Qpad X5 User Guide

Hi-Target Surveying Instrument Co., Ltd.

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Manual Revision

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Revision Date	Revision Level	Description
2016-06-03	1	Qpad X5 User Guide

Preface

Introduction

Welcome to use Hi-Target Qpad X5 GIS data collector. This introduction describes how to use this product.

Experience Requirement

In order to help you use Hi-Target series products better, Hi-Target suggests you carefully read the instruction. If you are unfamiliar with the products, please refer to www.hi-target.com.cn

Tips for safe use

Notice: The contents here generally are special operations, and need your special attention. Please read the contents carefully.

Warning: The contents here generally are very important. Such wrong operation may make the machine damaged, make the data lost, even breaks down the system and endangers personal safety.

Exclusion

Before using the products, please carefully read the operating instruction, and it will help you better use it. Hi-Target Surveying Instrument Co., Ltd will not assume the responsibilities if you fail to operate the product according to the requirements in operating instruction, or operate the product wrongly because of failing to understand the operating instruction.

Hi-Target is committed to constantly perfect product functions and performance, improve service quality and reserve the rights to change the contents in operating instruction without separate notice.

We have checked the consistency between contents in instruction and software & hardware, without eliminating the possibility of deviation. The pictures in operating instruction are only used for reference. In case of inconformity with products, the products shall prevail.

Technology and Service

If you have any technical issues, you can call Hi-Target technology department for help, we will answer your question in time.

Relevant Information

You can get this introduction in the following ways:

1. After purchasing hi-target receivers, you can find this manual in the instrument container to guide you how to operate instrument.

2. Log in hi-target official website, download the electronic version introduction in “Download Center” → “Manual” → “Surveying Products”

Advice

If you have any comments and suggestions, please call us or Dial the national hotline: +86 400-678-6690. Your feedback information will help us to improve the quality of the product and service.

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CHAPTER

1

Hardware

This chapter describes:

- **Design**
- **Key Functions**
- **Technical Specification**
- **Accessories**

1.1. Design

Front

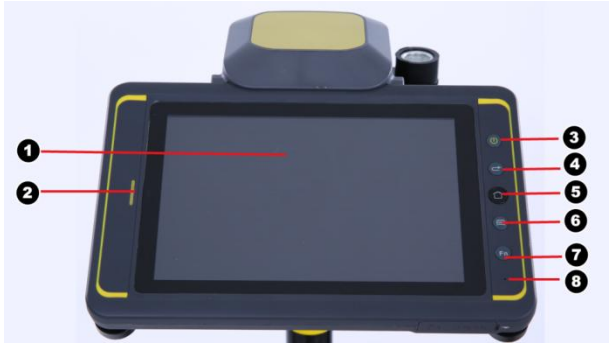

Figure 1-1-1

① Screen

② Phone Receiver

③ Power Key

④ Return Key

⑤ Home Key

⑥ Function Key

⑦ Customize Key

⑧ Microphone

Side

Figure 1-1-2

⑨ Charging Socket

⑩ Micro USB Socket

⑪ Earphone Socket

⑫ Battery Lock

Back

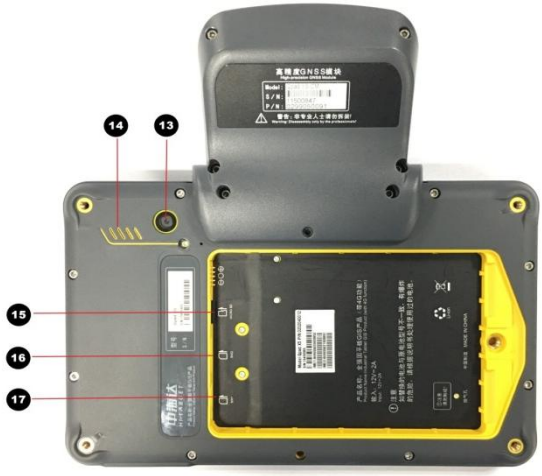

Figure 1-1-3

⑬ Camera

⑭ Speaker

⑮ SIM card slot 1

⑯ SIM card slot 2

⑰ Micro SD card slot

1.2. **Key functions**

Power on: Long press power button for almost 3 seconds. The initialization time is less than 10 seconds. After power on, we can see as below:

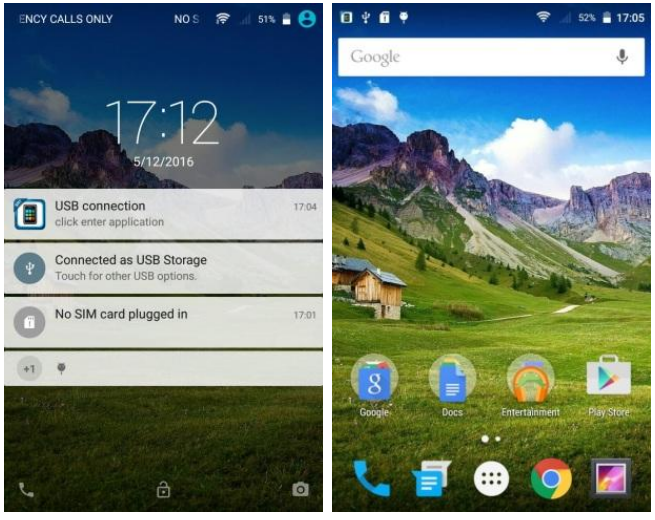

Figure 1-2-1

Lock screen: Single press power key to lock screen. Single press it again to unlock screen.

Power off: Long press Power key for almost 3 seconds and choose “Power off”

to shut down the device.

Screen shot: Press Funtion key and Power key simultaneously.

1.3. **Technical Specification**

System	Operating system: Android 5.0
	CPU: 8-core 1.7GHz
	RAM: 2GB
	ROM: 16GB
	Display: 7 inch, 1280 × 800 resolution, 10-point capacitive touch screen
GPS Features	GPS+GLONASS+BDS, AGPS
	Time for the first fix: 30 seconds
	Single Positioning accuracy: 5meters
	SBAS Positioning accuracy: 1 to 3meters
Communication	Dual SIM Dual Standby
	4G: FDD-LTE/TD-LTE 3G: WCDMA/TD-SCDMA 2G: GSM
	WIFI: IEEE 802.11b/g/n, WAPI, AP
	Bluetooth 4.0
	T-Flash card: Up to 128GB storage
	USB: Micro USB, support OTG

Power supply	Battery: 7.4V, 4000mAh, online charging
	8~10 hours continuous work
Application functions	Camera: 1300 million pixels, auto focus, with flashlight
	Headset jack 3.5mm
	Build-in gravity sensor, proximity sensor, light sensor, electronic compass, barometer and gyroscope
	Support NFC
Physical properties	Size: 220mm×135mm×18mm
	Weight: 600g
	Operating temperature: -30℃～+60℃
	Storage temperature: -40℃～+80℃
	Dustproof/Waterproof: IP67
	Shock and vibration: Designed to survive a 1.5m nature fall onto concrete
Optional function	Hardware Encryption
	High GNSS accuracy: cm, dm

1.4. **Accessories**

Battery

This battery is 4.7V, 4000mAh and can be charged when using Qpad X5. The pictures below show detail appearance of both sides:

Figure 1-3-1

Notice: For protecting environment, please do not throw the battery at will when this battery is unavailable.

Power adapter

Figure 1-3-2

USB cable

The USB cable is used for data transfer between PC and Qpad X5.

Figure 1-3-3

Earphone

Figure 1-3-4

GNSS module

Figure 1-3-5

There are two module can be chose: CM (centimeter module) and DM (decimeter module). Here is the detail information of DM and CM:

Module	DM	CM
GNSS Feature	GPS: L1, L2 GLONASS: L1 BDS: B1 SBAS: WAAS/EGNOS/MSAS	GPS: L1, L2, L2C GLONASS: L1, L2 BDS: B1, B2 SBAS: WAAS/EGNOS/MSAS
Message type	RTCM 2.3/3.1/3.2	RTCM 2.1/2.3/3.0/3.1/3.2 CMR, CMR+, RTCA
Horizontal accuracy	Single positioning: 2.5m RTD positioning: 0.5m	Single positioning: 2m RTK positioning:2cm Static:±5mm+1ppm

CHAPTER

2

Software

This chapter describes:

- **Operation System**
- **Hi-QⅡ**
- **SuperSurv**
- **Firmware Upgrade**

2.1. Operation System

2.1.1. Android 5.0

Qpad X5 is running with original Android 5.0 system, and supports Google service, like Google Map, Chrome, Google Play, etc.

Qpad X5 is operated like an Android Phone, very easy to use.

