Intersil ISL39000M

IEEE 802.11a/g MiniPCI WLAN Card

Installation Manual

Version 0.2

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0-Introduction

The Intersil ISL39000M WLAN NIC is a complete wireless high speed Network Interface Card (NIC). It conforms to the IEEE 802.11g and IEEE 802.11a protocol and operates in the 2.45 GHz and 5150-5350MHz frequency bands.

It provides a complete reference design evaluation platform of hardware and software to system providers or integrators requiring wireless data communications capability and is ideal for integration into computer platforms.

• Fully compliant with the IEEE 802.11g and IEEE 802.11a WLAN standards
• FCC Certified Under Part 15 (pending) to Operate in the 2.45 GHz and 5150-5350MHz Bands
• Support for 54, 48, 36, 24, 18, 12, 9, and 6 Mbps OFDM, 11 and 5.5 Mbps CCK and legacy 2 and 1 Mbps data rates
• Driver Supports Microsoft Windows ® 98/SE, ME, XP and 2000 (SR1)

1-OEM Installation procedure

1.0 Host PC Notebook

The Intersil ISL39000M WLAN MiniPCI Card is authorized to be installed into the following host PC notebooks:

1—Toshiba Satellite Pro type 6100 series

1.1 Installing the miniPCI card into the host PC Notebook

a-open miniPCI slot cover of host PC Notebook housing (please observe the necessary ESD precautions).

b-insert miniPCI card into miniPCI slot

c-connect the host PC notebook antennas to the miniPCI card antenna connectors (Hirose type UFL connector)

d-close miniPCI slot cover of host PC Notebook housing

1.2 Installing the software drivers

a-Start windows

b-When windows detects new hardware and asks for drivers, point to directory where the Intersil driver is located (for example floppy drive, cdrom , harddisk) to install.
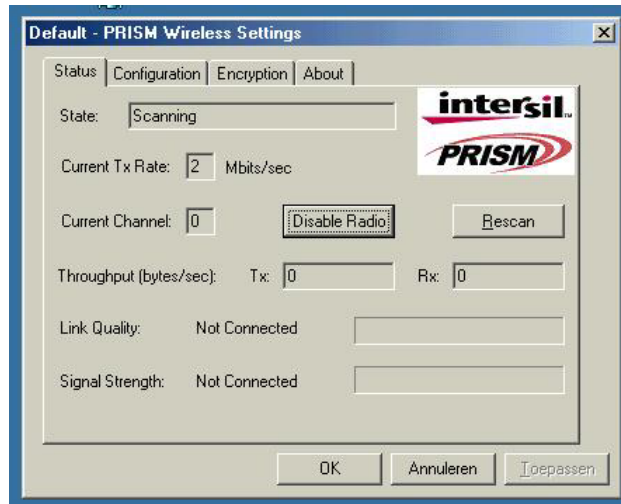
c-after drivers are installed, restart windows

d-the Intersil WLAN icon will appear in system tray on the bottom right of the screen (see yellow arrow in fig. 01)
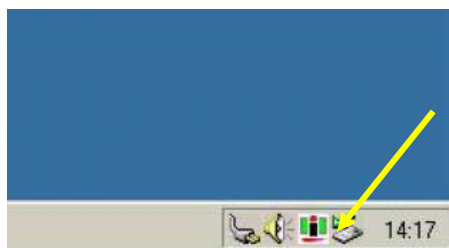
fig, 01: Intersil WLAN icon

e-double click the Intersil WLAN icon to open the WLAN settings, the following window will appear (see fig.02)

fig, 02: Intersil WLAN settings window

f-click on configuration tab and select which type of network is required (access point or Peer-to-peer mode), see fig. 03.

fig, 03: WLAN network type setting window

g-select what TX rate is required (default setting is fully automatic) see fig. 04.

