

Operating User Manual

WG7831D ELF



Software Installation

(1) Executive TI Wireless Tools HDK2.0.exe, met process of following screen , please fill in

Customer name = Random

License Key = 644509802

Others Were to select the preset

Texas Instruments Wireless Tools - InstallShield Wizard

TEXAS INSTRUMENTS

Technology for
Innovators™

Please provide the Texas Instruments Wireless Tools licensing information

The InstallShield(R) Wizard will install Texas Instruments Wireless Tools on your computer. To continue, click Next.

Customer name:

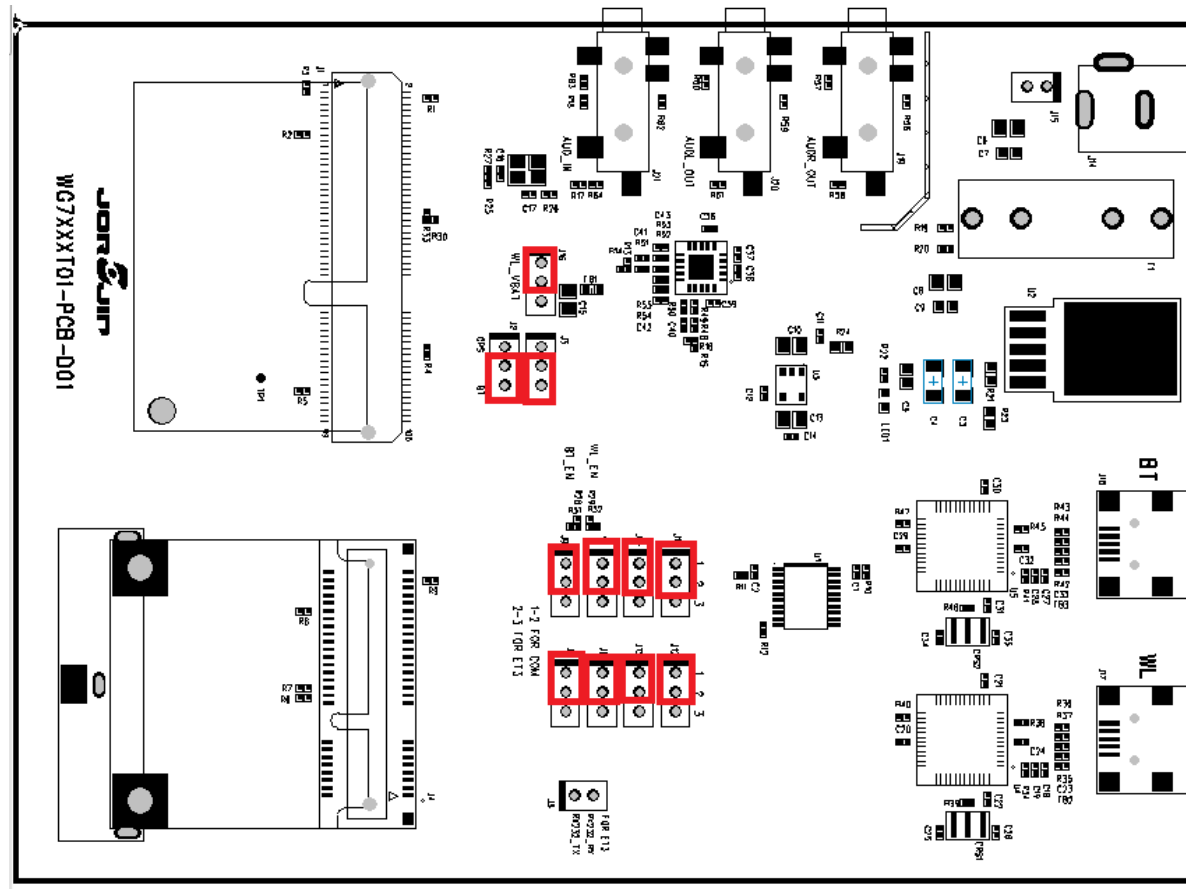
License key:

In case a license key was not provided with this software, please contact the local TI Israel customer representative.

