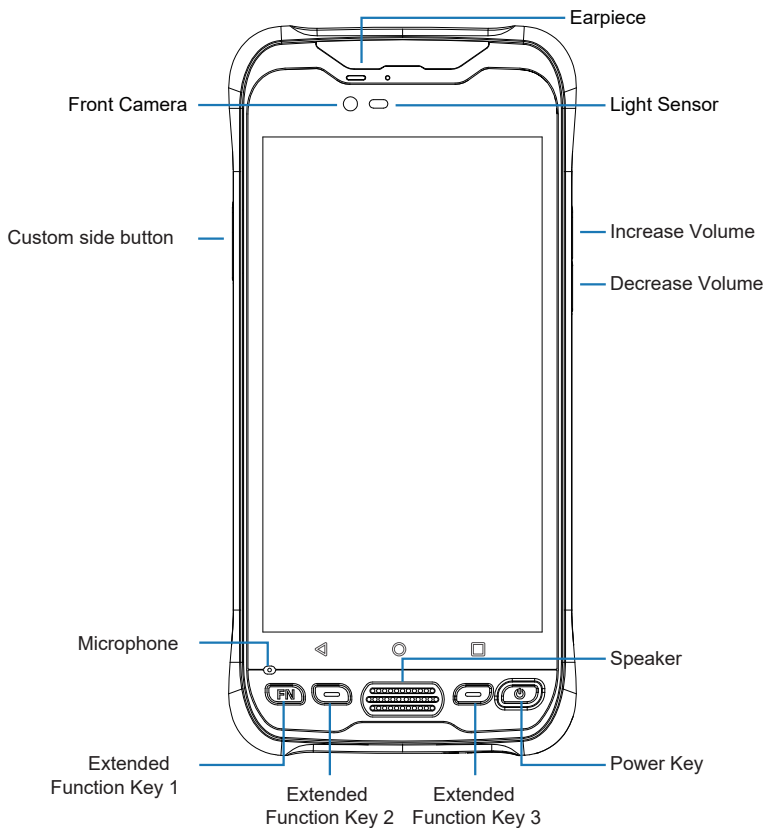
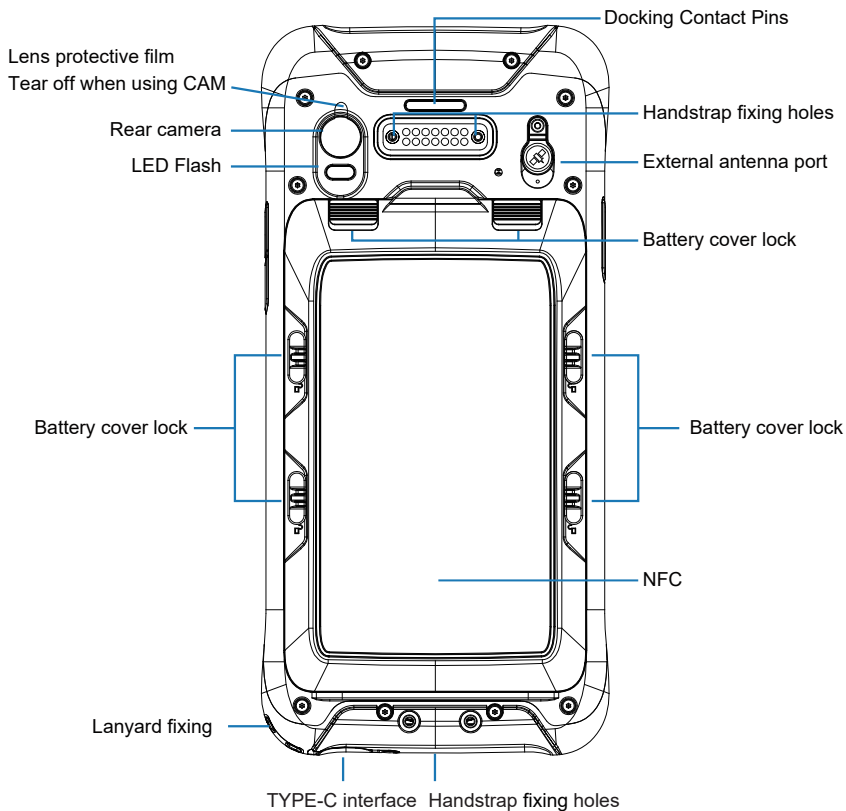




# TDC600

Quick Start Guide





## 1. Battery Charging

### • Charge with travel charger

Insert the small plug end of the USB data cable into the TYPE-C port of the device, insert the large plug end of the USB data cable into the travel charger plug, and then insert the travel charger plug into a power outlet to charge.

### • Charge with USB data cable

Insert the small plug end of the USB data cable into the TYPE-C port of the device, insert the large plug end into the USB port of the computer to charge.

Note: During normal charging, the home screen status bar will display the charging icon when screen is on.

When the charging is completed, the home screen status bar will display the full battery icon when screen is on.

## 2. Install SIM card, memory card, battery

Power off the device before installing or removing the SIM card, MicroSD card or battery.

Flip the device to its rear, follow the directions shown in Figure 1 and push the back cover lock to the open position, and remove the battery cover.

Install the SIM card and MicroSD card according to the battery compartment label instructions, as shown in Figure 2.