fig, 04: WLAN tx rate setting window

h-select what encryption type is required, 64 or 128 bit WEP (default setting is disabled) see fig. 05.
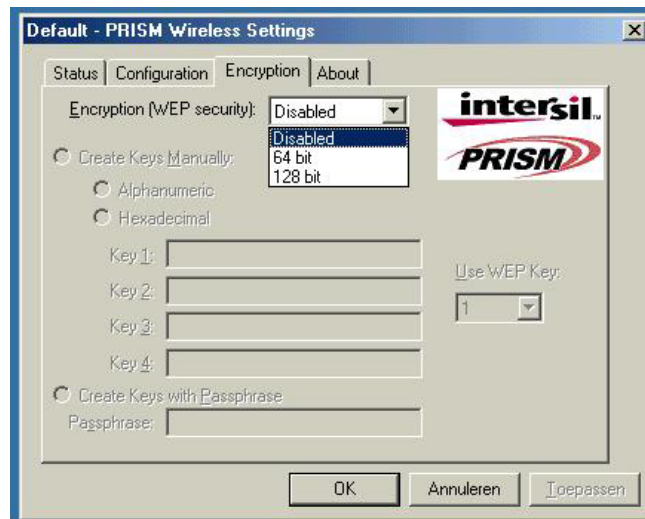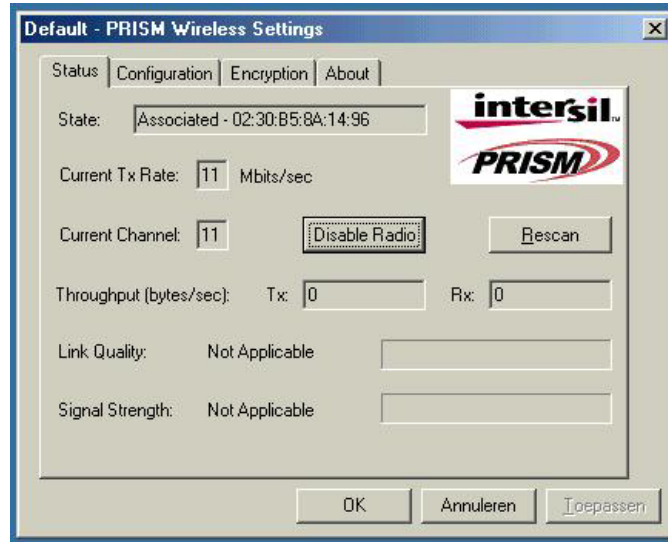

fig, 05: WLAN encryption rate setting window

i-click on the status tab to see the connection status (fig.06).

fig, 06: WLAN network status

j-click on the about tab to see the software drivers versions and MAC address (fig.07).

fig, 07: WLAN driver and MAC addres information

1.3 Wireless LAN installation guide lines and Authorization for use

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by Intersil may void the user's authority to operate the equipment. Intersil is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution or attachment of connecting cables and equipment other than specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Intersil and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

The use of Wireless LAN devices may be restricted in some situations or environments for example:
    * On board of airplanes, or
    * In an explosive environment, or
    * In case the interference risk to other devices or services is perceived or identified as harmful.

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please first verify authorization to use these devices prior to operating the equipment.

2-Regulatory information

2.1 FCC Information to User

This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals

2.2 FCC Guidelines for Human Exposure

In order to comply with RF exposure limits, the user is advised to maintain a distance of at least 20 cm from the antenna of this device while it is in use. The antenna is located at the top of the LCD screen of the note book host PC.

2.3 FCC Electronic Emission Notices

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
2. This device must accept any interference received, including interference that may cause undesired operation.

Caution:
1--Within 5.15 to 5.25 MHz bands, UNII devices are restricted to indoor operations to reduce any potential harmfull interference to co-channel Mobile Satelite Systems (MSS) operations.

2--High power radars are allocated as primary users in the 5.25 to 5.35GHz and 5.65 to 5.85GHz bands. These high power radar stations can cause interference with and/or damage to this device.

