



# USB Mini Spectrum Analyzer User Manual

## PC program TSA

### For TSA4G1

### TSA6G1

### TSA8G1

### TSA12G5

**Triarchy Technologies, Corp.**





---

## USB Mini Spectrum Analyzer User Manual

### Copyright Notice

Copyright © 2013 Triarchy Technologies, Corp. All rights reserved.

Initial Version July 2013

Documentation version 1.3

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without the prior written permission of Triarchy Technologies, Corp.

### Technical Support

For technical support, please call 1-604-637-2167, send email to [info@triarchytech.com](mailto:info@triarchytech.com), or visit our website at <http://www.triarchytech.com>



## Table of Contents

<b>1 GETTING STARTED.....</b>	<b>4</b>
1.1 INSTALL PC APPLICATION.....	4
1.2 UNINSTALL PC APPLICATION:.....	8
1.3 SYSTEM CONNECTION.....	9
<b>2. OPERATIONS.....</b>	<b>9</b>
2.1 PARAMETERS SETTING.....	9
2.2 FREQUENCY SETTING.....	10
2.3 SPAN SETTING.....	10
2.4 AMPLITUDE SETTING.....	11
2.5 SWEEP TIME SETTING.....	11
2.6 TRACE SELECTION.....	11
2.7 CURRENT TRACE.....	12
2.8 AVERAGE TRACE.....	12
2.9 MAX TRACE.....	12
2.10 DENSITY MEASUREMENT.....	13
2.11 MANUAL CALIBRATION.....	13
<b>3. MEASUREMENT SUPPORT FEATURES.....</b>	<b>13</b>
3.1 SELECT MEASUREMENT CURVE.....	13
3.2 MARKER.....	13
3.3 DELTA MARKER.....	14
3.4 CHANNEL POWER.....	14
3.5 LIMIT LINE.....	15
3.6 REFERENCE.....	15
3.7 HARDCOPY.....	15
3.8 RECORDING.....	15
3.9 DISPLAY MOVING.....	15
<b>4. DECLARATION OF CONFORMITY.....</b>	<b>17</b>
4.1 FOR MODLE TSA6G1,TSA5G35, TSA4G1.....	17



## 1 Getting Started

### 1.1 Install PC Application

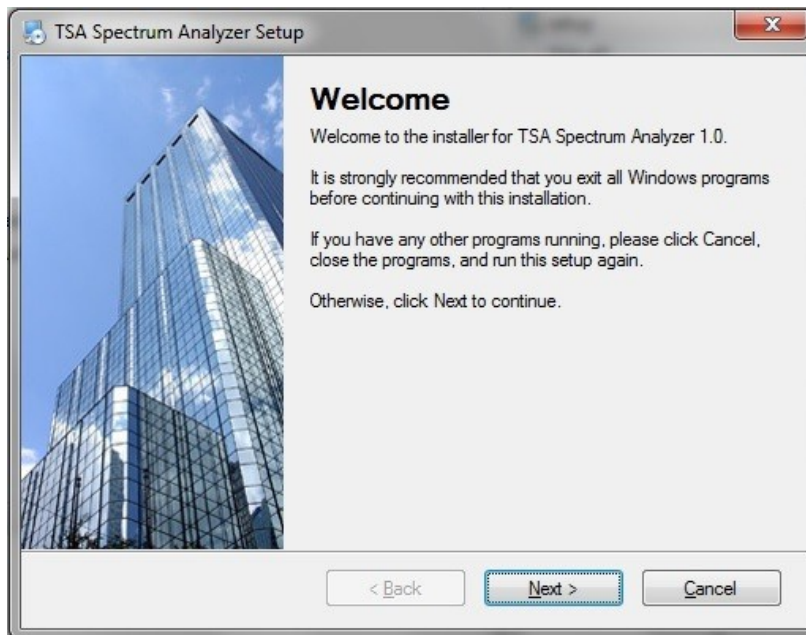
#### **System Requirements:**

To use this USB mini spectrum analyzer, your system must meet the following minimum requirements:

Windows XP, Windows 7, or Windows Vista and Window 8:

- 1 Gigahertz (GHz) or faster 32-bit (x86) or [64-bit \(x64\)](#) processor
- 1 Gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)
- 100 MB hard disk space (Buffered data may need extra space)
- Display resolution shall be better than 1024x768

