CHAINWAY®

C3000 Handheld Terminal User Manual



Shenzhen Chainway Information Technology Co., Ltd

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*Note: In this manual, we use WINCE6.0 professional for the reference.*

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CHAPTER 1 Overview

C3000 handheld data terminal was born with compact size, portability, durability, functionality and flexibility, which is customized for enterprise administrative personnel and mobile staff, as well as business application and IT demands.

C3000 integrates 1D or 2D barcode scan engine, RFID HF, UHF multiple frequency read/write module, Bluetooth, WIFI, GPRS, GPS communication methods, 5MP auto-focus camera, etc. With C3000, workers in every walk of life (such as logistic expressage personnel, medical care personnel in the hospital, retail management personnel and warehouse management personnel) are able to enjoy economic efficient data collection service so as to realize simplification of task, improve work efficiency, shorten responsive time to customers and enhance customer service.

The product features at adoption of consumer's favorite appearance and ergonomics design, which can meet business requirements of mobile staff. In addition, it abides by design philosophy of portability and good-looking industrial design, compact size and ease of use, waterproof and dustproof, sturdiness and durability, high precision, high speed, extensibility and customization, to adapt different business data collection applications.

1.1 Technical Parameters

Physical Parameters	
Dimension	153mm * 75mm * 29mm
Weight	330g(including the standard battery)
Display	Color 3.5″QVGA TFT-LCD with backlight, 65K colors, 240 W x 320 L (QVGA size)
Input Method	Touch input and keyboard input
Extension Slots	PSAM, SIM/PSAM, MicroSD/TF card slot under the battery
Battery	Rechargeable li-ion polymer battery 3.7V/3200mAh Pistol Grip: rechargeable li-ion polymer battery 3.7V, 5200mAh MAX (with pistol grip)
Audio	0.5W watt
Keyboard	QWERT: 41 silicone buttons and 3 side buttons; Numeric: 24 silicone buttons and 3 side buttons;
Performance	
CPU	Freescale 800MHz
RAM	256MB
Memory	4GB iNAND FLASH; MicroSD/TF card, maximum 32G
Interface/Communications	USB port for sync with PC(set USB as OTG, it recognizes external devices like U disk) RS-232 port for printer debugging DC port for charging
Environmental	
Operating Temperature	-10℃ to 50℃
Storage Temperature	-40℃ to 70℃

Humidity	5%RH to 95%RH non-condensing		
Dropping Survive	Multiple 5ft./1.5m drops over operating temperature range, in accordance with MIL-STD 810G		
Tumbling Survive	1,000 0.5m tumbles, in accordance with IEC tumble specification		
Sealing	IP64		
Electrostatic Discharge (ESD)	+/-15kv VDC air discharge, +/-8KV VDC direct discharge, +/-8KV VDC indirect discharge		
Programming Environment			
Operating System	Windows Embedded CE 6.0		
SDK	Chainway Software Development Kit		
Language	C++, C#, VB.NET		
Tool	Visual Studio 2005/2008		
Data Collection			
Barcode	1D Linear scanner (SE655 CCD or SE955 laser); 2D Imager (SE4500 CMOS);		
1D Barcode Scan Engine	1D CCD scanner: Symbol SE655 (Optional) Optical resolution: 5Mil min width Roll tolerance: ±25º Pitch tolerance: ±65º Skew tolerance: ± 30º Ambient light: 0ft.candles-10000ft.candles Scan repetition rate: 50 per second Scan angle: 53º±3º Barcode type: UPC/EAN, Bookland EAN, Code 128, Code 39, Code 93, Code 11, Interleaved 2 of 5, Discrete 2 of 5, Chinese 2 of 5, Matrix 2 of 5, Inverse 1D, MSI, GS1 DataBar, etc.		
	1D laser scanner: Symbol SE955 (Optional) Optical resolution: 4Mil min width Roll: 100%UPC (5in. ±35º) Pitch Angele: 100%UPC (5in. ±65º) Skew tolerance: 100%UPC (5in., ±50º) Ambient light: 10000ft.candles (107640 lux) Scan repetition rate: scan 104 per second（±）12 times (two-way) Scan angle: 47º±35º(standard)/ 35º±3º (narrow-angle) Barcode type: UPC/EAN, Code128, Code39, Code93, Code11, Interleaved 2 of 5, Discrete 2 of 5, Chinese 2 of 5, Codabar, MSI, RSS, ect.		
2D Barcode Scan Engine	2D CMOS laser scanner: Symbol SE4500 Sensor resolution: 750 (horizontal) * 480 (perpendicular) pixel (gray level) Roll tolerance: 360º Pitch tolerance: ±60º Skew tolerance: ±60º Ambient light: 9000ft.candles/96900 lux (lightless) Aiming LED (VLD): 655nm ± 10nm Illumination element: 650nm ± 5nm Field of view: 40º horizontal， 25º perpendicular Barcode type: PDF417, MicroPDF417, Composite, RSS, TLC-39, Datamatrix, QR code, Micro QR code, Aztec, MaxiCode; Postal Codes: US PostNet, US Planet, UK Postal, Australian Postal, Japan Postal Dutch Postal (KIX),ect.		
	Decode ranges		
	SR Focus	**Near**	**Far**
	5 mil Code 39	2.1 in./53 mm.	7.5 in./191 mm.
	100% UPC/ENA	1.6 in./41 mm.	15.5 in./394 mm.
	6.7 mil PDF417	3.4 in./86 mm.	7.1 in./180 mm.
Camera	Resolution: 5.0MP Auto Focus		
RFID	HF: (Optional) Frequency: 13.56MHz Protocol: ISO14443A/B, ISO15693 (Optional) Distance: 0cm~8cm		

	UHF: (Optional) Operating: 840~960MHZ (customizable) CN: 840~845MHZ CN: 920~925MHZ EU: 865~868 (ETSI EN 302 208) Protocol: EPC C1 GEN2/ISO18000-6C Read range up to: 2.0m Antenna: right-hand polarization (3dbi) Power: 1W (+10dBm ~ +30dBm)
Wireless Data Communications	
WIFI	WIFI: muRata® Protocol: IEEE802.11b/g; Data Rates: 802.11b max 11Mbps; 802.11g max 54Mbps Antenna: internal Freq range: 802.11b-2.4GHz; 802.11g-2.4GHz Security: WPA2, PEAP, TLS, WPA2-PSK, WPA-PSK, WPA2/AES
WWAN	Frequency: GSM/GPRS(850,900,1800,1900MHz)
Wireless PAN	Bluetooth: Class 2.0, 5~10 m
GPS	GPS: UBLOX NEO-6M low energy GPS chip

1.2 Feature and Structure



Pic 1-2-1 C3000 Front



Pic 1-2-2 C3000 Back

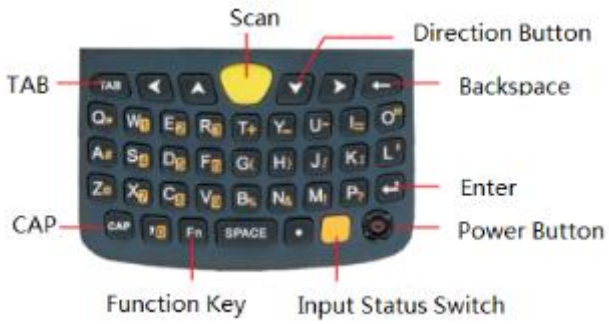


Pic 1-2-3 C3000 Bottom

1.3 Keyboard

There are two optional types including QWERT and numeric keyboards.

QWERT Keyboard: 41 silicon buttons and 3 side buttons for customization;



Pic 1-3-1 C3000 QWERT Keyboard

Numeric Keyboard: 24 silicon buttons and 3 side buttons for customization.



Pic 1-3-2 C3000 Numeric Keyboard

1.4 Standard Accessories

Name	Quantity	Description	Picture
AC Adapter	1	Battery recharging	
USB Cable	1	Synchronization and battery recharging	

Stylus	1	Touch screen operation	
Battery	1	Li-ion polymer battery, with 3200mha capacity	
IO Slot	1	USB port, UART port and DC port	

1.5 Optional Accessories

- Carrying Case: being ideal for outdoor using;



- Serial Cable: communicating with the PC;



- Docking Station: Synchronizing with PC, and battery recharging.





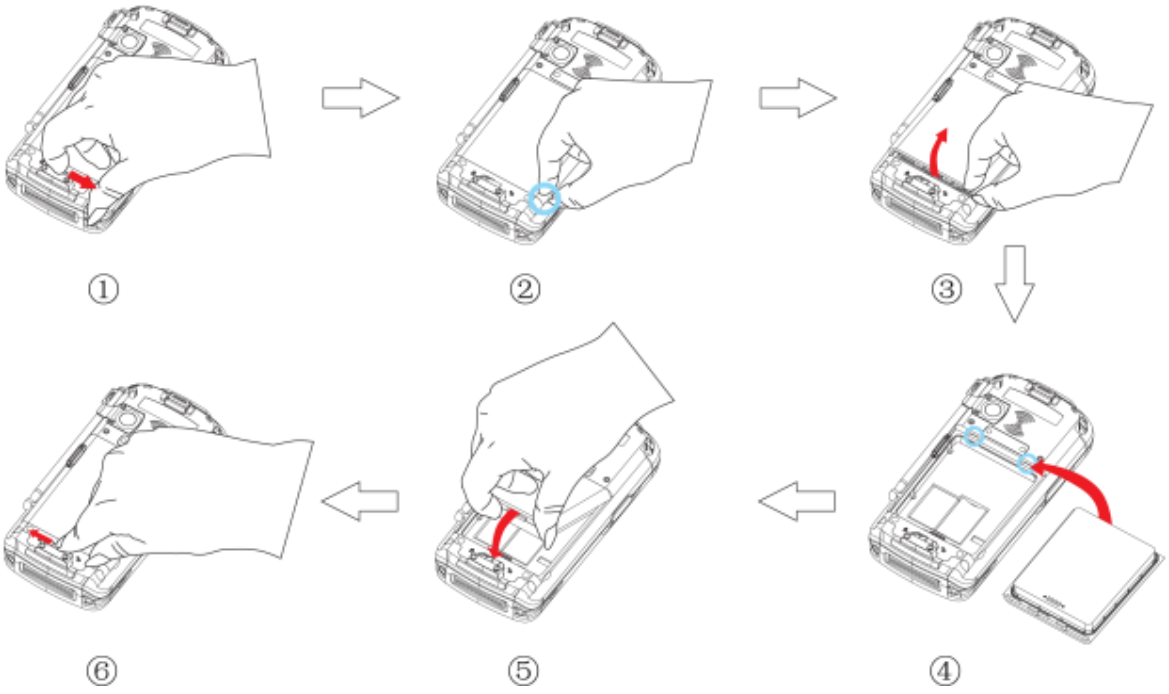


CHAPTER 2 Getting Started

2.1 Battery Exchange

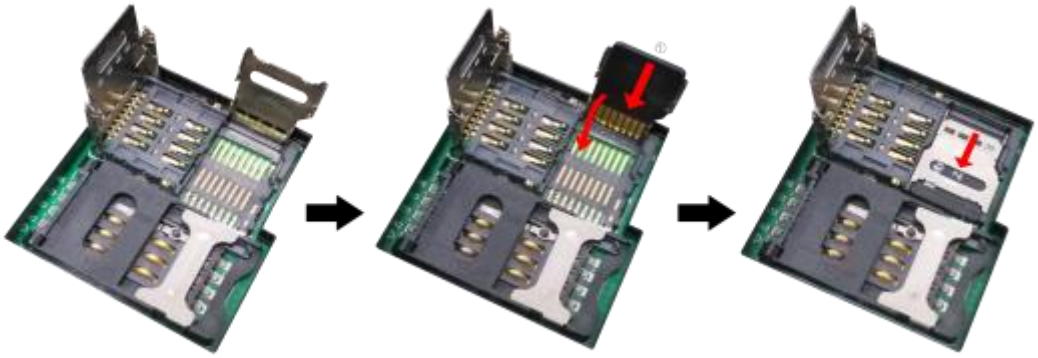
Operating Steps: (Pic 2-1-1)

1) Ensure the device is in non-working or recharging status, and unlock the battery cover;
2) Remove the battery cover as the direction of ③;
3) Take out the battery lightly;
4) Install the new battery as the direction of ⑤;
5) Lock the battery cover as the direction of ⑥.



