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(71) Applicant(s)

T.T.R. Technologies Ltd

(Incorporated in Israel)

Hanagar Street 2, 44424 Kfar Saba, Israel

(74) Agent and/or Address for Service

Bailey, Walsh & Co

5 York Place, LEEDS, LS1 2SD, United Kingdom

(72) Inventor(s)

Moshe Brody

Baruch Sollish

(54) Abstract Title

**Copy-protected digital audio compact disc, and method and system for producing same**

(57) A copy-protected digital audio compact disc and method for producing same, such that neither the proper playing of the original nor the enforcement of the copy-protection depends on the use of any special equipment. A pattern of latent noise is incorporated into a digital audio CD by overwriting some of the original audio signal data symbols with grossly-erroneous values, and then overwriting the corresponding error-correction parity symbols in such a way as to create an uncorrectable error in the codewords containing the erroneous values. An ordinary CD player of such a disc will therefore detect each occurrence of a latent noise value as an uncorrectable error and will apply interpolative error-concealment to prevent the output of the error. By appropriately choosing the locations for the overwriting of the erroneous values in such a way that the interpolated value will be substantially identical to the original value, the resulting sound output from the CD player will match that of the original audio signal, so that an ordinary CD audio player will properly reproduce the original audio signal from the protected disc without any superimposed noise. Most commercially -available CD-ROM drives for computers, however, do not employ error-concealment when reading a compact disc as a data source. Depending on the copying software employed with such CD-ROM drives, when an uncorrectable error is detected, either no data is read from the disc, or only the raw uncorrected data is read from the disc. Thus, either substantial portions of the original disc will be uncopiable because of the uncorrectable errors, or the uncorrected raw data of the original will be copied, which will place audible noise on the unauthorized copy. To inhibit unauthorized copying via CD-ROM drives that employ error-concealment, alterations are made to the channel Q mode and/or CRC to disable the ability of the CD-ROM drive to seek to the desired data position.

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