

Sinocan Mobile POS

MC-6000 User's Guide



Version 1.0

Notice

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The permissible level (Class B) of electromagnetic waves

The product was tested for electromagnetic waves and was rated as class B, which means it is safe to use anywhere.

Caution

For safe and use of this product, please read this guide carefully. Please keep the following instructions in mind.

Caution during installation

- Keep objects with magnetic properties away from this product.
- Check the operational voltage before plugging the power cord into the outlet.
- Use the adapter that is included with the product and do not place heavy things on it.
- To prevent electric shock and fire, do not use an outlet that is damaged or that is not standard.
- Be sure that the total voltage of all the devices connected to the adapter does not exceed the number specified on it.

Caution during use

- Please make sure that no liquid enters into the product. This can cause damage to the product, fire, or electric shock.
- Unplug the power before cleaning this product. Please wipe with tissues or fabrics that are sprayed with a PC cleaner and do not directly spray the product.

- When this product will be idle for an extended period of time, unplug the adapter to prevent damage stemming from power surges.
- When unplugging the power cord, pull by the plug, not the wire.
- Do not place this product in a place where the temperature is over 60oC (140 oF) and ventilation is poor. This may damage the product.
- The optimum temperature for the operation of this product is 35oC, so keep electric heaters away from this product.
- Take precautions to avoid losing data stored on the Flash of this Mobile POS and back-up important data at all times in case of an unforeseen accident.
- Do not attempt to disassemble this product. When this Mobile POS needs repairs or updates, request warranty service and have a service person do the work.
- Should the following situations occur, contact one of our quality assurance divisions.
- When liquid gets into the product or when it is exposed to humidity for an extended time
- When this Mobile POS does not operate well even though you are following the instructions
- When this product has fallen and broken or become cracked during delivery.

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Chapter 1. Introduction

Congratulations on your purchase of the Sinocan Mobile POS MC-6000.

Product features

Sinocan MC-6000 is the All-in-One mobile computer with all the features you need. It has been widely used in such areas as dish order, mobile payment, PDA etc. It is simple, lowcost. Both hardware and software customization is available.

1. Areas of application:

Spot payment
order and reservation
Route accounting
On-board ticketing
Parking enforcement
On-the-spot billing
In-Flight sales

2. Special equipment:

Built-in speaker
Thermal printer
Wireless LAN
MAR Card reader
polymer Lithium battery

3. Product advantages:

All-in-one Portable
Versatile communication features
Expandability
Light&Durable
Compact size

Fanless operation, Flash-based storage
Hot-swappable lithium battery

Unpacking

This product is packaged with cardboard paper for safe delivery. If there is a defect or missing part, contact the agency where you purchased the product.

The box should contain the following items.

- 1x 2.8" TFT Mobile POS main body
- 1 x Black package
- 1 x Switching power adapter
- 1 x Wireless Compact Flash Card
- 5 x Printer papers
- 1 x Lithium battery
- 1 x USB cord
- 1 x Sinocan Master CD (with the SDK files for backup)



Pic 1. The items of unit

Chapter 2. About the Mobile POS

This chapter will briefly outline the mobile pos exterior, buttons, LED indicator devices, and additional input/output connection devices.



Pic. 2 The front of the main body



Pic 3. The Right side



Pic 4. The Left Side



Pic 5. The Bottom

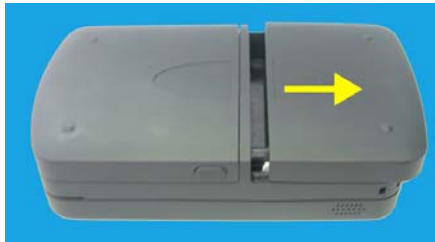
Chapter 3. Starting up the Mobile POS for the first time

In this chapter, we will give a brief explanation about the use of the machine at the first time

