
Configuration Utility User's Guide

Revision 0.1		1
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1 Introduction

The configuration utility provides displaying and changing parameters of the TI WLAN driver.

1.1 List of abbreviations and Terms

AES	- Advanced Encryption Standard
AP	- Access Point
BSS	- Basic Service Set
BSSID	- Basic Service Set Identifier
CU	- Configuration Utility
FCS	- Frame Check Sequence
GUI	- Graphical User Interface
IBSS	- Independent Basic Service Set
LEAP	- Lightweight Extensible Authentication Protocol
MAC	- Medium Access Control
MSDU	- MAC Service Data Unit
PBCC	- Packet Broadcast Control Channel
PRS	- Product Requirements Specification
RSSI	- Received Signal Strength Indication
SSID	- Service Set Identifier
SSN	- Sub System Number
TI	- Texas Instruments Inc.
TKIP	- Temporal Key Integrity Protocol
WEP	- Wired Equivalent Privacy
WiFi	- Wireless Fidelity
WPA	- WiFi Protected Access
WLAN	- Wireless Local Area Network

2 Installation

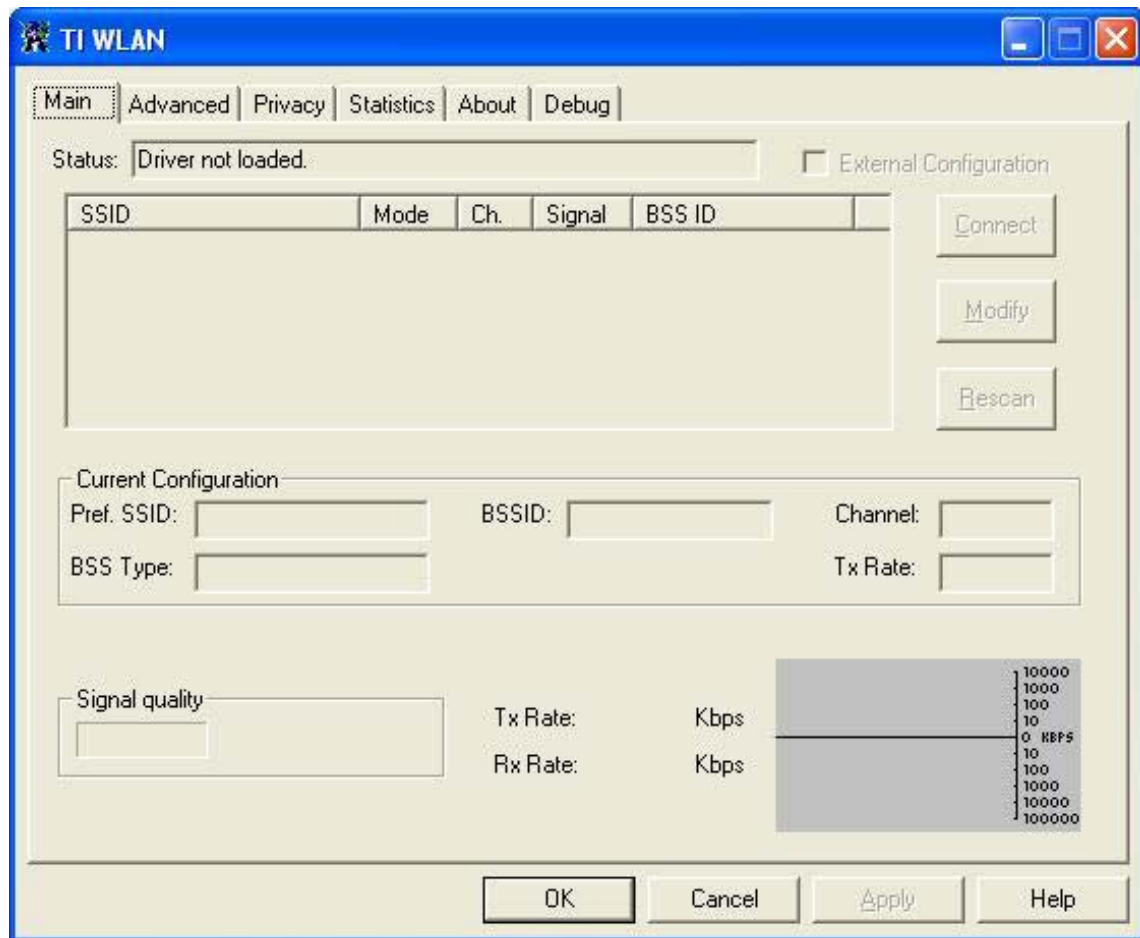
3 Using the TI WLAN CU

Important Notes:

- In case that the device was not installed properly or that it is disconnected, all buttons, combo boxes, edit boxes etc. will be disabled. Also the status text in the main window will be set to Driver not loaded.
- To save any changes – press the Apply button. Changes will not be saved if changed focus to another tab without previously clicking the Apply button.
- Pressing the OK / Cancel button from the main property sheet will minimize the application to the task bar. In case that there were changes, clicking the Cancel button will return the displayed data to the one stored on the driver. Another click will minimize the application to the task bar. Left click the application icon on the task bar, or right click and choose Restore to restore it. Choose Exit to exit the application.