Figure 2-1-1

2.1.2. Wi-Fi & Bluetooth

Enter “Settings” – “Wireless & networks”, Wi-Fi and Bluetooth can be opened or closed in here.

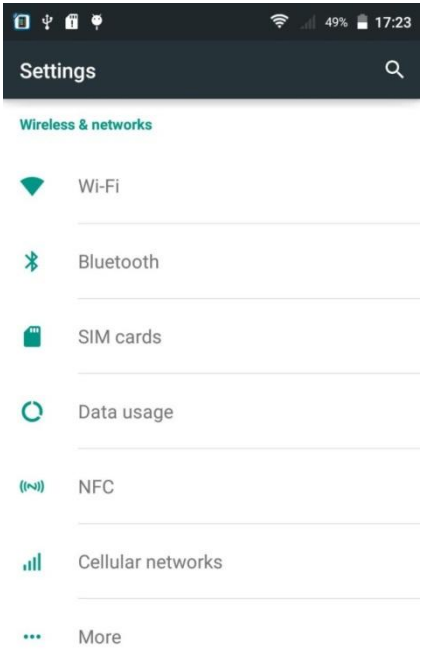

Figure 2-1-2

2.1.3. GPS

Enter “Settings” – “Personal” – “Location”, GNSS positioning function can be opened or closed in here.

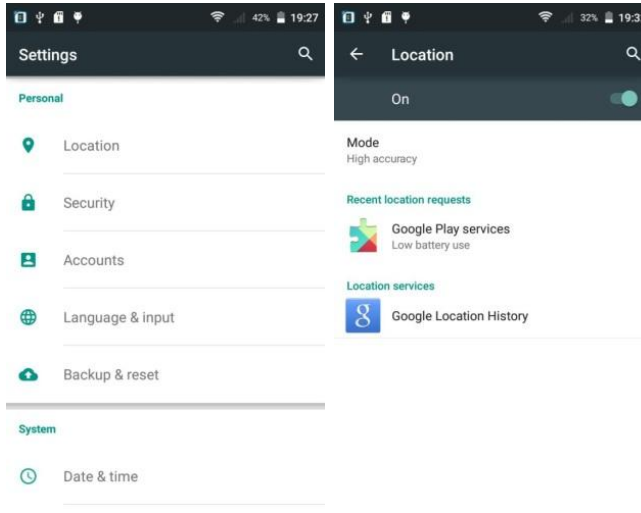

Figure 2-1-3

2.1.4. Charging

Qpad X5 should be Charged by attached charger. If no connecting external

GNSS module, the charging LED shows orange and will be green when full charged in power on status, while it shows red and will be off when full charged in power off status. If connecting external GNSS module, the charging LED shows orange with red flashing and will be green when full charged in power on status.

Tip: Qpad X5 can not be charged by USB.

2.1.5. Notification and Control Center

Slip down from the screen top, you can see the notification from system and apps. Slip more to enter control center, most frequently used function can be on-off or adjusted here.

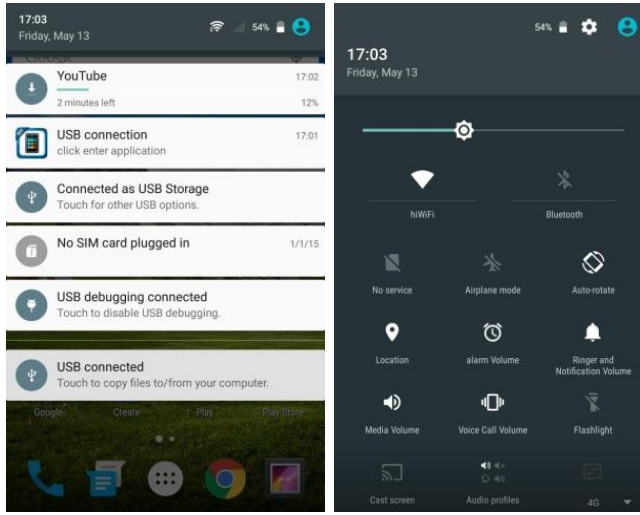

Figure 2-1-4

2.1.6. USB debugging

Go Setting-About phone, Click Build number about 7 times, then it will say you are a developer. Go Settings-Developer options, check USB debugging, Qpad X5 will go debug mode when USB is connected.

