



TPS Transmitter Operation Manual

创远  仪器
TRANSCOM INSTRUMENTS

Shanghai Transcom Instruments Co., Ltd.

November 1, 2016

Table of Contents

Preface	3
1.1 Purposes and functions	3
1.2 Product composition	3
1.3 Technical indexes	3
Basic operation	5
1.4 Equipment connection	5
1.5 Operation steps	6
1.6 Settings	7
Warranty and notices	9

Preface

1.1 Purposes and functions

TSP transmitter is a portable instrument, which is suitable for engineering test, and could make various transmit frequency bands according to user requirements. It possesses compact structure and strong portability. It outputs continuous waves, which is used in transmission model calibration, analog coverage test, auxiliary design and engineering acceptance test of indoor coverage system. Via meticulous design, this product could guarantee stable output of power under various conditions.

Frequency range supported by TSP transmitter: 700MHz-2700MHz; power adjusting range: 0dBm-43dBm Note: The frequency band actually supported by the system shall coincide with the purchase contract.

1.2 Product composition

Basic configuration includes:

- | | |
|---|---|
| 1) Host of transmitter | One |
| 2) Outdoor 5dBi omnidirectional antenna | One (configured according to actual frequency band) |
| 3) Triangle bracket | One |
| 4) Feeder line | One |
| 5) AC input power cable | One |
| 6) Draw-bar box | One |

1.3 Technical indexes

Equipment type	Applicable network mode	Frequency stepping
TSP transmitter (700-2700 MHz)	GSM CDMA 2000/EVDO WCDMA TD-SCDMA TDD-LTE FDD-LTE NB-IoT/LoRa	10KHz
Electrical characteristics		
Output power	0dBm~43dBm (20W); -10dBm~33dBm (2W)	
Power stepping	Min. 0.5dB	
Power accuracy	Typical: ± 1 dB	
	Max.: ± 1.5 dB	
Frequency spectrum mode	Continuous wave or pilot frequency mode	
Out-of-band stray	≤ -50 dBc (out of working frequency 200KHz)	
Secondary harmonic wave	≤ -15 dBc (typical)	
Working temperature (keeping performance)	0 ~ +50°C	
Storage temperature	-40°C ~ +70°C	
Max. input level	≤ 5 dBm	

Mechanical characteristics	20W transmitter	2W transmitter
Dimension	200 x 110x 230 mm	200 x 60x 230 mm (2W)
Weight	4.5 kg	2Kg
RF interface	N type female	N type female
Power supply	220 V AC; 28V DC; max. power consumption 140W	220 V AC; 28V DC; max. power consumption 50W
Communication interface	WiFi	WiFi

Basic operation

1.4 Equipment connection



Fig. 1 Front Connection of Transmitter






Fig. 2 Back Connection of Transmitter

Note: When RF port is not connected to antenna, it is not allowed to connect power supply directly, otherwise it is very likely to damage the equipment!!!

- Two interfaces on the transmitter need to be connected: The antenna interface and the power interface;
- 5dBi omnidirectional antenna is configured by the system, which could be connected via feeder line or directly connected to antenna aperture.
- 220V AC power supply is adopted by the system, and power cable could be connected to power interface; or an external battery could also be used to supply power.

1.5 Operation steps

Starting operation steps of the equipment are as follows:

1. Connect antenna to RF port and power on the equipment, the ON/OFF indicator turns red, indicating normal equipment power supply.
2. Press the ON/OFF button for 1-2s, the "PWR" indicator turns green, after about 20s, the equipment WiFi is available for communication.
3. Turn on WiFi function at terminal, search WiFi of the same name with equipment S/N, and connect to this WiFi signal (connection password 12345678).
4. Open APP software, the symbol in the upper right corner of the interface turns  , indicating communication between terminal and equipment is done.
5. Configure signal information to be transmitted, and click "SEND" to transmit after completion, after  1 seconds, the "RUN" indicator turns green, and the symbol in the upper right corner of the interface turns  , the transmission configuration is completed, and system starts to output signals.

Note: When RF port is not connected to antenna or load, it is not allowed to supply power directly, otherwise it is very likely to damage the equipment!!!

