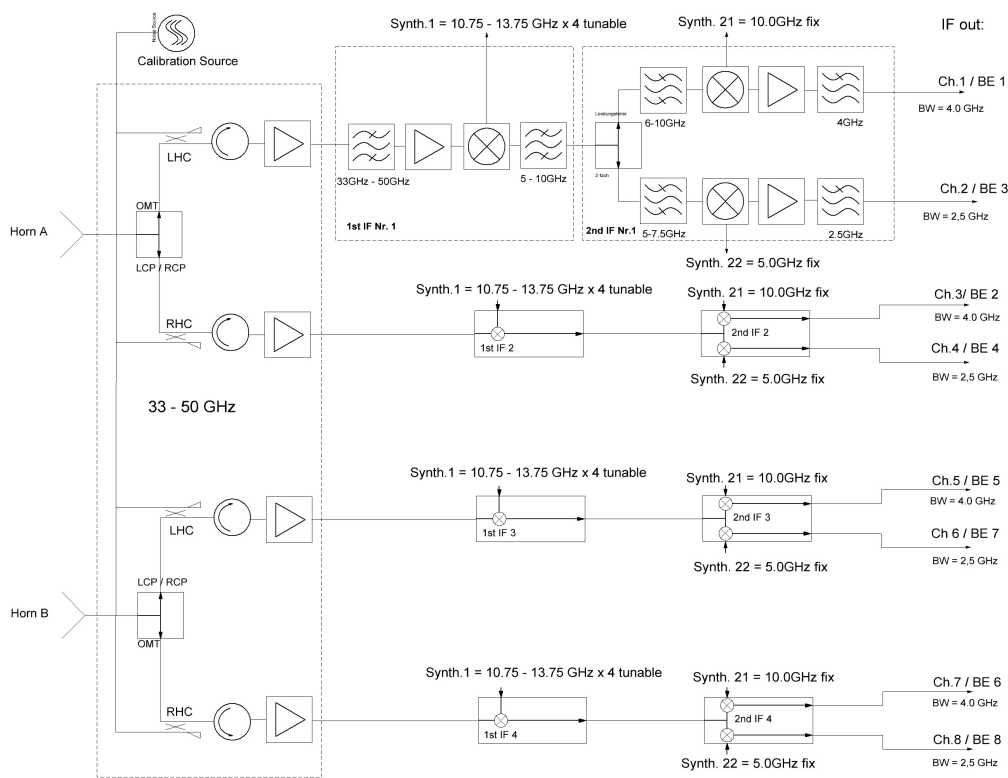


Technical Documentation of the Q-Band Receiver 33 -50 GHz (S7mm)

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)			
<i>Synth.1 frequency for fsky at center of:</i>			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	Erstellt
Datum	Name	gpc	09.12.2019	R. Neve
19.03.2019	R. Neve	gpc		
11.03.2019	R. Neve			
18.02.2019	R. Neve			

Q-Band Empfänger S7

Zeichnungs-Nr.: bsb q-band neu Web.spl

Blatt Nr.:

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)

of the HITTITE Synthesizer (SYNTH01) and programming manual

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