Pic 2-1-1

2.2 TF Card Installation

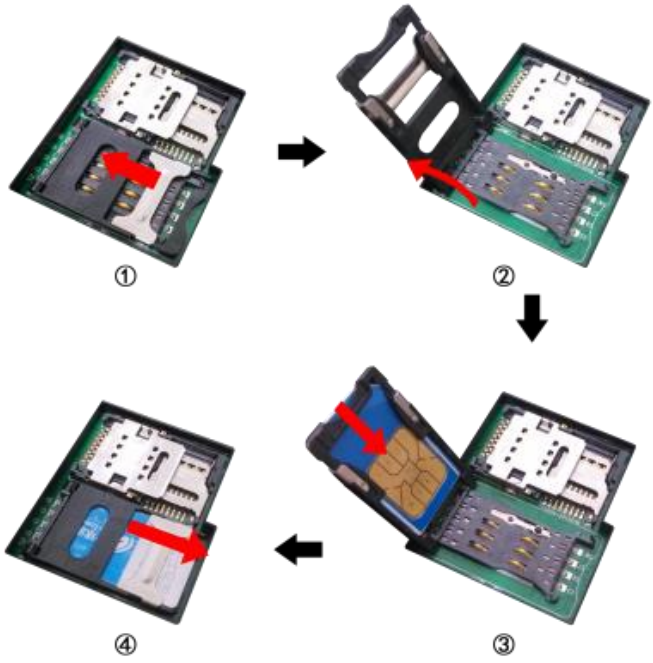


Pic 2-2-1

Operating Steps:

1) Ensure the device is in non-working or recharging status;
2) Unlock the battery cover;
3) Take out the battery;
4) Install the TF card carefully as the direction of Pic 2-2-1;
5) Install the battery and lock the battery cover.

2.3 SIM Card Installation



Pic 2-3-1

Operating Steps:

1） Ensure the device is in non-working or recharging status;

2） Unlock the battery cover;

3） Take out the battery;

4） Install the SIM card;

5） Install the battery and lock the battery cover;

2.4 Battery Recharging

Three methods to charge the battery:

1) Use AC Adapter to charge by 220V AC power sockets;

2) Use USB cable to charge by connecting with the PC;

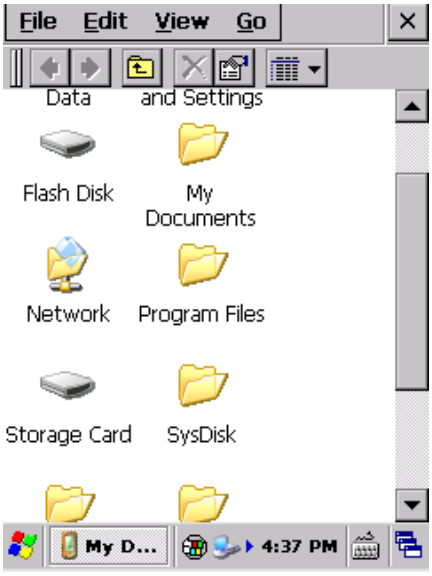
3) Use the cradle to charge the battery;



Pic 2-4-1

2.5 TF Card Installation

After installing the TF card, files under the catalogue of 'My Device/Storage Card' (Pic 2-5-1) can be viewed, while is also the TF card catalogue.

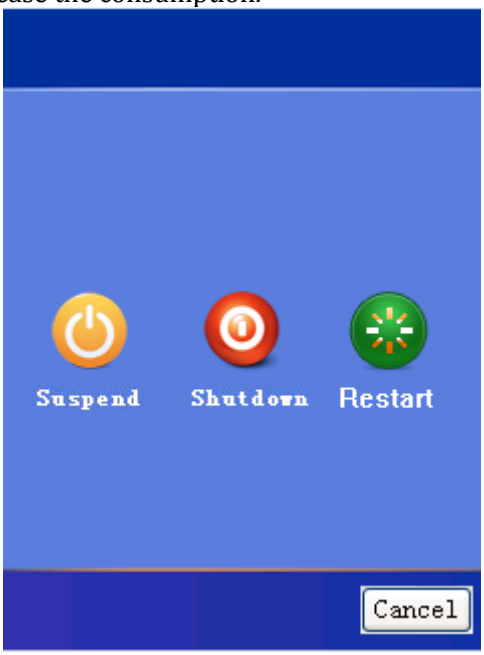


Pic 2-5-1

2.6 Suspend/Shutdown/Restart

Suspend

The button can be pressed to switch the status including Suspend/Shutdown/Restart.
When suspending, the screen would be dark and all modules would stop working.
The device would enter the suspend mode when being in non-working status after a specified time automatically to decrease the consumption.



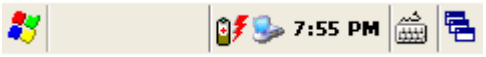
Wakeup

Press the power button  once for device in suspending status, then the device would be waken up.

Note: It is better to suspend it when charging, which would take less time. Please do not press this button frequently within a short period of time, otherwise it may cause damages to the screen and data.

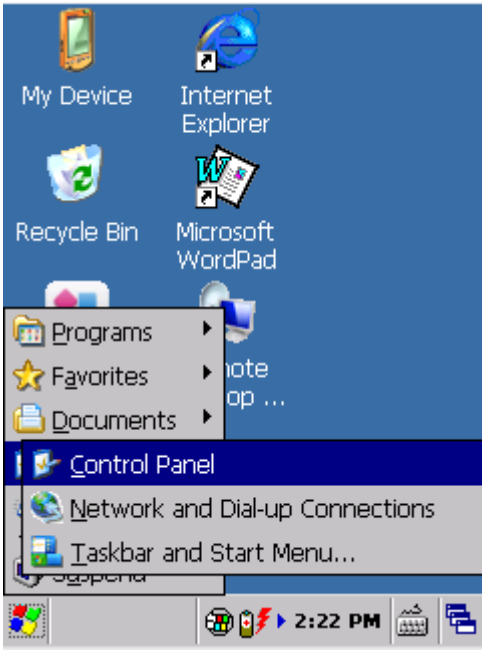
2.7 Taskbar

The taskbar is on the bottom right of the screen as Pic 2-7-1.



Pic 2-7-1

Start menu: The menus including multiple applications can be viewed and opened as Pic 2-7-2.



Pic 2-7-2

Input method menu: Double click to view the available input methods, also the soft keyboard can also pop up by clicking as Pic 2-7-3 and Pic 2-7-4.



Pic 2-7-3



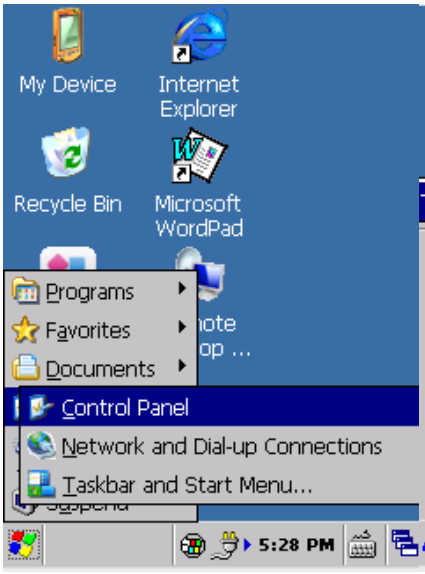
Pic 2-7-4

Current task menu: Click it to view all the current tasks, also click to switch the tasks. Pic 2-7-5

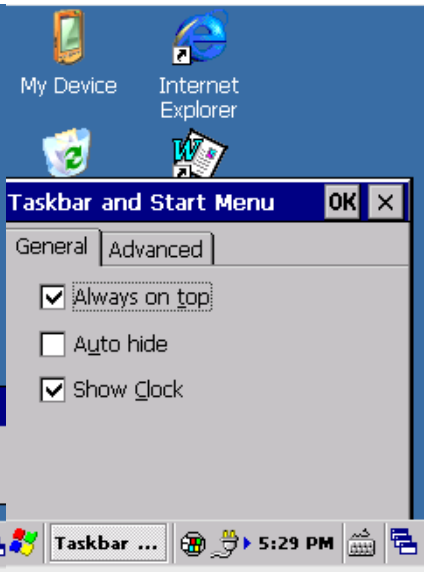


Pic 2-7-5

Clock 14:55: Show the current time, and 'Date/Time Properties' set, it can also be set by 'Control Panel->Date/Time'. The showing can be enabled/disabled by '->Settings->Task and Start Memu'. Pic 2-7-6 and Pic 2-7-7.



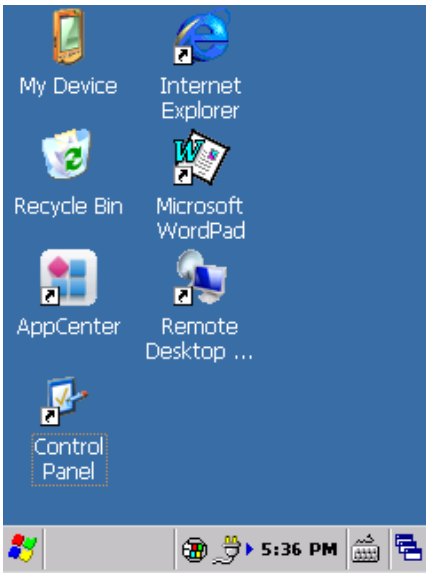
Pic 2-7-6



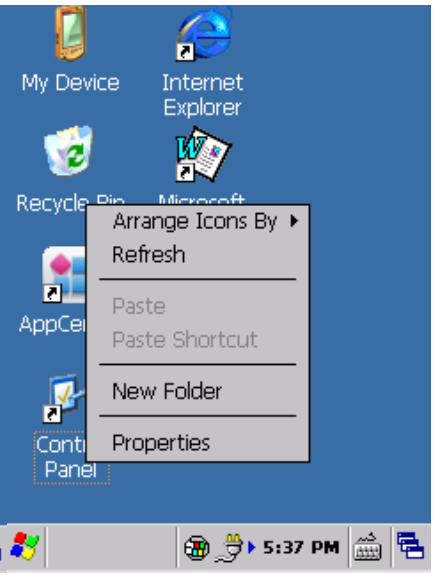
Pic 2-7-7

2.8 Desktop

The desktop displays the normal icons and shortcuts which we can select efficiently. Pic 2-8-1 and Pic 2-8-2



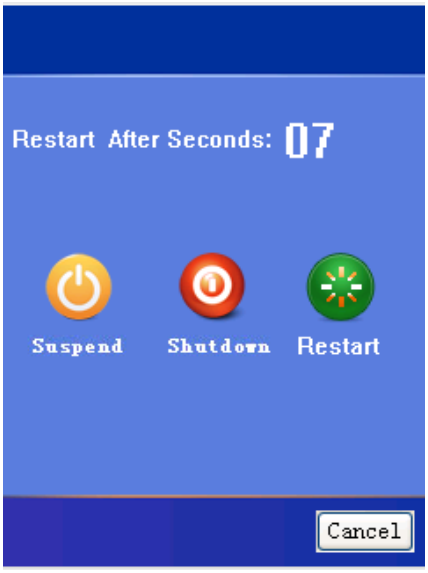
Pic 2-8-1



Pic 2-8-2

2.9 Restart

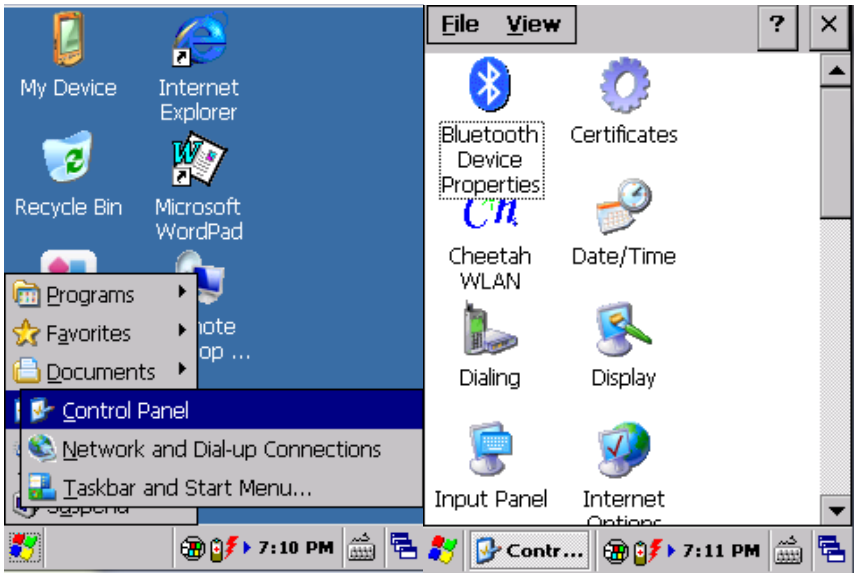
Press the power button  for 10 seconds, and the device would restart automatically as Pic 2-9-1



Pic 2-9-1

CHAPTER 3 System Setting

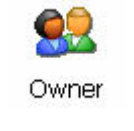
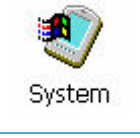
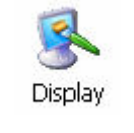
Click , and select 'Settings' to enter the interface of 'Control Panel.