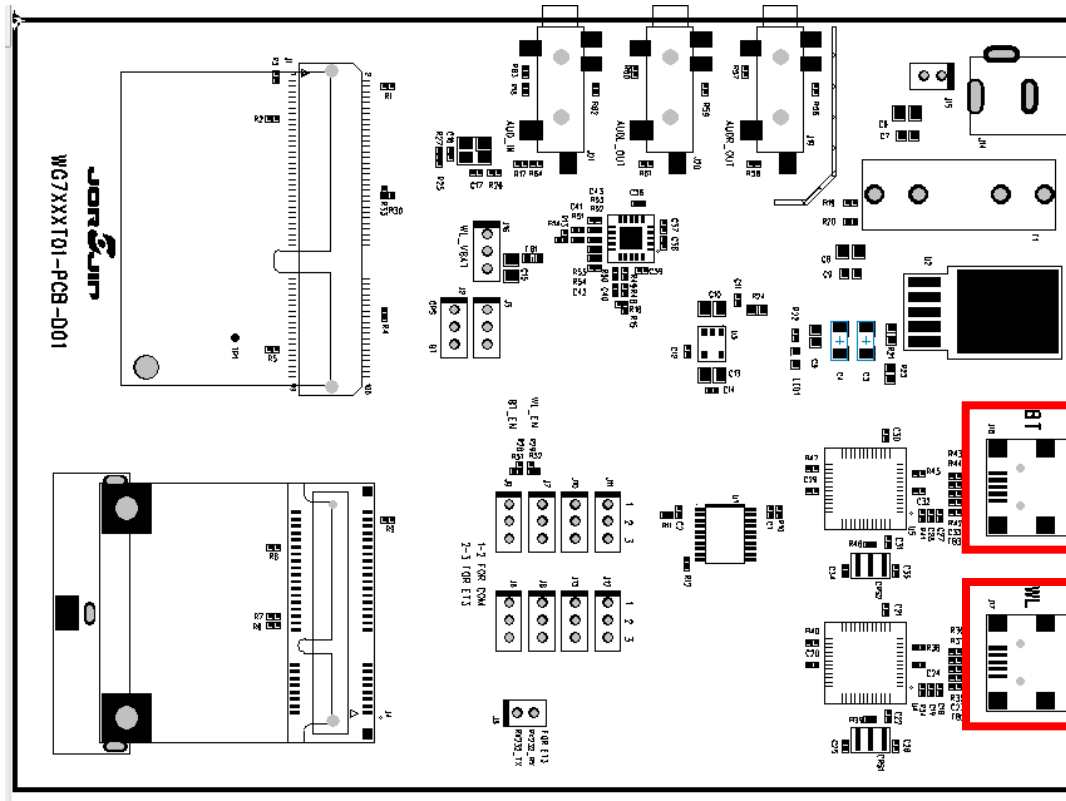
< Back Next > Cancel

Evaluation Board Description - 1

Jumper insertion position for the red box



Evaluation Board Description - 2



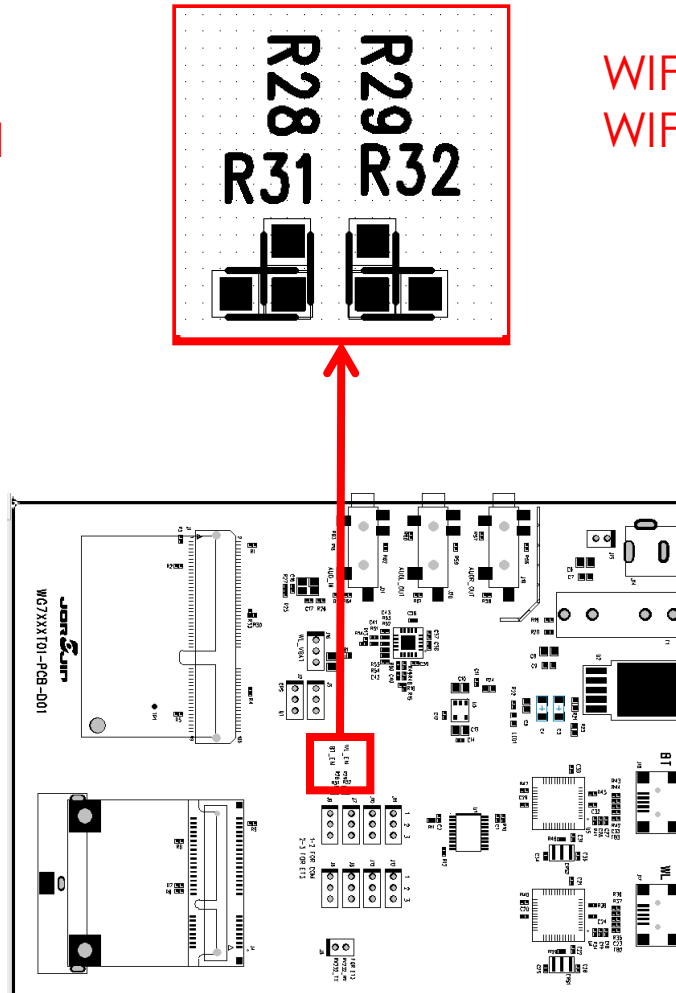
BT Test
Connection USB

WIFI Test
Connection USB

Evaluation Board Description - 3

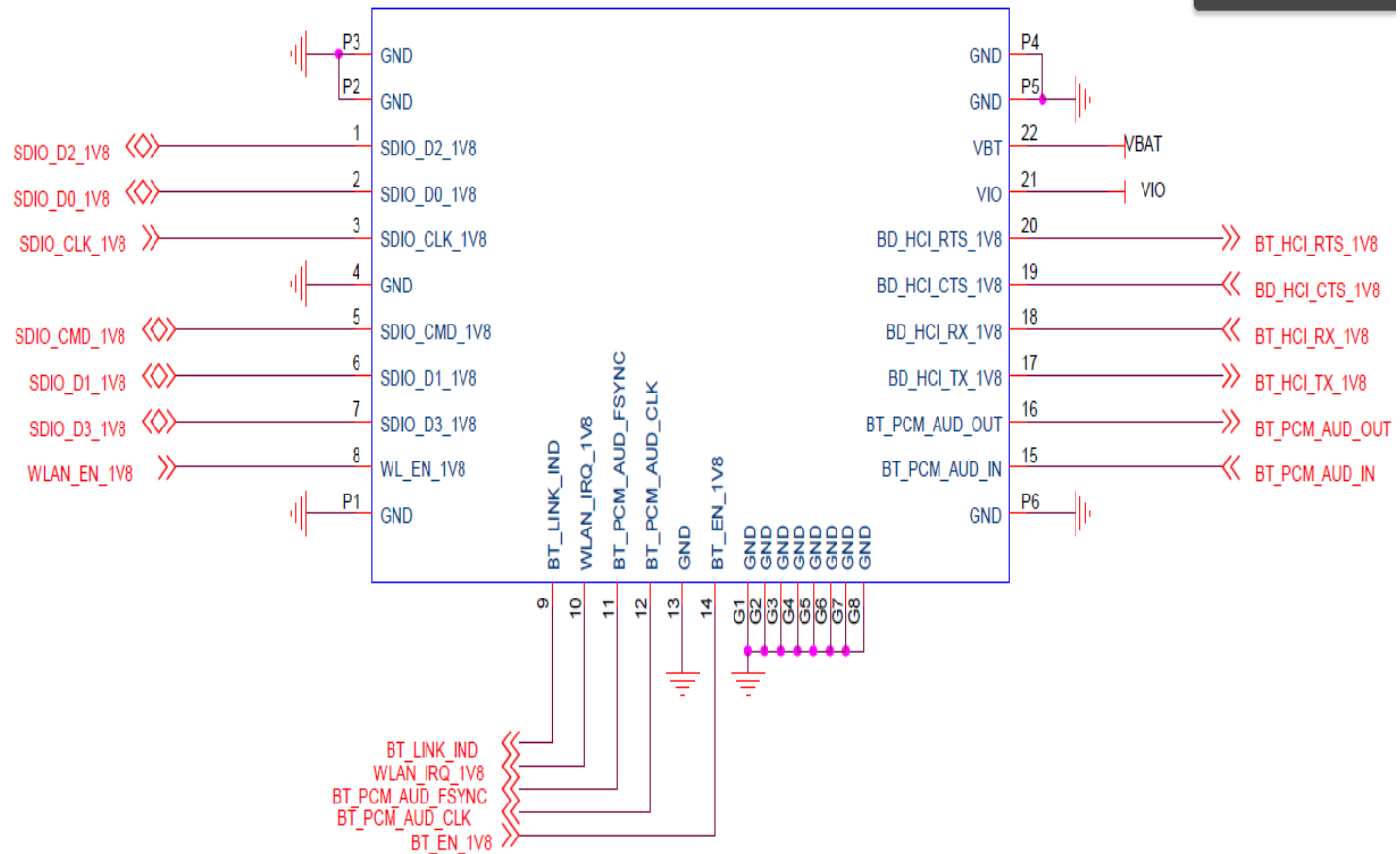
