



Amateur Television in the UK - Hamradio 2016 update

Noel Matthews – G8GTZ

The screenshot shows the BATC.TV website interface. At the top, there are logos for 'BATC.TV ATV streaming portal' and 'BATC FORUM For all the latest ATV news'. Below the logos, there is a navigation bar with 'Home', 'Password', and 'Logout' options. The main content area is divided into two sections: a video player on the left and a chat window on the right. The video player shows a stream titled 'GB3HV' with a thumbnail image of a person. The chat window displays a list of messages from users, including '08:10:21:29' and '08:10:21:30'. At the bottom of the page, there is a footer with the text 'Home Counties Amateur Television Group' and 'GB3HV is now active from near Farnham in Surrey, K91CF, antenna height 710ft. est. Transmitted on 1.248 MHz analogue or digital or on 710cm digital, to activate the stream.'



UK ATV overview

- About 100 active ATV operators
 - Mainly centred around repeaters
- Migration to digital happening but still a lot of FM around
 - DVB-S with 2 and 4 Msymbols
- 35 active repeaters
 - Primary outputs on 3 bands
 - All in shared bands
 - Digital only Repeater output policy on 23cms
- Most DX activity on BATC activity days
 - Co-ordinated with Netherlands and France





UK ATV bands

71 & 146 MHz

- The new ATV bands!
- Temporary license
- Only 1 MHz so need Reduced bandwidth

70cms

- Digital only on 437MHz
- DATV and RB-TV

23cms

- 1240 MHz – 1325 MHz
- Analogue and digital
- Activity on repeaters and simplex

13cms

- Very little activity
- Repeaters inputs

3.4 GHz

- Digital only

5.7 GHz

- 1 Repeater input

10 GHz

- Repeaters and simplex



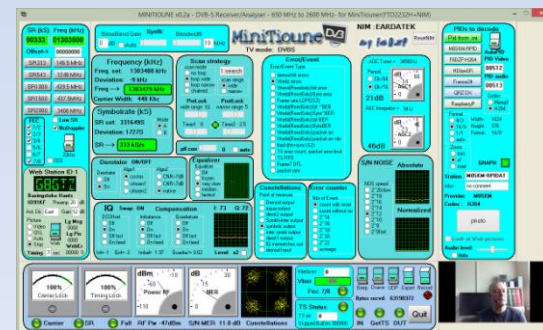
Reduced Bandwidth (RB-TV)

- Need reduce bandwidth on 71 and 146 MHz
- RB-TV is “normal” DVB-S but below 1 Msymbol / sec
 - Bandwidth = <1 MHz wide
- 2 “standards”
 - 333kSym/s 7/8 FEC = ~450Khz bandwidth
 - 125 Ksym/s 7/8 FEC = ~
- Based on DVB-S standard BUT
 - Uses MPEG-4 encoding for transmit
- “Normal” DVB-S stb will not work below 1 Ms
- So we needed new ideas!



RB-TV receive

- The hard part!
- Consumer STB do not go below 1 Msymbol ☹️
- Only solution was to design one!
- F6DZP developed Tutioune s/w
 - Optimised DATV receive solution
 - .125 to 45 Msymbols (not just RB-TV)
 - And a really valuable diagnostic tool
- He then designed the USB minituner h/w
- Available from BATC shop



RB-TV Transmitter

- 2 main choices
 - DATVexpress (SDR hardware)
 - wide range of symbol rates
 - 70 MHz to 2.45 GHz
 - Linux and Windows
 - Very flexible solution
 - Raspberry Pi RB-TV plug in card
 - Low SR modulator (fixed 330 kS)
 - Si570 LO = 50MHz to 1.3 GHz





