Rugged Handhelds & Terminals

MDT665

Ultra-Rugged Android Handheld Terminal

with Modular Barcode Scanning & In-Vehicle Mobility

User Manual

Version 3.0



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

Revision History

Version	Release Time	Description
1.0	202305	Initial Release
2.0	202311	Add Metal bracket
3.0	202503	Add Scanning module

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About This Manual

This user's manual provides the general information and installation instructions for the product. The manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future.
Thank you for choosing TOPICON Tablet products.

Safety Precautions

Please charge and discharge the device as one cycle at room temperature when devices are stored for more than 3 months or above.
Do not attempt to repair, customize, or disassemble the device without the appropriate knowledge and pre-cautions may lead to dangerous situations with chance of damaging the product.

Do not use in extreme conditions such as high and low temperatures, it may damage battery and impact the product life time. Please avoid long-time exposure to sunlight

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Chapter 1: Introduction

1.1 Product Introduction

The MDT665 is an ultra-rugged Android mobile data terminal (MDT) engineered for versatile enterprise and field mobility. It bridges the gap between a high-efficiency handheld tool and an in-vehicle computer.

Equipped with a detachable barcode scanning module, the device delivers high-performance 1D/2D data capture for logistics, warehousing, and inventory management.

Furthermore, it's heavy-duty in-vehicle cradle and robust mounting bracket ecosystem allow seamless integration into diverse transit and industrial fleet environments.

This ensures secure, vibration-resistant operation as an authoritative in-vehicle telematics display or a docked mobile workstation.

1.2 Key Features and Specifications

Key Features & Enterprise Capabilities

- **Hybrid Field & In-Vehicle Mobility:** Compact 5.7-inch form factor (265g) that shifts seamlessly from a handheld device to a fixed in-vehicle terminal via rugged vehicle or motorcycle docking stations.
- **Industrial 1D/2D Data Capture:** Supports an optional high-performance, hardware-decoded 1D/2D barcode scanning module for rapid warehouse and logistics workflows.
- **Fleet-Proven Connectivity:** Rock-solid global 2G/3G/4G LTE voice and data connectivity, dual-band Wi-Fi, and high-accuracy GNSS (GPS/GLONASS/GALILEO).
- **Tailored MDM Customization:** Native integration with Topicon's MDM server for centralized firmware updates, automated APN settings, and secure Kiosk Mode locking.
- **Secure Driver Login:** Features integrated NFC, biometric fingerprint options, and rear RFID access optimized for swift operator authentication.

Hardware & Environmental Specifications

- **OS & Processing:** Android 14 (GMS optional) | 2.0GHz Octa-Core CPU | 4GB RAM + 64GB ROM.
- **All-Weather Durability:** Certified IP67 waterproof and MIL-STD-810H shockproof (1.2m / 4 ft. drop resistance). Operates reliably from -20°C to 60°C.
- **Display & Camera:** 5.7" IPS touch panel (supports glove/wet-finger input) | 20MP autofocus rear

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camera & 8MP front camera.

● **Power & Interface:** Long-lasting 4000mAh battery | Type-C OTG & 8-pin docking connector (supporting RS232/USB serial communication).

1.3 Parts of the Device

This section describes the external components, buttons, and interfaces of the MDT665.



