MDT665

The MDT665 is for the outdoor area designed. It's a rugged smartphone, especially apps to use in the outdoor area. You can use it as a tool. Look to your tasks even under demanding to do outdoor conditions. It is waterproof, dustproof and shockproof.

●The device can be used for up to 30 minutes in 1.5 m deep lying water.

●You can do it in dirty and dusty environments.

●Ambient temperatures are from -20℃ to 25℃ (via with USB-C port) or 40℃ (via with charging base).

●The impact resistance was with a drop height of 1.5 m tested.

Although the MDT665 is the IP 68 standard and tested for ruggedness no heavy objects thrown on the display or filed. It should not be thrown be squeezed or bent. It can be used for Underwater photos, but the specified depth should not be exceeded. Hold it off fire stoves and areas with higher than that remote temperatures. Charge the battery please not longer than 24 hours.

Technical Manual

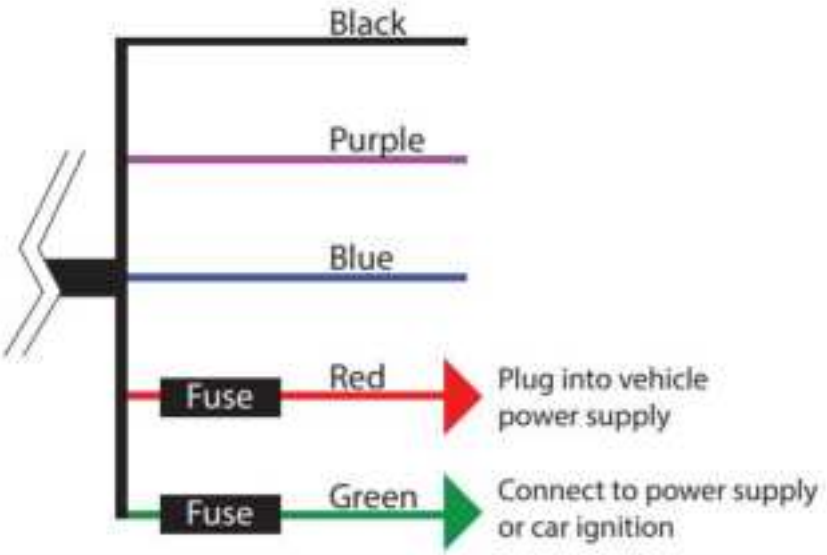
Device overview graph

1. Power button
2. Volume key +/-
3. Custom button
4. SIM and TF card slots
5. Front camera
6. Earphone
7. Rear camera
8. Speaker
9. Docking interface
10. ypeC USB port
11. Microphone
12. NFC Antenna

