

Description of Block Diagram

The R&S FSL is a triple-conversion heterodyne receiver for the frequency range from 9 kHz to 3 GHz, 6 GHz or 18 (20) GHz, depending on the instrument model. After signals are received, they are processed by the frontend to a digital IF of approx. 49 MHz. This IF is fed to the motherboard where the digital filtering is provided. The remaining data are transferred to the host processor via a PCI interface. The hardware settings are controlled via a serial interface on the motherboard that is set from the host via the PCI interface.

In R&S FSL models with a tracking generator up to 6 GHz, the TG is located on the frontend module.

Frontend

The frontend converts the receive frequencies to an IF of 49 MHz. The module also includes the required local oscillators and associated frequency processing circuits and the AD-Converter.

The RF signal passes from the input connector via the limiter and the input switch to the electronic input attenuator, which can be set from 0 dB to -30 dB in steps of 5 dB. The input signal is applied to the switch as well as a 65.833 MHz signal which has a close tolerance level for the self-alignment routine of the instrument. After the input attenuator a 15 dB RF amplifier can be switched into the signal path when the RF preamplifier option is fitted. In the FSH18 an external relay is used to switch the RF input directly to input 1 or via a 10 dB pad to input 2 of the frontend module.

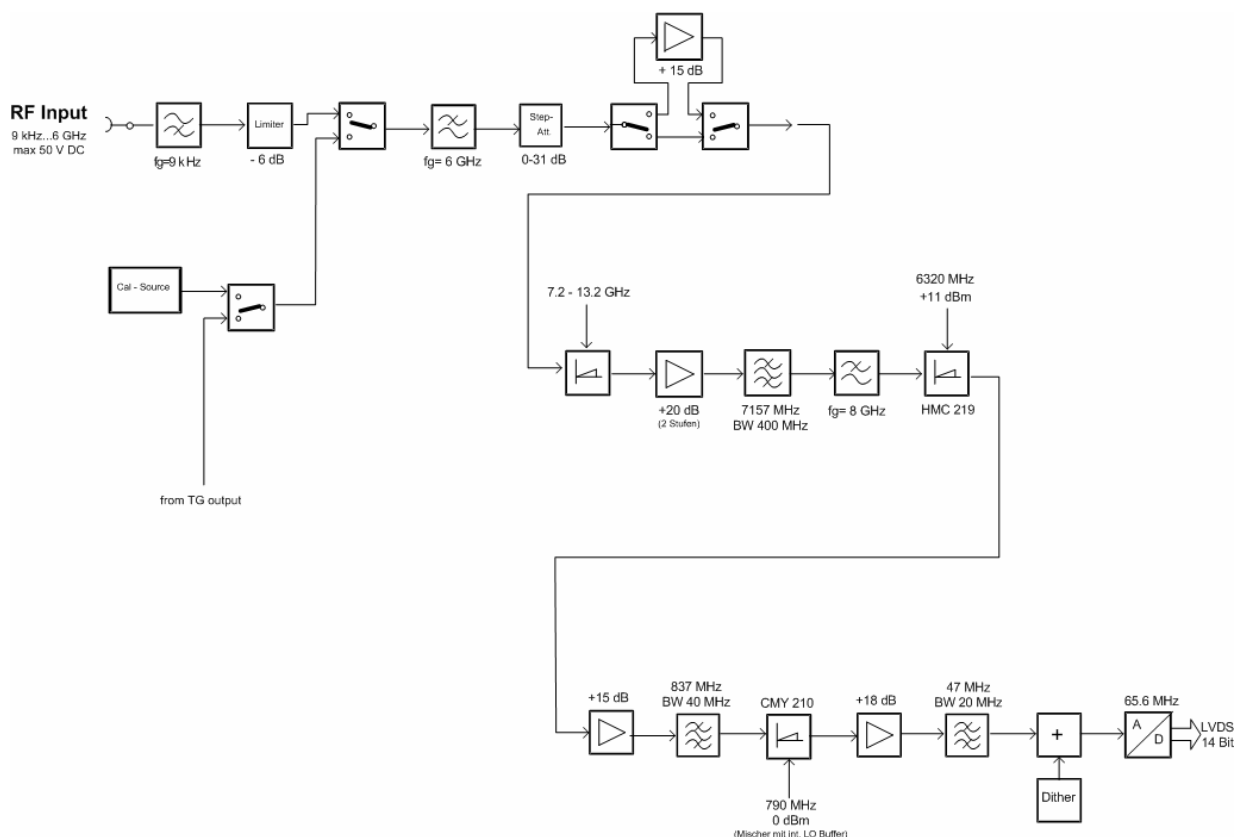


Fig. 3-2 RF-to-IF conversion R&S FSL3 / 6