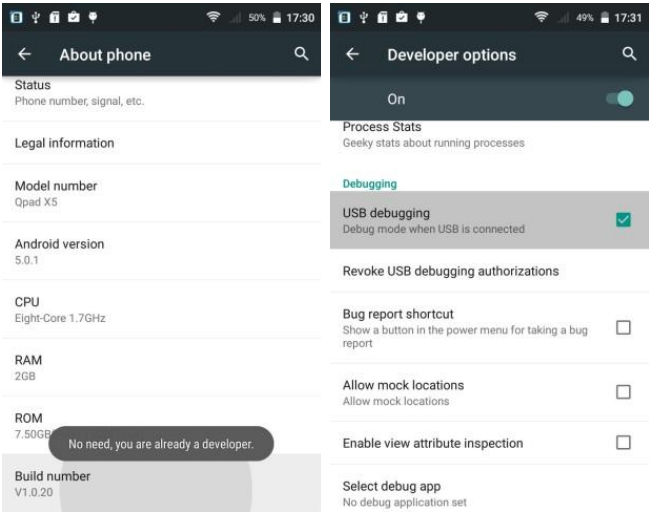
50% 17:30
About phone
Status
Phone number, signal, etc.
Legal information
Model number
Qpad X5
Android version
5.0.1
CPU
Eight-Core 1.7GHz
RAM
2GB
ROM
7.50GB
No need, you are already a developer.
Build number
V1.0.20
49% 17:31
Developer options
On
Process Stats
Geeky stats about running processes
Debugging
USB debugging
Debug mode when USB is connected
Revoke USB debugging authorizations
Bug report shortcut
Show a button in the power menu for taking a bug report
Allow mock locations
Allow mock locations
Enable view attribute inspection
Select debug app
No debug application set

Figure 2-1-5

2.1.7. Short Cut Menu

Long press power key to get this menu, you can power off the Qpad X5, enter airplane mode here, restart it or do some other frequently used functions.

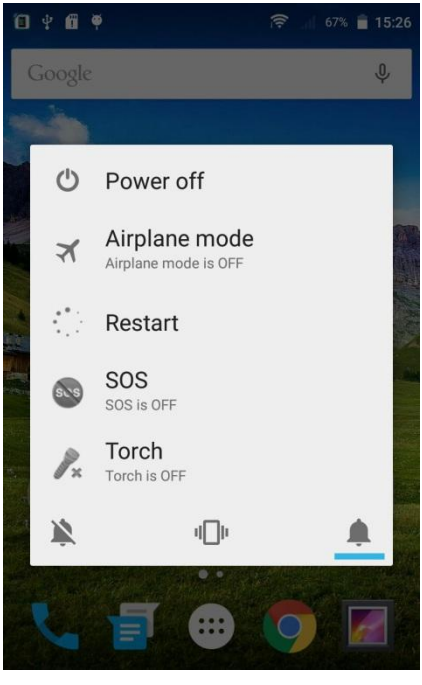

Figure 2-1-6

2.1. Hi-Q Ⅱ

2.1.1. Software Introduction and Installing

Hi-Q II is an universal GIS data collecting software, absorbed advantages of original Hi-Q, at the same time, increase the support of a large amount of data, improve the speed of image display, optimizing the acquisition process, and through the Hi-Q tools II of flexible configuration options to use the function.

Copy the .apk to Qpad X5, then click it on Qpad X5, click next and install, start installing.

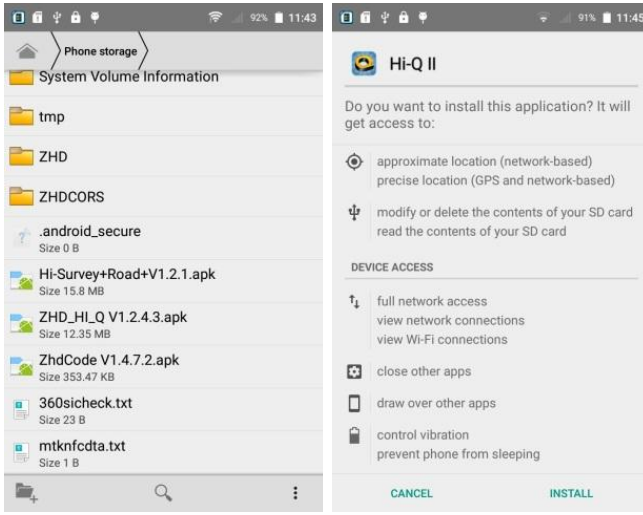
92% 11:43
Phone storage
System Volume Information
tmp
ZHD
ZHDCORS
.android_secure
Size 0 B
Hi-Survey+Road+V1.2.1.apk
Size 15.8 MB
ZHD_HI_Q V1.2.4.3.apk
Size 12.35 MB
ZhdCode V1.4.7.2.apk
Size 353.47 KB
360sicheck.txt
Size 23 B
mtknfcdta.txt
Size 1 B
91% 11:45
Hi-Q II
Do you want to install this application? It will get access to:
approximate location (network-based)
precise location (GPS and network-based)
modify or delete the contents of your SD card
read the contents of your SD card
DEVICE ACCESS
full network access
view network connections
view Wi-Fi connections
close other apps
draw over other apps
control vibration
prevent phone from sleeping
CANCEL
INSTALL

