

receiver. The receiving unit is for receiving the radio signal to produce a received signal which will be described in the following. The announcing unit is for announcing an announce to inform a user of the paging receiver of reception of the radio signal. The control unit is for controlling the announcing unit in accordance with the received signal with reference made to the identification number.

The received signal carries an intermittent succession of frames each of which comprises a first and a second codeword. Each of the first and the second codewords includes a call number and is supplied with a signal condition.

It will be assumed that the signal condition becomes worse when one of the codewords is influenced by noise and others. In this case, the announce may be an erroneous one. This is because the control unit carries out comparison between the identification number and the call number received within a predetermined error range and controls the announcing unit in accordance with a result of the comparison. Each codeword may be received within the predetermined error range even when the signal condition is appreciably unfavorable.

SUMMARY OF THE INVENTION

It is an object of the present invention to ameliorate one or more disadvantages of the prior art.

According to one aspect of the present invention there is provided a radio communication apparatus including a memory for memorizing an identification number specific to said apparatus, receiving means for receiving a radio signal to produce a received signal, announcing means for announcing an announce, and control means for controlling said announcing means in accordance with said identification number and said received signal, said received signal carrying an intermittent succession of frames which are preassigned to said apparatus and each of which comprises a first and a second codeword, each of said first and said second codewords including a call number and received with a signal condition, said control means comprising: first control signal producing means connected to said receiving means and said memory for producing a

first control signal in accordance with said identification number, the call number of said first codeword, and the signal condition of said second codeword; second control signal producing means connected to said receiving means and said memory for producing a second control signal in accordance with said identification number, the call number of said second codeword, and the signal condition of said first codeword; announce signal producing means connected to said first control signal producing, said second control signal producing, and said announcing means for producing an announce signal in accordance with said first and said second control signals to make said announcing means announce said announce in compliance with said announce signal.

Brief Description of the Drawing:

Fig. 1 is a block diagram of a radio communication apparatus according to a first embodiment of this invention;

Fig. 2 is a signal format for use in describing operation of the radio communication apparatus illustrated in Fig. 1;

Fig 3 is a block diagram of a control part included in the radio communication apparatus illustrated in Fig. 1; and

Fig. 4 is a block diagram of a control part included in a radio communication apparatus according to a second embodiment of this invention.

Description of the Preferred Embodiment:

Referring to Fig. 1, a radio communication apparatus according to a first embodiment of this invention is a radio paging receiver 10 and is for carrying out communication with other radio paging receivers (not illustrated) by the use of a radio signal including a POCSAG code which is described before. The other radio paging receivers are similar in structure and

CLAIMS

1. A radio communication apparatus including a memory for memorizing an identification number specific to said apparatus, receiving means for receiving a radio signal to produce a received signal, announcing means for announcing an announce, and control means for controlling said announcing means in accordance with said identification number and said received signal, said received signal carrying an intermittent succession of frames which are preassigned to said apparatus and each of which comprises a first and a second codeword, each of said first and said second codewords including a call number and received with a signal condition, said control means comprising:

first control signal producing means connected to said receiving means and said memory for producing a first control signal in accordance with said identification number, the call number of said first codeword, and the signal condition of said second codeword;

second control signal producing means connected to said receiving means and said memory for producing a second control signal in accordance with said identification number, the call number of said second codeword, and the signal condition of said first codeword;

announce signal producing means connected to said first control signal producing, said second control signal producing, and said announcing means for producing an announce signal in accordance with said first and said second control signals to make said announcing means announce said announce in compliance with said announce signal.

2. A radio communication apparatus as claimed in claim 1, wherein said first control signal producing means comprises:

first comparing means connected to said receiving means and said memory for carrying out a first comparison between said identification number and the call number

of said first codeword to produce a first comparison result signal representative of a result of said first comparison;

first checking means connected to said receiving means for carrying out a first error check on the signal condition of said second codeword to produce a first check result signal representative of a result of said first error check; and

first local signal producing means connected to said first comparing and said first checking means for producing a first local signal as said first control signal in accordance with said first comparison and said first check result signals,

said second control signal producing means comprising:

second comparing means connected to said receiving means and said memory for carrying out a second comparison between said identification number and the call number of said second codeword to produce a second comparison result signal representative of a result of said second comparison;

second checking means connected to said receiving means for carrying out a second error check on the signal condition of said first codeword to produce a second check result signal representative of a result of said second error check; and

second local signal producing means connected to said second comparing and said second checking means for producing a second local signal as said second control signal in accordance with said second comparison and said second check result signals.