Charging with cradle

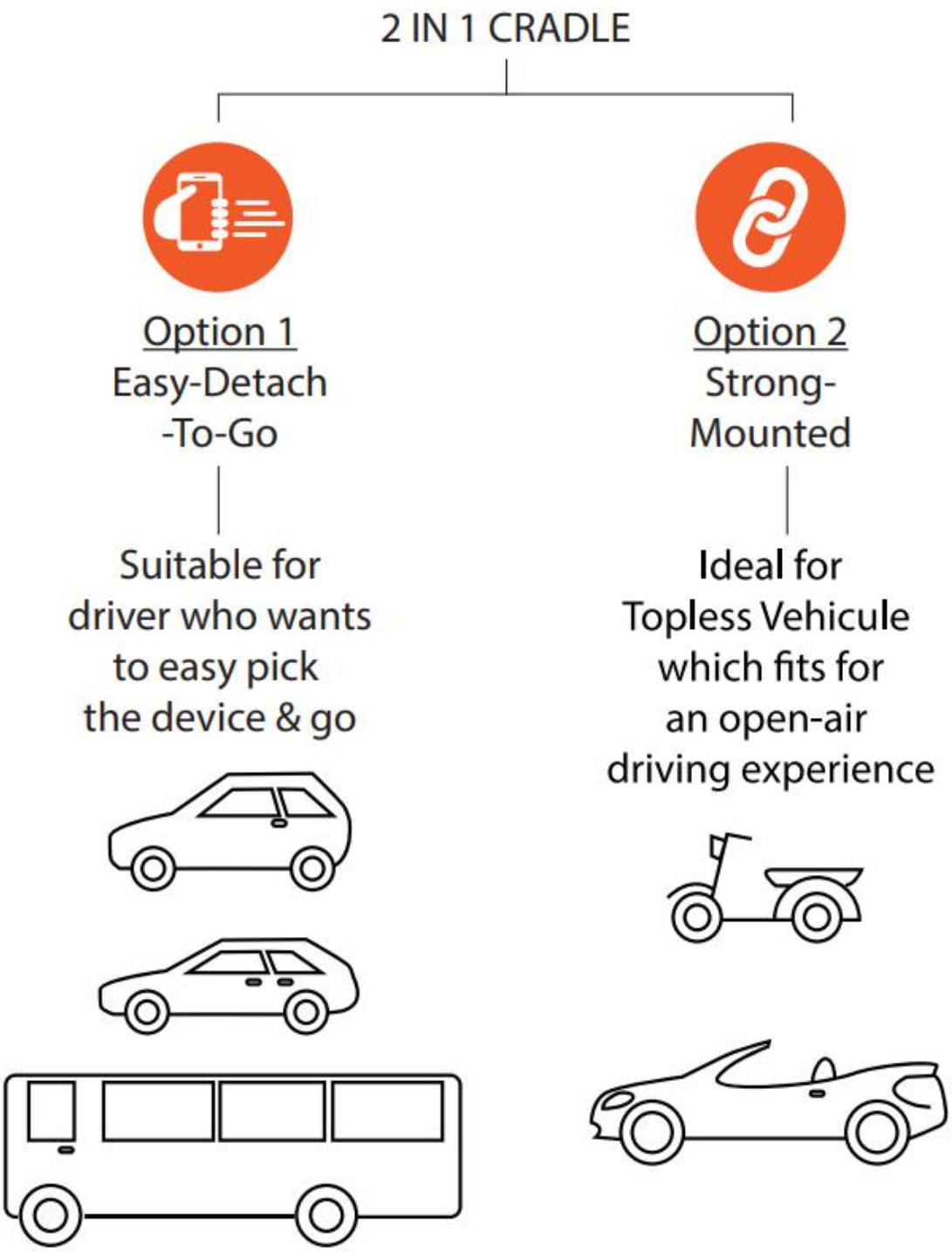
There are RS232 interfaces and OTG from cradle.

Highlight: OTG port from device and cradle are sharing same pins. Only 1 OTG interface can be used.



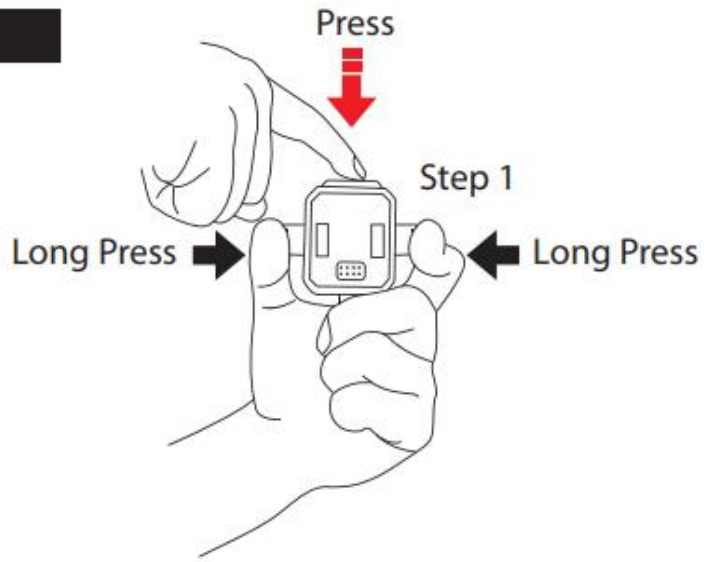
CORE	DESCRIPTION
Black	GND + Shield
Purple	RXD (RS232)
Blue	TXD (RS232)
Red	Power 9-36V (with fuse)
Green	Ignition 9-36V (with fuse) (Please note that the ignition input is used to control the power supply to the phone. If ignition is low, no power supply to the phone (no charging))