BT ON : R28
BT OFF : R31

WIFI ON : R29
WIFI OFF : R32

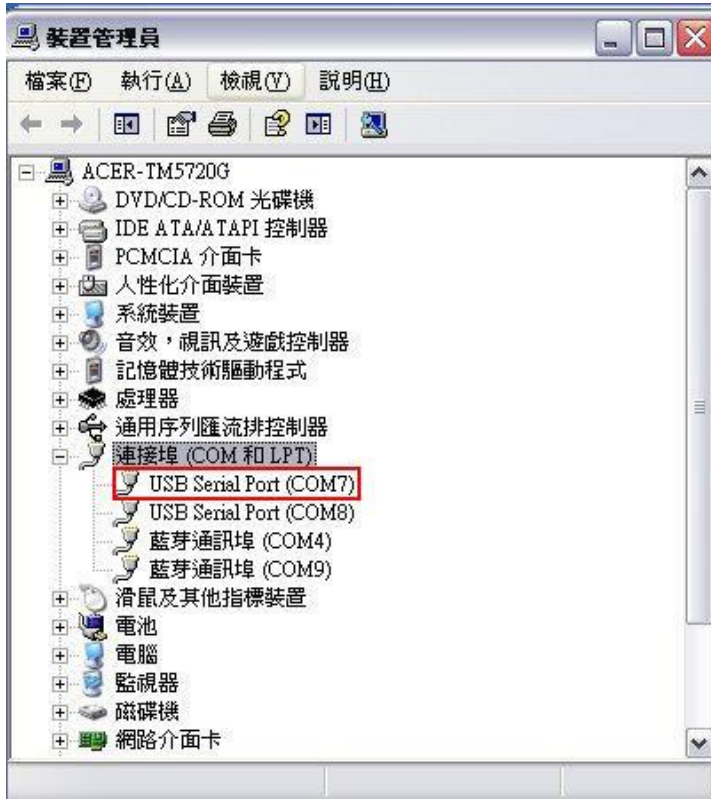


WG7831DELF

Reference Schematics



COM PORT Setting

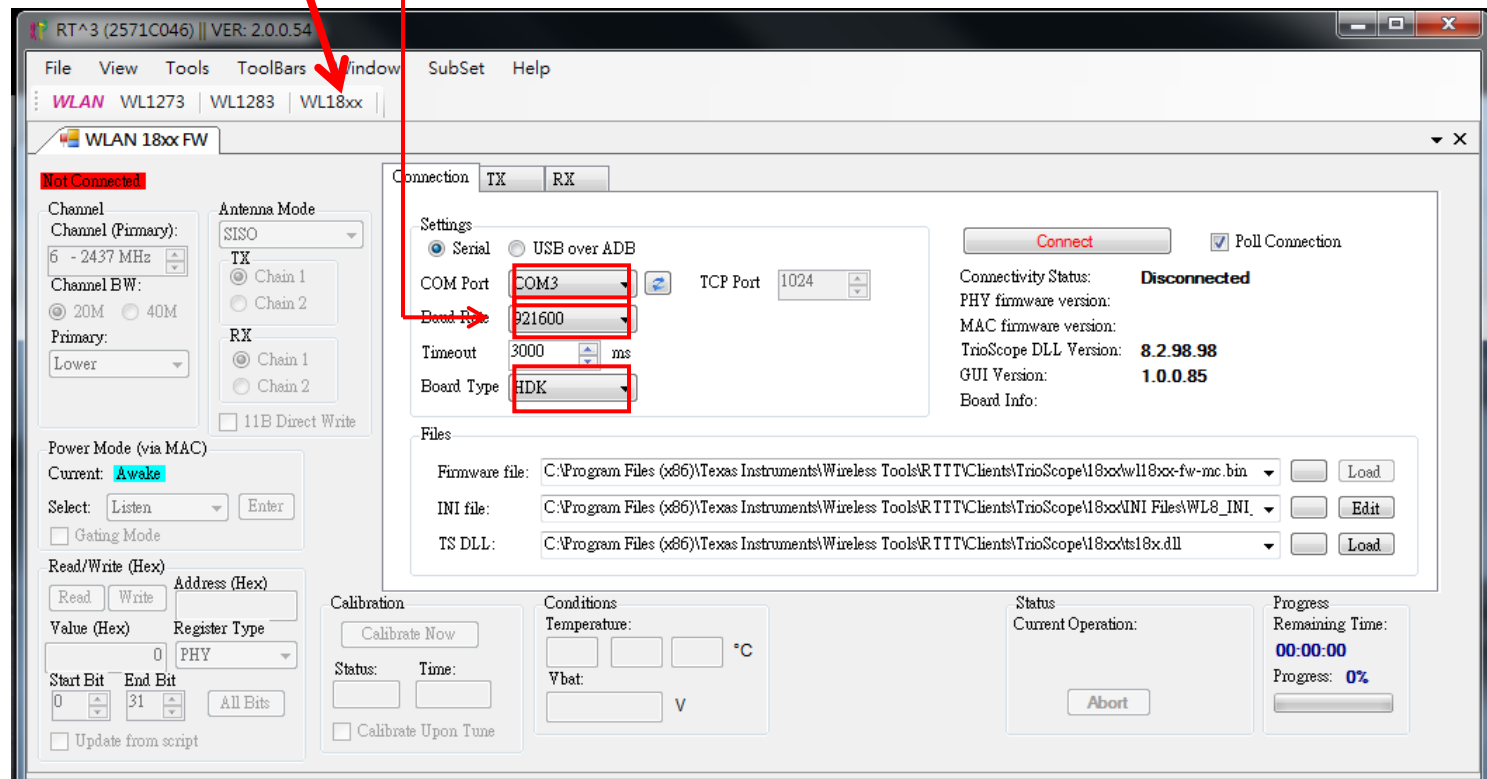


1. Install TI Wireless Tools
2. When the hardware is connected to the PC,
it is possible to find the port number for communication.
Under the Device Manager, select Ports (Com & LPT).
3. Run "RTTT" to start WiFi test software.

The USB ports are Com7 and Com8. Normally, the first port, Com7, is the communication port, while the next port, Com8, is the debug port.

WIFI RTTT Setting – 1

- (1) Select WL18XX
- (2) SET COM PORT
- (3) SET Baud Rate (921600)
- (4) SET Board Type : HDK