Pic 3-1 Pic 3-2

The detailed setting applications are listed as follows:

Application	Description
Internet Options	Set internet options such as homepage, privacy, security etc.
PC Connection	Specify the method connecting with PC.
Stylus	Recalibrate the screen
Storage Manager	Storage management, including HDD and TF cards.
Power	View battery power and manage power schemes.

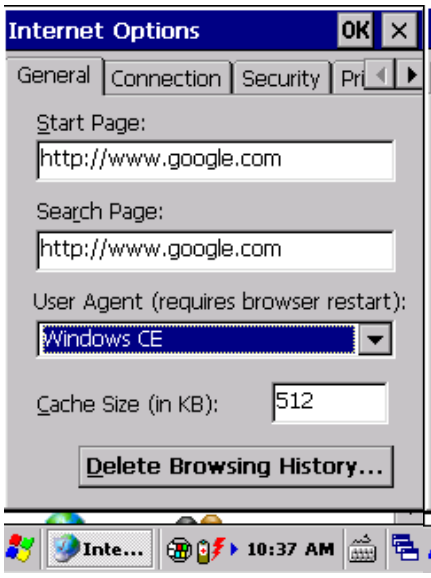
	Set keyboard properties.
	Set password for system
	Regional settings, customized regions, user interface/input language.
	Adjust current time, current date, and change time zone.
	Select and remove programs.
	Switch input method.
	View properties of mouse.
	Change the owner information
	Network and dial-up connections. Used for WiFi or GPRS connecting configuration.
	Adjust volume and sounds.
	Display system information, adjust memory and change device name.
	Adjust background, appearance and backlight.

 Dialing	Adjust dialing properties.
 Cheetah WLAN	WLAN setting. Configure wireless network.
 Certificates	Certificate information.
 USB Mode Switch	Switch the three USB connection modes including Storage Card For U Disk, Flash Dish For U Disk and Activesync

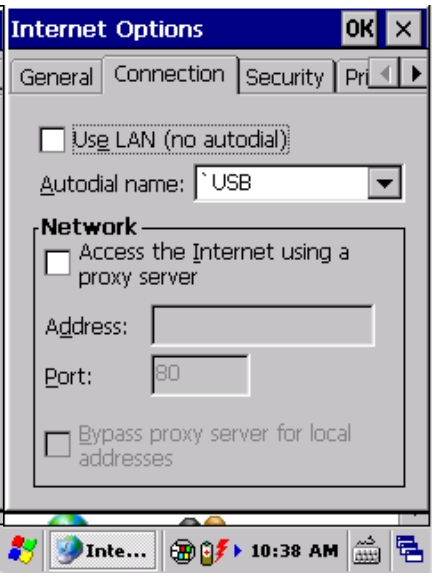
Note: Please do not modify the items not mentioned above unless being professional.

3.1 Internet

Internet settings including 'General/Connection/Security/Privacy/Advanced/Popups' can be set by 'Control Panel->Internet Options' as the follows :



Pic 3-1-1



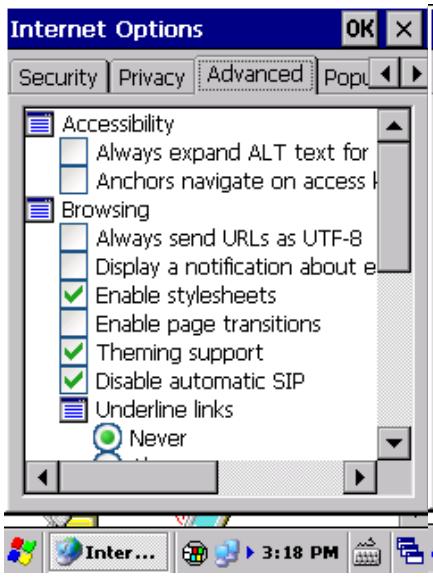
Pic 3-1-2



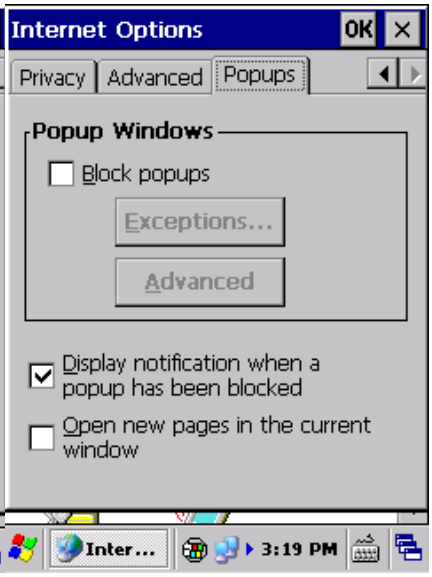
Pic 3-1-3



Pic 3-1-4



Pic 3-1-5



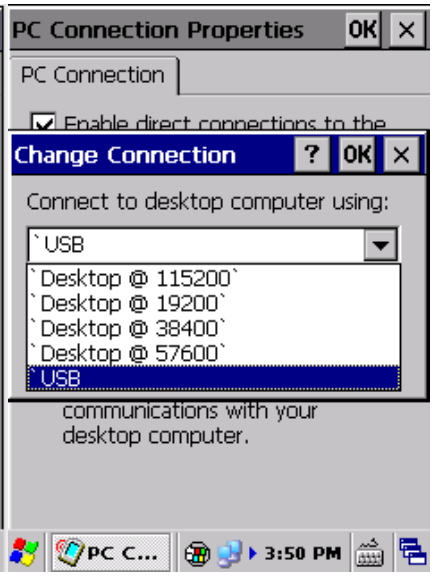
Pic 3-1-6

3.2 PC Connection

PC Connection Properties can be set by 'Control Panel->PC Connection' as Pic 3-2-1 and Pic 3-2-2:



Pic 3-2-1



Pic 3-2-2

3.3 Storage Manage

Storage Manager can be set by 'Control Panel->Storage Manager' as Pic 3-3-1 where the operations including formating and dismounting can be done:

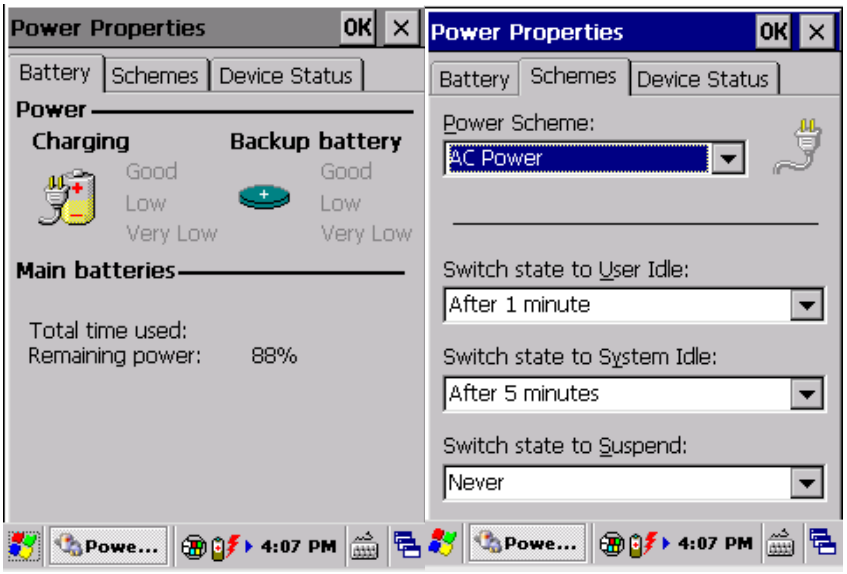


Pic 3-3-1

3.4 Power

Power properties cannot be set by 'Control Panel->Power'.

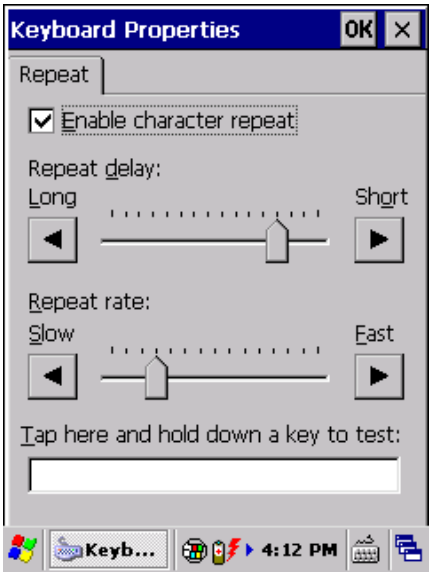
Power properties including 'Battery/Schemes/Device Status' can be checked and set as follows:



Pic 3-4-1 Pic 3-4-2

3.5 Keyboard

Keyboard Properties can be set by 'Control Panel->Keyboard' as Pic 3-5-1:

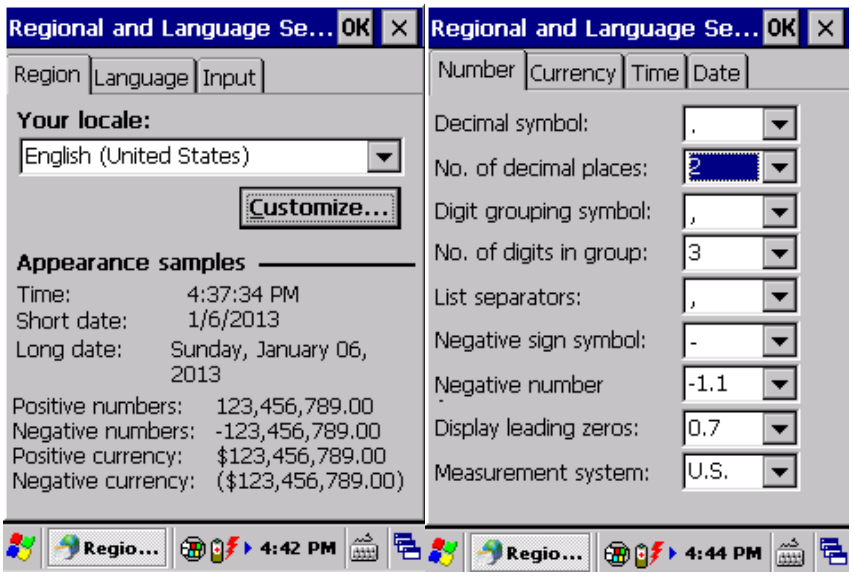


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Pic 3-5-1

3.6 Regional Settings

Regional and Language settings can be set by 'Control Panel->Regional Settings' as Pic 3-6-1.



Pic 3-6-1

Language (Pic 3-6-2) can be selected when the multiple languages are supported, but the default is recommended.



Pic 3-6-2

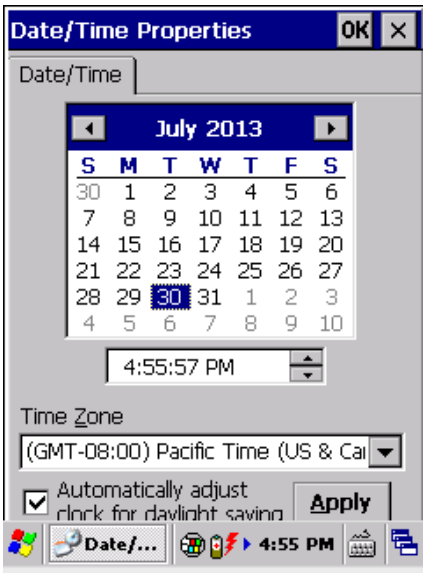
Input: the input language can be set as Pic 3-6-3 once they are installed in the OS as Pic 3-6-3:



Pic 3-6-3

3.7 Date/Time

Date/Time/Tim Zone can be set by 'Control Panel->Date/Time' as Pic 3-7-1.



