

WTX-610 ILLUMINATOR™

Multi-standard Test Transmitter to 6 GHz

User Manual





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Introduction

Overview

Consultix WTX-610 ILLUMINATOR is a handheld multi-standard modulated transmitter that gets myriad technologies in your hand. Generating CW (Continuous Wave) signals, LTE & WCDMA modulated signals and Arbitrary Waveforms with a maximum output power of 40 dBm. It is compact, portable, lightweight and easy to use for indoor and outdoor coverage test scenarios. ILLUMINATOR covers all 2G/3G/4G cellular frequency bands; 200 MHz, 400MHz, 700 MHz, 850 MHz, 900 MHz, 1.8 GHz, 2.1 GHz, 2.5 GHz, 2.6 GHz and others up to 6 GHz.

ILLUMINATOR Highlights

Key Features

- Handheld & heavy-duty
- Battery operated up to 6 Hours with continuous operation
- CW, LTE & W-CDMA signal modulations
- 200MHz to 6000 MHz in a single device
- 10 Watt built-in Power Amplifier (Optional)
- 2dB Level Accuracy
- 1 KHz frequency resolution
- Lightweight < 1.6 Kg (3.5 lb)
- Ergonomic user interface
- Waveform Storage
- Field upgradable through license keys

Applications

- CW Measurements
- Walk-Tests
- IBS Path Loss Measurements
- DAS Performance Evaluation
- In-Building Coverage Enhancement
- General Purpose Signal Generator



Safety Compliances & Precautions

In order to avoid damage to your ILLUMINATOR and to ensure efficient operation of your test transmitters, please make sure to follow the following recommendations and best practices:

- A. To avoid hazard or damage, only use original accessories with the ILLUMINATOR.
- B. Don't touch the antenna during operation as it may alter the radiation pattern.
- C. The best practice is to connect the antenna before turning-on the RF Power.
- D. Do not operate in Wet/Very Damp Conditions.
- E. Do not operate near flammable or explosive materials.
- F. If you suspect there is damage to this product, have it inspected only by authorized service personnel or service centers.

Getting Started

Package contents

Please unpack and inspect the shipping package to make sure that you have received all the parts without damage; the shipping package is shown in **table 1**.

<p>WTX-610 ILLUMINATOR</p>	
<p>12 VDC Power Adapter</p>	
<p>28Vdc Power Adapter(*)</p>	
<p>Stylus Pen</p>	
<p>Manual CD</p>	
<p>Carrying Case</p>	

Table 1: ILLUMINATOR Packing List

(*)In Case Power Amplifier is included

For any issue regarding the shipment package, please contact your nearest Consultix distributor or contact us directly at support@consultixwireless.com

ILLUMINATOR Panels

Figure 1 below depicts the Front Panel of the ILLUMINATOR.