2.4 FCC Radio Frequency Interference statement
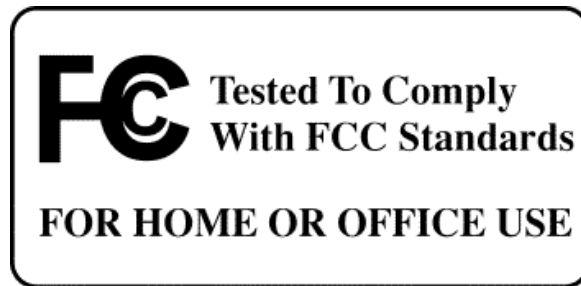
This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, 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. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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:
• Reorient or relocate the receiving antenna
• Increase the separation between the equipment and receiver
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
• Consult the dealer or an experienced radio/TV technician for help

2.5 Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

2.6 Europe - EU Declaration of Conformity

This device complies with the essential requirements and other relevant provisions of the European R&TTE Directive 1999/5/EC.
Compliance to essential test suites is met per standards:

R&TTE Harmonized Standard	Description
LVD specification EN 60950	EN 60950,ed. (1992), incl A1(1993), A2(1993), A3(1995) and A4(1997) Safety of information technology equipment, including electrical business equipment. Meets R&TTE directive art. 3.1.a of essential requirements on protection of the health and sefety of the user.
ETSI EMC specification ETSI EN 301 489-1 V1.2.1 (2000-08) ETSI EN 301 489-17 V1.1.1 (2000-09)	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; *Part 1: Common technical requirements* *Part 17: Specific conditions for Wideband data and HIPERLAN equipment* Meets R&TTE directive art. 3.1.b of essential requirements on protection with respect to Electro Magnetic Compatibility.
ETSI RF specification ETSI EN 300 328 Part 1 V1.2.2 (2000-07) ETSI EN 300 328 Part 2 V1.1.1 (2000-07) EN 301 893 V1.1.1 (2001-01)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; *Part 1: Technical characteristics and test conditions* *Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive* Broadband Radio Access Networks (BRAN), HIPERLAN Type 2 Harmonised EN covering essential requirements of article 3.2 of the R&TTE Directive Meets R&TTE directive art. 3.2.a on effective use of spectrum so as to avoid harmful interference.

	Important Notice :
$C \in 0336 \; ①$	This device is a dual band 2.4 GHz / 5 GHz low power RF device intended for home and office use in EU and EFTA member states. In some EU / EFTA member states some restrictions may apply. Please contact local spectrum management authorithies for further details before putting this device into operation.

EU versions of this WLAN device may only have 4 channels in 5150-5250MHz band with RF output power limited to 50 mW. This device is intended for indoor use only.

3-Technical Specifications

Radio Technology	IEEE 802.11g and IEEE 802.11a (DSSS and OFDM)
Operating Frequency	2400-2497MHz ISM band and 5150-5350 MHz UNII band
Modulation Schemes	DQPSK, DBPSK, CCK, 16 QAM, 64 QAM
RF Channel Availability	2.4 GHz band 11 channels for United States (2412 MHz to 2462 MHz) 13 channels for Europe (2412 MHz to 2472 MHz) 13 channels for Japan (2412 MHz to 2472 MHz), channel 14 only available in DSSS mode (11 Mbps max) 5 GHz band 8 channels for US and Europe (5150 MHz to 5350MHz) 4 channels for Japan (5150 MHz to 5250MHz)
Data Rate	Support for 54, 48, 36, 24, 18, 12, 9, and 6 Mbps OFDM, 11 and 5.5 Mbps CCK and legacy 2 and 1 Mbps data rates
Media Access Protocol	CSMA/CA with ACK
Transmitter RF Output Power	2400-2497 MHz: < 18.0 dBm EIRP (typical) including antenna gain 5150-5250 MHz: < 17.0 dBm EIRP (typical) including antenna gain 5250-5350 MHz: < 20.0 dBm EIRP (typical) including antenna gain
Antenna Type	Internal diversity antennas with 1 dBi rated gain
Operating Voltage	3.3 VDC via PC host miniPCI slot
Interface	miniPCI
Formfactor	miniPCI III B
Device driver Support	Microsoft® Windows® NT, 2000, ME, and XP