

A USER PROGRAMMABLE SELECTIVE CALL RECEIVER AND METHOD FOR
PROVIDING AN ALERT SIGNAL DEPENDENT UPON A RECEIVED
MESSAGE

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FIELD OF THE INVENTION

This invention relates to a user programmable
selective call receiver and method for providing an alert
10 signal dependent upon a received message.

BACKGROUND ART

Paged information transmitted from a central
15 information station to a selective call receiver, often
referred to as a pager, has become a well known and used
form of communication. Such selective call receivers are
usually carried by users for receiving paged messages when
they are away from their office or home telephone.

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In general a selective call receiver has an alert
mechanism for generating an audible signal that announces
reception of a received paged message. Upon receiving the
paged message the user may view the message content that
25 can be displayed upon a liquid crystal display associated
with the selective call receiver. However, in some
situations the user may not wish to view the message
content immediately.

30 In U.S. Patent no. 4,922,221 there is disclosed a
selective call receiver that provides three alert signals
indicative of a message absent call, a message present
call and a repeat call. To select one of these three alert
signals, the selective call receiver is addressed by a
35 different call code that refers to a different paged
message. Accordingly, the selection of the alert signals

is dependent on how the selective call receiver is addressed by an information station that sends the paged message. The resulting alert signal is dependent upon a priority allocated to a particular message by the
5 information station, therefore the user does not necessarily have control over selecting alert signal that can identify messages of different priorities.

SUMMARY OF THE INVENTION

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It is an aim of the invention to provide a selective call receiver or method for providing an alert signal dependent upon at least part of a received paged message.

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According to one aspect of the invention there is provided a selective call receiver comprising:

receiver means for receiving a coded transmitted message;

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processing means, in communication with said receiver means, for processing and decoding said coded transmitted message; and

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alert generating means, controllable by said processing means, for generating a selected alert signal selectable from a plurality of signal types,

wherein said processing means is adapted to store one or more user defined message identification strings, said
30 message identification strings being used for selecting from said signal types which alert signal is to be generated in response to at least part of said coded transmitted message.

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Preferably, said message identification strings may be insertable into said selective call receiver by said user.

Suitably, said processing means may be adapted to analyse said coded transmitted message to determine if at least part of said message matches one of said message identification strings associated with said processing means to thereby select said alert signal from said signal types.

Preferably, said processing means may include a micro-processor and associated memory means.

Suitably, said alert generating means may be a speaker for transmitting audible signals.

In one alternative form, said alert generating means may include a transducer for providing a vibrating alert signal that vibrates a casing of said selective call receiver.

Preferably, said selective call receiver may have one or more input switches in communication with said processing means to allow said user of said selective call receiver to determine from said signal types which alert signal is to be generated in response to said message..

In an alternative form said selective call receiver may have a touch screen in communication with said processing means to allow said user of said selective call receiver to determine from said signal types which alert signal is to be generated in response to said message.

According to another aspect of this invention, there is provided a method for providing a selective call receiver alert signal, the method comprising the steps of:

receiving a coded transmitted message;

processing and decoding said coded transmitted message; and

generating a selected alert signal selectable from a plurality of signal types,

wherein said step of processing is dependent upon one
5 or more user defined message identification strings used to select from said signal types which alert signal is to be generated in response to at least part of said coded transmitted message.

10 Preferably, said message identification strings may be inserted into said selective call receiver by said user.

Suitably, said step of processing may include the
15 step of analysing said coded transmitted message to determine if at least part of said message matches one of said message identification strings to thereby select said alert signal from said signal types.

20 BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be readily understood and put into practical effect, reference will now be made to a preferred embodiment as illustrated with reference to
25 the accompanying drawings in which:

FIG. 1 is a block diagram illustrating an embodiment of a selective call receiver in accordance with the invention;

30 FIG. 2 is a diagram illustrating an example of message identification strings inserted by a user into the selective call receiver of FIG. 1.

