

ABSTRACT

A digital watermark embedding apparatus for embedding embedding information, as digital
5 watermark, into an input signal having dimensions equal to or greater than N (N is an integer equal to or greater than 2) and a digital watermark detection apparatus for detecting the digital watermark are disclosed. The digital watermark embedding
10 apparatus generates an embedding sequence based on embedding information, generates a $N-1$ - dimensional pattern based on the embedding sequence, generates N -dimensional embedding pattern by modulating a periodic signal according to a value on the $N-1$ -
15 dimensional pattern, and superimposing the embedding pattern in the input signal and outputs it. The digital watermark detection apparatus measures a component of a predetermined periodic signal in a direction of a dimension of the input signal to
20 obtain a $N-1$ - dimensional pattern, obtains a detection sequence from values of the $N-1$ dimensional pattern, and detects embedded digital watermark based on a size of correlation value between the detection sequence and an embedding
25 sequence.