IoT: Client Devices

Communications

IoT-Specific

Zigbee (IEEE 802.15.4)

Cheap, low-power, line-of-sight, short range; used for PANs

6LoWPAN

IPv6 for PAN; can transmit over Zigbee (very common configuration)

Wifi HaLow (IEEE 802.11ah)

Sub 1GHz, extended range, low-power; great for rural, smart metering

General Purpose

Wifi

Standard run-of-the-mill IEEE 802.11 wifi, interface with home networks

Bluetooth/BLE

Common for media devices, fitness devices, wearables

Radio/RFID

Used in industrial applications; inventory monitoring, equipment tracking

Other Layers

TCP/IP

Most systems (all using Linux) can use TCP/IP sockets, etc.

HTTP/HTTPS

Devices consume HTTP/HTTPS APIs, they don’t usually provide them

Thrift, Protocol Buffers

Not common, but have been used; binary format, low overhead is nice

Proprietary, Other

Over TCP/IP

TDDP, proprietary binary protocol used by TP-Link devices

Over HTTP/HTTPS

JSON, REST-style APIs, SOAP not very common today

Thread Group (see OpenThread)

Closed documentation, royalty free; encrypted, uses other IoT protocols

OpenThread is the Open Source version of this, released by NEST