Consultix CellWizard™ WTX-35-B

Multi-port CW transmitter

User Manual

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Overview

Introduction

Consultix WTX-35-B4 is a handheld test transmitter that generates CW (Continuous Wave) signals with a maximum output power of 15 dBm. It is compact, portable, lightweight and easy to use for indoor coverage test scenarios.WTX-35-B4 operates over most of wireless frequency bands; 2.6 GHz, 2.5 GHz, 2.1 GHz, 1.8 GHz, 900 MHz, 850 MHz, 700 MHz, 400 MHz, 3.5 GHz (optional) and others.

Key Features

- 4 adjustable frequency channels & simultaneous transmission.
- Adjustable output power range: -10 dBm to 15 dBm (according to the frequency band)
- 100 KHz Frequency step
- Best output power accuracy of ±1 dB
- Up to 24 Memory channels
- Light weight < 0.7 kg
- Ergonomic user interface
- Functional Keypad
- LCD display
- Battery Operation
- Versatility & Upgradability

Applications

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

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Safety Compliances & Precautions

In order to use the WTX-35-B4 in a correct, efficient, safe way, and to avoid damage caused by improper operations, you are recommended to:

A. Use only the original accessories to prevent any damage to the device.

B. To not affect the radiation pattern, don't touch the antenna during operation.

C. It is preferable to connect the antenna before switching RF power on.

D. Don't let water or other liquids flow into the device.

E. Prohibit approaching the device to flammable or explosive items.

F. Don't open the device outside company maintenance branches.

G. For the first time usage of the device, the battery should be charged continuously 10 hours before usage.

Setup & Installation

Check the package

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*.

WTX-35-B4	
Power Adapter	
Carrying Case	

Table 1: WTX-35-B4 Packing list

For any issue regarding the shipment package, please call your agent or our nearest service office or contact us through support@consultix-egypt.com

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User Interface

Figure 1 below depicts the Front Panel of the WTX-35-B4.

Antenna Interface

LCD Display

Keypad

Battery Compartment

a- Fron t Panel

b- Back Cover

Charging Interface
(12 Vdc)

USB Interface
(FW Upgrade)

c- Bottom Panel

Figure 1: WTX-35-B4 User Interface

Functions Keys

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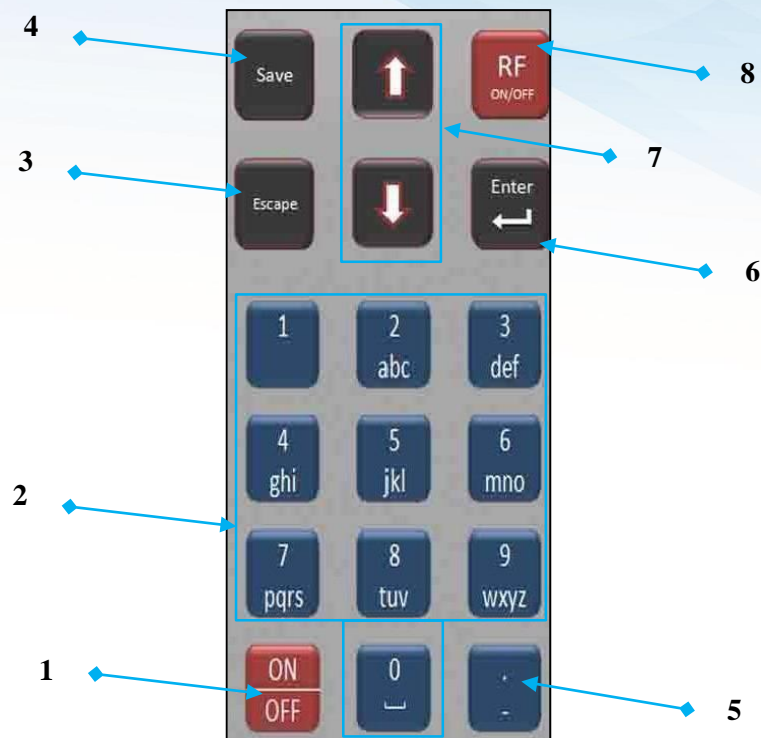
1) **ON/OFF**: Switching on & switching off the device

