

Embedded System

System Elements

We start with a simple question: **what is an embedded system?**



Why *embedded*?

definition: "(adj) fixed firmly and deeply in a *surrounding mass*; implanted."

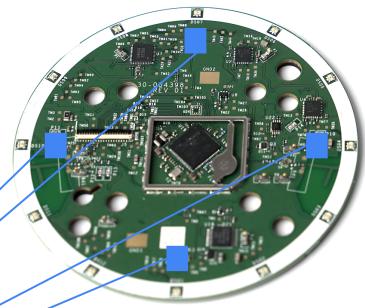




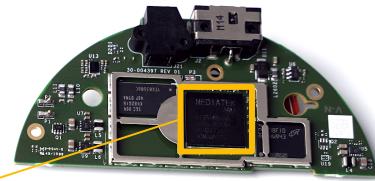
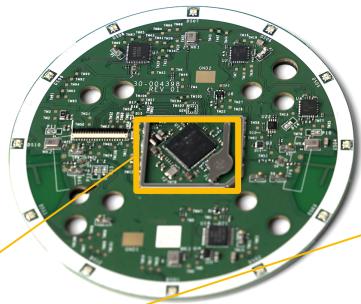




**sense
(input)**



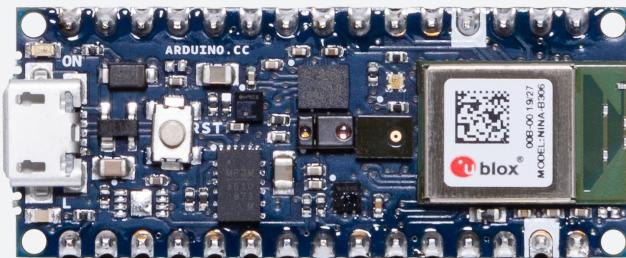
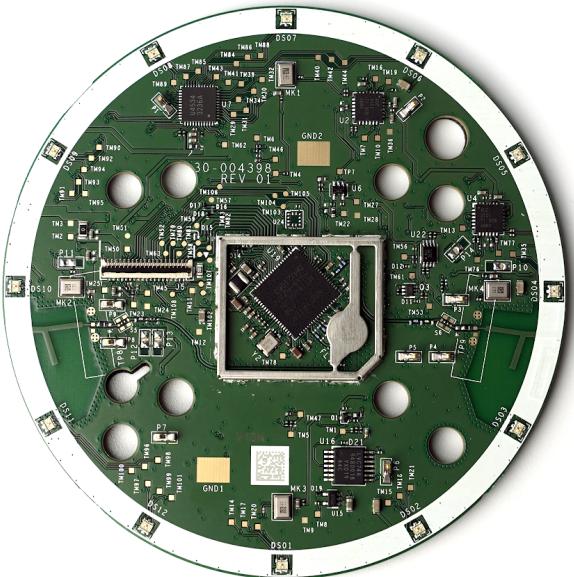
process



