wave (SAW) filter for 67.25 MHz Vision I.F. and 72.75 MHz Sound I.F. 50 ohm input and output impedance. \$20

Vestigial Sideband filter module for 38.90 MHz Vision I.F.: SAW filter, PCB, and buffer amplifiers. ITU-R Standard Vision Carrier frequency. 50 ohm input and output impedance. This is a replacement for a coil-capacitor VSB filter – some trimming of gain and operating levels may be required, depending on the model of transmitter. SAW filter not sold separately. \$50

## UHF VARACTOR (VARIABLE CAPACITANCE DIODE) BB149A 60c

Just when you thought it was safe to come out of hiding (I can't finish that project because I can't buy a decent performance varactor diode), we go and spoil your excuse. This surface mount version of the BB409 has the lowest parasitic inductance and resistance of any UHF varactor diode that we have ever come across, and hence the highest Q.

The BB149A is an ideal replacement for varactors such as BB109 and BB409. They are designed as tuning diodes for VHF and UHF oscillators, such as those in 70cm and 23cm ATV receive converters, and for VHF and UHF transmitters, such as 23cm FM ATV.

|                |       |       |       |      |        |
|----------------|-------|-------|-------|------|--------|
| TUNING VOLTAGE | 1 V   | 2 V   | 4 V   | 10 V | 20 V   |
| CAPACITANCE    | 18 pF | 14 pF | 10 pF | 5 pF | 2.5 pF |

25g reel 0.4 mm (27 swg/26 awg) enamel copper wire \$1



## MORE EX-EQUIPMENT ITEMS

Colpitts crystal oscillator on double-sided PCB, complete with 65.136 MHz, 67.568 MHz, 68.784 MHz or 69.392 MHz overtone crystal \$2.50

Siemens + Matsushita surface mount inductors. 1210 body size: 3.2 mm L, 2.5 mm W, 1.9 mm H  
22, 220, 470, 560 nH. 1, 2.2, 470 uH 50c each, 10 for \$4

Surface mount ferrite chokes. Body size 9 mm L, 3 mm W, 3 mm H. 2 for 30c, 8 for \$1

Surface mount resistors, 0805 size, mixed bag - our choice of values - usually includes a selection consisting of zero ohm and 10 ohm to 100 k ohm. 25 for \$1

Surface mount tantalum capacitors 2.2 uF 6 V, 22 uF 6 V. 10 for \$1

## WALKIE PRINTED CIRCUIT BOARDS (undrilled)

Walkie transmit board. Use 12 MHz or 36 MHz crystal to multiply to 144 MHz. \$10

Walkie receive board. Use 45 MHz crystal to mix 144 MHz down to 10.7 MHz. \$10

9027 kHz close tolerance professional crystal, in resistance weld HC51/U holder (same size as HC6/U). Available in matched sets for use in ladder bandpass filters (CW, SSB, AM). \$4

Matched set of six, for 6-pole filter \$20

Matched set of eight, for 8-pole filter \$25

AC mains filter capacitor block - Two class X2 100 nF phase to neutral; two class Y2 4n7 phase to ground and neutral to ground. Made by Evox Rifa. 50c

HSMS-2810 \$2.20

Surface mount Schottky diode, for high efficiency detector, mixer and harmonic multiplier use. 20 V peak inverse voltage. 1.2 pF max junction capacitance.

LOW NOISE TRANSISTOR BFS17A (SURFACE MOUNT) \$1.00

|                              |                   |                       |                  |
|------------------------------|-------------------|-----------------------|------------------|
| Max collector-emitter volts  | 15 V              | Max collector current | 25 mA            |
| Max dissipation              | 300 mW            | Typical current gain  | 75               |
| Typical transition frequency | 2.8 GHz           | Typical noise figure  | 2.5 dB (800 MHz) |
| Typical gain                 | 13.5 dB (800 MHz) |                       |                  |

The BFS17A is suggested for low noise amplification at, up to, 925 MHz, and for oscillator/multipliers at, up to, 2.4 GHz. It has better performance than BF199, BF494, BSX20, BFX89, BFY90, etc.