You can open APP software only after completing step 2, if the APP has been opened, you need to exit APP first, and reenter!!!

Shutdown operation steps of the equipment are as follows:

1. Click the "STOP" button in APP interface, the "RUN" indicator turns off, and the equipment stops outputting.
2. Press and hold the ON/OFF button for 1-2s, the ON/OFF indicator turns red, wait till the PWR indicator turns off, and equipment internal power supply is disconnected.
3. Unplug power cable, and complete equipment shutdown.

Note: When shutdown is completed, do not unplug the power cable directly, otherwise it is very likely to damage equipment components!!!

1.6 Settings

The equipment transmits information using APP configuration, and the configuration interface is shown in Fig. 3:

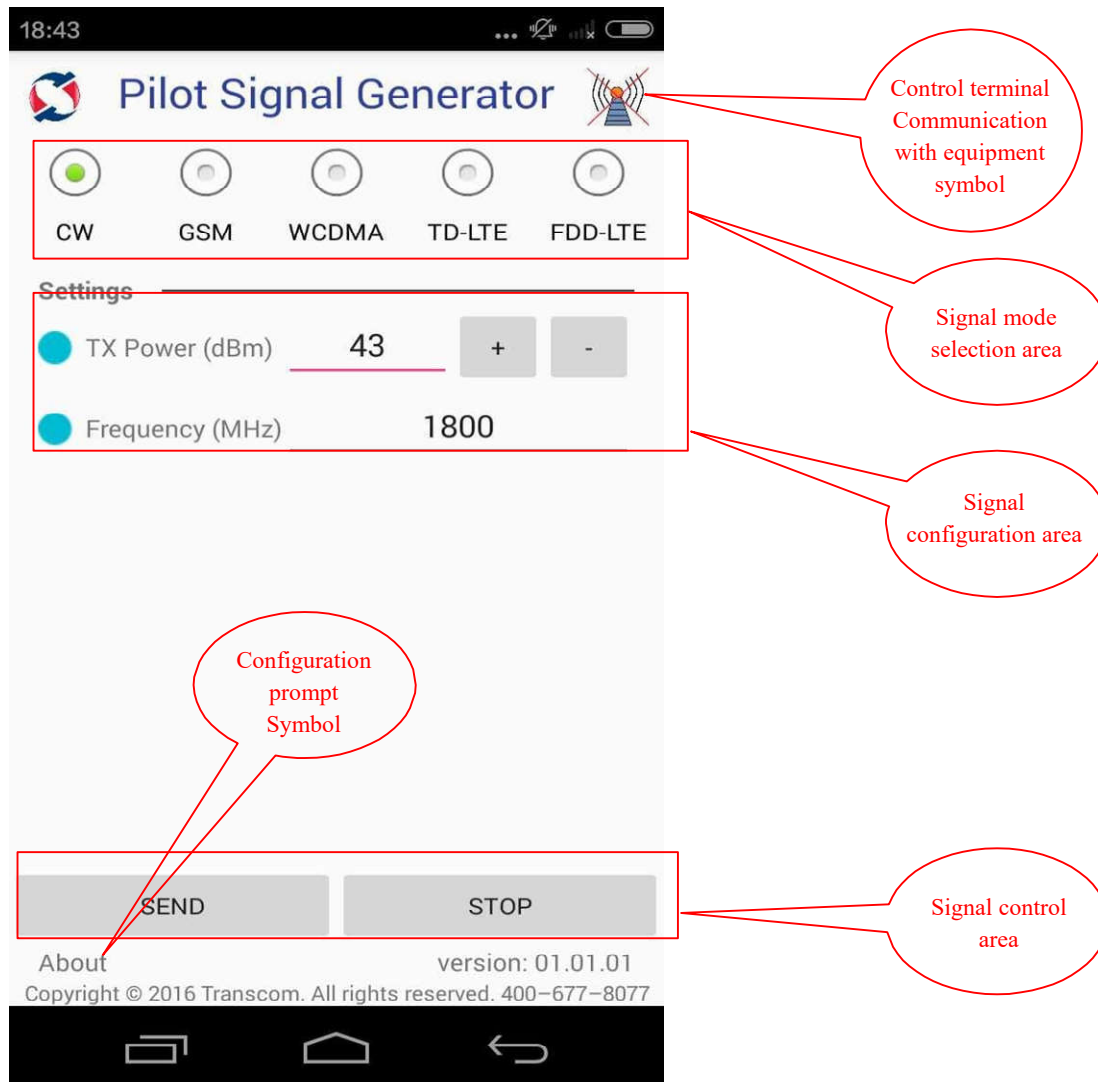





Fig. 3 APP Configuration Interface

- Communication between control terminal and equipment symbol  indicates the terminal is not connected to the equipment,  indicates the terminal is connected to the equipment,  indicates terminal configuration information is sent successfully, and the transmitter has received information and sent signals successfully.
- Signal mode selection area: Users select signal mode to transmit.
- Signal configuration area: The content of transmission signal configured by users, i.e.: Information such as frequency point, scrambling, power etc.
- Signal control area: Control the transmitter to transmit signals or stop transmission.
