



# EDD

- Universal *E*ffelsberg *D*irect *D*igitiznig System



## EDD System



21.11.2022



C. Kasemann



# EDD

## - Universal Effelsberg Direct Digitiznig System



Pro

System Design

Con.

Teleskop Focus Cabin

Shielded Room

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### EDD functionality

#### Frontend



- Temperature Read Out
- Vacuum Read Out
- Cold Heat Drive Unit
- LNA Bias Supply
- Time & Reference Modul
- Micro Controller
- Power Supply
- Signal:
  - Amplifiers
  - Mixer
  - Synthesizer
  - Signal Filter
  - Controlable Attenuators
  - Gain Equilizer
  - Signal ADC (Digitizer)
  - Media Converter (FireFly)
  - Noise Source

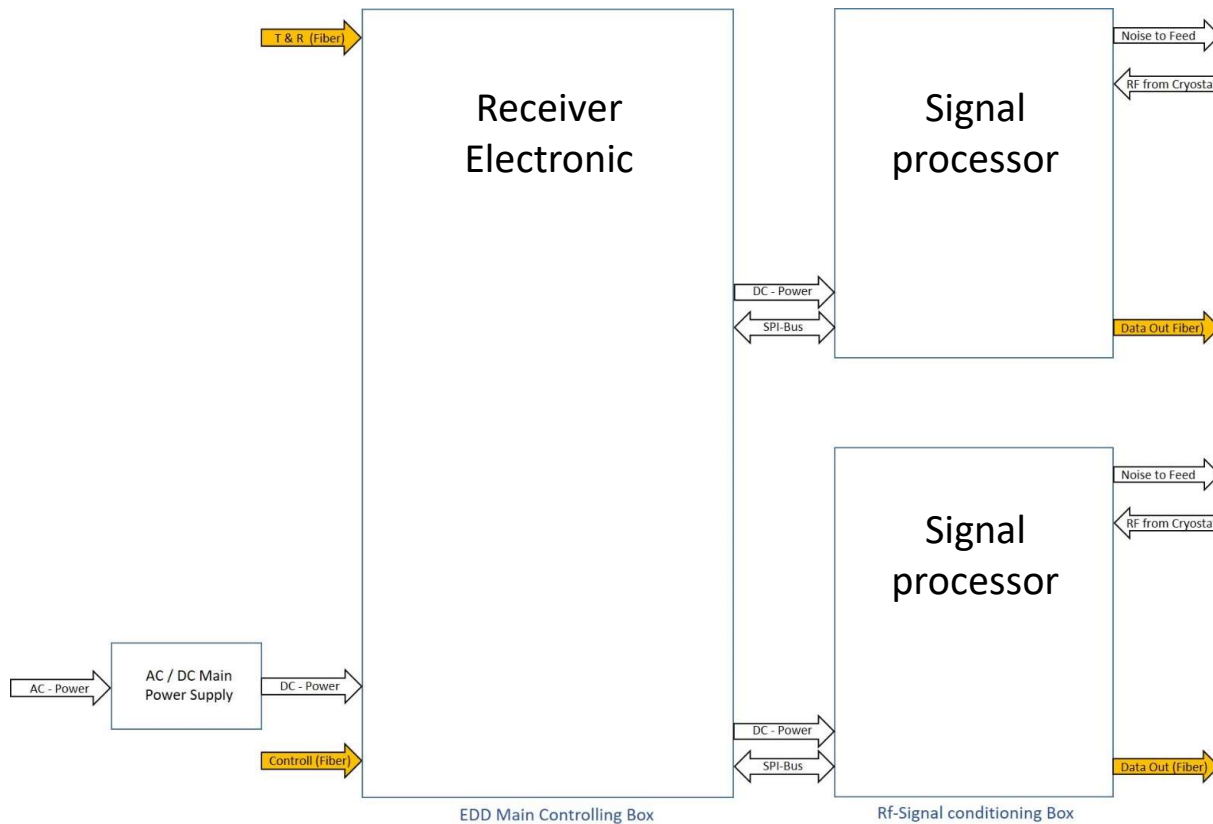
#### Backend





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1 Main Box and  
2 Signal Boxes with two  
Signal channel each

