QRP
150mW
QRG
10,140,060
QRV
18-Jul-09 to 29-Jul-09

QTH
Grenada, Caribbean
Ant
Dipole, aimed at Europe

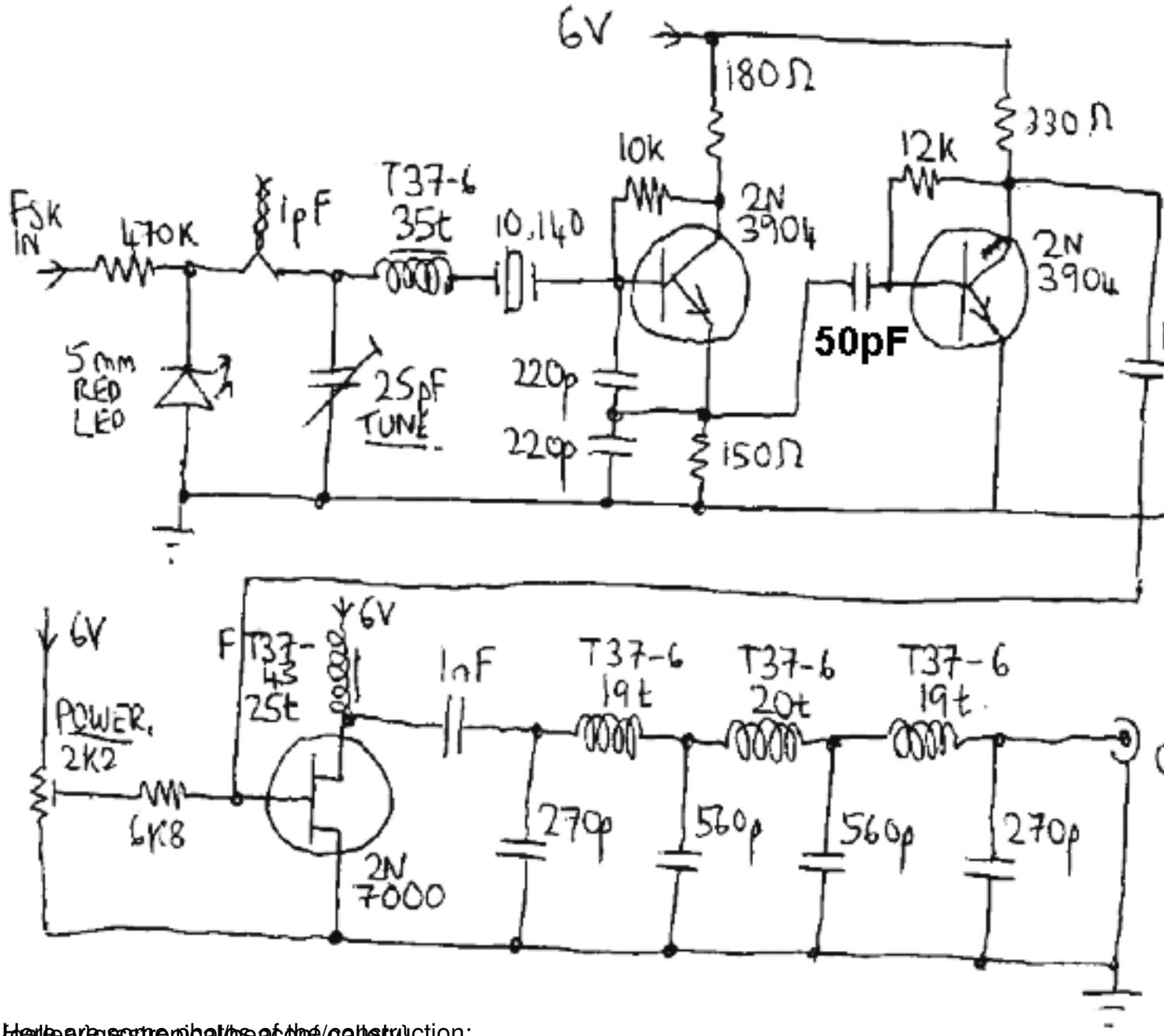
Msg
"UPL" in FSKCW with 4Hz shift
{gallery}qrsstropical/local{/gallery}

I designed, built and debugged this 30m QRSS beacon in 2 hours, from 3 o'clock a.m. until 5 o'clock a.m. in the early hours before we left for the airport. It was a real last minute job! As such the design surely isn't perfect, and the construction a bit messy. I finished it just in time! It is built in a tiny Ozon mint tin and powered by my mobile phone charger: saves having to pack a separate PSU! The local copy of the signal (using my 30m QRSS receiver) is shown above right.

