



GENERIC MEASUREMENT SOFTWARE (GMS)

User Manual

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TABLE OF CONTENTS

OVERVIEW	1
INSTALLATION	2
SOFTWARE CONFIGURATION	5
MAIN WINDOW	5
CONFIGURING THE INSTRUMENTS	6
<i>Configuring Meters (BR5, MBR5 and MLT)</i>	7
<i>Configuring a Switch (COS switch)</i>	8
CONFIGURING TEST SETTINGS.....	9
<i>Test Format and Test Order Tab</i>	10
<i>Test Length Tab</i>	11
<i>Save Options Tab</i>	12
SETTING UP A TEST PROFILE	16
CREATING A NEW TEST PROFILE.....	16
BUILDING THE TEST LIST	17
<i>Configuring the First Test</i>	17
<i>Adding a Test at the End the Test List</i>	18
<i>Inserting Tests into the Middle of a Test List</i>	19
<i>Editing Tests in a Test List</i>	22
<i>Deleting Tests from the Test List</i>	23
<i>Adding Pauses to the Test Sequence</i>	23
CONFIGURING HEADER LABELS	24
ALARMS	25
<i>Adding an Alarm</i>	26
<i>Editing an Alarm</i>	27
<i>Deleting an Alarm</i>	27
<i>Alarm Colors</i>	27
<i>Beep on Failure</i>	29
<i>Committing Changes</i>	29
TEST TEMPLATE	29
SAVING AND LOADING TEST PROFILES	30
<i>Saving a Test Profile</i>	30
<i>Loading a Test Profile</i>	31
RUNNING A TEST	33
CONFIGURING THE INSTRUMENT	33
<i>Meter (BR5, MBR5 and MLT)</i>	33
<i>Switch</i>	33
CONFIGURING TEST SETTINGS.....	34
<i>Single Cycle Tests</i>	34
<i>Long-term Test (more than 1 Cycle)</i>	35
ON THE MAIN FORM.....	35
TAKING A REFERENCE	38
TAKING REFERENCES ONE CHANNEL AT A TIME.....	39
TAKING REFERENCES FOR ALL CHANNELS AT ONCE	40

1

OVERVIEW

This Generic Measurement Software (GMS) User Manual contains information regarding the installation and operation of the software.

The GMS automates testing procedures for optical devices. It can be used to test Insertion Loss (IL), Return Loss (BR), and Power (PWR).

Supported Instruments:

- JGR MBR5 Meter
- JGR BR5 Meter
- JGR MLT
- JGR COS Optical Switch, SX8 & SXM

Features:

- Insertion loss, return loss, power testing through optical connectors
- Save results into Excel files with various saving options
- Simple and efficient, operator requires minimal training
- Easy saving, loading, and editing of test profiles
- Includes long-term testing options

System Requirements:

- Windows XP or higher
- .NET framework 3.5
- Microsoft Excel (2003 or 2007)
- National Instruments Drivers (for GPIB)

2

INSTALLATION

Double click and launch the set-up executable file (Setup.exe) to install the GMS application.

