This Sheet Has Been Replaced

ABSTRACT OF THE DISCLOSURE

An encoding scheme resistant to transmission errors encodes a data bitstream for application to a quadrature amplitude modulator (QAM) in a high definition television system. The error-resistant code provides a rotationally symmetrical 32-point constellation on a plane defined by I,Q quadrature axes. The constellation is divided into first (A) and second (B) partitions arranged so that constellation points that are closest in distance to any constellation point of the first partition belong to the second partition, and constellation points that are closest in distance to any constellation point of the second partition belong to the first partition. The binary value of one bit of each of successive 9-bit packets in the bitstream determines that one of the two partitions (A),(B) to which both of a consecutive pair of first and second constellation-point transmissions belong (the first and second transmitted constellation-points of that consecutive pair being selected by the then current 9-bit packet of the stream). The code is such that the binary values of such one bit of each of alternate ones of the successive 9-bit packets are opposite to one another. This permits a receiver decoder to decide whether each received constellation-point belongs to a first or a second constellation, thereby permitting the detection and, in most cases, the correction of transmission errors.