

Editors Note:

Welcome to the March bulletin. Please forgive my ramblings in the last issue, but sometimes it is good to have a diversion from the usual routine.

This month we also continue with the development of the new remote keyer. We will be discussing the formulation and application of the input stages. I have not been able to come up with a suitable name for the keyer. So if any member would like to make a suggestion please let me know.

Of interest to all members is the annual field day which is scheduled for the 1st of April (No its not a joke we will be having one - honest). The details have been published later in the bulletin. It is hoped that all members will participate. If not to score points perhaps get on the air and make contact with those members who are participating in the competition. Why not have a chat to other members on an adjacent channel.

Club Activities:

SIXTH WA VHF/UHF/SHF FIELD DAY

Sunday, 1 April, 2001.

1. The contest is open to all individual licensed amateurs. All bands above 50 MHz, and all licensed modes, may be used.

2. Points are scored for two way contacts between pairs of stations, at least one of which must be portable, and at least one of which must be in the VK6 call area. (Repeater contacts do not count towards the score, but may be used for liaison purposes.) For the purposes of the contest, a portable station is one which is being operated away from the usual station address and which is not powered from the AC mains. Mobile stations (including permanently mobile) count as portable, as does the

VHF Group station VK6WH.

3. CONTEST TIME: 1030-1500 WST (0230Z-0700Z) on Sunday, 1 April, 2001.

The contest is divided into 2 intervals of 2 hours each, 1030-1230 WST and 1300-1500 WST. These are separated by a half hour (1230-1300 WST) for lunch. Two stations may work each other for a scoring contact once on each band in each 2 hour interval.

4. The contest exchange will consist of a signal report, 3 digit serial number starting from 001, and the station location.

5. Each scoring monoband contact is worth 1 point times the following multipliers:

DISTANCE MULTIPLIER:

One point for each 25km or part thereof, up to a maximum of 15 points.

Up to (km)	25	50	75	100	125	150	175	200	225	250
Multiplier	1	2	3	4	5	6	7	8	9	10
Up to (km)	275	300	325	350	350+					
Multiplier	11	12	13	14	15					

BAND MULTIPLIER:

Nom. freq. MHz	50	144	432	1296	2400	3400	5760	10368
Multiplier	3	2	2	5	8	8	8	8
Nom. freq. MHz	24000		47000 & up					
Multiplier	12		16					

PORTABLE TO PORTABLE MULTIPLIER: 2

PORTABLE TO COUNTRY FIXED STATION MULTIPLIER: 2

Contacts count double if both stations are portable, or if one is portable and the other is a country fixed station. A country station is one which is at least 100km from GPO Perth.

NOVICE STATION MULTIPLIER: 4

Contacts with Limited Novice and Novice stations count quadruple.

6. SECTIONS: 1. Portable (All band), 2. Portable (Single Band),
3. Fixed (All band), 4. Novice.

All portable contestants should submit with their logs, a tally of their score for each band (for section 2) and their total score (for section 1).

7. GROUP OPERATION: There is no section for club stations, but contacts with club stations count towards the scores of individual amateurs entering sections 1 to 4. Groups of up to 3 licensed amateurs may pool their equipment, and operate from a single portable site under their own individual call signs. (An exception is made for VK6WH, which is allowed multiple operators, and can enter the portable section even if operated from Wireless Hill.)

The use of multiple call signs by a single individual is not allowed.

8. CROSSBAND CONTACTS are permitted, but only score in special circumstances. If two stations work crossband from band A to some other band (B, say), but do *not* have a two way contact on band A in the relevant 2 hour time period, then *once, and only once*, in that period, each may claim towards their band A (and total) score *half* the points that would have resulted from a band A contact. This means that if they do *not* have a two way contact on band B in the time period, they may also claim (once

only) *half* the points that would have resulted from a band B contact.

9. LOGS should be sent by Monday, 23 April, 2001 (April Meeting night) to:

CONTEST MANAGER, WEST AUSTRALIAN VHF GROUP (INC),

PO BOX 189 APPECROSS, W.A. 6953

The Contest Manager's decisions and interpretation of the rules are final.

Up to km	25	50	75	100	125	150	175	200	225	250
50MHz	3	6	9	12	15	18	21	24	27	30
144/432	2	4	6	8	10	12	14	16	18	20
1296MHz	5	10	15	20	25	30	35	40	45	50
2-10GHz	8	16	24	32	40	48	56	64	72	80
24GHz	12	24	36	48	60	72	84	96	108	120
47GHz & higher	16	32	48	64	80	96	112	128	144	160

Up to km	275	300	325	350	350+
50MHz	33	36	39	42	45
144/432	22	24	26	28	30
1296MHz	55	60	65	70	75
2-10GHz	88	96	104	112	120
24GHz	132	144	156	168	180
47GHz & higher	176	192	208	224	240

REMEMBER: Contacts between a portable station, and a portable or country fixed station, count double. Contacts with Novice stations count quadruple.

