(Club management from page 26)

teract before the meeting and during breaks.

However, saving time for "meetings after the meeting" helps more specialised groups meet somewhere else.

In one of my clubs, the DXers in the group left the regular meeting after it was over, went to the local pizza place five blocks away and had some pizza, beer and conversation. While it was great to be in the meeting with everyone, it was also great to be able to socialize with those that do what you do in the hobby.

How many of your clubs have meetings after the meeting?

Bloemfontein Amateur Radio Club

Bloemfontein Amateurradioklub

An affiliated Club of the South African Radio League



http://www.zs4bfn.co.za

Vergader die laaste Saterdag van elke maand om 14:00 (winter) en 16:00 (somer) by die Klubhuis te CBC-skool in Waverleyweg

The Club bulletin is broadcast on Monday evenings at 19:30 on the 145,600 MHz Naval Hill Repeater

145,600 MHz Naval Hill (88,5 Hz) 145,650 MHz Brandkop

Thé Radio Club in central South Africa

The Zeus ZS-1 SDR Dennis Green, ZS4BS

was contacted by SSB-Electronic GmbH of Lippstadt in Germany to review their Zeus ZS-1 Software Defined Radio. A week later I received a large box via a courier company and thought to myself "this is a big radio!" But inside the box was a smaller box containing the ZS-1 SDR, cables and CD. The ZS-1 measures 240 (L) x 170 (W) x 35 mm (H) and weighs in at 1,2 kg. The radio comes with a USB and a power cable and a CD containing the software and ZS-1 manual. Before the radio arrived, I received an e-mail from SSB Electronic informing me that new software was available on their web site.

The receiver covers 0,3 to 30 MHz and the transmitter covers the 160, 80, 40, 30, 20, 17, 15, 12 and 10 metre bands. The maximum output power of the radio is 15 watts.

(Continued on page 29)

The ZS-1 SDR with a double matchbox to show the size.



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AMATEUR RADIO

TinyTrak 4

APRS Position Encoder & TNC

- TinyTrak3+ features
- DSP Packet Decoding
- Field upgradeability
- KISS and UI TNC firmware
- Supplied built and tested with case
- Compatible with optional NAVI-S-UX-38K4 GPS

Radiometrix

SHX1 Multi Channel Transceiver Module

- Frequency: 144-146 MHz
- 8 parallel or 255 serial channels
- High performance double superhet PLL synthesizer
- 500mW RF power output
- Sensitivity : -118dBm for 12dB SINAD
- Internal Modem Data rate: up to 5kbps
- Size: 67 x 30 x 9mm

SkyTracker APRS Beacon

- Integrated u-blox LEA-6H GPS receiver module
- Radiometrix HX1-144.800 transmitter
- Mitsubishi RA08H1317M RF power module
- Frequency : 144.800 MHz, RF Power : 8W (variable)
- Connectors : SMA-F (TX), MCX-F (GPS)
- Fischer Anodised Aluminium housing
- Optional Active GPS Antenna, 2m Antenna
- Size : 72 x 56 x 24mm



TinyTraka

ww.byonics.c

Radiometrix M()

SHX1-144-5

www.rfdesign.co.za

🔼 021 555 8400 🔀 sales@rfdesign.co.za (The Zeus ZS-1 SDR from page 27)

The radio is connected to the PC or laptop via a USB.2.0 connection and the computer needs to run Windows XP, Vista or Windows 7 x32 or x64 with Intel Core 2 Duo 1,5 GHz with 2 GB RAM and a video card with OpenGL 1,5 or higher.

Well, I downloaded the new software and ZS-1

manual, then connected the power cable to a power supply, connected the USB cable and the antenna. Next I doubled clicked on the Zeus radio icon and watched the screen display on the laptop - as seen below.

I loaded the ZS-1 manual onto my iPad and sat reading the manual and clicking on the buttons on the laptop display to see what happens (yes, read the manual before using!)

The manual (73 pages in PDF format) is will written and easy to understand, with a number of pictures



Rear view of the ZS-1 showing the connectors

and diagrams explaining the operation of the various buttons and sliders. It has a section of 30 pages called 'Software description' where each button, slider and function is explained.

The next section of 11 pages is called "Basic operation' dealing with frequency setting, RIT, XIT and split modes, receiver filter bandwidth, display bandwidth, time machine, CW mode, SSB and AM signal transmis-



The South African Radio League has produced a generic QSL card which you can personalise by writing in your own call sign. The cards are available in batches of 100 at R50 per batch, postage included.

To order, pay the amount for the required number of QSL cards into the SARL bank account - ABSA account no 407 158 8849, branch code 632 005. Then send details of your delivery address and the proof of payment to Willem, ZS6WWJ at



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(The Zeus ZS-1 SDR from page 29)

sion, digital modes and the virtual audio cable (VAC) and audio file transmission.

