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## MAINTENANCE SECTION

PART	DESCRIPTION
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<u>1</u>	<u>WIP-5000M SERVICE MANUAL</u>
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WIP-5000M

# Service Manual

**Publication Information**

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PRINTED IN USA

# INTRODUCTION

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## Purpose

This manual provides information on the specifications of WIP-5000M, which is a mobile phone for use at homes, and describes how to disassemble and reassemble parts. Also, this manual describes failures that may occur while using the product, troubleshooting the failures. This manual shows hardware block diagrams and exploded view.

## Document Content and Organization

This manual consists of four chapters, one annex and an abbreviation as follows:

### [CHAPTER 1. Specifications](#)

This chapter describes configuration and specifications of WIP-5000M.

### [CHAPTER 2. Troubleshooting](#)

This chapter describes the hidden menus of WIP-5000M and how to troubleshoot failures that may occur during operation.

### [CHAPTER 3. Software Upgrade](#)

This chapter describes how to upgrade the software of WIP-5000M.

### [CHAPTER 4. WIP-5000M Debugging](#)

This chapter describes how to debug your WIP-5000M.

### [ANNEX A. PCB Component Layout](#)

Annex A shows layout of WIP-5000M PCB components.

### [ABBREVIATION](#)

Abbreviation provides the acronyms used in this manual and their full names.

## Conventions

The following types of paragraphs contain special information that must be carefully read and thoroughly understood. Such information may or may not be enclosed in a rectangular box, separating it from the main text, but is always preceded by an icon and/or a bold title.



### **WARNING**

Provides information or instructions that the reader should follow in order to avoid personal injury or fatality.



### **CAUTION**

Provides information or instructions that the reader should follow in order to avoid a service failure or damage to the system.



### **CHECKPOINT**

Provides the operator with checkpoints for stable system operation.



### **NOTE**

Indicates additional information as a reference.



### **OPERATION PROCEDURES**

Indicates the operational procedures that should be executed in sequence.

## Reference

### **WIP-5000M User Guide**

WIP-5000M User Guide provides users of the WIP-5000M mobile phone with instructions on using the basic functions, convenient features and application menus.

### **OfficeServ Wireless Installation and Maintenance Manual**

This manual provides an overview of Wireless Base Station 2.4GHz (SMT-R2000), Access Point (AP), the Wireless Local area network Interface (WLI) board, and Wireless IP Phone 5000 Mobile (WIP-5000M) required to use wireless LAN features by inter-working with the OfficeServ 7000 Series, OfficeServ 500, and OfficeServ 100, and describes how to install and maintain SMT-R2000 and to perform MMC programming.

## Revision History

EDITION	DATE OF ISSUE	REMARKS
00	03. 2005.	Original

# SAFETY CONCERNS

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For product safety and correct operation, the following information must be given to the operator/user and shall be read before the installation and operation.

## Symbols



### **Caution**

Indication of a general caution



### **Restriction**

Indication for prohibiting an action for a product



### **Instruction**

Indication for commanding a specifically required action



## CAUTION



### **Detaching Parts from Front and Rear Sides**

The parts on the rear side are connected to the board on the front side by cables; thus, too strong force may cause the cables to be cut.



### **During Upgrade**

Make sure that the power of SMT-R2000 AP and WIP-5000M remain on while downloading new software. If the power goes off during download, the WIP-5000M may not operate properly.



### **Detaching Speakers**

Non-woven fabric is attached to the speakers by a double side tape; thus, be careful that the non-woven fabric is not detached from the speakers.



### **Repairing Product**

A part should be replaced with the one who meets qualifications.



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# CHAPTER 1. Specifications

This chapter describes the hardware description and specifications of WIP-5000M.

## 1.1 Hardware Description

### 1.1.1 Front/Side View

This section describes the buttons on the front and sides of WIP-5000M.