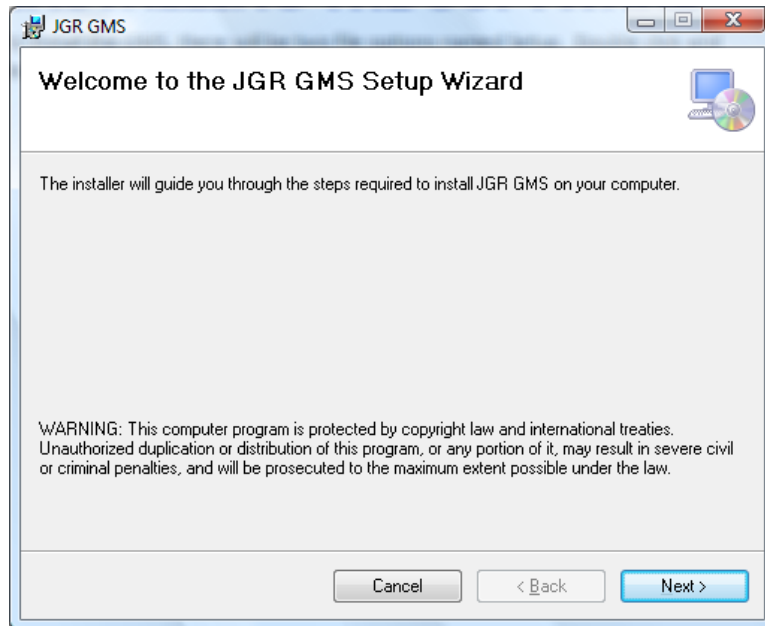


Figure 1: Opening of installation window

To start installation, click Next.

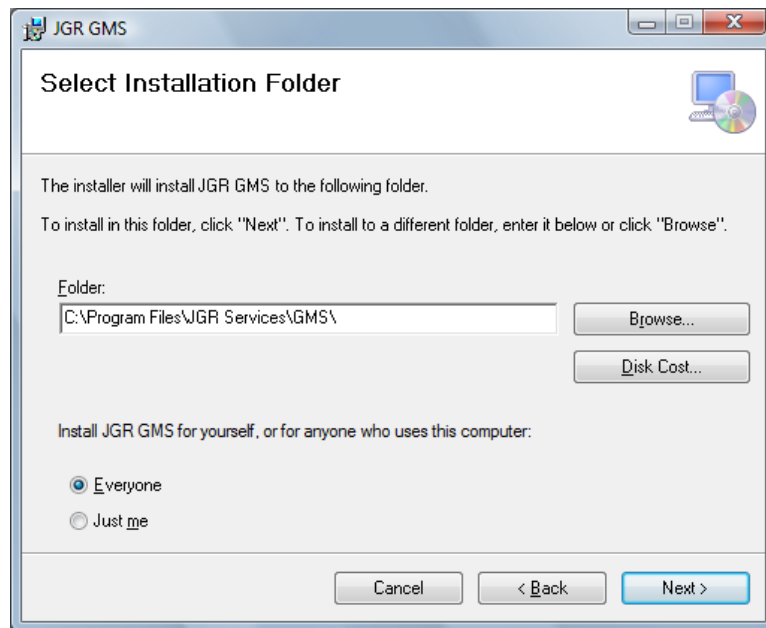


Figure 2: Select installation folder

Select the folder where to install the GMS and specify the which user(s) of the computer can use the software once it is installed. Click Next.

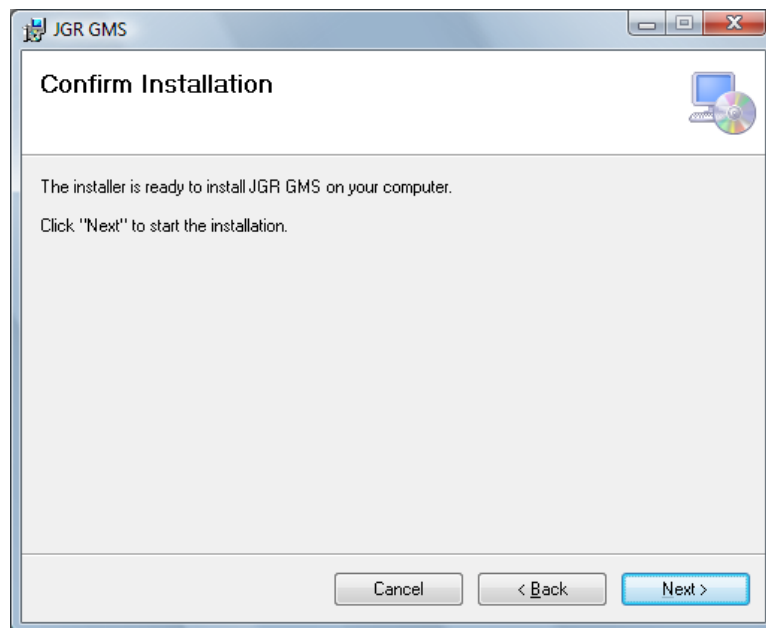


Figure 3: Installation confirmation

Click Next to continue or Back to make changes.

