

[54] SECURE COMMUNICATIONS IN A WIRELESS SYSTEM 5,600,324 2/1997 Reed et al. .... 340/825.69 5,661,804 8/1997 Dykema et al. .... 380/21

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[73] Assignee: Pittway Corporation, Chicago, Ill.

[21] Appl. No.: 08/667,847

[22] Filed: Jun. 20, 1996

[51] Int. Cl.<sup>7</sup> ..... H04L 9/00; G08C 19/00; G06F 7/04

Primary Examiner—William Oen Attorney, Agent, or Firm—Anthony R. Barkume, P.C.

[52] U.S. Cl. .... 380/21; 340/825.72; 340/825.31; 340/825.09

[57] ABSTRACT

[58] Field of Search ..... 380/21, 23, 28, 380/29, 43, 46; 340/506, 539, 825.22, 825.31, 825.32, 825.34, 825.5, 825.69, 825.72

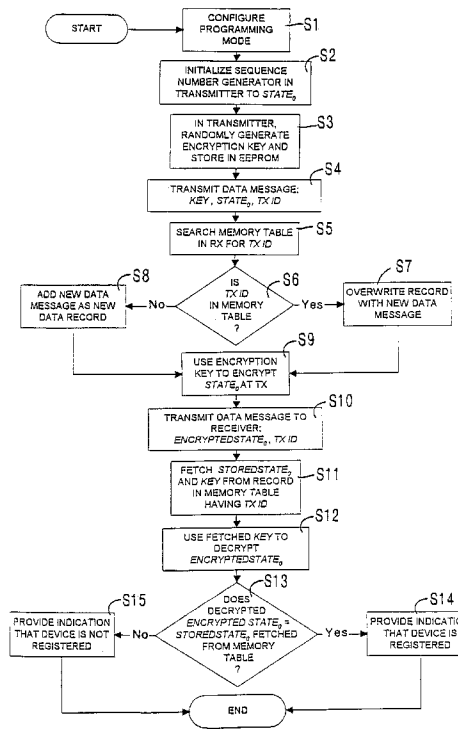
Disclosed are three major aspects relating to wireless transmission of encrypted data messages in a security system wherein the receiver stores locally an encryption key utilized by the transmitting device to encrypt the data message and the receiver uses the encryption key to decrypt an encrypted data message, and wherein a sequence number generator is used to synchronously track the message sequence at both the transmitter and receiver. A first major aspect involves encrypted device registration (learning) methods that are user-friendly and immune from detection by technically skilled intruders with special RF equipment, and periodic user-friendly changing of the encryption key per encrypted transmitting device in the system. A second major aspect involves encrypted device de-registration (unlearning, or deletion) that is likewise user friendly. A third major aspect of the invention allows the receiver to process encrypted and non-encrypted messages, interchangeably, within the same wireless security system.