Figure 2-2-1

2.1.2. Main Functions

Figure 2-2-2

- **Collect**: Surface features can be collected, edited, searched in project according to data dictionary and coordinate system files.
- **Skyplot**: Geographic coordinates, satellites distribution, Hdop, solution status are showed in here.

- **Set**: Including System set, Demo set and Navigation set.
- **Regist**: Register Qpad X5.
- **Record**: Record voice and play.
- **Dic**: Create or edit data dictionary.
- **Map**: Show position on Baidu map.
- **Camera**: Take photos, record a video, also you can view them.
- **CoordSystem**: Create a new coordinate system or edit one.
- **Net Diff**: When using high accuracy module, Qpad X5 can receive correction message by operating in here.
- **About**: Software version, system version, telephone and official website are showed in here.

2.3. SurperSurv

SuperSurv is a smart mobile GIS software of SurperGeo, and it is fully compatible with Qpad X5.

Figure 2-3-1

- Smart Survey App designed for Android and iOS
- Integrating with latest GIS and GNSS tech
- Easily capturing and handling spatial data in the field
- Efficiently collect point, line, polygon data
- Support offline & online editing
- Display map data with global coordinate system
- Create and manage waypoints
- Query and measure on the map
- Fully compatible with other SuperGIS product lines

2.4. Firmware Upgrade

2.4.1. Upgrade by USB Cable

1. Open Smart Phone Flash Tool.

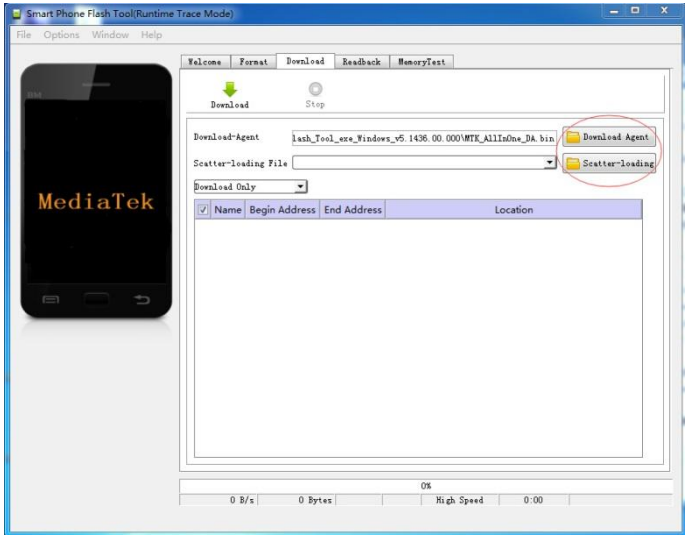

Figure 2-4-1

2. Select Download Agent:

SP_Flash_Tool_exe_Windows_v5.1436.00.000\MTK_AllInOne_DA.bin

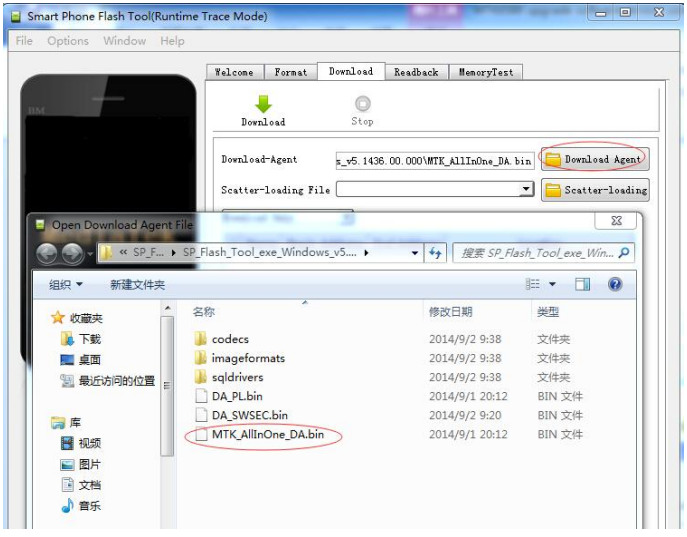

Figure 2-4-2

3. Select Scatter-loading:

TF_MT6752_QPAD-X5_5.0_VER_Qpad1.0.16_P0_20160330_google\MT6595_Android_scatter.txt

