



Wideband Component Test System User Guide

All information contained herein is believed to be accurate and is subject to change without notice. No responsibility is assumed for its use. ©JGR Optics Inc, 2016.

Contents

1	Overview	2
2	Quickstart Guide	3
	Navigating the WCS Software	4
	Settings	5
	Plots	6
	Analysis	7
	Saving	8

Overview

The WCS Wideband Component Test System takes advantage of JGR's powerful and cost effective ultra-wide band TLS, thus providing fast and reliable measurements across the entire O,E,S, C,L and U wavelength ranges in one single sweep.

The WCS is capable of characterizing 32-Channel components such as broadband splitters and CWDM's in less than 10 seconds.

With the included WCS software, users can setup PASS/FAIL criteria on their devices and view real time graphical results of IL/BR/PDL vs wavelength.

Included Features:

- 1260 to 1650 wavelength range
- Fast scanning (<10 seconds for the entire band)
- Up to 32 Channels per chassis
- IL, BR and (optional)PDL capability

Applications:

- Broadband coupler testing
- CWDM testing
- FTTH/PON Splitter testing
- Attenuator testing

Quickstart Guide

Upon receiving the WCS, plug in both the TLS5 and the WCS chassis. Connect the following items:

- BNC cable between the TLS5 *Trig Out* port and the WCS *Trig In* port
- USB-to-Serial cable from the WCS chassis to the PC

Now we are ready to connect the included optical fibers. *Note: all connections on the TLS5 and WCS chassis are FC/APC.*

If you purchased, and wish to use, the PDL functionality do the following:

1. Connect the TLS5 output to the TLS IN (PDL) on the WCS chassis with the blue PM fiber patchcord.
2. Connect TLS OUT PDL to TLS IN with an FC/APC-FC/APC patchcord.
3. Connect the OUTPUT port to DETECTOR 1 with your master test jumper.

If you **did not** purchase, or do not wish to use PDL functionality do the following:

1. Connect the TLS5 output to the TLS IN port on the WCS with the blue PM fiber patchcord.
2. Connect the OUTPUT port on the WCS to DETECTOR 1.

Navigating the WCS Software

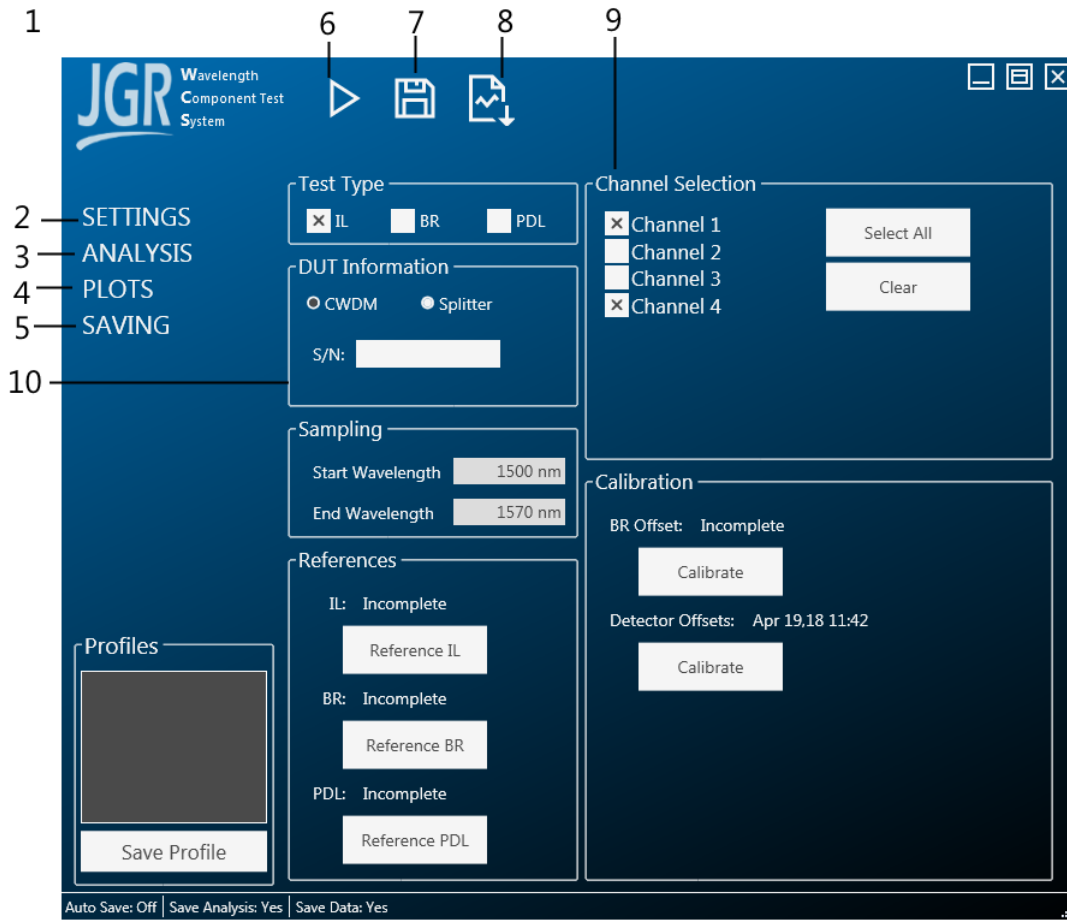


Figure 2.1: The main screen of the WCS software.