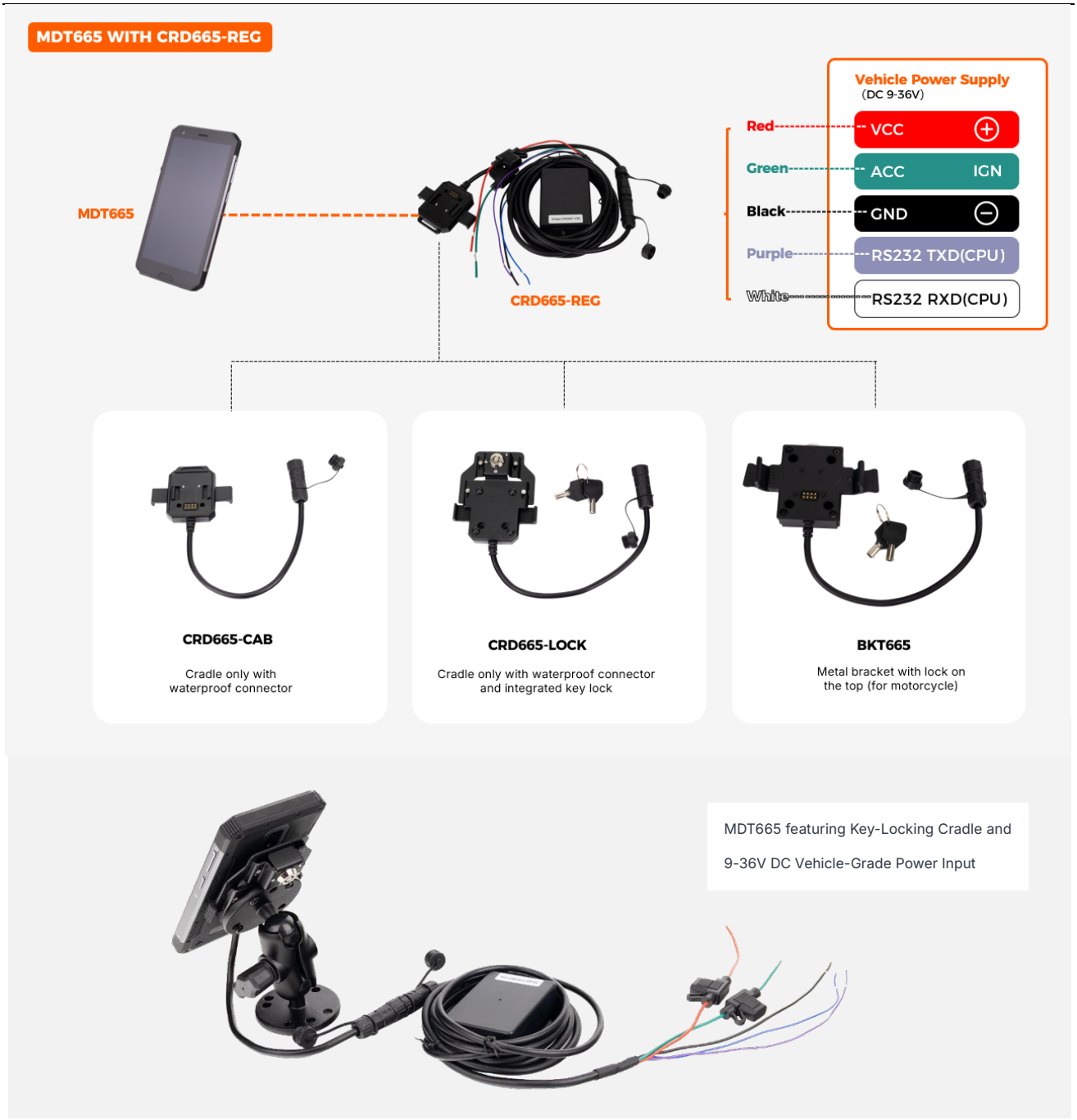
Chapter 2: Accessories and Expansion Options

2.1 Connect Cradle

2.1.1 CRD665-REG Cradle with Direct-Wire Power Cable (9-36V DC Input)

Supports 1 x RS232 serial interface and a wide 9-36V DC vehicle power input.

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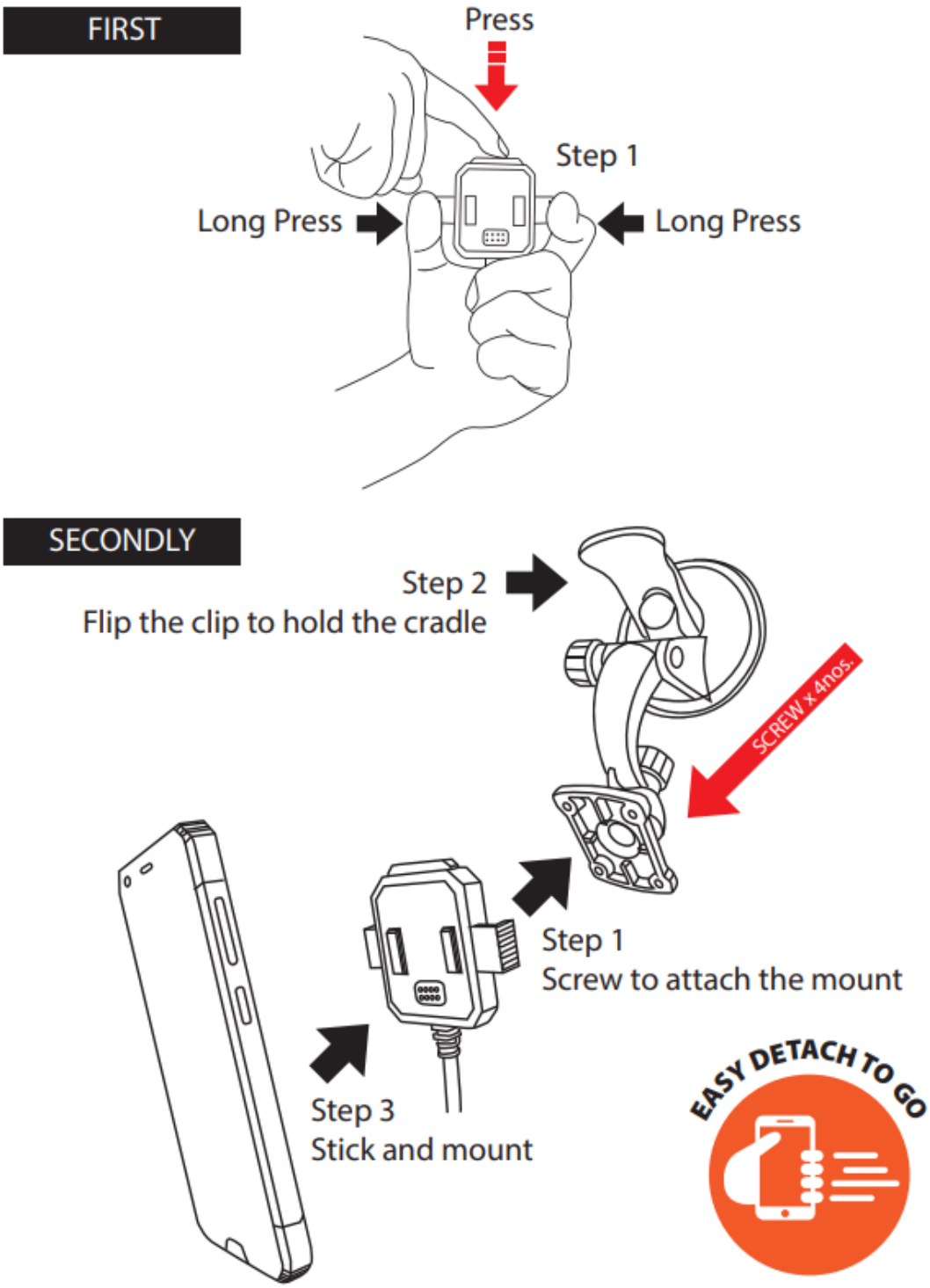
2.1.2 CRD665-REG Cradle with USB Charging Kit (Vehicle Adapter & AC Plug)



