



MagicLAN5 Utility SWL-2700M/5300M User's Guide



SAMSUNG

**2.4/5GHz
Wireless LAN
Networking
Solutions**

Introduction

The MagicLan5 Utility is a user-mode utility designed to [edit and add profiles](#) for, as well as display and diagnostics pertaining to a selected SWL-2700M/5300M minipci card (wireless adapter).

See also:

- [System Requirements](#)
- [Scan Available Networks](#)
- [Profile Management](#)
- [TCP/IP Configuration](#)

System Requirements

- Laptop/ PC containing:
 - 32-bit CardBus slot (or Desktop PC with PC Card-PCI adapter)
 - Mini PCI
 - 32 MB memory or greater
 - 300 MHz processor or higher
- Microsoft Windows 2000, Windows Millennium Edition, Windows 98 Second Edition, Windows XP

Scan Available Networks

Click the [Refresh](#) button on the [Wireless Networks tab](#) to scan for available infrastructure and ad hoc networks.

Connecting to a different network

- Highlight a network name and click the [Configure](#) button to connect an available network. If no configuration profile exists for that network, the Profile Management window opens to the General tab. Fill in the profile name and click [OK](#) to [create the configuration profile](#) for that network.

Profile Management

Configure the wireless network adapter (wireless card) from the Wireless Networks tab of the MagicLan5 Utility.

- [Add a profile](#)
- [Switch to a different profile](#)
- [Edit a profile](#)
- [Remove a profile](#)

The wireless network adapter works in either [infrastructure mode](#) (which uses an access point) or [ad hoc mode](#) (a group of stations participating in the wireless LAN).

Create or Modify a Configuration Profile

To add a new configuration profile, click [New](#) on the Wireless Networks tab. To modify a configuration profile, select the configuration from the Profile list and click the [Modify](#) button.

Profile Management:

- [Edit the General tab.](#)
- [Edit the Security tab.](#)
- [Edit the Advanced tab.](#)

To configure a profile for [ad hoc](#) or [access point](#) (infrastructure) mode, edit the Network Type field on the [Advanced tab](#).

Remove a Configuration Profile

1. Go to the [Wireless Networks tab](#).
2. Select the profile to remove from the list of configuration profiles.
3. Click the [Remove](#) button.

Switching to a different configuration profile

1. To switch to a different profile, go to the [Wireless Networks tab](#).
2. Click on the profile name in the Profile List.
3. Click the [Activate](#) button.

See also [Scan Available Networks](#).

General Tab

In the MagicLan5 Utility, access the General tab by clicking [Configure](#), [New](#) or [Modify](#) on the Wireless Networks tab.

Edit the fields in the General tab to configure the configuration profile. Make sure to also edit the [Security](#) and [Advanced](#) tabs.

| | |
|-----------------------------|---|
| Profile Name | Identifies the configuration profile. This name must be unique. Profile names are not case sensitive. |
| Network Names (SSID) | The IEEE 802.11 wireless network name. This field has a maximum limit of 32 characters. Configure a SSID |

See also:

- [Configure a Profile for Ad Hoc Mode](#)
- [Configure a Profile for Access Point \(Infrastructure\) Mode](#)

Ad Hoc Mode Profile Configuration

To configure a profile in ad hoc mode, change the Network Type in [Advanced tab](#). For ad hoc mode, modify the settings:

- Network Name (on [General Tab](#))
- Transmit Power Level
- 802.11b Preamble (if using 802.11b)
- Wireless Mode When Starting an Ad Hoc Network

Make sure to also edit the [General](#) and [Security](#) tabs.

Infrastructure (Access Point) Mode Profile Configuration

To configure a profile in infrastructure (access point) mode, change the Network Type in the [Advanced tab](#). For access point mode, modify the settings:

- Transmit Power Level
- Power Save Mode
- 802.11b Preamble (if using 802.11b)
- Wireless Mode

Make sure to also edit the [General](#) and [Security](#) tabs.

Security Tab

In the MagicLan5 Utility, access the Security tab by clicking [New](#) or [Modify](#) on the Wireless Networks tab. Click the Security tab in the Profile Management window.