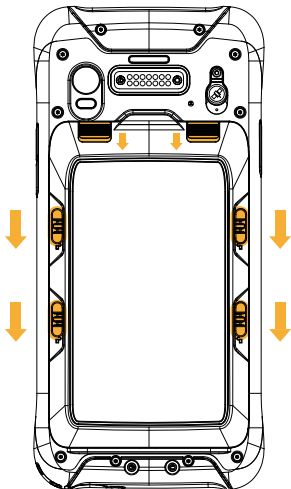


Figure 1

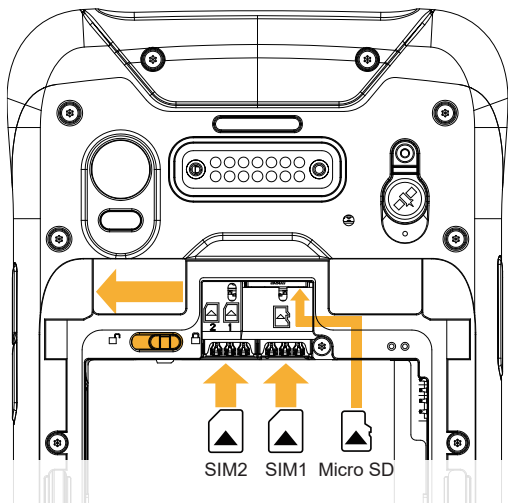


Figure 2

- Face the SIM card metal contacts downwards and push into the slot. Take note on the direction of the notched corner.
- Face the MicroSD card metal contacts downwards and push into the slot. Take note on the direction of the notched corner.
- Align the contacts of the battery with the terminals of the battery compartment and put in the battery gently.
- After the battery is installed, replace the battery compartment cover and push the back cover lock to locked position to secure the battery compartment cover.

## Handstrap

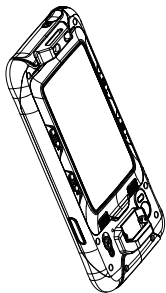


Figure 1

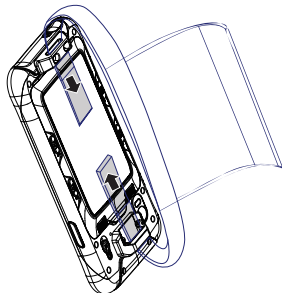


Figure 2

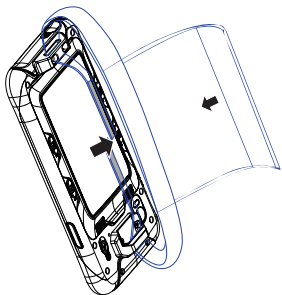


Figure 2

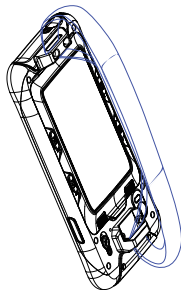


Figure 3

### 3. Turning the device on and off

To turn on the device, firmly press and hold the bottom right **【Power Button】** until the boot screen appears.

To turn off the device, firmly press and hold the **【Power Button】** to display the options menu. Select the Power off option to shutdown.

With the device turned on, press the **【Power Button】** to turn off the screen and go into sleep mode; Press the **【Power Button】** again to wake the device, swipe upwards on the screen to unlock; If the device has been idle for a period of time, the screen will automatically turn off and go into sleep mode.

### 4. Home screen operation

From the home screen, you can view the device status and access the applications.

The home screen can have multiple panels;

Swipe up on the screen to view each panel.

At the top of the home screen is the status bar, which contains the notification area, the status area and the display area; the shortcut panel is at the bottom.

- **Using the notification panel**

When new notification icons appear in the notification area of the status bar, hold the status bar and drag down to open the notification panel; To hide the panel, drag the bottom border of the panel upwards.

- **Customize the shortcut panel**

You can customize the shortcuts at the bottom of the home screen by adding or removing “Shortcut Icons”. To remove the “Shortcut icon”, press and hold the “Shortcut icon” and drag it to the “Delete icon”. To add a “Shortcut icon”, press and hold the icon on the home screen and drag it to the Shortcut panel.

- **Using applications**

Slide the screen up to see all the included applications. Touch the [Home button] below the screen to close it and return to the home screen.

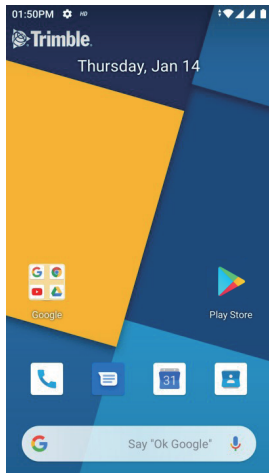


Figure 3

- **Expanding the home screen**

Swipe your finger horizontally on the home screen to expand to the up of the home screen.

- Adding an icon on the home screen

Press and hold any application or widget icon and drag it to an empty area on the home screen.

- Moving icons on the home screen

Press and hold the icon on the home screen and drag the icon to the desired location on the screen.

- Removing icons on the home screen

Press and hold the home screen icon and drag the icon to the "Delete" icon until the icon turns red.

- **Create folder**

- On the home screen, folders are automatically formed when you drag an icon onto another icon.

- Touch the new folder on the screen to open it.

Click on the folder's label to rename it.

- **Changing the home screen wallpaper**

Press and hold a blank area on the home screen or touch the [Menu button] → "Wallpaper" to change the home screen wallpaper by selecting options such as wallpaper, live wallpaper, gallery, etc.

