Title (en)

MULTI-LEVEL, MULTI-FREQUENCY INTERFERENCE PATTERN ANALOG WAVEFORM ENCODING OF DIGITAL DATA FOR TRANSMISSION

Title (de)

KODIERUNG DIGITALER DATEN ZUR ÜBERTRAGUNG VON ANALOGEN WELLENFORMEN MIT MEHRPEGELIGEN-, MEHRFREQUENZ-INTERFERENZMUSTERN

Title (fr)

CODAGE DE DONNEES NUMERIQUES EN UNE FORME D'ONDE ANALOGIQUE A DIAGRAMME D'INTERFERENCE A NIVEAUX ET A FREQUENCES MULTIPLES POUR TRANSMISSION

Publication

EP 0876725 A1 19981111 (EN)

Application

EP 97903777 A 19970110

Priority

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- US 984396 P 19960116
- US 77352797 A 19970101

Abstract (en)

[origin: WO9726745A1] Digital data is encoded into a series of analog waveforms, called symbol waveforms, created as the result of interference of sinusoidal wave interference patterns. Each of these waveforms is an encoded version of N-bits of data (block 210). These encoded symbol waveforms are an encoded version which is very different, in both appearance and in propagation properties, from traditional voltage state signaling or pulse codes. The encoded symbol waveforms are formed by generating (blocks 230 and 240) and superimposing (blocks 270A and 270B) a set of analog sinusoidal waves, where the gain (blocks 260A and 260B) and phase shift (blocks 250A and 250B) of each wave is computed so as to provide, in combination, a unique interference pattern that can be recognized, via signal processing techniques, by a detector and then decoded. The symbol waveforms are computed so that successive symbol waveforms seam together to form a smooth continuous AC analog signal that does not itself generate interference frequencies, can be bandpass filtered, and is suitable for long distance propagation. The transmission technology of the present invention is applicable to, inter alias, a digital communication device or system.

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