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(71) Applicant: **ETYMOLOGY PTE. LTD.** [SG/SG]; 196
Pandan Loop #07-26 Pantech Business Hub, Singapore
128384 (SG).

(72) Inventors: **WONG, Kok Ann**; 7 Woodlands Drive 72
#06-14 Woodsvale, Singapore 738092 (SG). **TANG, Yi**;
91 Dawson Road #36-18 Skyterrace@Dawson, Singapore
144091 (SG).

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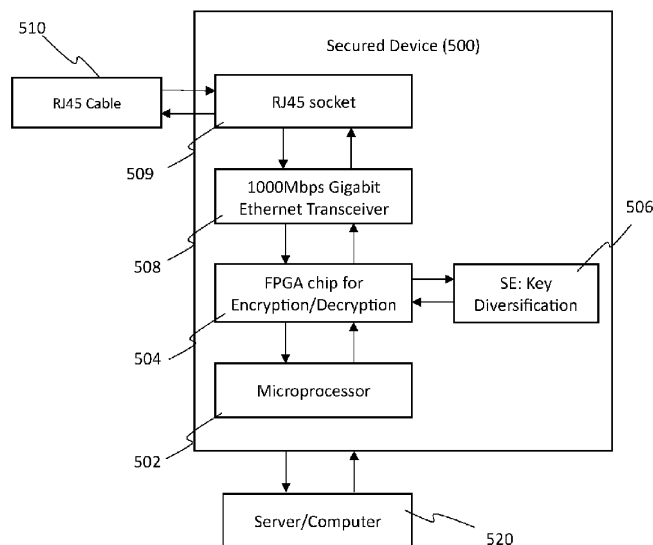


FIG. 5

(57) Abstract: The present invention provides a secure device adapted for power grid metering network having a plurality of power grid meters and a power grid metering backend system. The secure device comprises a communication module having a socket for locally connecting to the power grid meter or the power grid metering backend system to transmit data over a communication network; a microprocessor acts as a control unit for the secure device and handling the data flow; an FPGA chip operationally encrypting/decrypting the data; a secure element for handling key diversification for encrypting/decrypting the data by FPGA chip. The secure device is connected locally to the power grid meters or power grid metering backend system, such that the data is end-to-end encrypted across the power grid metering network by the secure device. There is also provided a power grid metering network and method therefor in present invention.

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