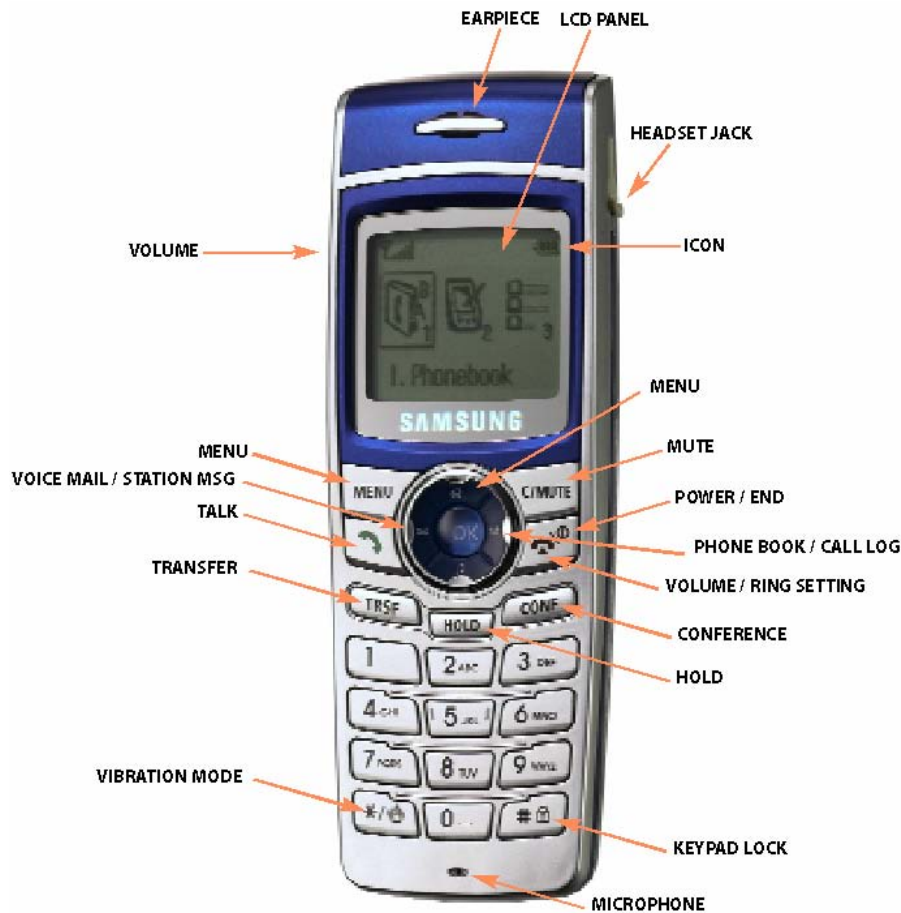
































Figure 1.1 Front View of WIP-5000M

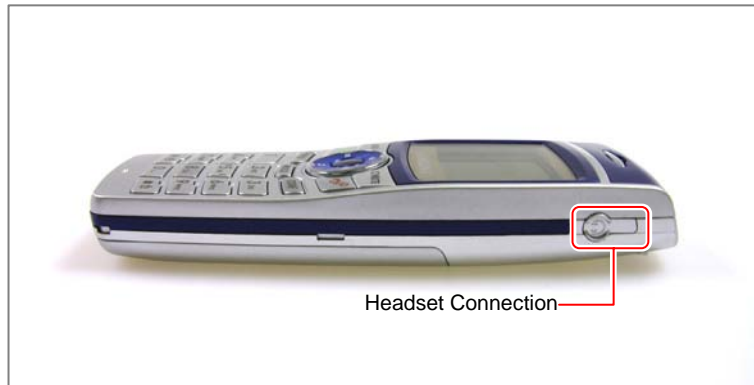
## Button Description

Button	Description
	Used when calling or receiving an outside trunk call/when transferring a call.
	Used when entering the menu mode.
	Used when moving the menu bar upward. Go to the main menu from the initial screen.
	Used when moving the menu bar downward. Go to the Volume/Ring menu from the initial screen.
	Used when moving the menu bar to the right direction/Directory. Go to the Phone Book menu from the initial screen.
	Used when moving the menu bar to the left direction. Go to the message menu from the initial screen.
	Used when selecting or saving the selected item for function settings.
	Used when erasing letters or moving to an upper menu. Used when setting mute during a call.
	Used when holding a call.
	Used when connecting to another phone number while a phone call is in progress.
	Used when making a conference.
	Used when applying the etiquette mode.
	Used when dialing or entering characters.
	Used when applying the automatic key lock.
	Used when turning the power on/off, when returning to the initial screen or when terminating the call.
	Used when controlling the volume of voice or key tone.

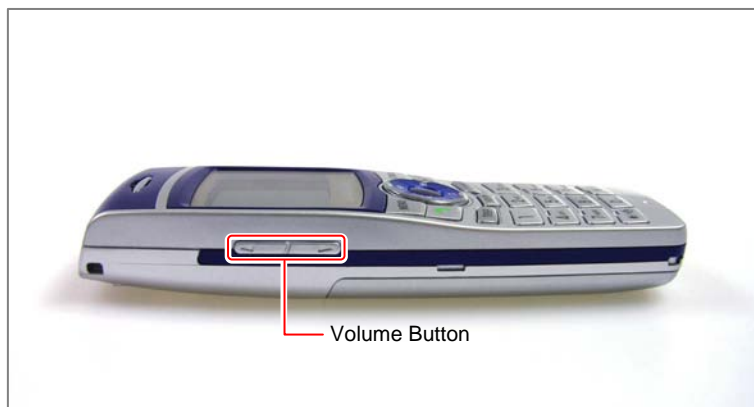
## Icon (Display) Description

Icon	Features
	This indicates the signal intensity.  : weak signal  : strong signal
	This turns on when the service is not available.
	Blinks when trying to make a call and turns on when a call is connected.
	The status that indicates an alarm is set.
	Displayed when a message is received.
	Etiquette function or vibration function is enabled.
	Indicates that the automatic key lock is enabled.

Icon	Features
	<p>Indicates the battery charging level.</p> <p>  : fully charged              : sufficient              : insufficient   : needs to be charged immediately         </p>



**Figure 1.2 Right Side View of WIP-5000M**



**Figure 1.3 Left Side View of WIP-5000M**

## 1.2 Specifications

The specifications of the WIP-5000M are as follows.

**Table 1.1 General Specifications of WIP-5000M**

Items	Specification
Model Name	WIP-5000M
Frequency	2.4 GHz ISM Band (2400~2483.5 MHz)
Size(mm)	43 (width) × 126 (length) × 19 (height)
Operating Temperature(°C)	0~45 °C
Operating Humidity(%)	0~90 %
Weight	95 g
Battery Charge Time	2 Hour
Battery Duration	Call duration: 2 Hours 30 Minutes Standby duration: 25 Hours

**Table 1.2 Electrical Specification of WIP-5000M**

Item	Specification	Remarks
Communication Speed	1, 2, 5.5, 11 Mbps	Variable
Rated Power	14 ±1 dBm	RBW 100 kHz, VBW100 kHz, and BW 22 MHz when measuring channel power using spectrum
Spurious Emission	25 uW or less (-16 dBm or less)	@Fc-26~Fc-13 MHz, Fc+13~Fc+26 MHz
	2.5 uW or less (-26 dBm or less)	@<fc-26 MHz>fc+26 MHz
Frequency Tolerance	±25 ppm	-
Max Rx Input Level Allowed	-30 dBm	@ FER: 8 × 10 <sup>-2</sup> 11 Mbps CCK Modulation
Rx Sensitivity	-81 ±2 dBm	-
Average Current Consumption	250 mA Typ.	@ 2 % Tx, 98 % Rx
Consecutive Tx Current Consumption	450 mA or less	-
Consecutive Rx Current Consumption	400 mA or less	-
Pass Bandwidth	26 MHz or less	-
Power Supply	+3.8 V Litum-Ion Battery Charger: - input: 110~220 VAC - output: DC4.2 V 800 mA	-

Item	Specification	Remarks
Typical Power Consumption	Calling: 440 mA/3.8 VDC Sleep mode: 20 mA/3.8 VDC	-

**Table 1.3 Detail Specifications of WIP-5000M**

Item	Specification
Air Interface Standard	IEEE802.11b DSSS
Data Rates Supported	1 Mbps, 2 Mbps, 5.5 Mbps, 11 Mbps
Modulation Technique	Direct Sequence Spread Spectrum: DBPSK @ 1 Mbps DQPSK @ 2 Mbps CCK @ 5.5 Mbps and 11 Mbps
Operational Channel	Europe:13 (ETSI) Ch1~Ch13/America (FCC): Ch1~Ch11
Medium Access Protocol	Carrier Sense Multiple Access/Collision Avoidance(CSMA/CA)
Network Architecture Type	Infrastructure
Security	128 bit WEP(Wired Equivalent Privacy) key
Available Transmit Power	15 dBm max @ 22 MHz channel bandwidth
Range	Depend upon AP antenna gain - Indoor: Approximately 150 ft - Outdoor: 400 m (Reception is good in all directions up to 150 m from AP, but is good only in certain directions from 150 m to 400 m distance from the AP.)
Antenna	Inside-Antenna (Intenna)
Call Signal Protocol	Session Initiation Protocol (SIP) Request For Comments 2543 bis 09 Compliant
LCD	128 × 64 dot Mono + 1 Icon Line
LED, LCD Back light	Color: Blue, EL-Sheet (Blue)
Warranty	One Year

# CHAPTER 2. Troubleshooting

This chapter describes the hidden menus of WIP-5000M and how to troubleshoot failures that may occur during operation.

