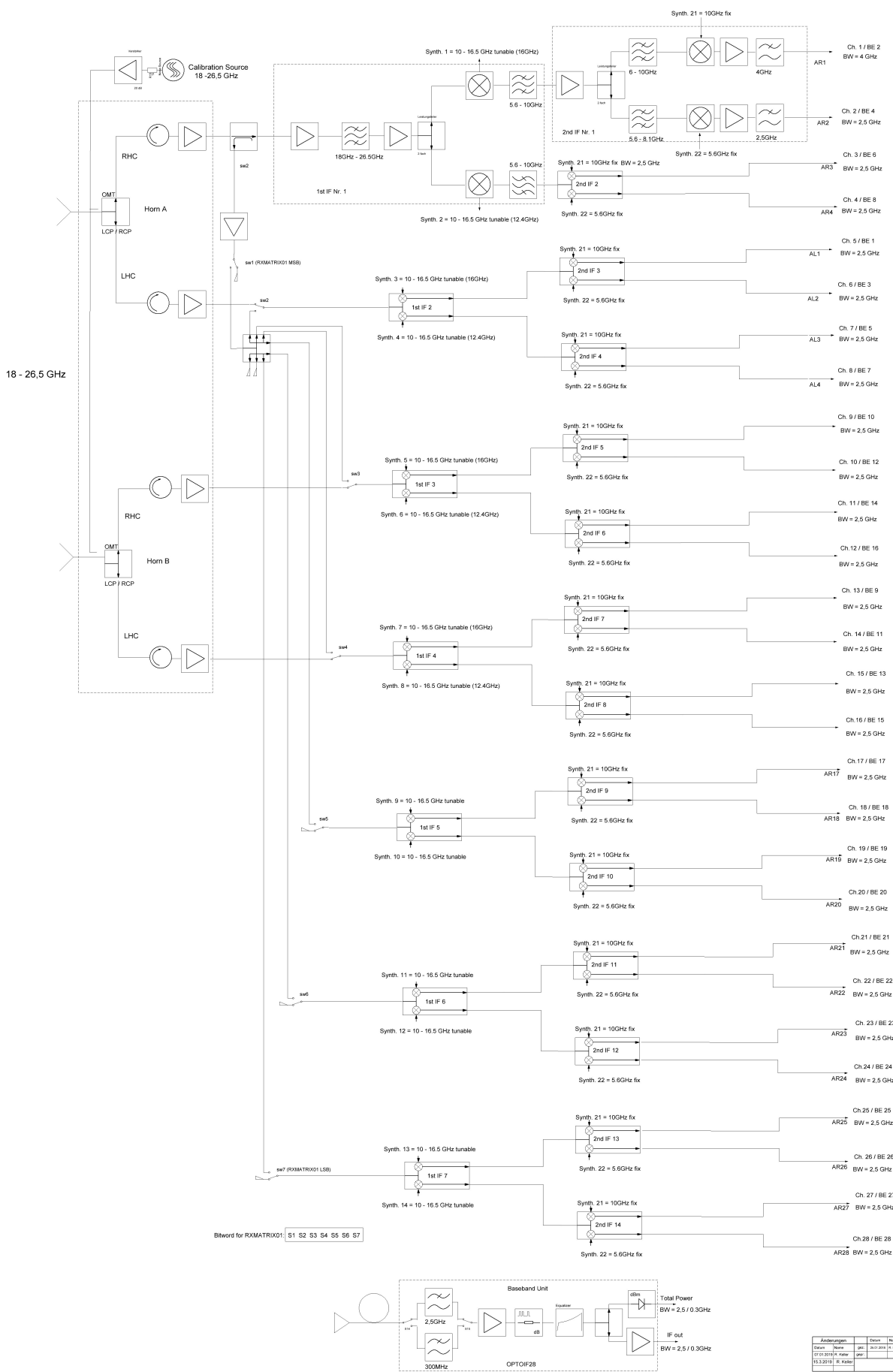


**Technical Documentation of the K-Band Receiver 18 - 26.5 GHz (S14mm)**

|                                                     |                   |                                                                     |                   |                     |                     |
|-----------------------------------------------------|-------------------|---------------------------------------------------------------------|-------------------|---------------------|---------------------|
| Type                                                | HEMT cooled       |                                                                     |                   |                     |                     |
| Channels                                            | 28                | upper/lower band of 2 polarizations in 2 horns each + 20 zoom bands |                   |                     |                     |
| Receiver Noise                                      | 18K               |                                                                     |                   |                     |                     |
| Frequency range                                     | 18 GHz - 26.5 GHz |                                                                     |                   |                     |                     |
| Polarization                                        | LHC/RHC           | 2 horns                                                             |                   |                     |                     |
| Calibration                                         | Noise diode       | 5 MHz phase cal                                                     |                   |                     |                     |
| 1st IF                                              | 5.6 - 10 GHz      |                                                                     |                   |                     |                     |
| 2nd IF lower band                                   | 0 - 4 GHz         | 0 - 2.5 GHz                                                         | 0 - 300 MHz       |                     | fsynth.21 = 10 GHz  |
| 2nd IF upper band                                   |                   | 0 - 2.5 GHz                                                         | 0 - 300 MHz       |                     | fsynth.22 = 5.6 GHz |
| <i>Synthesizer frequency for fsky at center of:</i> | <i>4 GHz IF</i>   | <i>2.5 GHz IF</i>                                                   | <i>300 MHz IF</i> | <i>0.5-1 GHz IF</i> |                     |
| Highband (Ch.1, 3, 5...)<br>fsynth.1,3,5...:        | fsky - 8 GHz      | fsky - 8.75 GHz                                                     | fsky - 9.85 GHz   | fsky - 9.25GHz      | (preset 16.0 GHz)   |
| Lowband (Ch.2, 4, 6...):<br>fsynth.2,4,6...:        |                   | fsky - 8.75 GHz                                                     | fsky - 9.85 GHz   | fsky - 9.25GHz      | (preset 12.4 GHz)   |



Simplified **Block Diagram** of the complete receiver, (RK on 15.3.2019)

[Block Diagram](#) of the 2nd IF conversion, (CK on 8.3.2019)

[Adresses and switch positions](#) of the synthesizer and switches, (CK on 27.4.2014)

S14MM(K Band)-**LHC**-Horn A [Frequency Conversion plan](#) for 22 GHz Sky Frequency

S14MM(K Band)-**RHC**-Horn A [Frequency Conversion plan](#) for 22 GHz Sky Frequency

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