A FULL-DUPLEX 32K BITS PER SECOND VOICE CODER FOR USE IN THE PROPOSED SECOND GENERATION CORDLESS TELEPHONE APPLICATION

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ABSTRACT

SYNOPSIS:

Amongst the many possible voice functions that can be implemented, voice coding has carried the most promise of finding early applications due to potential use in the existing telecommunications networks. However, commercial realisation of this opportunity has been somewhat retarded, partly due to the problem of coding voice down to low data rates not being addressed adequately. Whereas this has not been purely a matter of suitable algorithms being unavailable, the cost to performance necessary for many obvious consumer level applications has not been achieved. This paper discusses a Voice Coder for an application which may become one of the early successes in the mass market.

The standard proposed for the second generation cordless telephones, the so-called CT2, requires voice to be coded digitally. This method of RF channel coding is aimed at overcoming many of the disadvantages of the present generation of cordless telephones, namely, voice quality, fading, interference or cross-talk in high user density and privacy.

The very nature of the application sets out a number of demanding challenges to the technologist out to conquer the problem. The use of a coder in a mobile handset calls for very low power consumption to conserve batteries over reasonable periods of use. The size of such a device needs to be compact to enable the use of it as a convenient ‘communicator’ carried about one’s person. And the pricing required to place a product attractive eventually to a domestic consumer, is stringent. In the coder discussed here, these needs have been vindicated to a significant extent, by using VLSI integration techniques. The end product discussed is to be made available shortly as a commercial sub-system to OEMs.