External connections  
only by Optical Fiber

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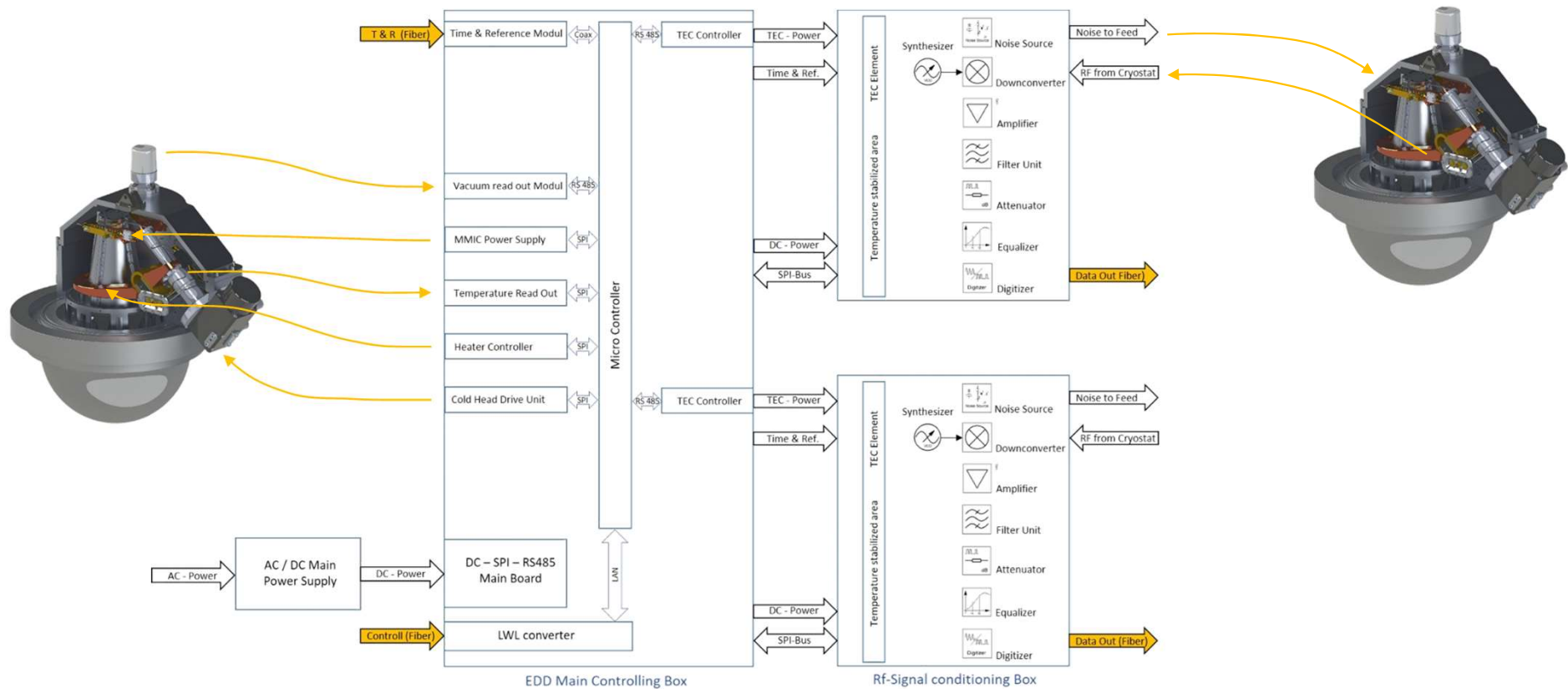


