



Multiple sensors data collection

Key features

With integrated multiple sensors the PUCK device includes a high-resolution camera, a microphone array, and two IR thermopile arrays.

It comes with powerful computing capabilities (4 ARM A57 and one Maxwell GPU with 128 CUDA-cores), multiple communication interfaces (Wi-Fi, Bluetooth, Ethernet) and several GPIOs for interfacing additional sensors.

PUCK is designed for ease-of-use:

- Easy to install via magnets or a multi-purpose fixation plate
- Automatic data collection when powered-on.
- Easy data retrieval as data is automatically loaded to a USB storage device upon plug-in
- ML development through the standard tools and the embedded Nvidia GPU

Device content

- Embedded AI acceleration
- High resolution RGB camera
- Far-field microphone array
- Temperature imaging
- Wireless communication
- Any additional sensor

AI content

- Anonymized data collection
- People counting and tracking
- Density map for people frequentation
- Object-based temperature tracking
- Anomaly detection
- ... and more

Applications

- Traffic analytics and optimization
- Livestock monitoring
- Predictive maintenance
- Health and security tracking
- ... and more

Technical specifications

Dimensions	Diameter: 160 mm Thickness: 32 mm
CPU	4x Cortex-A57, 1.43 GHz
GPU	Nvidia Maxwell, 128 CUDA cores 472 GFLOPS (FP16)
Memory	4 GB 64-bit LPDDR4, 1600MHz 25.6 GB/s
Imagers	IMX 219 (Sony), rolling shutter 8 MP, 3280x2464 (color) Max 120 FPS (@720p) Pixel size 1.12x1.12 µm Default lens: 200° FoV, F2.0
Microphone	Respeaker MicArray v2.0 4x MP34DT01TR-M (ST) 1x XVF-3000 (XMOS) Embedded DOA and VAD 12 programmable RGB LEDs
IR sensor	2x Melexis MLX90640 48 x 32 pixels, 140x110° FoV -40 to 85°C, ± 1°
Connectivity	Wi-Fi, BT, Ethernet, other extensions via USB port
Additional interfaces	USB3, I2C, I2S, SPI, UART 3V and 5V GPIOs
Power consumption	5 – 10 Watts Optional battery (1 hour)
Storage	400 GB on SD card (up to 10 days recording)
Encryption	Compatible with ARM TEE
Software suite	Ubuntu 18.04, CUDA, TensorFlow, TensorRT