- Configuration prompt symbol: Click "About" to display start/shutdown notices, as shown in Fig. 4.

Note: Be sure to get familiar with prompts in "About" before connecting equipment!!!!

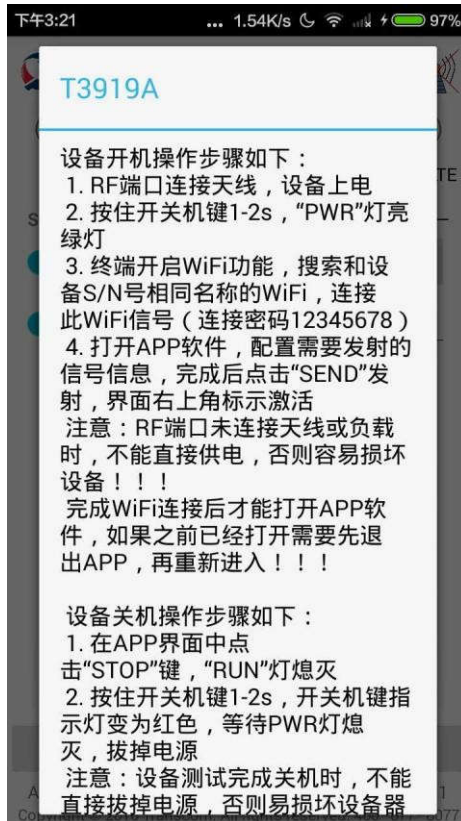


Fig. 4 About Prompt Information

Starting operation steps of the equipment are as follows:

1. Connect antenna to RF port, and power on equipment.
 2. Press and hold the ON/OFF button for 1-2s, the "PWR" indicator turns green.
 3. Turn on WiFi at terminal, search WiFi of the same name with equipment S/N, and connect to this WiFi signal (connection password 12345678)
 4. Open APP, configure signal information to transmit, and click "SEND" to transmit after completion, the communication between terminal and equipment symbol is activated. Note: When RF port is not connected to antenna or load, it is not allowed to supply power directly, otherwise it is very likely to damage the equipment!!!
- Connect to WiFi first, and then open App!!!

Shutdown operation steps of the equipment are as follows:

1. Click the "STOP" button in APP interface, the "RUN" indicator turns off, and the equipment stops running.
 2. Press and hold the ON/OFF button for 1-2s, wait till the "PWR" indicator turns off, unplug the power cable, to complete equipment shutdown.
- Note: When shutdown is completed, do not unplug the power cable directly, otherwise it is very likely to damage equipment components!!!!