3.1 The Main (Status) Screen

The Main Screen is the main page for the CU. It contains the available 802.11 networks and the current configuration basic data. It enables rescanning the network, modifying the current configuration parameters and connecting to each one of the listed SSIDs. It also enables activating and deactivating of using an external configuration.



The image shows the TI WLAN Main (Status) Screen. The window has a blue title bar with the text "TI WLAN" and standard Windows window controls. Below the title bar is a tabbed interface with tabs for "Main", "Advanced", "Privacy", "Statistics", "About", and "Debug". The "Main" tab is selected.

Under the "Main" tab, there is a "Status:" label followed by a text box containing "Driver not loaded." To the right of this is a checkbox labeled "External Configuration" which is currently unchecked.

Below the status area is a table with the following headers: "SSID", "Mode", "Ch.", "Signal", and "BSS ID". The table body is empty. To the right of the table are three buttons: "Connect", "Modify", and "Rescan".

Below the table is a section titled "Current Configuration". It contains five input fields: "Pref. SSID:", "BSSID:", "Channel:", "BSS Type:", and "Tx Rate:". The "Tx Rate:" field is currently empty.

Below the "Current Configuration" section is a "Signal quality" label followed by a small rectangular display area. To the right of this are two labels: "Tx Rate:" and "Rx Rate:", each followed by a "Kbps" label. To the right of these labels is a vertical scale with values: 10000, 1000, 100, 10, 0 Kbps, 10, 100, 1000, 10000, 100000.

At the bottom of the window are four buttons: "OK", "Cancel", "Apply", and "Help".

Getting Started:

In order to connect to a network, do the following:

- 1) In the *Available Networks Window* the currently available networks are displayed. In order to connect to a specific network – select the appropriate row (will be highlighted as a result)
- 2) Click on the **Connect button** (another option is to double click the appropriate row). After doing so, the CU will attempt associating with the chosen network. If there are no available networks on the available networks window, you can choose to rescan for currently available networks by pressing the **Rescan button**.

After choosing a network, a basic connection data will be displayed on the screen. See Displayed data section for details.

If no network is available or refreshing the available networks list is desired – click on the **Rescan button**.

Displayed data:

Status – can be one the following:

- **Driver not loaded** – driver not installed or not inserted.
- **Disconnected from network** – disconnected from current configured SSID.
- **Connecting to network** – while in the process of connecting.
- **Connected to network** – connected to current configured SSID.
- **Scanning network** – scanning network for available SSIDs.
- **Not connected to network** – idle status

Current configuration - provides read-only status information of the current active connection.

- **Pref: SSID** - Preferred Service Set Identifier.
- **BSS Type** - Basic Service Set Type.
- **BSSID** - Basic Service Set Identifier.
- **Channe** - the channel number through which we are connected.
- **Tx Rate** - current rate used for transmitting frames.

For more information, [see section 3.2.1](#)

Signal quality – displays the Received Signal Strength Indication as a percentage bar.

Tx Rate Rx Rate displays instantaneous transmit and receive rates, in a graphical format. These values are being refreshed every second.

Modifying Current Connection Parameters

To modify the current connection parameters, click the **Modify button**. So, a new property sheet will be opened. This property sheet contains two pages named "New connection" and "Advanced", [see section 3.2.1](#) , [see section 3.2.2](#) .

Advanced Configuration

Check the External Configuration check box for enabling privacy external configuration. By doing so, all three buttons (Connect, Modify and Rescan) will be disabled, [see section 3.4](#) – Privacy Screen for more details.

Summary

Connect button – use this button to initiate a connection to the network chosen in the *Available Networks Window*.

Rescan button –use this button to rescan and update the *Available Networks Window*.

Modify button – use this button to modify the current connection parameters.

External Configuration check box – check this check box for enabling privacy external configuration.

3.2 The Modify Property Sheet

Both New Connection and Advanced page contains the current connection modifiable parameters retrieved from the driver.

3.2.1 The New Connection tab

The screenshot shows a 'New Connection' dialog box with the following fields and controls:

- Preferred SSID:** A text input field.
- BSS Type:** A dropdown menu.
- Tx Rate:** A dropdown menu.
- Channel:** A dropdown menu.
- Power Mode:** A dropdown menu.
- IBSS Protection:** A dropdown menu.
- 4x Config:** A section containing two radio buttons:
• ☐ 4X Disable
• ☐ 4X Enable
- Tx Power Level:** A dropdown menu.
- Mode:** A dropdown menu.
- Profile:** A dropdown menu.
- Buttons:** 'Load' and 'Save' buttons located below the Profile dropdown.