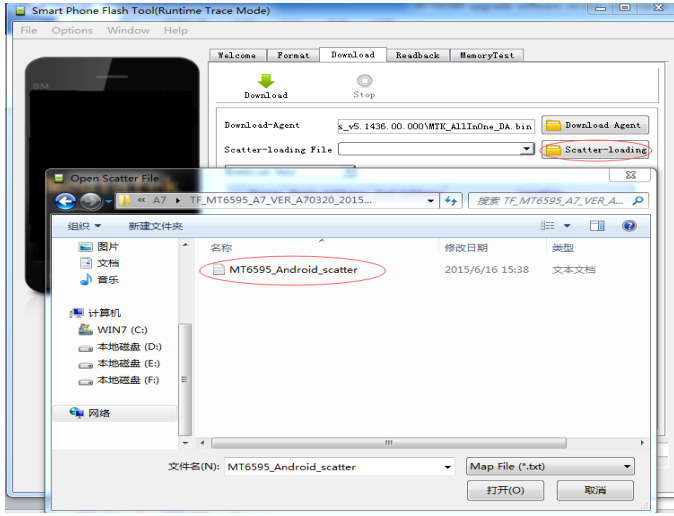

Figure 2-4-3

4. Select **“Firmware->Upgrade”** option, then select **“Download”** option.

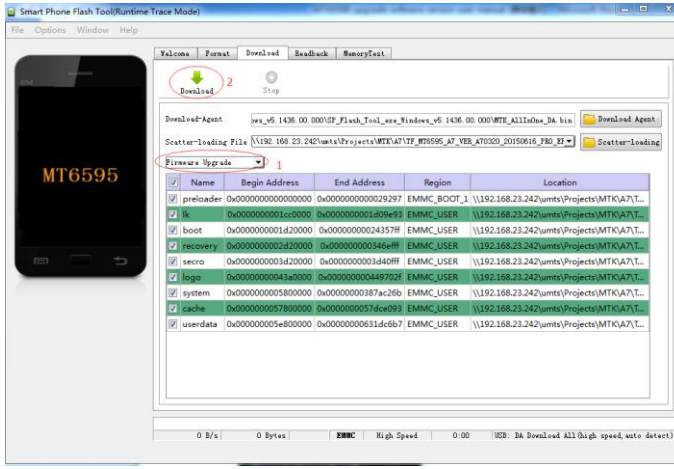

Figure 2-4-4

5. Power off phone, wait a moment , connect to PC, there will be a driver named **MT65xx Preloader** need to be installed. Generally it will be installed automatically by searching windows update.

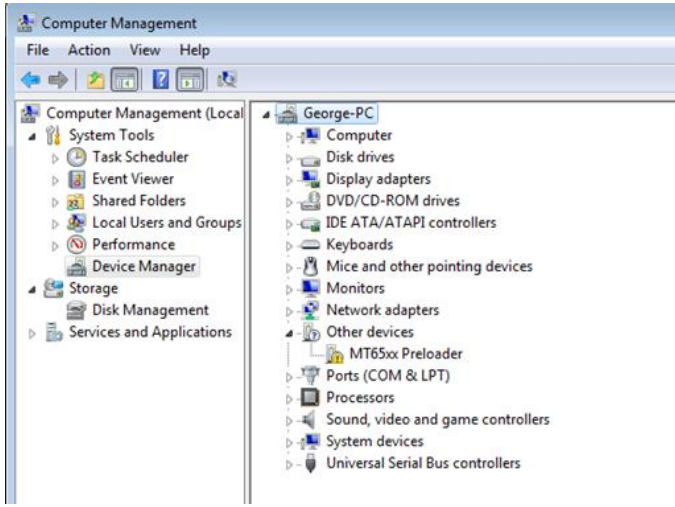

Figure 2-4-5

6. If the driver is installed failed by searching windows update, we should install it manually. Right click **MT65xx Preloader** and go **Update Driver Software** - **Browse my computer for driver software**. Then select the driver folder and click **Next** to start installing.

