

v. 1.0.0
DATASHEET

SMART CAMERA AI



Born to be smart

Urbana Smart Camera AI is a camera device with onboard computer vision engine for real time video analysis which runs smart algorithms for event detection and image processing.

The device can connect to the long range wireless LoRaWAN® network and is able to transmit the outcome of the video analysis instead of the entire video stream. It is able to implement services like people tracking, people counting, entrance and areas monitoring, vehicles tracking and the data produced can be used to make statistical analysis like mean permanence time, higher presence areas, etc. The device is powered

from grid and communicates through LoRaWAN®, LTE™, Wi-Fi® and Ethernet. The device is a Plug&Play solution using Urbana IoT Platform.

Ultimate technology for network connectivity

The device deploys LoRa® radio technology for last mile communication. This innovative low-power and long-range technology is used by Urbana Smart Camera AI for communicating with the Urbana IoT Platform. It operates under LoRaWAN® 1.0.3 standard with coverage radius up to 5 Km. LoRa® technology provides the best performance for radio communication in terms of reliability, scalability and obstacle penetration with

low power consumption. The maximum power consumption is 19 dBm with 153 dB of link budget and high sensitivity of -138 dBm.

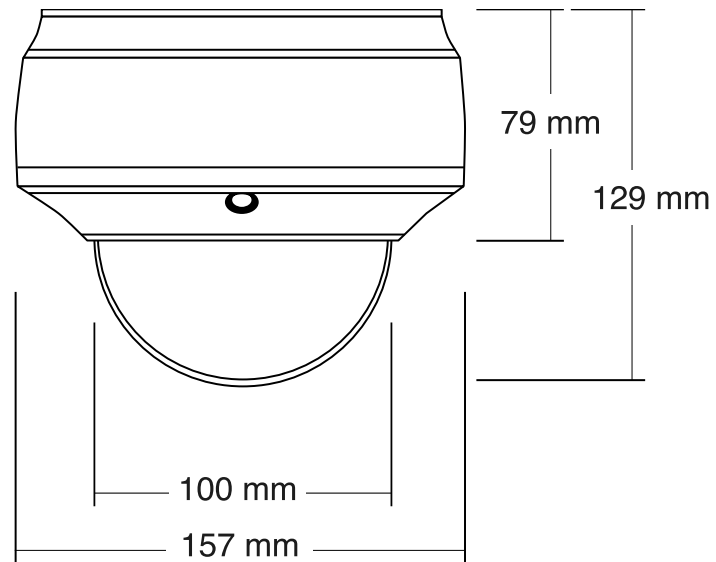
Competitive advantage

With enhanced features for robust and compact wireless capability, Urbana Smart Camera AI delivers rapid time to market and ease of integration for remote control applications at the lowest cost.

Real-time optimization through Urbana IoT Platform

Optimised for industrial usage to suit field applications and extended lifetime requirements with multiple interface options to provide seamless connectivity for different applications.

DEVICE DIMENSION



TECHNICAL SPECIFICATION

MECHANICAL

Housing:	Solid Case
Material:	Alluminium
Dimension:	157 x 129 mm

ELECTRICAL

Input Voltage:	12VDC +/- 10%
Input Current (max):	2.1A
Power Consumption:	15W (Max), 5W (Idle)

ENVIROMENTAL

Operating Temperature:	-25°C ~ +60°C
Storage Temperature:	-50°C ~ +85°C
IP Rating:	IP68

INTERFACES AND PROTOCOLS

LPWAN:	LoRaWAN®
Ethernet:	RJ45 1Gbit (IEEE1588 and IEEE802.1AS)
Wi-Fi:	IEEE802.11b/g/n (2.4GHz)
Cellular:	LTE™ Cat.4 (Optional)
Deep Learning Engine Onboard:	NVIDIA® Jetson Nano

PERFORMANCE

Coverage Area at 13m Height:	~ 65 m ²
Camera FOV:	100 Degrees
Max. Distance for People Detection:	13 m Max
Performance of Pedestrian Detection:	72.72 Average Precision on PASCAL Visual Object Class Test Set (Person class)
Frequency During Detection:	10 Hz

FUNCTION AND MONITORING PARAMETERS

People Counting/Tracking	Access control
Vehicle Counting/Tracking	Region Occupancy Rate, Off-limit Regions
Access Control	Off-limit Region Control
Object Detection	Object Recognition