- **Preferred SSID** – preferred Service Set Identifier - a string identifying the current configured service set.
- **BSS Type combo box** – Basic Service Set Type. This field can be one of the following:
 - 802.11 Ad hoc
 - Infrastructure
 - High-speed Ad hoc
- **Tx Rate combo box** – Current rate used for transmitting frames. The available values depend on the BSS Type value and the Mode value.
- **Channel combo box** – the channel number through which we are connected.
- **Power Mode combo box** – This option enables stations power conserving by turning off receiver and transmitter.

-
- This field contains the following values:
 - o No Power Save
 - o Max Power Save
 - **IBSS Protection combo box** – Independent Basic Service Set protection can be one of the following:
 - o None
 - o TI Protection
 - o CTS Only
 - **4x Config radio button** – select “*4x enable*” to enable 4x mode, and “*4x disable*” to disable it.
 - **Tx Power Level combo box** – Transmit power level. Can be one of the following:
 - o Low Power
 - o Medium-Low Power
 - o Medium-Power
 - o Medium-High Power
 - o High Power
 - **Mode combo box** – selection of one of the standard 802.11 operating modes:
 - o B-Only Mode
 - o B-Plus Mode
 - o B&G Mode
 - o G-Only Mode
 - o A-Only Mode
 - o A&G Mode
 - **Profile** – Save a profile or load a stored profile. To save profile, enter a profile name within the combo box and press save. To load an existing profile, choose the profile name from the comb box and press load. All of the current configuration parameters will be changed to the saved profile parameters.

3.2.2 Advanced tab

The screenshot shows a window titled "Advanced" with a close button in the top right corner. The window is divided into several sections:

- Thresholds:** Contains two edit boxes: "Fragment Threshold" and "RTS Threshold".
- Preamble:** Contains two radio buttons: "Long Preamble" and "Short Preamble".
- Authentication:** Contains a dropdown menu.
- 802.11g version:** Contains two radio buttons: "Draft 5" and "Draft 6".
- Antennas:** Contains two dropdown menus: "Tx Antenna" and "Rx Antenna".
- Retry limits:** Contains two edit boxes: "Short" and "Long".

- **Fragment Threshold edit box**- the range of selectable values is 0 – 2347 inclusive. 2347 is the default value.
- **RTS Threshold edit box** - the range of selectable values is 0 – 2346 inclusive. 2346 is the default value.
- **Preamble** - the user can select either short or long.
- **Authentication combo box** – Can be one of the following values:
 - o Auto Switch
 - o Shared Key
 - o Open System
- **802.11g version** – this section is enabled only with *G-Only* Mode operation mode selected on the New Connection Page.
- **Antennas combo boxes** – this section contains two identical combo boxes, having the following options:
 - o Both
 - o Antenna 1
 - o Antenna 2
- **Retry limits Short edit box** - the range of selectable values is 0 – 15.

- **Retry limits Long edit box** - the range of selectable values is 0 – 15.

3.3 The Advanced Properties Screen

Read only advanced data for current configuration. Most of the parameters are those previously defined in the Modify property sheet.

Additional parameters:

Left Side:

- **Authentication** — defined in the Privacy screen. See next section for more details.
- **AP Tx Power Level** — Current AP Tx power level in mW.

