Embedded System

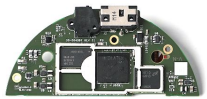
System Elements

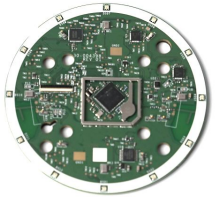
We start with a simple question: **what is an embedded system?**

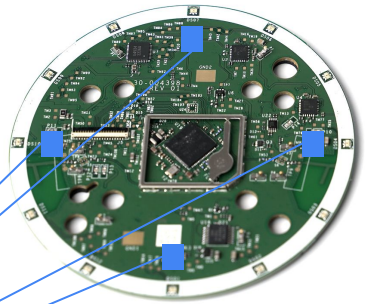
Why ***embedded***?
definition: “(adj) fixed firmly and deeply in a *surrounding mass*; implanted.”

10:01

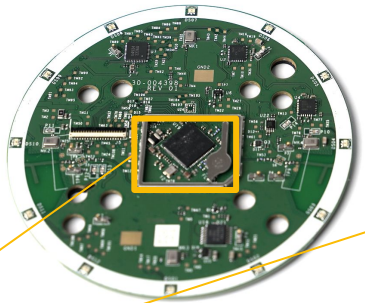
nest
Nest Learning Thermostat
nest
22
TURN OR PUSH
TO DEMO

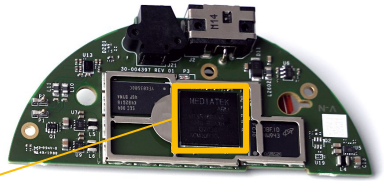






sense
(input)

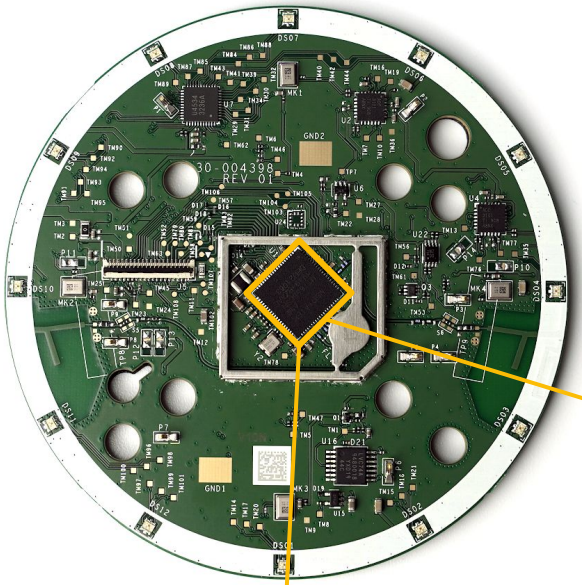


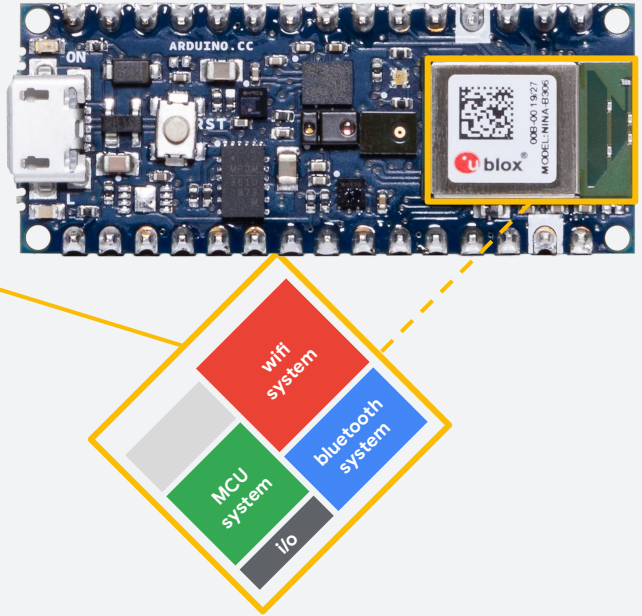


process

actuate
(output)

