

# ODR-mmbTools – Open-Source Software-Defined DAB+ Transmitter

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<http://opendigitalradio.org>

**FOSDEM<sup>15</sup>**

<https://fosdem.org>

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# About the speaker

Matthias P. Brändli

Lead developer of the ODR-mmbTools  
Studied in Lausanne  
Member of student radio station



# ODR-mmbTools

## Contents

- ODR-DabMux
- ODR-DabMod
- fdk-aac-dabplus
- toolame-dab
- Scripts, examples, monitoring, documentation

Everything on <http://opendigitalradio.org> and GitHub.

# ODR-mmbTools

## History

It all started at Communications Research Centre Canada

2002 First DAB developments at CRC

2009 CRC-DABMUX open-source  
Availability of CRC-DABPLUS encoder

2010 CRC-DABMOD open-source

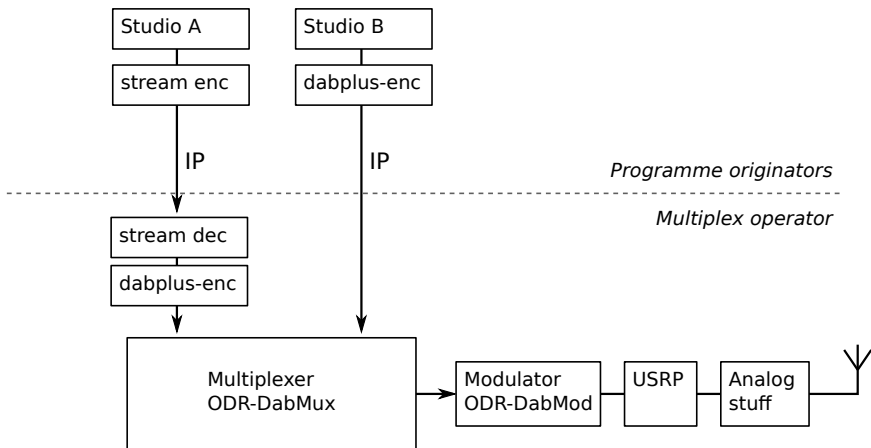
2012 Tools used in production in DK  
mpb mmbtools-SFN development

2013 fdk-aac goes open-source

2014 MOT Slideshow by CSP.it  
CRC involvement stops, development taken over by ODR

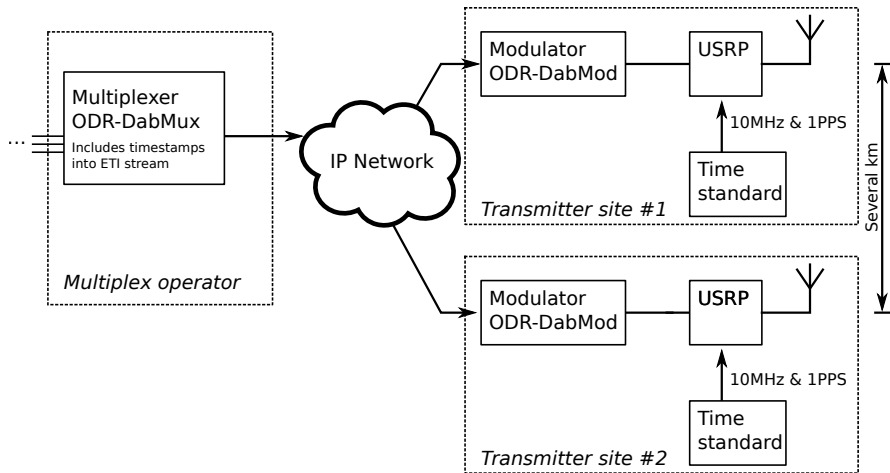
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## Single Transmitter