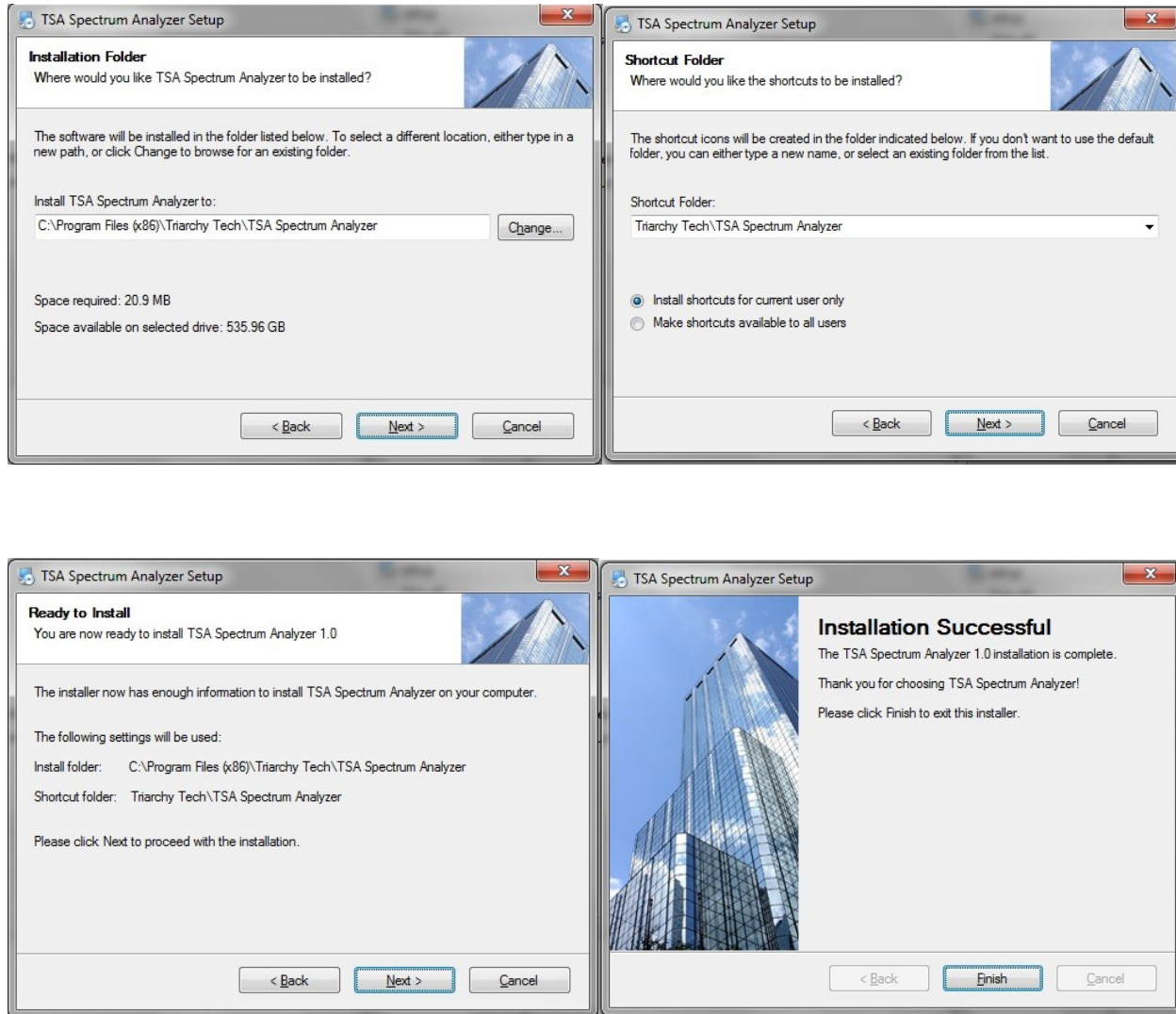
Insert CD into the computer, open the **SW\_file/TSA** folder from CD, and click the setup.exe to install software. When you see the installation window, click "Next". Please see **Figure 1**



**Figure 1 Installation View**



Follow the installation instruction to install the PC program.