2) **Numeric Keypad**: Writing numbers, characters or space

3) **Escape**: Going to previous menus, or canceling entered data

4) **Save**: Saving the current configuration channel

5) ⬛ : Editing values or names

6) **Enter**: Entering to submenus, accepting choices, going to fine-tuning for amplitude and frequency adjustment

7) **Up & Down arrows**: Moving up and down between menus, or fine-tuning of amplitude and
   frequency (after clicking the "Edit" key as per (5) above)

8) **RF ON/OFF**: Starting or stopping RF power transmission

General Operations

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Preparations

- Connect the power adapter to the charging socket
  (For the first-time usage of the device, the battery should be charged continuously 10 hours)
- Switch On the device by a one-second press on the On/OFF switch
- Connect the antenna to the device; The device now is ready to start RF transmitting

In the following section, the menus of the WTX will be described in details before going through illustrating different operations of the unit
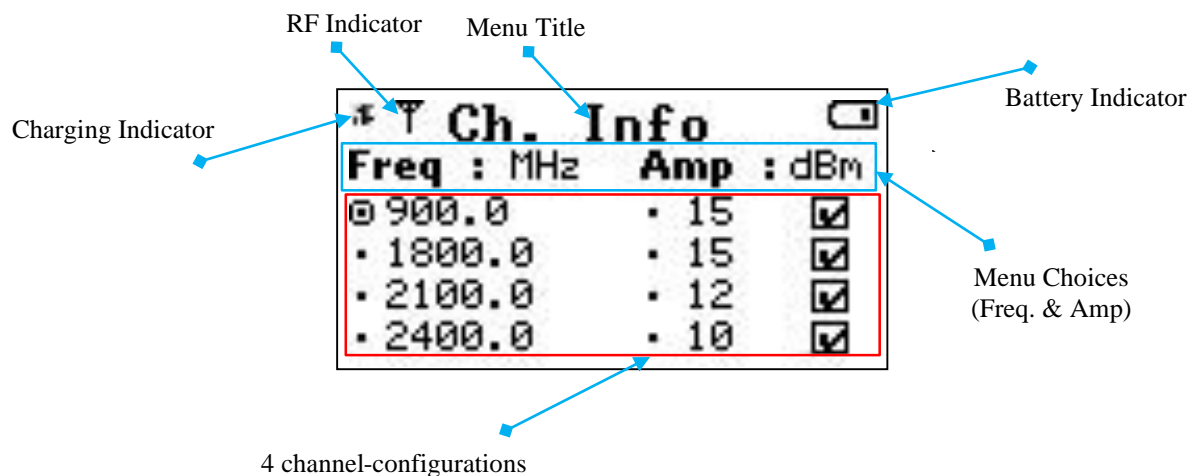
Main Menu

This menu contains all available functions that can be applied for the transmitter like starting a test, saving a test channel, going to system settings and checking the device memory.

```
Main Menu         ▭
◉ Start Test
· Saved Channels
· New Channel
· Settings
· Memory Status
```
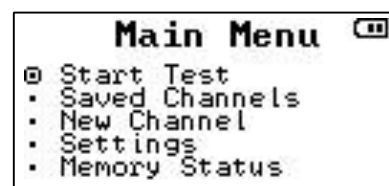
Start Test

This will recall all configurations for the last test setup including Freq. (**MHz**), and Amp. (**dBm**). And you can modify afterward.

RF Indicator   Menu Title

Charging Indicator

Battery Indicator

```
⚡T Ch. Info         ▭
Freq : MHz    Amp : dBm
◉ 900.0      · 15    ☑
· 1800.0     · 15    ☑
· 2100.0     · 12    ☑
· 2400.0     · 10    ☑
```

Menu Choices (Freq. & Amp)

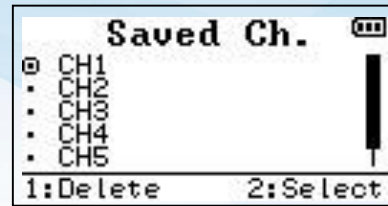4 channel-configurations

Saved Channels

This menu contains the saved test channels with all of its configurations. Use Key (1) to delete a saved test channel and use Key (2) to select a test channel.