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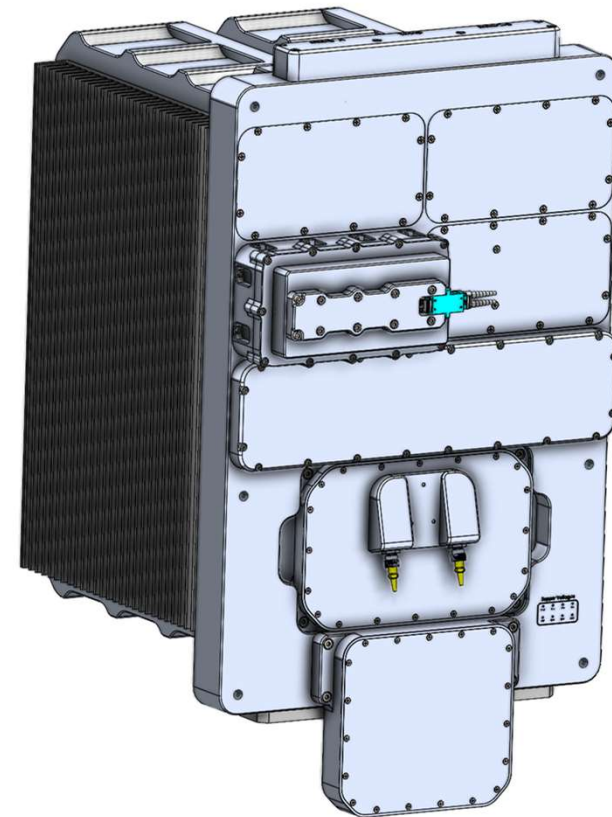
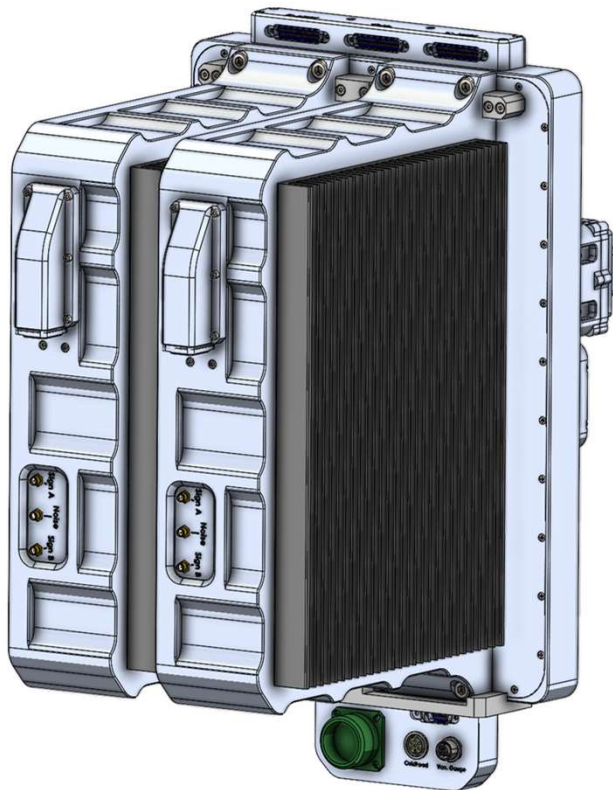
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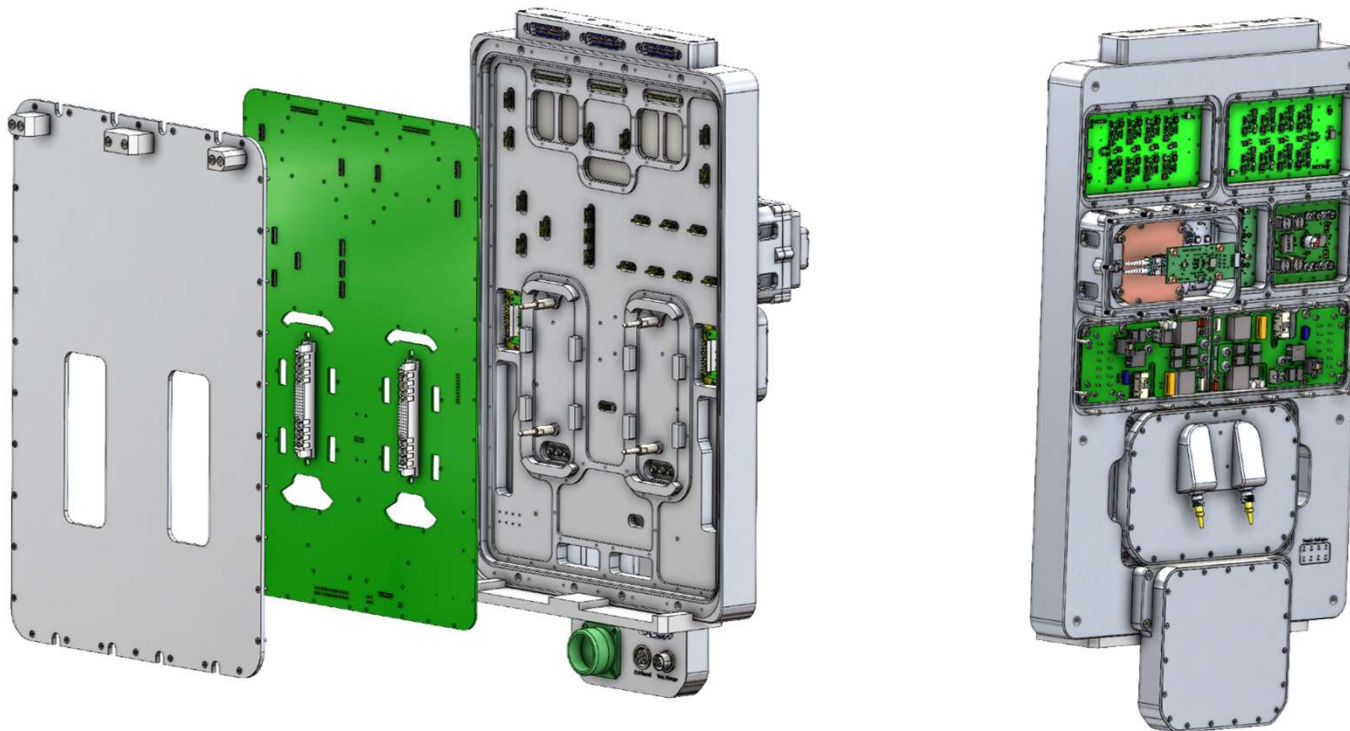