1	Main Screen	All testing is done on this page.
2	Settings Menu	Contains test setup and referencing
3	Analysis	Once a measurement is complete, analysis functions can be performed. Results are displayed here.
4	Plots	View results from sweeps for IL, BR and PDL.
5	Saving	Settings related to save files and templates.
6	Start	Start a measurement sweep.
7	Save	Saves current sweep raw data into a .txt file.
8	Save Plot	Save current sweep plot into a .png file.
9	Channels	Select which detectors to use in the next sweep.
10	DUT Information	Set a serial number for export and select CWDM or Splitter for analysis modes.

Settings

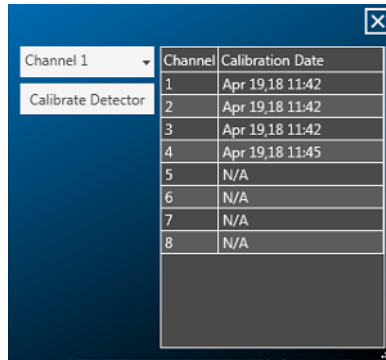


Figure 2.2: The main screen of the WCS software.

The Settings page (Fig. 2.1) is used to setup a sweep and run references. Before running the first measurement several steps must be completed.

1. With your master test jumper connected to the TLS OUT port of the WCS, under the heading **Detector Offsets** click *Calibrate*. This will open up the window in Fig. 2.2.
2. For each channel (detector) in the list connect the TLS OUT port to the corresponding detector on the WCS chassis and click *Calibrate Detector*. *Note: This step is only necessary once, it will allow you to use Detector 1 as a reference and still achieve accurate results across all detectors.*
3. Under the heading **BR Offset** click *Calibrate* and follow the prompts. This will enable accurate BR measurements. It is necessary to perform this anytime the master test jumper is changed or removed.
4. Reconnect your master test jumper between the TLS OUT port and Detector 1. You are now ready to perform a reference.
5. **Important: If PDL is being performed, ensure that it is selected under the *Test Type* section before proceeding!**
6. In the section **References** click *Reference IL*. The button will display 'Reference Complete' when it is done. *(Note: If PDL is selected this option will be greyed out. Performing a PDL reference will do an IL reference automatically.)*
7. Do the same for BR, ensuring that your master test jumper is appropriately terminated.
8. Next, click *Reference PDL*. This will take a little bit longer as the system will perform 4 full sweeps (1 for each state used in the PDL measurement).
9. Finally, enter a DUT Serial Number and select if it is a CWDM or Splitter. This is only necessary for Analysis and will not affect the measurement.

