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Lindquist

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(54) **MOBILE TERMINALS AND METHODS FOR REGULATING POWER-ON/OFF OF A GPS POSITIONING CIRCUIT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1028 days.

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H04W 24/00 (2009.01)

(52) **U.S. Cl.**
USPC **455/456.1**; 455/456.4; 455/456.2; 455/418; 455/556.1; 455/574

(58) **Field of Classification Search**
USPC 455/456.4, 574, 456.1, 456.2, 456.3, 455/552.1, 421; 370/311
See application file for complete search history.

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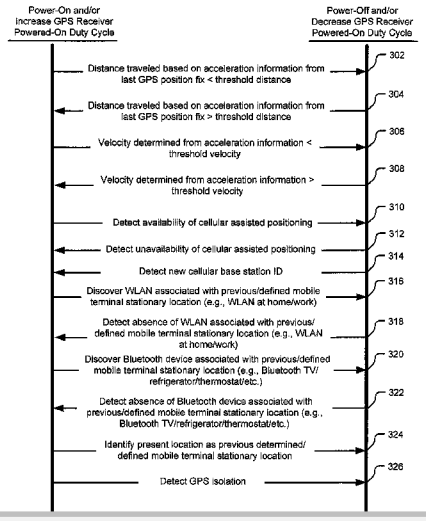
(57) **ABSTRACT**

A method for determining location of a mobile terminal includes repetitively switching power-on and power-off to a GPS receiver circuit which determines location of the mobile terminal using GPS signals. The power-on to power-off duty cycle of the GPS receiver circuit is regulated in response to distance that the mobile terminal has moved from a previously determined location. The power-on to power-off duty cycle can be regulated in response to identifying GPS isolation, in response to an acceleration-determined distance from previous GPS-determine location, an acceleration-determined velocity of the mobile terminal, availability of position assistance information from a cellular system, presence/absence of signals from a WLAN/Bluetooth device, and/or detection of a new cellular base station ID.

18 Claims, 3 Drawing Sheets



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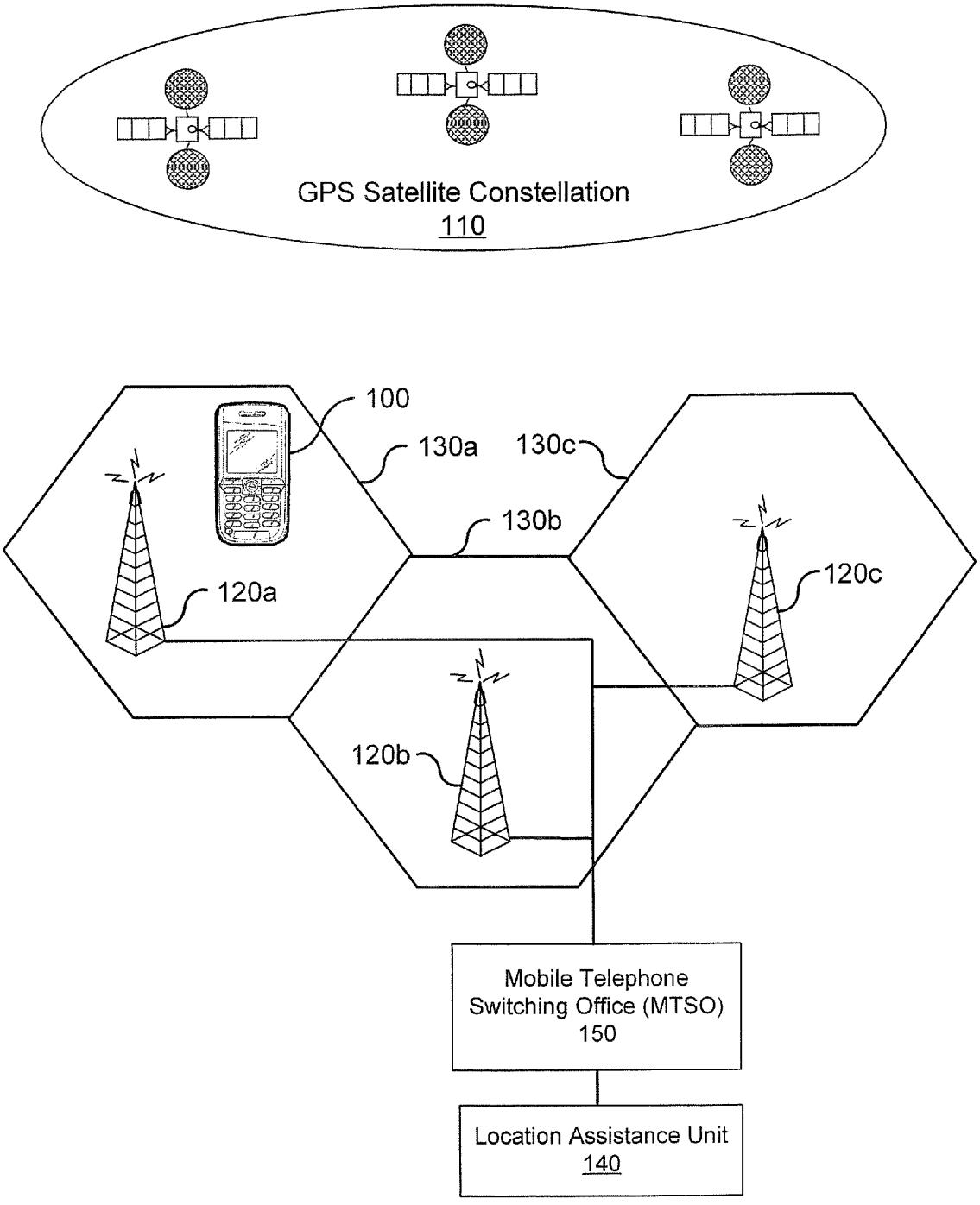