Pic 3-7-1

3.8 Remove Programs

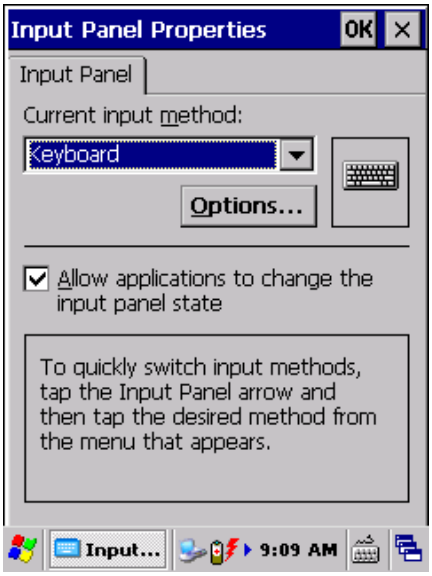
The installed programs can be removed by 'Control Panel->Remove Programs', the working principle is the same as PC. Pic 3-8-1



Pic 3-8-1

3.9 Input Panel

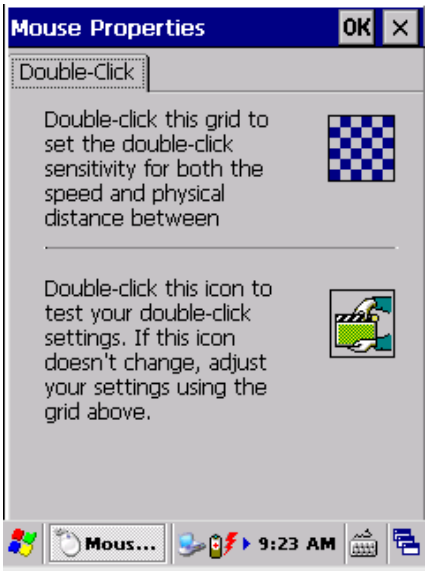
Input Panel including current input method can be set by 'Control Panel->Input Panel' as Pic 3-9-1;



Pic 3-9-1

3.10 Mouse

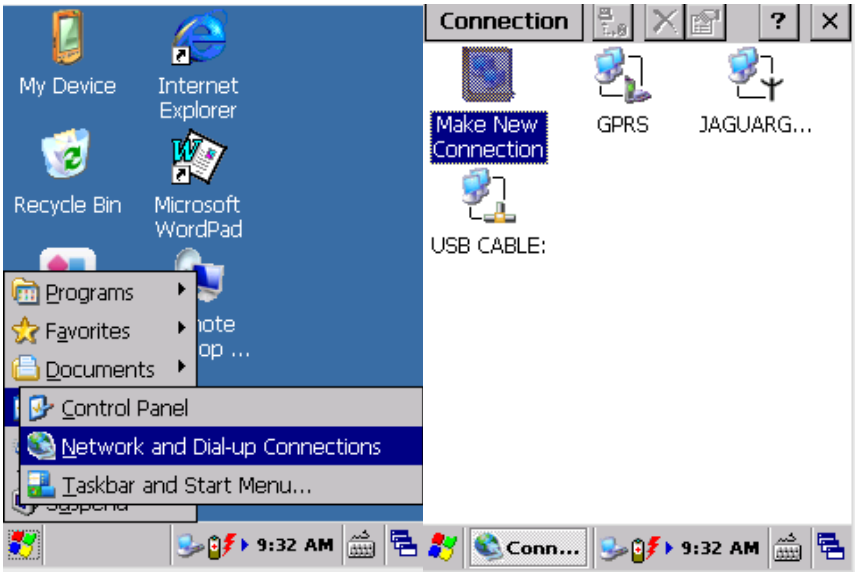
Mouse Properties including sensitiveness of double-click and physical distance can be set by 'Control Panel->Mouse' as Pic 3-10-1;



Pic 3-10-1

3.11 Network and Dial-up Connection

Network Properties can be set by 'Start->Settings->Network and Dial-up Connection' as Pic 3-11-1 and Pic 3-11-2;



Pic 3-11-1 Pic 3-11-2

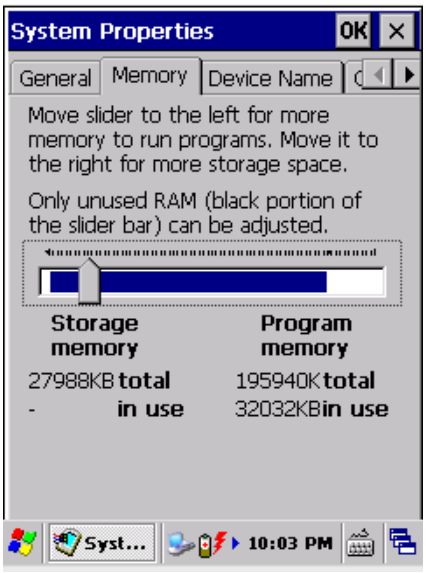
3.12 System

System Properties including 'General/Memory/Device Name/Copyrights' can be set by 'Control Panel->System' as Pic 3-12-1;



Pic 3-12-1

Memory: the memory using status can be viewed as Pic 3-12-2;



Pic 3-12-2

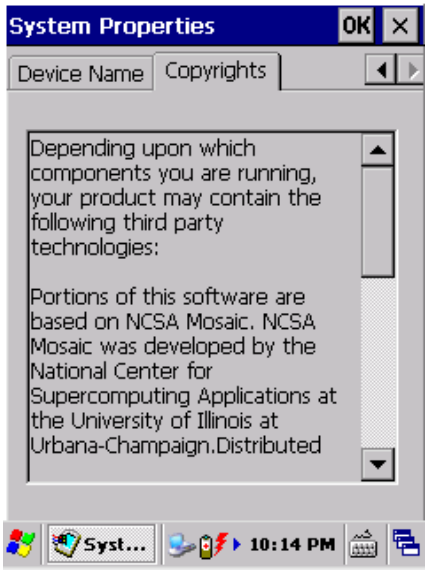
Note: the slider cannot moved since we are using ROM system otherwise we would get unpredictable error unless restarting the device.

Device Name: device name and device description can be modified as Pic 3-12-3;



Pic 3-12-3

Copyright: the detailed copyright can be viewed as Pic 3-12-4;



Pic 3-12-4

3.13 Display

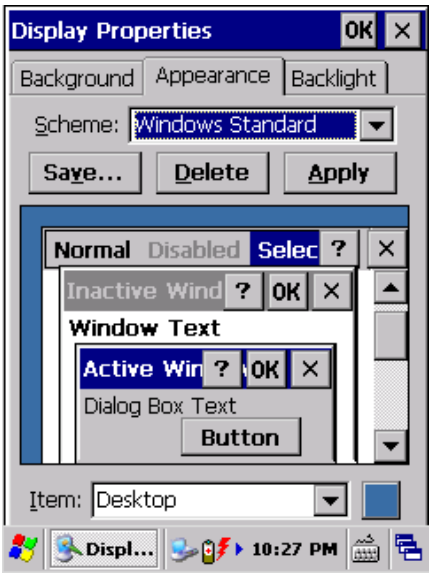
Display Properties including 'Background/Appearance/Backlight' can be set by 'Control Panel->Display';

Background: the background image can be set and customized as Pic 3-13-1;



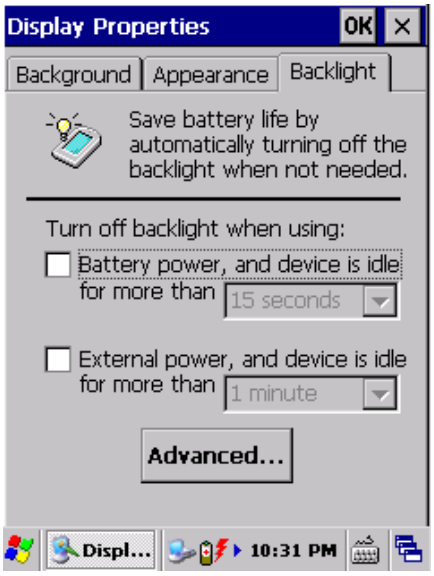
Pic 3-13-1

Appearance: the system appearance can be set as Pic 3-13-2;



Pic 3-13-2

Backlight: the backlight can be set and customized to save the battery life by setting the idle time as Pic 3-13-3;

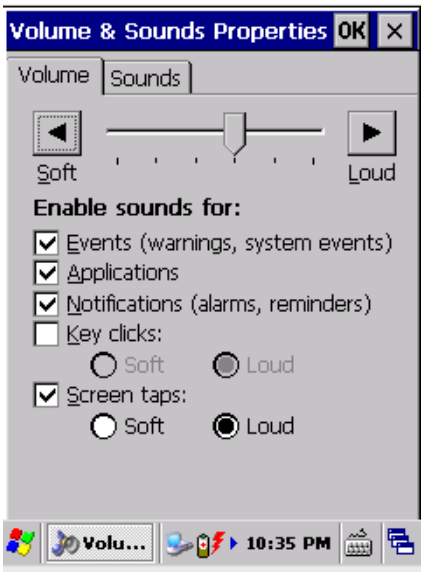


Pic 3-13-3

3.14 Volume&Sounds

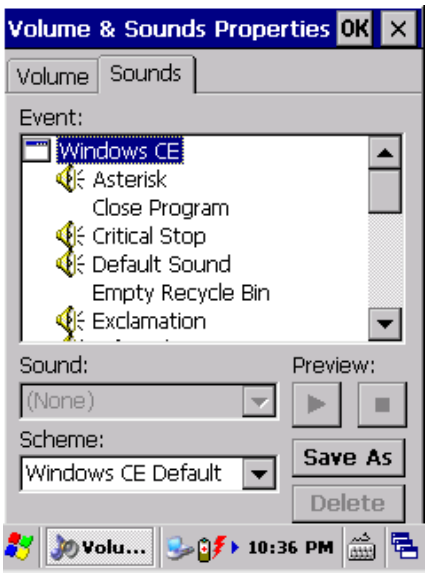
Volume&Sounds Properties can be set by 'Control Panel->Voluem&Sounds';

Volume: the volume can be set as Pic 3-14-1;



Pic 3-14-1

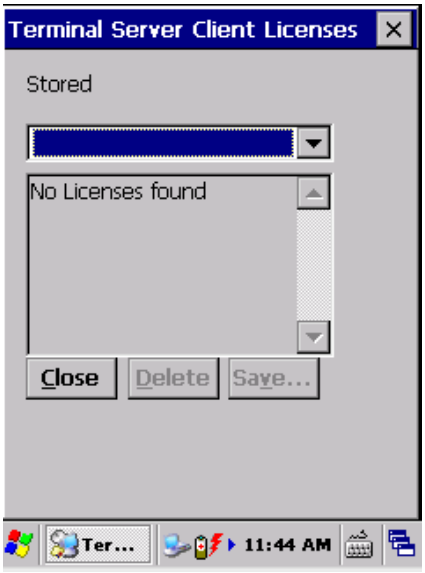
Sounds: different sound solution can be set as Pic 3-14-2;



Pic 3-14-2

3.15 Terminal Server Client Licenses

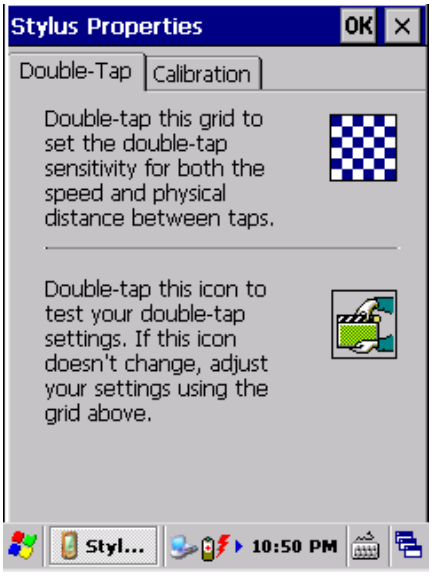
The local license can be managed by 'Control Panel->Terminal Server Client License' as Pic 3-15-1;



Pic 3-15-1

3.16 Stylus

Double-Tap: it is used for double-tap sensitivity setting and testing as Pic 3-16-1;



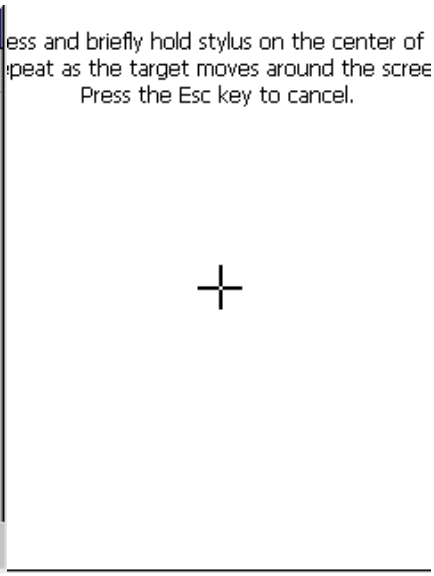
Pic 3-16-1

Calibration: it is used for touch screen calibration when the screen is not responding properly.