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New Channel

this menu adds a new channel to the device memory for future use.

```
     Saved Ch.    [===]
⊙ CH1
· CH2
· CH3
· CH4
· CH5
1:Delete      2:Select
```

```
   Add Channel [===]
Freq : MHz    Amp : dBm
· 2110.0      ⊙ -10    ☑
· 2500.0      · -5     ☑
· 2700.0      · 10     ☒
· 960.0       · 0      ☒
```
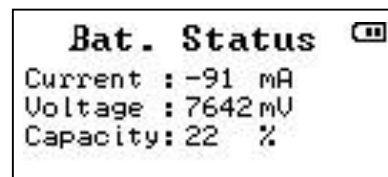
Settings menu

Factory Reset: This function is used to restore WTX factory settings. It will delete all saved test channels from your device

   ☐ *Note*: This action will erase activated Key-codes license

```
    Settings     [===]
⊙ Factory Reset
· Battery Status
· Port Upgrade
· Device Information
```
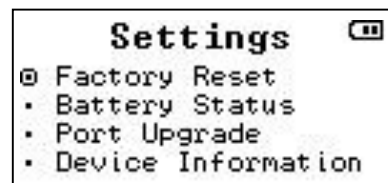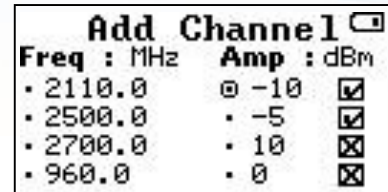
Battery Status: This function is used to show the device battery's status.

```
   Bat. Status   [===]
Current : -91 mA
Voltage : 7642 mV
Capacity: 22  %
```

Port Upgrade

This menu provides information about activated features and available upgrades

```
  Port Upgrade [===]
⊙ ☒ Wideband 2 port
· ☑ Wideband 4 port
```

Device Information:

This menu provides the device information; like serial number, Firmware & Hardware version and others

```
   Device Info  [===]
PN    : WTX-35-B4
HW Ver: UI-V7  RF-V3
FW Ver: 7.1.1077
SN    : C1410S730128
```

Memory Status

This menu shows the number of utilized and free memory locations.
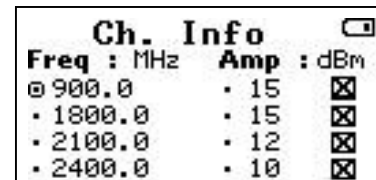
(WTX-35-B4 can store up to 24 test channels)
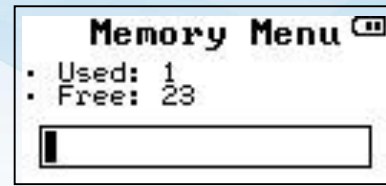
Starting a test scenario

Start a new test

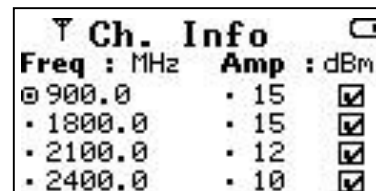As per the CW Measurement scenario, after identifying Antenna locations, connect the WTX-35-B4 CW

Transmitter to the Antenna at the first Antenna location now you are ready for starting a CW Walk Test. Please stick to the following steps to do a proper RF Transmission,

1- Press "RF ON/OFF" Key. This will recall the last configuration test.
2- Edit any parameter Freq. or Amp. –if needed- and press "RF ON/OFF" again to start transmitting (Alternatively, From Main Menu, go to "Start Test", and click Enter)

3- Adjust the new test channel configuration parameters through the following steps:

   - Write test channel frequency (in **MHz**) in the relevant band (a standard frequency step of 100 KHz)

   - Write channel amplitude (in **dBm**) related to the selected frequency band

   - You have 4 channels configurations, 1st configuration is for the transmitter port 1, 2nd configuration is for the 2nd transmitter port and so on

4- Press Key "1" to enable or disable the transmitter port 1, press Key"2" for enabling port 2 and so on, then press the RF ON/OFF key. You will notice the RF indicator appears on the screen

5- After finishing the CW transmission, press "RF ON/OFF" key to stop the RF transmission.

