

CellWizard™ CW Transmitter Family

CW & WCDMA Test Transmitter

User Manual





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Introduction

Overview

Consultix WTX is a test transmitter that generates a CW (Continuous Wave) and W-CDMA (WTX-05-W and WTX-05-A only) signals with maximum output power 20 dBm. It is a compact, portable, lightweight, easy to use for indoor coverage test scenarios. WTX 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, 200 MHz and others.

WTX Highlights

Key Features

- Two transmitter modes: CW & W-CDMA (WTX-05 only).
- Adjustable output power range, W-CDMA mode: -10 dBm to 20 dBm (Depends on band)
- Adjustable output power range CW mode: -10 dBm to 20 dBm
- Adjustable channel frequency.
- Standard Frequency step: 200 KHz. (optional 1 KHz)
- Output power accuracy of 1 dBm.
- Memory channels.
- Lightweight.
- Ergonomic user interface.
- Functional Keypad.
- LCD display.
- Battery Operation



Safety Compliances & Precautions

In order to avoid damage to your WTX 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 WTX
- 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</p>	
<p>12 VDC Power Adapter</p>	
<p>Manual CD</p>	
<p>Carrying Case</p>	

Table 1: Packing List

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

WTX Front Panels

Figure 1 below depicts the Front Panel of the WTX transmitter.



Figure1: WTX Transmitter User Interface

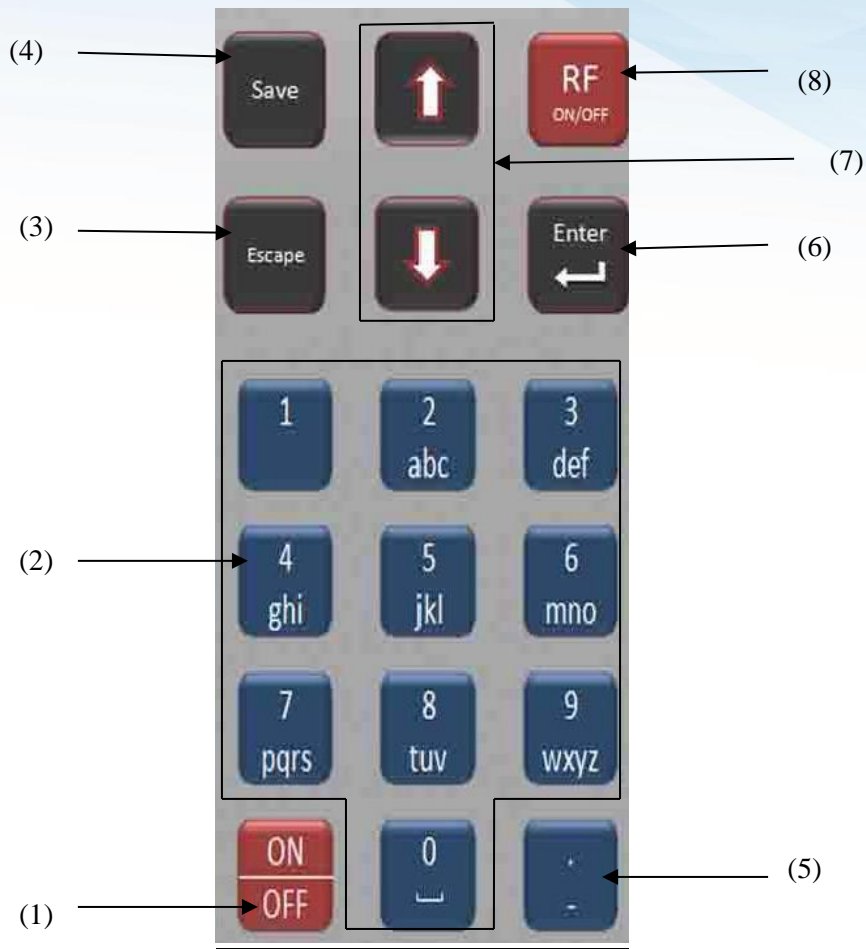
(1) Antenna connected to SMA RF interface