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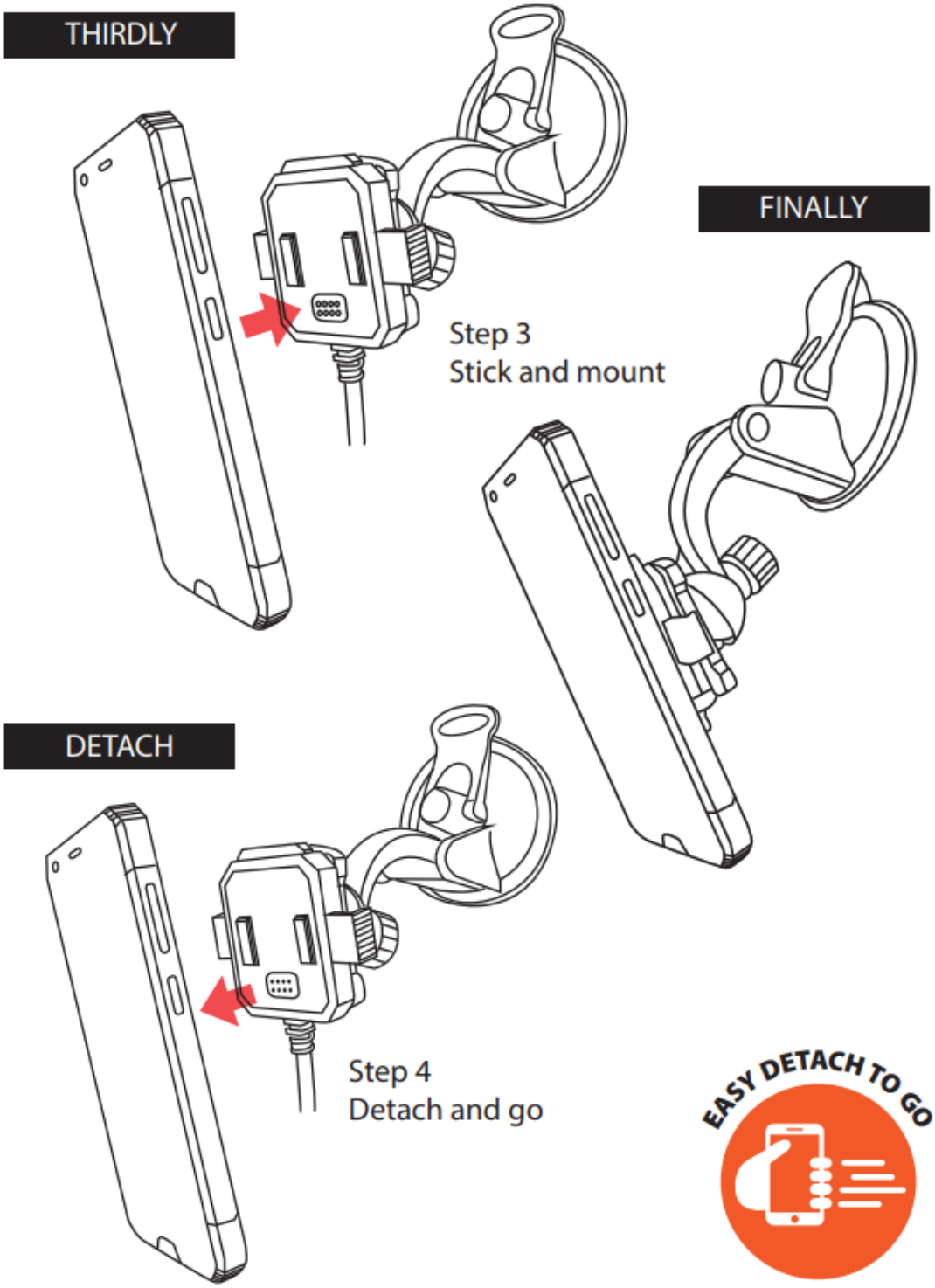
2.2 Cradle installation