LOW NOISE TRANSISTOR BFG520 (SURFACE MOUNT) \$1.90

|                              |                                  |                       |               |
|------------------------------|----------------------------------|-----------------------|---------------|
| Max collector-emitter volts  | 15 V                             | Max collector current | 70 mA         |
| Max dissipation              | 300 mW                           | Typical current gain  | 120           |
| Typical transition frequency | 9 GHz                            | Typical gain          | 13 dB (2 GHz) |
| Typical noise figure         | 1.1 dB (900 MHz), 1.9 dB (2 GHz) |                       |               |

The BFG520 is suggested for low noise amplification at, up to, 2.5 GHz, and for oscillator/multiplier at, up to, 5.6 GHz. It has better performance than BFG67, MRF901, BFR91A.

SIEMENS B 62152 A 8 - X17 MINIATURE 2-HOLE FERRITE CORES \$1

For the DJ7VY pre-amplifier, featured in VHF Communications. Two cores required for the 19 dB

gain version, or one core for the 9.5 dB gain version. Original article: 50c  
 What's special about the DJ7VY pre-amplifier? The secret is the ferrite core. By using the correct amount of RF negative feedback: the input SWR improves, without degrading the noise figure (~1.3 dB NF at 146 MHz, ~2.0 dB NF at 440 MHz); the dynamic range is 102 dB; the third order output intercept is +33 dBm. The gain is 19 dB, from 70 MHz to 570 MHz.

1SV128 PIN diode for voltage-controlled, constant impedance, low intermodulation, IF and RF attenuators. See October 2000 Q-Bit. Not suitable for transmit/receive RF switching. \$1 each

920 to 945 MHz isolator 10 watt \$23 4 GHz isolator \$23

12 V 0.5 A power transformer plus 7 V 0.1 A winding \$4

JMS-1 Double-balanced mixer 500 MHz. Surface mount. \$16

JMS-2 Double-balanced mixer 1000 MHz. Surface mount. \$23

TUF-5 Double-balanced mixer 1500 MHz \$28

SRA-149 Double-balanced mixer 500 MHz. High isolation. \$29

|                          |        |                          |        |
|--------------------------|--------|--------------------------|--------|
| MRF660 10 W 440 MHz      | \$14   | 2N3866 1 W 400 MHz       | \$3    |
| BF960 Low Noise UHF FET  | \$1.50 | BFW16A 1 W 400 MHz       | \$3    |
| 836 MHz bandpass filter  | \$2.90 | 962 MHz bandpass filter  | \$2.50 |
| SAA5020 Teletext clock   | \$10   | SAA5050 Teletext ROM     | \$10   |
| LC7385 DTMF RX & crystal | \$16   | 880-990 MHz VCO 404A     | \$12   |
| BAT85 hot carrier diode  | 60c    | 40347V1 40V 1A 8W NPN AF | 50c    |
| 7815 15 volt regulator   | \$1.50 | 2N4920 80V 1A 30W PNP AF | \$1    |

5 pF, 30 pF plastic Rx trimmers 60c 35 pF ceramic UHF Tx trimmers 90c

Jackson Brothers C801 air-variables 25 pF close-spaced or 30 pF wide-spaced \$3

Ceramic Caps and Philips polycarbonate. \$8 per 100. You can mix values to make hundreds

0.82 pF, 1, 1.2, 1.5, 1.8, 2.2, 3.3, 4.7, 10, 18, 22, 27, 33, 47, 68, 220 pF, 1.5 nF. Large disc 100 nF, 220 nF. Philips polycarbonate. 47 nF 250 V, 47n 400V, 300n 63V, 0.47 uF 250 V, 0.47 uF 400 V.

Mini electrolytics. Values can be mixed to make a 100. 100 uF 4 V, 220 uF 4 V, 100 uF 10 V, 4.7 uF 16 V, 2.2 uF 40 V, 47 uF 40 V, 47 uF 63 V. \$6 for 100

Larger electrolytics 1,500 uF 40 V \$2 for 10

2.2 uF and 4.7 uF 35 V bead tantalum 10c

UNELCO METAL CASE MICA UHF TRANSMIT CAPS 27 pF, 33 pF \$1

|                                 |             |   |        |
|---------------------------------|-------------|---|--------|
| Six hole ferrite beads          | 20c         | two hole balun ferrite core             | \$1    |
| 3 mH, 20 mH, 33 mH mini coils   | 50c         | 1 microhenry microchoke                 | 50c    |
| 6-pin DIN plug or socket        | \$2         | BNC cord socket for URM43               | \$2.50 |
| C-type Tee connector F+M+F      | \$4         | C male plug for URM43                   | \$4    |
| 38.9 MHz TV receiver SAW filter | \$4         | 21.4125 MHz 18 kHz 4 pole filter        | \$15   |
| BNC square flange socket        | \$2.50 each | 10 for \$20, 50 for \$80, 100 for \$140 |        |