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Recall saved configuration

- From Main menu, use up & down arrows to choose "Saved Channels" menu then press enter key

- In the saved channels menu, you will find the saved test configurations you stored "up to 24 test configurations". Use up & down arrows to choose the required configuration then press Key (2) to select the channel and start RF Transmission

- In this case, you don't have to press RF ON/OFF key, you will notice the RF indicator appears on the screen once you select one of the saved channels

Save a re-usable Configuration

- After setting new test configuration parameters, you can save these new channel configurations by pressing "Save" key to be saved in the "Saved Channels" menu - A text box appears on the screen. It has a default name.
- To save with its default name, press the "Enter" key directly.

- To edit the name, press edit key [: -] then enter the name of the test configuration needed to be saved and then press the "Enter".

 Note: The maximum number of the channel name characters is 12
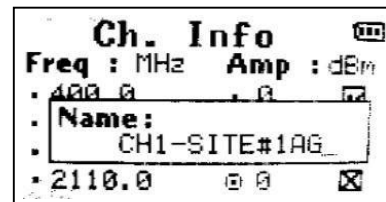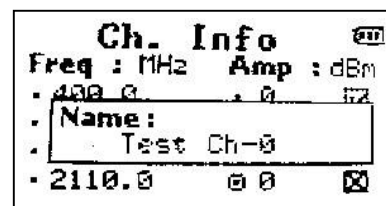
Upgrade WTX-35-B4

WTX-35-B4 is upgradeable by key-code from a 2-port (2 simultaneous channels) unit to a 4-port (4 simultaneous channels) unit. Once purchased an upgrade for your unit, you will be provided with the new code.

Activating a new upgrade with a key-code

From Main Menu > Settings > Port Upgrade

You will notice a box checked " √" beside activated license, while "X" beside available upgrades

Please notice that the default license of WTX-35-B4 is a Wideband 2port license

Toggle between available upgrades using the Up/Down arrows, and choose one then press "Enter" key you will be required to write the key-code.

To activate any purchased upgrade either the 2-port or the 4-port license, select the required license, press "Enter" key and write down the key code provided by Consultix Support team

Please contact support@consultix-egypt.com for any required upgrades

Press Enter, then you will notice the box checked " √" for successfully upgrade

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Specifications

RF Characteristics	
Number of simultaneous channels	4
Internal Frequency Accuracy	2 ppm. (Typical 1ppm)
Frequency Range	400 MHz – 2700 MHz 150 MHz – 400 MHz (Optional) 2700 MHz – 4000 MHz (Optional)
Frequency Step	100 KHz
Modulation	CW (Continuous Wave); single carrier
Minimum output power	-10 dBm
Maximum output power	15 dBm @ 150 MHz to 1800 MHz 10 dBm @ 1800 MHz to 2700 MHz 5 dBm @ 2700 MHz to 3500 MHz 2 dBm @ 3500 MHz to 3700 MHz 0 dBm @ 3700 MHz to 4000 MHz
Power Accuracy	±1 dB (typ. ±0.5 dB)
Off Transmit Power	-100 dBm
Non-Harmonic spurious	<-40dBc @ 10dBm output power
RF output	50-ohm SMA Female
Power supply	
Power Consumption	<14 Watts
DC Input	12 VDC, 2 A power adapter
Battery	7.2 V, 2.2 A Li-ion chargeable battery
Battery Operation time	105 minutes (Field exchangeable battery)
Physical	
External Dimensions	L179 x W80 x H43mm
Antenna interface	SMA Female
Weight	< 700gm incl. battery
Operating Temp	-10 to +40 C

Further Help

-For any support inquiry, kindly contact: **_Support:_** support@consultixwireless.com

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

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