Installation

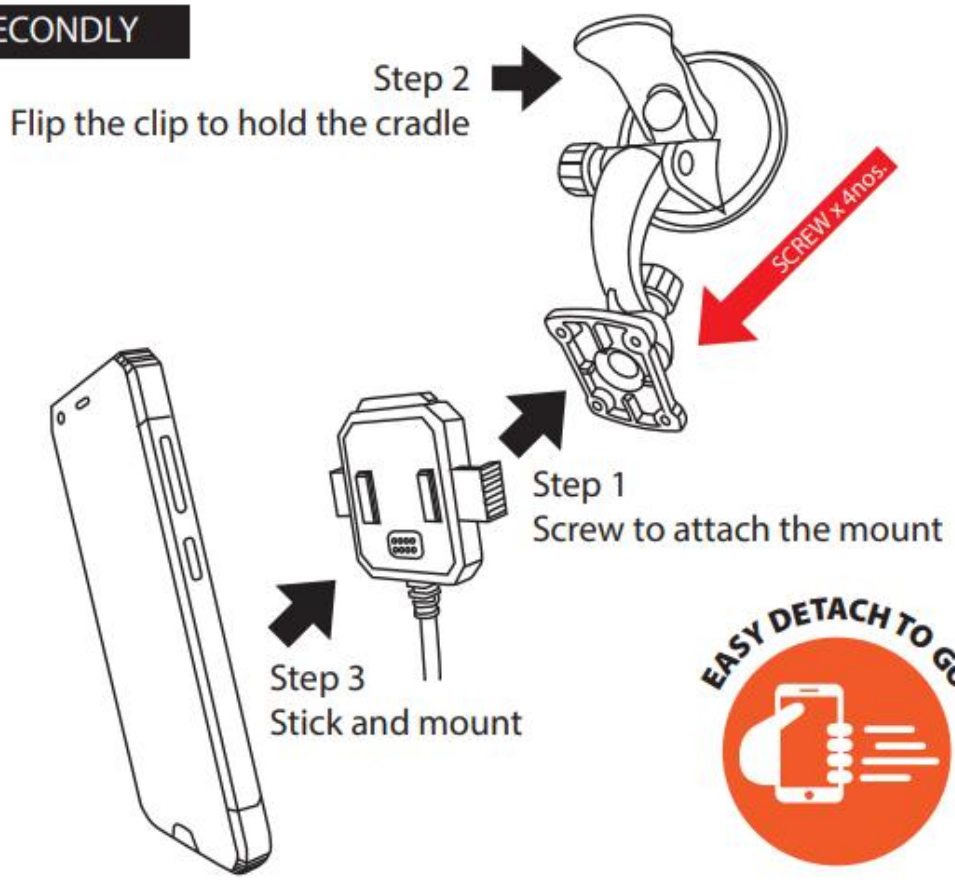


Cradle installation - Option 1 (Easy-Detach-To-Go):

