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**(54) Title (EN):** BALANCED, RETRACTABLE MOBILE PHONE ANTENNA

**(54) Title (FR):** ANTENNE DE TÉLÉPHONE MOBILE REPLIABLE ÉQUILBRÉE

**(57) Abstract:**

**(EN):** The balanced, retractable dipole antenna comprises a first radiator element that is selectively extendable from, and retractable into, a mobile phone casing, a second radiator element, and a counterpoise that is electrically isolated from a printed wire board (PWB) of a mobile phone. The balanced, retractable dipole antenna further comprises a signal balancing means coupled between a signal source and at least the second radiator element and counterpoise to generate first and second signals, respectively. The first and second signals are substantially equal in magnitude but out of phase by 180 degrees. When the first radiator is extended, the first signal is transferred to the first and second radiator elements, and the second signal is transferred to the counterpoise. When the first radiator element is retracted, the first signal is transferred to the second radiator, while the second signal is transferred to the counterpoise and the first radiator element. The first and second signals produce balanced currents, thereby producing a symmetric radiation pattern.

**(FR):** La présente invention concerne une antenne de téléphone mobile dipôle, repliable et équilibrée qui comprend un premier élément rayonnant que l'on peut sélectivement déplier hors d'un boîtier de téléphone mobile et replier dans celui-ci, un second élément rayonnant, et un contrepoids isolé électriquement de la carte imprimée (PWB) d'un téléphone mobile. Cette antenne dipôle repliable et équilibrée comprend aussi un organe d'équilibrage de signal couplé entre un signal source et au moins le second élément rayonnant et le contrepoids de façon à générer respectivement le premier et le second signal. Ces premier et second signaux sont sensiblement égaux en magnitude mais déphasés par 180 degrés. Lorsque le premier élément rayonnant est déplié, le premier signal est transféré aux premier et second éléments rayonnant, et le second signal est transféré au contrepoids. Lorsque le premier élément rayonnant est replié, le premier signal est transféré au second élément rayonnant, tandis que le second signal est transféré au contrepoids et au premier élément rayonnant. Les premier et second signaux produisent des tensions équilibrées, et donc un diagramme de rayonnement symétrique.

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