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



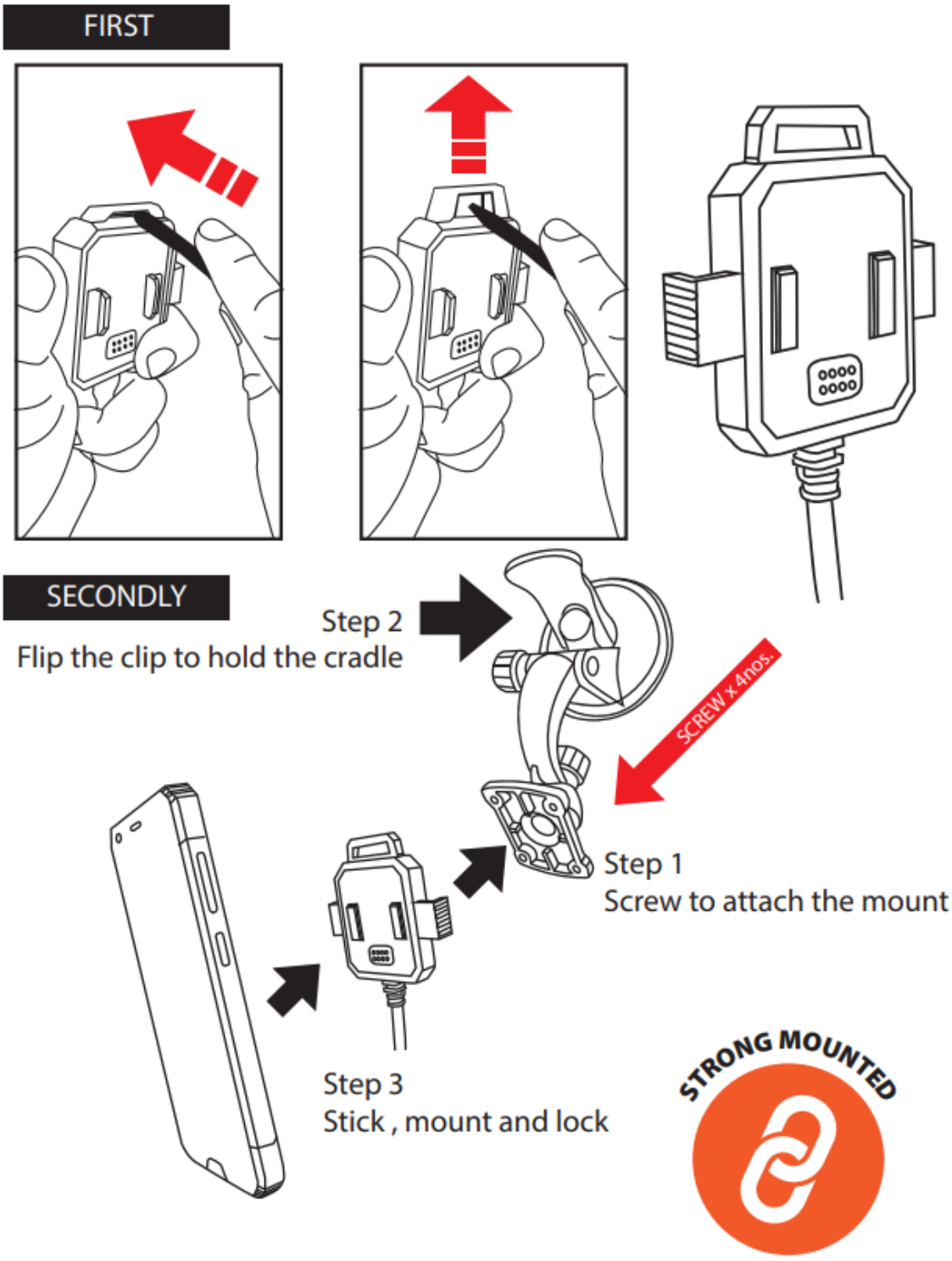
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Cradle installation - Option 1 (Easy-Detach-To-Go):



