

HAMRADIO-2015
Friedrichshafen, 26-28 June 2015
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Digital Amateur TV: state of the art and trends

The DATV session at HAMRADIO 2015 is being organised by BATC and SwissATV in association with AGAF.

It will give an overview of current ATV activity in European countries and will cover the move from analogue to digital operation by ATV operators, the benefits of switching to digital and the opportunities that digital technologies give us to further develop our hobby.

The first part of the session will cover the following topics:

- Current ATV activities in Germany by DJ8DW
- Overview of UK ATV operation and other European countries by G8GTZ
- Solutions for DATV – a update on the various solutions available to ATV operators by HB9DUG

The second part of the session will look at the very latest developments in very narrow band digital amateur TV or RB-TV. The allocation of spectrum for very narrow band or Reduced Bandwidth DATV (RB-TV) within the new 146 MHz band in the UK and the increasing interest in using RB-TV on other bands has triggered several projects to develop the second generation of equipment for amateur use. The common aim of these projects is to produce fast scan amateur television equipment which will allow operation in less than 1 MHz of bandwidth whilst still producing acceptable picture quality.

The need to reduce the transmitted bandwidth below 1 MHz impacts on several areas of DATV equipment design and in particular the need for more efficient video coding. The common consensus is that MPEG-2 is not suitable for bitrates below 1 Mbit/s and that we will have to adopt H.264 (MPEG-4) coding to achieve the desired quality. Whilst most modern consumer STBs will decode H.264, most models are only specified to operate down to 0.8 – 1 Ms/s (Msymbols per second) so new receiver solutions are required and this is proving to be one of the most difficult technical challenge to solve.

The presentations will describe the various projects which are in development, the possible options for operators to get on air with RB-TV and will discuss the developments using the RaspberryPi SBC to both receive and transmit H.264 (MPEG4) video on DVB-S in less than 500 KHz. It will also include a smart software solution to receive DATV signals (including RB-TV) and measure their quality parameters.

Presentations will include:

- An introduction to Reduce Bandwidth DATV and practical experiences and possibilities on 437, 146 MHz and lower bands by G8GTZ
- Transmitting narrow band DATV with the Raspberry Pi computer by F5OEO
- Using the “Tutioune” software program to receive and measure DATV and RB-TV by F6DZP

We will discuss the choice of Digital TV equipment available to operators and there will be live demonstrations of the equipment discussed and plenty of time for questions and discussions.

The conference program will cover topics of interest to both the experienced ATV operator and beginners in the hobby.