## 2.1 WIP-5000M Password Verification Procedure

WIP-5000M users who have forgotten the password can verify the password by executing the following procedure:

### When WIP-5000M is not in Key Lock State



NOTE

#### OfficeServ Series AP

SMT-R2000 is an Access Point (AP) that can inter-work with the following systems: OfficeServ 500, OfficeServ 100, and OfficeServ 7000 Series. [For detailed information on SMT-R2000, refer to the 'OfficeServ Wireless Installation Manual.'](#)



CHECK

#### When WIP-5000M is not in Key Lock State

WIP-5000M will not change to 'Key Lock' status unless registered to SMT-R2000. Register the WIP-5000M to SMT-R2000 and change the status to 'Key Lock'. [Refer to the 'WIP-5000M User Guide' for the registration procedure.](#)

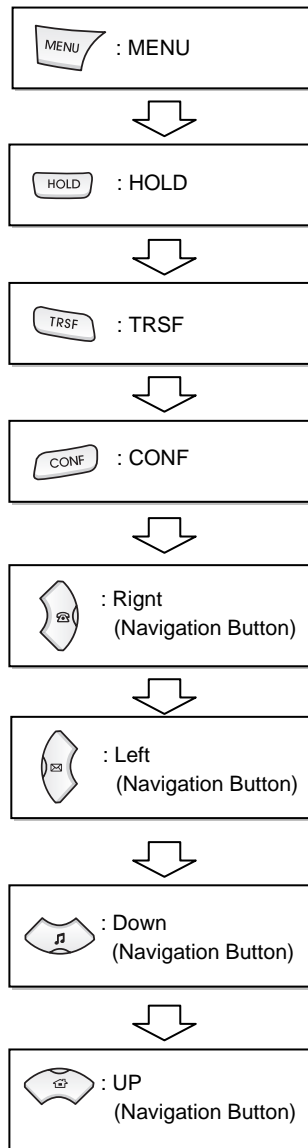
Switch to 'Key Lock' state by pressing and holding the '#' key and execute the next ('When WIP-5000M is in Key Lock State') procedure:



### When WIP-5000M is in Key Lock State

If the WIP-5000M is in Key Lock state, users can check the password regardless of whether the WIP-5000M is registered to SMT-R2000.





Press the buttons according to the sequence shown below to display the password:



Use MMC 101 to reset WIP-5000M passcode to 1234.

## 2.2 Using Test Mode

This section describes how to use the test mode for checking and setting the terminal status, S/W version and various current statuses.

- To enter the test mode, enter  →  →  →  button in order.

### S/W Version

-  →  →  →  → 

Displays current S/W version.

Samsung Ver 1.00
26.11.2004
(Zone:)
Build 0

### IP Address

-  →  →  →  → 

Displays WIP-5000M's IP address.

IP address
165.213.99.100

### MAC Address

-  →  →  →  → 

Displays WIP-5000M's MAC address.

MAC address
00:02:78: F5:08:54








### Phone State

-  →  →  →  → 

Displays UI(User Interface) status,  
SIP(Session Initiation Protocol) status,  
current codec configuration and registered AP type.

UI: StateOnHook
Sip: Terminating
Codec: 711a/u, 729
AP Type: Standard

## Display RSSI

-  →  →  →  → 
- In case of conversation,  → 

Displays WIP-5000M's RSSI(Received Signal Strength Indication) information.

- 1: # of Scanned AP
- MAC: MAC Address of SMT-R2000
- C: Channel in use (1~11)
- CQ: Call Quality (0~92)
- SL: Signal Level (27~154)

1	MAC	C	CQ	AS	SL
102701	b	30	75	20	

Quality Of Voice	Communication Quality(CQ)	Signal Level(SL)
Good	92-40	9 A – 78
Poor	40-20	78 – 5A
Bad	20-0	5A-16

The WIP DBG En/Dis, Telnet, and Data Clear modes are set for development.

## WIP DBG En/Dis (Debugging Mode)

-  →  →  →  → 

Enables or disables WIP-5000M debugging mode.

## Telnet

-  →  →  →  → 

Enables user to connect to WIP-5000M via Telnet.

## Auto Answer

Set handset to Auto Answer Mode.

## Scan Test

-  →  →  →  → 

Scans AP around WIP-5000M.

Prism Scan Test
Scan Channel ? _

## SET AEC(Acoustic Echo Cancellation)

-  →  →  →  → 

Enables or disables AEC (Acoustic Echo Cancellation) function.

Echo Cancel : On
1: Disable
2: Enable ←

## CHAPTER 3. Software Upgrade

This chapter describes how to upgrade the software of WIP-5000M.

Prepare the following items to upgrade the software of WIP-5000M:

- Desktop or portable PC
- LAN cable
- SMT-R2000 AP
- WIP-5000M
- S/W image (WIP-5000M S/W image)
- TFTP program (WinTFTP Server 1.0)



NOTE

### OfficeServ Series AP

SMT-R2000 is an Access Point (AP) that can inter-work with the following systems: OfficeServ 500, OfficeServ 100, and OfficeServ 7000 Series. [For detailed information on SMT-R2000, refer to the 'OfficeServ Wireless Installation Manual'.](#)

WIP-5000M is upgraded using the built-in Web server.

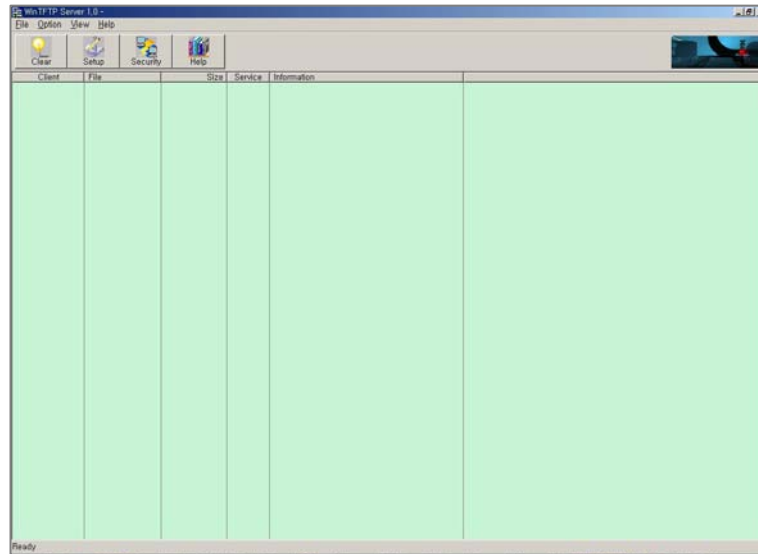
WIP-5000M can upgrade software using a wire or wireless LAN. Microsoft Explorer and a TFTP Server program (e.g. WinTFTP) must be installed and a software image required for upgrade should be saved into the PC to upgrade software.