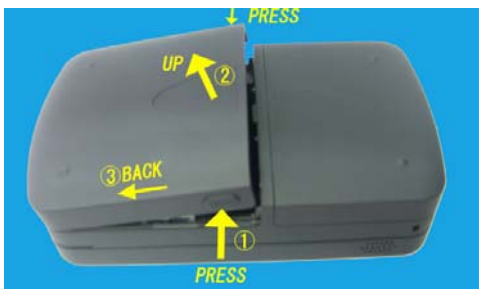
Install Wireless LAN



Install Battery



Install Print Paper



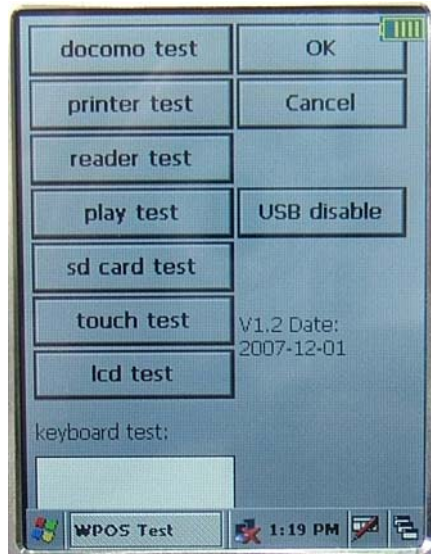
Charge the battery

After the Battery is fully drained up, please charge it for 12 hours for the first time.

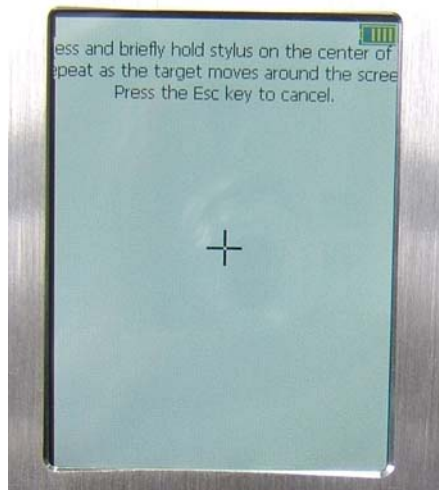
Chapter 4. Using the Mobile POS

In this chapter, we will give a brief explanation about the use of the machine

To Use WPOS_Test Program

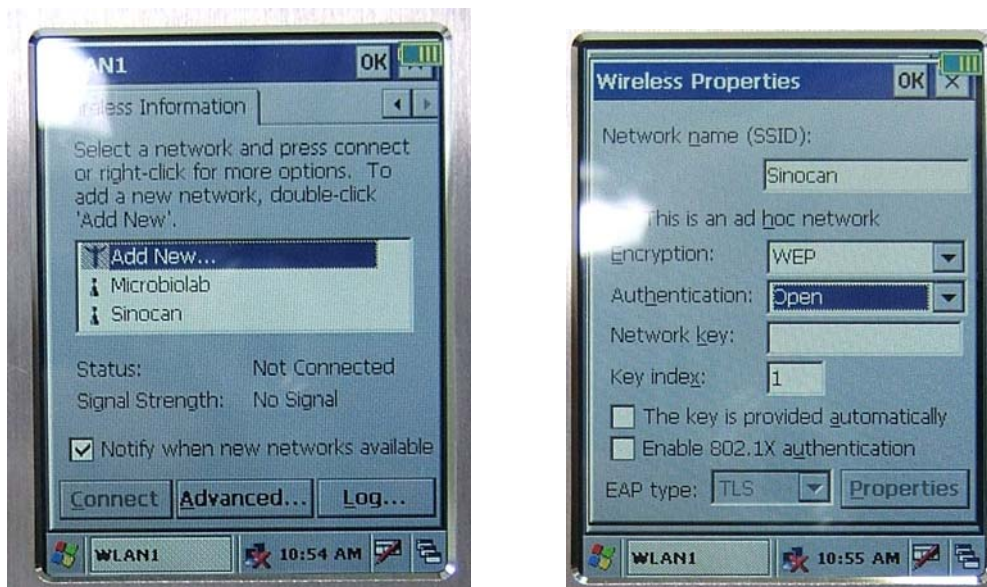


- Test FEED without print paper: In the situation of not installed the printing paper in advance, selects the printer test button, this time, the machine should spring a window, prompts the printing paper spend.
- Test FEED with print paper: In the situation of installed the printing paper in advance, selects the printer test button, and the press FEED button, this time, the print paper should walk smooth.
- Test PRINT sample: In the situation of installed the printing paper in advance, selects the printer test button, and the press PRINT button, this time, the print paper should walk smooth, and the text should clearly, no missing
- Test MSR: click 'reader test', then click 'open', brush the card.
- Test Audio: click 'play test', the speaker should play some voice.
- Test SD Card
- Test Touch Screen: look at the picture.



- Test LCD Panel: Click 'LCD TEST', It should appear a colorful interface.
- Test Key-Pad: click the blank frame, press the key one by one.