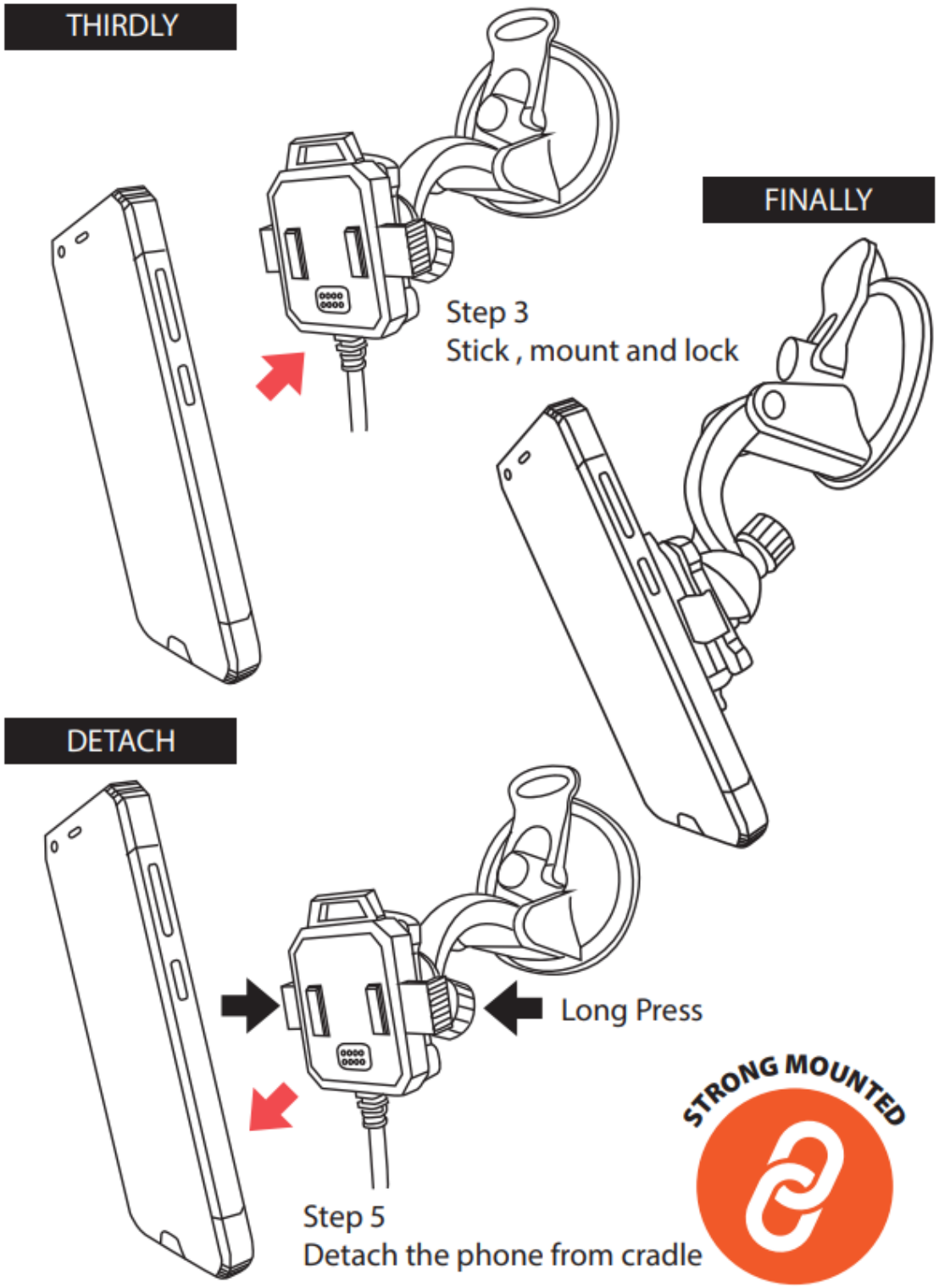
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Cradle installation - Option 2 (Strong-Mounted):