## 3.1 TFTP Server Program Setting

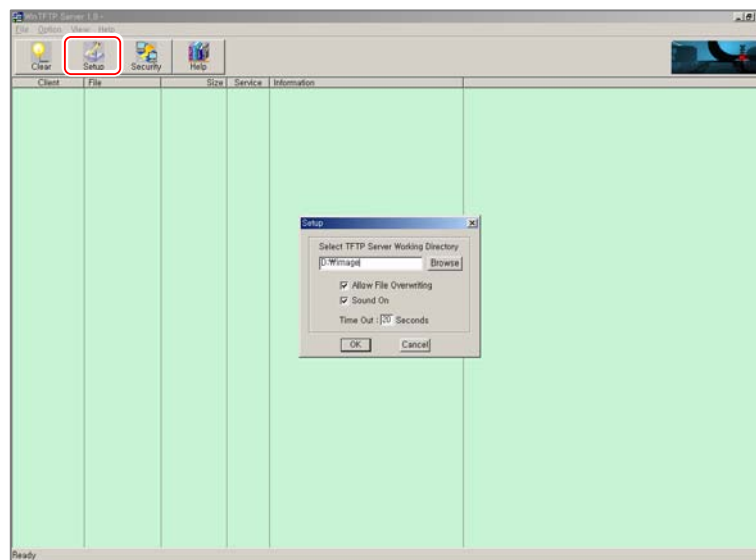
Set PC Internet Protocol (TCP/IP) IP address to the same subnet as the Samsung WLAN system.



- 1) Install and execute WinTFTP Server program.




- 2) Enter the 'Setup' menu and select the folder where the S/W image of the target WIP-5000M is saved. Click the [OK] button to start the TFTP server. The S/W image of the target WIP-5000M should be saved in a pre-defined folder.



## 3.2 Upgrading S/W in Engineering Mode

Engineering Mode is used for upgrading a WIP-5000M that is not registered to SMT-R2000. Since this process starts while the power is off, turn off the power or detach and re-attach the battery in case the power is on.



- 1) While the power of WIP-5000M is off, press the  button and '5' button simultaneously.

- 2) The following menus will appear on the LCD screen. Select '2. Download Mode'.

Download 01.08
1. RF Test Mode
2. Download Mode
3. Ping Test Mode

- 3) Select '1.Edit IP' from the next screen.

Download Mode
1. Edit IP
2. Fixed IP

- 4) Enter the IP address of WIP-5000M according to the following conditions:
- Among addresses of networks to which SMT-R2000 is allocated, select an IP address that will not conflict with other devices.
  - Press the '\*' button to enter '.'.
  - After entering the IP address, press the [OK] button to proceed to the next step.

Download Mode
Edit IP
Enter here
192.168.111.XXX

- 5) Enter the SSID into the following screen and press the [OK] button to proceed to the next step. The SSID previously set for registration should be entered.

Download Mode
Edit SSID
Enter here



NOTE

### When Entering SSID and WEP Key

Refer to the 'OfficeServ Wireless Installation Manual' for procedures on registering and verifying the SSID and WEP key.

- 6) Enter the WEP key into the screen shown below. This WEP key can be verified from the WIP-5000M. If a WEP key is not set, press the [OK] button and proceed to the next step.

Download Mode
Edit WEPKEY
0

- 7) Select whether to enable WEP key. If a WEP key is not set, press the [OK] button and proceed to the next step.

Download Mode
WEPKEY Mode?
1. Enable
2. Disable

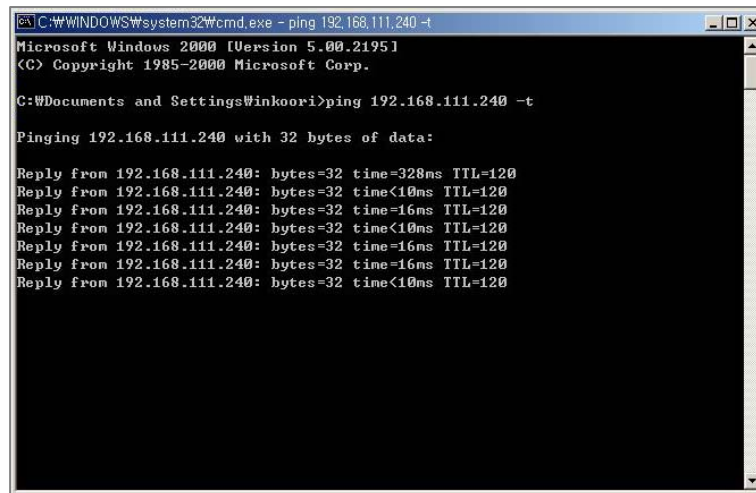
- 8) On completing the above steps, the following screen appears and the system starts the upgrade.

** Downloader **

### 3.3 Checking WIP-5000M Connection

Check the wireless connection between WIP-5000M and SMT-R2000 by connecting a portable PC to SMT-R2000 crossover or connecting both PC and SMT-R2000 to a hub.

Open a command window at the portable PC and perform a ping test to the previously entered IP address of the WIP-5000M.



```
C:\WINDOWS\system32\cmd.exe - ping 192.168.111.240 -t
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\Winkoori>ping 192.168.111.240 -t

Pinging 192.168.111.240 with 32 bytes of data:

Reply from 192.168.111.240: bytes=32 time=328ms TTL=120
Reply from 192.168.111.240: bytes=32 time<10ms TTL=120
Reply from 192.168.111.240: bytes=32 time=16ms TTL=120
Reply from 192.168.111.240: bytes=32 time<10ms TTL=120
Reply from 192.168.111.240: bytes=32 time=16ms TTL=120
Reply from 192.168.111.240: bytes=32 time=16ms TTL=120
Reply from 192.168.111.240: bytes=32 time<10ms TTL=120
```

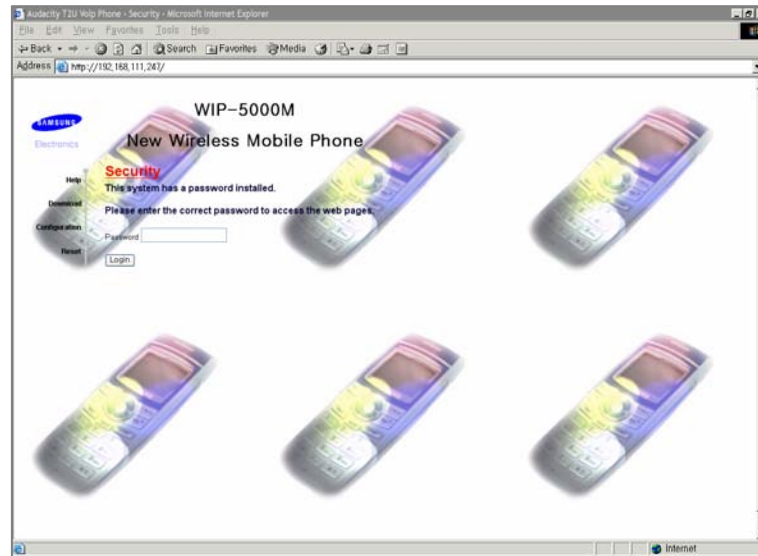
A response should be returned if the WIP-5000M is properly connected to SMT-R2000. If no response is returned, check if the LAN cable is properly connected and if the IP address of the portable PC is correct. Use CTRL-C to terminate the pinging operation.