Figure 1

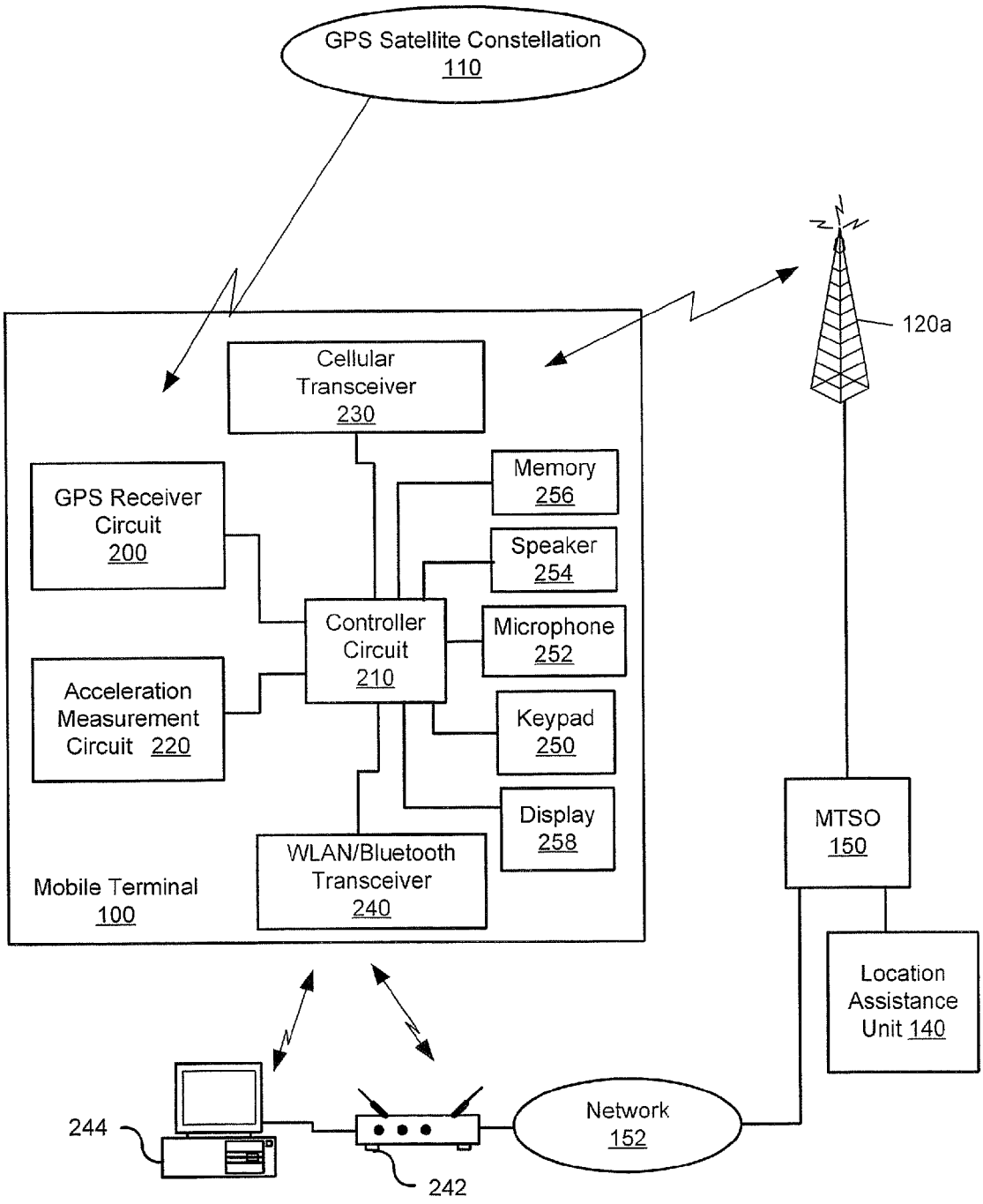

Figure 2

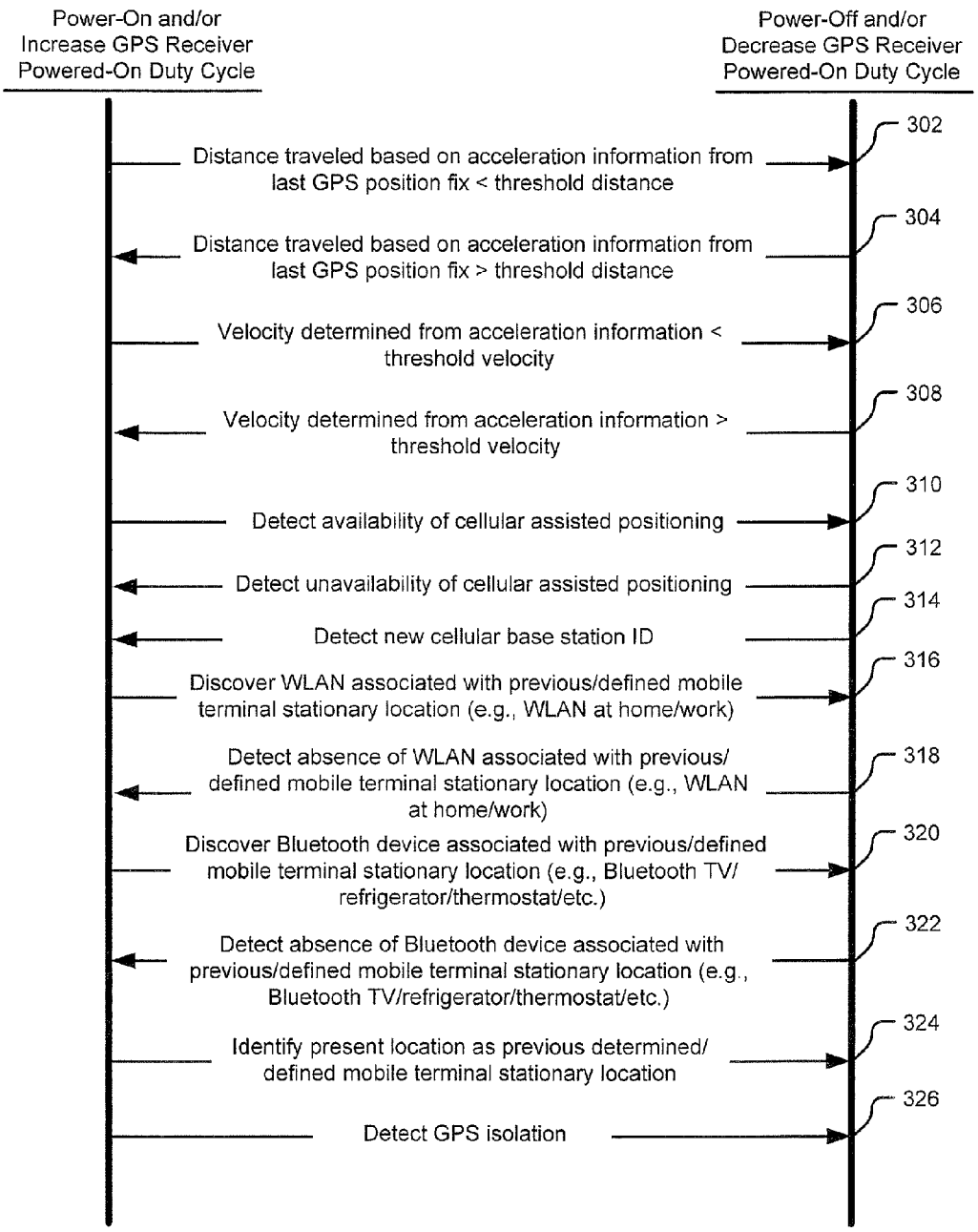

Figure 3

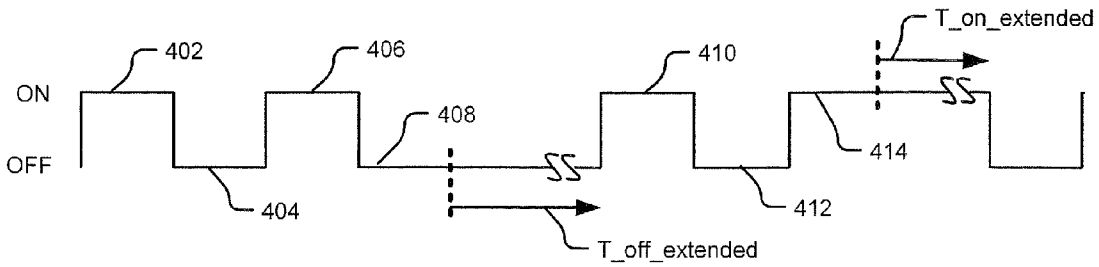

Figure 4

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