

Newsletter
October
2012

Kingston Amateur Radio Club

2012 Executive



Kingston Amateur News

President: Terry Barrett, VA3KLG
pres at ve3kbr.com

Vice-Pres: Steve Cutway, VE3KC
vicepres at ve3kbr.com

Treasurer: David Sellick, VE3DZE
treas at ve3kbr.com

Secretary: Assaf Shool, VA3PCI
sec at ve3kbr.com

Past-Pres: Steve Cutway, VE3KC
pastpres at ve3kbr.com

2012 COMMITTEE CHAIRS:
Two Metre Net Manager:
VE3KC Steve Cutway
netmanager at ve3kbr.com

Newsletter Editor:
VA3PCI Assaf Shool
news at ve3kbr.com

168 McMichael Street
Kingston, Ontario K7M 1N6 Canada
<http://www.ve3kbr.com>

VE3KAR Clarendon Stn
147.090 (+) MHz

VE3KER Kingston packet
node
145.010 MHz simplex



VE3KBR Kingston
146.940(-) MHz
151.4Hz Tone
IRLP 2750

VE3UEL-1 Hartington APRS
node
144.390 MHz

MEMBER ARTICLE

VHF SDR on the CHEAP

Being true to **my** ham values, I prefer to not be an appliance operator, but to always be looking for a way that I can build what I need by repurposing something or building it myself!

A few months ago, while looking on the internet for new ideas, I came across several references to something called RTL-SDR. This wonder unit was being heralded as an inexpensive VHF SDR!

For a person like me, this meets a few requirements to get my attention.

First it is a new type of radio to play with.

Second, it is computer related.

Third, it is not mainstream yet.

Fourth, and most importantly, it is CHEAP!

I've thought about getting into SDR (software defined radio) for some time now, but never felt like spending the money to tinker with it.

When I saw that I could download a free software package and connect a repurposed European digital tv USB dongle that cost less than \$20 to my computer and get a display of the spectrum around 2 mhz wide, with all mode capability, I was hooked.

The original units that were being shipped used a Realtek 2832U chip with an E4000 tuner chip which could tune from about 50mhz to over 1200 mhz.

The newer units use the Realtek 2832U with a different tuner chip which tunes from 47mhz to around 900mhz. This is the version I got and it seems any unit that uses the 2832U chip can be used, although the specs change.

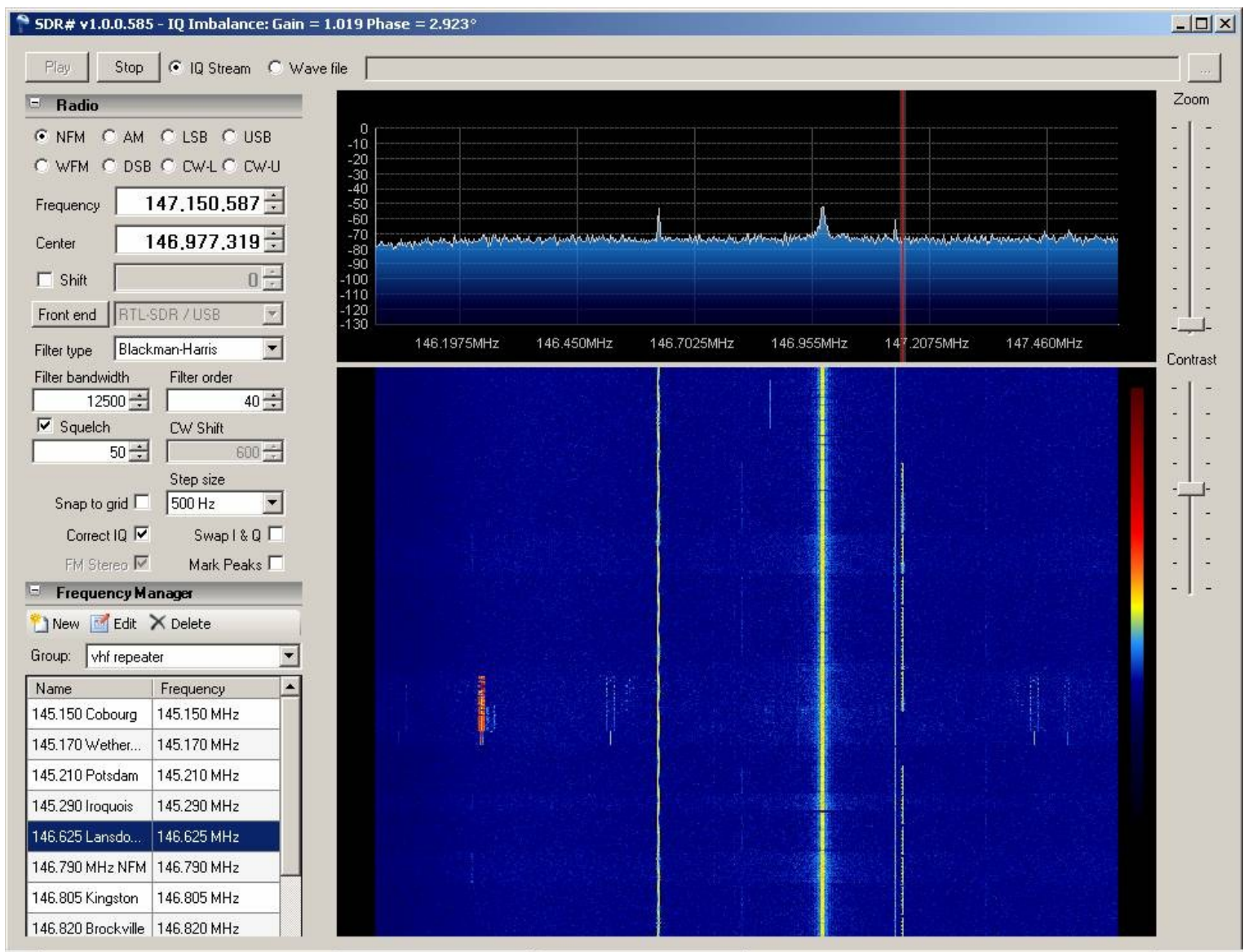
The units that I purchased were the EZCAP USB 2.0 DVB-T/DAB/FM dongle from Deal Extreme. At the time, it was less than \$20 delivered, but I have seen them recently around \$23.

