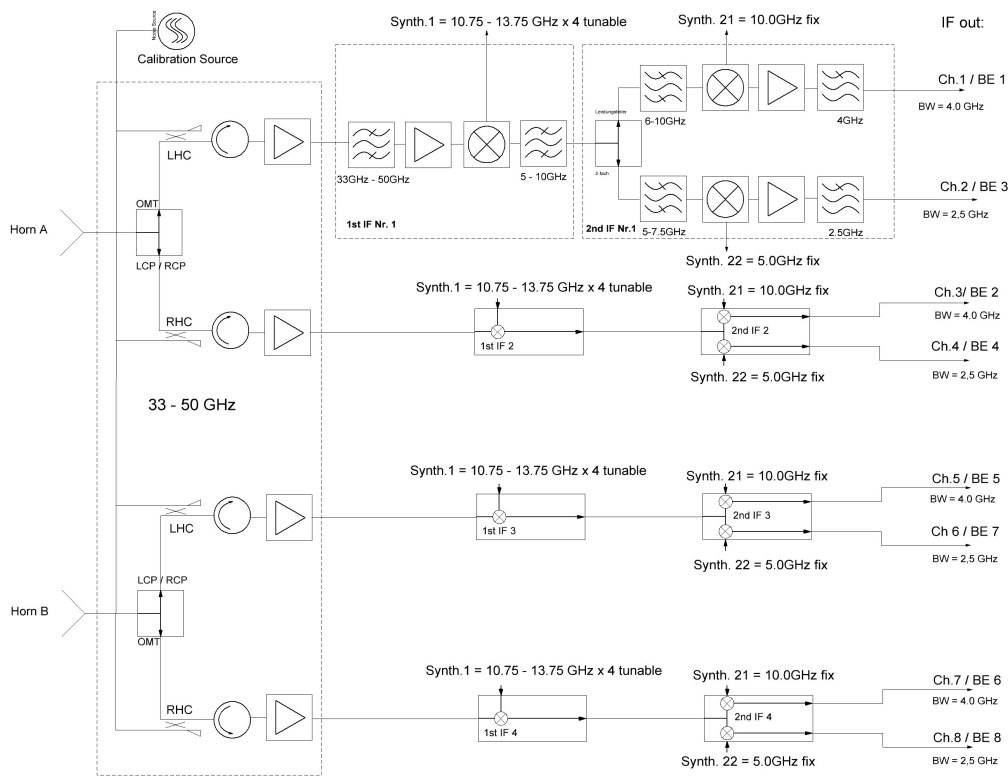


Technical Documentation of the Q-Band Receiver 33 -50 GHz (S7mm)

Type	HEMT cooled			
Channels	8	(upper/lower band of 2 polarizations in 2 horns each)		
Receiver Noise	30-50K	depending on frequency band: channels 1&2 (horn A; offset horn) and channels 3&4 (horn B; main offset)		
Frequency range	33 GHz - 50 GHz	(for details see conversion plan)		
Polarization	LHC/RHC	2 horns		
Calibration	Noise diode	noise figures for high channels low channels		
1. IF	5 - 10 GHz	(Synthesizer 1 = 10.75 - 13.75 GHz x 4)		
2. IF	0 - 4 GHz	lower band (Synthesizer 21 = 10 GHz)		
	0 -2.5GHZ	upper band (Synthesizer 22 = 5 GHz)		
Synth.1 frequency for fsky at center of:	4 GHz IF	2.5 GHz IF	300 MHz IF	0.5-1 GHz IF
Highband (Ch.1, 3, 5, 7): fsynth.1 =	(fsky + 8.0GHz)/4	(fsky + 8.75GHz)/4	(fsky + 9.85GHz)/4	(fsky + 9.25GHz)/4
Lowband (Ch.2, 4, 6, 8): fsynth.1 =		(fsky + 6.25GHz)/4	(fsky + 5.15GHz)/4	(fsky + 5.75GHz)/4



Synth. 1 frequency for fsky at center of: 4 GHz IF: 2.5GHz IF: 300MHz IF: VLBA (0.5-1GHz) IF:
Highband (Ch.1, 3, 5, 7): fsynth.1 = (fsky + 8.0GHz)/4 (fsky + 8.75GHz)/4 (fsky + 9.85GHz)/4 (fsky + 9.25GHz)/4
Lowband (Ch.2, 4, 6, 8): fsynth.1 = (fsky + 6.25GHz)/4 (fsky + 5.15GHz)/4 (fsky + 5.75GHz)/4

Änderungen		Datum	Name	Beschreibung	Bearbeiter
10.03.2019	R. Keller	gpc	19.03.2019	R. Keller	Q-Band Empfänger S7
10.03.2019	R. Keller	gpc			
10.03.2019	R. Keller				

Simplified [Block Diagram](#) of the complete receiver, (RK on 19.3.2019)

Detailed [Block Diagram](#) of the Frontend including 1st IF (RK on 23.10.2018)

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Last update: **2019/12/13 12:01**

