United States Patent [19]

Garrabrant et al.

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[54] **PACKET RADIO COMMUNICATION SYSTEM PROTOCOL**

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[21] Appl. No.: **404,111**

[22] Filed: **Mar. 14, 1995**

Related U.S. Application Data

[63] Continuation of Ser. No. 804,319, Dec. 9, 1991, abandoned.

[51] **Int. Cl.⁶** **H04Q 1/00**

[52] **U.S. Cl.** **340/825.52**; 340/825.5; 370/394; 370/913; 371/33

[58] **Field of Search** 340/825.52, 825.53, 340/825.5; 370/60, 61, 94.1; 371/32, 33, 60

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Primary Examiner—Brian Zimmerman
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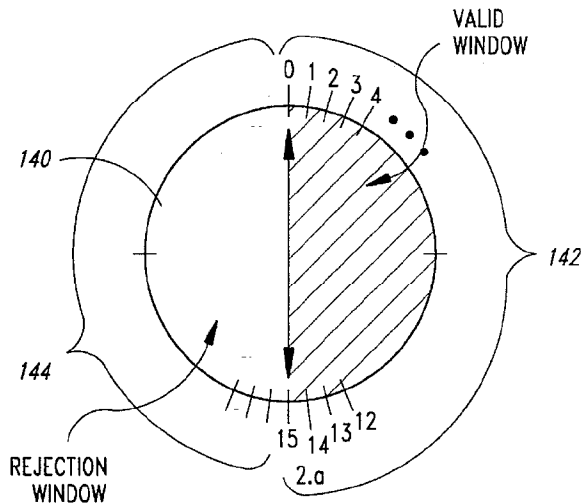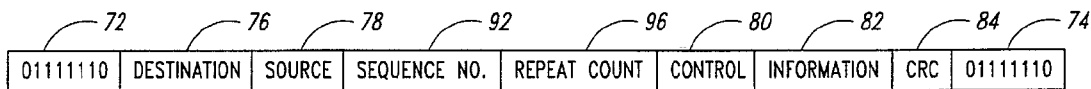
[57] **ABSTRACT**

A method and apparatus for transmitting data in a packet radio communication system having data sources, destinations and intermediate repeaters. According to a packet protocol, a repeat count in the protocol is decremented each time a packet is retransmitted, until the repeat count reaches zero, at which time the packet is discarded. According to another packet protocol, a sequence index is used to prevent duplicate packets from being received by requiring that the sequence number fall within a sequence number window at each device, which is incremented each time a packet is received. The sequence number is also used to cause the retransmission of packets which are lost, at which time the sequence number windows in the devices which are affected are reset to allow transmission of the lost packet.

13 Claims, 9 Drawing Sheets
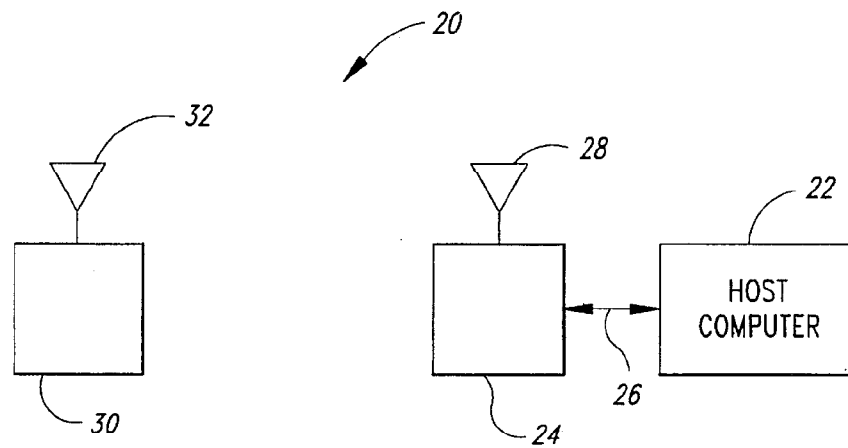
Fig. 1
(PRIOR ART)

Fig. 2
(PRIOR ART)

Fig. 6

01111110	DESTINATION	SOURCE	CONTROL	INFORMATION	CRC	01111110

72   76   78   80   82   84   74

70

Fig. 3 (PRIOR ART)