Edit the fields in the Security tab of Wireless Networks to configure the profile. To define the security mode, select the radio button of the desired security mode. Make sure to also edit the [General](#) and [Advanced](#) tabs.

| | |
|---------------------------------|--|
| WPA | <p>Enables the use of Wi-Fi Protected Access (WPA).</p> <p>Choosing WPA opens the WPA-EAP drop-down menu. The options include:</p> <ul style="list-style-type: none">• TLS• TTLS• PEAP (EAP-MSCHAP V2) |
| WPA-PSK | <p>Enables WPA – PSK security.</p> <p>Click on the Configure button and fill in the WPA–PSK .</p> |
| 802.1x | <p>Enables 802.1x security. This option requires IT administration.</p> <p>Choosing 802.1x opens the 802.1x EAP type drop-down menu. The options include:</p> <ul style="list-style-type: none">• TLS• TTLS• PEAP (EAP-MSCHAP V2)• LEAP |
| WEP Key (Static WEP) | <p>Enables the use of WEP keys that are defined on both the access point and the station.</p> <p>To define pre-shared encryption keys, choose the WEP Key radio button and click the Configure button to fill in the Define Pre-Shared Keys window.</p> |
| None | <p>No security (not recommended).</p> |

Using TLS Security

To use EAP-TLS security In the MagicLan5 Utility, access the [Security tab](#) in the Profile Management window.

1. On the Security tab, choose the WPA radio button.
OR: On the Security tab, choose the 802.1x radio button.
2. Choose TLS from the drop-down menu.

Enabling TLS security:

To use EAP-TLS security, the machine must already have the EAP-TLS certificates downloaded onto it. Check with the IT manager.

1. If EAP-TLS is supported, choose TLS from the drop-down menu on the right, then click the [Configure](#) button.
2. Select the appropriate certificate authority from the list. The server/domain name and the login name are filled in automatically from the certificate information. Click [OK](#).
3. Click [OK](#).
4. Activate the profile.

Using TTLS Security

To use EAP-TTLS security In the MagicLan5 Utility, access the [Security tab](#) in the Profile Management window.

1. On the Security tab, choose the WPA radio button.
OR: On the Security tab, choose the 802.1x radio button.
2. Choose TTLS from the drop-down menu.

Enabling TTLS security:

To use EAP-TTLS security, the machine must already have the EAP-TTLS certificates downloaded onto it. Check with the IT manager.

1. If EAP-TTLS is supported, choose TTLS from the drop-down menu on the right, then click the [Configure](#) button.
2. Select the appropriate certificate from the drop-down list and click [OK](#).
3. Specify a user name for EAP authentication:
 - o Enter a EAP user name in the User Name field to use a separate user name and password and start the EAP authentication process.
4. Click [Advanced](#) and:
 - o Leave the server name field blank for the client to accept a certificate from any server with a certificate signed by the authority listed in the Network Certificate Authority drop-down list. **(recommended)**
 - o Enter the domain name of the server from which the client will accept a certificate.
 - o Change the login name if needed.
5. Click [OK](#).
6. Enable the profile.

Using PEAP-MSCHAP V2 Security

To use PEAP-MSCHAP V2 security In the MagicLan5 Utility, access the [Security tab](#) in the Profile Management window.

1. On the Security tab, choose the WPA radio button.
OR: On the Security tab, choose the 802.1x radio button.
2. Choose PEAP (EAP-MSCHAP V2) from the drop-down menu.

To use PEAP (EAP-MSCHAP V2) security, the server must have PEAP certificates, and the server properties must already be set. Check with the IT manager.

1. Click the [Configure](#) button.
2. Select the appropriate certificate from the drop-down list.
3. Specify a user name for inner PEAP tunnel authentication:
 - o Enter a PEAP user name in the User Name field to use a separate user name and start the PEAP authentication process.
4. Click [Advanced](#) and:
 - o Leave the server name field blank for the client to accept a certificate from any server with a certificate signed by the authority listed in the Network Certificate Authority drop-down list. **(recommended)**
 - o Enter the domain name of the server from which the client will accept a certificate.
 - o The login name used for PEAP tunnel authentication, fills in automatically as PEAP-xxxxxxxxxxxx, where xxxxxxxxxxxx is the computer's MAC address. Change the login name if needed.
5. Click [OK](#).
6. Enable the profile.

Using LEAP Security

To use security In the MagicLan5 Utility, access the [Security tab](#) in the Profile Management window.

LEAP security requires that all infrastructure devices (e.g. access points and servers) are configured for LEAP authentication. Check with the IT manager.

To use LEAP security

- On the Security tab, choose the 802.1x radio button. Choose LEAP from the drop-down menu.
 1. Click the [Configure](#) button.
 2. Enter the user name and password.
 3. Confirm the password.
 4. Click [OK](#).
 5. Enable the profile.

Using WPA – PSK Security

To use WPA-PSK security In the MagicLan5 Utility, access the [Security tab](#) in the Profile Management window.