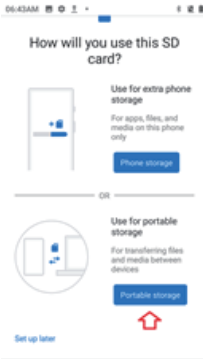
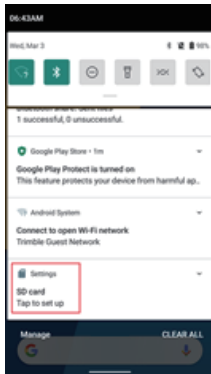
## 5. Connecting to a computer

Use the USB data cable to connect the device to the computer, pull down the top status bar and you can see the message "Android System . Charging this device via USB" in the notification area. Clicking on Tap for more options will bring up USB Preferences with 5 options "File Transfer", "USB tethering", "MIDI", "PTP", "No data transfer", which can be selected according to your needs.



## 6. SD card Settings

1. The very first time a microSD card is present when the device is turned on, You'll have to set it up as portable storage.



2. If you need to Rename or Eject or Format as portable or Migrate data the microsd card when the device is turned on, slide the screen to the up " Settings-Storage-SD card→ ⋮ , which can be selected according to your needs.

## 7. Installation and management of applications

Users can enter the applications store to download and install related application programs. Slide the screen up → "Settings", select " Apps & notifications" →"App info" to Select the application that you want to manage and apply the required actions.

## 8. Using Beidou/GPS/GLONASS/GALILEO positioning function

Slide the screen up → "Settings", select "Location Information" to go into the location service panel, You have the following options:

- Use location switch.
- SBAS Mode switch.
- GALILEO Mode switch.
- GNSS menu.
- App permission.
- Wi-Fi and Bluetooth scanning.
- Emergency Location Service.
- Google Location Accuracy.
- Google Location History.
- Google Location Sharing.

In the "GNSS menu", select GPS + BDS or GPS + GLONASS or GPS or GLONASS or BDS options as needed. Enable or disable GALILEO tracking.

The user can view the status of the BDS Satellite, GPS satellites a comma, GLONASS satellites and Galileo satellites at the current position through an application with the corresponding functions. The program can display real-time information such as, signal strength, position of the satellite, etc. at the current position.

After the location service is turned on, the applications downloaded and installed from the applications store can obtain the current location information and provide location-related services and applications through the corresponding service interfaces.

## 9. Camera and videos

**Slide the screen up** → "Camera", to turn on the camera, the screen orientation will change according to how the device is held.

Use two fingers to make a gesture of zooming in or zooming out on the subject.

Touch the camera switch icon on the top middle part of the screen to select the front or rear camera.

Touch the button at the bottom right of the screen to switch between taking photos and videos.

After taking a photo or video, tap the gallery button at the bottom left of the screen to share, delete, edit or other operations.

## 10. Mobile network connection (WLAN/Bluetooth)

### • WLAN connection

**Slide the screen up** → "Settings" to go into the settings panel, go to the WLAN options and turn the "On" switch to activate WLAN. After WLAN is turned on, the WLAN icon will be displayed in the status bar. Select the connection to be used from the list of available networks and follow the prompts to enter the network key to connect.

### • Bluetooth connection

- (1) Activate Bluetooth **Slide the screen up** → "Settings", go into the Settings panel, go to the Bluetooth option and turn on the "on" switch to activate Bluetooth. After Bluetooth is turned on, a Bluetooth icon is displayed in the status bar.
- (2) Bluetooth pairing The system will search for connectable Bluetooth devices in the list of available devices. Click on the Bluetooth device you want to connect to, enter the Bluetooth password when "Bluetooth pairing request" pops up, and select pairing. When the owner of the external Bluetooth device accepts the connection or enters the same password, the connection to the external device is completed.
- (3) Bluetooth transmission Photos, videos and music files can be shared with family members and friends via Bluetooth.

### • Mobile network connection

**Slide the screen up** → "Settings", "More", go to Wireless and Network panel. Select "VPN" to make the relevant settings.

## 11. External GNSS antenna

- (1) External GNSS antenna cable is the MMCX plug.
- (2) The DC voltage output provided by the unit is 3V, maximum current that can be provided to the external antenna is 100mA.

## 12. NFC

- (1) NFC controller and antenna supported is Type 1, 2, 4.
- (2) Controller the standards supported is ISO/IEC14443 A/B, ISO/IEC 15693, MIFARE.

## Notice

1. Some special places, such as airports, hospitals, gas stations and other places, do not allow the use of electronic equipment. Please comply with the rules and do not use this product in these places.
2. For your safety and the safety of others, please do not use this product while driving a vehicle.
3. In order to avoid potential safety problems, do not put this product near the vehicle's airbag.
4. For your safety, please do not use this product during thunderstorms.
5. Although this product is waterproof, do not leave this product for long periods of time in areas with water or moisture.
6. This product has an operating temperature range of  $-20^{\circ}\text{C}\sim+45^{\circ}\text{C}$  and a storage temperature range of  $-40^{\circ}\text{C}\sim+70^{\circ}\text{C}$ . Extreme temperatures can affect the device's performance and service life.
7. Please use an original rechargeable lithium battery. Low-quality batteries will affect the performance and service life of the device, and may even have the danger of explosion.
8. Although the product has been tested to withstand harsh operating environments, do use the product in an improper manner.
9. Please do not disassemble this product. In case of failure, please send to our authorized service centres to proceed with repairs.
10. After the device has reached the end of its service life, please discard in a proper way to avoid environmental pollution.
11. When replacing the battery or during the use of an external power supply, shut down the device completely before removing the battery or disconnecting the external power supply to prevent damage.
12. This product is a Class B product, which may cause radio interference. The user may be required to take necessary preventive measures.