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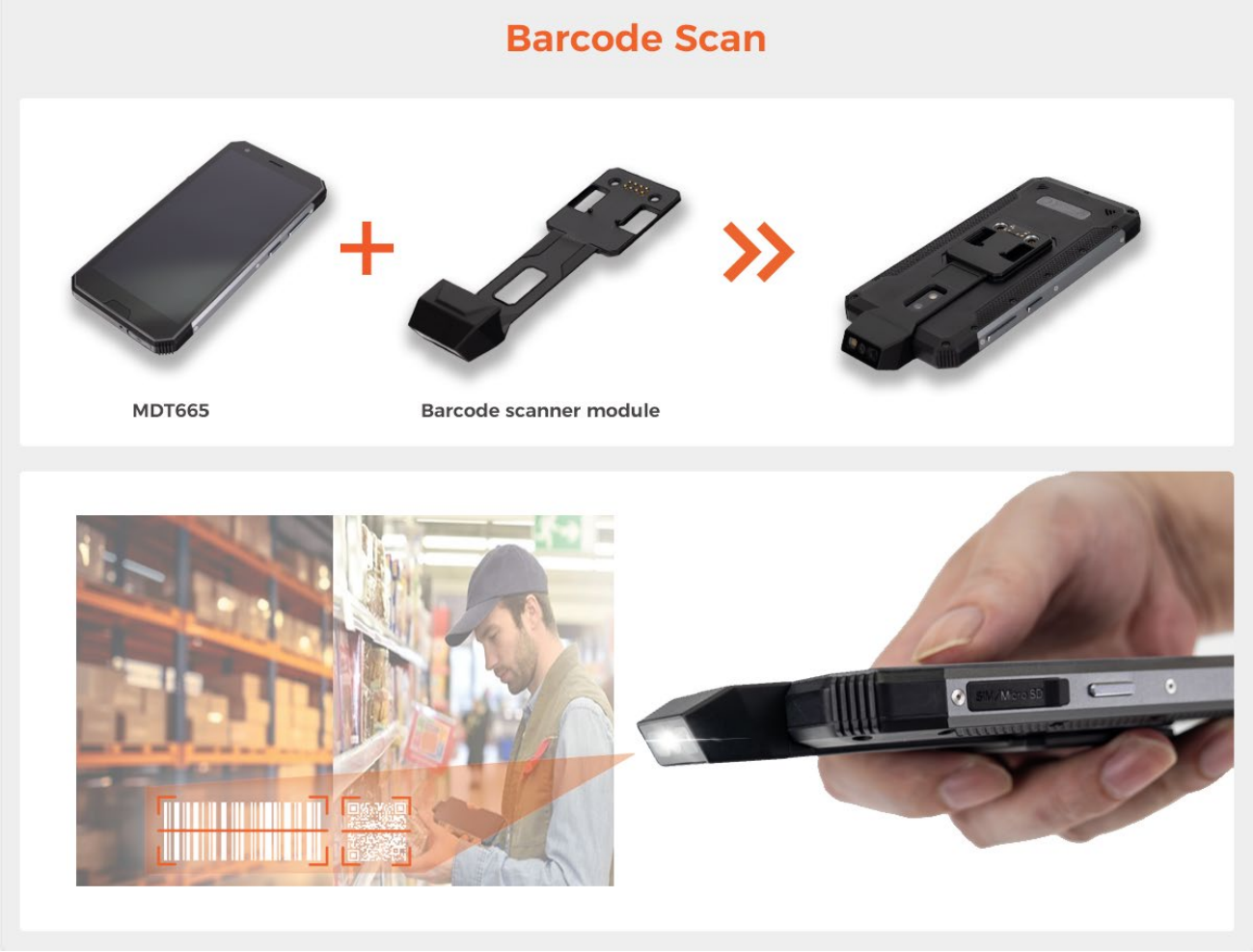
Cradle installation - Option 2 (Strong-Mounted):



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2.3 Accessories

2.3.1 Barcode Scanner Module



2.3.2 NFC



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2.3.3 Cap





2.3.4 Other Accessories



CRD665-CAB
(Lock for cradle)



BKT665
(Metal bracket with lock on the top)



CRD665-LOCK
(Cradle only with waterproof connector)



CRD665-REG
(Standard cradle)



RAM-BIKE-02
Bicycle mount
(with key lock)



RAM-BIKE-01
Bicycle mount
(without key lock)



STD-WS-001
Standard mount



RAM-ROUND-2
Metal mount

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CAB-665-USB
USB charging cable with waterproof



USB A TO C



ADA-HOME-00
Home adapter



ADA-CAR-00
Cigarette Lighter Adapter



MOB-665-BAR
Barcode scanner module



STR-HAND-00
Hand strap



Hand strap at back



DOCK-665-01
6-Slot Charging Dock for MDT665

Chapter 3: Specifications

PERFORMANCE CHARACTERISTICS	
CPU	2.0GHz Octa Core Processor
OS	Android 14 with GMS or without GMS
Memory	4GB LPDDR4X
	64GB eMMC
PHYSICAL CHARACTERISTICS	
Dimensions	161.5 mm L x 77.5 mm W x 14.5 mm D
Weight	265g
Display	5.7 inch, IPS panel, pixel 720 x 1440
Touch Panel	Capacitive multi-touch / Glove, Wet, Stylus
Backlight	LED Backlight
Power	Battery 3.7V 4000mAh

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Expansion Slot	Micro SD card s lot
	Support up to128G B
SIM	Dual-SIM card slot
Interface	Docking Connector (8-pin)
	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
GNSS	GPS
	GLONASS
	GALILEO
WIRELESS LAN	
Radio	802.11 a/b/g/n/ac;
	802.11 d/e/h/i/j/k/r/v/w
	IPv4, IPv6
Data Rate	5GHz: 802.11a/n/ac — up to 500Mbps;
	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	V5.0
DATA CAPTURE	
Scanning (Optional)	1D&2D Imager (w/Smart Plug)
Camera	Rear: 20MP Autofocus
	Front: 8MP Fixed Focus
NFC	ISO 15693, Mi Fare, Des File
Serial Communication	RS232 (default with docking station)
SENSOR	
Ambient	Light sensor, Proximity sensor
Motion	Accelerometer, E-Compass, Gyroscope
USER ENVIRONMENT	
Operating Temp	-20°C to 60°C / -4°F to 140°F
Storage Temp	-20°C to 70°C / -4°F to 158°F
Humidity	90% non-condensing

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Drop Spec	1.2m / 4 ft. to drop per MIL STD 810G
Sealing	IP67
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	