LORA® INTERFACE

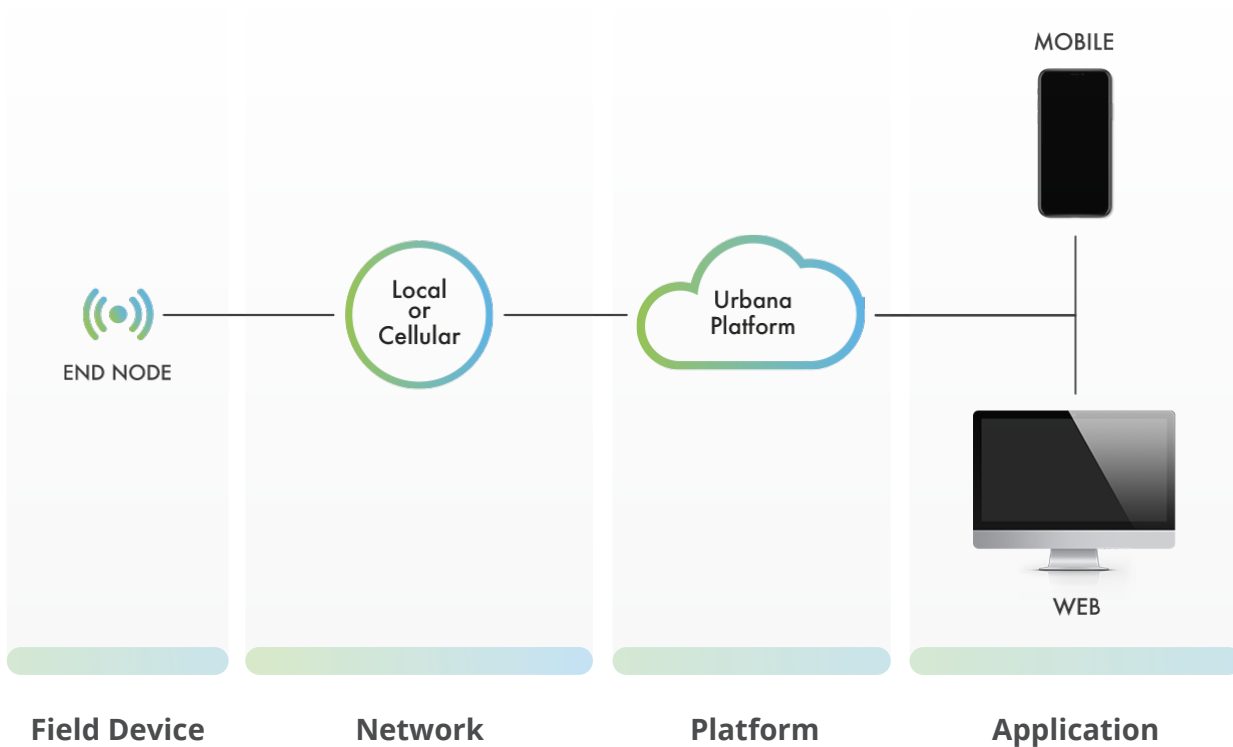
Frequency:	LoRaWAN®1.0.3 Regional Parameters
Modulation:	LoRa®
Stack:	LoRaWAN® 1.0.3
Sensitivity:	-135.5 dBm (SF 12; SB 125 kHz, CR 4/6) -133 dBm (SF 12; SB 250 kHz, CR 4/6)
Output Power (Max):	+18.5 dBm
RF Data Rate:	0.24 to 37.5 kbps
RF Range:	Up to 15000 m (line of sight)
Transmission Current:	128 mA (18.5 dBm)
Receive Current:	21.5 mA (@125 kHz BW)
Stand-by Current:	<1.8 uA

CONFIGURATION

Plug&Play using Urbana IoT Platform

URBANA IoT PLATFORM

Urbana platform is designed to provide end-to-end IoT solutions from hardware to software. The core structure of the platform is based on a scalable distributed and containerised infrastructure maintaining the requirements of clients to scale up whenever needed. The tech stack used in Urbana allows us to have no restriction based on number of devices, features, users and availability. With use of these highly scalable and available databases, Urbana IoT Platform is able to provide advanced reporting and fallback mechanism to provide high level of reliability. One of the most important components of the Urbana IoT Platform is the MQTT broker (server). The MQTT layer is the gate that connects the cloud-based part of the infrastructure to the local field network of devices. It plays a critical role both in terms of security and scalability but also in terms of interoperability. Urbana infrastructure can interface with any device compliant with LoRaWAN[®] network protocol as standardized by the LoRa Alliance[®]. Urbana Smart Solutions, being an end-to-end provider, have in-house LoRaWAN[®] gateways readily for the clients if needed, which are Plug&Play compliant with all the Urbana devices.



CCAI Module
Datasheet

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