If things get a bit quiet, some suggested frequencies to try are:

SSB: 50.175, 144.120, 432.120, 1296.120

FM: 52.525, 146.5, 434.0, 439.0

Liaison: 144.175 (SSB), 432.175 (SSB), 145.375 (FM)

Letters to the Editor:

I have received several e-mails from Christine Bastin VK6ZLZ depicting various internet sites to visit. These have been correlated below.

<http://www.heavens-above.com/>

This shows a site where you can select your current position by entering the country and city. The site then allows you to select a range of orbiting body data that will appear over your location. The data includes a 24hr prediction of amateur satellites, MIRs current location, planetary probes and even celestial bodies including the planets. This is a very interesting site not only for amateur but for budding astronomers.

<http://www.qsl.net/g3zhi>

This has the web page for G3ZHI. This also has additional links to other amateur sites.

<http://spaceflight.nasa.gov/realdata/tracking/index.html>

This contains realtime information as to the current location of the international space station. There are additional tabs for links to other NASA sites covering human space flight.

http://spaceflight.nasa.gov/realdata/sightings/SSapplications/Post/SightingData/sighting_index.html

This site calculates the predicted passes of the international space station with reference to the selected country and city.

Wally VK6KZ also gave me a list of contacts that were received in Broome by VK6JQ. This will hopefully give scope to the range of contacts that can be achieved from out northern areas.

Log for the Bulletin
Wally

6 Months of 50 MHz IN
Broome - VK6JQ

25 countries of the 41 heard
were contacted as listed below.

The following list of countries are in the order of having been heard in Broome between April and September 2000. The numbers in the columns represent the total days that signals from stations or beacons were heard that month.

April	May	June	July	Aug	Sept
H44	JA	LIR	SP	JA	JY
JA	9M2	EY	OH	BV	JA
EY	9N7	4W6	RU		YB
5B4	KH6	UN	JA		9M2
YB	W	DL			VR2
KH6	V73	SP			EY
FK8	i				9V1
ZL					T88
T88					
JY					
BV					

Country	Apr	May	June	July	Aug	Sept
H44	3					
JA	23	26	12	13	23	28
4X	2					
EY	8	2	4	2	1	4
HL	7	2	1	3	4	
5B4	5	1				
ZL	4					
KH6	7	5				
F05	3					
V73	1	1				
9M2	4	7	1	3	8	15
YB	1					1
JY	4					2
FK8	1					
T88	1					3
VR2	4	5	1	1	7	8
BA	1					1
BV	2				2	3
9V1	1	1				7
9H1	1					
YJ	1					
YV	1					
4W6	1	1	16	12		
LIR	2	2	1			
9N7	2					
4S7	1					
W	1			1		
VE	1					
i	2	1				
R	1			1		
SP	1		1	2		
9M6			1		4	3
UN			2	1		
LZ			1			
DL			1			
G3			1			
PA			1			
OH					1	
SM					1	
P29					1	
9M2						1
No. of COUNTRIES HEARD	23	18	15	13	8	12

The DX for Oct./Nov is looking good, as on Sunday 1st Oct, between 23.30 and 13.00, I monitored the band for a total of 8 hours and heard 15 countries as follows
JA 4W6UN/bcn HLIKTX
KGM10/KH6 Y1IAU S59A
9A4DA SVIDH/9 5B4AGM 4X1IF
JY9NX BV2DP VR2HAM 9V1JA
9M2/J11ETU/bcn.

Of those listed, I worked
JABOW KGM10/KH6 S59A 5B4AGM
JY9NX, all of whom replied to my 10 watt output CQ calls with VR2HAM being the only station that I answered his CQ.
Good DX'ing to all for the next 6 months. Bill, VK6JQ

ALL ABOVE REDLINE SENT
TO A.R. MAGAZINE

DETAILS OF 1st OCT.

JF9IWD/9	23.48 UTC
4W6UN/bcn	23.58 "
JABOW	00.17 "
KGM10/KH6	00.23 "
HLI KTX	00.50 "
KH7T	00.51 "
KH6HME/bcn	01.17 "
KH6HI/bcn	04.30 "
KH6HME/bcn	06.23 "
Y1IAU	07.45 "
S59A	07.53 "
9A4DA	07.57 "
SVIDH/9	08.03 "
5B4AGM	09.35 "
4X1IF	10.02 "
JAGYG	10.12 "
JY9NX	10.48 "
BV2DP	10.58 "
VR2HAM	11.56 "
VR2XMT	12.33 "
9M2/J11ETU/bcn	12.34 "
9V1JA	12.48 "

DETAILS OF 15th OCT.