Chapter 4: RF Transmitters Technical information

Bands Covered by the CE Test Report

Model No: MDT665	
Technical Characteristics of EUT	
2G	
Support Networks:	GSM, GPRS, EDGE
Support Bands:	GSM900, DCS1800
Frequency Range:	GSM/GPRS/EDGE 900: TX(Uplink):880M 915MHz; RX(Downlink):925M 960MHz GSM/GPRS/EDGE 1800: TX(Uplink):1710M 1785MHz; RX(Downlink):1805M 1880MHz
RF Output Power:	GSM/GPRS/EDGE 900: 32.74dBm (EIRP)

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	GSM/GPRS/EDGE 1800: 29.52dBm (EIRP)
Modulation Type:	GMSK, 8PSK
Type of Antenna:	PIFA Antenna
Antenna Gain:	GSM900: 3.0dBi, DCS1800: 3.0dBi
GPRS/EDGE Class:	Class 12
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Bands:	WCDMA Band 1, WCDMA Band 8
Frequency Range:	WCDMA B1: TX(Uplink): 1920~1980MHz; RX(Downlink): 2110~2170MHz WCDMA B8: TX(Uplink): 880~915MHz; RX(Downlink): 925~960MHz
RF Output Power:	WCDMA Band 1: 23.37dBm, WCDMA Band 8: 22.49dBm
Modulation Type:	QPSK
Antenna Type:	PIFA Antenna
Antenna Gain:	WCDMA Band 1: 3.0dBi, WCDMA Band 8: 3.0dBi
4G	
Support Bands:	FDD-LTE Band 1, 3, 7, 8, 20; TDD-LTE Band 40
Frequency Range:	FDD Band 1: Uplink: 1920 MHz to 1980MHz Downlink: 2110 MHz to 2170 MHz FDD Band 3: Uplink:1710 MHz to 1785 MHz Downlink: 1805 MHz to 1880 MHz FDD Band 7: Uplink: 2500 MHz to 2570 MHz Downlink: 2620 MHz to 2690 MHz FDD Band 8: Uplink: 880MHz to 915 MHz Downlink: 925 MHz to 960 MHz FDD Band 20: Uplink: 832 MHz to 862 MHz Downlink: 791 MHz to 821 MHz TDD Band 40: Uplink & Downlink: 2300 MHz to 2400 MHz
Max. RF Output Power:	LTE FDD B1: 23.03 dBm (EIRP) LTE FDD B3: 22.93 dBm (EIRP) LTE FDD B7: 23.29 dBm (EIRP) LTE FDD B8: 23.39 dBm (EIRP) LTE FDD B20: 23.58 dBm (EIRP) LTE TDD B40: 23.30 dBm (EIRP)
Modulation Type:	QPSK, 16QAM
Antenna Type:	PIFA Antenna

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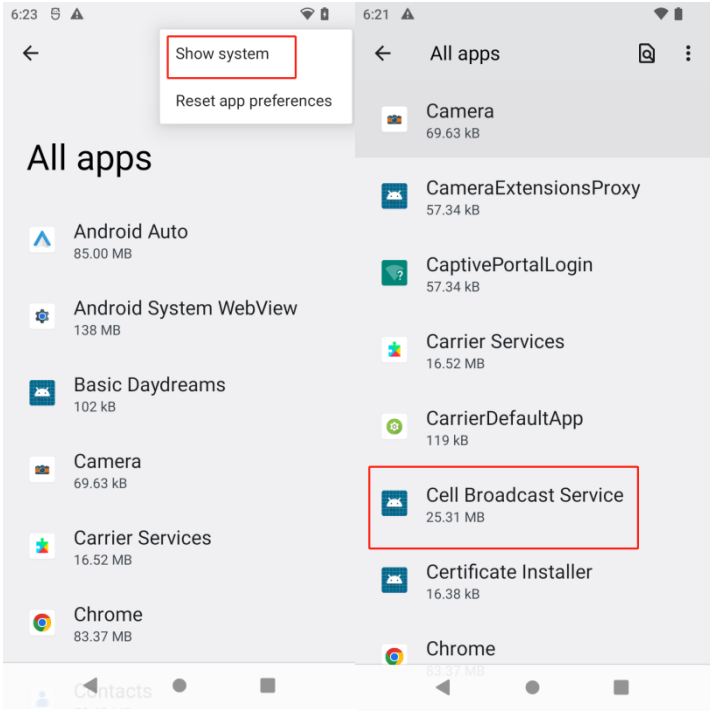
Antenna Gain:	FDD-LTE Band 1: 3.0dBi, FDD-LTE Band 3: 3.0dBi, FDD-LTE Band 7: 3.0dBi, FDD-LTE Band 8: 3.0dBi, FDD-LTE Band 20: 3.0dBi FDD-LTE Band 40: 3.0dBi
Bluetooth	
Bluetooth Version:	Bluetooth V5.0
Frequency Range:	2402-2480MHz
Max. RF Output Power:	6.82dBm (EIRP)
Type of Modulation:	GFSK, Pi/4 DQPSK, 8DPSK
Data Rate:	1Mbps, 2Mbps, 3Mbps
Quantity of Channels	79/40
Channel Separation:	1MHz/2MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	3.0dBi
Wi-Fi (2.4G)	
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	15.88dBm (EIRP)
Type of Modulation:	DBPSK, BPSK, DQPSK, QPSK,16QAM,64QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	3.0dBi
NFC	
Frequency Range:	13.56MHz
Radiated H-Field:	66.56 dBμA/m
Type of Antenna:	Integral Antenna
Antenna Gain:	2.0dBi
Transmitter Product Class	1
GPS	
Frequency Range:	1575.42MHz