To Set up and Test Wireless LAN



To Connect to PC

Install Active Sync v4.5

Setup the software in the Sinocan attached CD step by step.

Set up Mobile POS

Before using Mobile POS, please entry Nandflash, open "WPOS_test", click the button "USB disable", after this button change to "USB enable", open the USB port. Then the software ActiveSync can be used normally. More detail please goto

<http://www.microsoft.com/windowsmobile/en-us/help/synchronize/activesync45.msp#download>



Chapter 5. Applications

1. wpos printer demo source code and reader

=====WCE APPLICATION : PrinterTest=====

AppWizard has created this PrinterTest application for you.

This file contains a summary of what you will find in each of the files that make up your PrinterTest application.

PrinterTest.cpp

This is the main application source file.

PrinterTest.pbp

This file (the project file) contains information at the project level and is used to build a single project or subproject. Other users can share the project (.pbp) file, but they should export the makefiles locally.

////////////////////////////////////

AppWizard has created the following resources:

PrinterTest.rc

This is a listing of all of the Microsoft Windows resources that the program uses. It includes the icons, bitmaps, and cursors that are stored in the RES subdirectory. This file can be directly edited in Microsoft Windows CE Platform Builder.

res\PrinterTest.ico

This is an icon file, which is used as the application's icon (32x32).

This icon is included by the main resource file PrinterTest.rc.

////////////////////////////////////

Other standard files:

StdAfx.h, StdAfx.cpp

These files are used to build a precompiled header (PCH) file named PrinterTest.pch and a precompiled types file named StdAfx.obj.

Resource.h

This is the standard header file, which defines new resource IDs.

Microsoft Windows CE Platform Builder reads and updates this file.

////////////////////////////////////

Other notes:

AppWizard uses "TODO:" to indicate parts of the source code you should add to or customize.

=====WCE APPLICATION : TestCom=====

AppWizard has created this TestCom application for you.

This file contains a summary of what you will find in each of the files that make up your TestCom application.

TestCom.cpp

This is the main application source file.

TestCom.pbp

This file (the project file) contains information at the project level and is used to build a single project or subproject. Other users can share the project (.pbp) file, but they should export the makefiles locally.

//

Other standard files:

StdAfx.h, StdAfx.cpp

These files are used to build a precompiled header (PCH) file named TestCom.pch and a precompiled types file named StdAfx.obj.

//

Other notes:

AppWizard uses "TODO:" to indicate parts of the source code you should add to or customize.

2. API detail description

Reader APIs

// open the reader for use

HANDLE WINAPI Reader_Open(VOID * lpReserve);

Parameters:

lpReserve – [in] reserve for future, must = NULL

Return Values:

If the function succeeds, the return value is an open handle to the specified device;

If the function fails, the return value is INVALID_HANDLE_VALUE; To get extended error information, call GetLastError.

// close reader device

HANDLE WINAPI Reader_Close(HANDLE hDevice);

Parameters:

hDevice–[in] Handle to the communications device. The Reader_Open function returns this handle.

Return Values:

If the function succeeds, the return value is nonzero;

If the function fails, the return value is 0; To get extended error information, call GetLastError.

// wait a reader event

BOOL WINAPI Reader_WaitEvent(HANDLE hDevice, DWORD * lpEvtMask, DWORD dwWaitTime);

Parameters:

hDevice–[in] Handle to the communications device. The *Reader_Open* function returns this handle.

lpEvtMask- [out] Pointer to a variable that receives a mask indicating the type of event that occurred. If an error occurs, the value is zero; otherwise, it is one of the following values.

RDEV_RXDATA : data was received and placed in the input buffer

dwWaitTime– [in] Specifies the time-out interval, in milliseconds. The function returns if the interval elapses, even if the object's state is nonsignaled. If *dwWaitTime* is zero, the function tests the object's state and returns immediately. If *dwWaitTime* is *INFINITE*, the function's time-out interval never elapses.

Return Values:

If the function succeeds, the return value is nonzero. If the function fails, the return value is zero. To get extended error information, call *GetLastError*

// get bits data length

```
DWORD WINAPI Reader_GetDataBitsLength ( HANDLE hDevice , UINT nTrack );
```

Parameters:

hDevice–[in] Handle to the communications device. The *Reader_Open* function returns this handle.

nTrack – [in] Track index of reader , 1 base index.