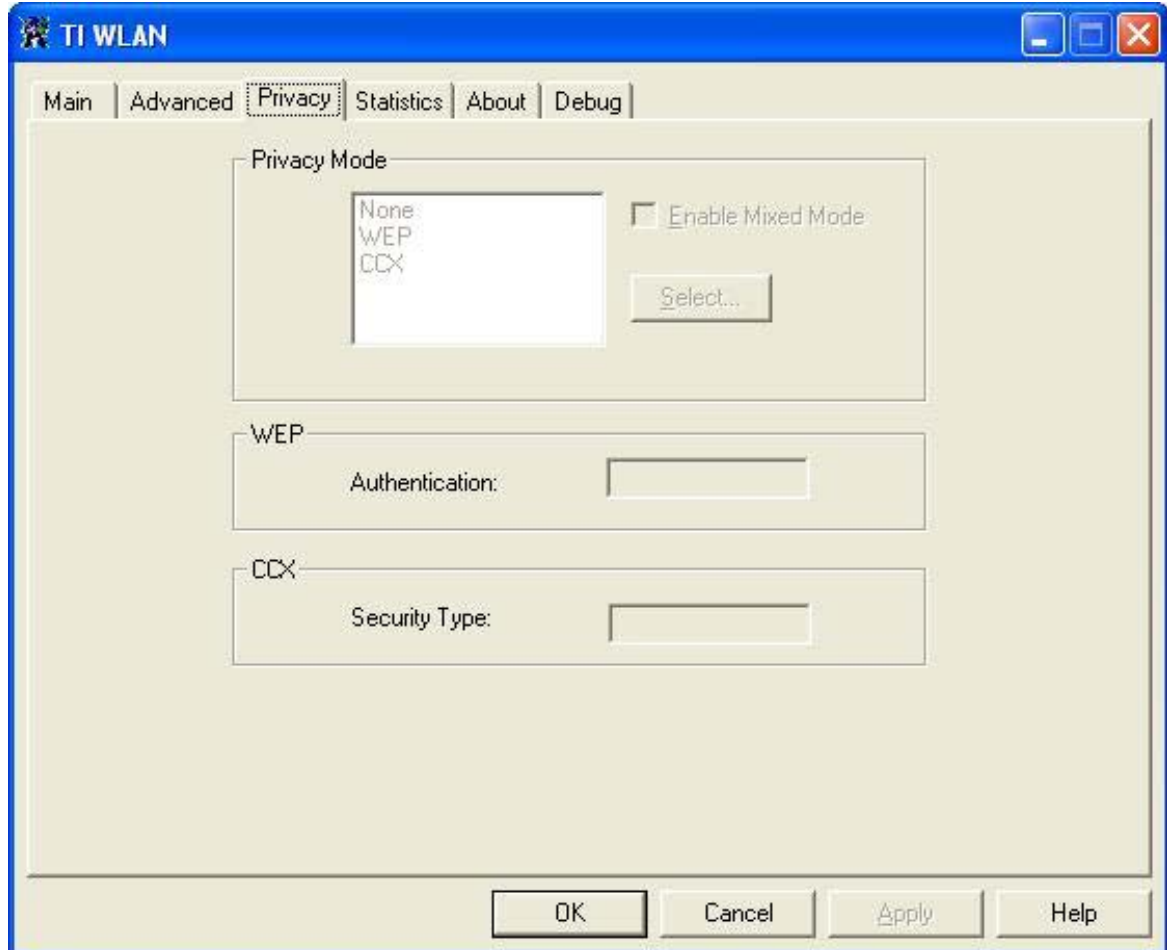
Network Information

- **IP Address**
- **Net. Mask**
- **Gateway**

Right side:

- **Encryption** — defined in the Privacy screen. See next section for more details.
- **Regulatory Domain** — can be one of the following:
 - For 2.4 GHz:
 - o FCC
 - o IC
 - o ETSI
 - o Spain
 - o France
 - o MKK
 - o MKK1
 - o Unknown
 - For 5 GHz:
 - o US
 - o World Band
 - o Extended World Band
- **MAC Addr** - MAC address
- **Country Code** — represented by a 3 maximum length string.

3.4 The Privacy Screen



Note: This window will be disabled in case that the *External Configuration* check box (in the Main window) was checked.

In this screen the privacy mode is being configured.

There are 3 optional privacy modes:

- **None** — no security defined.
- **WEP** -for WEP key defining. Press the Select button to change WEP configuration. A new dialog window will be opened ([see section 3.4.1](#)).
- **CCX** - for CCX configuration. Press the Select button to change CCX configuration. A new dialog window will be opened ([see section 3.4.2](#)).

To use the external mode (privacy configured by Funk's Odyssey software), check the **External Configuration check box** in the main dialog and press the **Apply button**. All privacy configurations will be disabled, until you uncheck the **External Configuration check box**.

3.4.1 The WEP Screen

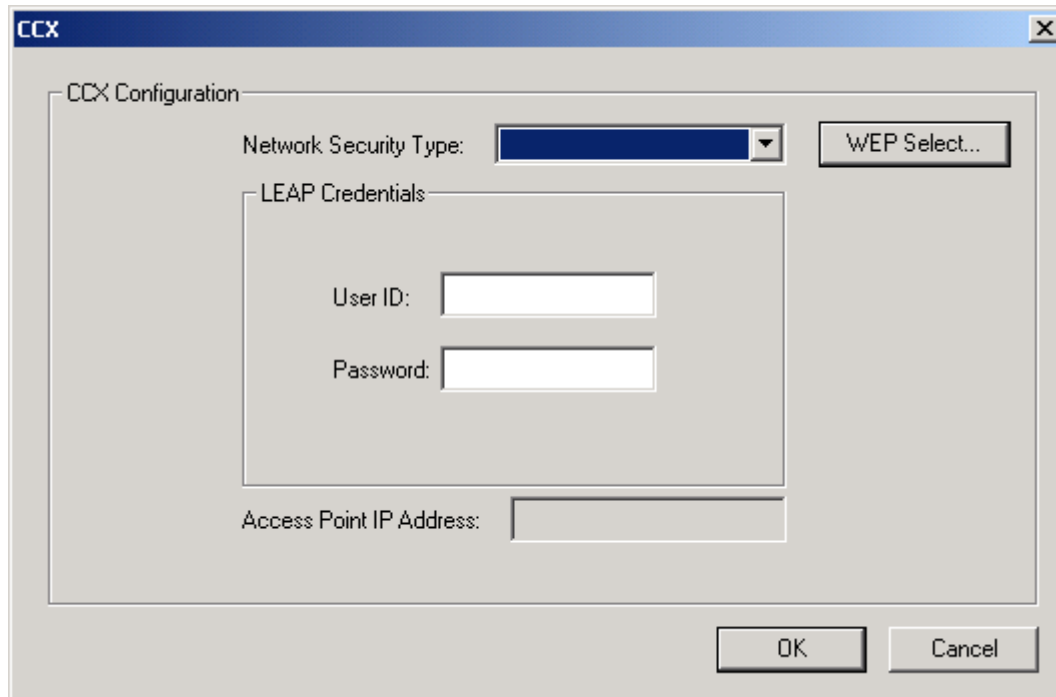
The screenshot shows a Windows-style dialog box titled "WEP". Inside the dialog, there is a section titled "WEP Configuration". This section contains three columns of controls: "Encryption", "Key Size", and "Authentication:". Under the "Encryption" column, there are four radio buttons labeled 1, 2, 3, and 4, each followed by a text input field. Under the "Key Size" column, there are four dropdown menus corresponding to the radio buttons. Under the "Authentication:" column, there is a single dropdown menu. At the bottom right of the dialog are "OK" and "Cancel" buttons.