(2) LCD

(3) Keypad

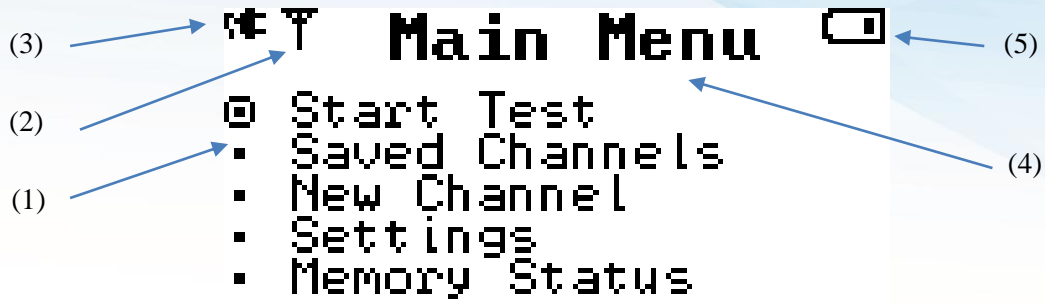
(4) Charger Socket

Keypad buttons functions



- (1) ON/OFF: Switching on & switching off the device
- (2) Num pad: Writes numbers, characters or space
- (3) Escape: Goes to previous menu, or cancels entered data
- (4) Save: Saves current configuration
- (5)  Edits values or names
- (6) Enter: Enters to submenus, accepts choice, goes to fine-tuning for amplitude, frequency adjustment or toggles between CW or W-CDMA modes
- (7) Up & Down arrows: Move up and down between menus, or fine-tuning of amplitude and frequency (after clicking the hard button “Edit” as per (5) above)
- (8) RF ON/OFF: Starts or stops RF transmission

Display Icons



(1) Menu Choices

(2) RF On/OFF indicator

(3) Charging indicator

(4) Menu title

(5) Battery indicator

General Operations

Preparations

Connect the charger into its socket.

Note, for the first time usage of the device, battery should be charged continuously 10 hours.

Switch On the device by 1 second press on the On/OFF switch.

Connect the antenna to the device.

The device now is ready to start tests.

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

Menus

Main Menu	
	<p>Start Test: To start a test This will recall all configurations for the last test setup incl.: Mode, Freq, Amp, and scrambling code. And you can modify afterwards</p>
	<p>Saved Channels: This menu contains saved test channels with all of its configurations. Use num pad (1) to delete saved test channel, and use num pad (2) to start RF test for a chosen channel, or simply click RF ON/OFF</p>
	<p>New Channel: To add a new channel to the device memory</p>
	<p>Mode: To choose the transmitting mode; either CW or W-CDMA "for WTX-05-W and WTX-05-A only "</p>
	<p>Freq: Enters the required channel frequency in the relevant band (standard frequency step 200 KHz)</p>
	<p>Amp: Enters the required channel amplitude</p>
	<p>Scr.: Enters the scrambling code of the W-CDMA signal. Scrambling code ranges from 0 to 511</p>
	<p>Setting</p>
	<p>Factory setting - This function is used to restore WTX factory settings. It will delete all saved test channels from your device Note: this will erase activated Key-codes license Version/Upgrade: - Providing info about activated features, and available upgrades - Entering key-codes required for any newly purchased upgrade</p>
	<p>Memory Status: Shows the number of utilized and free memory locations. WTX can store up to 24 test channels</p>


Starting a test scenario

Start a new test

Press the hard button “RF ON/OFF”. This will recall last configuration test.


Then you can edit any parameter –if needed- and press “RF ON/OFF” again to start transmitting

Alternatively, from main menu, go to “Start Test”, and click Enter.

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

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

- Choose the transmitting mode either CW or W-CDMA (WTX-05-W and WTX-05-A)
- Write test channel frequency in the relevant band (std. frequency step of 200 KHz)
- Write channel amplitude
- Write scrambling code "for W-CDMA mode only" in the range between 0 to 511
- To start/stop transmitting, press the RF ON/OFF button. You will notice the RF indicator appears/disappears on the screen

```
Ch. Info   
⊙ Mode : CW  
· Freq : 3000.000 MHz  
· Amp : 0 dBm
```

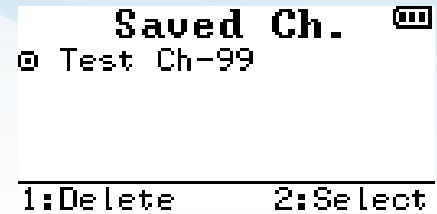
Channel Saving

Recall saved configuration

- From main menu, use up & down arrows to choose “Channels” menu then press Enter button

- 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 test then press button (2) from num pad


- You will notice the RF indicator appears on the screen



Save a re-usable Configuration

- After setting new test configuration parameters, you may save this new configuration by pressing the hard button “Save”.

