

Description

With reference to Figure 1, the components of the system are:

- 1) Data collection device with key elements including (2), (3), (4) and (6)
- 2) Metrology chip(s)
- 3) Processor(s)
- 4) Communications module(s)
- 5) Electrical wires
- 6) Sensing elements
- 7) Wireless network
- 8) Server

The data collection device is installed in an electrical distribution panel and obtains analog current and voltage inputs using the sensing elements. The analog inputs are processed using the metrology chip(s) and processor(s), before being communicated to a server through a wireless network.

Once installed, the data collection device analyzes electrical parameters generated by the metrology chip(s) to perform feature identification for electrical loads. Those features are used to perform load disaggregation, also known as non-intrusive load monitoring. The states and energy consumption characteristics of the disaggregated loads are communicated to the server. Models on the data collection device are trained and enhanced based on input provided from the server.