

5.6 MIPI—In Healthcare

USE CASES



In Remote Healthcare Monitoring - Enabling Independent Living and Better Health Outcomes:

- DSI-2 over C/D-PHY to drive advanced high resolution displays, enabling low-power 'Smart Region of Interest' mode when devices are in standby mode
- MIPI Touch to enable touchscreen user interface
- CSI-2 over C/D-PHY as a highly scalable interface to connect advanced high-resolution cameras - enabling low-power vision inferencing and machine vision
- C-PHY physical interface, reducing line and pin counts, and generating low EMI – enabling smaller devices requiring less EMC shielding
- I3C to provide a shared, two-wire interface to connect heart rate, motion and other sensors and simple UI components such as LEDs and haptics
- SoundWire to drive advanced audio components such as microphones, speakers and headsets – enabling audio for telemedicine applications
- RFFE within radio communications modules



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

Enabling machine vision for remote surgery:

- CSI-2 over C/D/A-PHY as a highly scalable interface to connect advanced, high resolution cameras - enabling low-power vision inferencing and machine vision, and providing low-power modes for 'cold camera' applications
- C-PHY physical interface, reducing line and pin counts, and generating low EMI – allowing smaller devices requiring less EMC shielding

MIPI Displays and Cameras enable microsurgery; XR Headsets enable remote surgery:

- DSI-2 over C/D-PHY to drive state-of-the-art ultra-high-resolution displays enabling a truly immersive virtual/augmented reality experience
- MIPI Touch to enable touchscreen user interface
- I3C to provide a shared, two-wire interface to connect heart rate, motion and other sensors, and simple UI components, such as LEDs and haptics
- A-PHY as a long-reach ($\leq 15m$), ultra reliable physical interface, to link the components to the rest of the system in EMI-sensitive environments



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

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

