

# Chapter 7: Automated Readings


Automated Readings allow you, the user, to sweep and analyze data without physically clicking the sweep and analyze buttons. In this chapter we will describe WinTDR's automation features and describe in detail how to use these features.

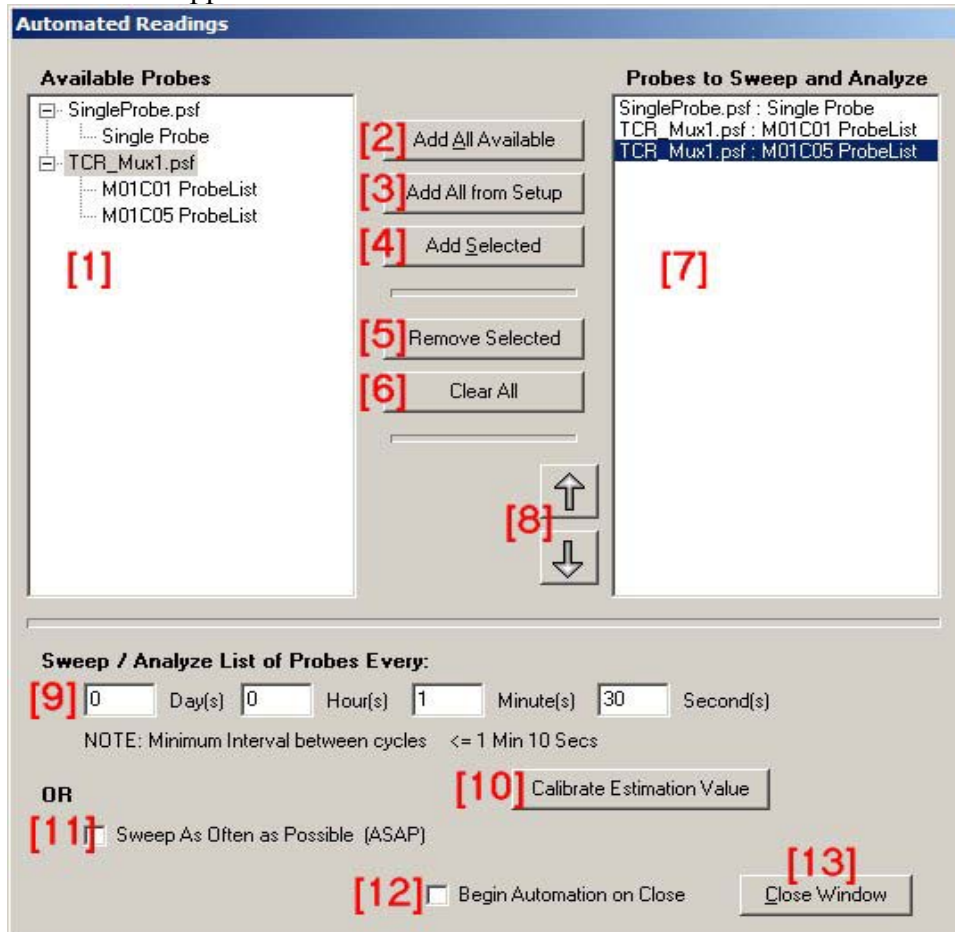
## WinTDR Automation Features

WinTDR allows you to automatically sweep and analyze single probes and/or probe lists. This includes having them connected to a multiplexer.

To Automate Readings in WinTDR, there are two steps:

1. Choose which probes will be automatically swept and
2. Begin the readings.


To choose which probes will be automatically swept, click on the "Adjust Scheduling" menu item (found under "Scheduling" on the main menu or the  icon). The following window will appear.




We have numbered the window with red numbers for explanatory purposes.