Configure WEP keys:

- Choose key size from the **key size combo box**. Available values - 40 bit, 128 bit, 256 bit.
- Add an encryption string within the **Encryption edit box**.
- Choose authentication type from the **Authentication combo box**.
Available values – Open System, Shared Key, Auto Switch
- Select default key by pressing the desired radio button.

Press OK to save and return to previous dialog, or cancel to cancel changes and return to the previous dialog.

3.4.2 The CCX Configuration Screen



The screenshot shows a Windows-style dialog box titled "CCX". Inside the dialog, there is a section titled "CCX Configuration". Within this section, there is a "Network Security Type:" label followed by a dropdown menu. To the right of the dropdown is a button labeled "WEP Select...". Below the dropdown is a group box titled "LEAP Credentials". Inside this group box, there are two labels: "User ID:" followed by a text input field, and "Password:" followed by another text input field. Below the "LEAP Credentials" group box is the label "Access Point IP Address:" followed by a text input field. At the bottom right of the dialog, there are two buttons: "OK" and "Cancel".

Select an option from the **Network Security Type** combo box.

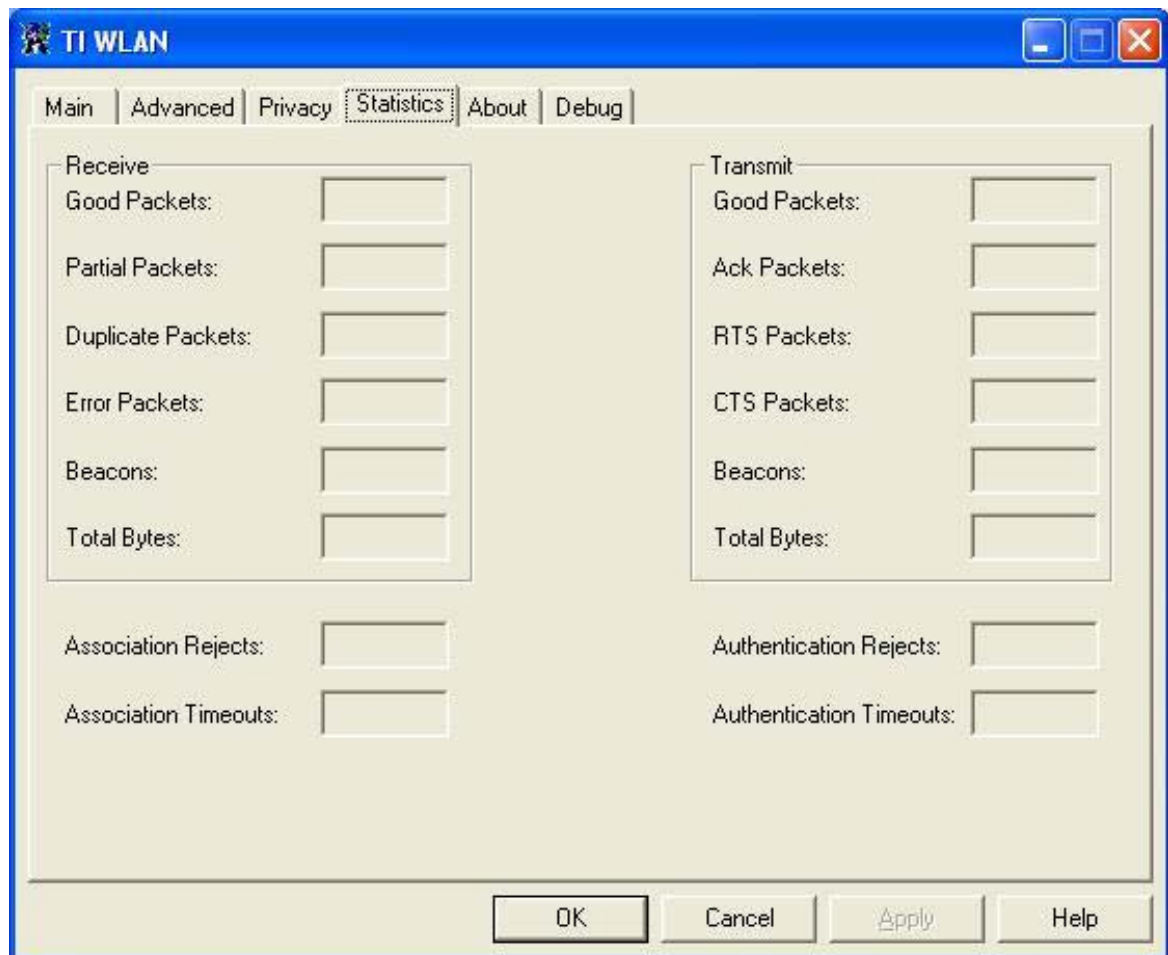
Available options are:

- **None** — choosing it will enable the **WEP Select button**. By pressing it you will get to the same window as described in [see section 3.4.1](#)
- **LEAP** — choosing it will enable the **Leap Credentials** group box, where you can type the user ID and password.
- **External** —external CCX configuration.

Press OK to save and return to previous dialog, or cancel to cancel changes and return to the previous dialog.

3.5 The Statistics Screen

Contains general statistics data retrieved from the driver.

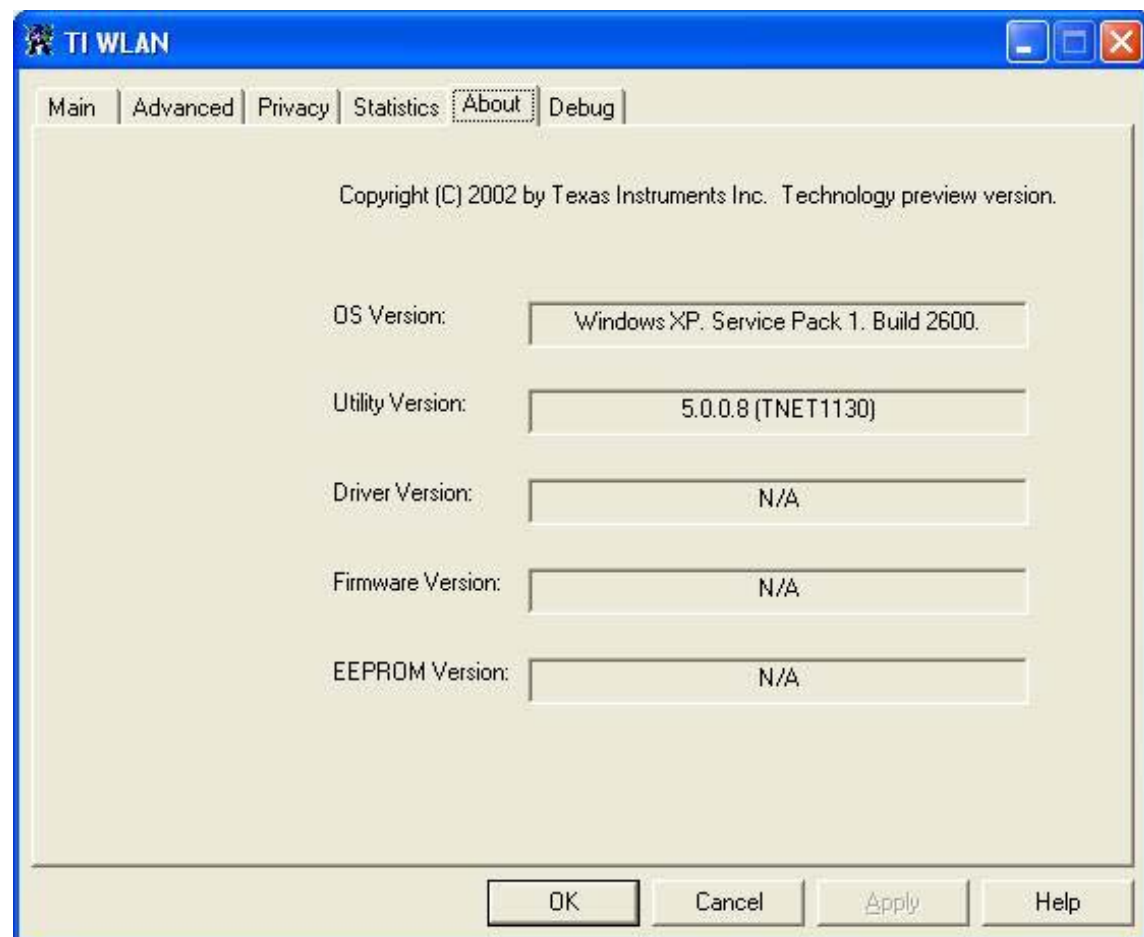


The image shows a screenshot of the 'TI WLAN' application window, specifically the 'Statistics' tab. The window has a blue title bar with the text 'TI WLAN' and standard Windows window controls (minimize, maximize, close). Below the title bar is a tabbed interface with five tabs: 'Main', 'Advanced', 'Privacy', 'Statistics' (which is selected and highlighted), 'About', and 'Debug'. The main content area is divided into two columns. The left column is