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### EDD – Controll Box



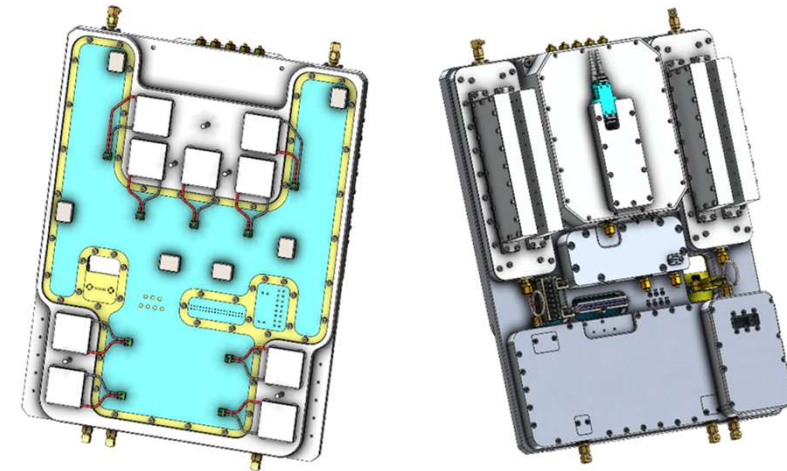
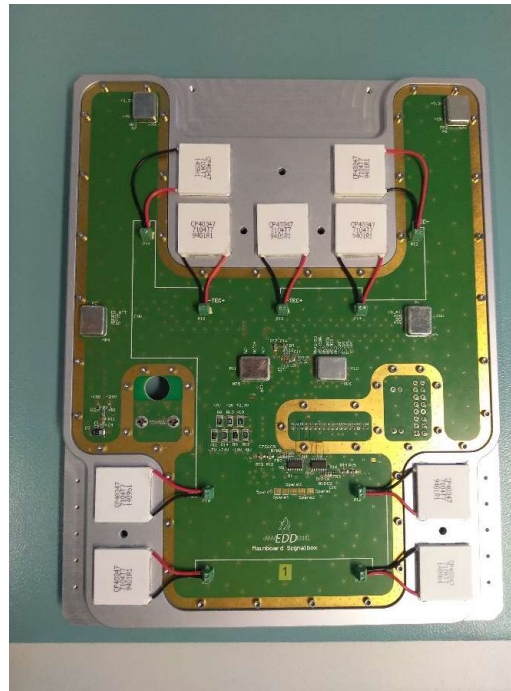
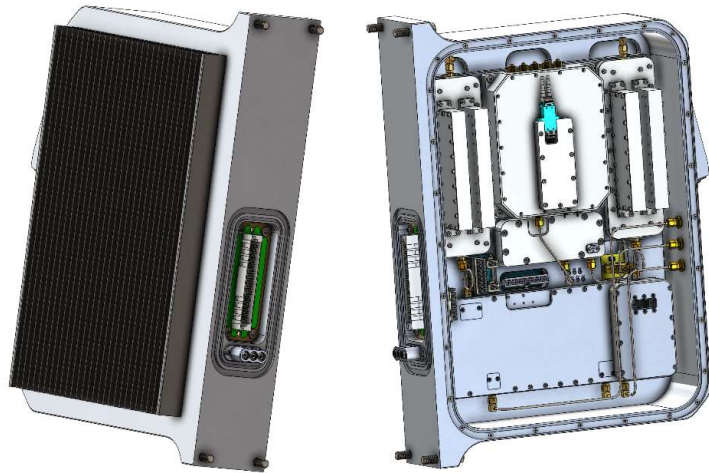