RB-TV on air

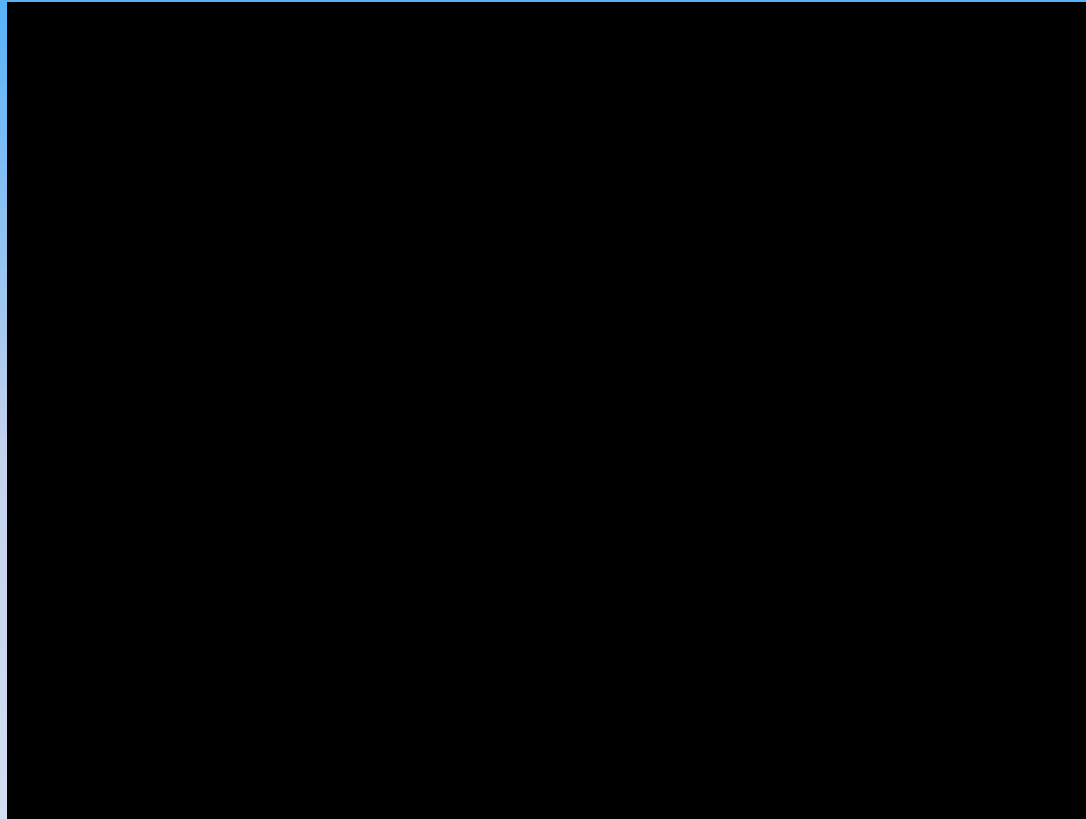


- 146 MHz is limited to 25 watts erp
 - Best DX = 148Kms 2 way (168Kms one way)
 - No success on 200+ Km – not enough erp!
- On 70cms narrower b/w gives significant improvement
- RB-TV works where DVB-S does not!
- 70cms uses higher erp
 - Best DX = 235 Kms at 125 Ks














RB-TV on air



**G3PYB (now SK) > G4KLB @ 60 Kms
437 MHz – 333 Ksymbols**



The BATC

-  950 members worldwide (30% non UK)
-  Publishes CQ-TV in e and paper format
-  Represents ATV on UK committees
-  Supports projects such as Digilite
-  Runs BATC shop for hard to get parts
-  Annual convention - CAT16
-  Active ATV community online forum
-  Supports DXSpot.TV
-  Runs ATV streamer