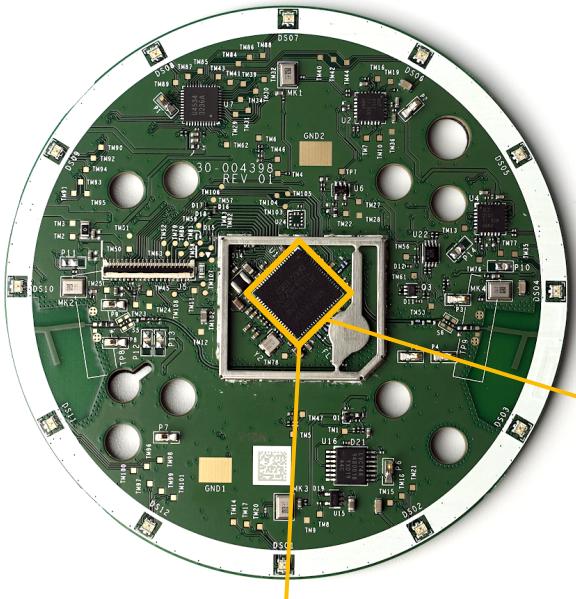


**actuate
(output)**

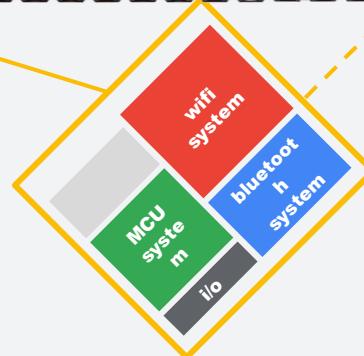
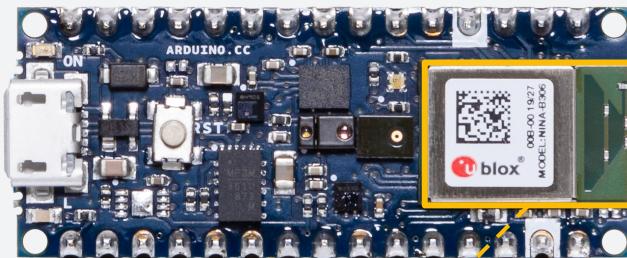
Your Embedded System