FIRST

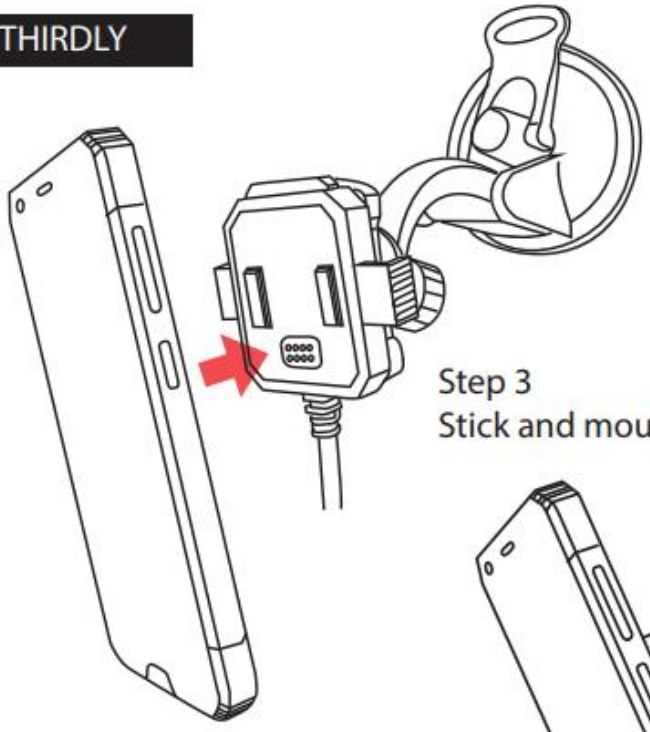


SECONDLY



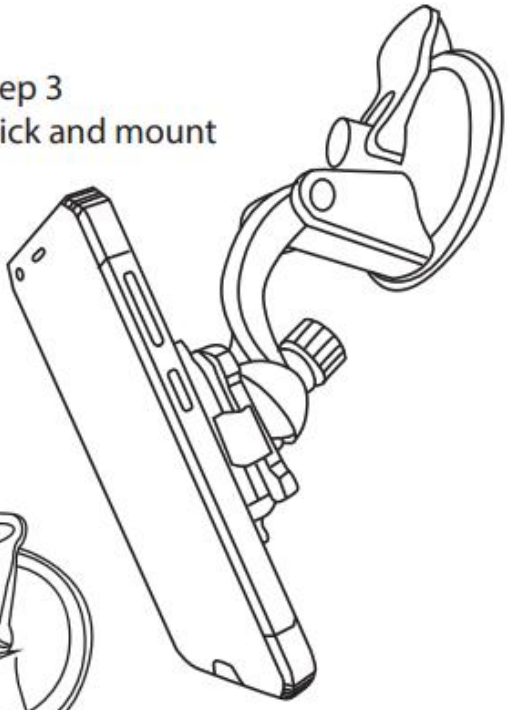
Cradle installation - Option 1 (Easy-Detach-To-Go):