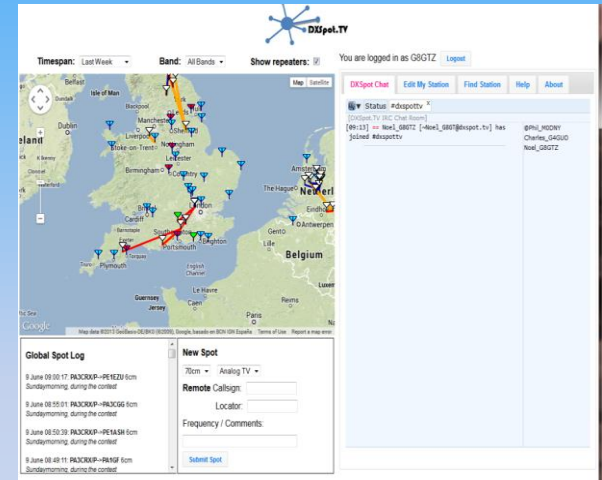




DXSpot and BATC wiki

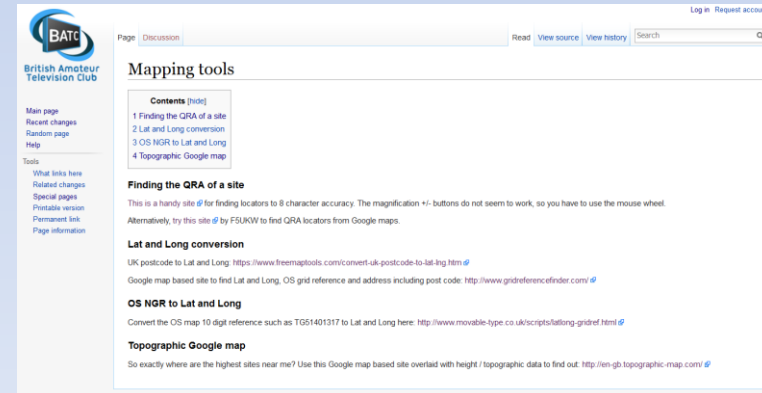
Initiative to enable ATV DX

- Dxspot cluster just for ATV
- dedicated dx chat line
- Interactive maps showing ATV station and repeater locations



Reference library for worldwide ATV community

- Want to know anything about ATV, go to the wiki!
- https://wiki.batc.tv/BATC_Wiki





ATV activity weekends

- **Not a contest – just a weekend of ATV activity**
 - 9 July 2016 - 10 July
 - 13 August 2016 - 14 August 2016
 - 10 September 2016 - 11 September 2016
 - 10 December 2016 - 11 December 2016






- **All bands from 50 MHz to 24 GHz**
- **Digital and analogue modes**
- **Repeater and simplex contacts**
- **See the BATC forum for more info**

- **Let's make it an international weekend!**
 - Already is in NL and France



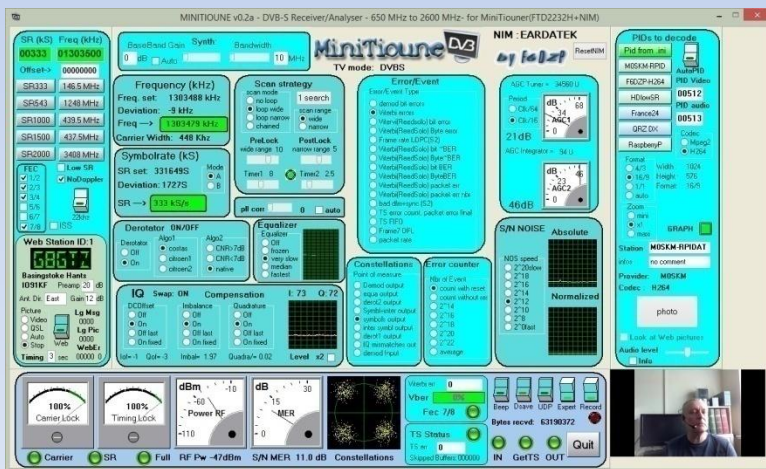


The future of ATV

-  All ATV bands are under pressure
-  We must become more spectrally efficient
 - Allows ATV to co-exist
 - Presents a modern image to regulators and public
-  Digital ATV is the future
 - RB-TV has got the UK 2 new bands
 - But we need standards
 - All BATC projects = DVB-S
-  We must engage with national society and the regulator
-  We need more international co-operation
 - Contests / technology
 - We are the ATV community!

BATC

Thank you



The British Amateur Television Club

BATC

CQ-TV

RB-TV Special - May 2015

New Band, New Mode, New Award

Reduced Bandwidth TV is here!

Reduced Bandwidth DATV (RB-TV) RB-TV Awards Programme

A Two way on 146.5MHz RB-DATV Modulator for the Raspberry Pi

DigItThin - A Narrowband QPSK Modulator for the Raspberry Pi

DigItThin Beta Testing