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**Etchegoyen et al.**

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(54) **NEAR FIELD AUTHENTICATION THROUGH COMMUNICATION OF ENCLOSED CONTENT SOUND WAVES**

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**H04B 7/00** (2006.01)  
**H04B 5/02** (2006.01)  
**H04B 5/00** (2006.01)

(52) **U.S. Cl.**

CPC ..... **H04B 5/02** (2013.01); **H04B 5/0031** (2013.01)

(58) **Field of Classification Search**

CPC ..... H04B 1/034; H04B 1/205; H04B 5/0031; H04B 5/02

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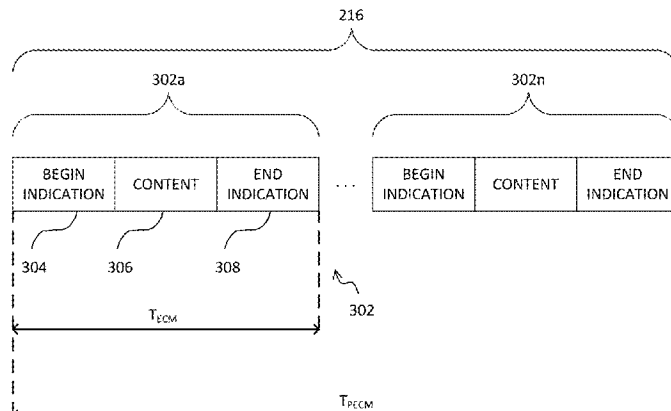
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(57) **ABSTRACT**

A method for near field authentication of sources using an audio transceiver computing device includes scanning a plurality of predetermined frequencies for a free frequency, selecting the free frequency from the plurality of predetermined frequencies, generating a periodic enclosed content message, generating a modulated carrier wave representing the periodic enclosed content message, and transmitting the modulated carrier wave at the free frequency. A method for near field authentication of sources using a microphone input of a receiving computing device includes scanning a plurality of predetermined frequencies to detect a signal using the microphone input, verifying, responsive to detecting the signal, that the signal includes at least one enclosed content message, and extracting a content from the enclosed content message.

**12 Claims, 9 Drawing Sheets**





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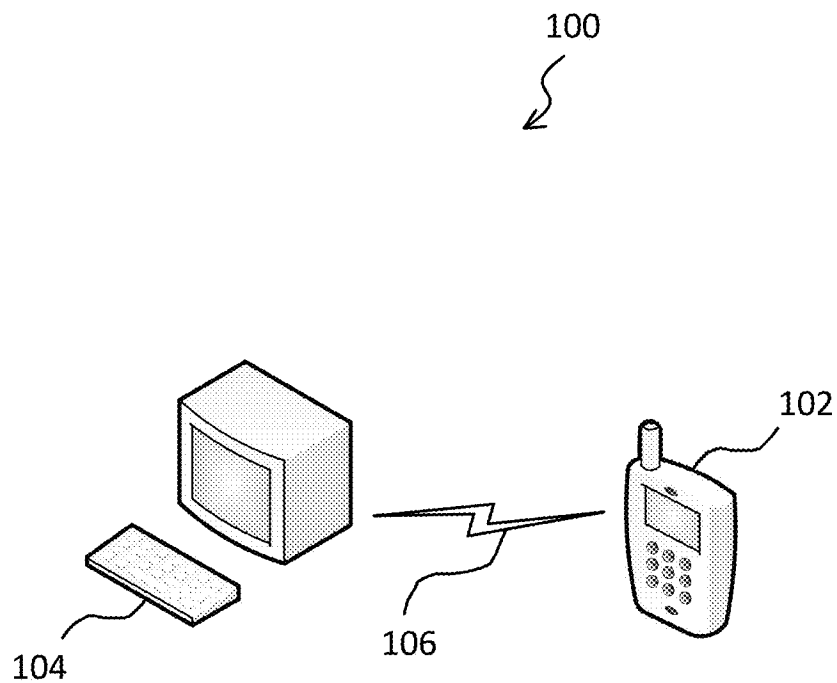