Click 'Recalibrate' and in the new interface, please operate as the introduction (5 times, from the middle to the four corners). Pic 3-16-2 and Pic 3-16-3



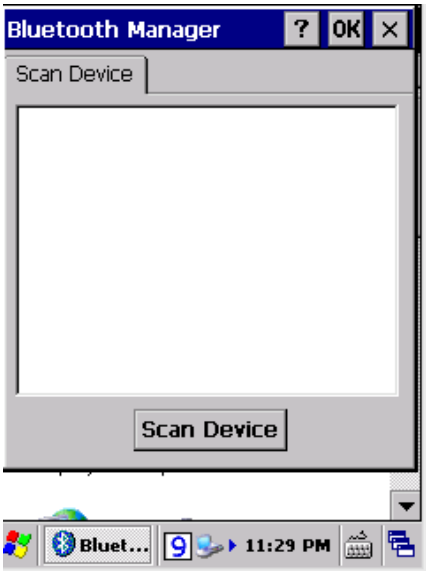
Pic 3-16-2



Pic 3-16-3

3.17 Bluetooth Device Properties

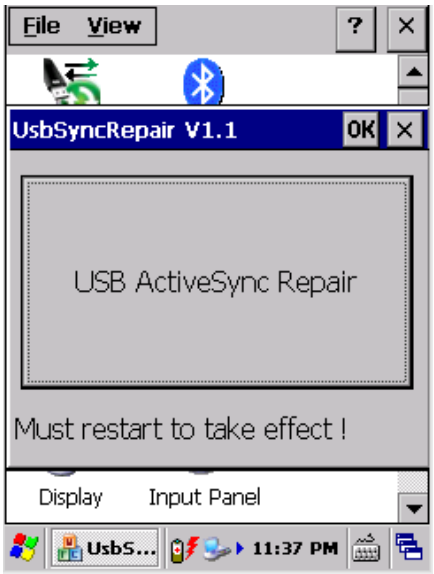
Bluetooth Device Properties including nearby Bluetooth devices can be scanned by 'Control Panel->Bluetooth Device Properties' as Pic 3-17-1;



Pic 3-17-1

3.18 ActiveSync Repair

Abnormal synchronization failure can be repaired by 'Control Panel-> ActiveSync Repair' as Pic 3-18-1;

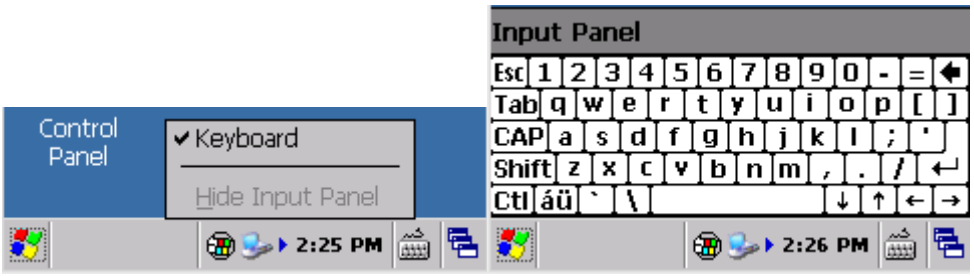


Pic 3-18-1

CHAPTER 4 Keyboard and Input Method

4.1 Soft Keyboard

The soft keyboard can be used to input the letters/numbers/symbols as Pic 4-1-1, the default is English;



Pic 4-1-1

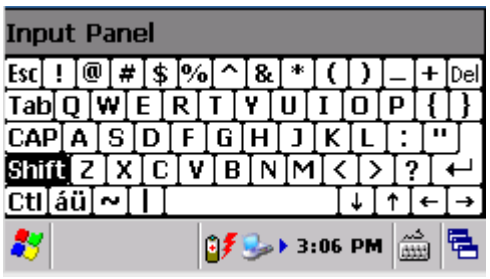
Two methods to input the uppercase:

1) Click the CAP of the soft keyboard to input the uppercase, and click CAP to change to the lowercase as Pic 4-1-2;

2) Click the Shift of the soft keyboard to input the uppercase, and it would change to lowercase automatically after inputting one letter as Pic 4-1-3;



Pic 4-1-2



Pic 4-1-3

For symbol inputting, please click the CAP of the soft keyboard and select the symbols to be inputted, then click CAP to go back to the normal status as Pic 4-1-2;

4.2 Input Methods

Multiple input methods are supported, but the default is English.

CHAPTER 5 Network Connection

5.1 WIFI Connection

1) Open 'AppCenter' on desktop , then run the application *'WIFI'* in 'AppCenter'; Pic 5.1-1
2) Click 'Load' on 'WLAN Loader' , then network icon will display on toolbar; Pic 5.1-2

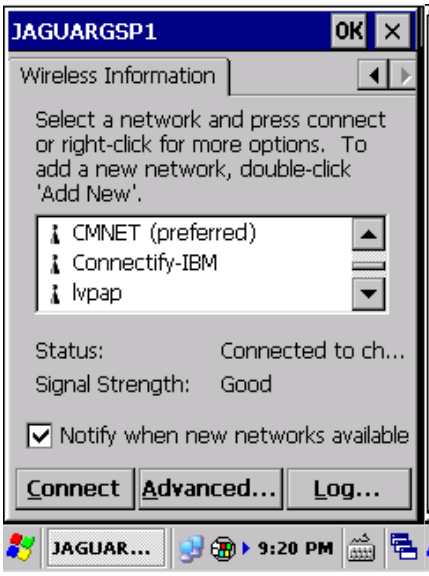


Pic 5-1-1

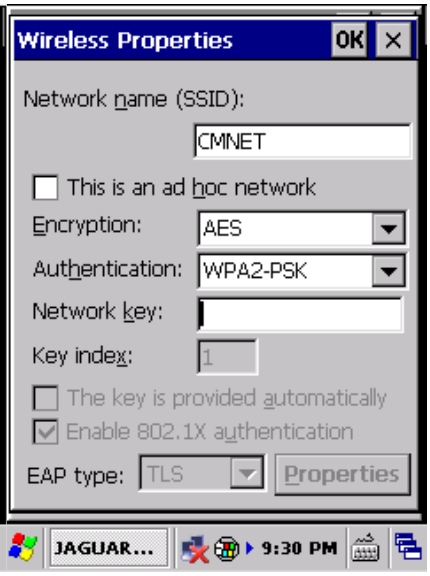


Pic 5-1-2

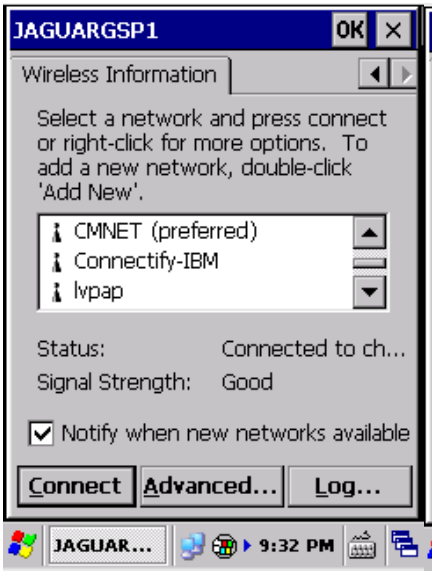
3) Double click the network icon, choose the router from 'Wireless Information', and then click 'Connect'; choose proper 'Encryption' and 'Authentication', and type password in 'Network Key', and then click 'OK'; Pic 5.1-3, Pic 5.1-4, Pic 5.1-5 and Pic 5.1-6



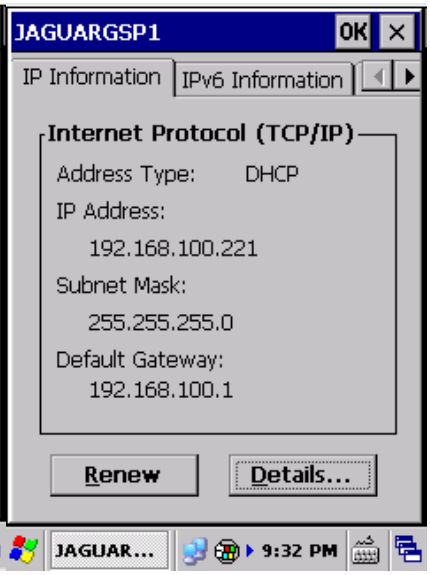
Pic 5-1-3



Pic 5-1-4



Pic 5-1-5



Pic 5-1-6

5.2 GPRS Dial-up Connection

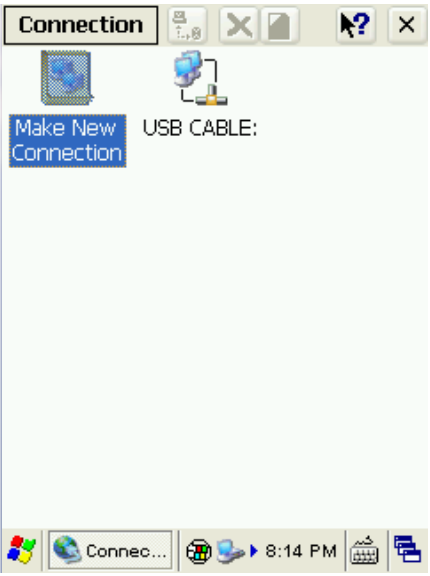
5.2.1 GPRS Configuration

Dial-up settings：

1) Click 'Start Menu'->' Settings'-> 'Network and Dial-up Connections', and then double click 'Make New Connection'. Pic 5.2.-1 and Pic 5.2-2

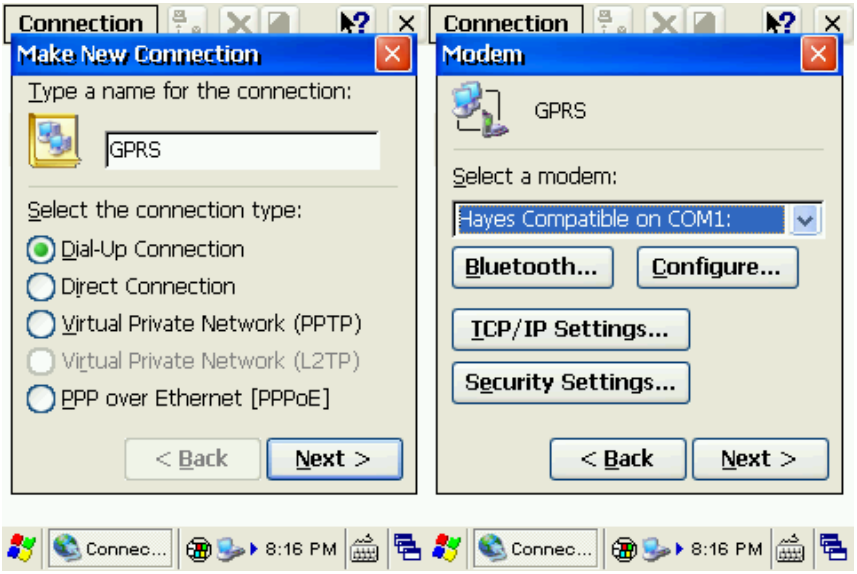


Pic 5.2-1



Pic 5.2-2

2) Input connection name 'GPRS' and then 'Next' ; click 'Configure' then 'Next'; Pic 5.2-3 and Pic 5.2-4

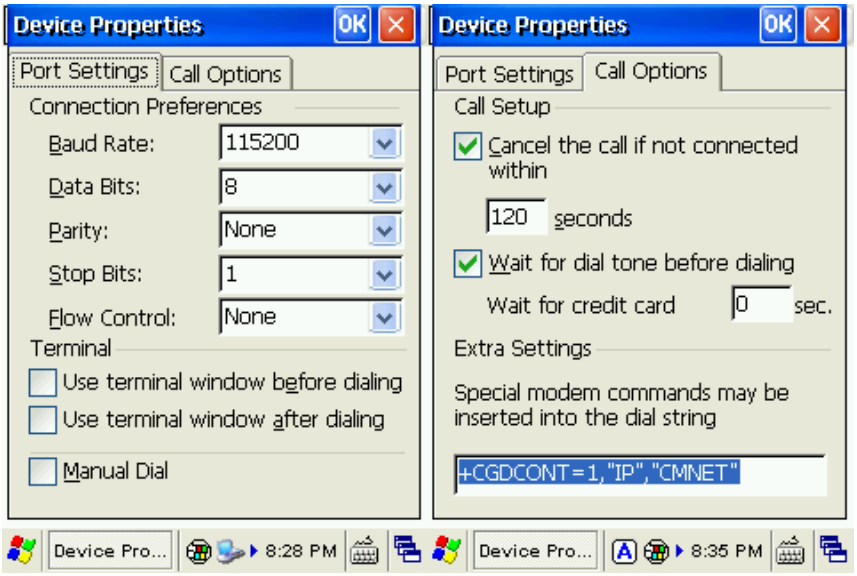


Pic 5.2-3 Pic 5.2-4

3) In 'Port Settings', set 'Connection Preferences' as below:

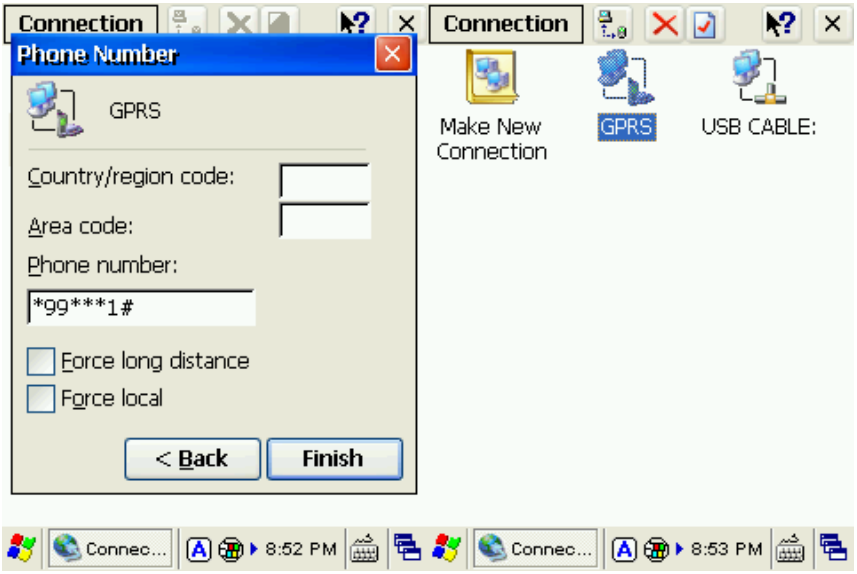
'Baud Rate': 115200; 'Data Bits': 8; 'Parity': None; 'Stop Bits': 1; 'Flow Control': None
Then click 'Call Options' to turn to another tab page;

4) Input '+CGDCONT=1,"IP","CMNET"' (input all blue characters including the commas and quotation marks) into 'Extra Settings', the 'CMNET' (which is short for China Mobile Network) should be replaced by your local 'GPRS APN' (Access Point Name); left other default, then click 'OK'; Pic 5.2-5 and Pic 5.2-6



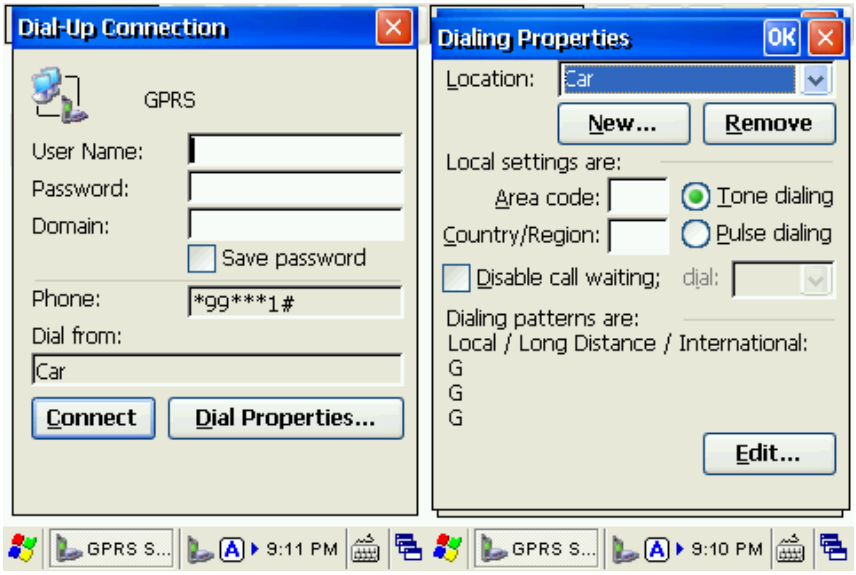
Pic 5.2-5 Pic 5.2-6

5) Click Next to Phone Number page, input the country/region code, area code and Phone number (*99***1#***)***, then click Finish; now you can see the GPRS connection icon; Pic 5.2-7 and Pic 5.2-8

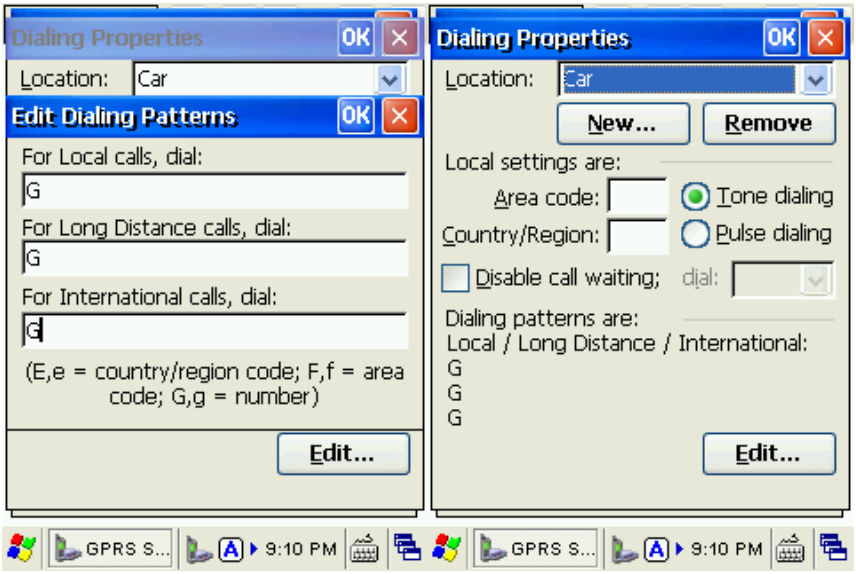


Pic 5.2-7 Pic 5.2-8

6) Double click the GPRS icon; in 'Dial-Up Connection' page, keep 'User Name', 'Password' and 'Domain' blank, and then click 'Dial Properties'; choose 'Location' as 'Car' and then click 'Edit'; Fill the 3 edit boxes all with letter 'G' and then 'OK'. Click 'OK' on 'Dialing Properties', and then back to desktop. Pic 5.2-9, Pic 5.2-10, Pic 5.2-11 and Pic 5.2-12



Pic 5.2-9 Pic 5.2-10



Pic 5.2-11 Pi 5.2-12

Note: During the process of our configurations, we use 'CMNET' as the reference, for users please input the local GPRS setting and dial-up information by contacting the local service provider.

5.2.2 GPRS Dial-up Connection

Please pay attention to the following points before dial up:

- The configurations are set properly;
- SIM card is installed properly as the followed image;
- The frequency of the SIM card is supported by the GPRS module;
- The SIM card is available and the GPRS function is activated;



5-2-11

CHAPTER 6 Synchronization with the PC and Updating OS

The handheld, can be visited for data previewing, copying and file cutting after installing the ActiveSync software successfully. The following introduces the detailed steps on how to install it:

6.1 Introductions on the ActiveSync

3 versions ActiveSync software for different OS (operating system):

- **ActiveSync4.5_OfficialRelease.msi**

Supports OS:

Windows Server 2003；Windows Server 2003 Service Pack 1；Windows Server 2003 Service Pack 2；Windows XP；Windows XP 64-bit；Windows XP Embedded；Windows XP Embedded Service Pack 1；Windows XP Embedded Service Pack 2；Windows XP for Itanium-based Systems Version 2003；Windows XP Home Edition；Windows XP Media Center Edition；Windows XP Professional 64-Bit Edition (Itanium)；Windows XP Professional 64-Bit Edition (Itanium) 2003；Windows XP Professional Edition；Windows XP Professional x64 Edition；Windows XP Service Pack 1；Windows XP Service Pack 2；Windows XP Starter Edition；Windows XP Tablet PC Edition

- **ActiveSync6.1_OfficialRelease-x64.exe**

Supports OS（64bit）:
Windows 7 Ultimate；Windows 7 Enterprise；Windows 7 Professional；Windows 7 Home Premium；Windows Vista Ultimate；Windows Vista Enterprise；Windows Vista Business；Windows Vista Home Premium；Windows Vista Home Basic；Windows Vista Server

- **ActiveSync6.1_OfficialRelease-x86.exe**

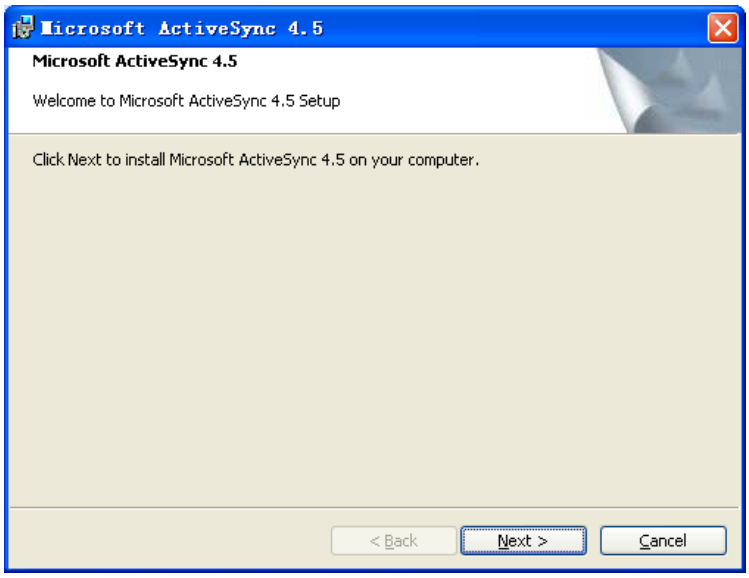
Supports OS（32bit）:

Windows 7 Ultimate；Windows 7 Enterprise；Windows 7 Professional；Windows 7 Home Premium；Windows 7 Starter；Windows Vista Ultimate；Windows Vista Enterprise；Windows Vista Business；Windows Vista Home Premium；Windows Vista Home Basic；Windows Vista Server

6.2 ActiveSync Installation

Choose the ActiveSync properly according to the OS of the PC, and we use ActiveSync4.5_OfficialRelease.msi as the reference,

1) Open the software, the following is the interface: Pic 6.2-1



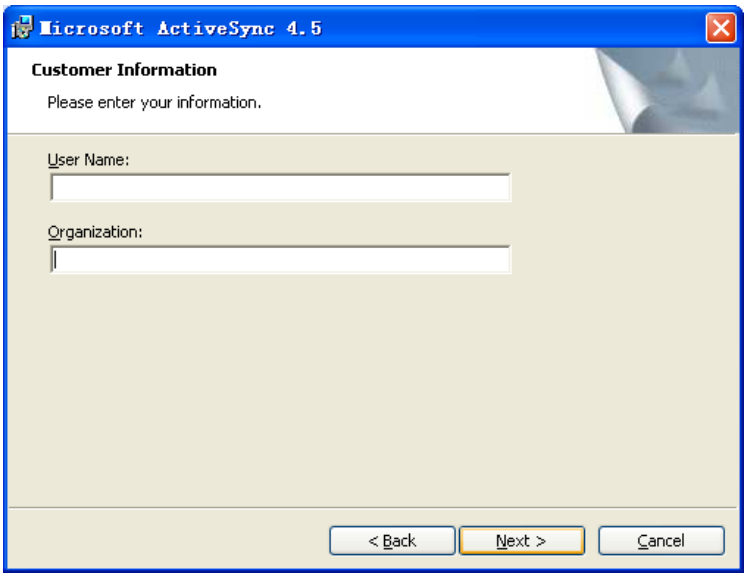
Pic 6.2-1

2) Choose 'Next' and we will enter the following interface: Pic 6.2-2



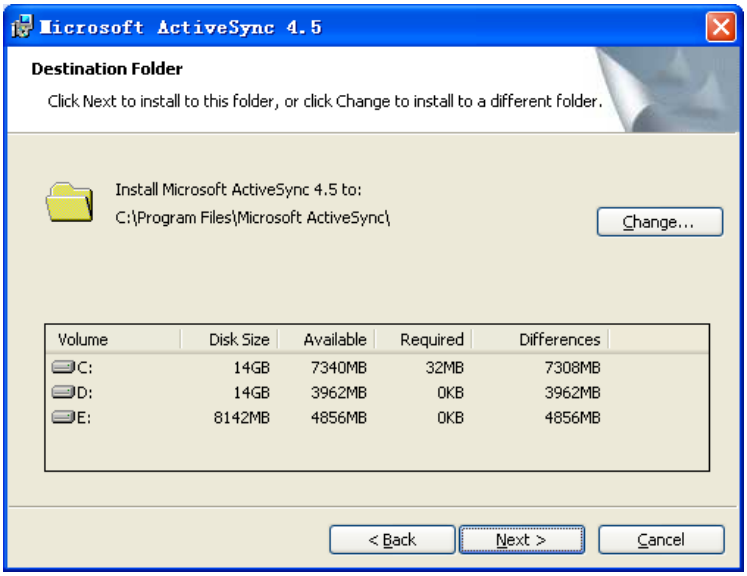
Pic 6.2-2

3) Then we choose 'I accept the terms in the license agreement', and click 'Next'; Pic 6.2-3