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EDD – RF- Signal Box



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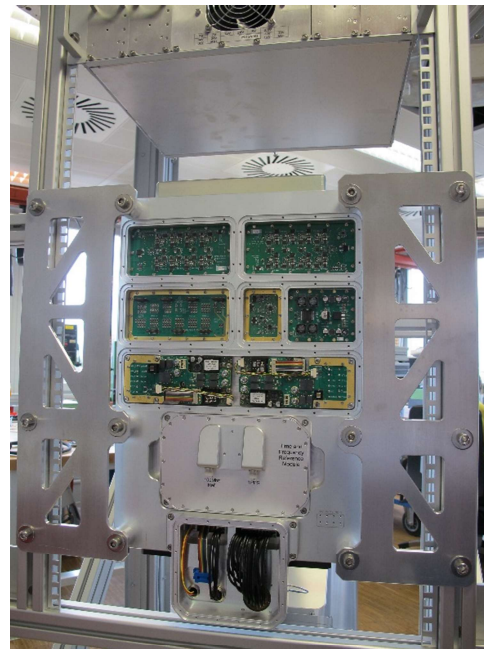


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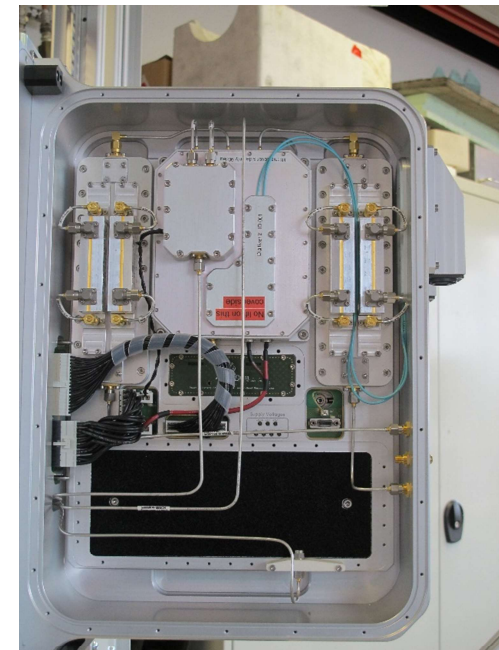
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EDD – First prototype System



EDD Main



Signal Processor

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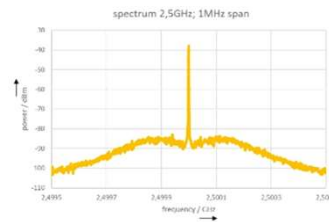
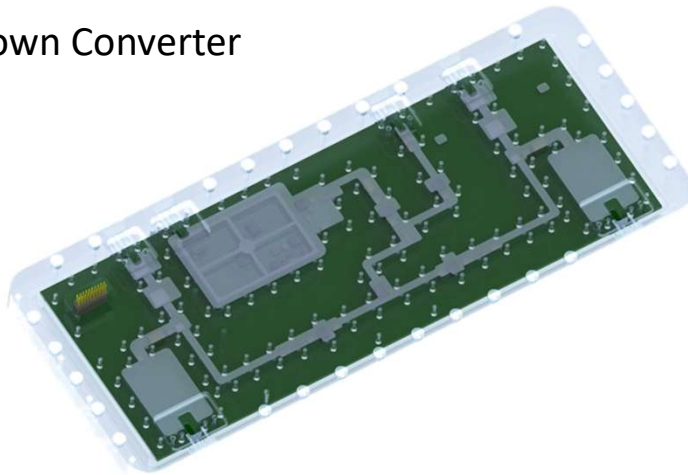


