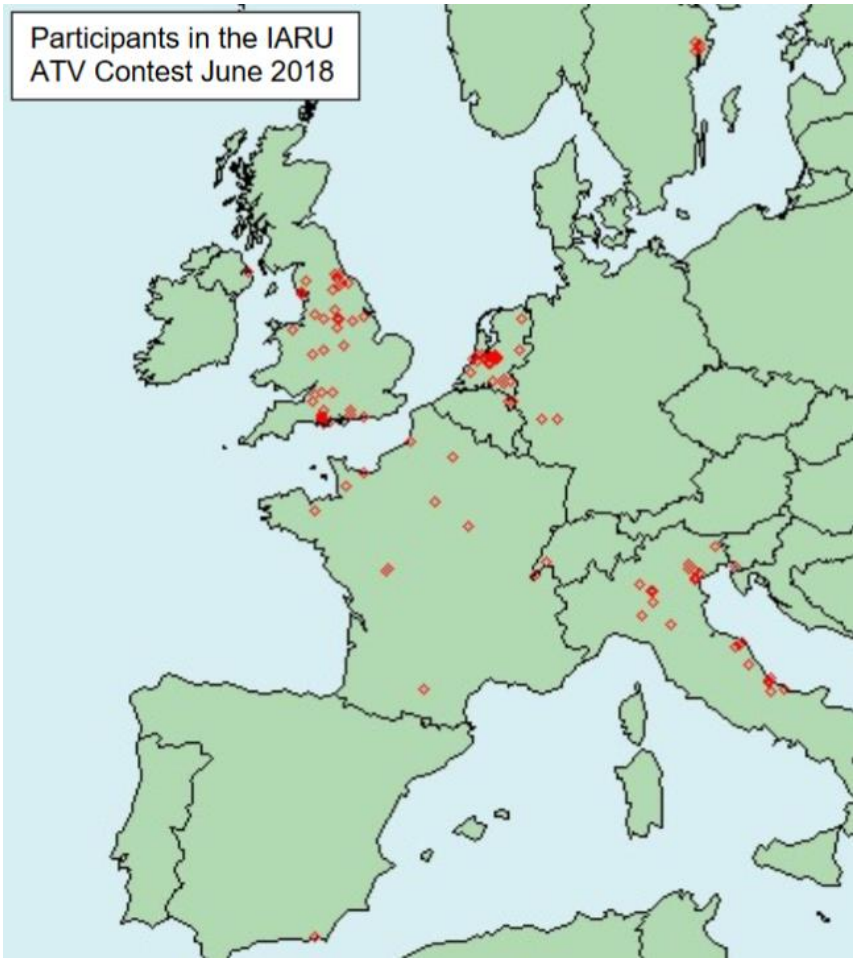
BATC report to the RSGB spectrum Forum – October 2018

Reduced Bandwidth (RB-TV) digital television transmissions continue to evolve with stations active on all bands from 50MHz to 76GHz. Digital modulation tests continue to indicate that DVB-S2 provides about a 2dB improvement over DVB-S for the same bandwidth. Stations are now experimenting with the new H265 codec and have successfully transmitted full 1920 by 1080 HD pictures in 500KHz bandwidth on the 146MHz band. Reports of these initiatives have been fed back to Ofcom as important examples of continued innovation in Amateur Radio.

Activity levels

ATV activity on all bands is increasing, particularly on the 5.6GHz band where the use of cheap drone FPV equipment has enabled a very easy and low cost route to get on air.

This increase is activity was reflected in the recent IARU region 1 contest results where UK had the most entries of any country and UK stations won the 9cms, 24GHz and 76GHz sections.



The Bands

50 MHz

There has been a limited amount of RB-TV testing at the top end of the existing band. The BATC has supported the IARU region 1 team initiative to gain an additional 2 MHz at WARC 2019 and provided input to the Ofcom consultation. If this initiative is successful it is envisaged that there will be more RB-TV activity on the band.

71 MHz

The recent ability to apply online for an NoV has sparked interest in this band and ATVers are having to learn new skills to operate on the band including higher noise floors and huge antennas! Even with the 100 watt ERP restriction, QSOs in excess of 150Km have already been achieved.

146-147 MHz

The recently released top end of the 2mt band is regularly used for RB-TV. Even though the maximum transmit power is limited to 50 watts ERP, ATV QSOs using 500KHz bandwidth over 200Km are now happening regularly with the current record standing at 280Km.

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

Significant progress has been made in clearing the outstanding repeater applications for 23cms and currently 27 repeaters are licensed for this band, which continues to be very popular for analogue and digital transmission. Simplex, non repeater, operation is also popular in the band.

2.3 GHz

There are still 2 repeaters licensed for this band and even though we lost 40MHz of the band in the PSSR process there continues to be a small amount of simplex operation.

A number of operators are known to building 2.4GHz DATV equipment ready to take advantage of the Es'hail-2 geostationary satellite which is due for launch in late 2018.

3.4 GHz

7 repeaters are now licenced 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 were active during the IARU contest using Reduced Bandwidth DATV..

5.6GHz

With the availability of the low cost (<£20) FPV 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 we believe this will become an important band to attract newcomers to ATV and microwaves.

10 GHz

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

There is still FM activity on the band and the low cost HB100 Doppler module is being tested with a view to providing a low cost alternative to the now obsolete Solfan heads.

A number of stations are active with DATV on the band using standard narrow band transverters from144 / 432 MHz to generate DATV signals on the band. Distances over 100Km have been worked easily.

24GHz

A number of stations are active on 24GHz ATV undertaking mainly portable work with the current best DX standing at 80Kms.

Higher bands

2 stations are active on 76GHz and have achieved 30+kms one way and M0DTS has successfully transmitted video on 134 GHz.

TV Repeaters

Overall we currently have 42 TV repeaters licensed and 1 new repeater NoV has been requested. The repeaters are using 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 a 25% increase during the past 4 years with the Portsdown DATV system 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.

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 neighbouring IARU countries.