What is claimed is:

1. An energy management system comprising
(a) one or more power measurement device, each of which comprises a communication module, a micro-controller, and one or more AC sockets, each of said socket is connected to a power measurement module;
(b) one or more Dongle for wireless communication; and
(c) a plurality of master and peripheral appliances plugged into said AC sockets,
wherein energy consumption of said appliances are measured by the power measurement device and communicated to a computer or mobile device via the Dongle, wherein depending on the power consumption of the master appliances, the peripheral appliances could be switched on or off remotely via software on said computer or mobile device.

2. The energy management system of claim 1, wherein the Dongle is not attached to a power measurement device or is reversibly attached to a power measurement device which further comprises a docking space and a battery charging circuitry for said Dongle.

3. The energy management system of claim 1 or 2, wherein said Dongle communicates wirelessly with said computer or mobile device using Wi-Fi.

4. The energy management system of any one of claims 1-3, wherein the Dongle is capable of operating under Wi-Fi in both infrastructure and ad-hoc modes.

5. The energy management system of any one of claims 1-4, wherein said Dongle communicates wirelessly with the power measurement devices using Z-Wave or ZigBee wireless communication.

6. The energy management system of claim 1, wherein the peripheral appliances are switched off automatically when the master appliances are in standby state.

7. The energy management system of claim 1, wherein the peripheral appliances are switched on automatically when the master appliances resume operation.

8. The energy management system of claim 1, wherein the mobile device is a smart phone or a tablet PC.

9. The energy management system of claim 1, wherein said software provides a user interface to manage energy measurement data and control the operation of the master and peripheral appliances.

10. The energy management system of claim 1, wherein said AC sockets further comprise a plug detection feature so that a user would be notified through said software when an appliance is plugged into or unplugged from said sockets.

11. A power measurement device comprising a communication module, a micro-controller, and one or more AC sockets, each of said socket is connected to a power measurement module.

12. The power measurement device of claim 11, further comprising a detachable communication module, a docking space for said module, and a battery charging circuitry for said module.

13. The power measurement device of claim 12, wherein said detachable communication module is capable of operating under Wi-Fi in both infrastructure and ad-hoc modes.

14. The power measurement device of claim 12, wherein said detachable communication module communicates wirelessly with the power measurement device using Z-Wave or ZigBee wireless communication.

15. The power measurement device of claim 11, wherein said AC sockets further comprise a plug detection feature so that a user could be notified when an appliance is plugged into or unplugged from said sockets.

16. A method of managing power consumption of a plurality of appliances, comprising the step of plugging said appliances into the system of claim 1.

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CLAIMS

1. An energy management system including:

(a) one or more power measurement device, each of which includes a ZigBee or Z-wave communication module, a micro-controller, and one or more AC sockets, each of said sockets being connected to a power measurement module;

(b) one or more Dongle for wireless communication, wherein said Dongle includes at least one ZigBee or Z-wave communication module and at least one WiFi communication module; wherein the Dongle is reversibly attached to a power measurement device which further includes a docking space and a battery charging circuitry for said Dongle; and

(c) a plurality of master and peripheral appliances plugged into said AC sockets,

wherein energy consumption of said appliances is measured by the power measurement device and communicated to the Dongle via the ZigBee or Z-wave communication module and further communicated from the Dongle to a computer or mobile device via the WiFi communication module, wherein, depending on the power consumption of the master appliances, the peripheral appliances could be switched on or off remotely via software on said computer or mobile device.

2. The energy management system of claim 1, wherein the Dongle is not attached to a power measurement device.

3. The energy management system of any one of claims 1 to 2, wherein the Dongle is capable of operating under Wi-Fi in both infrastructure and ad-hoc modes.

4. The energy management system of claim 1, wherein the peripheral appliances are switched off automatically when the master appliances are in standby state.

5. The energy management system of claim 1, wherein the peripheral appliances are switched on automatically when the master appliances resume operation.

6. The energy management system of claim 1, wherein the mobile device is a smart phone or a tablet PC.

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7. The energy management system of claim 1, wherein said software provides a user interface to manage energy measurement data and control the operation of the master and peripheral appliances.

8. The energy management system of claim 1, wherein each of said AC sockets further includes a plug detection feature so that a user would be notified through said software when an appliance is plugged into or unplugged from said sockets.

9. A method of managing power consumption of a plurality of appliances, comprising the step of plugging said appliances into the system of any one of claims 1 to 8.