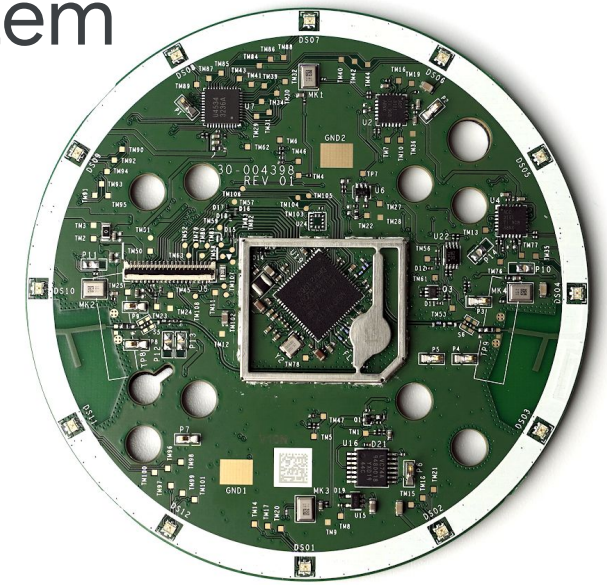
Your Embedded System



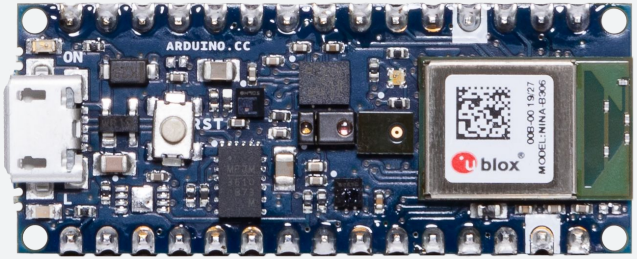


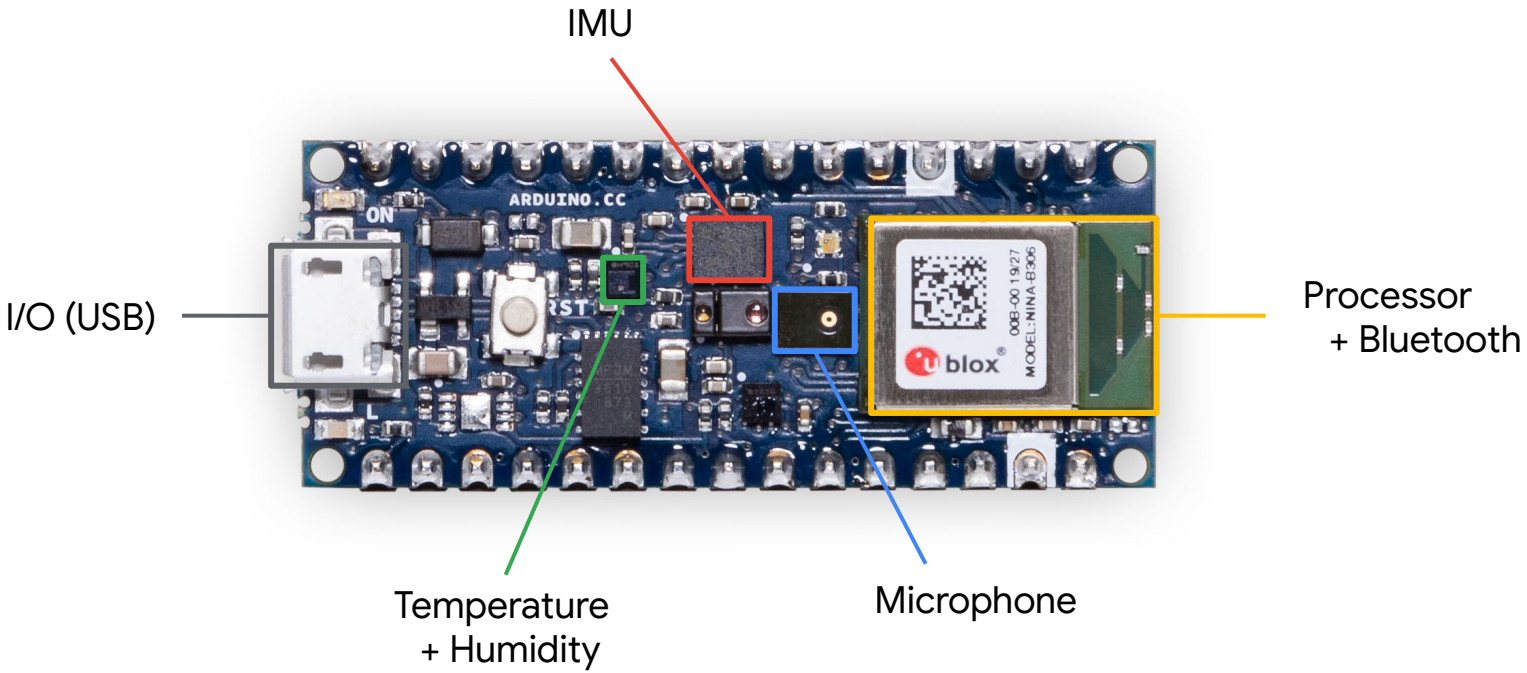
MediaTek 7658CSN: Wi-Fi +ARM® Cortex-R4

Real Embedded System

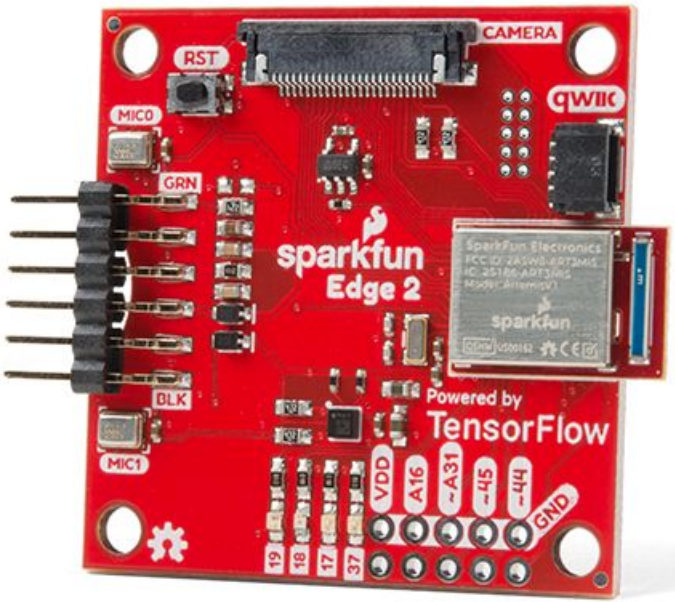


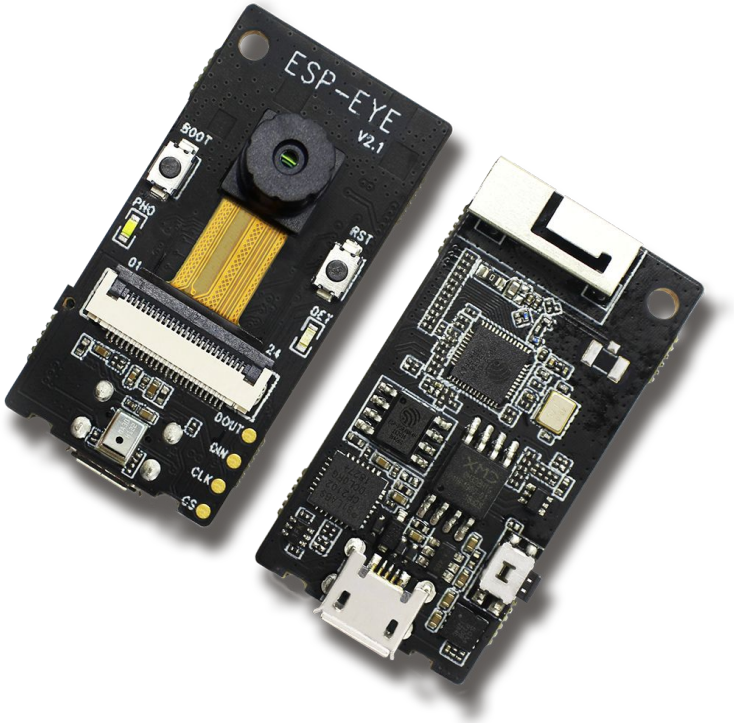
Developer Embedded Systems




IMU
I/O (USB)
Processor
+ Bluetooth
Temperature
+ Humidity
Microphone
ARDUINO.CC
ON
blox

Himax
Reset
AP-K-1


CAMERA
RST
qwiic
MIC0
GRN
sparkfun
Edge 2
BLK
Powered by
TensorFlow
MIC1
VDD
A16
~A31
~45
~44
GND
19
18
17
37


ESP-EYE
V2.1
BOOT
RST
01
24
DOUT
CLK

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
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