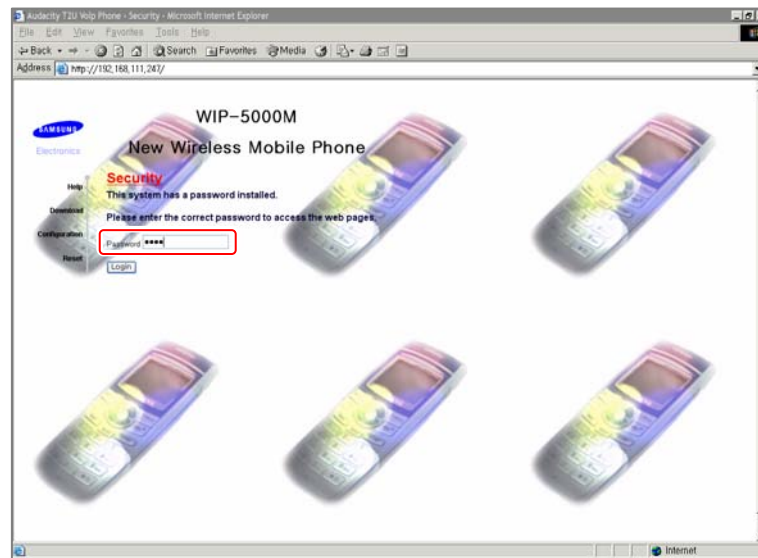
## 3.4 S/W Upgrade Using the Internet



- 1) Start the Internet browser and enter the IP address of the WIP-5000M into the address field.  
The following window appears when the WIP-5000M is connected to the web program:



- 2) Enter the WIP-5000M password into the Password field.

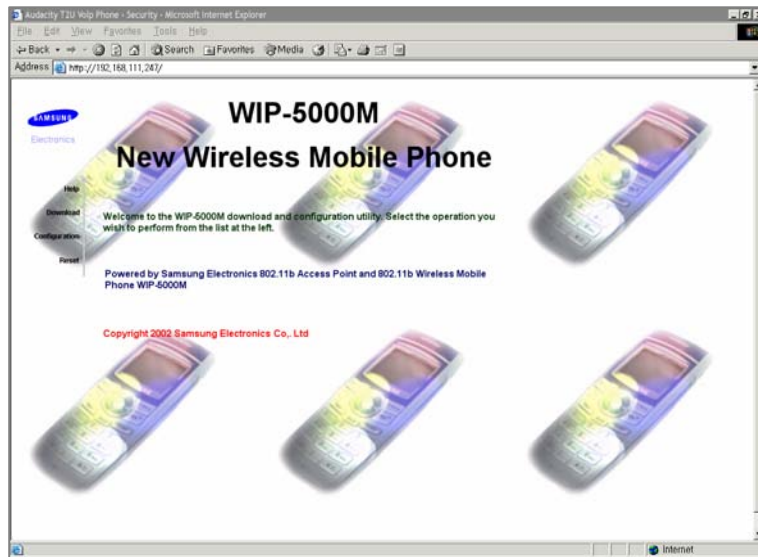


NOTE

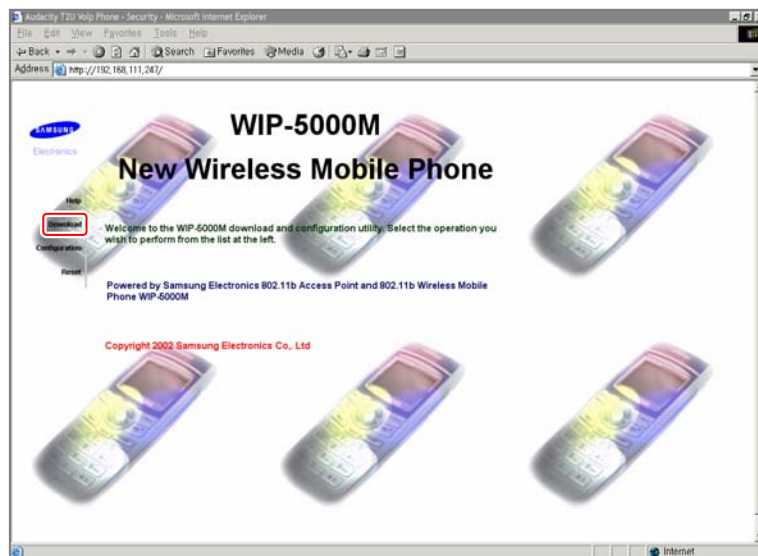
### In Case You Have Forgotten Your Password

The default password is '1234'. If the default password has been changed, refer to the ['3.1 WIP-5000M Password Verification Procedure' of this manual.](#)

- 3) On entering the correct password, the following window appears:  
(The password inquiry window will be displayed repeatedly until the correct password is entered.)



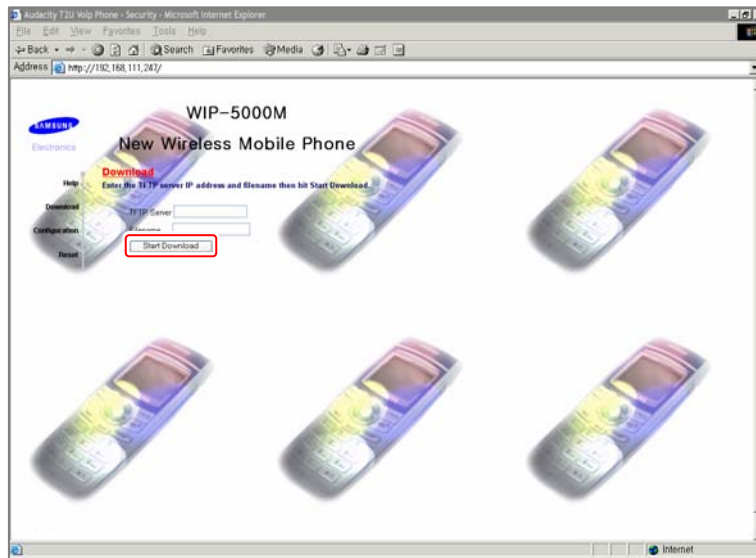
- 4) Click the [Download] menu on the left side of the window.



- 5) The following window appears:

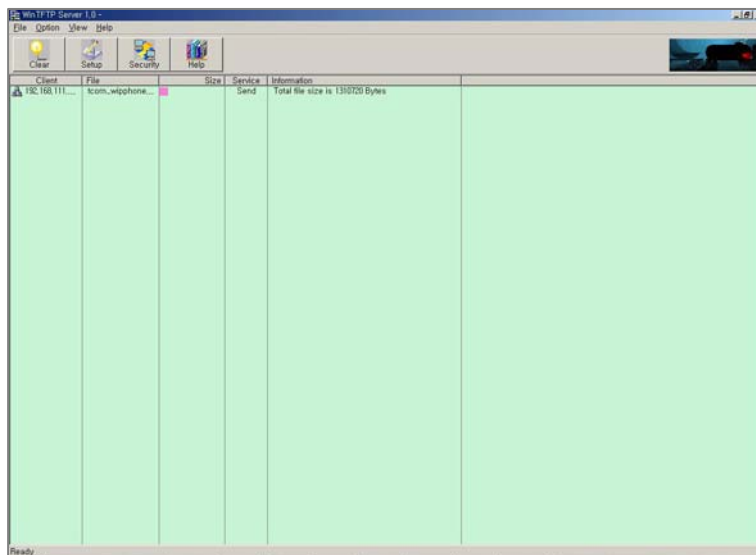
Enter the IP address of the portable PC into the TFTP Server field. In the Filename field, enter the name of the S/W image to download.