THIRDLY

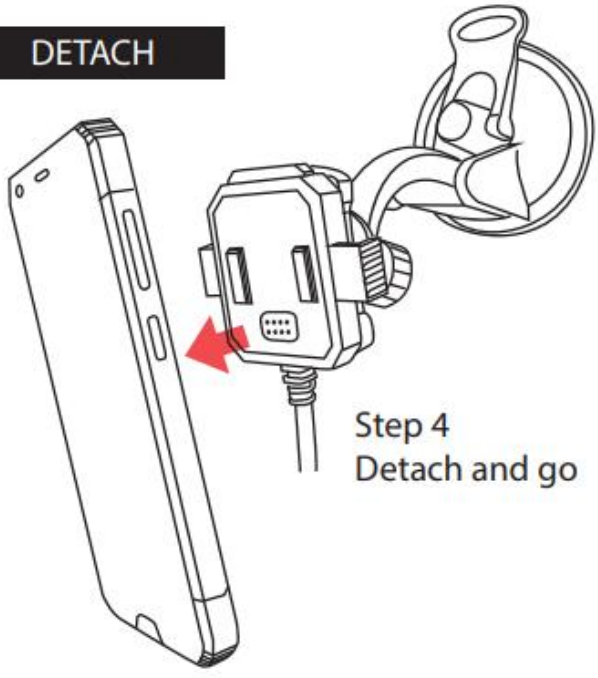


Step 3
Stick and mount

FINALLY



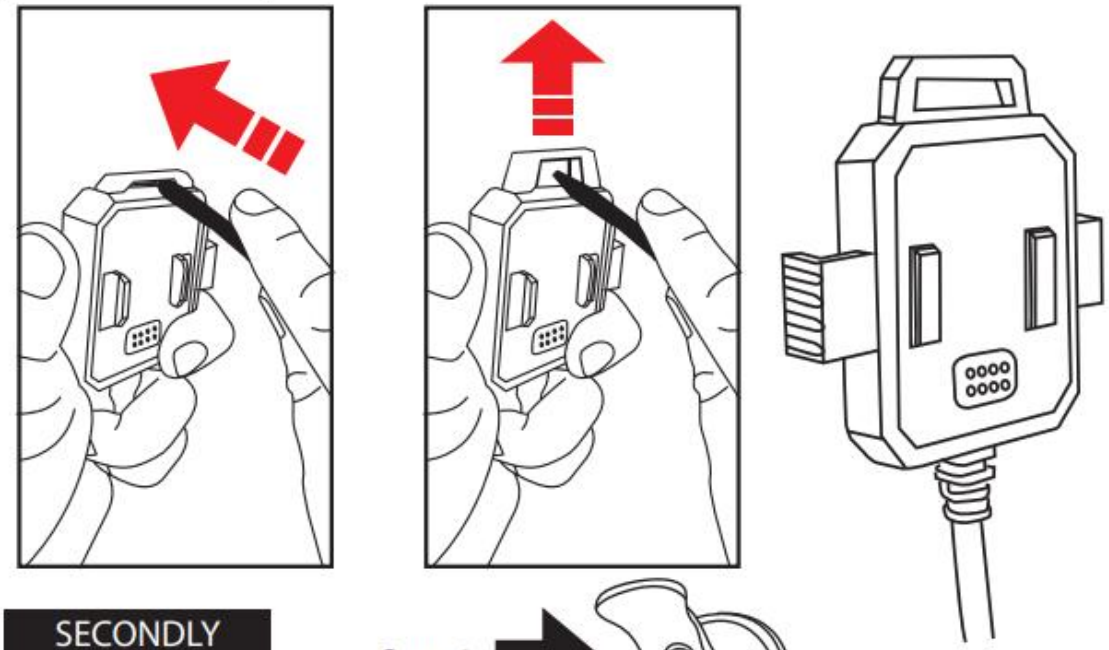
DETACH



Step 4
Detach and go

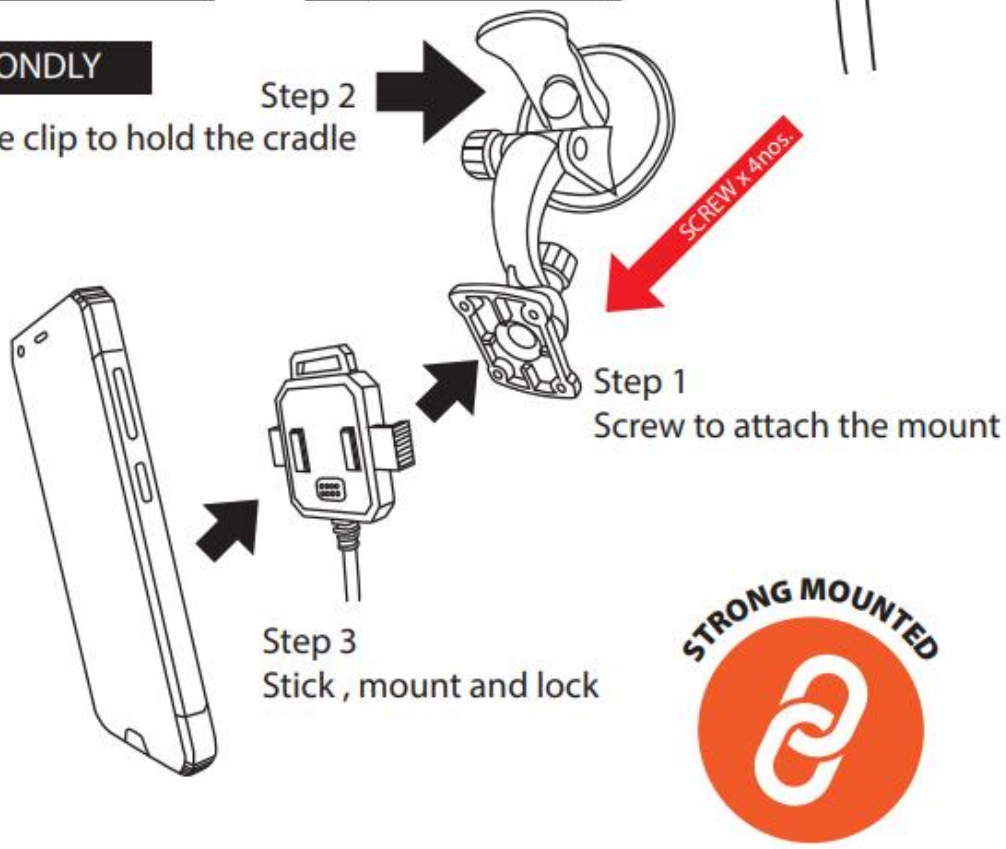
Cradle installation - Option 2 (Strong-Mounted):