titled 'Receive' and contains six labels with corresponding text boxes: 'Good Packets:', 'Partial Packets:', 'Duplicate Packets:', 'Error Packets:', 'Beacons:', and 'Total Bytes:'. The right column is titled 'Transmit' and contains six labels with corresponding text boxes: 'Good Packets:', 'Ack Packets:', 'RTS Packets:', 'CTS Packets:', 'Beacons:', and 'Total Bytes:'. Below these two columns, there are four more labels with text boxes: 'Association Rejects:', 'Association Timeouts:', 'Authentication Rejects:', and 'Authentication Timeouts:'. At the bottom of the window, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Receive	Transmit
Good Packets:	Good Packets:
Partial Packets:	Ack Packets:
Duplicate Packets:	RTS Packets:
Error Packets:	CTS Packets:
Beacons:	Beacons:
Total Bytes:	Total Bytes:
Association Rejects:	Authentication Rejects:
Association Timeouts:	Authentication Timeouts:

3.6 The About Screen

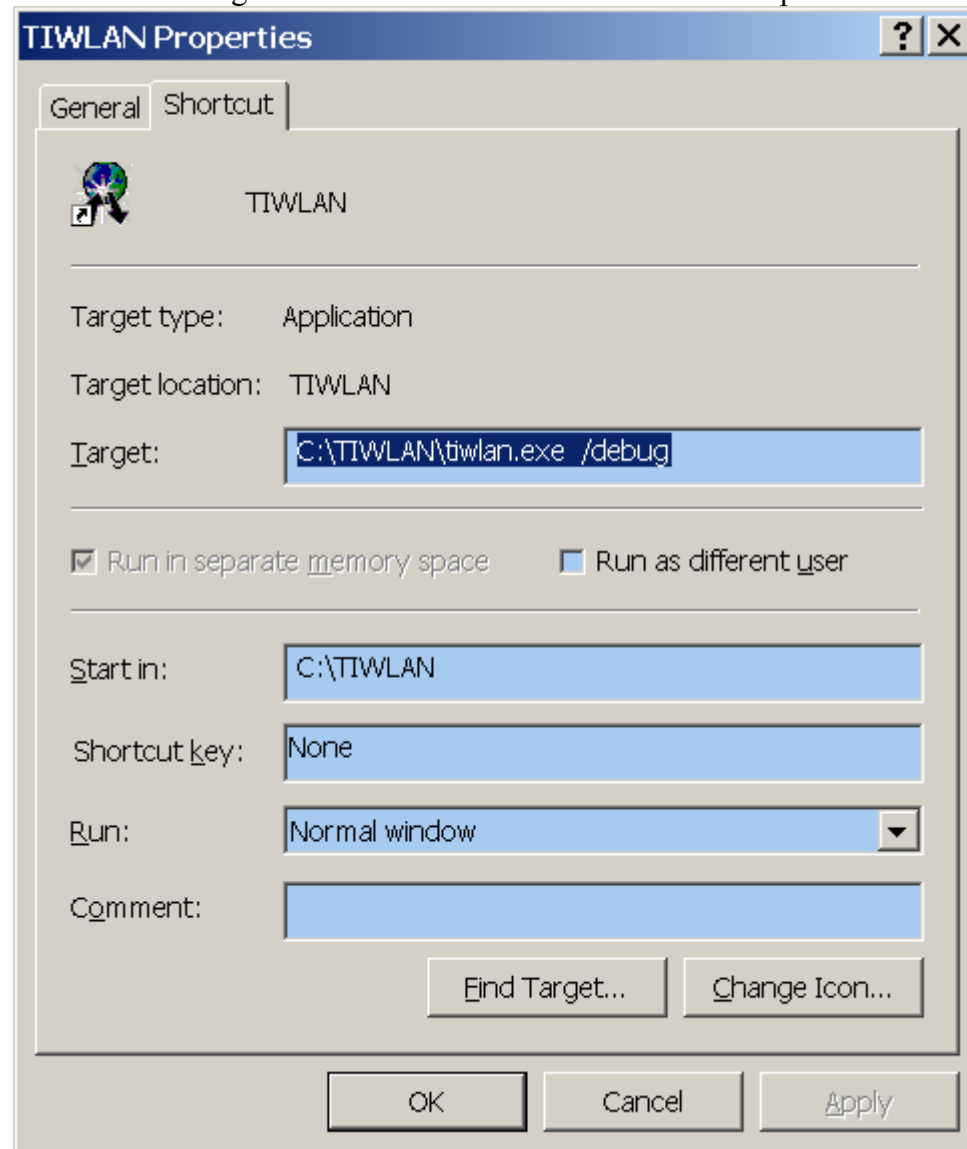
The about screen contains general version data.