## Battery Instructions

1. This product uses a rechargeable lithium battery as a power source. When the power is low, please charge the battery. To maintain battery life, it is recommended to deplete the battery's power before charging.
2. When the battery charger is not in use, please remove it from the power supply. Do not connect the charger to the battery for more than one week. Excessive charging will shorten the battery life.
3. Temperature affects the battery charging limit. Therefore, the battery may need to be cooled or warmed up before charging.
4. Please use the battery for its original intended purpose to prevent short-circuiting the battery. A short circuit will occur when a conductive material connects the battery's positive and negative terminals.
5. Do not use a battery that is damaged.
6. Placing the battery in extremely cold or hot places will lead to shortened battery life. Exposing the battery to extreme temperatures may cause the phone to malfunction, even if the battery is fully charged.
7. Do not put the battery in a fire. Please discard the battery in a proper manner or take the battery to a battery recycling station. Please dispose waste batteries in accordance with local laws and regulations.

## Notice

This device is restricted to indoor use where operated in the European Community using frequency in 5150MHz ~ 5250MHz to reduce the potential for interference. Restriction in BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK.

### NI Market(EU laws):

- (a) a Pictogram (see below) followed by the abbreviation "UK(NI)" or  
(b) the words "Restrictions or Requirements in the UK(NI)"

The Pictogram



NI remains subject to EU laws after 31 December 2020 by virtue of the Northern Ireland Protocol. The amendments to Regulation 14 reflect Article 7.2 of the Protocol which requires the UK(NI) indication for the UK in respect of NI.

Google, Google Play, YouTube, Gmail and other marks are trademarks of Google LLC.

## NOTICE:

Device type TDC600 after the laboratory measurements the Max. SAR values for this device is:  
Limb: 3.358 W/kg, when the device used at 0cm from your body. The SAR limit of France is 4.0 W/kg.  
Limb: 1.476 W/kg, when the device used at 5cm from your body. The SAR limit of Europe is 2.0 W/kg.  
This device was tested for typical body - worn operations with the back of the handset kept 0cm from the body. To maintain compliance with RF exposure requirements, use accessories that maintain a 0 cm separation distance between the user's body and the back of the handset. The use of belt clips, holsters and similar 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.

Working Temperature: -20°C ~ +45°C  
Storage Temperature: -40°C ~ +70°C

Charging mode need to operate indoors, please pay attention to the environment temperature should be -0°C ~ +40°C

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

Hereby, Trimble Inc. declares that the radio equipment type [TDC600] is in compliance with Directive 2014 / 53 /EU.

This device complies with Part 22 & 24 and Part 27 of the FCC Rules.

## SAR INFORMATION

The SAR limit of FCC and ISED is 1.6 W/kg averaged over one gram of tissue. Device type TDC600 has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use at the ear is 0.555 W/kg and when properly worn on the body is 1.494 W/kg. This device was tested for typical body -worn operations with the back of the handset kept 1 cm from the body. To maintain compliance with FCC and ISED RF exposure requirements, use accessories that maintain a 1 cm separation distance between the user's body and the back of the handset. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC and ISED RF exposure requirements, and should be avoided.

## NOTICE:

Band 5150-5250MHz is restricted to indoor use. (European/USA/Canada/Japan)

**NOTICE:**

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. 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.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**NOTICE:**

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.

**NOTICE:**

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.

RF mode and power tune-up refer to appendix A

## Normal Mode RF Power Range (GSM, WCDMA)

Mode	Range(dBm)
GSM850	33.50-34.50
GPRS850(1 Slot)	28.50-30.00
GPRS850(2 Slots)	28.50-30.00
GPRS850(3 Slots)	28.50-30.00
GPRS850(4 Slots)	28.50-30.00
EGPRS (8PSK, 1-Slot)	22.00-24.00
EGPRS (8PSK, 2-Slots)	22.00-23.00
EGPRS (8PSK, 3-Slots)	22.00-23.00
EGPRS (8PSK, 4-Slots)	22.00-23.00
GSM1900	30.00-31.00
GPRS1900(1 Slot)	26.00-27.00
GPRS1900(2 Slots)	26.00-27.00
GPRS1900(3 Slots)	26.00-27.00
GPRS1900(4 Slots)	26.00-27.00
EGPRS (8PSK, 1-Slot)	20.50-22.50
EGPRS (8PSK, 2-Slots)	20.50-22.00
EGPRS (8PSK, 3-Slots)	20.50-22.00
EGPRS (8PSK, 4-Slots)	20.50-22.00
WCDMA Band 2 RMC	21.50-22.30
WCDMA Band 2 HSDPA	20.00-21.50
WCDMA Band 2 HSUPA	18.50-21.50
WCDMA Band 5 RMC	22.00-23.00
WCDMA Band 5 HSDPA	21.00-22.50
WCDMA Band 5 HSUPA	19.50-22.00