The design:

- 2N3904 Colpitts transistor oscillator
- 2N3904 buffer
- 2N7000 FET "PA"
- 7-element low-pass filter
- Keying via ATtiny13

The ATtiny13 keyer wasn't built for this project, it was built for an earlier project, see my Si570 beacon project
. The circuit diagram:



Here are some photos of the construction:

Aerial and installation

Below are some photos of the antenna installation. The villa in Grenada was on the hill overlooking Grenada's only golf course (9 holes). The antenna was a wire dipole with each leg measured at 7.1m long. At the centre was a balun made of 6 bifilar turns on a T37-43 toroidal core, fed by 5m of 50-ohm coax. The coax was fed directly by the output of the 7-element low pass filter in the transmitter. No ATU and no attempt to tune the dipole by trimming etc.

I used string to suspend the dipole so that the wire would be less likely to get snapped in the windy conditions on the hill. One end of the string was attached to the car port roof and the

other to a bush by the road side. The roof of the villa is tin so would have had some shielding effect. The antenna was only 1m from the roof of the villa and below street level for most of its length, though perhaps 4m above the swimming pool for part of its length. I hope the photos give some better idea that will aid this description.

The orientation of the aerial was such that the perpendicular (and direction of maximum radiation) should point approximately North-East - as judged by where the sun rose and set - and therefore approximately in a European kind of a direction. Given the close proximity of the tin roof and the number of approximations involved I'd be very surprised if the radiation pattern was anything close to dipole theory! One of these photos shows the view from the antenna to the North East so that you can see that even if there was a hill behind, and a tin roof 1m below, at least the view towards Europe was somewhat unobstructed!

{gallery}qrsstropical/antenna{/gallery}

In a couple of those photos you can see how the Ozon mint tin transmitter was taped under the eaves of the house. The red wires go into the house and were taped to my Nokia phone charger, providing 5V with more than enough mA to power this small QRSS signal.

Reports

A sample report from each station who copied the beacon is shown below. Immediately on switch on, I looked at the online grabbers and saw the signal clearly at G8NXD, W1BW then ON5EX. The local time in Grenada was about 20:19 (i.e. about an hour after dusk, by the time the antenna farming was complete). On the grabbers of W1BW you can see the moment of switch on at 00:19 GMT!

{gallery}qrsstropical/g8nxd{/gallery}

Mike G8NXD

The first "report" was when I looked at the grabber of Mike G8NXD and saw the signal clearly there in I
{gallery}qrsstropical/w1bw{/gallery}

Bruce W1BW

Next I looked on the grabber of Bruce W1BW and there was the signal again, no problems to the US

{gallery}qrsstropical/on5ex{/gallery}

Johan ON5EX

The signal was also visible in Belgium JO1NUX on Johan's grabber. Note the switch-on visible at 0019Z!

{gallery}qrsstropical/dl4mgm{/gallery}

Michael DL4MGM

Michael sent a nice shot from Germany, his receiver on LSB with 10.148MHz crystal. Michael writes: "he
Hans and M1CNK are in the center with a strong IQ4FJ/p to the left and I0/N2CQR on the right."

{gallery}qrsstropical/pa3gfe{/gallery}

Martijn PA3GFE

Martiyn writes from The Netherlands: "Nice to see Hans in Grenada visible yesterday evening! At 22.30

{gallery}qrsstropical/wb3anq{/gallery}

Larry WB3ANQ

Larry's report on 20-Jul-09 at 22:52 UT from FM19rc (Pasadena, Maryland). He writes: "Here is one on t

{gallery}qrsstropical/pa1gsj{/gallery}

Joachim PA1GSJ

First report from Holland on 20-Jul-09 at 22:09, from Joachim who writes about his equipment: "direct co

{gallery}qrsstropical/g0bbl{/gallery}

Jan G0BBL

Fine strong signals received by Jan G0BBL at 2310Z on 20-Jul-09. Jan also reported reception on the following

{gallery}qrsstropical/m0pub{/gallery}

Alan M0PUB

Good copy also from Alan M0PUB, this example is on 21-Jul-09 at 23:16 (2216Z). Alan reported that the

{gallery}qrsstropical/g0xar{/gallery}

Steve G0XAR

Nice report too from Steve G0XAR in Norwich at 23:32 local (2232Z) on 23-Jul-09. FB OM!

{gallery}qrsstropical/on5sl{/gallery} **Pierre ON5SL**

Pierre sent a nice report from JO10tt (Etikhove, Belgium) on 27-Jul-09 at 01:56 and writes: "Hans in com

{gallery}qrsstropical/g6avk{/gallery} **Colin G6AVK**

Colin had a grabber running and this is a very nice strong shot from his grabber. Ignore the "grabber offl

Finally, while the beacon was busy whispering to the world, we were busy enjoying Grenada, and here's some photos of what we enjoyed!

{gallery}qrsstropical/grenada{/gallery}