1. On the Security tab, choose the WPA-PSK radio button.
2. Click on the [Configure](#) button.
3. Fill in the WPA Passphrase.
4. Click [OK](#).

WEP Keys

To use the WEP keys:

1. Click the [Define WEP Keys](#) radio button on the [Security tab](#).
2. Click on [Configure](#).
3. Fill in the fields in the Define Pre-Shared Keys dialog box:

| | |
|------------------------|---|
| Key Entry | Determines the entry method for an encryption key: hexadecimal (0-9, A-F), or ASCII text (all keyboard characters except spaces). |
| Encryption Keys | Selects the default encryption keys used. Only allows the selection for a shared First, Second, Third, or Fourth key whose corresponding field has been completed. |
| WEP Keys (1-4) | Defines a set of shared encryption keys for network configuration security. At least one Shared Key field must be populated to enable security using a shared key. Click on the radio button to set the key as the default encryption key. |
| WEP Key Size | Defines the size for each encryption key. The options include: <ul style="list-style-type: none">○ 64- bit (enter 10 digits for hexadecimal, 5 ASCII characters)○ 128- bit (enter 26 digits for hexadecimal, 13 digits for ASCII)○ 152-bit (enter 32 digits hexadecimal, 16 digits for ASCII) |

4. Click [OK](#) for the changes to take effect.

Advanced Tab

In the MagicLan5 Utility, access the Advanced tab by clicking [New](#) or [Modify](#) on the Wireless Networks tab, then clicking the Advanced tab in Profile Management.

Edit the fields in the Advanced tab of Wireless Networks to configure the profile.

Make sure to also edit the [General](#) and [Security](#) tabs.

| | |
|-----------------------------|---|
| Transmit Power Level | Selects the transmit power level for 80211b/g or 802.11a. Actual transmit power may be limited by regulatory domain or hardware limitations. |
| Power Save Mode | Specify: <ul style="list-style-type: none"> • Maximum mode causes the access point to buffer incoming messages for the wireless adapter. The adapter up periodically polls the access point to see if any messages are waiting. • Normal uses maximum when retrieving a large number of packets, then switches back to power save mode after retrieving the packets. • Off turns power saving off, thus powering up the wireless adapter continuously for a short message response time. |
| Network Type | Specifies the network as either infrastructure (access point mode) or ad hoc. |
| 802.11b Preamble | Specifies the preamble setting in 802.11b. The default setting is Short & Long (access point mode), which allows both short and long headers in the 802.11b frames. The adapter can only use short radio headers if the access point supports and uses them. Set to Long Only to override allowing short frames. |
| Wireless Mode | Specifies 5GHz 54 Mbps, 2.4 GHz 54 Mbps, 2.4 GHz 11 Mbps, or Super A/G operation in an access point network. The wireless adapter must match the wireless mode of the access point it associates to. |
| Wireless Mode | Specifies 5GHz 54 Mbps, 5GHz 108 Mbps, or 2.4 GHz 54/11 Mbps to |

**when Starting an
Ad Hoc Network**

start an ad hoc network if no matching network name is found after scanning all available modes.

This mode also allows selection of the channel the wireless adapter uses. The channels available depend on the regulatory domain. If the adapter finds no other ad hoc adapters, this selection specifies the which channel with the adapter starts the ad hoc network with.

The wireless adapter must match the wireless mode and channel of the clients it associates to.

TCP/IP Configuration

Configuring the TCP/IP Address for the network device:

1. After configuring the wireless network adapter properties, open the Control Panel and open [Network and Dial-up Connections](#).
2. Find the Local Area Connection associated with the wireless network adapter. Right-click that connection, and click [Properties](#).
3. Select [Internet Protocol \(TCP/IP\)](#) and click [Properties](#).
4. Click the radio button [Use the following IP address](#), then enter an IP address and Subnet mask. Assigning an IP address and Subnet mask allows stations to operate in [access point mode](#) (infrastructure mode) or in [ad hoc mode](#) and to have Internet access. Default gateway and DNS server information is also required.

IP configuration information (DHCP to assign the IP address, gateway and DNS server IP addresses) is usually obtained from the corporate IT staff.

Click [OK](#) to finish.