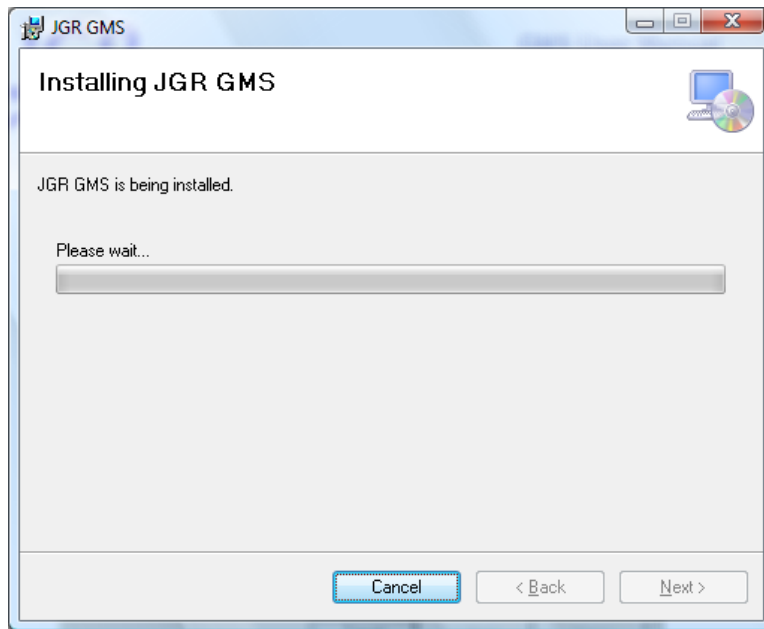


Figure 4: Loading screen

Wait while GMS installation is performed. Installation will take a few minutes.

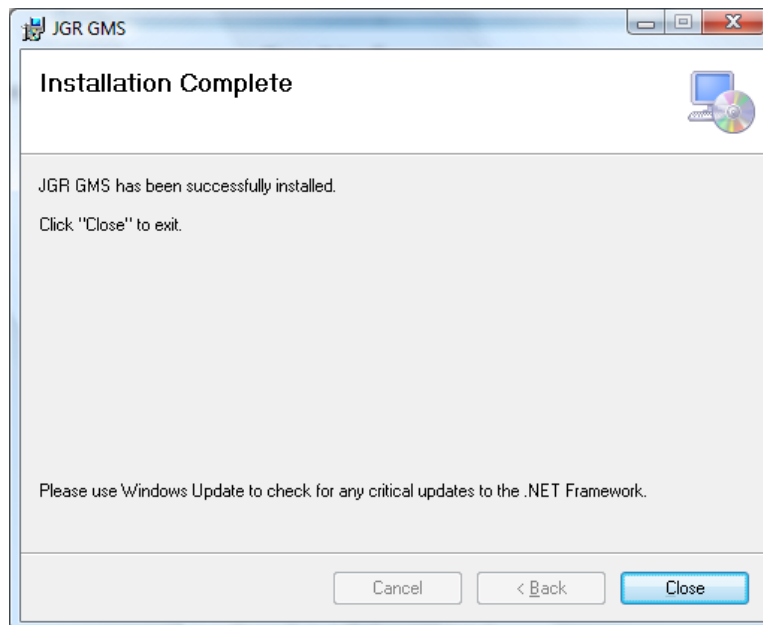


Figure 5: Installation completed

To complete the installation, click Close. A shortcut on the desktop will automatically be created.