Return Values:

If success, Return bits count of data in the input buffer, else return 0; To get extended error information, call *GetLastError*

// read bits data from reader

```
BOOL WINAPI Reader_ReadBitsData ( HANDLE hDevice,  
LPBYTE lpBuffer,  
DWORD nNumberOfBitsRead,  
LPDWORD lpNumberOfBitsRead,  
UINT nTrack  
);
```

Parameters:

hDevice–[in] Handle to the communications device. The *Reader_Open* function returns this handle.

lpBuffer–[out] Pointer to the buffer that receives the bit data read from the device. each bit will use a byte in *lpBuffer*

nNumberOfBytesToRead - [in] Specifies the number of bits to be read from the device.

lpNumberOfBytesRead - [out] Pointer to the variable that receives the number of bits read.

Reader_ReadBitsData sets this value to zero before doing any work or error checking.

nTrack – [in] Track index of reader , 1 base index.

Return Values:

If the function succeeds, the return value is *TRUE*. *lpNumberOfBytesRead* Is really number of bits read.

Printer APIs

// open printer for use

```
HANDLE WINAPI Printer_Open( VOID * lpReserve );
```

Parameters:

lpReserve – [in] reserve for future, must = NULL

Return Values:

If the function succeeds, the return value is an open handle to the specified device;

If the function fails, the return value is INVALID_HANDLE_VALUE; To get extended error information, call GetLastError.

// close printer

```
BOOL WINAPI Printer_Close( HANDLE hDevice);
```

Parameters:

hDevice–[in] Handle to the printer device. The Printer_Open function returns this handle.

Return Values:

If the function succeeds, the return value is nonzero;

If the function fails, the return value is 0; To get extended error information, call GetLastError.

//reset printer

```
BOOL WINAPI Printer_Reset( HANDLE hDevice );
```

Parameters:

hDevice–[in] Handle to the printer device. The Printer_Open function returns this handle.

Return Values:

If the function succeeds, the return value is nonzero;

If the function fails, the return value zero; To get extended error information, call GetLastError.

// power down / up the printer

```
BOOL WINAPI Printer_Power ( HANDLE hDevice, BOOL bState );
```

Parameters:

hDevice –[in] Handle to the printer device. The Printer_Open function returns this handle.

bState -[in] power up(TRUE) or power down(FALSE) the printer.

Return Values:

If the function succeeds, the return value is nonzero;

If the function fails, the return value zero; To get extended error information, call GetLastError.

// Forward paper feed

BOOL WINAPI Printer_Feed (HANDLE hDevice, int lines);

Parameters:

hDevice-[in] Handle to the printer device. The Printer_Open function returns this handle.

lines-[in] feeds paper in the forward direction by "lines"

Return Values:

If the function succeeds, the return value is TRUE;

If the function fails, the return value FALSE; To get extended error information, call GetLastError.

// get printer status

DWORD WINAPI Printer_GetStatus (HANDLE hDevice);

Parameters:

hDevice-[in] Handle to the printer device. The Printer_Open function returns this handle.

Return Values:

the return value is the printer status; the value is bits combination:

PRNS_OUT_OF_PAPER // out of paper

PRNS_HARDWARE_ERROR // a Hardware error detected

PRNS_TEMPERATURE_ABNORMAL // Head temperature is abnormal

PRNS_POWER_ABNORMAL //Power supply voltage is abnormal

// print bitmap

BOOL WINAPI Printer_PrintBitmap (HANDLE hDevice, HBITMAP hBitmap, int mode);

Parameters:

hDevice-[in] Handle to the printer device. The Printer_Open function returns this handle.

hBitmap-[in] bitmap handle, will output the bitmap data to printer.

mode -[in] print mode, 0 is Single density, 1 or others is Double density.

Return Values:

If the function succeeds, the return value is TRUE;

If the function fails, the return value FALSE; To get extended error information, call GetLastError or call Printer_GetStatus.

WPOS Security APIs

// enable or disable access the special device by uiDeviceType

BOOL WINAPI WSEC_EnableAccess(UINT uiDeviceType, BOOL bEnable);

Parameters:

uiDeviceType-[in] type to the device. The value is:

WSEC_CF – CF Card device.

WSEC_USB – USB slave

WSEC_SD – SD card

bEnable-[in] TRUE or FALSE, mean enable or disable the device type

Return Values:

If the function succeeds, the return value is TRUE;

If the function fails, the return value FALSE; To get extended error information, call

GetLastError.

Remarks:

If diable the device, the application can't access the device. The when system cold boot, these device's default state is disable.