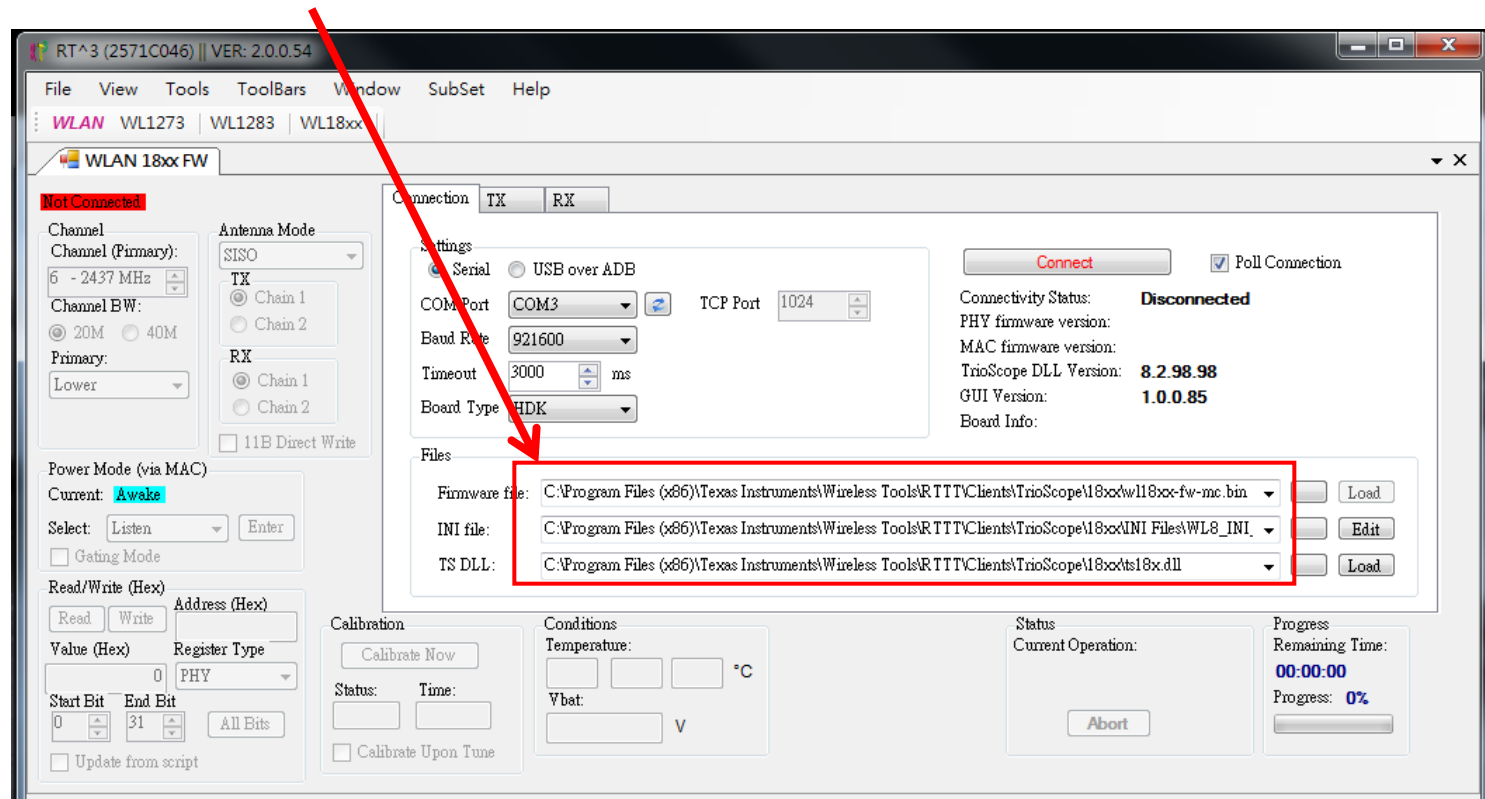
WIFI RTT Setting – 2

Set file path

Firmware file : C:\Program Files (x86)\Texas Instruments\Wireless Tools\RTTT\Clients\TrioScope\18xx\w18xx-fw-mc.bin

INI file : C:\Program Files (x86)\Texas Instruments\Wireless Tools\RTTT\Clients\TrioScope\18xx\INI Files\WL8_INI_2ANT.ini

TS DLL : C:\Program Files (x86)\Texas Instruments\Wireless Tools\RTTT\Clients\TrioScope\18xx\ts18x.dll