Appendix A – Specifications

| | |
|-----------------------------|---|
| Model | SWL-2700M |
| Wireless LAN (IEEE 802.11b) | |
| Frequency Range | 2.4 ~ 2.5 GHz (Subject to local Regulation) |
| Data Rates | 1, 2, 5.5 ,11 Mbps, Full Auto |
| Modulation | DSSS(Direct Sequence Spread Spectrum) / CCK, DBPSK, DQPSK |
| Receive Sensitivity | -87dBm(Typical) @ 11Mbps |
| Output Power | 19dBm(Typical) |
| Power Consumption | Typical 450mA |
| Wireless LAN (IEEE 802.11g) | |
| Frequency Range | 2.4 ~ 2.5 GHz (Subject to local Regulation) |
| Data Rates | 6, 9, 12, 18, 24, 36, 48, 54 Mbps, Full Auto |
| Modulation | OFDM / BPSK, QPSK, 16QAM, 64QAM |
| Receive Sensitivity | -92dBm(Typical) @ 6Mbps -72dBm(Typical) @ 54Mbps |
| Output Power | 19dBm(Typical) |
| Power Consumption | 480mA(Typical@transmit) |
| Security Features | |
| Security standard | WPA (Wi-Fi Protected Access) |
| Dynamic WEP-Key | Rekeying Support |
| Port Access Control | 802.1X (EAP-MD5, EAP-TLS, EAP-TTLS, PEAP) |
| Encryption | WEP (40/104 Bit) TKIP AES |
| System Information | |
| System Interface | MiniPCI Type IIIB |
| Supported OSs | Windows 98SE/ME/2000/XP, WinCE, Linux |
| Antenna Type | antenna supporting diversity |
| Operating Range | Open Space : 90m@54Mbps, 270m@6Mbps, 300m@2Mbps Closed Office : 30m@54Mbps, 50m@6Mbps, 60m@2Mbps |
| Size | 59.75x44.7x5.0mm |
| Weight | MAX 12g |
| Temperature | Operating : -20~55 °C / Storage : -30~75 °C |
| Humidity | 10% to 90%, Non-condensing |

| | |
|-----------------------------|---|
| Model | SWL-5300M |
| Wireless LAN (IEEE 802.11b) | |
| Frequency Range | 2.4 ~ 2.5 GHz (Subject to local Regulation) |
| Data Rates | 1, 2, 5.5, 11 Mbps, Full Auto |
| Modulation | DSSS(Direct Sequence Spread Spectrum) / CCK, DBPSK, DQPSK |
| Receive Sensitivity | -87dBm(Typical) @ 11Mbps |
| Output Power | 19dBm(Typical) |
| Power Consumption | Typical 450mA |
| Wireless LAN (IEEE 802.11g) | |
| Frequency Range | 2.4 ~ 2.5 GHz (Subject to local Regulation) |
| Data Rates | 6, 9, 12, 18, 24, 36, 48, 54 Mbps, Full Auto |
| Modulation | OFDM / BPSK, QPSK, 16QAM, 64QAM |
| Receive Sensitivity | -92dBm(Typical) @ 6Mbps -72dBm(Typical) @ 54Mbps |
| Output Power | 17dBm(Typical) |
| Power Consumption | 480mA(Typical) |
| Wireless LAN (IEEE 802.11a) | |
| Frequency Range | 5.15 ~ 5.85 GHz (Subject to local Regulation) |
| Data Rates | 6, 9, 12, 18, 24, 36, 48, 54 Mbps, Full Auto |
| Modulation | OFDM / BPSK, QPSK, 16QAM, 64QAM |
| Receive Sensitivity | -92dBm(Typical) @ 6Mbps -72dBm(Typical) @ 54Mbps |
| Output Power | 17dBm(Typical) |
| Power Consumption | 500mA(Typical@Transmit) |
| Security Features | |
| Security standard | WPA (Wi-Fi Protected Access) |
| Dynamic WEP-Key | Rekeying Support |
| Port Access Control | 802.1X (EAP-MD5, EAP-TLS, EAP-TTLS, PEAP) |
| Encryption | WEP (40/104 Bit) TKIP AES |
| System Information | |
| System Interface | MiniPCI Type IIIB |
| Supported OSs | Windows 98SE/ME/2000/XP, WinCE, Linux |
| Antenna Type | Dual Band antenna supporting diversity |

| | |
|-----------------|---|
| Operating Range | Open Space : 90m@54Mbps, 270m@6Mbps, 300m@2Mbps Closed Office : 30m@54Mbps, 50m@6Mbps, 60m@2Mbps |
| Size | 59.75x44.7x5.0mm |
| Weight | Max 12g |
| Temperature | Operating : -20~55 °C / Storage : -30~75 °C |
| Humidity | 10% to 90%, Non-condensing |

Appendix B – Regulatory Information

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for OEM integrators must include the following information in a prominent location “ IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user’s authority to operate the equipment

WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.:

INFORMATION TO USER:

This equipment has been tested and found to comply with the limit of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation; if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help