**Figure 2 Successfully Installed**

After the program is successfully installed, you will get the message “Finish the Installation Completely”, please see **Figure 2**,

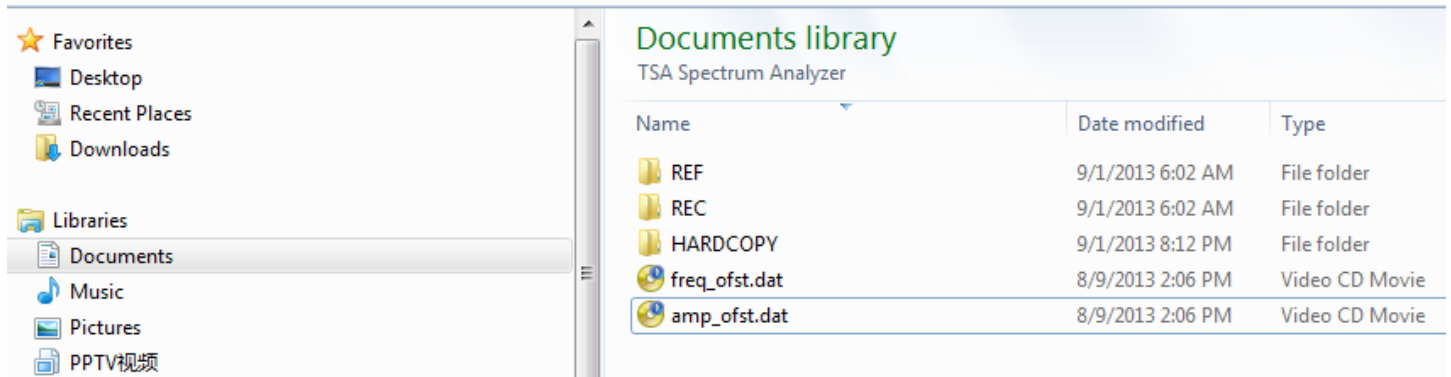
TSA program will install at **C:\Program Files (x86)\Triarchy Tech\TSA Spectrum Analyzer**

TSA data folder will be located at Documents, all the log data and Calibration file will put into data folder, the data folder path is **C:\Users\UserName\Documents\Triarchy Tech\TSA Spectrum Analyzer**.

Please see **Figure 4**.



0



**Figure 4 Data Folder View**

Do not run the program right away, after you install the PC program TSA as you still need to validate the installation. To validate the installation, please copy the calibration file of **amp\_ofst.dat** and **freq\_ofst .dat** from the CD to the installation folder to replace the old **amp\_ofst.dat** and **freq\_ofst .dat file**. The old **amp\_ofst.dat** and **freq\_ofst .dat file** was demo version, the calibration file in your CD will be related to your ordered device. You must copy it to replace the demo Demo version. Please request these 2 files from [support@triarchytech.com](mailto:support@triarchytech.com) if you do not have a CD.

(If your product is TSA5G35, you need to remove the **amp\_ofst.dat**, then copy calibration file **lic.dat** and **freq\_ofst.dat** which in your CD into the installed folder. **freq\_ofst.dat** file will replace the demo version.)

After copying the **amp\_ofst.dat** and **freq\_ofst.dat** files into Data folder, you can run the program from the desktop, click the TSA icon on desktop to start the application, please see **Figure 5**.





### Figure 5 TSA Shortcut Icons on Desktop

\*If clicking on the TSA ICON for Desktop, the “Sorry but can’t find calibration file!” warning appears, **Figure 6**. It means the *amp\_ofst.dat* and *freq\_ofst.dat* file from CD is missing in the data folder.

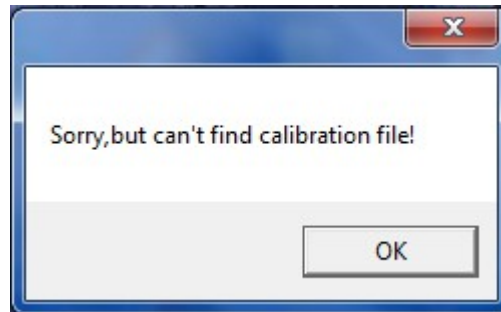


Figure 6 Needs to copy Calibration file

If the installation was successful, you will see spectrum analyzer application start-up window as shown in **Figure 7**.