4.433 MHz, 5.5 MHz, 6.0 MHz, 6.5 MHz Murata bandpass ceramic filter \$3

Parallel resonant crystals 4.000 MHz, 8.000 MHz, 19.008 MHz, 17.7344 MHz \$3

Series resonant crystals:

|  |        |
|--|--------|
| 65.000 MHz, 65.136 MHz, 67.568 MHz, 68.784 MHz, 69.392 MHz   | \$4    |
| ELCO (Japan) Switch mode regulated power supply. AC input 85 to 264 Volts. DC Output 5 V at 2 A, +12 V at 0.3 A, -12 V at 0.2 A. Compact size. | \$30   |
| 8-button keyboard for DTMF and similar uses. 2 x 4 matrix.   | \$4    |
| 12-button keyboard for DTMF and similar uses. 3 x 4 matrix.  | \$5    |
| 16-button keyboard kit for DTMF and similar uses. 4 x 4 matrix.  | \$6    |
| Dual 7 segment red LED display 10 mm high common anode   | \$3    |
| L78M09 9 Volt 3 terminal regulator Surface Mount   | \$1.20 |
| TL072 Dual JFET input low noise OP-amp 8 pin case  | \$2.00 |
| LM358 Dual low power drain OP-amp 8 pin case   | 80c    |
| NE5532 Dual bipolar input low noise OP-amp 8 pin case  | \$2.50 |
| NE5534 Single bipolar input low noise OP-amp (better than NE5532) 8 pin case   | \$2    |
| 2SC3358 bipolar 7 GHz fT used in our low-noise pre-amps  | \$3    |
| <b>COMPACT HIGH EFFICIENCY SWITCHING MODE DC POWER SUPPLY</b>  |        |
| 230V AC in. +5 V 3 A, +12 V 0.3 A, -12 V 0.3 A out   | \$50   |
| 12 volt 120 mA DC brushless (electronic drive) fan   | \$20   |
| <b>ELECTRET MICROPHONE INSERTS</b>   |        |
| Loud speakers 100 x 150 (4" x 6") elliptical 4 Ohm 5 Watt usually \$16.00, now   | \$10   |
| Round replacement speakers for Japanese transceivers   | \$5    |
| Frame diameters available 8 ohm: 57 mm, 66 mm, 70 mm. 16 ohm: 77 mm. 32 ohm: 57 mm   |        |
| <b>HIGH PERFORMANCE SHF single gate GaAsFET, MESFET and HEMT</b>   |        |
| FHX05LG Typical 11 dB gain, 0.8 dB NF at 10 GHz.   | \$25   |
| FHX35LG Typical 14 dB gain, 0.6 dB NF at 3.4 GHz.  | \$15   |
| NE76084 Typical 10 dB gain, 0.6 dB NF at 3.4 GHz.  | \$12   |
| ATF-10135 AVANTEK GaAsFET - as used in QST preamps   | \$25   |
| uPB585G Divide by 4, Input <500 MHz to >2.5 GHz.   | \$11   |
| <b>RF HYBRID AMPLIFIERS</b>  |        |
| M57714 440 MHz 5 W FM amplifier module   | \$70   |
| M57745 440 MHz 33 W linear amplifier module  | \$123  |
| S-AU11 910 MHz 10 W FM amplifier module  | \$80   |
| M57761 925 MHz 8 W FM amplifier module   | \$80   |
| M57768 910 MHz 13 W FM amplifier module  | \$80   |
| PF0031 920 MHz 6 W linear amplifier module   | \$80   |
| M67715 1300 MHz 2 W linear amplifier module  | \$134  |
| M57762 1300 MHz 10 W linear amplifier module   | \$149  |
| <b>MITSUBISHI PIN DIODE TRANSMIT-RECEIVE ANTENNA SWITCH MODULES</b>  |        |
| MD001H 25W 400-512 MHz   | \$37   |
| MD003 5W 800-940 MHz   | \$23   |
| MD003H 25W 800-940 MHz   | \$34   |