CONTEST STN.	TIME
YLIJN	07.07 U
DL7AY	07.08 I
1K21AC	07.12
SP2MK6	07.20
SP2EBQ	07.24
SP2BNJ	07.29
OK1DPU	07.36
LY2BA	07.42
S51UP	07.47
SP6ASD	07.53
3P7EXY	08.00
SP9HWY	08.07
UT1PA	08.15
SP3RNZ	08.18
G3ZYY	08.24
GØRRJ	08.29
G4UPS	08.36
G4HBA	08.43
EYBCA	08.48
G8BCG/P	08.49
UY1HY	08.58
UXØCQ	09.01
UY1HY	09.06
UXØCQ	09.38
JA6UUI	09.48

Technical Article:

REMOTE KEYSER

This month we will discuss the input section of the keyer. As was mentioned in previous articles it is all to easy to try and design a circuit that will try to be all things to all men. We are attempting to design a circuit which is as versatile a possible without losing track of our objective. Our circuit is designed such that the configuration may be changed by omitting components and adding jumpers between various blocks.

To begin we have assumed the available power supply is +12V. To allow for sufficient regulator overhead above the drop out voltage we have assumed an operating voltage for the analogue circuit of +8V. As secondary reference voltage of +5V may also be used if required. Otherwise U5 may be omitted and R1 set to 0 ohms.

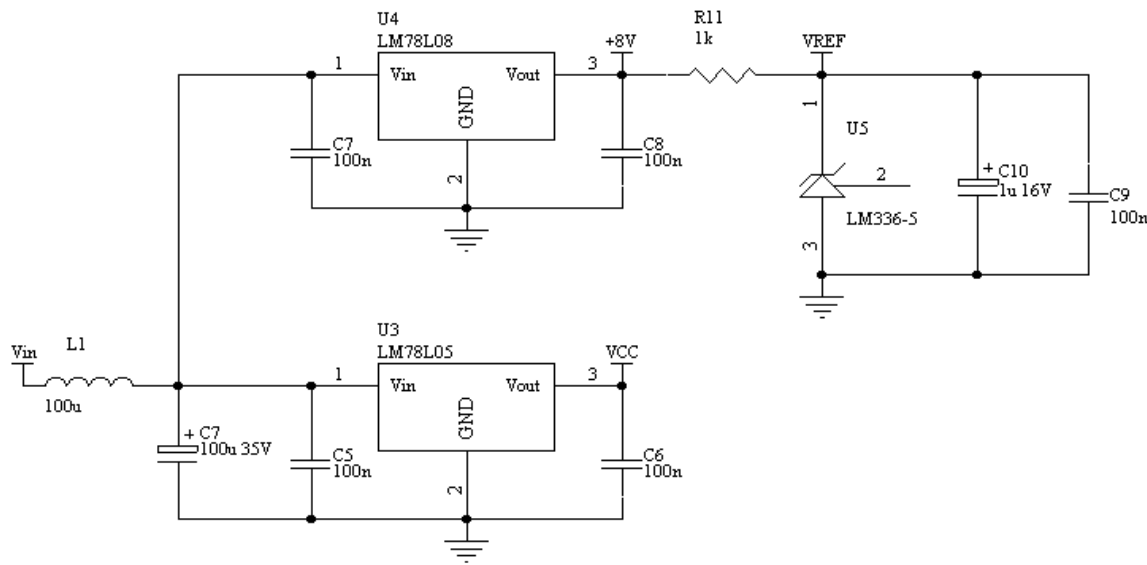


Figure 1

To make an 8 channel system we have the option of using semiconductors such as op amps and comparators that have either single circuits or up to 4 devices each internally. Using single circuits increases the size of the final PCB. Using multiple circuit devices does not substantially increase the cost as long as we use only the additional passive components as required. Dependent on the application, there may be cases where we only wish to use portions of the circuit. This configuration will allow us to activate those portions as required.

Referring to Figure 2, The signal we are trying to measure enters a Pi filter FILT1. This is to reduce any RF interference entering the circuit. Where a channel is not required, this component may be omitted.

The signal then enters a circuit which can be configured in several different ways. Varying the values of R1 and C3 allows us to provide a single pole low pass filter. Adding R2 provides a divider network to reduce any large signals to a level suitable for our circuit. D1 acts as input protection, clamping the signal level such that the devices are not overloaded.

Where a channel is not required, R1 and C3 may be omitted and R2 set to a short circuit such that the inputs to the remainder of the circuit is not floating.