## Normal Mode RF Power Range (LTE)

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 2	20 MHz	1	QPSK	22.50-23.70
		50		21.50-22.50
		100		21.50-22.50
		1	16QAM	21.00-22.50
		50		20.50-21.50
		100		20.50-21.50



Appendix A for US

	15 MHz	1	QPSK	22.50-23.50		
		36		21.50-22.50		
		75		21.50-22.50		
		1	16QAM	21.00-23.00		
		36		20.50-21.50		
		75		20.50-21.50		
	10 MHz	1	QPSK	22.50-23.70		
		25		21.50-22.50		
		50		21.50-22.80		
		1	16QAM	21.50-22.50		
		25		20.50-21.50		
		50		20.50-22.00		
	5 MHz	1	QPSK	22.50-23.50		
		12		21.50-22.50		
		25		21.50-22.50		
		1	16QAM	21.00-22.50		
		12		20.50-21.50		
		25		20.50-21.50		
3 MHz	3 MHz	1	QPSK	22.50-23.50		
		8		21.50-22.50		
		15		21.50-22.50		
		1	16QAM	21.50-22.50		
		8		20.50-22.00		
		15		20.50-21.50		
	1.4 MHz	1.4 MHz	1	QPSK	22.50-23.50	
			3		22.50-23.50	
			6		21.50-22.50	
		1.4 MHz	1.4 MHz	1	16QAM	21.50-22.50
				3		21.50-22.50
				6		20.50-21.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 4	20 MHz	1	QPSK	22.50-23.50
		50		21.50-22.50

Appendix A for US

		100		21.50-22.50	
		1	16QAM	21.00-22.50	
		50		20.50-21.50	
		100		20.50-21.50	
	15 MHz	1	36	QPSK	22.00-23.50
					21.50-22.50
					21.50-22.50
		36	75	16QAM	21.00-23.00
					20.00-21.50
					20.00-21.50
	10 MHz	1	25	QPSK	22.50-23.50
					21.50-22.50
					21.50-22.50
		25	50	16QAM	21.00-23.00
					20.50-21.50
					20.50-21.50
	5 MHz	1	12	QPSK	22.00-23.50
					21.50-22.50
					21.50-22.50
		12	25	16QAM	20.50-22.00
					20.50-21.50
					20.50-21.50
	3 MHz	1	8	QPSK	22.00-23.50
					21.50-22.50
					21.50-22.50
		8	15	16QAM	21.00-22.50
					20.00-21.50
					20.00-21.50
1.4 MHz	1	3	QPSK	22.20-23.50	
				22.20-23.50	
				21.50-22.50	
	3	6	16QAM	21.00-22.20	
				21.00-22.00	
				20.00-21.00	

Appendix A for US

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 5	10 MHz	1	QPSK	23.00-24.00
		25		22.00-23.00
		50		22.00-23.00
		1	16QAM	22.00-23.00
		25		21.00-22.00
		50		21.00-22.00
	5 MHz	1	QPSK	23.00-24.00
		12		22.00-23.00
		25		22.00-23.00
		1	16QAM	21.50-23.00
		12		21.00-22.00
		25		21.00-22.00
	3 MHz	1	QPSK	23.00-24.00
		8		22.00-23.00
		15		22.00-23.00
		1	16QAM	22.00-23.00
		8		21.00-22.50
		15		21.00-22.50
	1.4 MHz	1	QPSK	23.00-24.00
		3		23.00-24.00
		6		22.00-23.00
		1	16QAM	22.00-23.50
		3		22.00-23.50
		6		21.00-22.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band7	20 MHz	1	QPSK	20.50-23.00
		50		20.00-21.50
		100		20.00-21.50
		1	16QAM	19.50-21.50
		50		19.00-20.50
		100		19.00-20.50

Appendix A for US

	15 MHz	1	QPSK	21.00-22.50
		36		19.50-21.50
		75		19.50-21.50
		1	16QAM	19.50-22.00
		36		19.00-20.50
		75		19.00-20.50
	10 MHz	1	QPSK	20.50-23.00
		25		19.50-21.50
		50		19.50-21.50
		1	16QAM	19.50-21.50
		25		19.00-20.50
		50		19.00-20.50
	5 MHz	1	QPSK	20.50-22.50
		12		19.50-21.50
		25		20.00-21.50
		1	16QAM	19.00-21.50
		12		18.80-20.50
		25		19.00-20.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 12	10 MHz	1	QPSK	23.00-24.50
		25		22.00-23.00
		50		22.00-23.00
		1	16QAM	22.00-23.00
		25		21.00-22.00
		50		21.00-22.00
	5 MHz	1	QPSK	23.00-24.00
		12		22.00-23.00
		25		22.00-23.00
		1	16QAM	21.50-23.00
		12		21.00-22.00
		25		21.00-22.00
	3 MHz	1	QPSK	23.00-24.00
		8		22.00-23.00