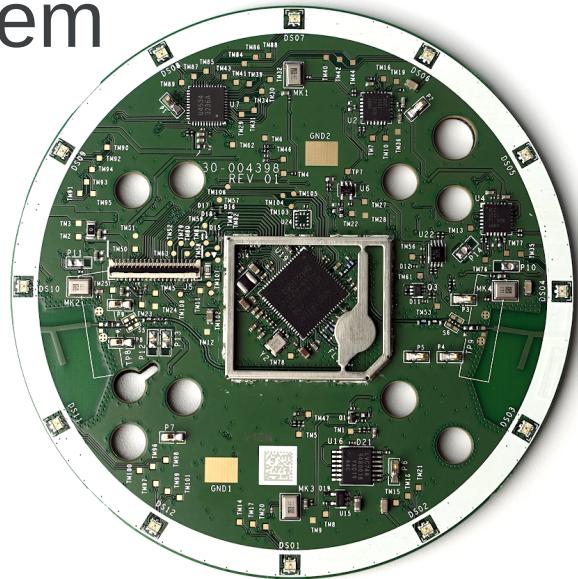
Your Embedded System



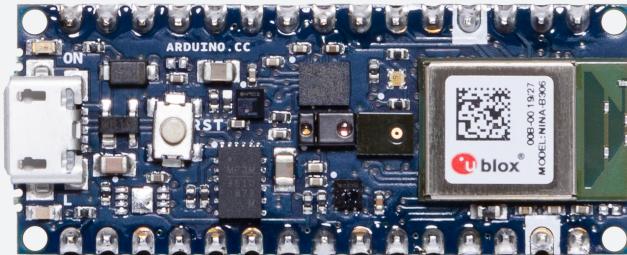
MediaTek 7658CSN: Wi-Fi +ARM® Cortex-R4

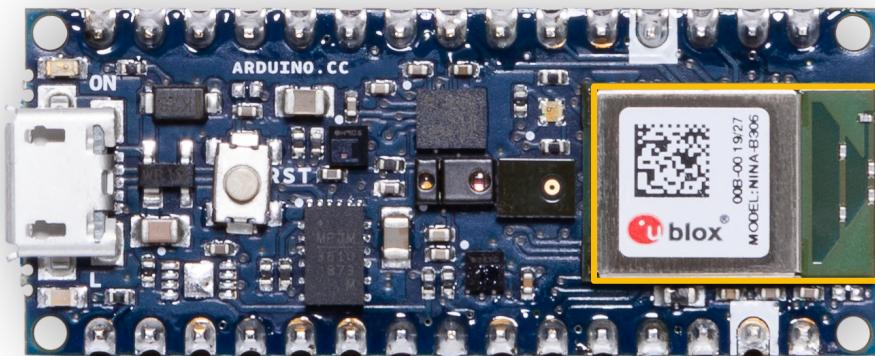


Real Embedded System

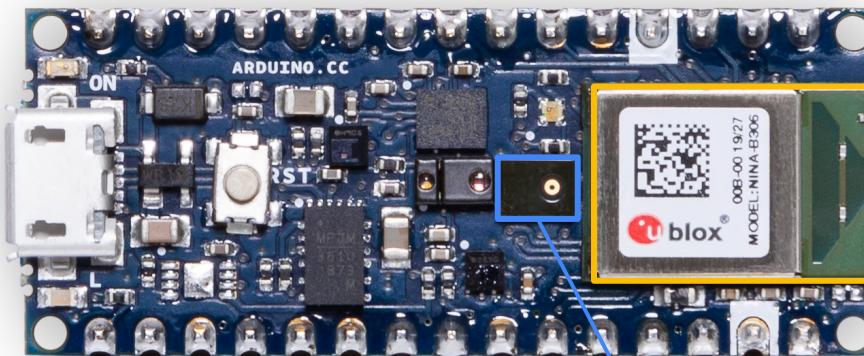


Developer Embedded Systems



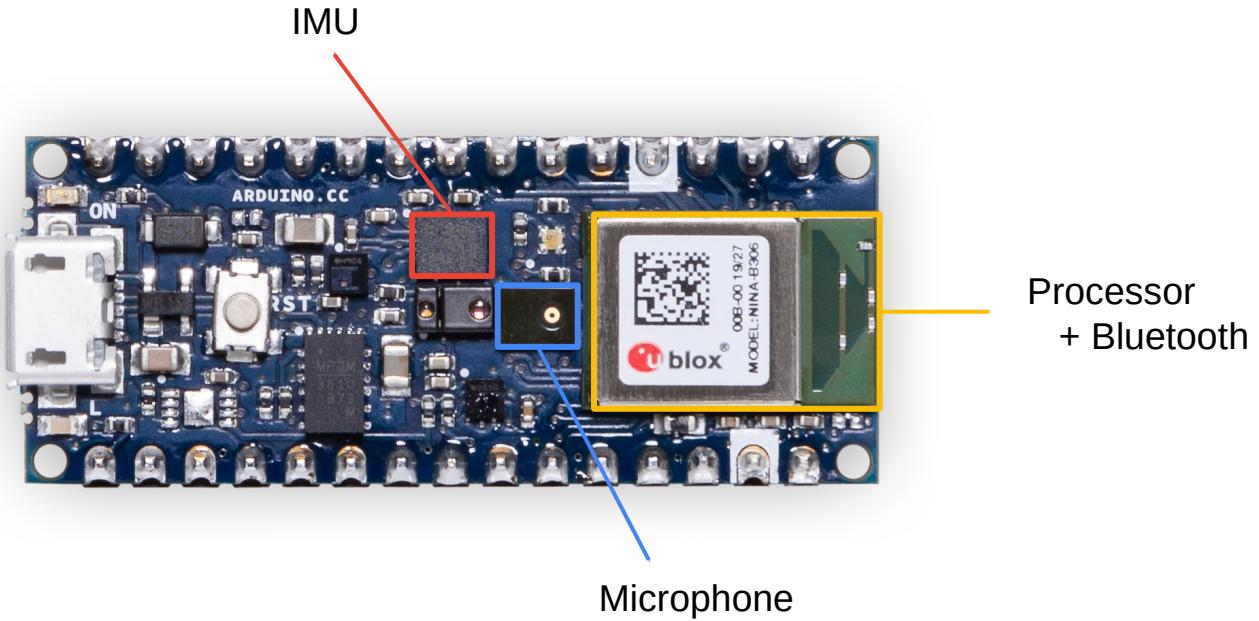


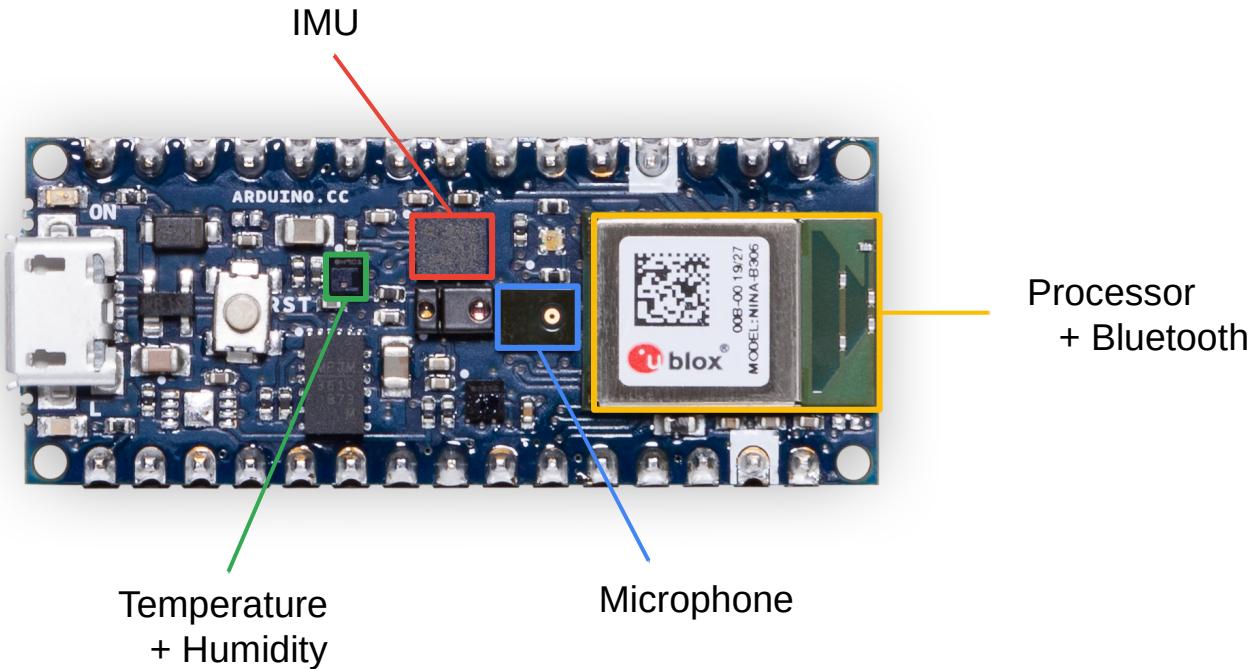
Processor
+ Bluetooth