3. A radio communication apparatus as claimed in claim 2, wherein said first comparing means comprises:

a first comparator connected to said receiving means and said memory for carrying out a first local comparison between said identification number and said call number of the first codeword received within a predetermined error range to produce a first local comparison result signal representative of a result of said first local comparison; and

a first processor connected to said first comparator and said first local signal producing means for processing said first local comparison result signal into said first comparison result signal.

4. A radio communication apparatus as claimed in claim 2, wherein said second comparing means comprises:

a second comparator connected to said receiving means and said memory for carrying out a second local comparison between said identification number and said call number of the second codeword received within a predetermined error range of the call number of said second codeword to produce a second local comparison result signal representative of a result of said second local comparison; and

a second processor connected to said second comparator and said second local signal producing means for processing said second local comparison result signal into said second comparison result signal.

5. A radio communication apparatus as claimed in claim 2, wherein said first checking means comprises:

a first checking circuit connected to said receiving means for carrying out a first local error check on the signal condition of said second codeword to produce a first local check result signal representative of a result of said first local error check; and

a first processor connected to said first checking circuit and said first local signal producing means for processing said first local check result signal into said first check result signal.

6. A radio communication apparatus as claimed in claim 2, wherein said second checking means comprises:

a second checking circuit connected to said receiving means for carrying out a second local error check on the signal condition of said second codeword to produce a second local check result signal representative of a result of said second local error check; and

a second processor connected to said second checking circuit and said second local signal producing means for processing said second local check result signal into said second check result signal.

7. A radio communication apparatus as claimed in claim 1, said received signal further carrying a preamble signal representative of reception of said radio signal and a synchronization signal following said preamble signal, wherein each of said first and said second control signal producing means has a busy and an idle mode, said apparatus further comprising:

a detector connected to said receiving means for detecting said synchronization signal to produce a detection signal representative of detection of said synchronization signal; and

a mode switch connected to said detector, said first control signal producing, and said second control signal producing means for putting said first and said second control signal producing means into said busy mode by said detection signal.

8. A radio communication apparatus as claimed in claim 1, said received signal further carrying a preamble signal representative of reception of said radio signal and a synchronization signal following said preamble signal, wherein each of said first and said second control signal producing means has a busy and an idle mode, said apparatus further comprising:

third control signal producing means connected to said receiving and said announce signal producing means and said memory for producing a third control signal in accordance with said identification number and the call number of said first codeword and making said announce signal producing means produce said announce signal in accordance with said third control signal, said first and said second control signal producing means having a busy and an idle mode in common, said third control signal producing means having said busy and said idle modes;

a detector connected to said receiving means for detecting said synchronization signal to produce a detection signal representative of detection of said synchronization signals; and

selecting means connected to said detector, said first through said third control signal producing means for selecting from a combination of said first and said second

control signal producing means and said third control signal producing means to put said selected means into said mode in accordance with said detection signal and to put the other of said combination and said third control signal producing means into said idle mode.

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Abstract

RADIO COMMUNICATION APPARATUS CAPABLE OF PRODUCING AN
ANNOUNCE WITH A REDUCED ERROR

In a radio communication apparatus of a specific identification number, a control part (14) produces one of first and second control signals to make a loudspeaker (19) generate an announcement in response to a received radio signal carrying an intermittent succession of frames which are preassigned to the apparatus and each of which includes first and second codewords, each comprising a call number and received with a signal condition. The first control signal is produced in accordance with the identification number, the call number of the first codeword, and the signal condition of the second codeword. The second control signal is produced in accordance with the identification number, the call number of the second codeword, and the signal condition of the first codeword. The control part may additionally produce a third control signal.

(Fig. 1)