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By Authority of the COMMISSIONER OF PATENTS AND TRADEMARKS

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PRIORITY DOCUMENT

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*Output Power Capped When the Device Operates In Very Close Proximity To A Human Body Please type a plus sign (+) inside this box

+ Approved for use through 09/30/2000. OMB 0651-0000

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. Attorney Docket No. 1280.00187 UTILITY Irvin et al. First Inventor or Application Identifier PATENT APPLICATION "Portable Communication Device With RF* TRANSMITTAL Express Mail Label No. EM378839008US W APPLICATION ELEMENTS ADDRESS TO: Box Patent Application PEP chapter 600 concerning utility patent application conf * Fee Transmittal Form (e.g., PTO/SB/17) X Microfiche Computer Program (Appendix) (Submit an original and a duplicate for fee processing 6. Nucleotide and/or Amino Acid Sequence Submission X Specification [Total Pages] (if applicable, all necessary) (preferred arrangement set forth pelow) Computer Readable Copy - Descriptive title of the Invention Cross References to Related Applications b. Paper Copy (identical to computer copy) - Statement Regarding Fed sponsored R & D C. Statement verifying identity of above copies - Reference to Microfiche Appendix - Background of the Invention ACCOMPANYING APPLICATION PARTS - Brief Summary of the Invention Assignment Papers (cover sheet & document(s)) - Brief Description of the Drawings (if filed) 37 C.F.R.§3.73(b) Statement - Detailed Description (when there is an assignee) - Claim(s) English Translation Document (if applicable) - Abstract of the Disclosure Information Disclosure Copies of IDS 3. X Drawing(s) (35 U.S.C. 113) [Total Sheets 10. Statement (IDS)/PTO-1449 Citations ļ.d. N Preliminary Amendment 4. Oath or Declaration Total Page Return Receipt Postcard (MPEP 503) Newly executed (original or copy) a. W (Should be specifically itemized) Copy from a prior application (37 C.F.R. § 1.63(d)) (for continuation/divisional with Box 16 completed) Statement filed in prior application Status still proper and desired DELETION OF INVENTOR(S) (PTO/SB/09-12) Status still proper Certified Copy of Priority Document(s) Signed statement attached deleting inventor(s) named in the prior application. (if foreign priority is claimed) see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b). Other: THOTE FOR THEMS 1 & 13: IN ORDER TO BE EXTITLED TO PAY SMALL EXTITY FEES, A SMALL EXTITY STATEMENT IS REQUIRED (37 G.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 G.F.R. § 1.28). 16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment Continuation Divisional Continuation-in-part (CIP) of prior application No: application info Examir Group / Art Unit: For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts. 17. CORRESPONDENCE ADDRESS or X Correspondence address below ☐ Customer Number or Bar Code Label (Insert Customer No. or Attach bar code label here) Dean A. Monco Name Wood, Phillips, VanSanten, Clark & Mortimer 500 West Madison Street, Suite 3800 Address Chicago State Illinois Zip Code 60661-2511 City 312.876-1800 312.876-2020 U. S. A. Country Name (Pnnt/Typa) Dean A. Monco Registration No. (Attorney/Agent) 30,091 a. nome July 7, 2000 Date

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APPLICATION FOR UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

Be it known that DAVID R. IRVIN, a citizen of the UNITED STATES OF AMERICA, residing at 1546 Iredell Drive, Raleigh, in the State of North Carolina, GERARD J. HAYES, a citizen of the UNITED STATES OF AMERICA, residing at 209 Lilliput Lane, Wake Forest, in the State of North Carolina, and NILS R. RYDBECK, a citizen of SWEDEN, residing at 202 Rutherglen, Cary, in the State of North Carolina, have invented a new and useful PORTABLE COMMUNICATION DEVICE WITH RF OUTPUT POWER CAPPED WHEN THE DEVICE OPERATES IN VERY CLOSE PROXIMITY TO A HUMAN BODY of which the following is a specification.

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PORTABLE COMMUNICATION DEVICE WITH RF OUTPUT POWER CAPPED WHEN THE DEVICE OPERATES IN VERY CLOSE PROXIMITY TO A HUMAN BODY

FIELD OF THE INVENTION

This invention relates to a mobile terminal used in a wireless communication system and, more particularly, to a mobile terminal operable to limit transmitter power if proximate a human body.

BACKGROUND OF THE INVENTION

A mobile terminal used in wireless communication systems, such as cellular telephone systems, is generally a portable device. In fact, mobile terminals are becoming small enough to fit into a user's pocket, and therefore be very close to the user's body. The mobile terminal includes a transmitter for transmitting a radio frequency (RF) signal through the air.

In a cellular communication system the mobile terminal conducts radio communications with a base station located proximate the mobile terminal. Cellular communication systems include control systems for limiting power. Typically, the base station instructs the mobile terminal to use the least power to avoid interference with other mobile terminals. The base station does so by measuring signal strength and returning instructions to the mobile terminal to modify transmitter power output.



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While conducting a voice call, the mobile terminal is placed in a "talk" position next to the user's head. Although there is no basis for concerns regarding an antenna being proximate the user, for psychological comfort the user can hold the mobile terminal spaced away or at an angle so that the antenna is farther from the user's head. Mobile terminals are also used to provide wireless connection for personal computers and the like to gain access to the Internet. With smaller mobile terminals the user might slip the mobile terminal into a shirt pocket or the like while the call is being conducted.

Again, to provide psychological comfort regarding RF transmitters being very close to a human body, there is a need to control RF power output under such situations.

SUMMARY OF THE INVENTION

In accordance with the invention, there is provided a mobile terminal that caps or limits RF power output when the mobile terminal is very close to the user, and yet permit the mobile terminal to operate without a power cap otherwise.

Broadly, there is disclosed herein a portable communication device operable to limit transmitter power if proximate a human body. The device includes a housing. A transmitter in the housing is connected to an antenna. A detector detects if the housing is proximate a human body. A control is operatively connected to the transmitter and to the detector. The control controls transmitter power and limits transmitter power if the detector



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