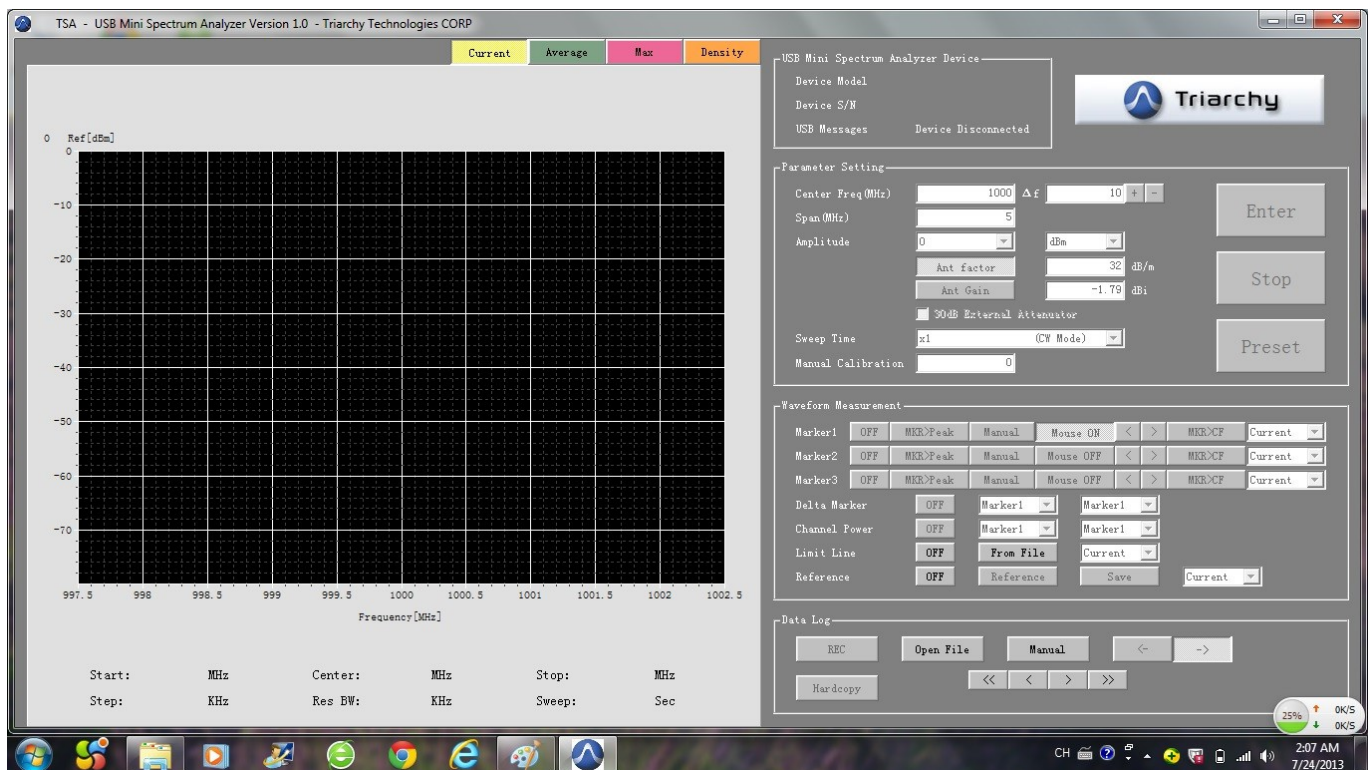
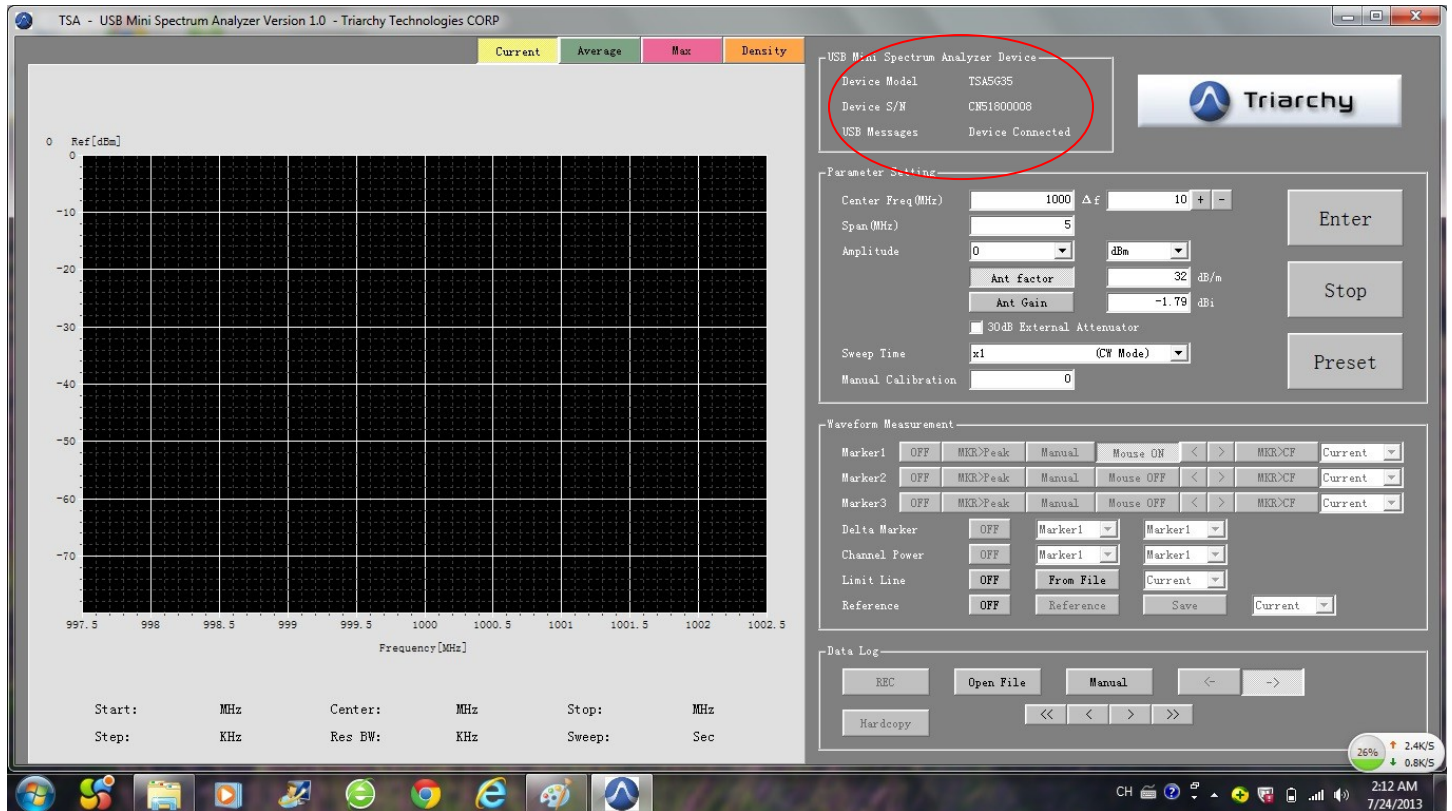