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20 Claims, 7 Drawing Sheets



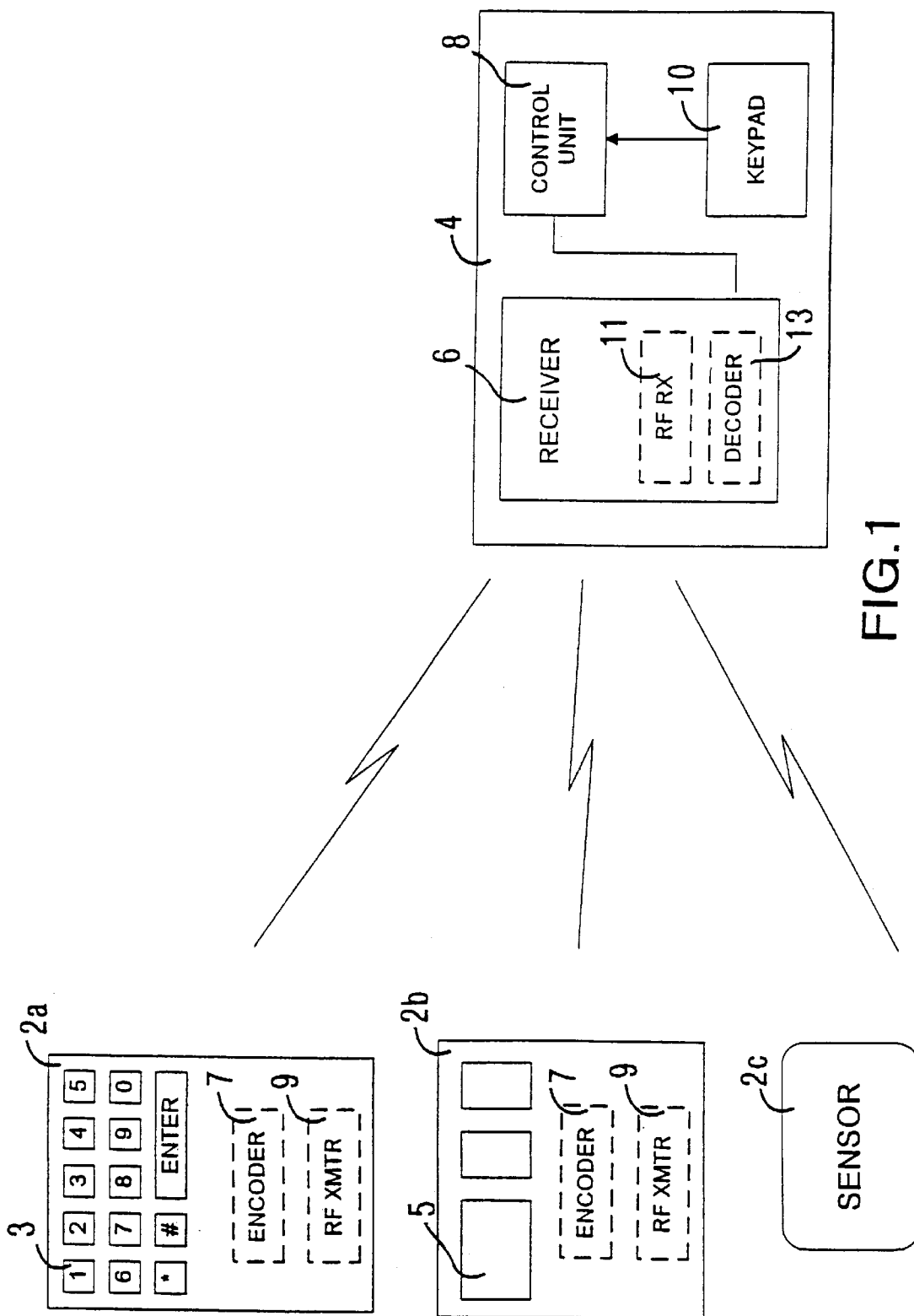


FIG. 1