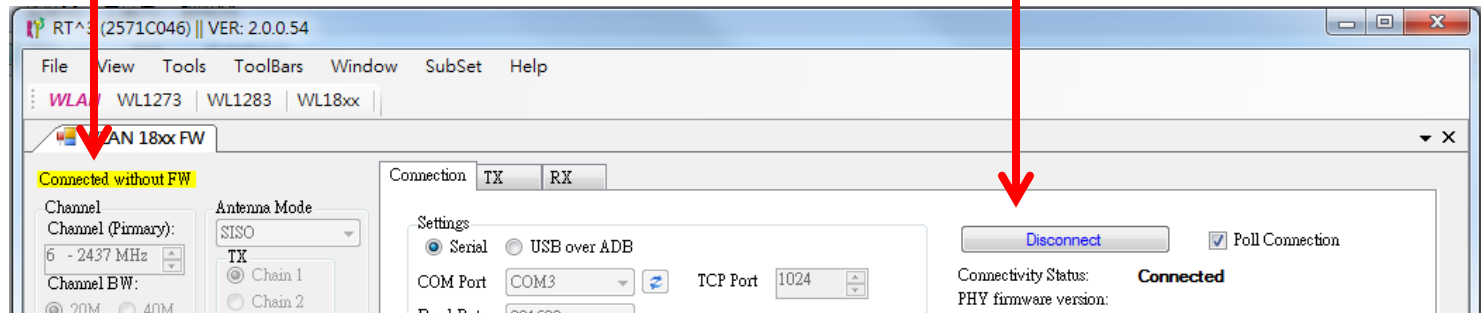


WIFI RTTT Setting – 3

Click Connect

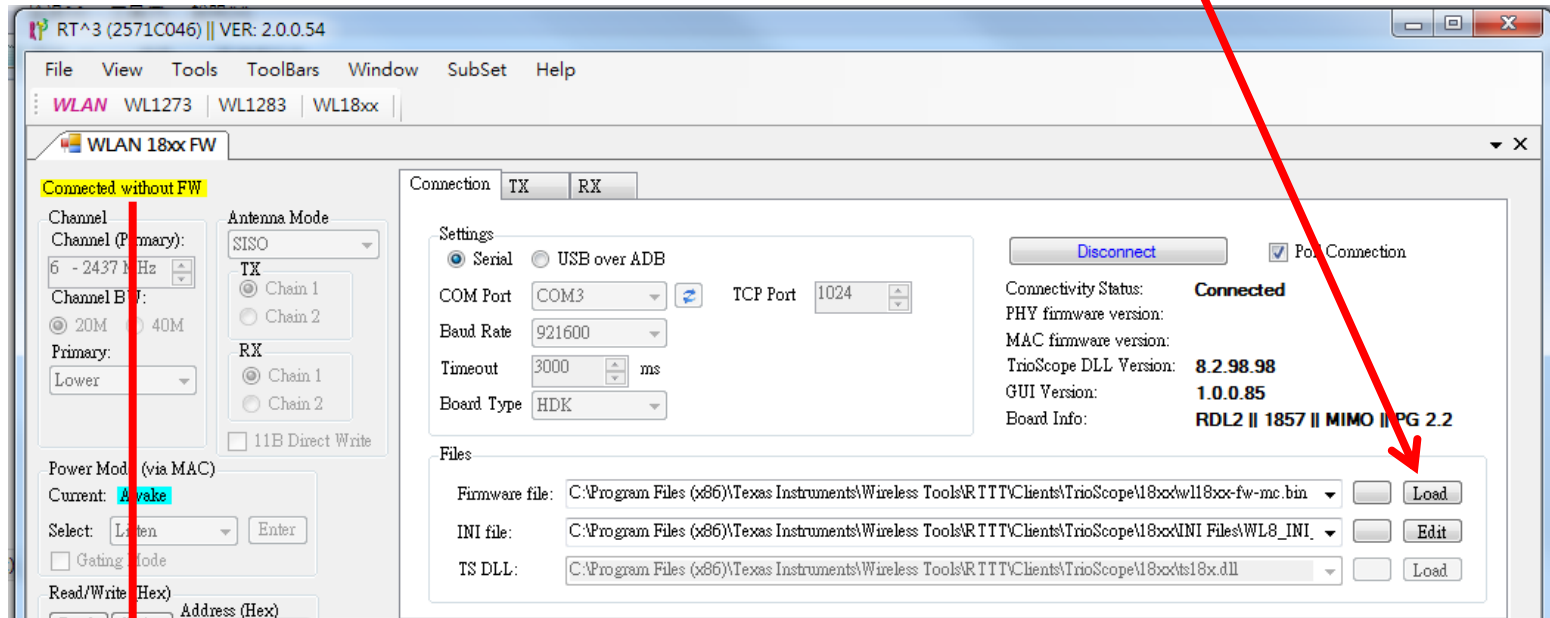


Connected without FW

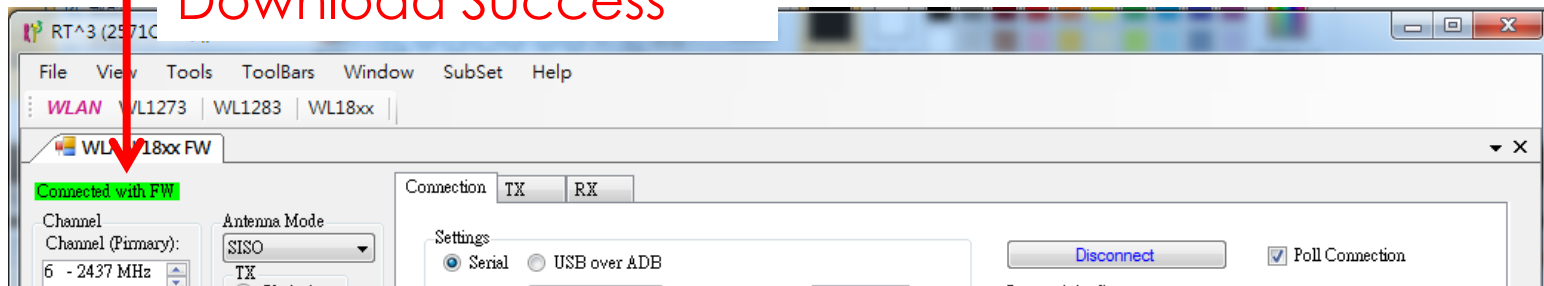


WIFI RTTT Setting – 4

Click “Load” to download Firmware



Download Success



WIFI RTTT Setting – 5

Set channel

Select TX or RX

Select Modulation and data rate

Set Power

The screenshot shows the RTTT (Real Time Test Tool) software interface for WLAN 18xx FW. The interface includes a menu bar (File, View, Tools, ToolBars, Window, SubSet, Help) and a toolbar. The main window displays various configuration tabs and settings.

Key settings and annotations:

- Channel:** 1 - 2412 MHz
- Channel BW:** 20M (selected), 40M
- Antenna Mode:** SISO (selected), TX (Chain 1, Chain 2), RX (Chain 1, Chain 2)
- Connection:** TX (selected), RX
- Packets:** Single, Ser, Continuous (selected)
- Rate:** 54M OFDM (selected), SGI, Scramble
- Preamble:** OFDM (selected), STBC, Increment
- BW:** 20M (selected), 40M
- Type:** Data, Seed 7
- Size:** 100 Bytes, Constant Data 124
- Amount:** 1 Packets, Duty Cycle: %
- Delay:** 400 µSec
- Source MAC Address:** 00:00:DE:DE:BE:BE
- Destination MAC Address:** 12:34:56:78:90:AB
- Overall Output Power:** dBm (selected), dBPsat, SoC Limits, 4.000
- Analog Setting:** 0, FEM Limits
- Antenna:** Auto, Channel Limits
- CLPC (Ext. FEM):** Enable CLPC, Reset, Range, CLPC [dB]
- Tones:** Silence, Carrier Feedthrough, Single Tone 0, Negate TX2 tone freq
- Start Tx Packet (Cont):** Button to start transmission
- Status:** Current Operation, Progress, Remaining Time: 00:00:00, Progress: 0%

Red arrows indicate the following settings:

- Set channel:** Points to the Channel and Channel BW settings.
- Select TX or RX:** Points to the TX/RX tabs.
- Select Modulation and data rate:** Points to the Rate and Preamble settings.
- Set Power:** Points to the Overall Output Power section.
- Select Channel BW:** Points to the Channel BW dropdown.
- Set ANT:** Points to the Antenna Mode dropdown.
- Switch TX ON/OFF:** Points to the Start Tx Packet (Cont) button.