// check if the current machine is wpos device

```
BOOL WINAPI WSEC_IsValidKey( VOID );
```

Parameters:

Return Values:

If the function succeeds, the return value is TRUE;

If the function fails, the return value FALSE;

Remarks:

The is a security api for wpos application.the wpos application must call the api to verify if it running in wpos machine.

WPOS Magcard APIs

/*

Main decoding function

return value:

1: correct data is read

0 :odd parity error was found in at least one track data

255:LRC error was found in at least one track data */

```
unsigned char WINAPI Magcard_CheckAndDecodeF2F(void);
```

// code JISII 8bit

```
unsigned char WINAPI Magcard_CheckAndDecodeF2FtoJISII(void);
```

// bit buffer convert to byte buffer

```
void WINAPI Magcard_DecodeCard(BYTE *pDataBuffer, DWORD dwDataLen, UCHAR  
CardType);
```

// get data buf decoded and size

```
BOOL WINAPI Magcard_GetTrackDecodeInfo( unsigned char ** ppData, UINT *  
pDataSize, int nTrack );
```

// reset decoder for start new data

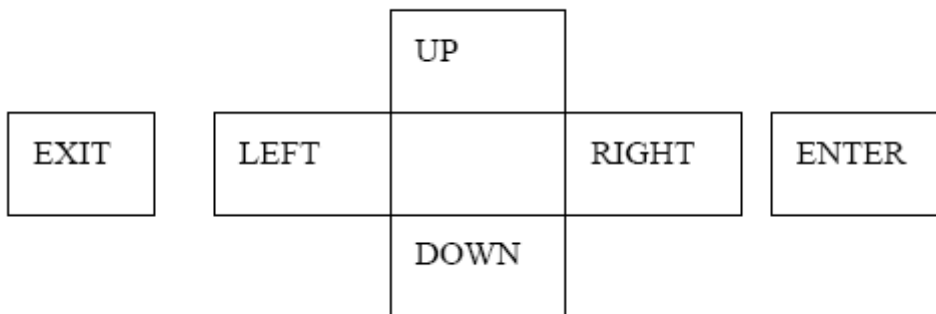
```
void WINAPI Magcard_CardValReset(void);
```

3. key define for application software

Because the virtual key (VK_F4, VK_F5, VK_F6) have been used by windows CE system, we can't redefined them for other function, we change these key. There are some changes in keyboard's definition.

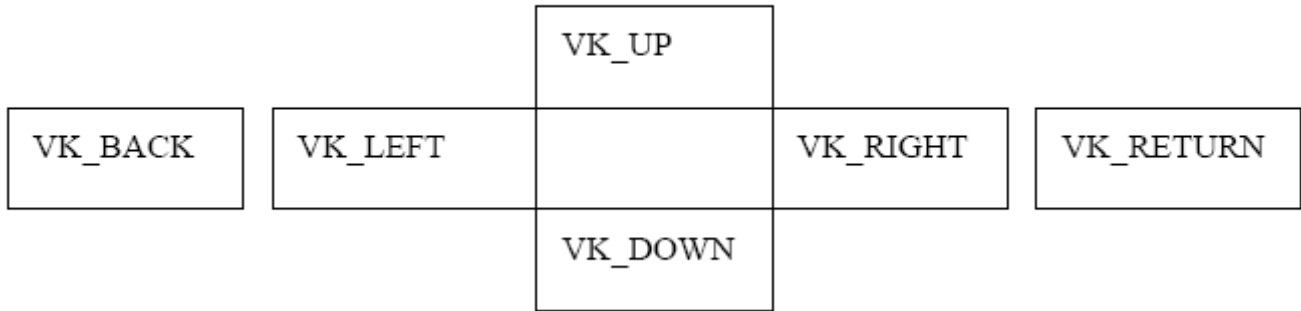
Wpos Key Function:

F1	1	2	3
F2	4	5	6
PRINT	7	8	9
FEED	CLR	0	FIX



Wpos virtual key for software develop:

VK_F1	1	2	3
VK_F2	4	5	6
VK_F3	7	8	9
VK_F7	VK_F8	0	VK_F9



Chapter 5. System upgrades

Hardware upgrades

In order to maintain this product’s normal operation and the user’s safety, we do not provide warranty services when users upgrade the system on their own. If you disassemble the computer, it may cause system damage or electrical shock. Please contact one of our sales agencies or customer support centers to upgrade.