7. Downloading. If not, try reconnecting Qpad X5. (Stay power off status)

8. Upgrade completed, disconnect it, then power on.

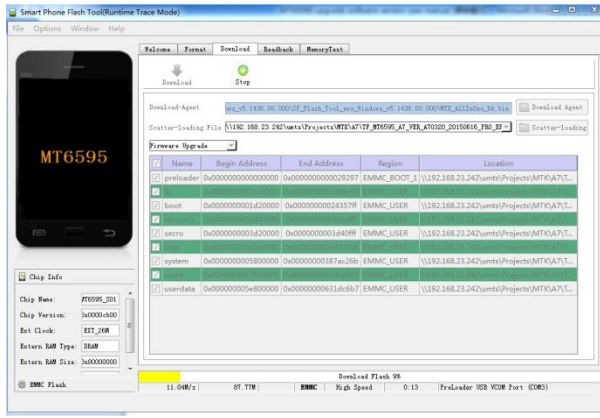

Figure 2-4-6

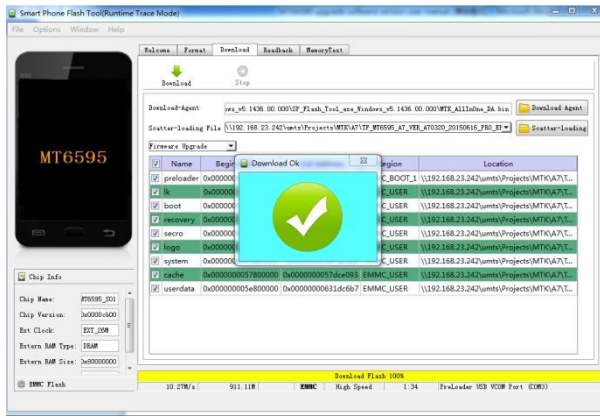

Figure 2-4-7

2.4.2. Upgrade by SD Card

1. Copy the file **update.zip** to an empty SD card, then insert the SD card in Qpad X5.

2. Long press the **MENU key** (left second) and **POWER key** (right first) simultaneously to power on Qpad X5, it will go recovery model.

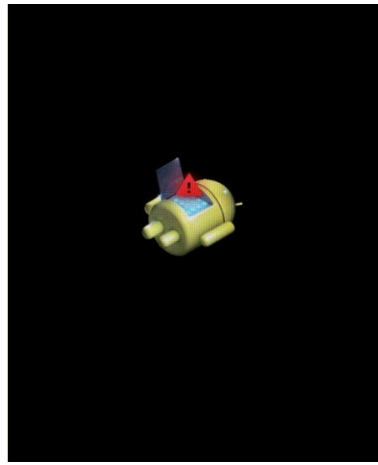

Figure 2-4-8

3. Press **POWER key** to enter menu interface.

Figure 2-4-9

4. **Wipe user data**: Press MENU key down to **wipe data/factory reset**, press POWER key to confirm.

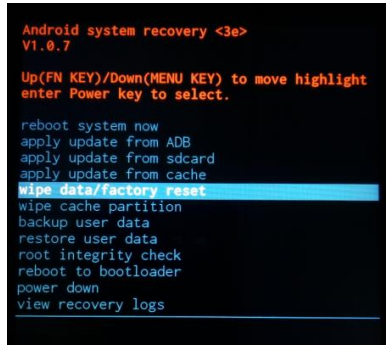

Figure 2-4-10

Press MENU key down to Y**es -- delete all user data**, press POWER key to confirm.

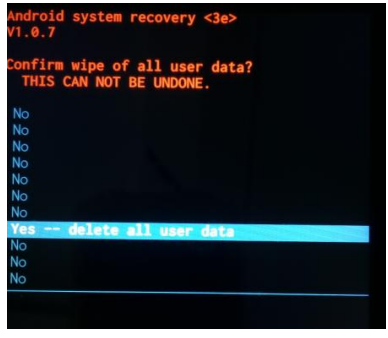

Figure 2-4-11

Wiping data.