35 FIG. 3 is flow diagram of the operation the selective call receiver of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE
INVENTION

5 With reference to Fig. 1 there is illustrated a selective call receiver 1 commonly known as a pager. Selective call receiver 1 comprises a receiver means 2 coupled to be in communication with a processing means 3. An alert generating means 4 is coupled to be controllable
10 by processing means 3 and a Liquid crystal display (LCD) 5 and keypad 6 are coupled to be in communication with processing means 3.

 In this preferred embodiment receiver means 2
15 includes a receiver 8 coupled to an antenna 7 via a radio frequency amplifier 9.

 The processing means 3 includes a demodulator 10 coupled to both receiver 8 and a decoder 11 having an associated Read Only Memory (ROM) 12 that store data for
20 decoding received messages.

 The processing means 3 also includes a micro-processor 13 coupled to decoder 11. Micro-processor 13 is
25 also coupled to keypad 6, liquid crystal display 5, a Random Access Memory (RAM) 14 and a Read Only Memory (ROM) 15. Further, liquid crystal display 5 has an associated slave driver 16 controllable by micro-processor 13.

30 Alert generating means 4 comprises an addressable tone generator 17 addressable by micro-processor 13. Outputs of tone generator 17 are coupled to drive either or both a speaker 18 and a transducer in the form of a vibrator motor 19 for vibrating a casing of selective call
35 receiver 1. As will be apparent to a person skilled in the art, tone generator 17 stores a variety of addressable

tones that can be selected to drive either speaker 18 or motor 19.

5 The Read only memory 15 stores data for converting decoded received binary messages into alpha-numeric data. In this embodiment Read Only Memory 15 also stores operating code for micro-processor 13. In contrast, Random Access Memory 15 stores identification strings that are input by a user at keypad 6 comprising a plurality of
10 input switches. Random Access Memory 15 also stores the received decoded paged messages. Further, The switches of keypad 6 can be mounted in either conventional keypad form or alternatively they can be spaced around the casing of selective call receiver 1.

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Referring to Fig. 2 there is illustrated message identification strings defined and inserted, using keypad 6, by a user into Random Access Memory 14. As shown, one
20 or more message identification strings can be associated with a particular response identifier r1 to r8 stored in a three bit response field. For example, a user can insert the telephone numbers 4867471 and 4867483 to be associated with response identifier r1, whereas the word urgent is
25 programmed to be associated with response identifier r5. To terminate an identification string a semicolon is used, therefore as illustrated response r6 has three message identification strings (mother; father; Mary;) and response r4 has one identification string (call home;).

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In use, and as illustrated with reference to FIG. 3, antenna 7 receives a modulated coded message at a receiving step 100. The message received by antenna 7 is amplified by amplifier 9, filtered by receiver 8 and
35 demodulated by demodulator 10.

After the receiving step 100, a processing step 101 is effected in which a decoder 11 in combination with associated Read Only Memory 12 decodes the message at decoding step 102. Decoding step 102 also stores this
5 decoded message Dm in Random Access Memory 14 and at step 103 a first identification string stored in Random Access Memory 14 is selected. For instance, referring to Fig. 2, "4867471" is the first string and therefore it would be selected.

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At a match test step 104 the decoded message Dm stored in Random Access Memory 14 is compared to determine if the first string matches either a part or the complete decoded message Dm. If at step 104 no match is found then
15 an End Of Strings check is conducted at a test step 105 to determine if there are any more strings to be compared with decoded message Dm. In this embodiment the test step 105 checks if the next or currently selected identification string is a "NO MATCH" string.

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If test step 105 results in a no then the next identification string is selected (i.e. "4867483") at step 106. This next identification string is compared at match test step 104 to determine if this next string
25 matches either a part or the complete decoded message Dm. Again if no match is found then test step 105 and 106 will result and the next identification string will be selected (i.e. "office").