Appendix A for US

		15	16QAM	22.00-23.00
		1		22.00-23.00
		8		21.00-22.00
		15		21.00-22.00
	1.4 MHz	1	QPSK	23.00-24.00
		3		23.00-24.00
		6		22.00-23.00
		1	16QAM	22.00-23.50
		3		22.00-23.00
		6		21.00-22.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 13	10 MHz	1	QPSK	23.50-24.50
		25		22.50-23.50
		50		22.50-23.50
		1	16QAM	22.50-23.50
		25		21.00-22.00
		50		21.00-22.00
	5 MHz	1	QPSK	23.50-24.50
		12		22.50-23.50
		25		22.50-23.50
		1	16QAM	22.00-23.50
		12		21.00-22.00
		25		21.00-22.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 17	10 MHz	1	QPSK	22.50-24.50
		25		22.00-23.00
		50		22.00-23.00
		1	16QAM	21.50-23.00
		25		21.00-22.00
		50		21.00-22.00
	5 MHz	1	QPSK	24.00-24.80
		12		23.00-24.00

Appendix A for US

		25		23.00-24.00
		1	16QAM	23.50-24.50
		12		22.00-23.00
		25		22.00-23.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 25	20 MHz	1	QPSK	22.00-23.20
		50		21.00-22.20
		100		21.00-22.00
		1	16QAM	21.00-22.50
		50		20.00-21.00
		100		20.00-21.00
	15 MHz	1	QPSK	22.00-23.00
		36		21.00-22.00
		75		21.00-22.00
		1	16QAM	21.00-23.00
		36		20.00-21.00
		75		20.00-21.00
	10 MHz	1	QPSK	22.00-23.50
		25		21.00-22.50
		50		21.00-22.00
		1	16QAM	21.00-22.50
		25		20.00-21.50
		50		20.00-21.50
	5 MHz	1	QPSK	22.00-23.50
		12		21.00-22.50
		25		21.00-22.50
		1	16QAM	21.00-22.00
		12		20.00-21.00
		25		20.00-21.00
	3 MHz	1	QPSK	22.00-23.00
		8		21.00-22.50
		15		21.00-22.50
		1	16QAM	21.00-22.00

Appendix A for US

		8		20.00-21.50
		15		20.00-21.00
	1.4 MHz	1	QPSK	21.00-22.00
		3		20.00-22.50
		6		20.00-21.50
		1	16QAM	21.00-22.50
		3		21.00-22.50
		6		20.00-21.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band41	20 MHz	1	QPSK	21.00-25.50
		50		20.50-23.50
		100		20.50-23.50
		1	16QAM	20.00-24.00
		50		19.50-22.50
		100		19.50-22.50
	15 MHz	1	QPSK	21.00-24.50
		36		20.50-23.50
		75		20.50-23.50
		1	16QAM	21.00-23.50
		36		19.50-22.50
		75		19.50-22.50
	10 MHz	1	QPSK	21.50-24.50
		25		20.50-23.50
		50		20.50-23.50
		1	16QAM	21.00-24.00
		25		19.50-22.50
		50		19.50-22.50
	5 MHz	1	QPSK	21.50-24.50
		12		20.50-23.50
		25		20.50-23.50
		1	16QAM	20.00-23.00
		12		19.50-22.50
		25		20.00-22.50

## Normal Mode RF Power Range (WLAN/Bluetooth)

Band (GHz)	Mode	Range(dBm)
WIFI 2.4G (2.4~2.4835)	802.11b	10.00-12.80
	802.11g	10.00-12.50
	802.11n(HT20)	9.00-11.50
	802.11n(HT40)	9.00-11.00

Band (GHz)	Mode	Range(dBm)
WIFI 5.2 G (5.15~5.25)	802.11a	9.00-10.00
	802.11n(HT20)	9.00-9.50
	802.11ac(VHT20)	10.00-11.00
	802.11n(HT40)	8.00-9.00
	802.11ac(VHT40)	9.00-10.00
	802.11ac(VHT80)	8.00-8.50
WIFI 5.8G (5.725~5.850)	802.11a	10.50-11.50
	802.11n(HT20)	10.00-11.20
	802.11ac(VHT20)	10.50-12.00
	802.11n(HT40)	9.50-11.00
	802.11ac(VHT40)	10.00-11.50
	802.11ac(VHT80)	9.00-10.00

Band (GHz)	Mode	Range(dBm)
Bluetooth (2.4~2.4835)	GFSK	11.00-12.20
	$\pi/4$ -DQPSK	11.00-12.00
	8-DPSK	11.50-12.80
	BLE	1.50-2.50



## Normal Mode RF Power Range (GSM, WCDMA)

Mode	Range(dBm)
GSM900	33.00-35.00
GPRS900(1 Slot)	29.00-30.00
GPRS900(2 Slots)	29.00-30.00
GPRS900(3 Slots)	29.00-30.00
GPRS900(4 Slots)	29.00-30.00
EGPRS (8PSK, 1-Slot)	21.50-22.50
EGPRS (8PSK, 2-Slots)	21.50-22.50
EGPRS (8PSK, 3-Slots)	21.50-22.50
EGPRS (8PSK, 4-Slots)	21.50-22.50
GSM1800	30.50-31.50
GPRS1800(1 Slot)	27.00-28.50
GPRS1800(2 Slots)	27.00-28.00
GPRS1800(3 Slots)	26.80-28.00
GPRS1800(4 Slots)	26.80-28.00
EGPRS (8PSK, 1-Slot)	19.00-20.00
EGPRS (8PSK, 2-Slots)	19.00-20.00
EGPRS (8PSK, 3-Slots)	19.00-20.00
EGPRS (8PSK, 4-Slots)	19.00-20.00
WCDMA Band 1 RMC	22.00-23.30
WCDMA Band 1 HSDPA	20.50-22.00
WCDMA Band 1HSUPA	19.00-21.50
WCDMA Band 8 RMC	23.00-24.00
WCDMA Band 8 HSDPA	22.00-23.00
WCDMA Band 8 HSUPA	20.50-23.00