Figure 7 Application Windows before USB Device Connected



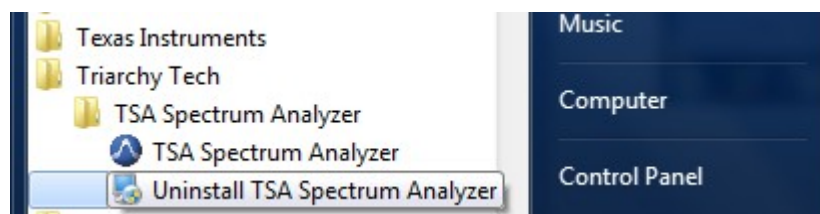
Plug the **TSAxGx USB mini spectrum analyzer** into the PC USB port, the program will recognize the USB device and displays Device model and Device S/N. If PC connects to USB device properly, the USB Message is shown Device Connected. Please see **Figure 7**



**Figure 7 TSA Connected with USB Mini Spectrum Analyzer Device**

## 1.2 Uninstall PC Application:

If you want to uninstall the TSA program, please go to the Start menu, look for the Triarchy Tech folder, then click Uninstall item and follow the instruction. Please see **Figure 8**.



**Figure 8 Uninstall View**





### 1.3 System Connection

**Figure 9** shows the system connection. TSAxGx connects to the computer through the USB port. The connection between TSAxGx and RF signal generator can be wired via coaxial cable or wireless via antenna. The RF signal generator could be any RF transmission device.



**Figure 9 System Connection**

## 2. Operations

### 2.1 Parameters Setting

When the application starts, the screen displays as shown in **Figure 10**. The default span is 5 MHz, the default reference level is 0 dBm, and the center frequency is 1000MHz.

When a signal presents at the input, the signal spectrum will be displayed. In this example, the signal center is at 1000 MHz. The spectrum display by default shows only the current trace. The average trace, peak trace, and density of the signal level are turned off. If you want to turn on different traces, you can enable different traces by clicking tabs to display.

If you want to change the setting, input value at each block, then click enter key. Stop button is used to stop scanning. When updating a new setting, click enter without clicking the Stop key.

The preset key will push the setting to the default value. That is 1000MHz for freq, 5MHz for SPAN, 0dBm for Amplitude, current display only.