Plots

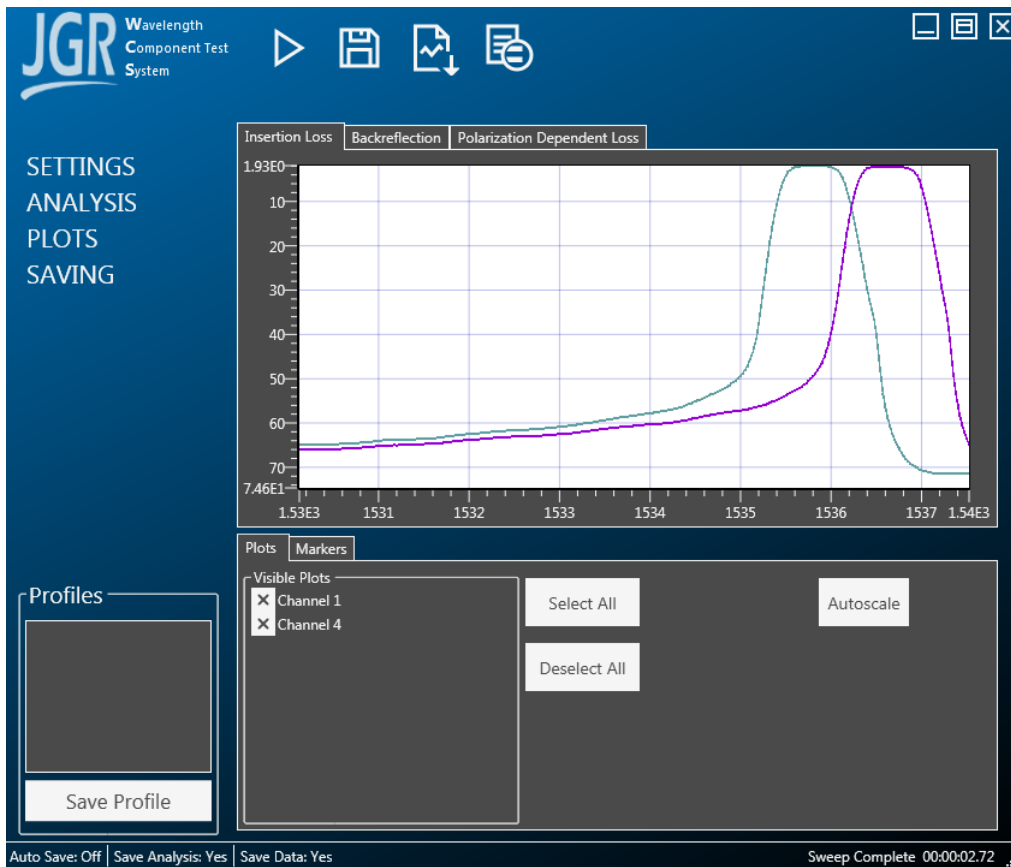


Figure 2.3: View test results

The Plots tab is where measurements can be viewed and managed. After completing all of the steps in Section click the *Start* button at the top of the page. A sweep will run and the results for your selected tests and channels will be displayed.

Axis minimum and maximums can be edited by clicking on the min or max value and entering the desired value (see Fig. 2.4). *Autoscale* will edit the scale to show all visible data.