7.488 MHz. Hermetic crystal oscillator. Divide to 3.744 MHz for low cost 80 m transmitter; divide down to data clocks of 38.4 kHz, 19.2 kHz, 9600 Hz, 4800 Hz, 2400 Hz. \$5

10.752 MHz. Voltage Controlled Crystal Oscillator (VCXO). Hermetic case. New. \$10

10 MHz. 5 ppm Temperature Compensated Crystal Oscillator (TCXO). Rakon. Non-hermetic case. Fine frequency trimmer. Requires 5 V at 1 mA; gives 1.6 V p-p AC-coupled output. Ideal for direct drive of 74HCxxx ICs. Removed from equipment and tested. \$10

HT/RF feed through ceramic insulator - for passing high voltages through metal or insulated sheet up to about 7 mm thickness. Complete with threaded rod, washers and nuts. \$1

Air-variable capacitor - receive or low power transmit - various 30 pF, 60 pF maximum. Limited numbers of each type, please give substitute required. \$1

Air-variable capacitor - butterfly type push-pull VHF transmitting type. \$5

Compression mica broadcast padder. \$1

50 ohm N female connectors for IEC50-3-3 cable. \$5

2-cell AA-size battery holder. 20c

#### ECONOMY SWITCH-MODE POWER SUPPLY \$10

Outputs: 5 Volt at 1.2 Amp, 12 Volt at 0.6 Amp, 20 Volt at 0.2 Amp, 32 Volt at 26 mA.

Input: 230 Volt AC nominal Made by Speedy-Tech Singapore

VHF/UHF SWR bridge PCB, with standard modifications. \$15

With custom modifications for ATV, as described in January 2000 Q-Bit. \$20

Ferrite rod. VHF grade ferrite rod. 8 mm diameter x 25 mm long. 50c

#### RF POWER TRANSISTORS - carefully removed from equipment, and tested:

2N3733 VHF/UHF TO-60 case. 1 W input gives 12 W output at 146 MHz, and 6 W output at 440 MHz; 2 W input gives 8 W output at 440 MHz

Above performance at 28 Volts DC - reduced output at 13.6 V. \$5

2N5643 40 W RF out, 100 to 200 MHz, 28 V DC, 2 W drive at 100 MHz, 3 W drive at 144 MHz.

Reduced output at 13.8 V DC. \$10

PT9782A 100 W RF out, 30 to 200 MHz, Controlled Q, 28 V DC, 4 W drive at 50 MHz, 8 W drive at 144 MHz. Reduced output at 13.8 V DC. Similar to MRF317. \$20

KCK VHF transmit grade disc ceramics. Ex equipment. 10 pF, 22 pF, 33 pF. Plenty of 10 pF, and 22 pF; limited supplies of 33 pF. 20c

Dual circulator. N female input, N male output. 50 W power rating. Requires one dummy load, equal in power rating to maximum expected reflection from the antenna.

775 to 1000 MHz 0.3 dB forward loss, 50 dB reverse loss at 925 MHz. \$40

Miniature step-down switching regulator, 50 x 50 x 10 mm. Input: 8 V to 28 V. Output: 5 V.

Current limit at about 1.5 A. Any number can be paralleled for more output current. \$10

#### RG-142 COAXIAL CABLE WITH CONNECTORS - SMALL NUMBERS REMAINING

50 ohm silver plated inner and outer, PTFE dielectric, most have connectors fitted both ends. Please specify alternatives from the following list as some types and lengths are in short supply.

N male to TNC male - 85 mm, 190 mm, 200 mm long \$5

TNC male to TNC male 110 mm long \$5

BNC female bulkhead to bare end 180 mm long \$3

SECONDHAND EPROMs – REMOVED FROM EQUIPMENT UV erased

2716 plentiful \$1

27128, 27256 very small quantities remaining \$1

27C256 plentiful \$2

PLCC package: 27C010, 27C101, 27C201 medium quantities \$4

IERC Large TO220 Heatsinks 50c

IERC Large TO3 Heatsinks \$1

Push-on TO5 heat sinks 50c

Instrument knobs - for 6 mm shaft \$1

Compression mica trimmers. Ideal for VHF and UHF transmitters. Three types:

404 (6 to 70 pF) limited quantities \$2

405 (10 to 80 pF) limited quantities \$2

4004 (6 to 60 pF) plentiful \$2

Murata receive grade disc ceramic capacitors. 1.5 nF. 20 for \$1