- A box appears on the screen. It has a default name. To save with its default name, press the “Enter” hard button directly.

To edit the name, press edit button  then enter the name of the test configuration needed to be saved, and then press the “Enter” hard button.

Note: The maximum number of the channel name characters is 12

Device Upgrade (WTX-05 only)

WTX-05 is upgradeable by key-code from single-band to multi-band or from CW to WCDMA.

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, choose Setting, and then choose Version/Upgrade.

You will notice the word “DEACT” beside activated features, while “ACT” beside available upgrades

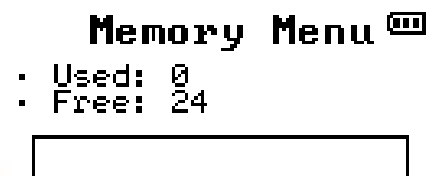
Toggle between available upgrades, and choose one.

You will be required to write the key-code.

Press Enter. Then you will notice the word “DEACT” instead of “ACT” beside the new feature.

Memory Status

In this menu you will track the number of used/free channels in the WTX memory





Device Information

This menu shows the device HW and FW version as well as the serial number

Battery Status

Battery capacity, voltage and current are shown in this menu as shown in the next figure

```
Device Info [00]
PN      : WTX-35-A4
HW Ver: UI-U8  RF-U3
FW Ver: 6.1.1027
SN      : C11812WTX35A4
S830383
```

```
Bat. Status [00]
Current : -64 mA
Voltage : 7710mV
Capacity: 64 %
```

Appendix A: Specifications

Specifications:	WTX-05	WTX-35-A	WTX-35-C
RF Characteristics			
Frequency Ranges (Selected as per Ordering Information Below)	2.6 GHz, 2.4 GHz, 2.1 GHz, 1.9 GHz, 1.8 GHz, 900 MHz, 850 MHz, or 700 MHz Selections	300 to 3 GHz 3 GHz to 4 GHz (Optional)	60 MHz to 3 GHz
Number of Bands per Unit	Tri-band	Multi-band	
Frequency Step	100 KHz	1 KHz	
Modulation	CW or 3GPP WCDMA	CW	
3G UMTS Channels	CPICH, SCH, and PCCPCH	N.A.	
Internal Frequency Accuracy	2 ppm. (typ. 1 ppm)		
Min. Output Power	-10 dBm		
Max. Output Power	20 dBm @ 2.1 GHz 15 dBm @ 850 MHz and 900 MHz 11 dBm @ other bands	20 dBm @ 300 MHz to 2.9 GHz 15 dBm @ 2900.1 MHz to 4 GHz	20 dBm @ 60 MHz to 2.2 GHz 15 dBm @ 2.2 GHz to 2.7 GHz 12 dBm @ 2.7 GHz to 3 GHz
Power Accuracy	±1 dB (typ. ±0.5 dB)		
Scrambling Code	0 to 511	N.A.	
RF Output Interface	50 Ohm SMA Female		
Power Supply			
Input Power	9 to 14 VDC (Over Voltage Protection up to 28 VDC)		
Power Consumption	<14 Watts	<7 Watts	
AC Charger	Input: 100-240 VAC, 50-60 Hz / Output: 12 VDC, 2A		
DC Input	Power Jack 2.1 mm ID 5.5 mm OD		
Battery	Li-Po, 2200 mAh		
Battery Operation Time (At Continuous Maximum Output Power)	105 Minutes (Field Exchangeable Battery)	>3 Hours (Field Exchangeable Battery)	
Physical			
External Dimensions	L179 x W80 x H43 mm		
Weight	Weight < 700 gm incl. Battery		
Operating Temp	-10 to +40 C		
Compliance	CE and RoHS		
Ingress Protection	IP65		
Standard Package	Transmitter, AC Charger, Hard Carrying Case and User Manual		

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