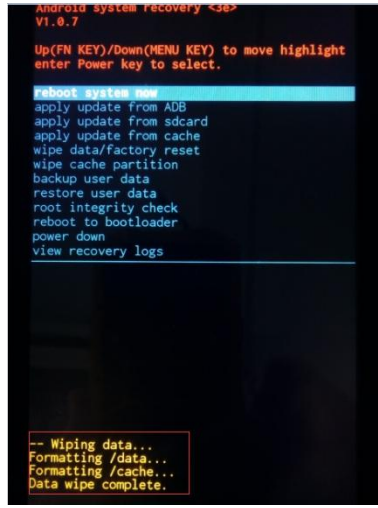

Figure 2-4-12

5. **Wipe cache partition**: Press MENU key down to **wipe cache partition**, press POWER key to confirm.

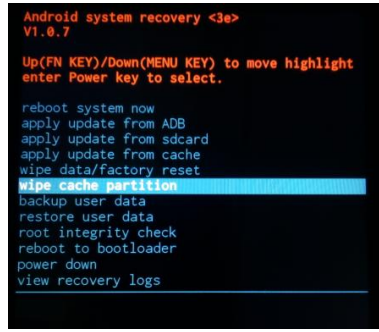

Figure 2-4-13

Wiping cache.

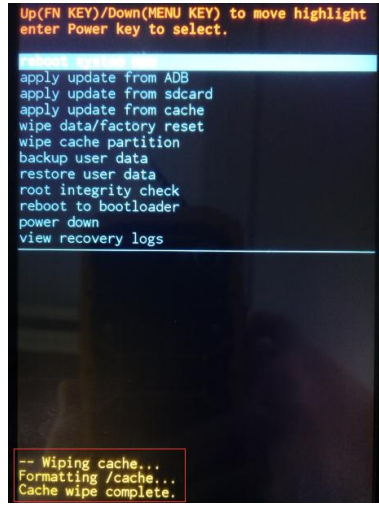

Figure 2-4-14

6. **Install update**

Press MENU key down to **apply update from sdcard**, press POWER key to confirm.

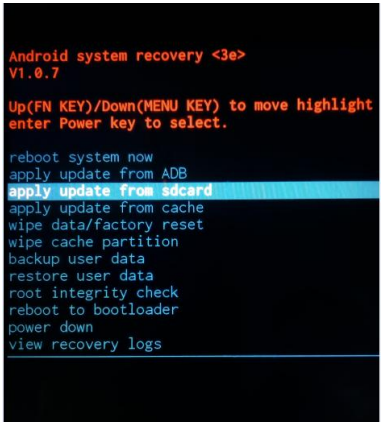

Figure 2-4-15

Select **update.zip**, press POWER key to confirm.

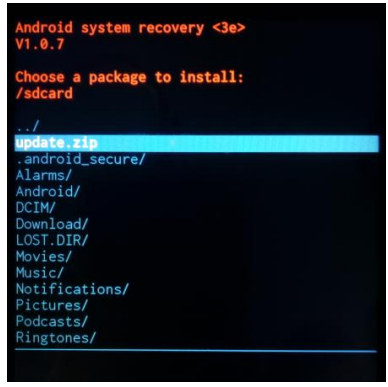

Figure 2-4-16

Installing update.

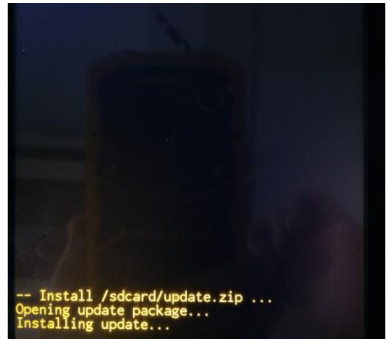

Figure 2-4-17

7. After installing, it will say “Install from sdcard complete”, select **reboot system now**, press POWER key to confirm to reboot.

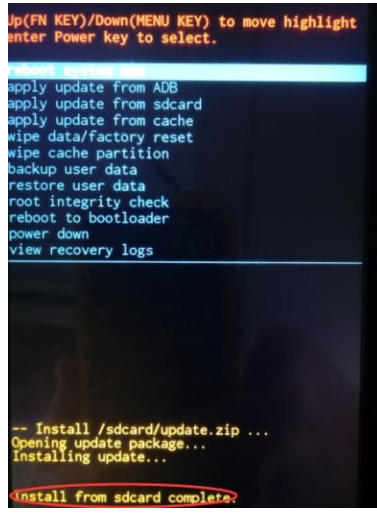

Figure 2-4-18