## Normal Mode RF Power Range (LTE)

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 1	20 MHz	1	QPSK	22.00-23.20
		50		21.00-22.00
		100		21.00-22.00
		1	16QAM	20.50-22.00
		50		20.00-21.00
		100		20.00-21.00

Appendix B for EU

	15 MHz	1	QPSK	22.00-23.00
		36		21.00-22.00
		75		21.00-22.00
		1	16QAM	20.50-23.00
		36		20.00-21.00
		75		20.00-21.20
	10 MHz	1	QPSK	22.00-23.50
		25		21.00-22.20
		50		21.00-22.20
		1	16QAM	21.00-22.00
		25		20.00-21.00
		50		20.00-21.00
	5 MHz	1	QPSK	22.00-23.00
		12		21.00-22.00
		25		21.00-22.00
		1	16QAM	20.50-22.00
		12		20.00-21.00
		25		20.00-21.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 3	20 MHz	1	QPSK	23.50-24.50
		50		22.50-23.50
		100		22.50-23.50
		1	16QAM	22.00-23.80
		50		21.50-22.50
		100		21.50-22.50
	15 MHz	1	QPSK	23.00-24.30
		36		22.50-23.30
		75		22.50-23.30
		1	16QAM	21.50-23.80
		36		21.30-22.50
		75		21.50-22.50
	10 MHz	1	QPSK	23.50-24.30
		25		22.50-23.30

Appendix A for EU

		50		22.50-23.30
		1	16QAM	22.00-23.80
		25		21.50-22.50
		50		21.50-22.50
	5 MHz	1	QPSK	23.00-24.30
		12		22.00-23.50
		25		22.00-23.80
		1	16QAM	22.00-23.00
		12		21.00-22.00
		25		21.00-22.20
	3 MHz	1	QPSK	23.00-24.30
		8		22.50-23.50
		15		22.50-23.50
		1	16QAM	22.00-23.50
		8		21.50-22.50
		15		21.00-22.00
	1.4 MHz	1	QPSK	23.00-24.30
		3		23.00-24.30
		6		22.00-23.00
		1	16QAM	22.00-23.00
		3		22.00-23.00
		6		21.00-22.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band7	20 MHz	1	QPSK	20.50-22.80
		50		20.00-21.50
		100		20.00-21.50
		1	16QAM	19.50-21.50
		50		19.00-20.50
		100		19.00-20.50
	15 MHz	1	QPSK	21.00-22.50
		36		19.80-21.50
		75		19.80-21.30
		1	16QAM	19.50-22.00

Appendix A for EU

		36		19.00-20.50
		75		19.00-20.50
	10 MHz	1	QPSK	21.00-22.60
		25		19.50-21.50
		50		19.50-21.30
		1	16QAM	19.50-21.50
		25		19.00-20.80
		50		19.00-20.50
	5 MHz	1	QPSK	20.50-22.50
		12		19.50-21.50
		25		19.80-21.50
		1	16QAM	19.00-21.50
		12		18.50-20.50
		25		19.00-20.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 8	10 MHz	1	QPSK	23.00-24.00
		25		22.50-23.00
		50		22.50-23.00
		1	16QAM	22.00-23.00
		25		21.50-22.00
		50		21.50-22.00
	5 MHz	1	QPSK	23.00-24.20
		12		22.00-23.00
		25		22.00-23.00
		1	16QAM	21.50-23.00
		12		21.00-22.00
		25		21.00-22.00
	3 MHz	1	QPSK	23.00-24.00
		8		22.50-23.00
		15		22.50-23.00
		1	16QAM	22.00-23.20
		8		21.00-22.00
		15		21.00-22.00

Appendix A for EU

	1.4 MHz	1	QPSK	23.00-24.20
		3		23.00-24.00
		6		22.00-23.00
		1	16QAM	22.00-23.00
		3		22.30-23.00
		6		21.00-22.00

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 20	20 MHz	1	QPSK	23.00-24.50
		50		22.50-23.30
		100		22.50-23.30
		1	16QAM	22.00-23.50
		50		21.00-22.50
		100		21.00-22.00
	15 MHz	1	QPSK	23.00-24.20
		36		22.50-23.50
		75		22.50-23.50
		1	16QAM	22.50-23.70
		36		21.50-22.50
		75		21.50-22.00
	10 MHz	1	QPSK	23.50-24.40
		25		22.50-23.50
		50		22.50-23.50
		1	16QAM	22.50-23.50
		25		21.50-22.50
		50		21.50-22.00
	5 MHz	1	QPSK	23.00-24.20
		12		22.50-23.20
		25		22.50-23.20
		1	16QAM	21.50-23.00
		12		21.00-22.20
		25		21.50-22.20