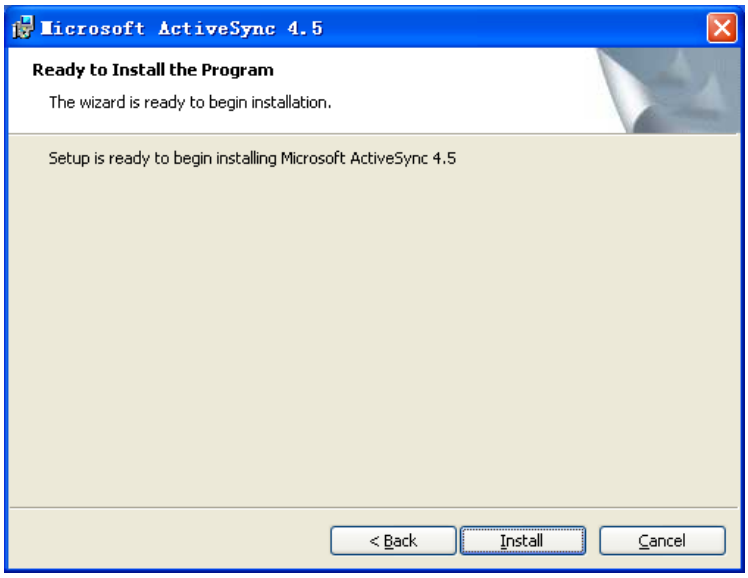
Pic 6.2-3

4) Input the user name and organization information and then click 'Next'; Pic 6.2-4



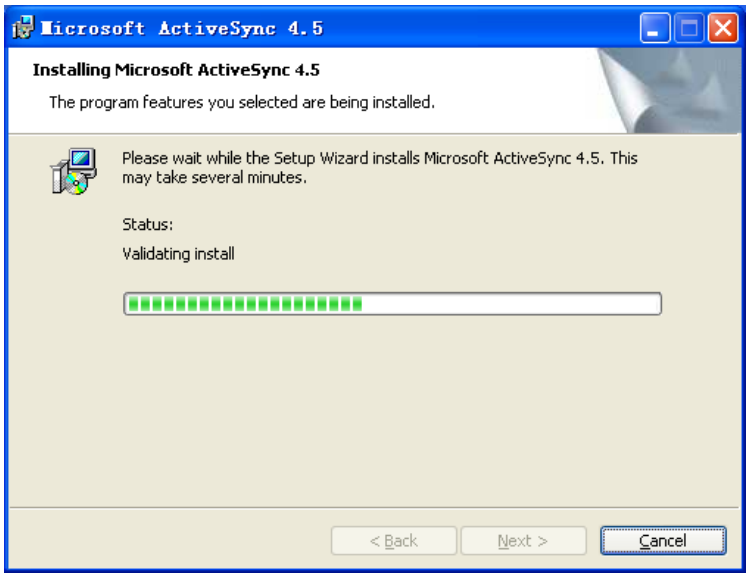
Pic 6.2-4

5) The default installation path is 'C:\Program Files\ Microsoft ActiveSync', we can click 'Change' to change the installation path; Pic 6.2-5



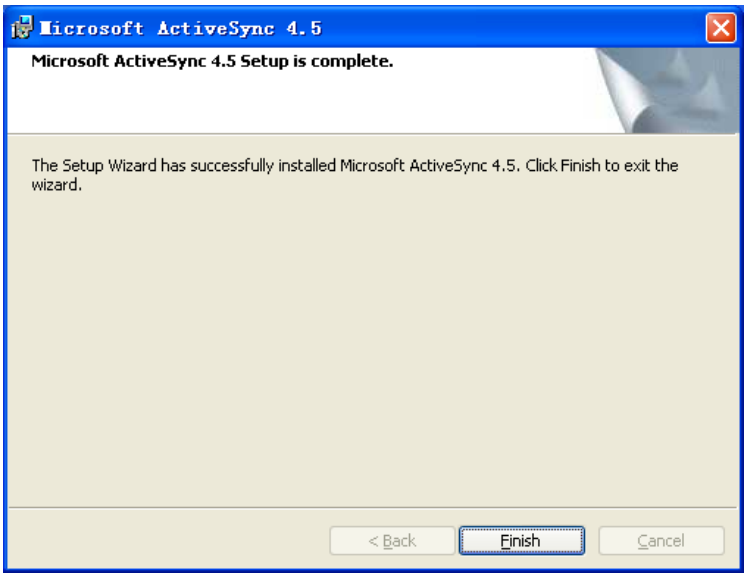
Pic 6.2-5

6) Confirm the operating is correct before click 'Install' to continue the process of installation; Pic 6.2-6



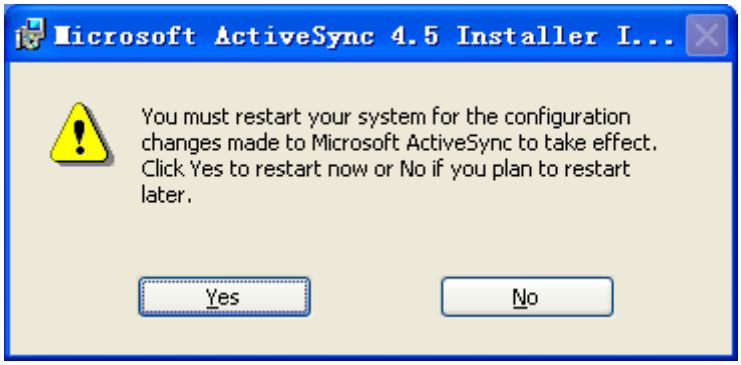
Pic 6.2-6

7) After the successful installation, we can go to the followed interface:



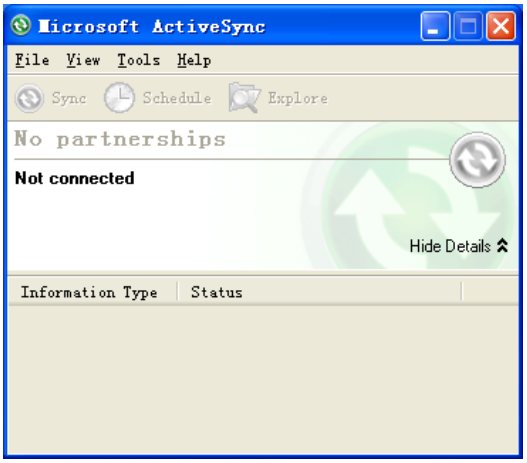
Pic 6.2-7

8) Click 'Finish' to finish the installation, and choose 'Yes' to reboot the PC; Pic 6.2-8



Pic 6.2-8

9) After the rebooting, we can find the icon  on the right corner of the PC, double click it to open the ActiveSync; Pic 6.2-9



Pic 6.2-9

6.3 Update Operating System

Before updating, please backup the data: copy the data to PC or other disk like SD card. All data and applications will be erased after updating.

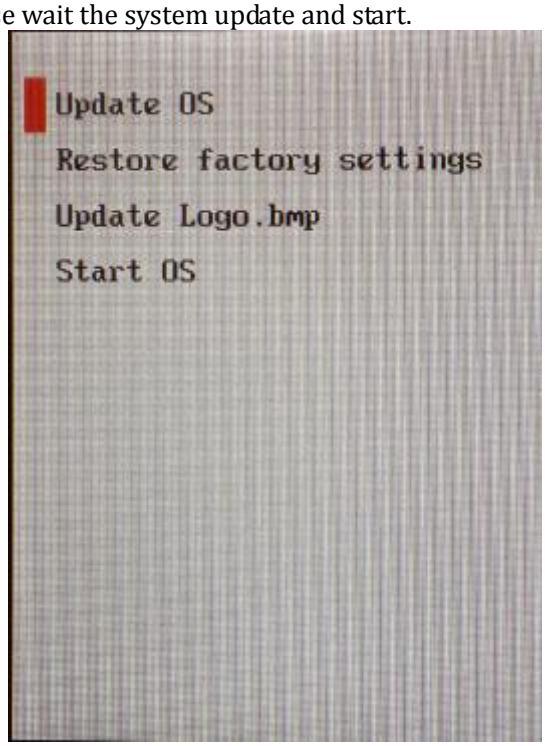
6.3.1 Copy System Files to SD Card

1) Format the SD card;

*Note: Format the card. Do not choose **fast format**. Choose the **File System** as **FAT32**.*
Tip: For the TF card installed in the device by default when being purchased from us, the step has been done before
2) Copy the update files into the SD card;
3) Install SD card to the device.

6.3.2 Update OS for Windows CE

After finishing steps above, restart the device, and then press ***the left button*** as soon as possible; then you will see it as Figure6-3-1; choose ***Update OS***, then press the yellow button on keyboard; then please wait the system update and start.



Pic 6.3-1

6.4 Restore Factory Settings

Before updating, please backup the data: copy the data to PC or other disk like SD card. All data and applications will be erased after updating.

After finishing steps above, restart the device, and then press ***the left button*** as soon as possible; then you will see it as Pic 6-3-1; choose ***Restore factory settings***, then press the yellow button on keyboard; then please wait the system restore and start.
If you choose ***Start OS***, the system will start normally.

6.5 Update Logo.bmp

Before customization, please the image with the format of bmp to TF card, and the maximum

size is 240x320.

Then restart the device and press ***the left button***  as soon as possible; then you will see it as Pic 6-3-1; choose ***Update Logo.bmp***, then press the yellow button on keyboard; then please wait the system restore and start.

CHAPTER 7 Functional Utilization

7.1 Barcode

The barcode scan engine is mounted at the top of the device, and it should be operated properly when scanning. Pic 7-1-1, Pic 7-1-2 and Pic 7-1-3。

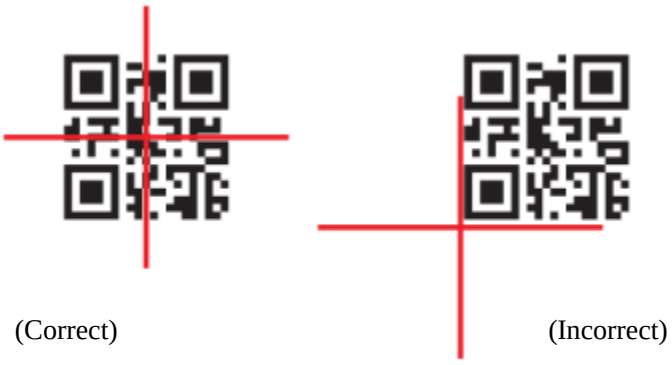


Pic 7-1-1



(Correct) (Incorrect)

Pic 7-1-2 1D Barcode Scanning



(Correct) (Incorrect)

Pic 7-1-3

7.2 RFID

The RFID sensing zone is on the back of the device, and the tags should be put in the sensing zone before reading correctly. Pic 7-2-1



Pic 7-2-1

High Frequency (13.56MHz)

Operating Frequency: 13.56HMZ
Protocol: ISO14443A/B, ISO15693;
Types of cards: HF S50, S70 and ultralight

Ultra High Frequency (840~960MHz**)**

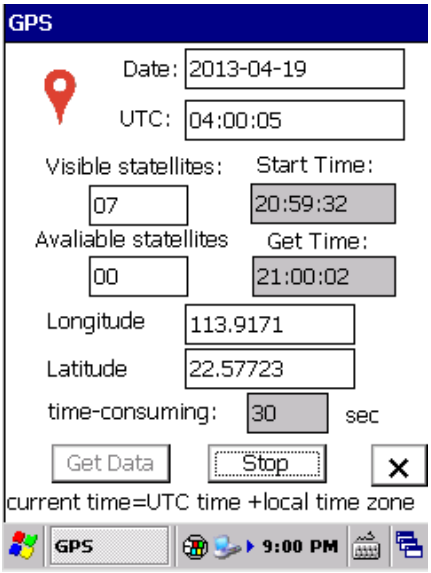


Pic 7-2-2

1) Protocol: EPC, GEN2/ISO 18000-6C
2) Operating Frequency: 840~960MHz
   - China Standard 920-925MHz;
   - China Standard 840-845MHz;
   - ETSI 865-868MHz;
   - Customization 915MHz;.
3) Power: 10~30dBm, and 24/25 dBm is recommended, the higher power, the higher battery consumption;
4) Antenna Gain: 3dBi;
5) Reading/Writing Distance: the actual distance depends on multiple elements including the tags, the using environment, the working frequency, and the power.