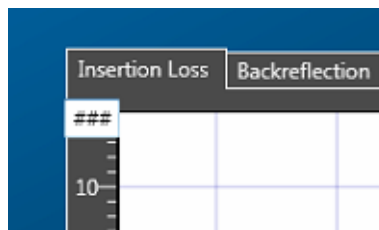


Figure 2.4: Edit plot axes

Analysis

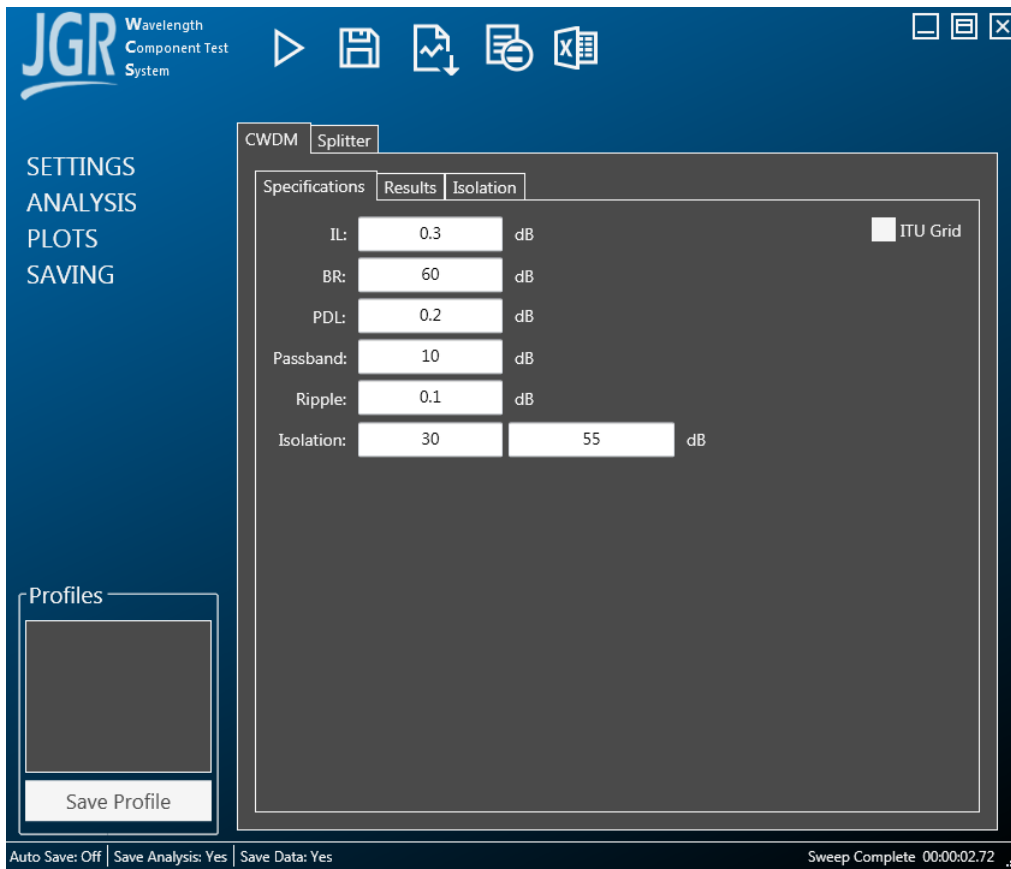


Figure 2.5: Analyze data

Once a sweep is completed the option to perform some analysis will become available at the top of the screen. Analysis for PASS/FAIL is based on the specifications entered in Fig. 2.5. Once analysis is completed one more icon will appear, this button allows exporting results and data to Microsoft Excel.

Saving

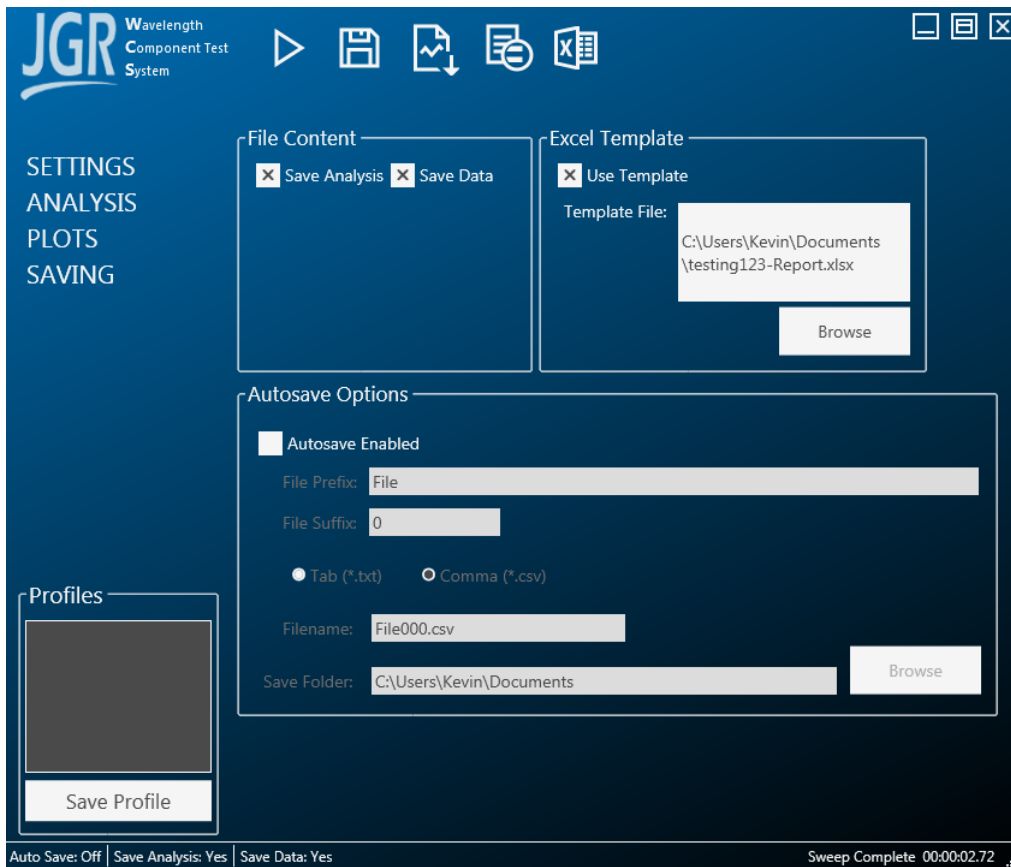


Figure 2.6: Settings which control how data is saved and exported

Raw data can be saved automatically following any test using the folder and options specified in **Autosave Options**.

	A	B	C	D	E	F	G	H	I
1	Date	03/15/2018							
2	Time	12:42:30							
3	S/N:	testing123							
4									
5									
6	Performance Specifications								
7	Parameter			Spec					
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									

The screenshot shows an Excel spreadsheet with the following data:

- Row 1: Date: 03/15/2018
- Row 2: Time: 12:42:30
- Row 3: S/N: testing123
- Row 6: Performance Specifications
- Row 7: Parameter: Spec

The spreadsheet has columns A through I and rows 1 through 23. The 'Splitter Report' sheet is active, and other sheets like 'Plots', 'IL Data', 'BR Data', 'PDL Data', and 'Label' are visible in the background.

Figure 2.7: Sample Excel export

If you wish to export a label/report this can be done by using a Microsoft Excel (.xlsx) template file. The label should be in a sheet called 'Label'. WCS software will export the results into the remaining sheets as shown in Fig. 2.7. Note, these sheets will be overwritten on Export.