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**RADIOFREQUENCY COMMUNICATION DEVICE WITH
CONTROLLABLE TIME DURATION FOR DISPLAYING
MESSAGES**

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Field of the Invention

This invention relates to radiofrequency (rf) communication devices. In particular, this invention relates to, but is not necessarily limited to, a portable rf communication device with adaptable time duration for displaying messages.

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Background of the Invention

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Portable radiofrequency (rf) communication devices, such as selective call receivers, are known to operate with displays for displaying messages received within a communication environment. Typically, an annunciation is provided to alert a user when, for example, a selective call message is received by a selective call receiver. Thereafter, the user actuates a button to display the selective call message for reading on, for example, a liquid crystal display (LCD).

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Conventionally, selective call receivers display selective call messages for a fixed time duration regardless of the length of such messages. This is a problem when these messages vary in length from just a few numeric characters to several sentences of alphanumeric characters. As a result, the fixed time duration is unnecessarily long to read a short message or too short to read a long message.

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The above problem is not significant when power is easily available. However, such a problem becomes critical for portable rf communication devices powered by limited energy batteries. As is known in the art, power consumption is even more critical for these devices when they operate with LCDs illuminated by backlighting. Consequently, when a user re-displays a message because the time duration for reading the message is insufficient, additional power is consumed. Therefore, alleviating unnecessary power consumption because of re-displaying messages helps in extending battery life for portable rf communication devices.

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Summary of the Invention

5 It is an object of this invention to overcome or at least alleviate the problems associated with displaying messages on portable radiofrequency (rf) communication devices.

10 According to one aspect of the invention, there is provided a portable radiofrequency (rf) communication device comprising:

- a receiver for receiving a selective call message;
- a display for displaying said message; and
- 15 a controller coupled to said receiver and said display,

20 wherein said controller controls a time duration for displaying said message or a portion thereof, said time duration being dependent upon length of said message or said portion.

Preferably, said controller can be adapted to determine whether to display said message or said portion.

25 Suitably, said controller can be further adapted to determine whether said message is a numeric message or an alphanumeric message.

Preferably, said controller can be further adapted to determine said length of said message or said portion.

30 Suitably, said controller can be further adapted to determine whether said time duration has expired.

35 Preferably, said device can further comprise a memory for storing a plurality of time durations, said time durations corresponding to different types or different lengths of said message or said portion.

According to another aspect of the invention, there is provided a method for displaying a selective call message in a portable radiofrequency (rf) communication device, said method comprising the steps of:

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receiving a selective call message; and

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controlling a time duration for displaying said message or a portion thereof, said time duration being dependent upon length of said message or said portion.

Preferably, said step of controlling can comprise the step of determining whether to display said message or said portion.

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Suitably, said step of controlling can comprise the step of determining whether said message is a numeric message or an alphanumeric message.

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Preferably, said step of controlling can comprise the step of determining said length of said message or said portion.

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Suitably, said step of controlling can comprise the step of selecting said time duration from a memory, said memory being for storing a plurality of time durations, said time durations corresponding to different types or different lengths of said message or said portion.

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Preferably, said step of controlling can comprise the step of determining whether said time duration has expired.

Brief Description of the Drawings

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In order to describe the invention and to put it into practical effect, reference will now be made to a preferred embodiment as illustrated with reference to the accompanying drawings in which:

FIG. 1 is a block diagram of a portable radiofrequency (rf) communication device in accordance with the preferred embodiment of the invention; and

5 FIG. 2 is a flow chart of a method for displaying a selective call message in the portable rf communication device of FIG. 1.

Detailed Description of the Invention

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FIG. 1 is a block diagram of a portable radiofrequency (rf) communication device 10 in accordance with the preferred embodiment of the invention. Device 10 can be, for example, a selective call receiver or a communication radio. Device 10 comprises an antenna 11, a receiver, 12, 15 a decoder 13, a controller 14, a display 15, an annunciator 16, a memory 17 and a power supply 18. Display 15 can be, for example, a liquid crystal display (LCD).

20 In use, device 10 operates in a communication environment from which selective call messages are received on rf carrier signals via antenna 11 and receiver 12. As is known in the art, each of these selective call messages provides an address to specify one or more selective call receivers or one or more communication radios. For a selective call message addressed to device 10, decoder 13 will decode this selective call message. Thereafter, controller 14 will activate display 15 or 25 annunciator 16 to provide an alert signal to a user of device 10.

30 Conventionally, users will actuate a display or read button (not shown) to display the selective call message on display 15. Controller 14 will then control display 15 to display the selective call message when a display or read signal is received from actuation of the display or read button.

35 In accordance with the preferred embodiment of the invention, controller 14 determines what type of selective call message has been received and length of the selective call message. Thereafter, controller 14 controls a time duration for displaying such a message prior to displaying it.

