

# Appliance Socket Interface

## Technical Requirements

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The H2G working group completed a document entitled *Appliance Socket Interface V21*, on September 15, 2010. The *Appliance Socket Interface* describes the high level architecture and requirements for a standardized, socket-based interface for communication between an Energy Service Interface (as defined in Open HAN 2.0), a type of residential gateway, and common residential electricity consuming devices. These devices (collectively labeled “appliances”) include heating and cooling systems, hot water tanks, and white goods (large kitchen and laundry appliances). Once established, we anticipate the socket would serve purposes much broader than electric utility applications.

The next step is to define a technical specification for the physical and data layers of the interface. A major challenge in creating the specification is to ensure that the specification is extensible for future applications. The best example of a specification that serves this purpose has been created by EPRI (Electric Power Research Institute) under a project team consisting of appliance and HVAC manufacturers, utilities, and communication device manufacturers. The protocol defines a very small set of simple serial commands needed to execute basic demand response; only four are mandatory for implementation including ACK and NAK commands.

33 The EPRI specification is a good example of how to create a protocol that is extensible for a  
34 variety of applications such as Simple Energy Protocol 2.0, Climate Talk, and even IP-based  
35 traffic.

36 The EPRI work is commendable for including a diversity of participants and defining a  
37 specification that resolves numerous issues and questions. There are now additional parties  
38 waiting to participate in specifying the Appliance Socket Interface based on the expectation  
39 that the H2G DEWG will decide whether and how to broaden the EPRI work further.  
40 Among the H2G DEWG options are to continue this work, identify an SDO (Standards  
41 Developing Organization) to create a standard based on our requirements, or define a PAP  
42 that the SGIP GB might commission to expand the DEWG requirements into specifications  
43 for an SDO.

44 A specification seeking to become a successful national or international standard will benefit  
45 from additional considerations and consensus regarding:

- 46 1) the physical form factor(s) required to allow implementation across all significant  
47 electric consuming devices, and
- 48 2) a method to accommodate robust extensibility for future applications.

49 To illustrate the minimal set of technical issues that must be addressed, the Table of Contents  
50 from the current EPRI specification is provided below.

51 *Harmonized Serial Communication Protocol for a Demand Responsive Appliance Socket*  
52 *Interface*

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