5.7 MIPI—In Utilities

USE CASES

In Smart Chargers:

- I3C to provide a shared, two-wire low-power interface to connect sensors and simple UI components such as LED and switches
- A-PHY as a long reach (≤15m), reliable physical interface to connect sensors on solar panels / wind turbines to main control unit

In Home Batteries:

- I3C to provide a shared, two-wire interface to connect sensors and simple UI components, such as LEDs and switches
- RFFE within communications module, linking device to smart grid

In Energy Harvesting Devices:

- I3C over A-PHY to provide a shared, two-wire interface to connect sensors and simple UI components, such as LEDs and switches
- A-PHY as a long-reach (≤15m), ultra-reliable physical interface to connect sensors on solar panels/wind turbines to the main control unit

In Energy Monitoring and Control:

- I3C to provide a shared, two-wire low-power interface to connect simple UI components such as LEDs and buttons
- DSI-2 over C/D-PHY to drive a high-resolution display, providing a rich user experience and, using "Smart Region of Interest", to reduce power consumption when device is in standby mode

In Water, Gas and Electricity Meters:

- I3C to provide a shared, two-wire low-power interface to connect sensors and simple UI components such as dot matrix displays, LEDs, buzzers and buttons; in-band interrupts enable active sleep mode, waking the application processor only when required (critical for battery powered meters)
- RFFE within the device's radio communications module, linking the meter to the smart grid and controlling critical RF front-end components, such as power amplifiers, filters, switches and antenna tuners

LEGEND

- Functionally safe and secure IoT device that will benefit from MIPI's focus on safety and security
- IoT device with constrained power supply that will benefit from use of MIPI low-power interfaces
- IoT device with wide-area cellular connectivity that will benefit from MIPI's 5G preparedness
- Size-constrained, tightly packaged IoT device, benefiting from MIPI's low pin count, low wire count, low EMI interfaces

Associated MIPI SOFTWARE and DEBUG specifications are also available to accelerate the design process

Use of MIPI specifications can aid product compliance to functional safety standards such as IEC 61508