Advantageously, an appropriate time duration is selected depending on the length of the selective call message displayed to thereby enable a sufficient amount of time for the user to read.

5 Table 1 below shows a plurality of time durations for displaying the selective call message depending on type and length of the selective call message. These time durations correspond to different types or different lengths of the selective call message and are stored in memory 17 for reference by controller 14. It is to be noted that the plurality of time
10 durations can be set to different values and are not restricted to the values indicated.

Table 1: Time duration for various message types or message
lengths

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Time Duration (seconds)	Message Type or Message Length
5	Numeric
10	< 7 words
15	≥ 7 and ≤ 15 words
30	≥ 15 words

Reference will now be made to FIG. 2 in which a flow chart of a method 20 for displaying the selective call message in device 10 is shown. Starting at step 21, method 10 proceeds to step 22 of receiving a selective
20 call message. Thereafter, controller 14 determines at decision step 23 whether the selective call message or a portion thereof is to be displayed.

For a "No" to decision step 23, method 20 returns to step 23 until the message is displayed. For a "Yes" to decision step 23, method 20 proceeds to decision step 24 in which controller 14 determines whether the selective
25 call message is a numeric message.

With a "Yes" in which the selective call message is a numeric message, controller 14 controls the display to display the numeric message for five seconds at step 25. Following step 25, method 20 returns to start step 21. With a "No" at decision step 24, the selective call message is then
30 processed as an alphanumeric message.

For an alphanumeric message, method 20 then proceeds to step 26 in which length of the alphanumeric message or a portion thereof is

determined by controller 14. Based on Table 1 and depending on the length of the alphanumeric message or the portion of it to be displayed, controller 14 then selects at step 27 a time duration from memory 17.

5 Upon selecting the time duration, display 15 is then actuated by controller 14 at step 28 to display the alphanumeric message or the portion for the time duration selected. While displaying at step 28, controller also checks at decision step 29 whether the time duration has expired. With a "No" from decision step 29, display 15 continues to display the alphanumeric message or the portion. With a "Yes", method 20 returns to
10 start step 21.

Advantageously, the invention applies method 20 to determine length of a selective call message or a portion thereof to thereby enable selection of a time duration that is appropriate for displaying the message or the
15 portion. Consequently, display 15 is only activated for the time duration. With this invention, a long message is displayed for a longer time duration than a short message. Hence, users of device 10 are less likely to re-display message as a result of insufficient time to read. Furthermore, a short message, such as a numeric message, need not be displayed longer
20 than required. This invention, therefore, alleviates unnecessary power consumption resulting from re-displaying messages to thereby extend battery life for portable rf communication devices.

25 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 preferred embodiment described herein.



We claim:

1. A portable radiofrequency (rf) communication device comprising:
 - 5 a receiver for receiving a selective call message;
 - a display for displaying said message; and
 - a controller coupled to said receiver and said display,
 - 10 wherein said controller controls a time duration for displaying said message or a portion thereof, said time duration being dependent upon length of said message or said portion.
- 15 2. The device as claimed in Claim 1, wherein said controller is adapted to determine whether to display said message or said portion.
- 20 3. The device as claimed in Claim 1, wherein said controller is adapted to determine whether said message is a numeric message or an alphanumeric message.
- 25 4. The device as claimed in Claim 1, wherein said controller is adapted to determine said length of said message or said portion.
- 30 5. The device as claimed in Claim 1, wherein said controller is adapted to determine whether said time duration has expired.
- 35 6. The device as claimed in Claim 1, wherein said device further comprises a memory for storing a plurality of time durations, said time durations corresponding to different types or different lengths of said message or said portion.
7. A method for displaying a selective call message in a portable radiofrequency (rf) communication device, said method comprising the steps of:
 - receiving a selective call message; and



controlling a time duration for displaying said message or a portion thereof, said time duration being dependent upon length of said message or said portion.

5 8. The method as claimed in Claim 7, wherein said step of controlling comprises the step of determining whether to display said message or said portion.

10 9. The method as claimed in Claim 7, wherein said step of controlling comprises the step of determining whether said message is a numeric message or an alphanumeric message.

15 10. The method as claimed in Claim 7, wherein said step of controlling comprises the step of determining said length of said message or said portion.

20 11. The method as claimed in Claim 7, wherein said step of controlling comprises the step of selecting said time duration from a memory, said memory being for storing a plurality of time durations, said time durations corresponding to different types or different lengths of said message or said portion.

25 12. The method as claimed in Claim 7, wherein said step of controlling comprises the step of determining whether said time duration has expired.

30 13. A portable radiofrequency (rf) communication device comprising a receiver, a display and a controller substantially as described herein with reference to and as illustrated by the accompanying drawings.

14. A method for displaying a selective call message in a portable radiofrequency (rf) communication device substantially as described herein with reference to and as illustrated by the accompanying drawings.