I was surprised to have the units I ordered in the mailbox within 6 days from China!

Once I had my new toys in hand, I started by popping the case and replacing the odd looking antenna connector with a chassis mount BNC that I had in the junkbox. The original looks like an odd RCA connector and the antenna included with the unit is junk. Even the "coax" is nothing more than a couple of wires in a round plastic tube!

For \$20, I was not expecting an Icom or even an Alinco receiver, but over the past few months, I have been surprised at how good it is!

I can receive Brockville, Syracuse and even the Napanee simplex guys quite well on 2m, several 440 repeaters in northern New York including Rochester with no problem and the waterfall is full during inversions using my homebrew 2m/440 J pole on the roof. I have also hooked it to my satellite yagis to listen to the the ISS and sideband satellites on 2m and 70cm. The attached screenshot shows conversations on the Lansdowne repeater (146.625) and the Fulton repeater (147.150) as well as some intermod received during a quiet spell. The bright trace just off centre is the centre frequency which happens on most SDRs. The only reason it is off centre is that I zoomed in slightly for this shot. This shows just over 1.5mhz of the band!



There is an excellent tutorial on implementing the RTL-SDR at <http://rtlsdr.org/softwarewindows>. This is updated regularly and contains any changes to the installation process. The software was originally written for Linux and ported to Windows.

Next I downloaded SDR#, from <http://sdrsharp.com/>. If you buy one, I suggest you download the continuous integration package. Since I downloaded the first time, they have added a few new features including a frequency manager for your bookmarked frequencies.

One of the changes in the newer packages is the exclusion of a DLL file that you need to download from OSMOCOM at <http://sdr.osmocom.org/trac/raw-attachment/wiki/rtl-sdr/RelWithDebInfo.zip>. There are two files necessary from the zip file. These are mentioned in the tutorial mentioned above.

The other program you will need is Zadig. This is used the first time you plug the dongle in to load the driver necessary to use it as a SDR. This is available from <http://sourceforge.net/projects/libwidi/files/zadig/>.

While I could go into the installation process, it is better to look at the tutorial, which has changed drastically from the procedure I used 2 months ago.

Basically, you plug the dongle in to the computer, hook up the antenna, run zadig to change the driver to a WinUSB driver, unzip SDR# and load the required files from OSMOCOM, add the RTL drivers from rtl-sdr.org to the folder. Then you run SDR#, select RTL-SDR/USB as the front end, hit play and start playing with the new toy. One thing I would suggest is that you tune in a known frequency, like 146.805 and use the Frequency Correction setting in the Front End selection to tune the repeater in properly. This will calibrate the software to the unit. Neither of my units use the same correction factor. One is at 33ppm and the other 18ppm.

