Internal Modulation Sources

An LF generator and a pulse generator are available as internal modulation sources for a fully equipped instrument. The LF generator supplies sinusoidal or rectangular signals.

The optional pulse generator (option R&S SMB-K27) provides single and double pulse modulation with selectable pulse widths and periods or a user-definable pulse train.

See also Chapter 4.5.1, "Overview of LF Generator", on page 223.

External Modulation Sources

The modulation input [MOD EXT] at the instrument front provides the external modulation sources for amplitude, frequency and phase modulation.

The external audio signal for stereo modulation is input via the analog [L] and [R] inputs or via the digital [S/P DIF] interface at the rear of the instrument.

The external modulation signal for AM, FM and PM at the input must have a voltage of U_S = 1 V (U_{EFF} = 0.707 V) in order to achieve the displayed modulation depth and range. The input voltage should not exceed 1 V, otherwise modulation distortions might occur.

Considerations to AM when using an external modulation signal:

With Mod Ext Coupling > DC, the RF output signal behaves according to:

- input signal = 0 V: the RF output amplitude corresponds to the level value set in the R&S SMB
- input signal = +1 V: the output level increases up to the maximum value given by the set modulation sensitivity
- input signal = -1 V: the output level decreases down to the minimum value given by the set modulation sensitivity

With Mod Ext Coupling > AC, the modulation input signal is internally highpass filtered. Therefore, the DC content of the input signal is removed before it reaches the amplitude modulator.

The [PULSE EXT] connector at the rear of the instrument controls the external pulse modulation. The input shows some hysteresis with threshold levels of 0.5 V/1.5 V. The voltage must not exceed 5 V.

Simultaneous Operation of Several Modulations or Other Operating Modes

The table shows the modulations and operating modes which can be activated simultaneously (+) or which deactivate each other (-).

	AM	FM	PhiM	Pulse
Amplitude modulation (AM)	/	+	+	(+)
Frequency modulation (FM)	+	/	-	+