Software upgrades

This product is installed with the 5.0 version of Windows CE Embed OS and basic driver files before it is shipped. However, manufacturers release new improved versions all the time to meet the user’s growing needs, so please feel free to contact us .

Appendix 1. Product specifications

OS	WinCE Ver.5.0(Can offer different languages)	
CPU	Intel Xscale PXA 270	
Memory	SDRAM	64MB
	Nand Flash	64MB
	Nor Flash	2MB
	Expandability	One TransFlash Slot Available, One CF Memory Card Slot Available
Display	Type	2.8 Inch TFT
	Active Area	43.0mm(W) X 57.0mm(H)
	Number of dots	240(H)XRGBX320(V)

	Number of colors	262,144
Card Reader	Readable	Code39/93/128,UPC/EAN,CODABAR
	Standard	ISO7811-7855,JIS I,JIS II
	Decode Mode	F2F
	Brush Speed	10-12cm/s (double direction)
	Header Life	600,000(min)
	Key Pad	Function Key
Numeric Key		1,2,3,4,5,6,7,8,9,0
Switch	Power ON/OFF (LCD Panel ON/OFF)	
	Reset Switch	
	Data Security Switch	
Connecter/Slot	One AC Adapter Jack	
	One Headphone Jack	
	One USB1.0 Connector	
	One TransFlash Card Slot	
	One CF Type I/Type II Card Solt(GSM/CDMA/Wi-Fi)	
Printer	Printer Mode	Line Thermal Dot Printer
	Total Dots	384 dots/line
	Paper Width	58mm
	Roll Paper Diameter	<=18mm
	Printer Speed	336 dots-line/s(max)
	Life	100km

Audio	Inside Speaker	
Battery	Power	DC 7.2V /1600maH
	Type	Polymer Lithium
AC Adapter	Input	AC 100V-240V, 50/60Hz, 0.55A
	Output	DC 9V, 2.6A
Environment	Temperature: 0-40 Degree(use), -20-60 Degree	
Dimension	128mm(L)*75mm(W)*33mm(H)	
Weight	258g(Include battery, Not include AC Adapter)	

Appendix 2. Internet Source

A Microsoft mobile device web-site

<http://www.microsoft.com/windowsmobile/information/devprograms/default.aspx>

B MS windows mobile developer download

<http://www.microsoft.com/windowsmobile/resources/downloads/developer/default.aspx>

C PPC 2003(iPAQ H2210) sdk

<http://microsoft.com/downloads/details.aspx?FamilyId=9996B314-0364-4623-9EDE-0B5FBB133652&displaylang=en>

D SQL CE

<http://www.microsoft.com/sql/CE/default.asp>

E Pocket PC 2002 SDK Emulator Images (The PPC Simulator of the PC)

<http://www.microsoft.com/downloads/details.aspx?FamilyId=25F4DE97-AE80-477A-9DF1-496B85B3D3E3&displaylang=en>

Appendix 3. Product warranty

About the product warranty

1. Keep the product warranty document and complete it with the necessary information when you make the purchase.
2. We do our best to provide the best quality assurance.
3. Even within the warranty period, charges can be applied for those services, which are charge-based.
4. We do not make compensation for all the dependent losses due to trouble of the product.

Product warranty

We guarantee as follows.

- 1) This product is manufactured with strict quality assurance and inspections

- 2) The free warranty service period is one year from the date of purchase.
- 3) When requesting repair, please show the warranty document to the service representative.
- 4) We do not reissue warranty documents, so keep them with care.
- 5) Contact the agency from which you made the purchase if there is problem with this product. If it is something that cannot be handled by the agency, contact our Customer Support Center to ask for technical support. This way, your needs will be looked after appropriately.

Charge-based service

- The following services are charge-based.
- Malfunction or damage to the product due to careless handling by the user.
- Problems caused by software
- Damage caused by natural disaster
- Damage or changes to the product that is done by people other than our service representative.
- Problems resulting from trouble with the power source

Recommendations and caution

- 1) Position this product away from direct sunlight or magnetic waves.
If those factors are unavoidable, find ways to protect the product.
- 2) Please equip with (A.V.R) or (Power Conditioner) with enough capacity for a stable operation.
- 3) If users do not have the warranty document or have not completed the warranty document, they can receive free or charge-based warranty services according to the guidelines specified in the Consumer Protection Law.

Model Name SINOCAN (MC-6000)

Customer Support Center

support@lcdpc.com.cn

<http://www.lcdpc.com.cn>