Of course, there is always a down side! As with any inexpensive wide band equipment, the dongle has a front-end that you could drive a truck through! Being in Strathcona Park, I am often plagued by intermod on my Kenwood and the Yaesu equipment. This unit is constantly hammered on VHF with the pagers and even the local FM broadcasters. UHF is better and I have found that if I play with the AGC settings I can reduce the interference to a tolerable level. If you are outside the city or farther away from the action than I am, this will not be a big problem for you.

This little gem certainly fit the bill for me. It is small, sensitive, accurate and CHEAP. I now have two all mode receivers that I can monitor almost anything that I want to while keeping my all mode transceivers free!

The next phase of the adventure involves a free software package (called DSD) to decode P25 transmissions. If only I had the passphrase for the Kingston police system!

This little toy is going to provide hours of enjoyment over the winter, and once I have completed work on some bandpass filtering for the front end, I am hoping to incorporate one into one of my FT-817s as a pan adapter.

73

Tom

VE3TEF

THE YORK REGION AMATEUR RADIO CLUB, INC.

IS PROUD TO PRESENT

THE 36th ANNUAL YORK REGION HAMFEST

THE PREMIER INDOOR AMATEUR RADIO
& ELECTRONICS EVENT IN CANADA

Saturday, November 03, 2012

**Markham Fairgrounds, Markham, ON
10801 McCowan Rd at Elgin Mills Rd E
Lat: 43° 55' 29"N - Long: 79° 17' 39" W**

Admission : \$7:00 per person, with an "express lane" for those with exact change. Commencing at 0730 an indoor ticket booth/gathering place/refreshment area opens for the general public – no freezing while waiting in line! Come join your friends for breakfast --- free coffee, with muffins and donuts available for purchase! Doors open to the sales area for the general public at 0900.

Talk-in: VE3YRA 145.350 (-)

D-STAR: 145.670 Direct

Venue: Vendors galore in two separate halls --- Lots of space for socializing in a separate area --- Wide aisles for scooters and wheelchairs --- Exhibits and Demonstrations --- Free Parking --- Great Door Prizes --- Refreshments --- Grand Prizes --- DXCC, WAS & VUCC Card Checking --- Licensing Examinations (register with Hamfest Co-ordinator prior to Hamfest to ensure we bring enough exams.)

Vendor Information: Vendors can access the site commencing 06:30. All tables are 8 ft. Reserve your space early. First come, first served. Questions and further information? Go to:

Email: hamfest@yrarc.com Web Site: www.yrarc.com

MEETING MINUTES

**MINUTES OF MEETING OF
THE KINGSTON AMATEUR RADIO CLUB, INC
HELD ON WEDNESDAY, 5 SEP 2012
AT SMITTY'S**

The Kingston Amateur Radio Club meeting was called to order at 7:00PM by our president Terry VA3KLG.

1. The members present introduced themselves. There were 19 members in attendance.

2. Additions to the Agenda:

a) Meeting Minutes: Steve VE3KC has said meeting minutes in the last newsletter should have indicated date as June 9th, and the correct spelling Clarindon.

3. **Minutes:** Assaf VA3PCI motioned to accept minutes as read, seconded by Roy VE3VJF.

4. **September Treasurer's Report:** In the newsletter.

5. Business Arising from the Minutes:

a) **Hamfest:** Reminder that the hamfast will be on Nov 17th at the C&E Museum. Doug VE3FFR has asked for volunteers to help with setup.

6. New Business:

a) Repeater Committee: There are no members currently in the committee. Terry is looking for volunteers.

b) Repeater ID: Phil VE3HST has identified the CW ID transmitting over voice traffic, Steve VE3KC indicated this is normal. Phil suggested the possibility of reducing the CW ID modulation level.

