

Abstract

Apparatus for the interference-immune modulation and demodulation of analog signals for message transmission via the screens of power transmission cables

The apparatus according to the invention has at least a series circuit formed by a clocked bandpass filter (GT), a Schmitt trigger (ST) and a digital demodulator (DDM) at a receiving end (E) and at least a digital modulator (DM) at a transmitting end (S). Furthermore, means (PT; CPU) for generating a central precision clock signal (T) are present, which precision clock signal is fed as a common time base at least to the clocked bandpass filter (GT), to the demodulator (DDM) and to the modulator (DM). The modulator (DM) preferably contains at least one digital frequency generator which is driven by the precision clock signal (T) and derives the characteristic frequencies (FL, FH) for frequency modulation from the precision clock signal (T) with high accuracy. The demodulator (DDM) preferably contains a reference counter for counting out the periods of analog reception signals (EK), the counting clock signal of which counter is determined by the precision clock signal (T). The clocked bandpass filter (GT) is preferably designed as a clocked capacitor filter whose mid-frequency is determined by the precision clock signal (T).

FIGURE 1