Click the [Start Download] button to start the download.



- 6) If the above download starts while the TFTP Server program is running, the TFTP Server program displays the following window:

(At this time numbers appear on the LCD of the WIP-5000M.)



Check the following items if the download does not start properly:

- Check if the WinTFTP Server program is running.
- Check if the IP address of the TFTP Server(portable PC) is correct.
- Check if the name of the target image file is correct.
- Check if the target image file exists in the folder defined by the WinTFTP Server program.
- After checking the above items, restart the download by clicking the [Start Download] button described in step 5).



**CAUTION**

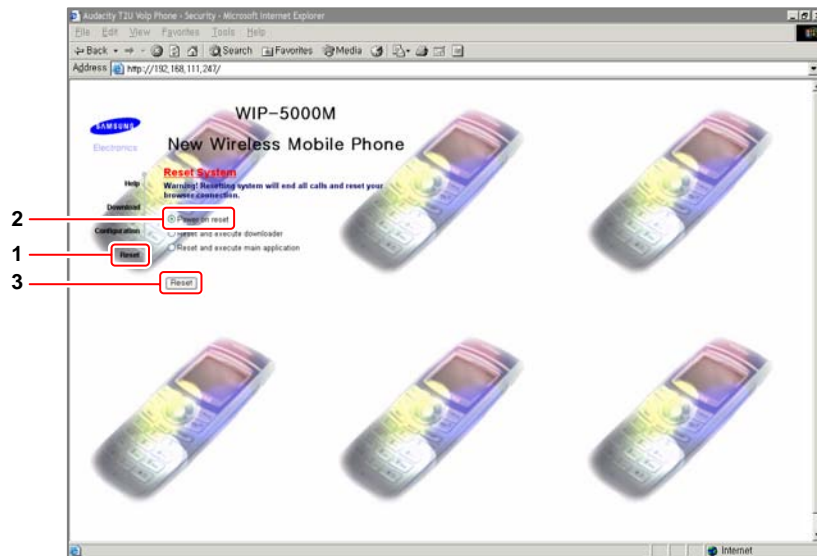
#### **During Upgrade**

Make sure that the power of SMT-R2000 AP and WIP-5000M remain on while downloading new software. If the power goes off during download, the WIP-5000M may not operate properly.

- 7) The window shown below appears when the download is complete. The 'Downloader' and 'SAMSUNG' messages are displayed alternatively in the LCD of the WIP-5000M.



- 8) Click the [Reset] menu on the left side of the window. The window shown below will appear. Select [Power on reset] and click the [Reset] button.



Once you successfully complete the above procedure, the starting window will appear if the WIP-5000M is registered to SMT-R2000. If not, the initial SSID entry screen will appear.



**NOTE**

**If download does not start properly**

Check the following:

- Is the WinFTP server program being executed?
- Is the IP address of the TFTP server (notebook PC) correct?
- Is the name of the target image file correct?
- Does the target image file exist in the folder set by the WinTFTP server program?

After checking the above items, select [Download] again from the window of the step 7) and start the download again.



**CAUTION**

**Battery Check When Upgrading WIP-5000M Software**

Do Not turn off the power of the WIP-5000M during download. The battery of the WIP-5000M is sometimes exhausted and turned off during download. If the battery is turned off during download, normal operation may be impossible. Thus, check the battery status before download. If the battery is low, charge the battery and perform the download procedure.

## 3.5 S/W Upgrade Using the Internet (Downloader S/W)

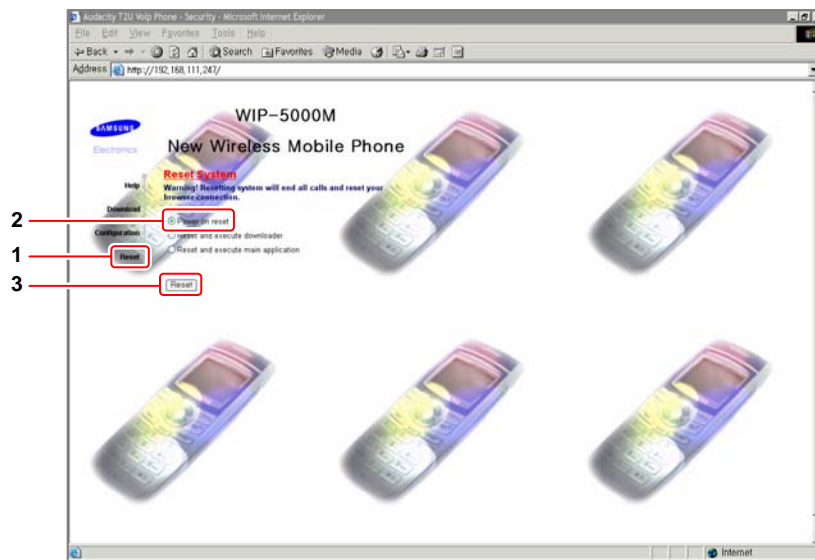
- 1) The way the Downloaded S/W is upgraded is identical to the Application S/W. But to prevent the phone from turning off during download, make sure that the battery is full and that the phone is put on the battery charger.



### During Upgrade

If failing to upgrade the downloaded S/W, the phone will be unusable because the WIP-5000M downloader S/W has the information that the phone uses when booting.

- 2) The step to upgrade the downloader image is identical to that to upgrade the application S/W. But the different point is to set the file name to upgrade to the downloader image file name.
- 3) After the upgrade is completed, click the [Reset] menu on the left side of the window. The window show below will appear. Select [Power on reset] and click the [Reset] button.



- 4) When the WIP-5000M restarts, the compressed image file previously downloaded will be extracted to the Flash ROM. After this step is completed, the 'COMPLETE' message is displayed in the LCD of the WIP-5000M and the 'Downloader' and 'SAMSUNG' messages are displayed alternatively in the LCD of the WIP-5000M.
- 5) When upgrading the downloader S/W image is completed, application S/W image is cleared. Therefore application S/W image must be upgraded again. Upgrade the downloader S/W image in Engineering mode, since the Application S/W area is cleared and doesn't exist.

## CHAPTER 4. WIP-5000M Debugging

WIP-5000M is a WLAN wireless phone that can connect to the OfficeServ system and receives its own IP. Telnet can be connected through WIP-5000M and debugging can be performed through telnet. The status and configuration information of WIP-5000M can be checked or modified through telnet.