Appendix A for EU

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 28	20 MHz	1	QPSK	22.00-23.00
		50		21.00-22.00
		100		21.00-22.00
		1	16QAM	20.50-22.00
		50		20.20-21.00
		100		20.00-21.00
	15 MHz	1	QPSK	22.00-23.00
		36		21.00-22.00
		75		21.00-22.00
		1	16QAM	21.00-23.00
		36		20.00-21.00
		75		20.00-21.00
	10 MHz	1	QPSK	22.00-23.00
		25		21.00-22.00
		50		21.00-22.00
		1	16QAM	21.00-22.00
		25		20.00-21.00
		50		20.00-21.00
	5 MHz	1	QPSK	22.00-23.00
		12		21.00-22.00
		25		21.00-22.00
		1	16QAM	20.50-21.70
		12		20.00-21.00
		25		20.00-21.00
	3 MHz	1	QPSK	22.00-23.00
		8		21.00-22.00
		15		21.00-22.00
		1	16QAM	20.80-21.80
		8		20.00-21.20
		15		20.00-21.00

Appendix A for EU

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band 38	20 MHz	1	QPSK	22.00-23.80
		50		21.00-22.50
		100		21.50-22.50
		1	16QAM	20.50-22.80
		50		20.50-21.50
		100		20.50-21.50
	15 MHz	1	QPSK	22.00-23.60
		36		21.50-22.50
		75		21.50-22.50
		1	16QAM	21.00-22.50
		36		20.00-21.50
		75		20.50-21.50
	10 MHz	1	QPSK	22.20-23.60
		25		21.50-22.50
		50		21.50-22.50
		1	16QAM	21.00-23.50
		25		20.50-21.50
		50		20.50-21.50
	5 MHz	1	QPSK	22.00-23.50
		12		21.00-22.50
		25		21.00-22.50
		1	16QAM	20.50-22.20
		12		20.50-21.50
		25		20.00-21.50

Mode	Bandwidth	RB	Modulation	Range(dBm)
LTE Band40	20 MHz	1	QPSK	21.20-23.80
		50		20.20-22.50
		100		20.20-22.50
		1	16QAM	20.20-22.20
		50		19.50-21.50
		100		19.50-21.50

	15 MHz	1	QPSK	21.00-23.50
		36		20.20-22.50
		75		20.20-22.50
		1	16QAM	20.00-22.80
		36		19.00-21.50
		75		19.30-21.50
	10 MHz	1	QPSK	21.00-23.50
		25		20.20-22.50
		50		20.20-22.50
		1	16QAM	20.50-23.00
		25		19.00-21.50
		50		19.00-21.50
	5 MHz	1	QPSK	21.00-23.20
		12		20.20-22.50
		25		20.20-22.50
		1	16QAM	19.50-22.20
		12		19.00-21.50
		25		19.50-21.30

## Normal Mode RF Power Range (WLAN/Bluetooth)

Band (GHz)	Mode	Range(dBm)
WIFI 2.4G (2.4~2.4835)	802.11b	12.00-12.70
	802.11g	8.30-11.00
	802.11n(HT20)	8.00-10.50
	802.11n(HT40)	9.00-10.50

Band (GHz)	Mode	Range(dBm)
WIFI 5.2 G (5.15~5.25)	802.11a	10.00-11.00
	802.11n(HT20)	8.80-10.50
	802.11ac(VHT20)	9.50-11.30
	802.11n(HT40)	8.50-9.50
	802.11ac(VHT40)	8.50-9.50
	802.11ac(VHT80)	7.00-8.00
WIFI 5.8G (5.725~5.850)	802.11a	7.50-10.00
	802.11n(HT20)	7.50-9.50



## Appendix A for EU

	802.11ac(VHT20)	7.50-10.00
	802.11n(HT40)	8.00-9.00
	802.11ac(VHT40)	7.50-9.00
	802.11ac(VHT80)	7.00-8.00

Band (GHz)	Mode	Range(dBm)
Bluetooth (2.4~2.4835)	GFSK	4.50-6.00
	$\pi/4$ -DQPSK	3.00-4.50
	8-DPSK	3.00-4.50
	BLE	(-0.5)-1.50

Antenna Type  
PIFA Antenna

Power class :

GPRS/EGPRS: class12

GSM/GPRS 900: 4

GSM/GPRS 1800: 1

EGPRS 900/1800: E2

WCDMA/HSDPA/HSUPA Band 1: 3

WCDMA/HSDPA/HSUPA Band 8: 3

LTE FDD Band 1: 3

LTE FDD Band 3: 3

LTE FDD Band 7: 3

LTE FDD Band 8: 3 LTE FDD Band 20: 3 LTE FDD Band 28: 3 LTE TDD Band 38: 3

LTE TDD Band 40: 3

GSM Release 99 ;WCDMA Release 6 ; LTE Release 8

NFC : 13.56MHz/ Power class 4 / Modulation type: ASK

GPS/GLONASS/BDS/Galileo 1559MHz~1610MHz

GSM900 (880.2MHz---914.8MHz)

DCS1800 (1710.2MHz---1784.8MHz)

WCDMA band 1 (1922.4MHz---1977.6MHz)

WCDMA band 8 (1712.4MHz---1782.6MHz)

LTE BAND 1 (1922.5---1977.5)MHz

LTE BAND 3 (1710.7---1784.3)MHz

LTE BAND 7 (2502.5---2567.5)MHz

LTE BAND 8 (880.7---914.3)MHz

LTE BAND 20 (834.5---859.5)MHz

LTE BAND 28 (704.5---746.5)MHz

LTE BAND 38 (2572.5---2617.5)MHz

LTE BAND 40 (2302.5---2397.5)MHz

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