30 The steps 104, 105 and 106 will continue until either a match found at step 104 or test step 105 determines that there are no more strings to be compared. If there are no more strings to be compared then a "NO MATCH" will result and step 107 will set a response register "r" in
35 microprocessor 3 to equal r8. However, if a match is found at step 104 then a response is identified at step 108. For example, if the contents of the decoded message

Dm is "ring your office" then the identification string "office" will match part of this decoded message Dm and therefore response r2 will be identified and the response register "r" will be set to equal r2.

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The step of generating 109 is effected by micro-processor 13 sending the contents of response register "r" to address tone generator 17. As a result, tone generator will select and drive either or both of speaker 18 and
10 vibrating motor 19 at a pitch or tone dependent upon the contents of response register "r" to therefore provide an alert signal to the user. This tone may be a varying pitch or tone so that the alert signal may be in the form of a frequency or tune emitted through speaker 18.

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The alert signal will differ depending upon the contents of response register "r" which addresses and therefore selects one of a plurality of tones that can be
20 generated by tone generator 17. Accordingly, the present invention advantageously allows the user to insert identification strings into Random Access Memory 14 that can be compared with a received message to provide for different alert signals to be generated depending upon
25 part or the complete message content. This therefore can inform the user of the type of message that has been received without the need for the user to view the message that can be displayed on Liquid Crystal Display 5. In this regard, if a "NO MATCH" is determined then response
30 register "r" will be set to equal r8. The emitted alert signal will therefore indicate that no identification string matched a received message. However, all other messages will emit an alert signal that audibly identifies part of the contents of a received message.

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The present invention also advantageously allows the user to insert, modify or delete identification strings. As a result, the user can prioritise messages into groups

associated with a particular alert signal without the need to inform others of what priority, and resulting alert signal, specific paged messages will be allocated.

- 5 Although the invention has been described with reference to a preferred embodiment it is to be understood that the invention is not restricted to the particular embodiment described herein.



WE CLAIM:

1. A selective call receiver comprising:

5 receiver means for receiving a coded transmitted message;

processing means, in communication with said receiver means, for processing and decoding said coded transmitted
10 message; and

alert generating means, controllable by said processing means, for generating a selected alert signal selectable from a plurality of signal types,

15 wherein said processing means is adapted to store one or more user defined message identification strings, said message identification strings being used for selecting from said signal types which alert signal is to be generated in response to at least part of said coded
20 transmitted message.

2. A selective call receiver as claimed in claim 1, wherein said message identification strings are insertable
25 into said selective call receiver by said user.

3. A selective call receiver as claimed in claim 2, wherein said processing means is adapted to analyse said coded transmitted message to determine if at least part of said message matches one of said message identification
30 strings associated with said processing means to thereby select said alert signal from said signal types.

4. A selective call receiver as claimed in any preceding claim, wherein there are one or more input switches in
35 communication with said processing means to allow said user of said selective call receiver to determine from said signal types which alert signal is to be generated in response to said message.



5. A selective call receiver as claimed in any one of claims 1 to 4, wherein there is a touch screen in communication with said processing means to allow said user of said selective call receiver to determine from said signal types which alert signal is to be generated in response to said message.

6. A method for providing a selective call receiver alert signal, the method comprising the steps of:

receiving a coded transmitted message;

processing and decoding said coded transmitted message; and

generating a selected alert signal selectable from a plurality of signal types,

wherein said step of processing is dependent upon one or more user defined message identification strings used to select from said signal types which alert signal is to be generated in response to at least part of said coded transmitted message.

7. A method for providing a selective call receiver alert signal as claimed in claim 6, wherein said message identification strings are inserted into said selective call receiver by said user.

8. A method for providing a selective call receiver alert signal as claimed in any one of claims 6 or 7, wherein said step of processing includes the step of analysing said coded transmitted message to determine if at least part of said message matches one of said message identification strings to thereby select said alert signal from said signal types.



9. A method for providing a selective call receiver alert signal substantially as described herein with reference to and as illustrated by the accompanying drawings.

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10. A selective call receiver substantially as described herein with reference to and as illustrated by the accompanying drawings.