4G Dock

DETAILED TECHNICAL SPECIFICATIONS

Part Number	**99-A0000019-01**
Model Name	**DOC01**

REVISION HISTORY

Rev	Date	By	Changes and Notes
0.1	2020-03-12	Kun	First release
0.2	2020-03-29	Eldon	Minor edits
0.3	2020-03-31	Kun	S/W spec
0.4	2020-03-31	Tony	H/W Spec Review
1.0	2020-12-27	Eldon	Release

Table of Contents

1 STANDARD TEST CONDITIONS

Unless otherwise noted, all testing shall be conducted under the following conditions:

Environmental:	Temperature:	+25°C ± 5°C
	Humidity:	20% to 60%
	Operating Voltage:	10.2V ~ 36V

Unless otherwise noted, all units are in:

Optical Wavelength	nm
Voltage:	V
Current	mA
Audio Volume	$dBSPL_C$
Angles	° (degrees)
Temperature	°C (degrees Celsius)
Distance	m(meter), ft (feet)
Location	Latitude , Longitude
	(°,’,”; degrees, minutes, seconds)
RF Sensitivity	dBm

Unless otherwise noted, all specifications within this document apply to all models listed on the title page of this DTS.

2 ABBREVIATIONS, ACRONYMS AND DEFINITIONS

Transee Specifications and Documentation

DTS	Detailed Technical Specifications	QC or QA	Quality Control/Assurance Dept

DTS Notation

§	Section reference in this DTS
ℜ	Requested Design Specification
➢	Model-specific feature
Nom	Nominal Value (Mean for all MP)
Lim	Eng Limit Value
Δ	Temporary Waiver from DTS
Highlight	Text corrected or added to DTS

Engineering Sample Stages

UUT	Unit Under Test
ES0	Prototype
ES1	Engineering Stage 1
FES	Final Engineering Stage
PrePro	Pre Production Stage
Pilot	Pilot Run
MP	Mass Production

Buttons & Functions

Cty	City
h or Hwy	Highway Mode
AutoMute	Audio Auto Mute Mode
Mute	Audio Manual Mute Mode
P or Pwr	Power
IMute	IntelliMute
IMPro	IntelliMute Pro

Miscellaneous

Mom	Momentary
PB	Push Button
‘beep’	Button confirmation tone
CLA	Cigarette Lighter Adaptor
FDM	Frequency Display mode
BT	Bluetooth
BLE	Bluetooth Low Energy
ADT	Audio Delay Timer

Colors

R	Red
O	Orange
G	Green
B	Blue
W	White
M or Multi	Multi-color RGB

3 GENERAL PRODUCT DESCRIPTION & OVERVIEW

The Waylens 4G Dock is a LTE dock system for Waylens Secure360 and Secure4K camera.

3.1 Features

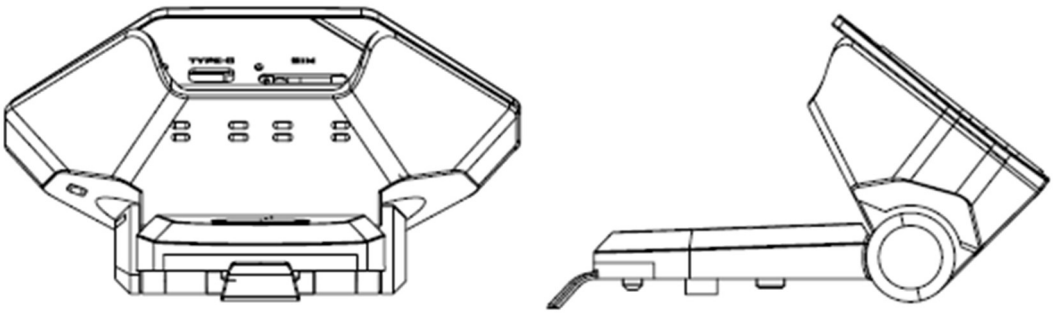
The Waylens 4G Dock provides following features:

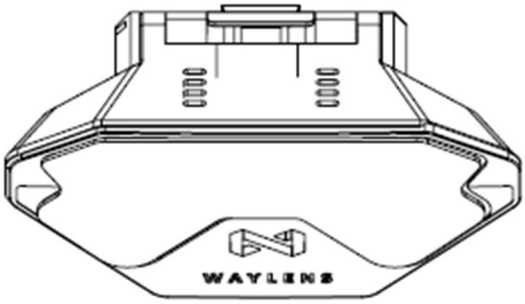
- Base to hold Waylens camera family
- 4G-LTE connection; No VoLTE
- GPS Receiver
- Low-power standby mode while parking;
- Smart power management;
- Low voltage protection
- SIM card slot
- Panic button
- Adjustable Hingle

3.2 Major Components

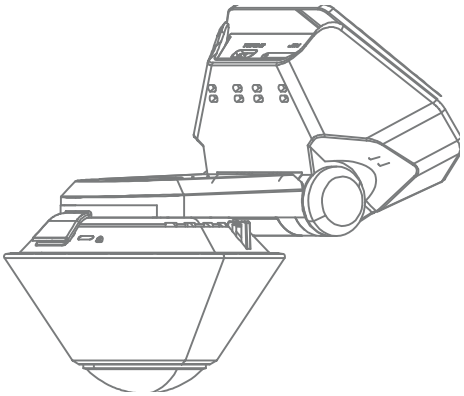
- Dock

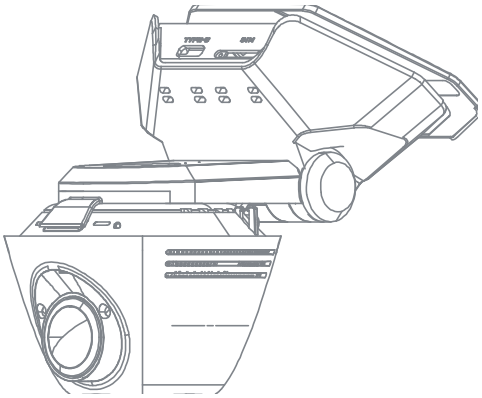
3.3 Product Picture





3.4 Product in Camera





4 LEDs, CONTROLs, FEATUREs, & BASIC OPERATION

4.1 LED

Position	Status	Description
Face to the windshield window mount	Blinking	Parking Status

4.2 Controls

4.2.1 Buttons

Position	Name	Description
Dock	Panic Button	With Waylens Camera Body: 3 clicks to flip on WiFi Direct Mode 2s to mark event 4s to restart

4.2.2 Dock hinge

Camera angle is adjustable by the dock hinge.

4.2.3 Engine ON/OFF detection

Waylens Secure4K detect the engine status(on/off) via voltage monitoring, specifically, by VBAT and ACC voltage.

VBAT	ACC	Status
VBAT > 10.2V	ACC ON	Driving Mode
VBAT > 10.2V	ACC OFF	Parking Mode
VBAT≤ 10.2V	X	OFF

4.3 Remote wake-up

The 4G Dock can be waked up remotely.

5 ELECTRICAL SPECIFICATIONS

Unless otherwise noted, all specifications listed within tables are inclusive, and the specification should be read as “is equal to or better than”

5.1 Device Power

The power inlets on Mount and Battery Pack are both USB Type-C sockets, while outlet on Battery Pack is a Dual-Type-A socket.

Mount can accept 12V input via Waylens standard power cords. If customers use 3rd party power cords, Waylens Secure4K may not work properly.

The device will be turned on until the input voltage is equal or higher than 12.2v. The maximal input voltage is 36v.

And the device will be turned off if the input voltage is below 10.2v for 10s. After it’s turn on, the device will maintain a working status even the input voltage is lower than the trun on voltage.