FIRST



SECONDLY

Step 2
Flip the clip to hold the cradle

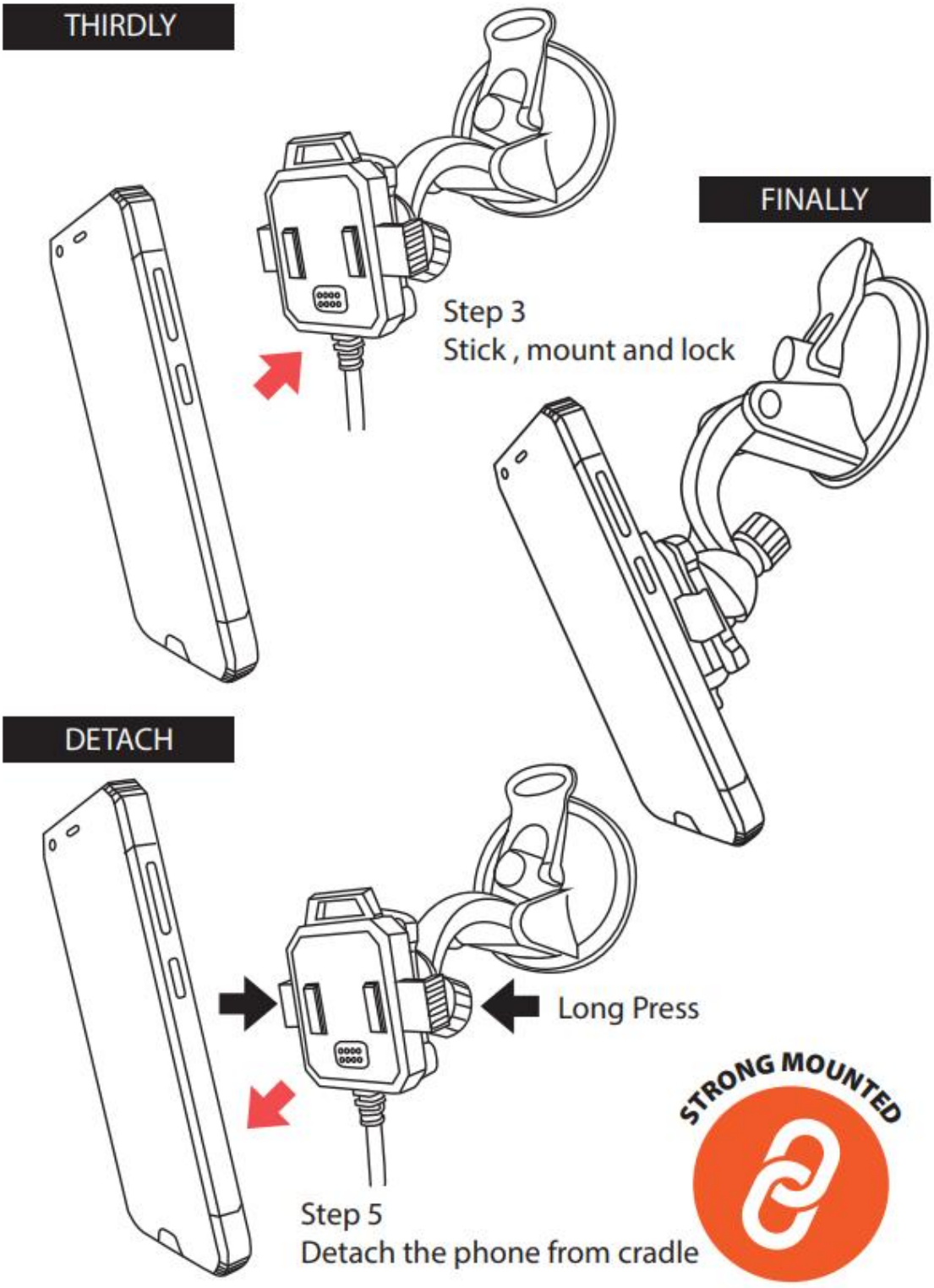


Step 1
Screw to attach the mount

Step 3
Stick , mount and lock

STRONG MOUNTED

Cradle installation - Option 2 (Strong-Mounted):



Topicon HK Limited

2314-2316, Tower C, Huangdu Plaza,Yitian Road, Futian District, Shenzhen 518048, China

Technical Specifications

PERFORMANCE CHARACTERISTICS	
CPU	2.0GHz Octa Core Processor
OS	Android 12 with GMS or without GMS
Memory	4GB LPDDR4X 64GB eMMC
PHYSICAL CHARACTERISTICS	
Dimensions	161.5mm L x 77.5mm W x 14.5mm D
Weight	280g
Display	5.7inch, IPS panel (720 x 1440 pixel)
Touch Panel	Capacitive multi-touch / Glove, Wet, Stylus
Backlight	LED Backlight
Power	Battery 3.7V 4000mAh
Expansion Slot	Micro SD card slot, support up to 128GB
SIM	Dual-SIM card slot
Interface	Docking Connector (8pin) USB Type C (2.0) (OTG)
Notification	Audible tone
Voice / Audio	Speaker, Microphone, headphone
Keypad	On-screen keypad
WIRELESS WAN DATA AND VOICE COMMUNICATION	
Radio Frequency	2G-GSM: 850,900,1800,1900 3G-WCDMA: B1,B2,B4,B5,B8 4G-LTE FDD:B1,B2,B3,B4,B5,B7,B8,B12,B17, B20,B28,B66 4G-LTE TDD:B40,B38,B41
GNASS	GPS, GLONASS, GALILEO
WIRELESS LAN	
Radio	802.11 b/g/n 802.11 d/e/h/i/j/k/r/v/w IPv4, IPv6
Data Rate	2.4GHz: 802.11b/g/n --- up to 144Mbps
Security and Encryption	WFA WPA/WPA2 Personal, AES-CCMP, WPI-SMS4, GCMP, WPS2.0, WAPI (hardware)

