

BATC annual report to the RSGB Spectrum Forum.

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1. Repeater licences.

After some years of delay in relation to NOVs for new repeaters and changes to existing ones, five NOVs have been issued in the past few months. Whilst this is most encouraging we still believe that better communication with the relevant primary users is an important goal for the future.

GB3SQ for the Bournemouth Group on 1.3GHz. Digital TX

GB3BH Bushey Heath N London, addition of 3.4GHz. Digital TX.

GB3BA Basingstoke, 3.4GHz Digital TX

GB3KM Kirk Merrington , addition of an 3.4GHz. Digital TX

GB3FY Fleetwood , addition of an analogue 10GHz TX - after amending proposal to use a higher frequency pair.

Spectrum efficient digital transmitters and the first use of the 3.4GHz band, are notable features of the above NOVs.

2. OFCOM liaison on TV related matters.

OFCEM have been charged by the government to examine the technical aspects of spectrum re allocation for 2.3GHz band. OFCEM made a request to the BATC earlier in the year for information on ATV transmitters, and to present typical ATV equipment for measurement to determine their spectrum occupancy. Typical Analogue FM and digital QPSK transmitters on 23, 13cm were taken to Baldock by a number of licensed amateurs. Later a further field test was made at GB3TZ near Dunstable.

A key aspect of the work was to provide OFCEM with real signals to enable interference ratios for potential re-allocation of spectrum. The spectrum characteristics of the transmitters were stored in a real time large scale sampling device.

In turn this will allow measurement of adjacent channel margins for potential new commercial systems such as LTE. Digital QPSK transmitters on 23 and 13cm at 4MS/s and 2MS/s were measured. The information derived may also be used to determine spectrum occupancy at 3.4GHz for similar modes.

The Baldock meeting also provided OFCEM, and the stations present, with an opportunity to discuss the improvements amateurs have made in the digital TV transmission field.

This included the targets that the BATC committee have sought to introduce through increased adoption of digital modes. The significant improvement in spectrum efficiency was noted, and how this could feed through to planning for licensing and future NOVs.

3. **ISS (International space station)** has now an installed 13cm digital transmitter. This has been provided by ESA and coordinated by AMSAT-Italy. Ground terminals are being constructed around the world and monitoring streams have been created on the BATC

streamer/server site. On air tests are scheduled to commence sometime during Nov/Dec 2013. The intention is to allow education establishments to track the down link from several ground terminals as the ISS orbit progresses. This should result in ARISS school contacts, which are presently voice only, being "video enabled". Two frequencies have been nominated in the 2.4GHz band. The ISS TX ERP is limited, so tracking 1.2 to 2mtrs dish will be needed at the ground station.

- 4 **DigiLite TX units** have been constructed by several stations around the UK. Extensive software work has taken place to add very small free standing processors to remove the limitation of a desktop PC.

BATC has sought to promote and support devices such as the DigiLite, to bring the new technology, (and spectrum benefits) to as many stations as possible.

In addition BATC has introduced a new complete encoder/modulator DTX1 as a finished unit. This is being specially produced for BATC by a UK manufacturer (Antennair). This will simplify the introduction of DATV transmitters for UK stations.

- 5 **Low bit-rate digital video transmission** is seen as the next big challenge. The introduction of current 4/2MS/s QPSK transmissions benefited from the availability of low cost DVB – S receivers. Sourcing matching DVBS encoders/modulators at reasonable cost was more of a challenge but is now coming to fruition. It is hoped that very low bandwidth fast scan ATV will be accommodated in any new VHF allocations and the BATC has started discussions with John Regnald (VHF manager) on potential usage schemes. Low bitrate receivers will present a significant design challenge, plus needing further decisions on the types of modulation and coding to be deployed.

6. The BATC has sponsored a web based near live reporting application called www.DXSpot.tv for reporting specific contacts on ATV. It includes a graphical representation of the UK/EU plus a text reporting and chat frames. The objective has been to increase the awareness of recent contacts made and stations active and looking for contacts. After logging in, a station can give key information about the frequency, symbol rate, FEC, ERP being used and the location.