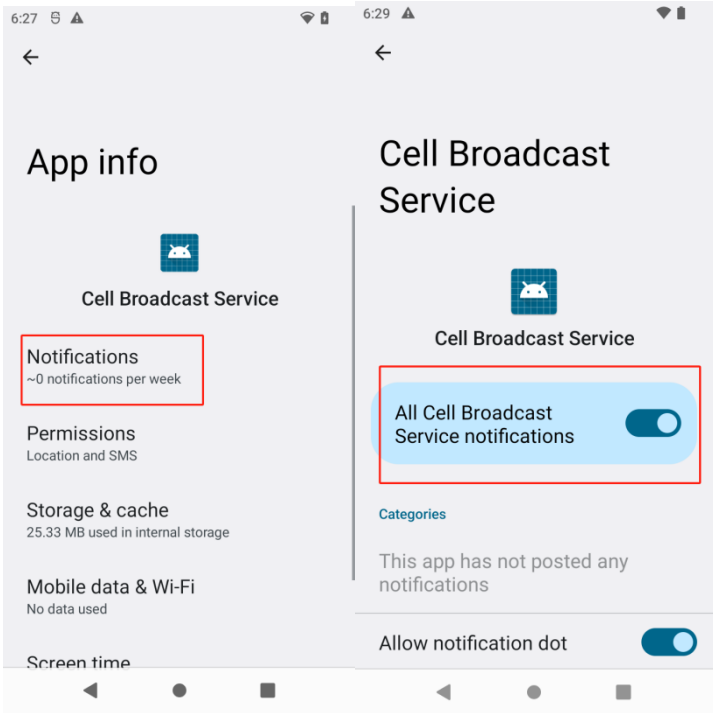
Note: The bands listed above are those covered by the CE (RED) test report. The complete list of operating bands is given in §3; bands not listed here are supported by the module but are not included in this test report. Max. RF output power is stated per band above.

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Chapter 5: Cell Broadcast Service

With the cell broadcast network service, you can receive messages on various topics from your service provider, such as weather or traffic conditions in a particular region. For available topics and relevant topic numbers, contact your service provider.
Settings->Apps->See all apps->"---" button->show system





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Chapter 6: Safety and regulatory compliance

FCC RF Exposure Information and 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: portable device has also been tested against this SAR limit.
SAR information on this and other tablets 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 0mm to body.
To maintain compliance with FCC RF exposure requirements, the use of accessories should maintain a separation distance between the user's bodies mentioned above.

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
(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 modification to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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CE

The product shall only be connected to a USB interface of version USB2.0 and that the connection to a power USB is allowed. Use caution when using earphones maybe possible excessive sound pressure from earphones and headphones can cause hearing loss.



CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

IC Warning

This device contains license-exempt transmitter(s) that comply with Innovation, Science and Economic Development Canada's license-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.

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. 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 IC is 1.6 W/kg averaged.
Device: Tablet (IC: 21087-MDT665) has also been tested against this SAR limit.
This device was tested simulation typical 0 mm to body. To maintain compliance with RF exposure requirements, the use of accessories should not contain metallic components in its assembly, the use of accessories that do not satisfy these requirements may not comply with RF exposure requirements, and should be avoided. The highest reported SAR value for body condition for separate function is 1.183W/kg respectively.

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L'équipement est conforme aux limites d'exposition aux rayonnements ambiants non contrôlés spécifiées dans le document IC RSS - 102. Ces lignes directrices sont fondées sur des critères établis par des organisations scientifiques indépendantes par le biais d'évaluations périodiques et approfondies de la recherche scientifique. Ces normes comportent une marge de sécurité importante et visent à assurer la sécurité de tous, quel que soit leur âge ou leur état de santé. La limite SAR pour IC est en moyenne de 1,6W/ kg. Équipement: Tablet (IC: 21087-MDT665) a également été testée conformément à cette limite SAR. L'appareil a fait l'objet d'essais de simulation, généralement à une distance de 0 mm. Afin de maintenir la conformité aux exigences en matière d'exposition aux radiofréquences, les composants qui utilisent des accessoires ne doivent pas contenir de pièces métalliques et les accessoires qui ne satisfont pas à ces exigences peuvent ne pas être conformes aux exigences en matière d'exposition aux radiofréquences et doivent être évités. Les valeurs SAR les plus élevées rapportées pour l'état physique des fonctions individuelles étaient respectivement de 1.183W/kg.

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