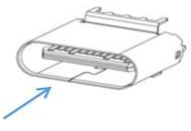
5.2 Operating Voltage Range

Trun on	12.2 V
Trun off	10.2 V
Maximal Input	36 V

5.3 Max DC Current

Power Supply	12V
4G Standby	8mA
4G Recording	1000mA

5.4 Power Connector



Looking into the product receptacle:

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND			**VBUS**	**CC1**	**DP**	**DM**	**SUB1**	**VBUS**			**GND**

GND			**VBUS**	**SUB2**	**DM**	**DP**	**CC2**	**VBUS**			**GND**
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

Pin#	Name	Description
A1	GND	GND
A2	NC	Not Connected
A3	NC	Not Connected
A4	VBUS	12V/5V power supply
A5	CC1	5V detect
A6	DP	USB 2.0 DP
A7	DM	USB 2.0 DM
A8	SUB1	ACC power
A9	VBUS	12V/5V power supply
A10	NC	Not Connected
A11	NC	Not Connected
A12	GND	GND
B1	GND	GND
B2	NC	Not Connected
B3	NC	Not Connected
B4	VBUS	12V/5V power supply
B5	CC2	5V detect
B6	DP	USB 2.0 DP
B7	DM	USB 2.0 DM
B8	SUB2	ACC power
B9	VBUS	12V/5V power supply
B10	NC	Not Connected
B11	NC	Not Connected

B12	GND	GND

5.5 4G Specifications

One of the below module will be used based on the availability and requirement at each manufacturing time. The 4G specification will be decided by the module chosen.

No VoLTE

Module: Gosuncn GM500

UE Category	Cat-4
Data Speed	150Mbps DL, 50Mbps UL
Antenna ports	1st TX/RX, internal. 2nd RX only, internal
Chipset	MDM9207
Freq Band(MHz)	B2 DL:1930-1990 UL:1850-1910 B4 DL:1805-1880 UL:1710-1785 B5 DL:869-894 UL:824-849 B12 DL:728-746 UL:698-716
Max TX power	25(dBm)
Operation Temp	-30℃~75℃

5.6 GPS Specifications

Chipset	Integrated in 4G module GM500
Central Freq	1575.42MHz
Update Rate	Default：1Hz， upto 2~4Hz
Supported Protocols	GPS,GLONASS
Antenna Type	Ceramic, Active

Antenna Size	25x25x4mm
Cold start time	55s avg.
Hot start time	4s avg.
Operation Temp	-30℃~75℃

6 MECHANICAL SPECIFICATIONS

6.1 Material

PC, Aluminum alloy

6.2 Dimensions

10.5cm x 9cm x 5cm

6.3 Weight

103g

7 ENVIRONMENTAL / RELIABILITY

7.1 Operating Temp

-20°C to +70°C (Parking Mode)

-20°C to +45°C (Driving Mode)

7.2 Storage Temp

-20°C to +80°C

7.3 Operating Humidity Range

90%RH, 3 hours continual operating

7.4 Vibration & Shock / Drop

Drop test 10 cm above a hard wooden surface under power-on mode. No re-power on or functionality problem happened, drop from 6 sides

Drop test 100 cm above a hard wooden surface under power-off mode. No functionality or mechanical problem happened, drop from 6 sides

Vibration test with speed of 210RPM, 3 perpendicular sides,30mins/face. No functionality or mechanical problem happened.

7.5 ESD

1 to 15 kV

Unit must withstand electrostatic discharge with NO MALFUNCTION using a high-voltage discharge probe with a 330Ω resistor in series with a 150pf capacitor and at a temperature between 20°C and 30°C and relative humidity between 30% and 60%.

8 COMPLIANCE SPECIFICATIONS

8.1 CE Approval

8.2 FCC Approval

8.3 PTCRB Approval

8.4 AT&T Certification

FCC Statement :

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference,and
(2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However,there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

ISED RSS Warning/ISED RF Exposure Statement

ISED RSS Warning: This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISED RF exposure statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Le rayonnement de la classe b repecte ISED fixaient un environnement non contrôlés.Installation et mise en œuvre de ce matériel devrait avec échangeur distance minimale entre 20 cm ton corps.Lanceurs ou ne peuvent pas coexister cette antenne ou capteurs avec d’autres.