WIRELESS PAN	
Bluetooth	v2.1+EDR, 3.0+HS, v4.1+HS
DATA CAPTURE	
Scanning (Optional)	1D&2D Imager (w/Smart Plug)
Camera	Rear: 20MP Autofocus Front: 8MP Fixed Focus
NFC	ISO 15693, MiFare, DesFile
Serial Communication	USB or RS232 (default with docking station)
SENSOR	
Ambient Sensor	Light sensor, Proximity sensor
Motion Sensor	Accelerometer, E-Compass, Gyroscope
USER ENVIRONMENT	
Operating Temp.	-20°C to 40°C / -4°F to 104°F
Storage Temp.	-20°C to 70°C / -4°F to 158°F
Humidity	90% non-condensing
Drop Spec.	1.2m / 4 ft. to drop per MIL STD 810G
Sealing	IP68
Electrostatic Discharge (ESD)	+/-8kVdc air discharge +/-4kVdc direct discharge

OPTIONAL ACCESSORIES

Vehicle docking station
Motorcycle docking station

OPTIONAL FEATURES

FM broadcasting
Fingerprint

* Specification is subject to change.

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RF Transmitters Technical information

Model No: MDT665	
Technical Characteristics of EUT	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Bands:	GSM900, DCS1800
Frequency Range:	GSM900: Tx: 880-915MHz, Rx: 925-960MHz
	DCS1800: Tx: 1710-1785MHz, Rx: 1805-1880MHz
RF Output Power:	GSM900: 33.50dBm, GSM1800: 31.01dBm EDGE900: 26.93dBm, EDGE1800: 26.52dBm
Modulation Type:	GMSK, 8PSK
Type of Antenna:	FPC Antenna
Antenna Gain:	GSM900: -0.8dBi, DCS1800:0.5dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Bands:	WCDMA Band 1, WCDMA Band 8
Frequency Range:	WCDMA Band 1: Tx: 1920-1980MHz, Rx: 2110-2170MHz
	WCDMA Band 8: Tx: 880-915MHz, Rx: 925-960MHz
RF Output Power:	WCDMA Band 1: 23.22dBm, WCDMA Band 8: 23.49dBm
Modulation Type:	BPSK, QPSK, 16QAM
Antenna Type:	FPC Antenna
Antenna Gain:	WCDMA Band 1: -0.8dBi, WCDMA Band 8: 0.6dBi
4G	
Support Bands:	FDD-LTE Band1, 3, 7, 8, 20, 28, TDD-LTE Band 38, 40
Frequency Range:	FDD-LTE Band 1: Tx: 1920-1980MHz, Rx: 2110-2170MHz
	FDD-LTE Band 3: Tx: 1710-1785MHz, Rx: 1805-1880MHz
	FDD-LTE Band 7: Tx: 2500-2570MHz, Rx: 2620-2690MHz
	FDD-LTE Band 8: Tx: 880-915MHz, Rx: 925-960MHz
	FDD-LTE Band 20: Tx: 832-862MHz, Rx: 791-821MHz
	FDD-LTE Band 28: Tx: 807-824MHz, Rx: 758-803MHz
	TDD-LTE Band 38: Tx: 2570-2620MHz, Rx: 2570-2620MHz
	TDD-LTE Band 40: Tx: 2300-2400MHz, Rx: 2300-2400MHz
Max.RF Output Power:	FDD-LTE Band 1: 23.18dBm, FDD-LTE Band 3: 24.07dBm, FDD-LTE Band 7: 23.27dBm, FDD-LTE Band 8: 23.17dBm, FDD-LTE Band 20: 23.21dBm, FDD-LTE Band 28: 23.21dBm, TDD-LTE Band 38: 23.39dBm, TDD-LTE Band 40: 23.33dBm
Modulation Type:	QPSK, 16QAM
Antenna Type:	FPC Antenna
Antenna Gain:	FDD-LTE Band 1: 0.6dBi, FDD-LTE Band 3: 0.5dBi, FDD-LTE Band 7: 0.9dBi, FDD-LTE Band 8:-0.8dBi, FDD-LTE Band 20: -1.3dBi, FDD-LTE Band 28: -1.3dBi, TDD-LTE Band 38:0.9dBi, TDD-LTE Band 40: 1.2dBi,