3

SOFTWARE CONFIGURATION

Main Window

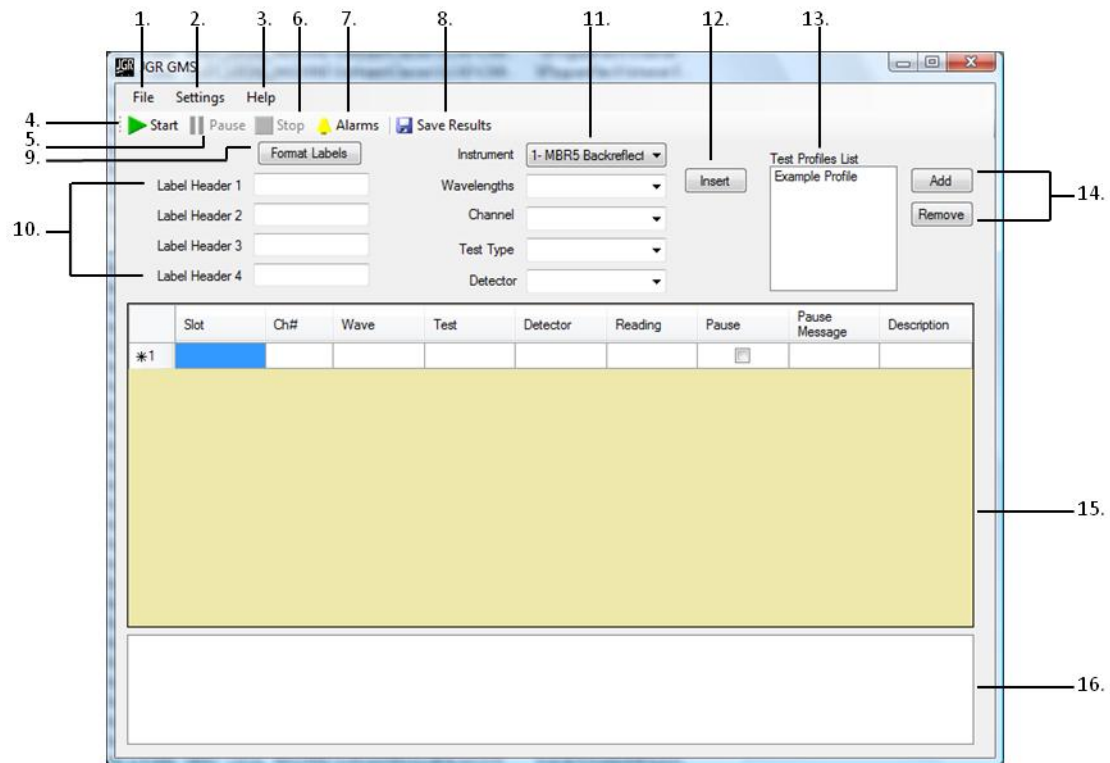


Figure 6: GMS opening window

1	File Menu	Save/load test profiles
2	Settings Menu	Instrument and Test settings, Reference, Lock
3	Help Menu	Link to access User Manual
4	Start Button	Initiates the test
5	Pause Buton	Pauses the tests currently running
6	Stop Button	Stops the tests currently running
7	Alarm Configuration	Configuration of Warning or Failure alarms
8	Save Button	Saves test results currently viewed in the main window
9	Format Labels Button	Select number of rows and row headers
10	Labels	Row headers (ex. Part Number, Serial Number, etc.)
11	Test Parameters	Configuration of wavelengths, channels, test types and detectors to test for the selected instrument
12	Insert Button	Inserts the test as defined in Test parameters in the sequence
13	Test Profiles List	List of test profiles available. In order to load a profile, select a profile from the list and double click on it.
14	Add/Remove Buttons	Add/remove test profiles to/from the list
15	Test List	Test information is stored in this grid in a list format. The grid displays the test sequence to be conducted, in execution order, from top to bottom.
16	Message/Status	Messages are displayed to provide information about test status and results

Configuring the Instruments

Before beginning a test, configuration of the various instruments must be completed properly. To do so, select “Instrument Settings” from the Settings menu (or press Ctrl + I on the keyboard).

The first step is to indicate how many instruments are available, select the #1 from the drop-down list and then configure it. Once this is done, select #2, if available, and configure it. Repeat those steps for all instruments available.

The “Instrument” and “Port” drop down lists are used to select the type of instrument and the communication port to be used (serial or GPIB). The bottom

part of the menu is used to provide specific details of each instrument to be used like available wavelengths, number of detectors, etc.