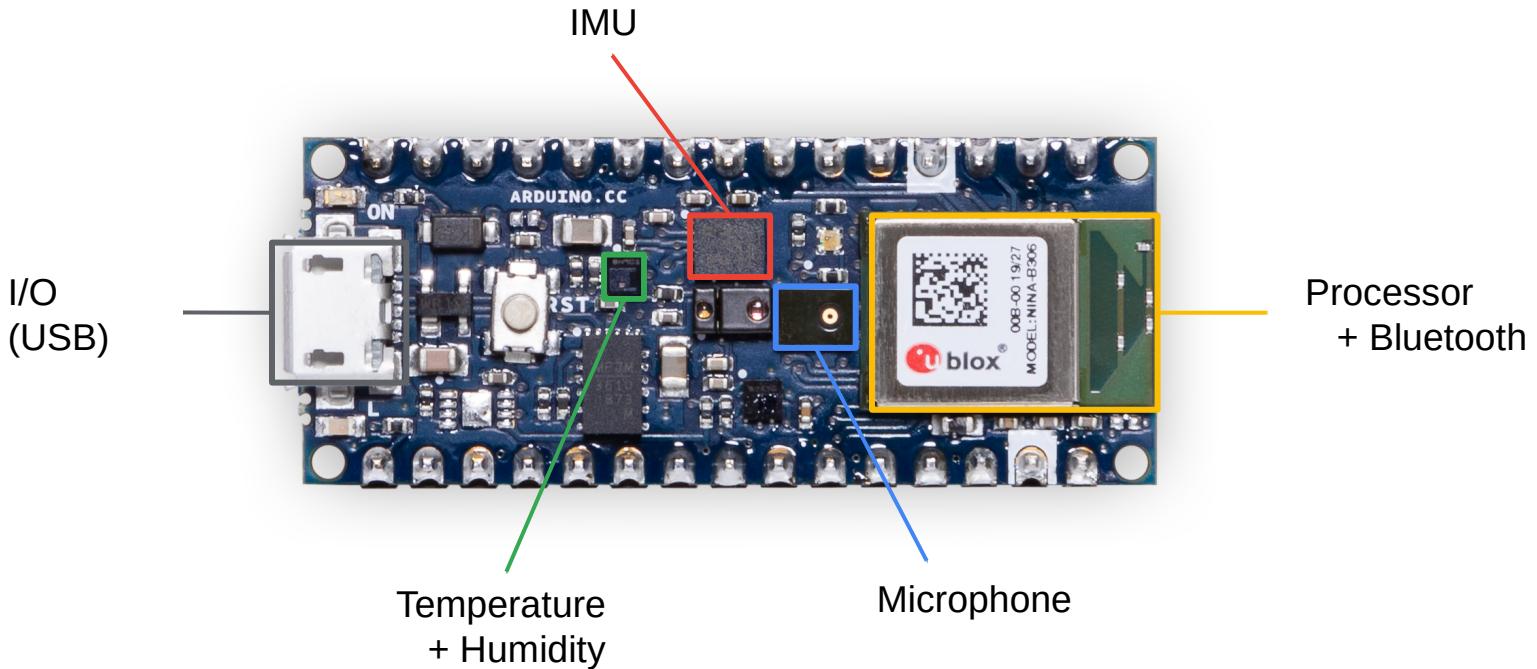


Microphone

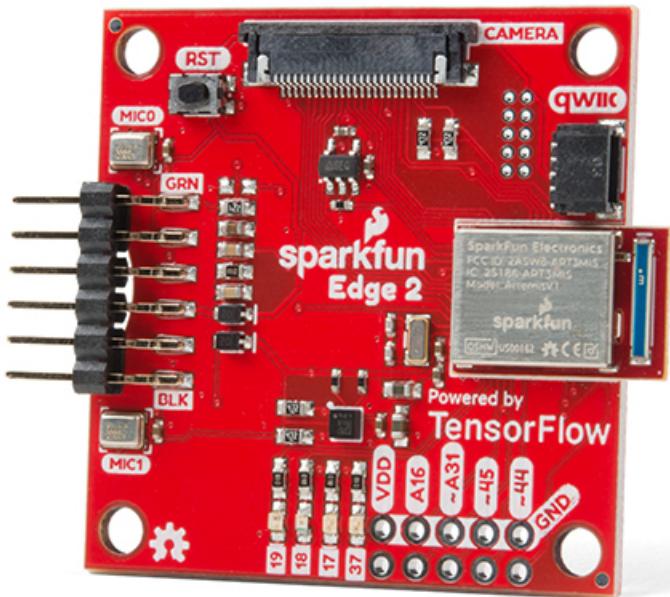
Processor
+ Bluetooth





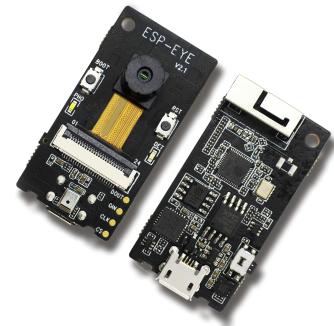
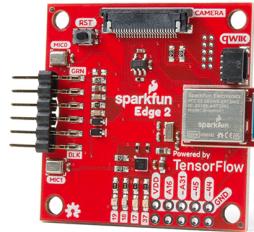
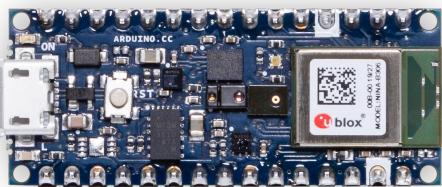








Embedded Systems



Embedded Systems

Board	MCU / ASIC	Clock	Memory	Sensors	Radio
	Himax WE-I Plus EVB HX6537-A 32-bit EM9D DSP	400 MHz	2MB flash 2MB RAM	Accelerometer, Mic, Camera	None
	Arduino Nano 33 BLE Sense 32-bit nRF52840	64 MHz	1MB flash 256kB RAM	Mic, IMU, Temp, Humidity, Gesture, Pressure, Proximity, Brightness, Color	BLE
	SparkFun Edge 2 32-bit ArtemisV1	48 MHz	1MB flash 384kB RAM	Accelerometer, Mic, Camera	BLE
	Espressif EYE 32-bit ESP32-D0WD	240 MHz	4MB flash 520kB RAM	Mic, Camera	WiFi, BLE

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Fullscreen Show Presenter