

# DVB-H Time Slicing and Power Consumption

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### DVB-H Time Slicing

The idea and intention to use Time Slices in DVB-H is to reduce the power consumption of mobile DVB-H receivers.

Time Slices are slots where the relevant data is transmitted. This can be seen as bursts or time slots as they are used in TDM telecommunication systems like GSM or IDSN.

The approach is:

- You have a channel with a constant, maximum bandwidth, e.g. 15 MBit/s MPEG-2 Transport Stream capacity for all video streams and data
- You are going to radiate different video streams where each has a nominal bandwidth of e.g. 400 KBit/s
- You will save power by switching of the front end (DVB-H receiver) when your data is not available.
- You are "informed" when to wake up your front end, when your next burst is expected.

### Calculation

The area of one single burst is:

$$A = 15 * 1.024 \text{ KBit/s} * 500 \text{ ms}$$

$$dt = A \text{ divided by } 400 \text{ KBit/s}$$

Therefore:

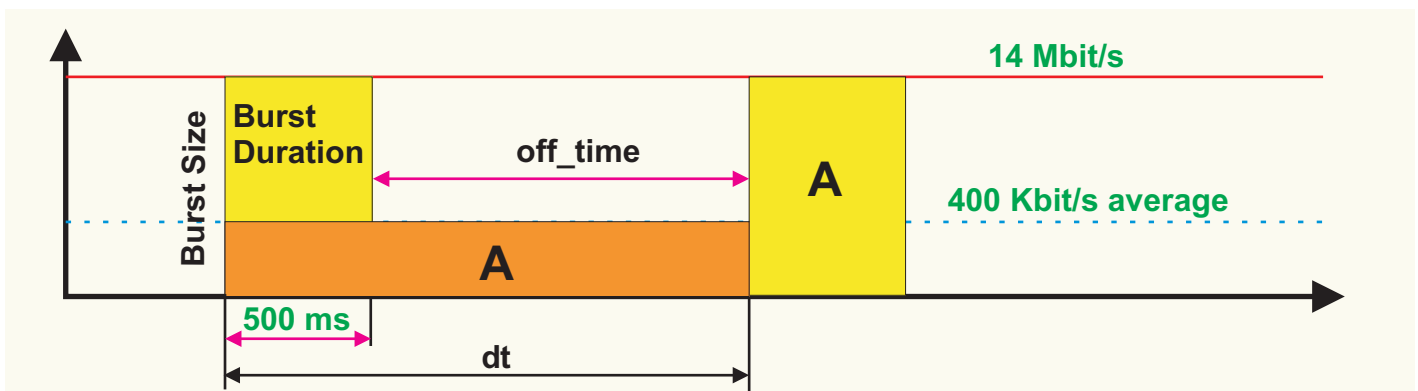
$$dt = (15 * 1,024 \text{ KBit/s} * 500 \text{ ms}) \text{ divided by } 400 \text{ KBit/s}$$

$$dt = 19,200 \text{ ms}$$

If you use the relation between burst time and off time you will get the percentage of reduced power consumption:

$$\text{off\_time} = 19,200 \text{ ms} - 500 \text{ ms} = 18,700 \text{ ms}$$

$$\begin{aligned} \text{Power\_Ratio} &= (500 \text{ ms divided by } 18,700 \text{ ms}) \\ &\quad * 100 \% \\ &= 2.7 \% \end{aligned}$$



### Time Slice Parameters

Therefore you have the following parameters:

- Total bandwidth of the channel: 15 MBit/s
- Mean bandwidth (average) of one encapsulated video stream: 400 KBit/s
- A Burst Duration of 500 ms for the different blocks of the video stream where as Burst Size the total available capacity is used

### Remarks:

The power ration is lower because of look ahead for bursts, re-synchronisation and the scanning and processing of Service Information tables. Other papers illustrate about 80% possible reduction.



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