If serial port is selected, an additional section of the menu will appear allowing configuration of the communication port (Transmission rate, parity, data bits, and stop bits - if unsure about these settings leave them as the default).

To test communication with the computer, click the "Test Port" button. The instrument is successfully communicating with the computer if a message indicating the "Port is active" appears. If the instrument fails to communicate through the port, make sure the right COM port is selected. If it continues to fail, turn the instrument off and on and try again.

Note that the information displayed in the lower half of the window will vary based on the instrument selected.

Configuring Meters (BR5, MBR5 and MLT)

- **Address:** refers to the GPIB address of the instrument (if using GPIB port) or the COM port of the instrument (if using serial port).
- **Number of Channels:** refers to the number of output channels available on the meter. Both the MBR5 and MLT have multiple output channels, whereas the BR5 has only one.
- **Number of Detectors:** This setting only applies to the MLT and refers to the number of detectors available on the instrument.
- **Wavelengths:** The checkboxes specify the standard wavelengths available on the meters. Check all wavelengths that apply to the selected instrument.

For any wavelengths that are not listed (ie. custom wavelengths), enter the wavelengths in the "Other Wavelengths" text box. For multiple custom wavelengths, separate each wavelength with a comma ",".

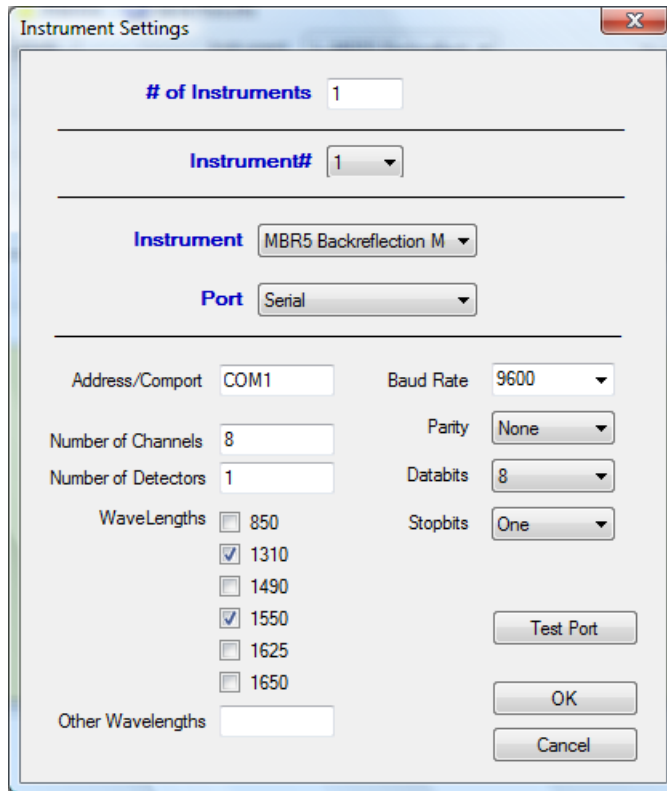


Figure 7: MBR5 instrument settings, using serial port

Configuring a Switch (COS switch)

- Address: refers to the GPIB address of the instrument (if using GPIB port) or the COM port of the instrument (if using serial port).
- # of Modules: Enter the number of modules on the switch being used.
- Channel: First select a module number from the “# of Modules” drop down list and enter the number of channels available for that module. Repeat the operation for all switch modules.