WIFI RTT Setting – 6

Antenna Mode
SISO

TX
☐ Chain 1
☒ Chain 2

RX
☒ Chain 1
☐ Chain 2

☐ 11B Direct Write

**NOTE: Chain 1 Express DUT ANT2,
Chain 2 EXpressDUT ANT1**

Select dBm, Do not select dBPsat

**Click SoC Limits, Power Limit Will be
locked the Dut settings. Power set
30dBm**

Overall Output Power

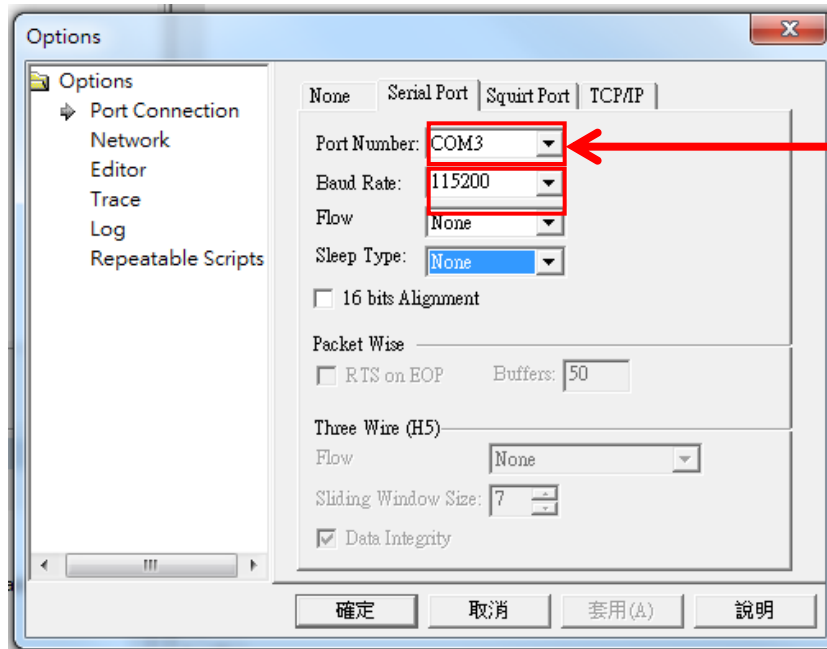
☒ dBm ☐ dBPsat ☒ SoC Limits

Analog Setting: ☐ FEM Limits

Antenna: ☐ Channel Limits

BT HCI Tester Setting – 1

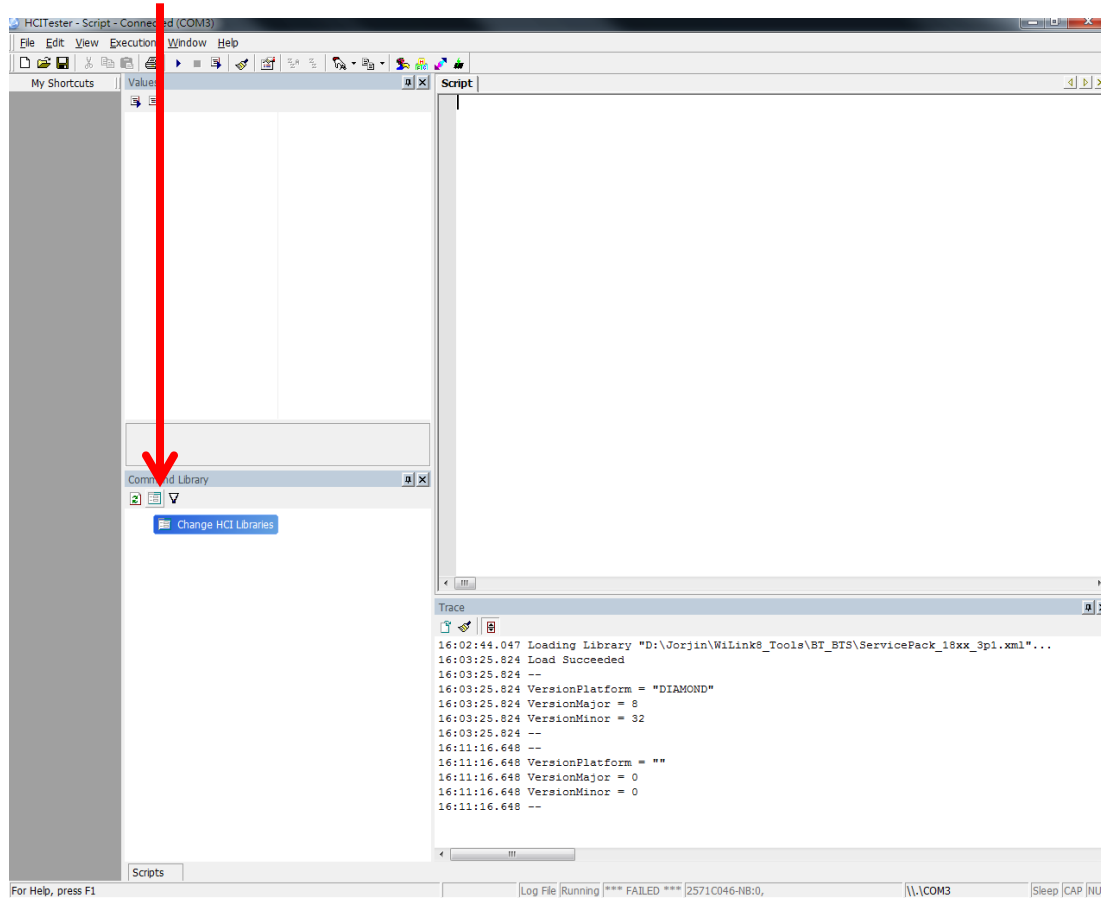
- (1) Execute HCI_Tester
- (2) Select View → Options



