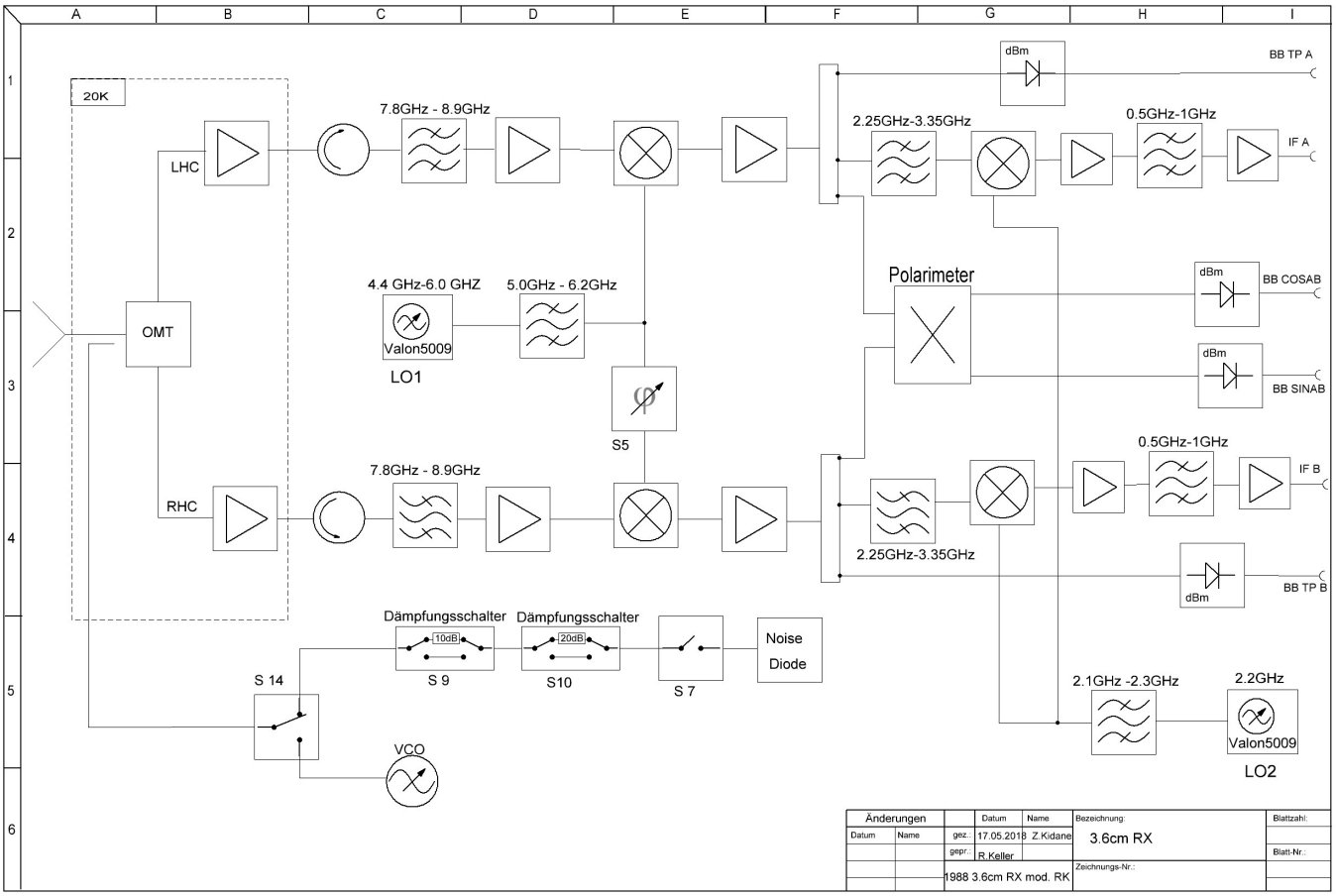
Technical Documentation of the 3.6cm Receiver 7.95 - 9.15 GHz (S36mm)

Type	HEMT cooled		
Channels	2		
Receiver Noise	15K		
Frequency range	7.95 - 9.15 GHz		
Polarization	LHC/RHC	single horn	
Calibration	Noise diode	phase cal for VLBI	
1st IF	2.2 -3.2 GHz	Synthesizer 1 =	
LO1	Valon 5009	fsynt.1 = 4.4 - 6 GHz	(preset 5.55 GHz)
2nd IF	0 - 1 GHz		
LO2	Valon 5009	fsynt.2 = 2.2 GHz	



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

Comment

The 8.6 GHz system is a secondary focus receiver with cooled HEMT amplifiers and a cooled polarization transducer. The system is set up for receiving both circular polarizations. Since the calibration signal is injected through the directional coupler directly following the horn, it is linearly polarized. The feed is fed through the inner part of the 2.3 GHz offset paraboloid feed system of the S130mm receiver to form a S/X-band system for VLBI observations.

The receiver is extended to 1.1 GHz instantaneous bandwidth in the VLBI IF. To use the full bandwidth the LOs have to set to the following values:

Synth.1 = 5.646 MHz

Synth.2 = 2.204 MHz

Only with these fixed settings the full bandwidth can be accessed (see also block diagram).