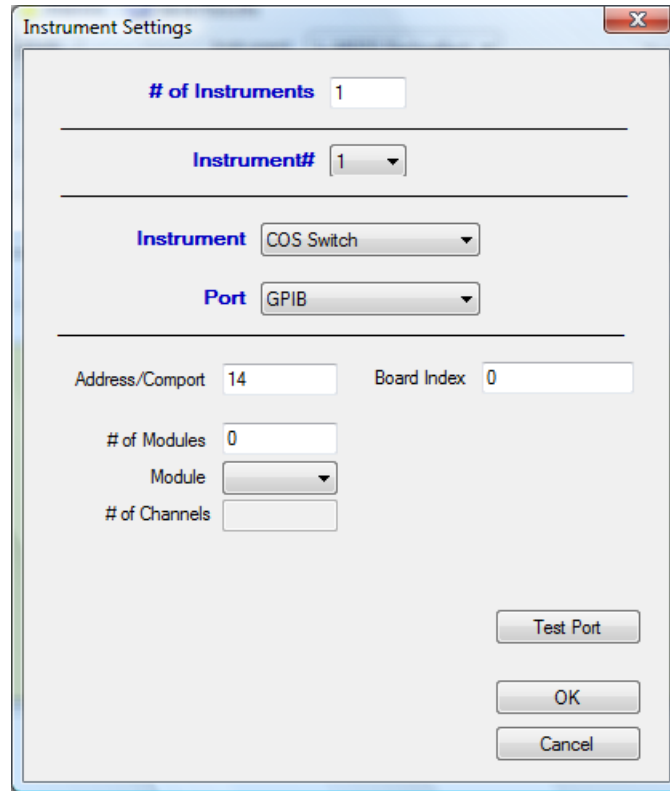


Figure 8: Switch instrument settings, using GPIB

Applying the settings

After all the instrument settings are configured, click OK to apply and save the settings. These settings are saved in a configuration file and will be loaded each time the software is run. To discard the changes made, click Cancel.

Note: the instrument settings are saved as part of the software settings and are independent of test profiles (these settings are static and do not change when a different profile is loaded).

Configuring Test Settings

In the “Test Settings” menu, the user can make changes as to how the test is carried out and how results are saved. The changes made in the “Test Settings/” menu are saved and are independent of test profile. To access the “Test Settings” menu, click the “Settings” menu item then select “Test Settings” (or press Ctrl + T on the keyboard).

Test Format and Test Order Tab

Under the first tab, the test order and column format can be set. In the “test list”, the various parameters (wavelength/ channel/ test type/ detector) are divided in separate columns. The user can specify in which order these columns appear in the list.

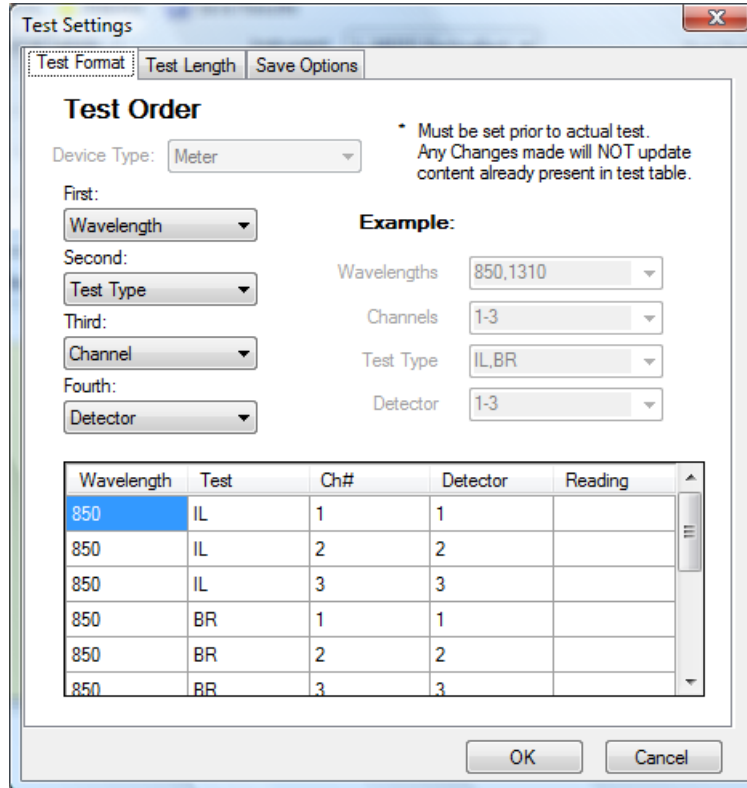


Figure 9: Test Settings - Test Format

The drop down lists located on the left and marked from First to Fourth vary depending on the type of instrument and are used to select the column order:

- MBR5 - channel, wavelength, and test type
- BR5 - wavelength, test type
- MLT - wavelength, channel, test type, detector
- Switch – none

The same parameter cannot appear more than once. When a valid format is specified, an example using the selected parameters is displayed on the right side of the window.