7. Reports:

a) **Net Manager:** See the newsletter for report. Steve said he is seeking additional controllers to fill in. 2 members volunteered.

b) **Web Page:** Chip VA3KGB has added Google Calendar to it, exec have read/write access to make changes to it.

c) **EMCOMM:** George VE3SIQ reported they have activated 2 light houses and 2 field day sites this year: one on the ice breaker Alexander Henry.

d) **ARES:** There are major changes to the organization in the Loyalist district. Bill Mulligan VA3WOW has resigned and George VE3SIQ has been appointed as disticted DEC.

e) **Kingston ARES:** Roy VE3VJF has no report for this month.

f) **Newsletter:** Assaf VA3PCI reminded everyone that articles for the newsletter should be sent to news@ve3kbr.com a week before the monthly meeting and thanks everyone for articles that have been submitted.

g) **CFARS:** Chip VA3KGB reports CFARS has been active all summer and still maintained east-to-west nets during poor band conditions.

h) **JOTA:** Coming up in October. Terry is looking for operators in Otter Lake, and he going to try to get the station in the museum working as well if the antenna can be repaired. He is looking for volunteers to man the stations.

8. **Date of next meeting:** October 3, 2012, 7PM at Smitty's.

9. There was a 50/50 draw.

Presentation: Assaf gave an interesting and informative presentation on the Arduino.

Assaf VA3PCI

Secretary

Kingston Amateur Radio Club Inc.

AGENDA - 3 OCT 2012

1. Members and Guests introduce themselves
2. Additions to the Agenda
3. Minutes of the last Meeting: errors / omissions / approval (Assaf VA3PCI)
4. Treasurer's Report (David VE3DZE)
5. Business arising from the Minutes:
 - a.
 - b.
6. New Business:
 - a.
 - b.
7. Reports:
 - a. President (Terry VA3KLG)
 - b. Repeaters (Chip VA3KGB)
 - c. RAC (See RAC bulletins via the Free List.)
 - d. Net Manager (Steve VE3KC)
 - e. Web Page (Chip VA3KGB)
 - f. KARC Newsletter (Assaf VA3PCI)
 - g. Frontenac EmComm Group (David VE3DZE)
 - h. Kingston ARES
 - i. CFARS (Les VE3KFS)
 - j. "Hearts and Flowers"
 - k. Other Reports
8. Date of next meeting: 07 November 2012
9. 50 / 50 Draw
10. Adjournment

FINANCIAL REPORT

Kingston Amateur Radio Club
Financial Statement
September 25, 2012

Income	
Deposits	33.50
<hr/>	
Total Income	33.50
Expenses	
	0.00
<hr/>	
Total Expenses	0.00
Overall Total	33.50
Bank Balance	
Co-Operation Plus Account	\$4882.38
Dividend Savings	\$23.07
Equity Shares	\$216.44

NET CONTROL SCHEDULE

Month	Date	Controller
October	2	VE3JPW Warren
October	9	VE3KC Steve
October	16	VE3NFU Bill
October	23	VA3PCI Assaf
October	30	VE3VJF Roy
November	6	VE3CAK John
November	13	VE3DZE David
November	20	VE3JPW Warren
November	27	VE3KC Steve
December	4	VE3NFU Bill
December	11	VA3PCI Assaf
December	18	VE3VJF Roy

NET CONTROL SCRIPT

KARC Tuesday night net Control Script

Revised March 7, 2011

Good evening. This is [callsign], net control station for the Kingston Amateur Radio Club's Tuesday night net. My name is ----.

The Kingston Amateur Radio Club Tuesday night net is an informal net that meets at 1930 hours every Tuesday evening on the Kingston repeater, VE3KBR, 146.940 MHz, with a 151.4 Hz tone required on the input, 146.340 MHz. We welcome participation by all amateurs.

Before continuing, is there any emergency or priority traffic? Please call now.

The purpose of the net is to take check-ins; to inform you of KARC activities; to provide news from other radio clubs and news of interest to Radio Amateurs. Information about KARC may be found on the web site (www.ve3kbr.com) or by contacting any of our club executive members.

I will take check-ins giving priority to mobiles, portables and stations checking in via EchoLink or IRLP. When checking in, please give your call sign phonetically, your name and location, and indicate whether you have any traffic or announcements for the net.

Are there any stations using EchoLink or IRLP wishing to check in? Please call now.

Are there any mobiles wishing to check in? Please call now.

Are there any portables wishing to check in? Please call now.

Are there any base stations wishing to check in? Please call now.

Trivia Time

Here's tonight's trivia question(s).

Swap Shop

Are there any items for the swap shop?

Closing

Are there any additional check-ins or announcements before I end the net?

That concludes this evening's Kingston Amateur Radio Club Tuesday night net. Thank you for participating. We had [number] check-ins this evening. 73. This is [callsign] returning the repeater to normal amateur use.