We will now explain each of the items in the window:

1. This is a list of all the available probes that could be automatically swept and analyzed. They are ordered by setup file. Thus in the above example, we have two setup files open. One only has a single probe the other is a mux setup with two probe lists at channels 1 and 5.
2. This button will add all the probes from the available probes to be swept.
3. This button will add all the probes from the currently selected setup file to be swept.
4. This button will only add the currently selected probe from [1] to the list of probes to be swept.
5. Removes selected probes from [7]. Making the probe not be swept.
6. Clears all the probes that are in the list to be swept and analyzed.
7. This is the list of all the probes that will be swept and analyzed each cycle. Probes are swept from the top down, and duplicates will sweep and analyze each time they are found in the list.
8. These two buttons change the ordering of the probes that are in the ‘to-be-swept’ list. The up arrow will move the selected probe up one position in the ordering. The down arrow just the opposite.
9. This area allows the user to select how often the probes in list [7] to be swept and analyzed. The user can specify from days to seconds. The only requirement is that the user interval must be at least as big as the minimum interval size. The Minimum interval size is determined by how many probes must sweep \* time for each probe to sweep and analyze.
10. This will recalibrate the time for each probe to sweep and analyze. It will sweep one probe and then recalculate the minimum interval based on the new value if you decide to keep it. NOTE: This is just an estimate. If you have a lot of muxes or change the delay multiplier (in the TDR settings), you should use this recalibration after you have selected the probe that will most likely cause the largest delay to ensure you don’t miss a cycle.
11. Sweeps the list of probes in [7] as fast as possible. No pauses are between each cycle and the list will continually loop until the user turns off scheduled readings.
12. Select this check box if you want scheduled readings to begin as soon as you close the Automated Readings window.
13. Closes the window. It will check to make sure that the user interval is valid (if ASAP is not selected) and will make sure the user interval is larger than the minimum interval.

Once you have selected the probes to be swept, beginning scheduled readings is as easy as clicking the  icon (or selecting “Scheduling” -> “Start Reading Cycle” from the main menu). A message will appear telling you that readings will begin as soon as you close the window.

Schedule readings can be canceled at any time by simply clicking on the  icon again. NOTE: You will have to wait for the currently sweeping probe to finish before the scheduled readings will stop. Please Be Patient.

### **Important Notes:**

- You should only begin a reading cycle with probes that have already been calibrated and setup to sweep the data you want.
- Only begin automation after you are sure you have the correct settings in the analysis options window. Automated readings will use all the user defined settings during the analysis process. There is one exception to this: Automated readings will always retrieve a new waveform regardless of if you have selected “Get New Waveform” or not.
- Probe lists will sweep each probe in the list during automated readings. So it is important you only use probe lists that are sized for your needs.
- If you stop and automated readings cycle while it is running, when you begin scheduled readings again, it will begin at the first probe in the list again, not where it left off.
- If at any time a cycle is missed, either because the minimum interval was incorrectly calibrated, or the probes were not calibrated appropriately before beginning scheduled readings, the next cycle will still be performed on schedule, but some cycles might be missed. WinTDR does not back-log missed cycles.
- Ensure that all probes scheduled to be swept and analyzed are open and valid. Do not close a setup file that has probes that are scheduled to be swept. If an invalid probe is ever attempted to be swept, the automated readings will halt.
- The minimum interval should be recalibrated each time you change the baud rate or delay multiplier. Also you should NOT get the user interval too close to the minimum interval if you are worried about missing a cycle, as the minimum is more of an estimate than an exact prediction.

### **Problems With Automated Readings:**

During testing of the Automated Readings we discovered some problems, or incompatibilities on some systems. Most are hardware related issues that did not cause problems on all systems. To avoid problems altogether, the following should be done to ensure the stability of WinTDR to be able to run Automated Readings.

- Make sure the computer running automated readings has all power saving options, of the Operating System, turned off. Power Settings can be found in the “Control Panel” of the Windows Operating system. Ensure that the Monitor and Hard Drives never turn off, and that the System will never go into Standby or Hibernation mode.
- Physically turn off the monitor instead of running screen savers as some have been found to cause instability of Windows and consequently to Automated Readings.