01111110	DESTINATION	SOURCE	SEQUENCE NO.	REPEAT COUNT	CONTROL	INFORMATION	CRC	01111110

72   76   78   92   96   80   82   84   74

90

Fig. 4

BRU
COVERAGE

REPEATER 1
COVERAGE

REPEATER 2
Tk COVERAGE

DEVICE mA
COVERAGE

Fig. 5

VALID
WINDOW

REJECTION
WINDOW
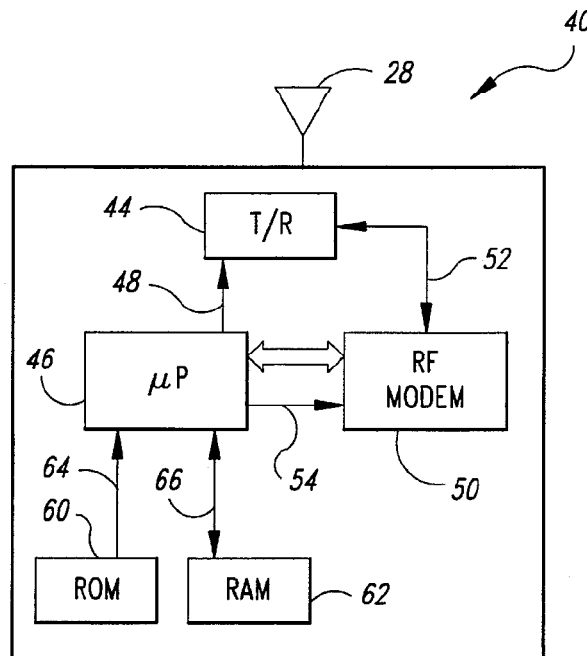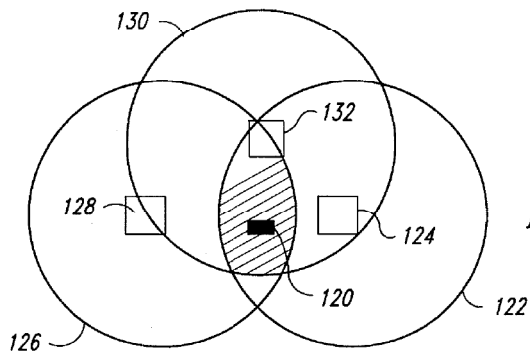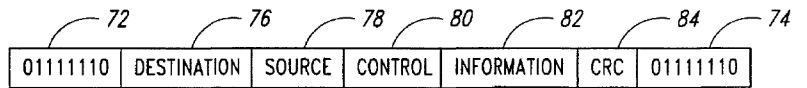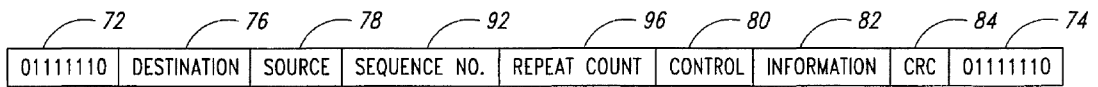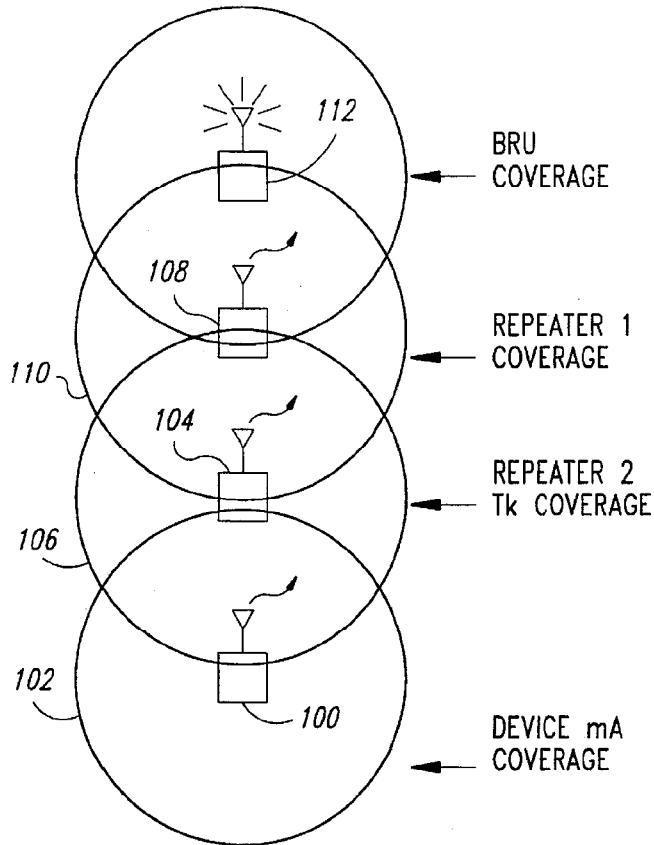
Fig. 7A