### Do not change WIP-5000M configuration information

The configuration information set in WIP-5000M is the setting value in the optimized status. Thus, do not change the value randomly.

### 4.1 Connecting to WIP-5000M Debugging Mode Via Telnet

Take the following procedure to prepare to connect to the debugging mode.

- 1) Select [Menu] → [Hold] → [\*] → [#] of the WIP-5000M.
- 2) Select [7. wTelnet Enable].
- 3) Execute the terminal application to connect to telnet from the PC connected to wired LAN or connected through air interface. In the Windows operating system, application such as 'DOS command prompt' and 'Tera term' can be used.
- 4) If you know the IP address of the target WIP-5000M ([Refer to the Programming Section](#)), try to connect at 'DOS command prompt' as follows:

```
C:\Windows>telnet 165.213.110.144
```

After completing the connection to the WIP-5000M, password is asked as follows. Enter 'wlan' for the password. Then, the login is completed.

```
>>>
>>> Welcome to WIP-5000M Telnet server...
>>>

Password : ****
```



#### If the connection to WIP-5000M fails

If the target WIP-5000M is in power save mode, connection is not established at once. Then, execute the 'ping' command in a PC to the WIP-5000M and check if a response is received from the WIP-5000M. If so, connect to the WIP-5000M.

## 4.2 List of Commands Used in WIP-5000M Debugging Mode

WIP-5000M can execute the following commands to perform debugging, and verify the list of all commands through the 'help' command.



#### Telnet release automatically

If nothing is entered within 3 minutes after the connection to telnet is established, the connection is released in the WIP-5000M.(However, the case of executing the pr on command is excepted.)



#### When telnet connection is terminated

Execute the 'bye' command to terminate a connection.

### help

Displays the list of the following commands:

How to execute: help <Enter>

```
WIP-5000M:165.213.110.114> help

>>> WIP-5000M Debug Command List

help    help
arp      arp                : Show Arp Table
bye      bye              : Exit Telnet Debug
codec    codec Type SS P J : Set CODEC Value
info     info           : Show WIP-5000M Information
```



```

jitter jitter value      : Set Jitter Value
netstat netstat         : Set Jitter Value
pr      pr on/off       : Print Debug Messages
state   state           : Show Call state
ver     ver             : Show Version information
wlan    wlan            : Prism Information
wcq     wcq             : setting Warning Tone CQ value
txrate  txrate rate[0,1,2,3] : set Prism Tx Rate
tone    tone    tone name on/off

WIP-5000M:165.213.110.114>

```

## arp

Displays the arp table of WIP-5000M.

How to execute: arp <Enter>

Internet Address	Hardware Address
[0] 165.213.87.80	00:09:5b:55:a9:a9
[1] 165.213.87.161	00:d0:b7:09:50:33
[2] 165.213.110.1	00:0b:bf:a4:17:fc
[3] 165.213.87.1	00:0b:bf:a4:17:fc
[4] 165.213.87.130	00:09:5b:55:a9:a9
[5] 165.213.87.82	00:09:5b:55:a9:a9
[6] 165.213.110.114	00:04:47:68:00:bb
[7] 165.213.204.131	00:0b:bf:a4:17:fc

## codec

Sets the CODEC type to be used for making a call and sets related options.

How to execute: codec <CODEC\_type> <silence\_suppression> <packet\_time> <Enter>

- CODEC\_type: Enter 711a, 711u, or 729A.
- silence\_suppression: Set or release this function. Enter on or off.
- packet\_time: Enter the time on a milli-second basis.

## info

Displays the version or setting information of WIP-5000M.

How to execute: info <Enter>

```

>>> WIP-5000M S/W Version Information
      Samsung Ver 1.12   2004/03/18      Build 0
      Mar 18 2004 - 21:17:06

>>> WIP-5000M Current Information
- ESSID      : 258036
- AP Type    : Combo

```

```

- CODEC      : G.711a/u, G.729
  G711A      : YES, SS=NO, Pack=20
  G711U      : YES, SS=NO, Pack=20
  G729       : YES, SS=NO, Pack=40
- Jitter Time = 180
- Port No   : DHCP(7000), PA(8000), LM(10000)
- Restart Reason = Normal Restart....

```

```

>>> WIP-5000M Prism Information
- Current BSSID : 0000 f03a 20c1
- Total Scanned AP Count : 2
  Current AP : MAC(0000f03a20c1), Channel(6), CQ(58), SignalLevel( 44)
  AP #1 : MAC(0000f03a2098), Channel(b), SignalLevel( 26)
- Total Handover/Roaming Cnt = 0

```

## jitter

Sets the jitter buffer time of WIP-5000M. If turning off the WIP-5000M after setting, the changed value is applied.

How to execute: jitter <jitter\_time> <Enter>

- jitter\_time: Enter this value on a ms basis.

## netstat

Displays the network configuration information of WIP-5000M.

How to execute: netstat <Enter>

```

>>> WIP-5000M Network Configuration Information

- IPInfo : myIpAddr           = 165.213.110.114
          : HostName           =
          : DomainName         =
- Current SubNetMask          = 255.255.255.255
- Current Broadcast            = 255.255.255.255
- Current Gateway              = 168.208.144.10
- Current DNS Addr             = 0.0.0.0
- Current DNS Addr             = 0.0.0.0
- Total UDP Rx Packet Cnt      = 1507
- Total UDP Rx Error Packet Cnt = 1174
- Total UDP Rx Multicast Pkt   = 107

```

## rtcpchk

When a WIP-5000M is being used, RTCP message is received every 5 seconds. If RTCP message is not received certain times, the system drops the call. This command is used to change the certain times. The changed value is applied when the WIP-5000M restarts. Default is 6 times(30 seconds).

How to execute: rtcchk <chk\_count> <Enter>

- chk\_count: Enter an integer from 1 to 500.

### stat

Displays the information on the most recently outgoing/incoming call attempted by WIP-5000M.

How to execute: stat <Enter>

```
>>> WIP-5000M Current Call Status Information
- Endpoint Call-State Information : StateOnHook
  OnHook(1), Waiting(0), Ringing(0), Connect(0), PA(1)
- SIP State : Sip Terminating
- globalPhoneStateFlag :
  MULTI_cell DONE_DHCP_INIT PHONE_INITIALIZE_OK RX_SYS_MSG_OK
- pEndPoint->stateFlags :
  STATE_ENABLE_CALL_TIME_DISP
- lastCallLogFlag :
  OUTGOING_CALL DIAL_NUMBER CALL_STS_CONNECT CALL_STS_IDLE
PRESS_END_KEY MAIN_CALL_IDLE_STAT
US
- Current Call Ringing Value :
  curCallPtr = 0x0
  ringingCallPtr_0 = 0x0
  ringingCallPtr_1 = 0x0
  ringingCallPtr_2 = 0x0
- prismStatusFlags :
  PRISM_JOINED_ALREADY
- rtcpRxErrorCnt = 0
- Call Connected Msg Loss State :
  Total Incoming Call Cnt = 0, Total Outgoing Call Cnt = 2
  Total PA Thread Received CallConnectMsg Cnt = 1
  Total UI Incall ConnectMsg Cnt = 0, Total UI Outcall ConnectMsg Cnt = 1
  Total Unknown Call State in Connect State = 0
```

### pr

Selects the output option of the debugging of WIP-5000M.