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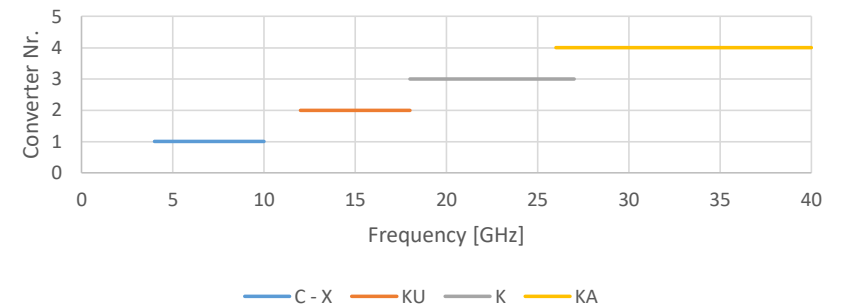
## - Universal Effelsberg Direct Digitizng System



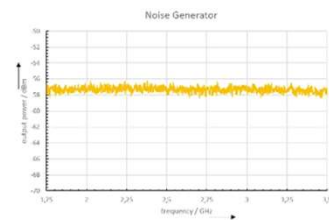
### EDD – Down Converter



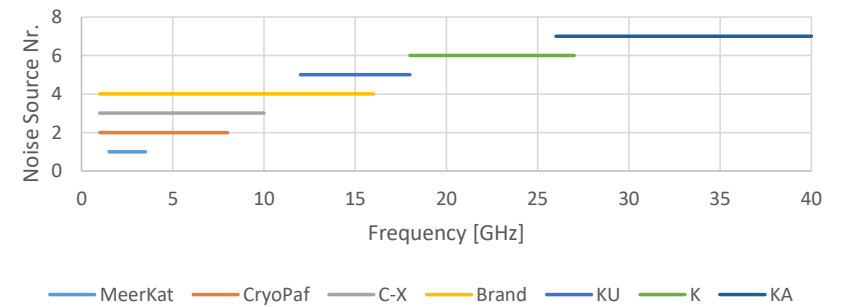
Available Converter



### EDD – Noise Source



Available Noise Source



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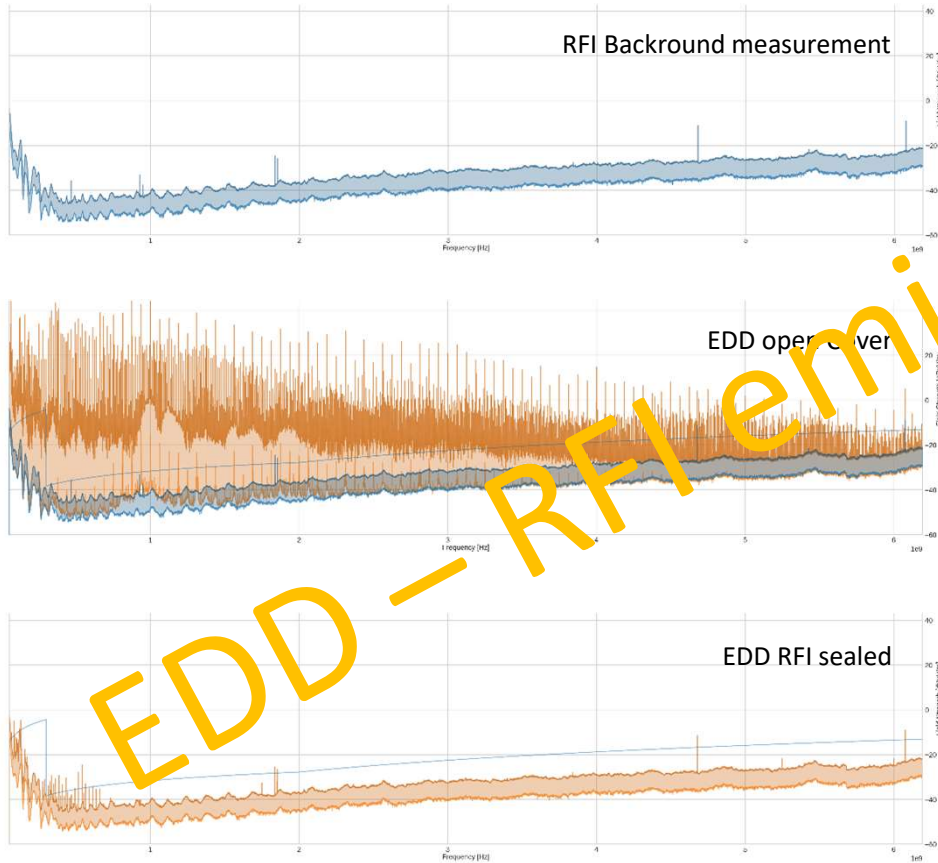