The third section, 'Software setting' deals with setting the transmit signal, setting audio devices, transceiver frequency correction, setting the CAT interface and operation by MIDI devices.

I tuned around the bands and listened to local and DX stations, but what about transmitting. After wiring up a footswitch. I gave a CQ call and engaged in a QSO. Wow, using my laptop as the front end of an amateur radio transceiver and easier to change settings than my Yaesu FT-897. I did not try out the radio using CW, mainly because my CW is almost non-existent (maybe I should go for lessons!)

What about all the technical details? **Receiver**

Frequency range 0,3 – 30 MHz Sensitivity (MDS, preamp on) -141

dBm Sensitivity (MDS, preamp off) -135

dBm

Blocking level (preamp on) -22 dBm Blocking level (preamp off) -5 dBm

IIP2 (preamp off) 63 dBm

IIP3 (preamp off) 28 dBm

Attenuators 10, 20, 30 dB

Receiver bandwidth up to 100 kHz Viewing bandwidth up to 4 MHz

Transmitter

Frequency range HF amateur bands: 10, 12, 15, 17, 20, 30, 40, 80, 160 m Output power 15 W* Harmonics level -50 dB Non harmonics level -70 dB TX bandwidth up to 10 kHz

* - the maximum output power of the transceiver ZS-1 in the range of 160 m, 80 m, 40 m, 20 m, 17 m, 15 m, 12 m and 10 m is 15 watts, but in the range of 30 m maximum output power is 8 w.

Common characteristics

PC interface (data & control) USB 2.0

Supply voltage 12 – 15 V Supply current (receive) 0,5 A Supply current (transmit) 4 A Size 240 x 170 x 35 mm Weight 1.2 kg

What are my impressions of the ZS-1 SDR?

I like it! I like it very much! It is compact and I think a radio that can be used by the traveller, the IOTA or SOTA activator, for Field Day or just for use in the shack. It will a ideal for that radio amateur that does not have the space for a radio shack. I have on occasions had to decide between the ZS-1 or the Yaesu FT-817, the ZS-1 won a number of times.

It fits into my computer bag with a 12 volt power supply and a dipole antenna (maybe a small antenna tuner as well) and you can operate from anywhere you travel. I had the radio with me on a trip to my daughter's farm in the North West province and she wanted to know why I was connecting the external hard drive to the antenna! I had to explain it is a radio, but I do agree with her, the *(Continued on page 31)* (The Zeus ZS-1 SDR from page 30)

radio does look like an external hard drive next to the laptop. I do not think airport security will be asking you questions!

Power output of 15 watts? You can work the world on 5 watts, so 15 watts is more than enough to getting you chatting to local as well as DX stations.

The price of the Zeus ZS-1 SDR on the web site is \in 1 499.

To find out more about the ZS-1 SDR you can visit the web page at http://www.ssb.de/product_info.php?l anguage=en&info=p3407_Zeus-ZS-1-Transceiver.html

Conclusion

I enjoyed working with the Zeus ZS-1 Software Defined Radio. I like its compact size, looks and functionality.

My thanks to Willi Passmann, DJ6JZ, and SSB-Electronic GmbH for the opportunity to use and review the Zeus ZS-1 SDR. It is appreciated.

The World of VHF, UHF and Microwaves Mike Bosch, ZS2FM

ow to Increase Your Radio Range on VHF During your experiments on 50 MHz and/or 144 MHz you would have noticed that some of the VHF signals were not guite strong enough for communication. You may have wondered how you could improve these signals without going into too great an expense. The answer lies in your beam antenna; if you increase the gain it will improve both your transmitted signal as well as the received signals, the bigger the antenna the better.

There are many designs for beam antennas, but the Yagi has proven to be the most efficient and compact on VHF and UHF. The DL6WU long Yagi series reigned supreme for a long time, but in recent years it has been replaced by the modern low temperature, low noise Yagis. Get into Google and type "LFA Yagis by G0KSC" and numer-January—February 2014 ous Yagi designs for 50 – 432 MHz will appear from low to very high gain. The LFA (Loop Fed Array), OWL (Optimized Wideband Lowimpedance) and OWA (Optimized Wideband Array) Yagis are currently the best designs available, just make your choice and give it a go at building one; it is not that difficult!

Effective Radiated Power

The rule of thumb on VHF, UHF and Microwaves is that the greater the effective radiated power (ERP) the greater the distance covered. The ERP of your station can be controlled by either increasing the transmitting output power (Watts) or the antenna gain (dBi) or both. If you are running a low power transceiver of 25 Watts on 50 MHz or 144 MHz then you could increase your ERP by adding a solid state linear power amplifier with an output between 100 – 400 Watts. On the other hand if you *(Continued on page 32)*