



## **BATC report to the RSGB spectrum Forum – November 2021**

Whilst day to day activity continues on 70cms and 23cms, experimentation on the low bands (50 and 71MHz) plus the microwave bands above 2.3GHz continues, especially during BATC activity weekends. It is interesting to note that Dutch ATV operators have now adopted the narrow band techniques pioneered by the UK ATV community and RB-TV QSOs between the countries have taken place on 144/6 and 437 MHz.

The ATV community has recently developed products enabling the use of narrow band DVB-T based multicarrier OFDM technology with H265 video encoding to be used in bandwidths as low as 250 kHz.

This has enabled contacts on 51, 71 and 146 MHz to be made over paths not previously possible, due to multi-path with single carrier DVB-S. It is planned to carry out mobile transmission tests using narrow band DVB-T where it is hoped this will prove significantly more robust than DVB-S in this challenging environment.

Amateur operators around the world, including Europe, South Africa and Australia are now equipped with narrow band DVB-T equipment supplied by the BATC and we are hoping that we will see narrow band DVB-T video contacts with other countries / continents as the sun spot activity increases.

### **IARU region 1 contest**

The Annual IARU contest is perhaps the best indicator of ATV activity and trends across the UK and Europe. In 2021, despite limitations on activity in some countries, there were 85 entries from 8 countries on all bands from 432MHz to 76GHz.

Disappointingly there was only 14 entries from the UK however G8GTZ was the overall region 1 contest winner and UK stations were band winners on all of the 6 bands above 2.3GHz.

A proposal to include 51MHz in the 2022 IARU region 1 contest is currently being discussed and if adopted will encourage more stations across region 1 to experiment with DVB-T which could result in some interesting DX opportunities.

### **The Bands**

#### **29 MHz**

The inclusion of an experimental segment at 29 – 29.51 MHz has encouraged a number of operators to start building narrow band DVB-T OFDM equipment for that band.

It is envisaged operation will be 250kHz wide centered on 29.125MHz to avoid interference to the satellite band at 29.3 MHz.

#### **50 MHz**

It is hoped that the release of narrow band DVB-T equipment will see some DX video contacts as the sun spot increases.

#### **71 MHz**

Activity continues on 71MHz with DVB-T starting to replace DVB-S.

### **146-147 MHz**

Many ATVers have applied for a special NoV to operate in this band and even though the maximum transmit power is limited to 100 watts ERP, ATV QSOs using 500kHz or less bandwidth over 200Km are now happening regularly with the current record standing at 407km.

### **430-440 MHz**

This band is much more active due to the narrower bandwidth of digital TV transmissions that can now fit into this crowded allocation. Regularly there are long distance transmission of over 200 km made around the UK and into Europe.

### **1.3 GHz**

In light of the potential changes to 23cms, BATC has published a proposed new standard migrating TV repeater outputs to DVB-S2 1Ms (1.2MHz occupied bandwidth) operation. Tests indicate a gain of 13 dB over a 16MHz FM signal with no loss in video quality.

### **2.3 – 2.4 GHz**

There are still 2 repeaters licensed for this band and even though we lost 40MHz of the band in the PSSR process some simplex operation continues.

### **3.4 GHz**

7 repeaters are now licensed for this band and due to a lower noise floor and easy receive systems using C band LNBS, the performance is equal to or better than 13cms. With the band having been reduced to 10MHz, there is only sufficient bandwidth to allow the digital repeater output to be on this band with inputs on other bands.

Due to bandwidth limitations there is little simplex operation on this band although stations are active during BATC and IARU contests using Reduced Bandwidth DATV.

### **5.6GHz**

With the availability of the low cost (<£20) FPV FM ATV transmit and receive equipment we are seeing a significant increase in the number of ATV and WBFM stations using the 5.6 GHz band. There are 2 repeaters with inputs on 5665MHz and BATC is currently running a ladder contest on the band to encourage activity.

### **10 GHz**

6 repeaters are licensed for this band and it is also quite active with simplex operation.

A number of stations are active with DATV on the band using standard narrow band transverters from 144 / 432 MHz to generate DATV signals on the band. The current best DX stands at 407Kms between M0DTS and G4UVZ worked during a tropo opening in October 2018.

### **24GHz**

A number of stations are active on 24GHz ATV undertaking mainly portable work with the current best DX standing at 136kms.

### **Higher bands**

A number of stations are active throughout the year on 47 and 76 GHz DATV and M0DTS has successfully transmitted video on 134 GHz.

### **Oscar 100**

The launch of the geostationary Oscar100 satellite has seen a large increase in activity and interest in ATV – over 150 UK stations are known to be operational on DATV

## **TV Repeaters**

We currently have 39 TV repeaters licensed on the 1.3 GHz, 2.4GHz, 3.4GHz and 10GHz bands with a mixture of analogue and digital transmission outputs.

## **The BATC**

BATC membership continue to grow with Oscar100 encouraging more stations to be active on DATV - the Portsdown DATV transceiver based on the Raspberry Pi proving to be a popular route back in to the hobby for many.

BATC believes that building a community of ATV builders and operators through online communities on the member's forum, providing a reliable source of relevant information on wikis and in the CQ-TV magazine and reporting activity on social media is fundamental to the growth we have seen both in ATV activity and BATC membership.

The BATC continues to support and drive initiatives with a program of awards and grants to recognize achievements in the community and the use of the BATC shop stocks otherwise difficult to source components for BATC sponsored projects.

BATC has actively supported the development of the Raspberry Pi4 / Pluto based Langstone narrow band transceiver project and the Ryde DATV set top box project.

In order to further increase operator numbers, BATC has awarded a number of prizes for contest winners and organizes a monthly activity weekend timed to coincide with activity weekends in neighboring IARU countries, thereby helping to promote the use of all our bands from 50 MHz up.