Fig. 7B

Fig. 9

DOCKET ALARM
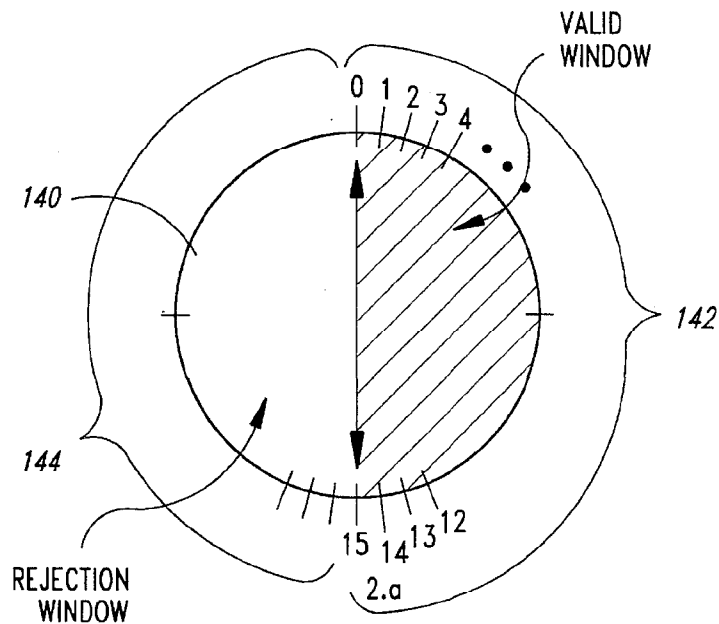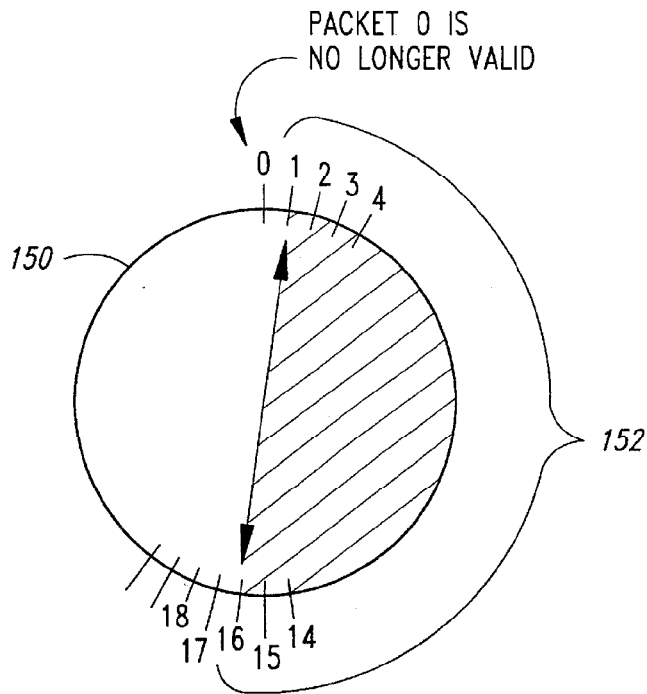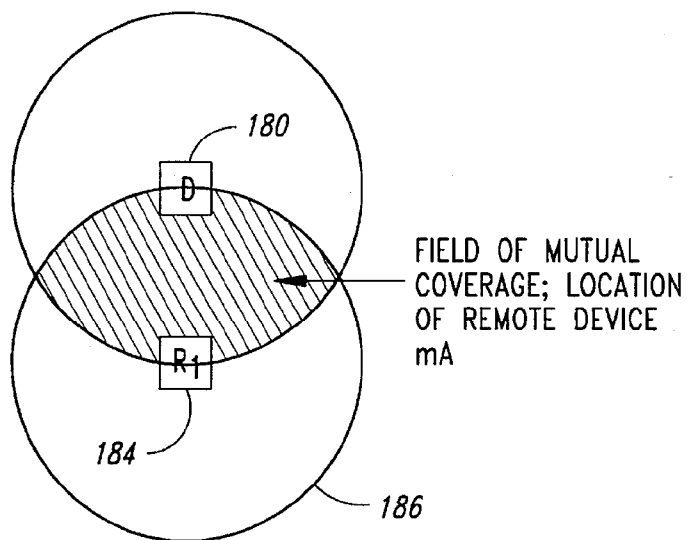
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