

Smart Grid Compatibility in a Module...

By Bill Romick, Vice President of Business Development, DNA Group, Inc.

Will your design platform benefit from a common Modular Communication Interface Specification for Demand Response? Richard Babyak's feature article in appliance DESIGN on January 2010, addressed this subject.

To the casual observer this July's meeting of the Smart Grid Interoperability Panel (SGIP) may appear to have made little progress. The emerging standard continues to deal with the same issues Mr. Babyak articulated his article 18 months ago.

However, such a module, or universal communication module (UCM), may be a step closer to reality. The Home to Grid Domain Expert Working Group posted Revision 1.3 on the NIST Smart Grid Collaboration Wiki Smart Grid Interoperability Panel Site [<http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/H2G>], which resolved over 60 comments received prior to the July 26, 2011, close date. The roadmap to implementation will likely remain a long journey; but I envision a few of the details will allow suppliers and OEMs to create some reference designs that will advance both the technology and improve cost of implementation.

Wireless or Powerline?

The latest interface specification revision defines two form factors of UCM versions. One form factor provides AC (120/240V) supply with an RS-485 serial interface. This option may be desired where a DC power source is not provided, or where compatibility with PLC communication or UCM access to line frequency is desired. The other form factor provides a low voltage DC power supply with SPI serial interface, where the appliance, end device, or smart grid device (SGD) may not have an AC power source, or where a small socket size is desired. (Serial communication protocol across the socket is the same for both versions.)

Physical size?

The latest interface specification identifies a specific brand socket which will define unit size within the SDG as well as the UCM. Spacing between power carrying conductors, materials of construction and agency testing will be just a few factors to consider for the SGD and UCM designer.

Existing units?

One concept of Mr. Babyak's article has kept me awake at night. What about the population of existing appliances? After all, the industry has maintained pride in the quality and long life of appliances. Does the most logical point of incorporating the UCM into the SGD electrical still reside at the service plug? One of the obvious advantage is the access to AC power, ease of consumer or installer access, the ability to add a control circuit (similar to a GFI) within the plug. The functionality of measuring total current consumed may be added for minimal incremental cost at this place in the design.

I see intriguing possibilities. DNA Group welcomes the opportunity to create an integrated solution around these new UCM specifications for our OEM and utility customers.

For more information about how we can help you implement your Smart Grid application, [contact us](#) or call DNA Group at 919.881.0889.