FIG. 1

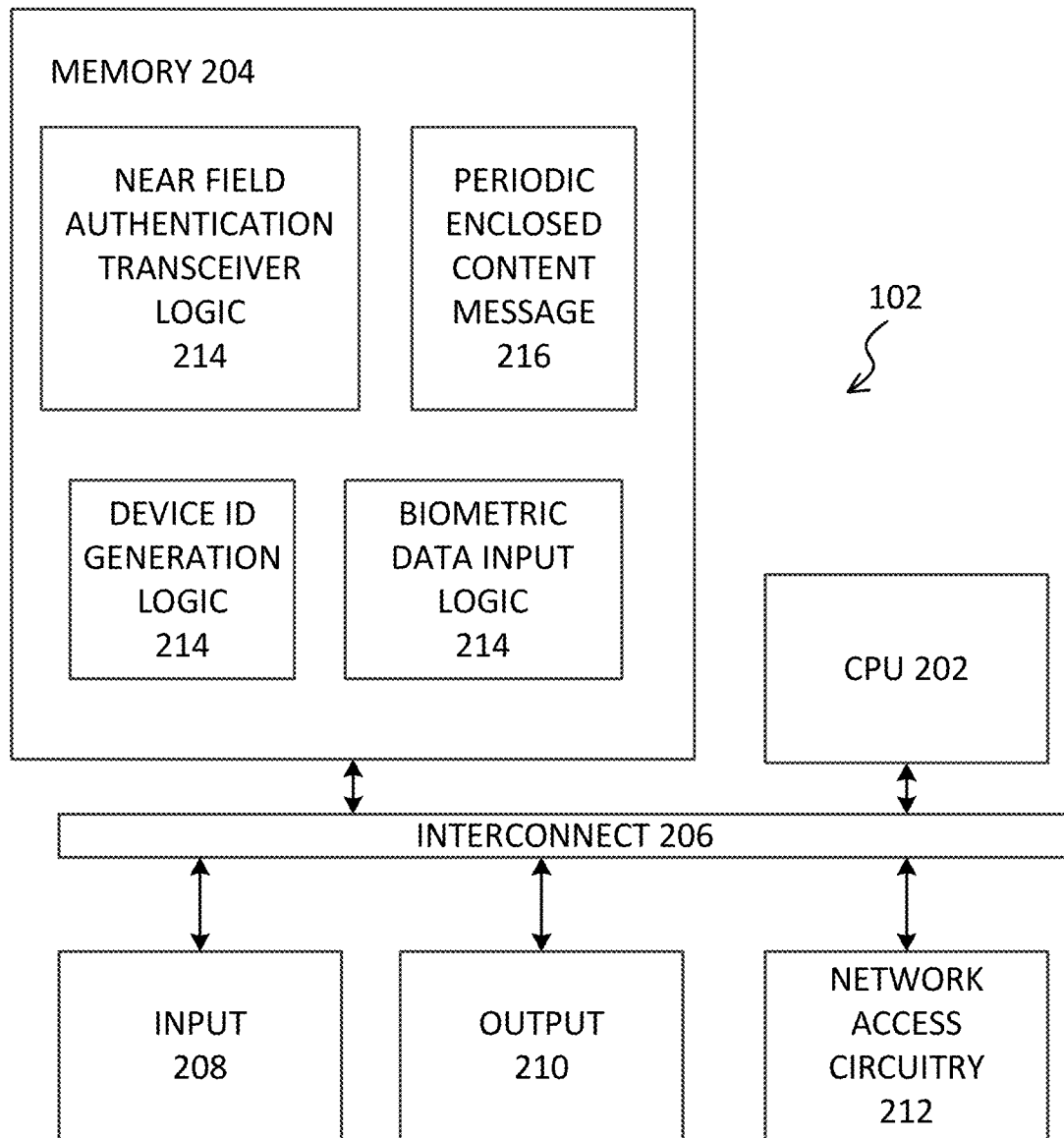


FIG. 2

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