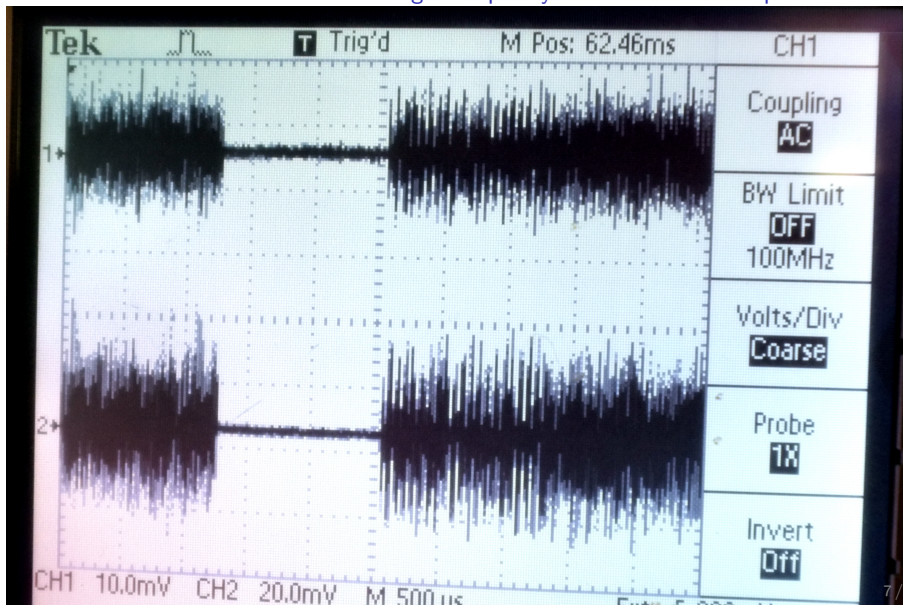
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## Single-Frequency Network



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Single-Frequency Network on the Scope



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MOT Slideshow – CSP.it & ODR





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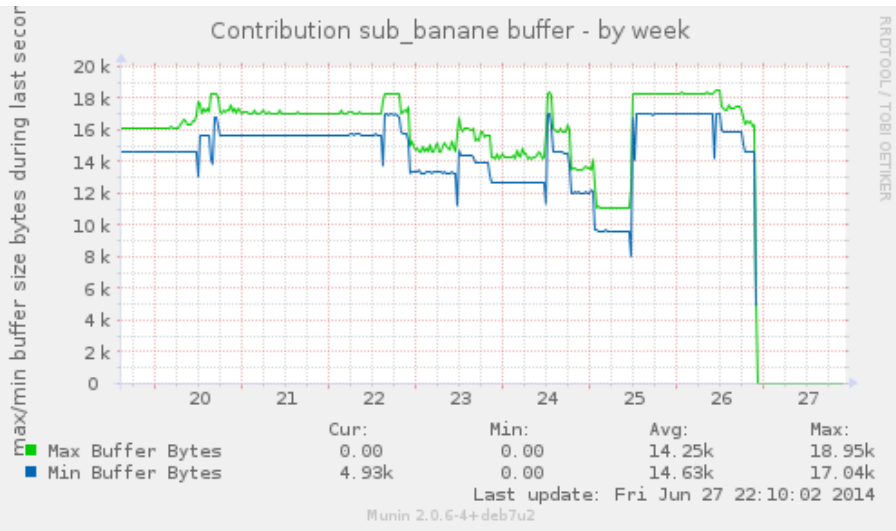
ARM platform



Odroid U3, Source: Hardkernel website

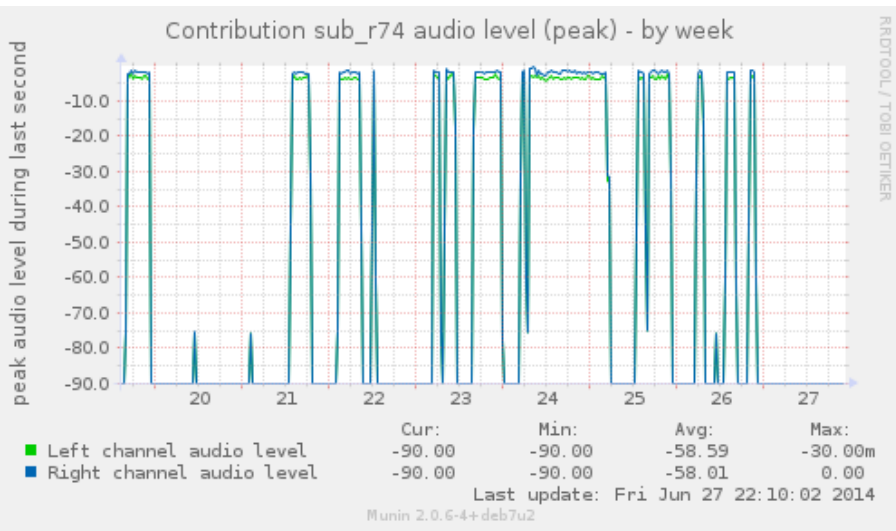
# Monitoring

## Buffers



# Monitoring

## Encoder Audio Level



## Conclusions

Development and testing community getting bigger

Tools used in production environment

# Questions ?

<http://opendigitalradio.org>