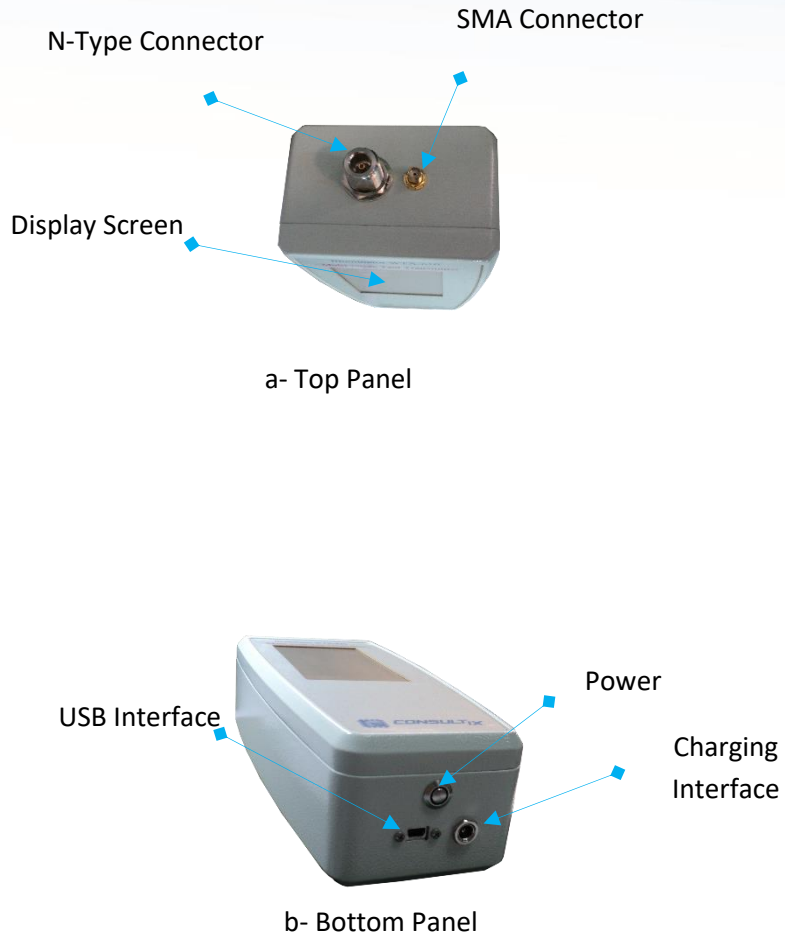


Figure1: ILLUMINATOR User Interface

General Operations

Preparations

- Connect the power adapter to the charging interface
- Switch On the device by a one-second press on the power switch
- Before starting RF transmission, please connect the antenna to ILLUMINATOR.

ILLUMINATOR Display Screen

Figure 2, depicts the Consultix ILLUMINATOR Display Screen

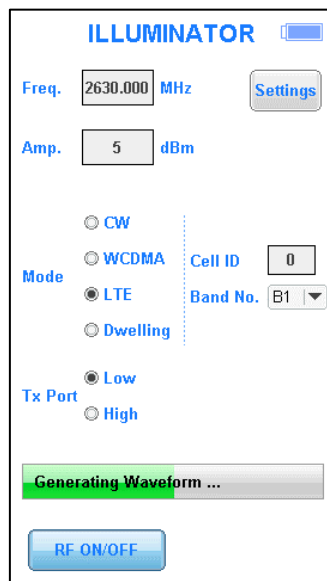


Figure2: Consultix ILLUMINATOR Main Window

- 1) **Freq.:** Type in the signal frequency in **MHz**
- 2) **Amp.:** Type in the required signal level in **dBm**
- 3) **Mode:** Select the required signal generation mode
 - CW: Select the Continuous Wave (CW) Mode
 - WCDMA: Select the WCDMA Mode
 - Scr. Code: Type in the scrambling code from 0 to 51
 - LTE: Select the LTE Mode
 - Cell ID: Type in the LTE Cell ID from 0 to 503
 - Band No.: Type in the required B number as per LTE standard bands.
 - Dwelling: Select the Dwelling Mode (Optional mode)

Note: After setting LTE or WCDMA configurations, The ILLUMINATOR will build the required waveform in its memory, please allow around 10-15 seconds for signal generation after you press “RF ON/OFF” button.

- 4) **TX Port:** Switch between high & low power mode

- Low: Low power signal generation for indoor applications; -10 dBm to 15 dBm (Standard)
 - High: High Power signal generation for outdoor applications; +20 to +40 dBm (Optional); PA ON/OFF button appears in this mode
- 5) **RF ON/ OFF**: Start/Stop RF signal generation; **RF ON** status indicator appears on the upper right corner
 - 6) **PA ON/OFF**: Turn on/off built-in power amplifier; **PA ON** status indicator appears on the upper right corner
 Note: Please make sure that a suitable antenna is connected to the high power RF port before turning on the built-in power amplifier module.
 - 7) **Settings**: Enter the device information window where the user can view the device information (Serial Number, HW Version and UI Version) and can activate WCDMA, LTE and Dwelling licenses by typing the license key in the “License Key” text box as shown in Figure 3 below:

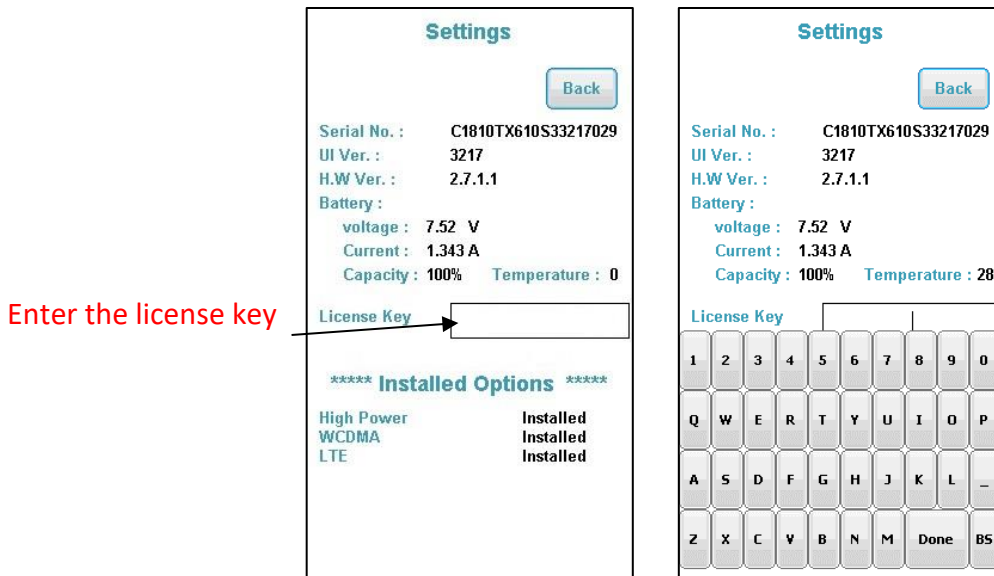


Figure3: Consultix ILLUMINATOR License Activation

Note: In order to obtain Consultix ILLUMINATOR Dwelling mode license or High Power mode upgrade please contact support@consultixwireless.com

Example test setup

Generating LTE signal using low power mode

Figure 4, depicts an example of generating 5dBm LTE signal at 1815.1MHz (EARFCN#1301) with Cell ID = 3 using Consultix ILLUMINATOR.

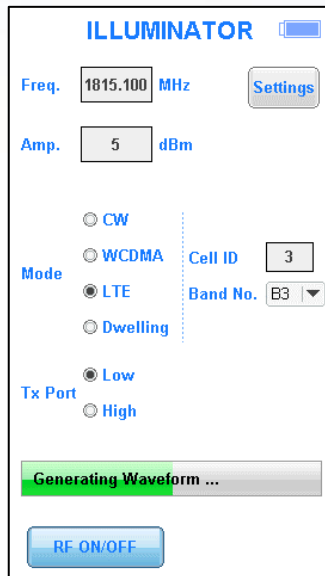


Figure 4: 5dBm LTE signal generation at 1815.1MHz

- 1- Connect the AC/DC Power Adapter to the charging socket and power on the ILLUMINATOR.
- 2- On the display screen follow the following steps:
 - Set the operation mode to “**LTE**”
 - Choose LTE band number “**Band No.**” as per standard LTE bands
 - Type in the required **Cell ID** (From 0 to 503)
 - Choose the **Tx Port** to be “Low”
 - In the “**Freq.**” Textbox, type in the signal frequency = 1815.1 MHz.
 - In the “**Amp.**” Textbox, type in the signal level = 5 dBm.
- 3- Toggle “**RF ON/OFF**” button to start RF Transmission; LTE waveform will be generated.

Note: In order to obtain Consultix ILLUMINATOR LTE mode license any other licenses, please contact support@consultixwireless.com

- 4- start your drive/walk test by holding your receiver/scanner and getting signal parameters in different locations at the venue.