Bluetooth	
Bluetooth Version:	Bluetooth V5.0
Frequency Range:	2402-2480MHz
Max.RF Output Power:	9.33dBm (EIRP)
Type of Modulation:	GFSK, π/4 DQPSK, 8DPSK
Data Rate:	1Mbps, 2Mbps, 3Mbps
Quantity of Channels	79/40
Channel Separation:	1MHz/2MHz
Type of Antenna:	FPC Antenna
Antenna Gain:	1.3dBi
Wi-Fi (2.4GHz)	
Support Standards:	802.11b, 802.11g, 802.11n-HT20/40
Frequency Range:	2412-2472MHz for 802.11b/g/n(HT20) 2422-2462MHz for 802.11n(HT40)
Max.RF Output Power:	15.60dBm (EIRP)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Quantity of Channels	13 for 802.11b/g/n(HT20), 9 for 802.11n(HT40)
Channel Separation:	5MHz
Type of Antenna:	FPC Antenna
Antenna Gain:	1.3dBi
NFC	
Frequency Range:	13.56MHz
Radiated H-Field:	13.34dBuA/m(@3m)
Modulation:	ASK
Type of Antenna:	FPC Antenna
Antenna Gain:	0dBi
Transmitter Product Class	1
GPS	
Frequency Range:	1575.42MHz Receiving

RF Exposure Information

RF Exposure Information (SAR)This device is in compliance with Specific Absorption Rate (SAR) limits for general population/uncontrolled exposure (Localized 10-gram SAR for head and trunk, limit: 2.0W/kg) specified in Council Recommendation 1999/519/EC, ICNIRP Guidelines, and RED (Directive 2014/53/ EU).During SAR testing, this device was set to transmit at its highest certified power level in all tested frequency bands and placed in positions that simulate RF exposure during use against the head with no separation and near the body with a separation of 10 mm. SAR compliance for body operation is based on a separation distance of 10 mm between the unit and the human body. This device should be carried at least 10 mm away from the body to ensure RF exposure level is compliant or lower than the reported level. When attaching the device near the body, a belt clip or holster should be used which does not contain metallic components and allows a separation of at least 10 mm to be maintained between the device and the body

The above power, frequency and distance are only applicable to EU.

RF Exposure Statement

For body worn operation, this device has been tested and meets the IC RF exposure guidelines when used with an accessory designated for this product or when used with an accessory that contains no metal and that positions the handset a minimum of 1.0 cm from the body. Noncompliance with the above restrictions may result in violation of RF exposure guidelines.

Pour le fonctionnement usé du corps, cet appareil a été testé et répond aux directives d'exposition IC RF lorsqu'elle est utilisée avec un accessoire désigné pour ce produit ou lorsqu'il est utilisé avec un accessoire qui ne contient pas de métal et qui positionne le combiné au moins 1,0 cm du corps. Le non-respect des restrictions ci-dessus peut entraîner une violation des directives d'exposition à la RF.

IC WARNING

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

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device is restricted to indoor use only when operating in the 5150 to 5250 MHz frequency range.
Lorsque l'appareil fonctionne dans la gamme de fréquences de 5150 à 5250 MHz, il est limité à une utilisation en intérieur uniquement.

FCC Radiation Exposure Statement:

This device meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. The SAR limit of USA (FCC) is 1.6 W/kg averaged. Device types: Tablet (FCC ID: 2AHAF-MDT665) has also been tested against this SAR limit. SAR information on this and other pad can be viewed on - line at http://www.fcc.gov/oet/ea/fccid/. Please use the device FCC ID number for search. This device was tested simulation typical 10mm to body. To maintain compliance with FCC RF exposure requirements, use accessories should maintain a separation distance between the user's bodies mentioned above, use accessories should not contain metallic components in its assembly, the use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

FCC Warning

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.

NOTE 1: 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.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Accessories

Certification

✓ CE RED

✓ ROHS

✓ REACH

✓ FCC (FCC ID:2AHAF-MDT665)

✓ Canada IC (IC:21087-MDT665)

✓ UKCA

✓ GSMA (TAC:35764925)