(3) SET COM PORT
and Baud Rate

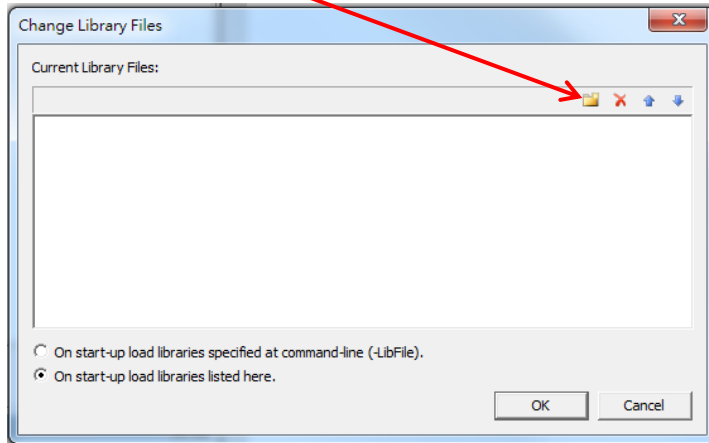
BT HCI Tester Setting – 2

(1) Add NEW XML file

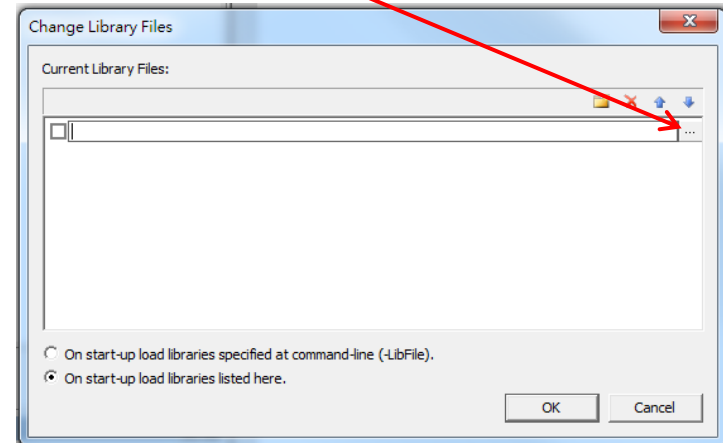


BT HCI Tester Setting – 3

(1) Select NEW



(2) Select directory



(3) Select "ServicePack_18xx_3P1.xml"


- The screenshot shows the top toolbar of the software. The menu bar includes File, Edit, View, Execution, Window, and Help. In the toolbar below, the 'Next' button, represented by a blue right-pointing triangle, is highlighted with a red square. A red arrow points from the 'Window' menu item to this button.

- The screenshot shows the Xilinx ISE software interface. The 'View Design' window is active, displaying the 'Normal, degraded, and extreme mode limits are applied to the power control process according to the' text. The 'View Design' window also shows a table of power control parameters for the 'WL128x.NVS and JMI File RF Function'.

Parameter	19	19	16	17.5	17.5	
OFDM12H18, MCS10	19	19	16	17.5	17.5	LowNorm
OFDM609	19	19	18	18	18	16
All 11b rates	20	21	18	40	40	40
MC50	18	18	17	18.5	18	15

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Note: 系統廠商應於平台上標示「本產品內含射頻模組:  XXXyyyLPDzzzz-x (NCC ID)」字樣

Manual Information to the End User

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 user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Federal Communication Commission Interference Statement

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.

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.
-
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
 - This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

➤ CAN ICES-3(B)/ NMB-3(B)

Radiation Exposure Statement

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

End Product Labeling

When the module is installed in the host device, the FCC/IC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: “Contains FCC ID: WS2-WG7831DELF” “Contains IC: 10462A-WG7831DELF “

The grantee's FCC ID/IC ID can be used only when all FCC/IC compliance requirements are met.

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,
- (2) The transmitter module may not be co-located with any other transmitter or antenna.
- (3) The Chip antenna with -2.46 dBi gain was verified in the conformity testing. Radiated transmit power must be equal to or lower than that specified in the FCC/IC Grant of Equipment Authorization for FCC ID: WS2-WG7831DELF and IC: 10462A-WG7831DELF. A separate approval is required for all other antenna type, or higher gain antenna.

Regulatory information/warning

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC/IC authorization is no longer considered valid and the FCC ID/IC ID cannot 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/IC authorization.