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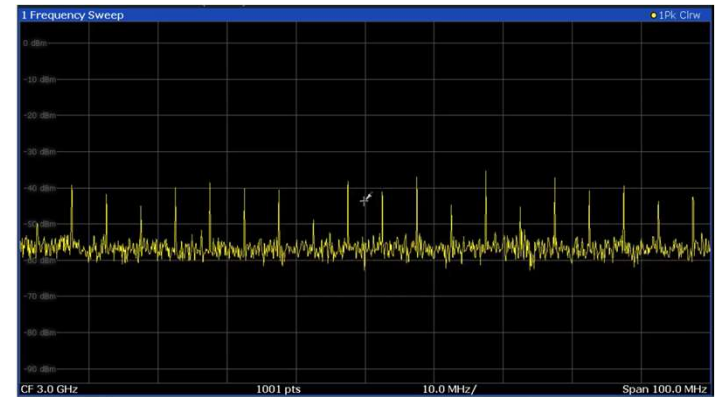


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RFI Chamber during Calibration



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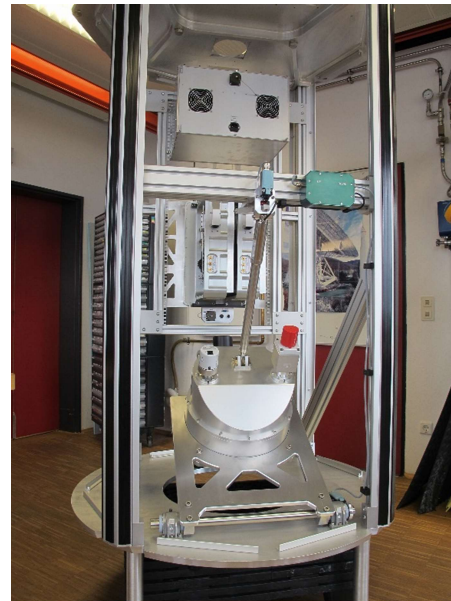


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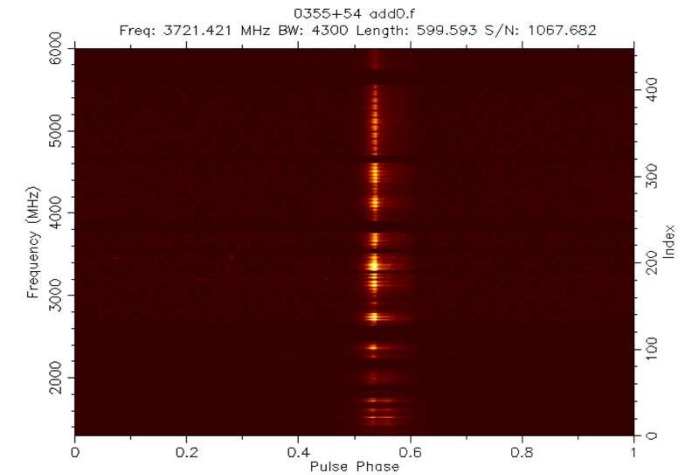
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EDD – Prototype implemented in the new UBB Receiver (1.3 – 6.0GHz)



### UBB in Effelsberg



Full-band UBB observation of PSR B0355+54, showing emission from 1.3 - 6.0 GHz



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## - Universal Effelsberg Direct Digitizng System



Oxford 6/30 Coldhaed



CTI 350 Coldhaed



CTI 350 Coldhaed modikation





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Thank you for your attention

