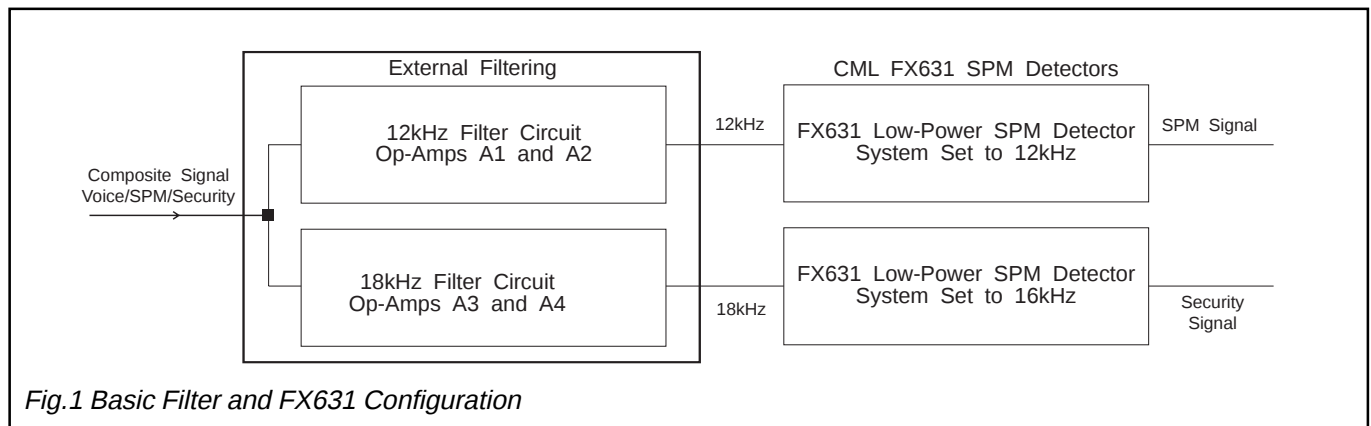


Téléphone à carte SPM Detector

- A dual (12kHz and 18kHz) tone detector circuit -

This Application Note describes how two FX631 Low-Voltage (Subscriber Pulse Metering) SPM Detector microcircuits can be used, with additional external filter components, to detect both the 12kHz SPM and the 18kHz security tones employed in the French payphone/cardphone system. This Application Note must be read in conjunction with the current FX631 Data Sheet.



The Circuit

The telephone signal will consist of voice, 12kHz SPM pulses and an 18kHz security system signal.

The current FX631 design allows it to completely reject voice frequencies but, the close proximity of the 12kHz and 18kHz frequencies require some form of separation pre-filtering.

Figures 1 and 2 describe, basically and in detail, the circuitry requirements to separate the 12kHz and 18kHz signals and to provide them to the processing medium.

Amplifiers A1, A2, A3 and A4 are formed using a TLC274 quad Op-Amp; A1 and A3 form attenuators to set the devices to the required sensitivity.

12kHz Filter section

Amplifier A2, with components, (Figure 2) forms a 12kHz/18kHz pole/zero pair feeding FX631A whose input stage is set to unity gain. FX631A is set to operate to a 12kHz SPM system with the Xtal/clock input at 3.579545MHz. This configuration separates the 12kHz SPM signal.

18kHz Filter Section

Amplifier A4, with components, forms an 18kHz/12kHz pole/zero pair feeding FX631B whose input stage is set to unity gain. FX631B is set to operate to a 16kHz SPM system and upgraded to operate to 18kHz by increasing the Xtal/clock input to 4.032MHz. This configuration separates the 18kHz security frequencies.

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