Test Length Tab

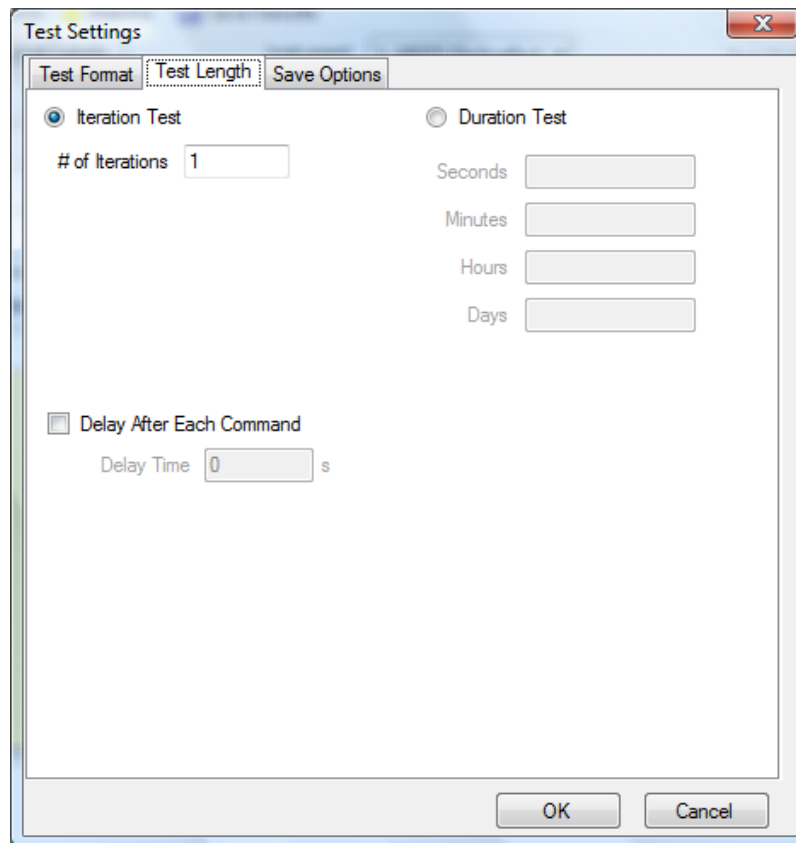


Figure 10: Test Settings Window - Test Length Tab

In this tab, the user specifies the duration of test.

- An **Iteration Test** will loop through all the tests in the Test List for a specified number of iterations. For example, to configure a standard one-cycle test, the field # of iterations is set to 1.
- A **Duration Test** will run the test, looping through all the commands (rows in the Test List) for the specified amount of time. The user can specify the test duration by using the days, hours, minutes, and seconds fields.
- The “Delay after each Command” checkbox specifies a waiting time (in seconds) after each command (a row in the Test List) before executing the next command.

Save Options Tab

This tab provides the various Save options available to the user. Note that the content of this tab will vary based on the duration of the test specified in the Test Length tab.

Single Cycle Test (1 Iteration)