Figure 5: ILLUMINATOR setting menu



Generating CW signal using high power mode

Figure 6 below depicts an example of generating 40dBm CW signal at 2600MHz using ILLUMINATOR.

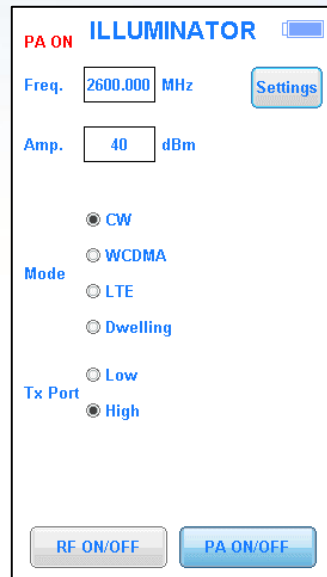


Figure 6: 40dBm CW signal generation at 2600MHz

- 5- Connect the AC/DC Power Adapter(*) to the charging socket and power on the ILLUMINATOR.
- 6- On the display screen follow the following steps:
 - Set the operation mode to "CW"
 - Choose the **Tx Port** to be "High"; **PA ON/OFF** button will be activated.
 - In the "Freq." Textbox, type in the signal frequency = 2600 MHz.
 - In the "Amp." Textbox, type in the signal level = 40 dBm.
- 7- Toggle "PA ON/OFF" button to turn on power amplifier module; **PA ON** indicator appears on the upper right corner.
- 8- Toggle "RF ON/OFF" button to start RF Transmission; **RF ON** indicator appears on the upper right corner.

Note: In order to obtain Consultix ILLUMINATOR high power mode license or any other licenses, please contact support@consultixwireless.com

(*)The power amplifier mode works with 28VDC only.

In Figure 7, a 2.6GHz CW signal is generated using ILLUMINATOR

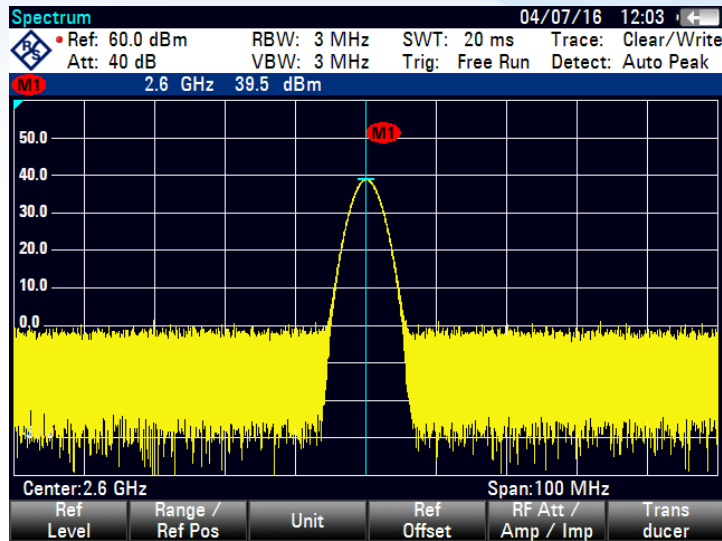


Figure 7: 40 dBm CW signal generation at 2.6GHz

- 9- Once you have done your test, toggle “RF ON/OFF” button to stop RF Transmission then turn off power amplifier module by pressing “PA ON/OFF” button.

ILLUMINATOR Upgrades

ILLUMINATOR is upgradeable by boot-loader process for any type of arbitrary waveform generations please contact support@consultixwireless.com to get your appropriate firmware version

Further Help

- For any support inquiry, kindly contact:

Support: support@consultixwireless.com

Or contact our distributor covering your region (check www.consultixwireless.com)

- For any information about prices, specifications, future developments, recommendations, customizations, or general question, kindly contact:

Sales: sales@consultixwireless.com