How to execute: pr <Option> <Enter>

- Option: Sets or release this function. Enter on or off.

### ver

Displays the version of WIP-5000M.

How to execute: ver <Enter>

```
>>> WIP-5000M S/W Version Information
Samsung Ver 1.12   2004/03/18   Build 0
Mar 18 2004 - 21:17:06
```

## wlan

Displays the information relate with wireless connection.

How to execute: wlan <Enter>

```
>>> WIP-5000M Prism Information
- Current BSSID : 0000 f03a 20c1
- Total Scanned AP Count : 3
  Current AP : MAC(0000f03a20c1), Channel(6), CQ(58), SignalLevel( 43)
    AP #1 : MAC(0000f03a2098), Channel(b), SignalLevel( 26)
    AP #2 : MAC(0000f03a2096), Channel(1), SignalLevel( 14)
- Total Handover/Roaming Cnt = 0
```

## wcq

Sets the standard call quality. Thus, if CQ(call quality) is lower than the setting quality during a call, a warning sound is generated.

How to execute: wcp <level> <Enter>

- level: Enter an integer from 0 to 90.

## txrate

Controls tx rate of prism.

How to execute: txrate <level> <Enter>

- level: Enter a number from 0 to 3.  
(Level 0: 1Mbyte, Level 1: 2Mbyte, Level 2: 5Mbyte, and Level 3: 11Mbyte)

## tone

Makes an audio tone once that can be generated in a terminal.(Only available during a call.)

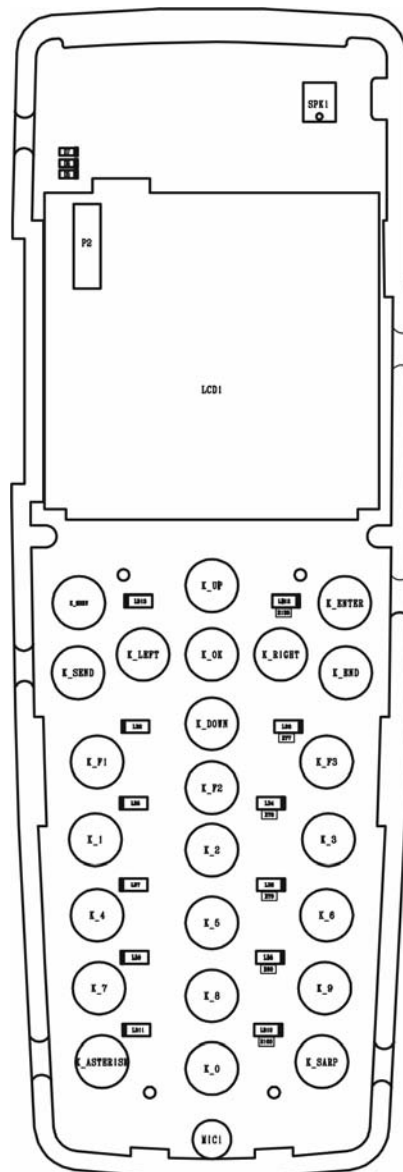
How to execute: tone <tone\_type> <on/off> <Enter>

- tone\_type: 0~7(Number of available tone types is 7.)
- on/off: Sets or release this function. Select on or off.

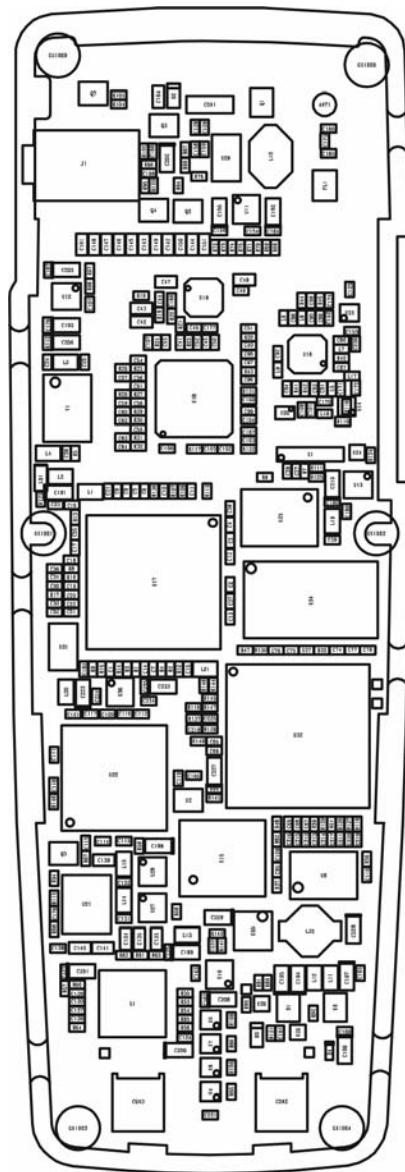
# ANNEX A. PCB Component Layout

Annex A shows layout of WIP-5000M PCB components.

## A.1 Front PCB Component Layout



## A.2 Rear PCB Component Layout



# ABBREVIATION

---

## A

AP	Access Point
AEC	Acoustic Echo Cancellation

## B

BBP	Base Band Processor
-----	---------------------

## C

CCK	Complementary Code Keying
CPLD	Complex Programmable Logic Device
CPU	Central Processing Unit

## D

DSP	Digital Signal Processor
DBPSK	Differential Binary Phase Shift Keying
DQPSK	Differential Quadrature Phase Shift Keying

## E

EL	Electro Luminescence
ETSI	European Telecommunications Standards Institute

## I

IP	Internet Protocol
I, Q	In phase, Quadrature phase
ISM	Industrial, Scientific and Medical band

## L

LAN	Local Area Network
LED	Light-Emitting Diode
LCD	Liquid Crystal Display

## M

MAC	Medium Access Control
-----	-----------------------

## P

PBA	Printed circuit Board Assembly
PCB	Printed Circuit Board
PCM	Pulse Code Modulation
PLL	Phase Locked Loop

## R

RAM	Random Access Memory
RF	Radio Frequency
ROM	Read Only Memory
RSSI	Received Signal Strength Indication

## S

SIP	Session Initiation Protocol
SRAM	Static Random Access Memory
SSID	Service Set Identifier

## T

TFTP	Trivial File Transfer Protocol
------	--------------------------------

## U

UI	User Interface
----	----------------

## V

VoIP	Voice over IP
------	---------------

## W

SMT-R2000	Wireless Base Station 2.4 GHz
WEP	Wired Equivalent Privacy
WLAN	Wireless Local Area Network