Once the signal has passed the divider network we have the choice of either routing it to the amplifier U1A or directly to a comparator U2A. Shorting pins 1 and 2 of H1 will send the signal to U1A. Shorting pins 2 and 3 of H1 will send the signal to U2A.

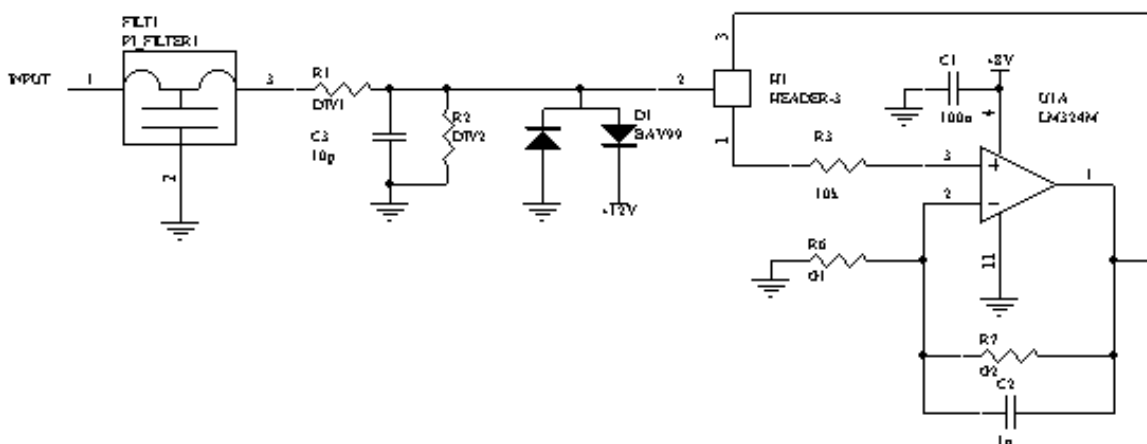


Figure 2

Referring now to Figure 3. U1A is configured as a non inverting amplifier. The gain of the amplifier is set by the

resistor ratio of R7 and R6 such that;

$$\text{Gain} = 1 + (R7/R6)$$

By omitting R6 the circuit acts as a unity gain buffer. C2 can be used to reduce the gain at high frequencies.

Where a channel is not required, R6 may be omitted.

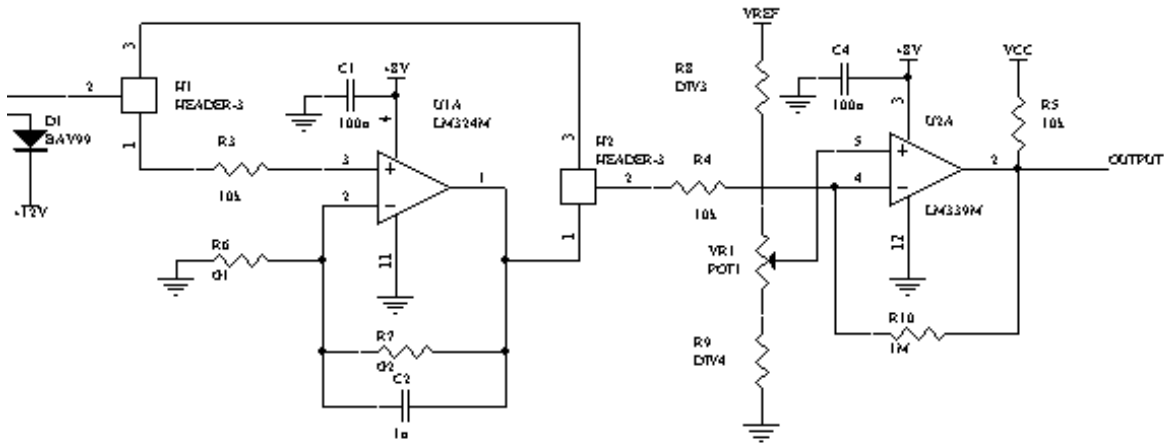


Figure 3

By shorting pins 1 and 2 on H2 the comparator U2A accepts its signal from the amplifier circuit. By shorting pins 2 and 3 the comparator accepts the signal from the divider network.

R4 and R10 provide a hysteresis circuit which prevents signals around the trigger point from oscillating the output. The ratio of R8, R9 and VR1 sets the trigger point for the comparator. The resistive divider may be powered by a reference voltage, which in this case is a precision reference of 5V. If this sort of accuracy is not required you can tie this point to the output of the 8V regulator.

As this type of comparator has an open collector output, R5 is used to pull-up to a 5V rail suitable for driving a digital input on the processor.

[The End]