7.3 GPS

The GPS module allows to locate the dynamic position including longitude/latitude data of the device. It is recommended to use outdoor. Pic 7-3-1



Pic 7-3-1

7.4 Camera

The camera is 5 mega pixels and supports max resolution 2592*1944.



Camera

Run ***Camera*** from ***AppCenter***, select the resolution needed, default resolution is 640*480; then click ***Preview*** to preview (Pic 7-4-1), and then click ***Photo*** take photo (Pic 7-4-2). The photos will be auto saved to My Device/Flash Disk/Photos automatically.



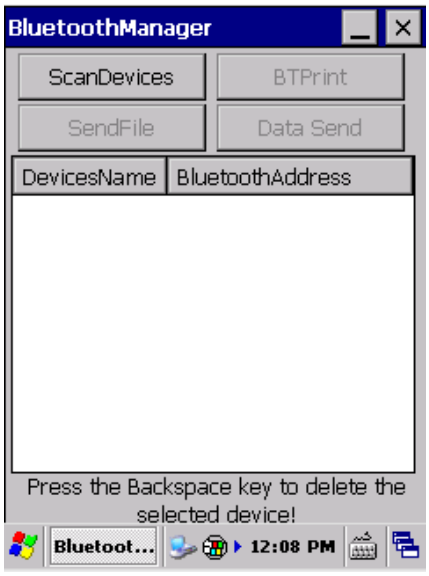
Pic 7-4-1



Pic 7-4-2

7.5 Bluetooth

The device is using Bluetooth 2.0. Date sending/printing and file sending are supported after being connected successfully. Pic 7-5-1


BluetoothManager
ScanDevices
BTPrint
SendFile
Data Send
DevicesName
BluetoothAddress
Press the Backspace key to delete the selected device!
Bluetoot...
12:08 PM

Pic 7-5-1

CHAPTER 8 Maintenance

8.1 Equipment and System Issues

Table 8-1 Equipment and System Issues

Issues	Solutions
Device can't start	• Ensure the battery is correctly placed • Change another piece of fully-charged battery. • Take off the battery and place again.
Touch-screen doesn't work	• Clean the touch screen. • Recalibrate by the calibration procedure. • Restart the device
Screen fails to display	• Check if the device is in standby mode. • Restart the device. • Replace with a fully-charged battery.
Keyboard doesn't work	• Check if the device is in standby status. • Restart the device. • Replace with a fully-charged battery.
Battery can't be recharged	• Check if the adapter is damaged. • Check if the USB cable is damaged. • Check if the adapter is plugged into the socket (220V). • Check if the adapter is plugged firmly.

8.2 Scanning Issues

Table 8-2 Scanning Issues

Issues	Solutions
Press "scan" button but no action	• Check if the scanner head is damaged. • Check if the program is correct (please refer to DEMO for specific codes). • Replace with fully-charged battery.
No data collected after scanning	• Check if the scanner head is damaged. • Check if the program is correct (please refer to DEMO for specific codes). • Check if the barcode is damaged. • Make sure it's in effective operating/scanning distance/range. • Make sure the barcode to be scanned is identifiable by the device. • Check if the scanning window is covered with dusts.

	• Replace with fully-charged battery.

8.3 RFID Issues

Table 8-3 RFID Issues

Issues	Solutions
RFID tag can't be identified	• Ensure the RFID module in the handheld terminal is compatible with the tags. • Ensure the program is correct (please refer to DEMO) • Ensure the tag being scanned is within the RFID sensing area

8.4 Network and Communication Issues

Table 8-4 Network and Communication Issues

Issues	Solutions
Can't be recognized after USB is connected	• Ensure USB cable is plugged. • Ensure USB cable is not damaged. • Restart the device. • Pull out and reconnect the USB cable. • Check if Microsoft ActiveSync has been installed properly (please refer the Chapter 7) • Ensure connection to PC is correct
WIFI communication error	• Ensure the program is correct (Please refer to DEMO). • Ensure the setting is correct (please refer to 5.1) • Ensure the accessories come with WIFI connection joint, which is in effective transmission distance.

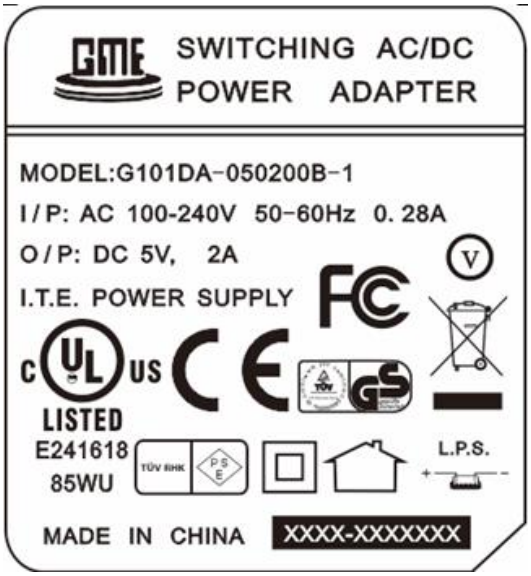
8.5 Others

Issues	Solutions
Activeysycn Installation Failure	• Disconnect the connection between the device with the PC when installing the Activesync software; • Install the Activesync software correctly based on the environment PC.
SDK Installation Failure	• Pay attention to the item of Documentation when installing;
System Updating Failure	• Use Windows Xp to format the SD card, and select 'FAT32', also please do not choose 'Quick Format'

CHAPTER 9 AC Adapter & Battery Safety

9.1 Switching AC/DC Power Adapter Specification

Input: AC 100~240V, 50~60Hz, 0.28A
Output: DC 5V, 2A
Label: refer to the Pic 9-1.



Pic 9-1 AC Adapter Label

9.2 Battery Safety Guidelines

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non-commercial environment.
- Follow battery usage, storage, and charging guidelines found in the user's guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the mobile device battery, the battery and charger temperatures must be between +32 F and +113 F (0 and +45 C).
- Do not use incompatible batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or other hazard. If you have any questions about the compatibility of a battery or a charger, contact Chainway technical support.
- For devices that utilize a USB port as a charging source, the device shall only be connected to products that bear the USB-IF logo or have completed the USB-IF compliance program.
- To enable authentication of an approved battery, as required by IEEE1725 clause 10.2.1, all batteries will carry a Chainway hologram. Do not fit any battery without checking it has the

- Chainway authentication hologram.
- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- Severe impact from dropping any battery-operated device on a hard surface could cause the battery to overheat.
- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Do not leave or store the equipment in or near areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source. Do not place battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to promptly dispose of used re-chargeable batteries.
- Do not dispose of batteries in fire.
- Seek medical advice immediately if a battery has been swallowed.
- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.
- If you suspect damage to your equipment or battery, contact Chainway to arrange for inspection.

Appendix 1 Code Types of 1D Barcode Scanner

The 1D barcode scanner can set parameters by scanning specific ***Function Barcodes***.
Operation Steps: aim the scanner at a function barcode; scan it; the laser will quickly disappear if succeed, which shows that setting is successful.

A1.1 Supported Code Types

Appendix Table 1

Enable	Disable	
Code 39	Codabar	IATA 2 of 5
Code 128	Discrete 2 of 5	UPC A with 2 Supps.
Interleaved 2 of 5	Code 93	UPC A with 5 Supps.
UPC A	MSI	UPC E0
EAN 8	Trioptic Code 39	UPC E0 with 2 Supps.
EAN 13	Bookland EAN	UPC E0 with 5 Supps.
EAN 128	Code 11	EAC 13 with 2 Supps.
UPC E	Chinese 2 of 5	EAN 13 with 5 Supps.
ISBT 128	UPC E1	UPC E1 with 2 Supps.
	RSS-Limited	UPC E1 with 5 Supps.
	RSS-14	Coupon Code
	RSS-Expanded	

*Note: the types enable / disable by default can be switched by scanning corresponding function barcodes in **Appendix Table 2**.*

A1.2 Transmit Code Type Character



Symbol Code ID Character
(0x02)
Enable



***None**
(0x00)
Disable

If this function is enabled, scanner will recognize code type when scanning a barcode.

A1.3 Enable / Disable Barcodes

Appendix Table 2

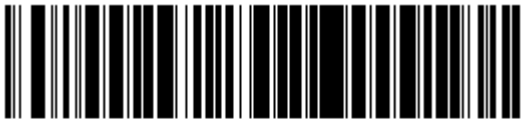
Type		Function Barcodes	Sample Barcodes
UPC-A	Enable	*Enable UPC-A	
	Disable	Disable UPC-A	
UPC-E	Enable	*Enable UPC-E	
	Disable	Disable UPC-E	
UPC-E1	Enable	Enable UPC-E1	
	Disable	*Disable UPC-E1	
EAN-8	Enable	*Enable EAN-8	

	Disable	Disable EAN-8	
EAN-13	Enable	*Enable EAN-13	
	Disable	Disable EAN-13	
Bookland EAN	Enable	Enable Bookland EAN	
	Disable	*Disable Bookland EAN	
Code 128	Enable	*Enable Code 128	
	Disable	Disable Code 128	
UCC/EAN 128	Enable	*Enable UCC/EAN-128	

<table>
<tr><td></td><td>Disable</td><td>
Disable UCC/EAN-128</td><td></td></tr>
<tr><td rowspan="2">ISBT 128</td><td>Enable</td><td>
*Enable ISBT 128</td><td rowspan="2"></td></tr>
<tr><td>Disable</td><td>
Disable ISBT 128</td></tr>
<tr><td rowspan="3">Code 39</td><td>Enable</td><td>
*Enable Code 39</td><td rowspan="2">
AB$+%-12</td></tr>
<tr><td>Disable</td><td>
Disable Code 39</td></tr>
<tr><td colspan="3">Scanning this barcode to enable for any length Code 39

Code 39 - Any Length</td></tr>
<tr><td>Trioptic Code 39</td><td>Enable</td><td>
Enable Trioptic Code 39</td><td></td></tr>
</table>

	Disable	*Disable Trioptic Code 39	
Code 39 Full ASCII	Enable	Enable Code 39 Full ASCII	 AaB-12 Trioptic Code 39 and Code 39 Full ASCII cannot be enabled simultaneously. If an error beep sounds when enabling Trioptic Code 39, disable Code 39 Full ASCII and try again.
	Disable	*Disable Code 39 Full ASCII	
Code 93	Enable	Enable Code 93	 AB- /$+2%3
	Disable	*Disable Code 93	
	Scanning this barcode to enable for any length Code  Code 93 - Any Length		
Code 11	Enable	Enable Code 11	 0123-456789
	Disable	*Disable Code 11	

	Scanning this barcode to enable for any length Code 11  Code 11 - Any Length		
Interleaved 2 of 5	Enable	 *Enable Interleaved 2 of 5	 1234567890
	Disable	 Disable Interleaved 2 of 5	
	Scanning this barcode to enable for any length I 2 of 5  I 2 of 5 - Any Length		
Discrete 2 of 5	Enable	 Enable Discrete 2 of 5	
	Disable	 *Disable Discrete 2 of 5	
	Scanning this barcode to enable for any length D 2 of 5  D 2 of 5 - Any Length		
Chinese 2 of 5	Enable	 Enable Chinese 2 of 5	

	Disable	*Disable Chinese 2 of 5	
Codabar	Enable	Enable Codabar	 A40156B
	Disable	*Disable Codabar	
	Scanning this barcode to enable for any length Codabar  Codabar - Any Length		
MSI	Enable	Enable MSI	 0123456782
	Disable	*Disable MSI	
	Scanning this barcode to enable for any length MSI  MSI - Any Length		
RSS-14	Enable	Enable RSS-14	

	Disable	 *Disable RSS-14	
RSS-Limited	Enable	 Enable RSS-Limited	
	Disable	 *Disable RSS-Limited	
RSS-Expanded	Enable	 Enable RSS-Expanded	
	Disable	 *Disable RSS-Expanded	