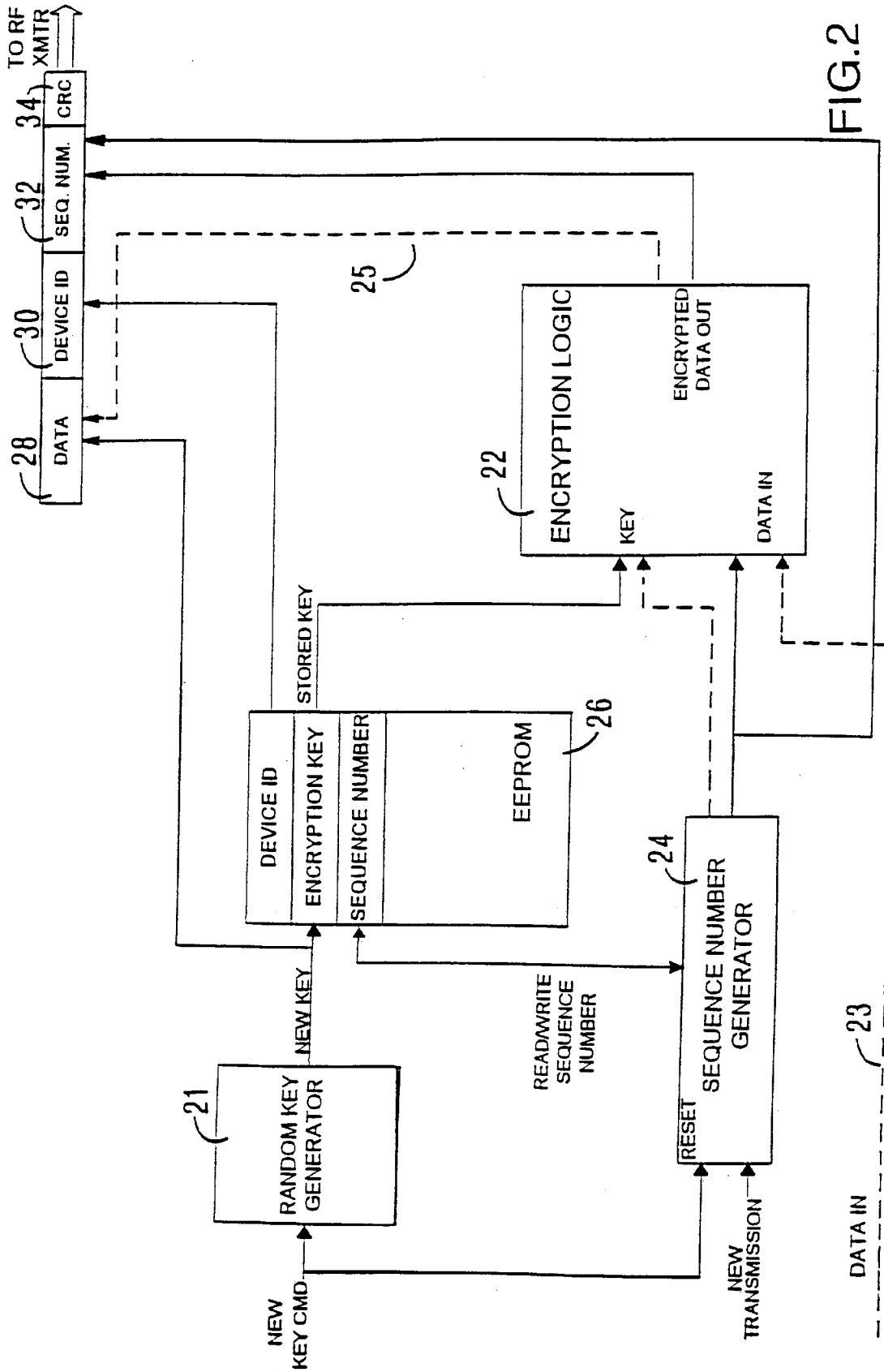


FIG. 2

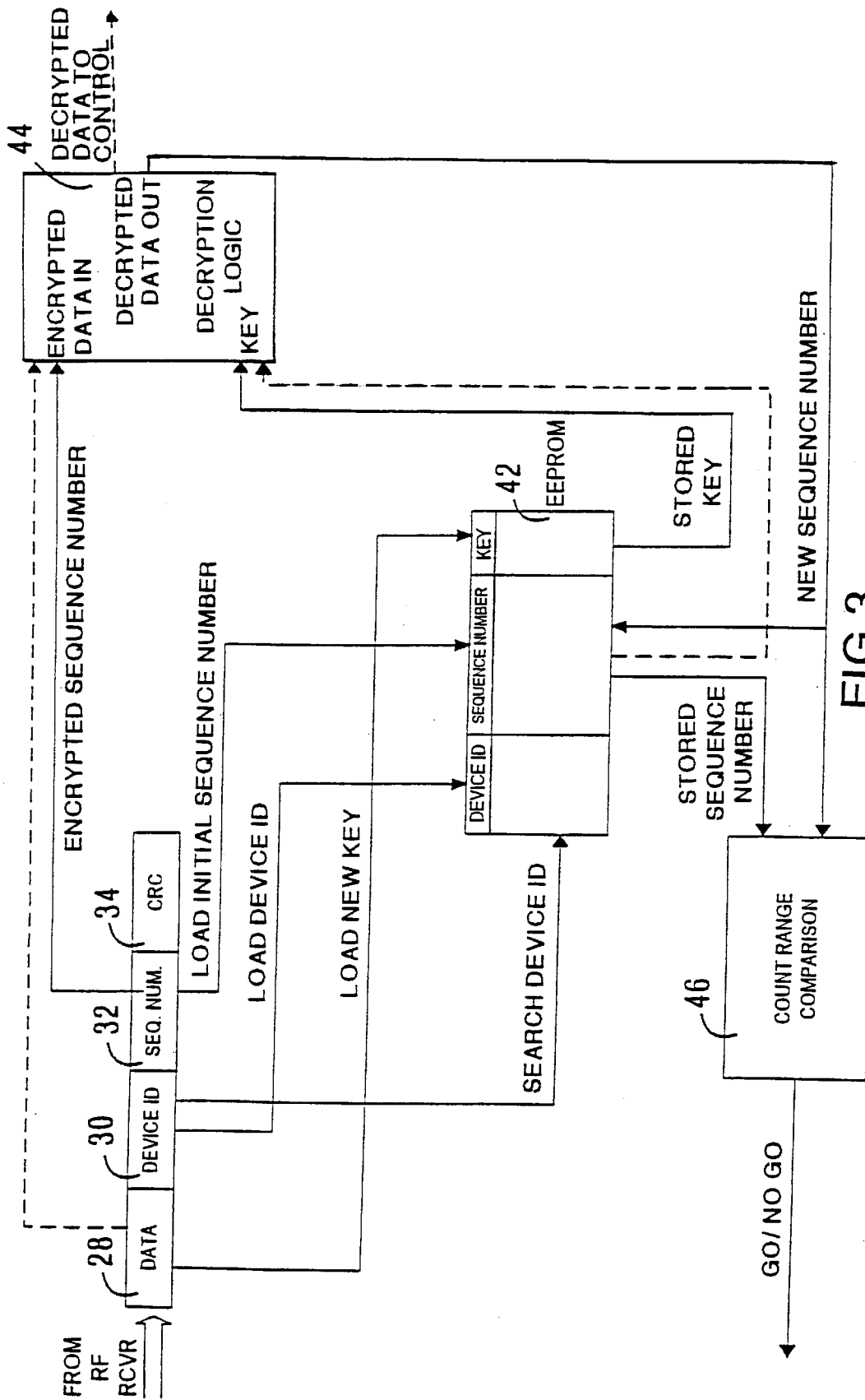


FIG. 3

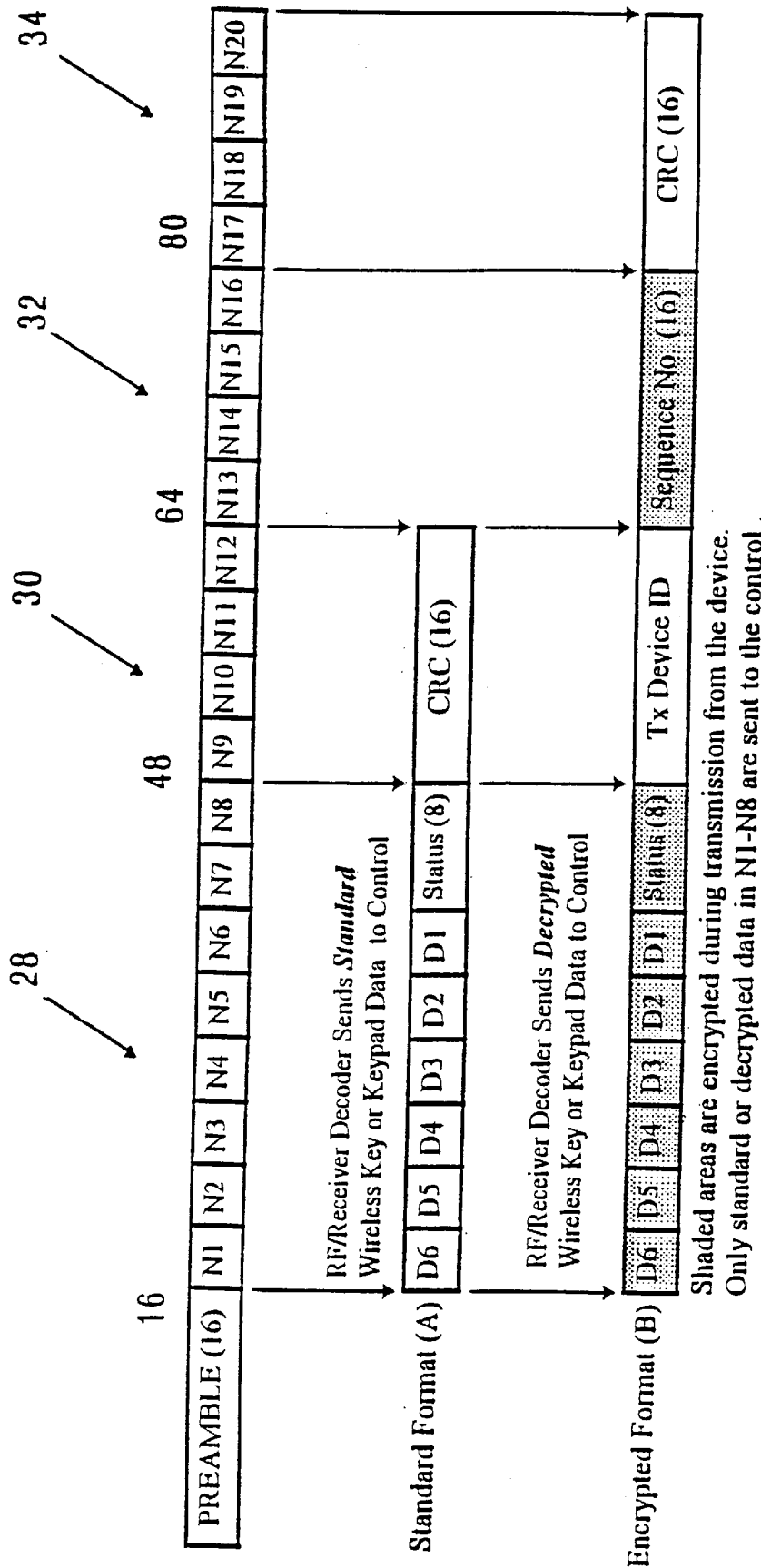


FIG. 4 Encrypted and Unencrypted Wireless Transmitted Message Formats

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