CW transmission configuration is shown in Fig. 5:

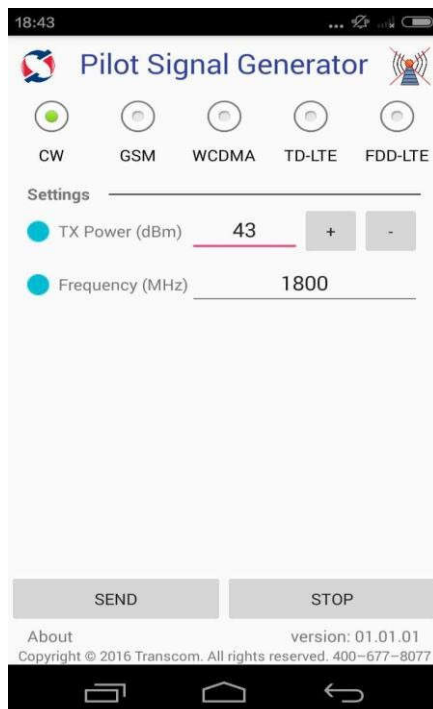


Fig. 5 CW Configuration Information

1. Select "CW" mode.

2. Configure TX Power power value, and you can input power value directly or click "+" "/" "-" to adjust, with adjustment stepping of 0.5dB.
3. Configure "Frequency" value, and frequency stepping is 10KHz. You can input frequency value directly, and 2 digits are allowed after decimal point.
4. Complete configuration, and click "SENT" to transmit.

Pilot frequency transmission configuration (taking TD-LTE as an example) is shown in Fig. 6:

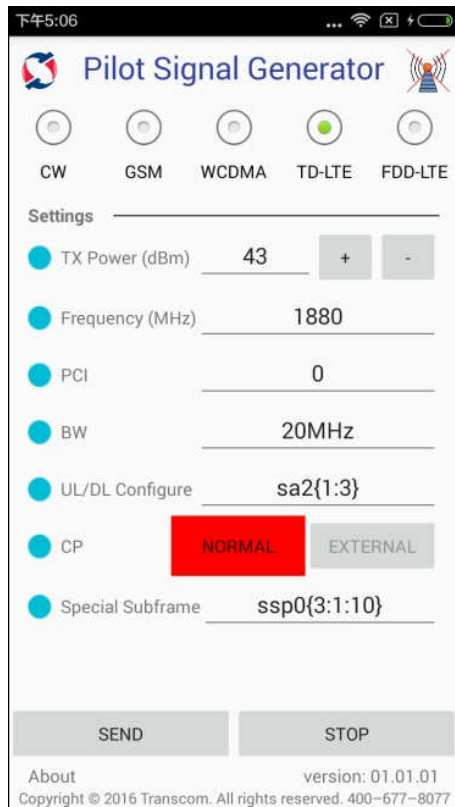


Fig. 6 Pilot Frequency Signal Configuration Information

1. Select "TD-LTE" mode.
2. Configure TX Power power value, and you can input power value directly or click "+" "/" "-" to adjust, with adjustment stepping of 0.5dB.
3. Configure "Frequency" value, and frequency stepping is 10KHz. You can input frequency value directly, and 2 digits are allowed after decimal point.
4. Configure "PCI" value, and set scrambling information.
5. Configure "BW" value, and set bandwidth information.
6. Configure "UL/DL Configure" value, and set uplink/downlink configuration information.
7. Configure "PC" mode
8. Configure "Special Subframe" value, and set special subframe information.
9. Complete configuration, and click "SENT" to transmit.

Warranty and notices

- Warranty of this product is one year. (The actual contract shall prevail)
- If there's any problem in use, you could contact us directly. Do not open the case for repair arbitrarily, otherwise, warranty be deemed to be automatically abandoned.
- During APP configuration and equipment switch control, guarantee the distance between the operator and the equipment does not exceed 10m, and there's no shield in sight distance, to avoid signal communication blocked. **APP installation is only supported by Android system!**
- Do not power on the transmitter when RF OUT is open, otherwise damaged transmitter shall be a man-made fault.
- During transmitter shutdown, operate according to procedure, and do not plug off the power cable directly.

About the product

Instruction: Target users of this user manual are technicians, system administrators or other operators. Users are assumed to get an overall understanding about the agreement. In this manual, functions and use methods of TSP transmitter will be explained and described in details.

Technical support: +86 (21) 64326888; hot line: 400-677-8077

Email: support@transcom.net.cn

Transcom Instruments website: [Http://www.transcom.net.cn](http://www.transcom.net.cn)

All rights reserved, piracy will be punished! © 2010-2020 Shanghai Transcom Instruments Co., Ltd.