3.7 Debug Screen

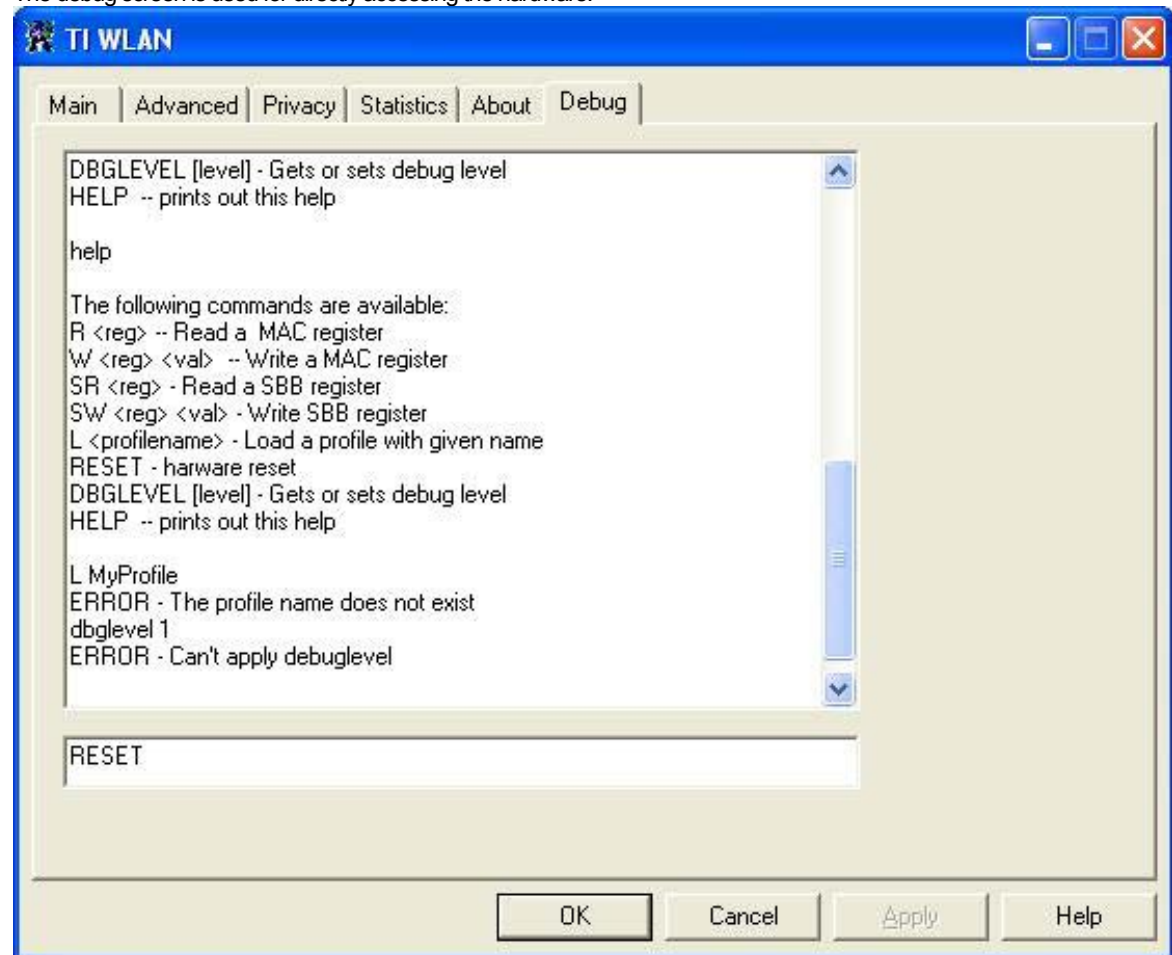
3.7.1 Debug Tab activation

Add the following text to shortcut definition as it shown on picture below.



3.7.2 Debug Screen options

The debug screen is used for directly accessing the hardware.



Federal Communication Commission 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 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 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.

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, Wireless AP , Wireless Router).

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna □ and users (for example :Access Point, Router, ADSL...and so on). The final □ end product must be labeled in a visible area with the following: "Contains TX □ FCC ID: N89-WM610T".□

Manual Information That Must be Included

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.