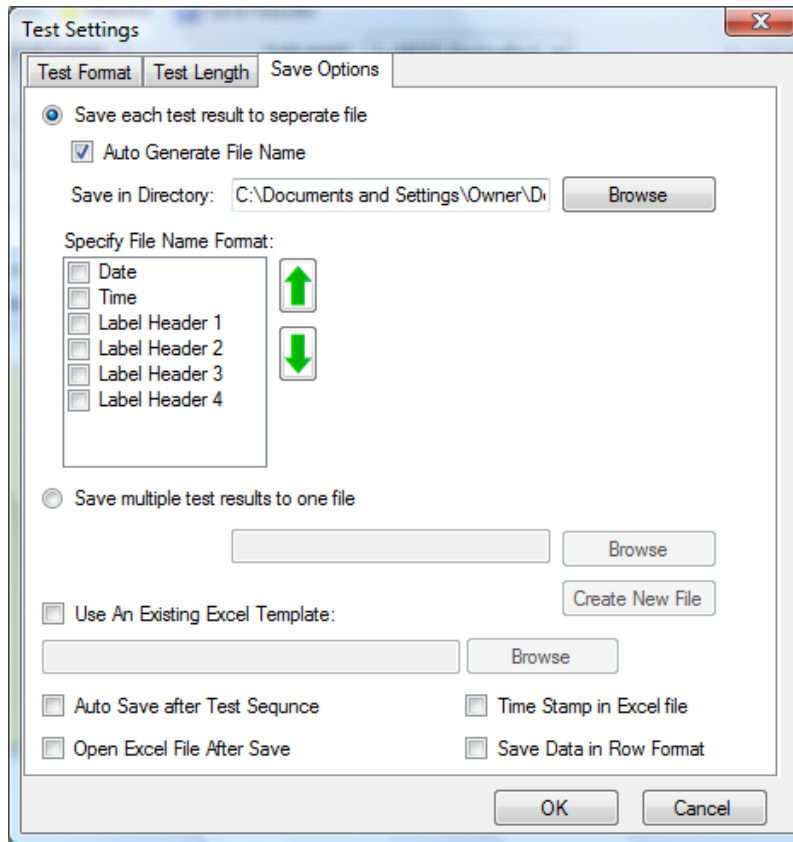


Figure 11: Save Options Tab - 1 cycle tests

To save the results after a test, there are two options, indicated as two radio buttons:

- Save each test to a separate file.
- Save multiple tests to one file.

Save each test result to a separate file

The Auto Generate File Name option allows the user to specify a file name format to use and the software will automatically generate the file when the user clicks the “Save Results” button on the main form. To specify the name, simply check off the items in the checklist. The topmost checked item will be the first to appear in the name, which will progress down the list. The user can specify the order with the up and down arrows to move around the checklist items. The checklist items include the date, time, and the header labels from the test profile.

If the “Auto Generate File Name” option is not selected, the user will be prompted to specify a save location each time the “Save Results” button from the main form is clicked. The user will have to manually enter a different file name each time.

Saving multiple results to one file

This option allows the user to save multiple test results in a single file. When the user clicks the “Save Results” button on the main form, test results will be saved to the specified file (in the textbox). The browse button is used to select an existing Excel file and append the results to that file. To create a new file using this format, click “Create new file” and specify a file name.

Note: This format is designed for the use of a single test profile. For example, if the same test profile is going to be used on multiple test devices, the user may want to save all the test information into one file. When using this format, the first entry in the file will contain the labels and their respective info, as well as the column headers. Raw data from the test results will then be stored below in a table format.

- Using an Existing EXCEL Template

This setting is saved with the test profile. Changing profile will change the template.

The template is used when the user wants to save the data using an existing Excel template and then save it as another file. The software will open the Excel template, load the data, and save it as a separate file under the specified file name.

- Auto Save after Test Sequence

If this option is checked, the GMS program will automatically attempt to save the results after a test.

- Open Excel File after Save

If this option is checked, the GMS program will automatically open the file after a successful save.

- Time Stamp in EXCEL file

If this option is checked, each test saved in the EXCEL file will be time stamped.

- Save Data in Row Format

When checking this box, results will be saved in the EXCEL file using different rows for a specific parameter like the detectors for example. It is mainly recommended to use this format when saving multiple large test files. See Figure 33 for an example.

Long Term Tests (More Than 1 Cycle)

For the entire duration of a long term test, the software will periodically export data, row by row, to an Excel file named "Long Term Test File". The software will save the results according to the time period specified in the text box below the file name. All data from the multiple cycles of the test will be saved. For a description of the check box options, refer to the "Single Cycle Test" section on page 12.

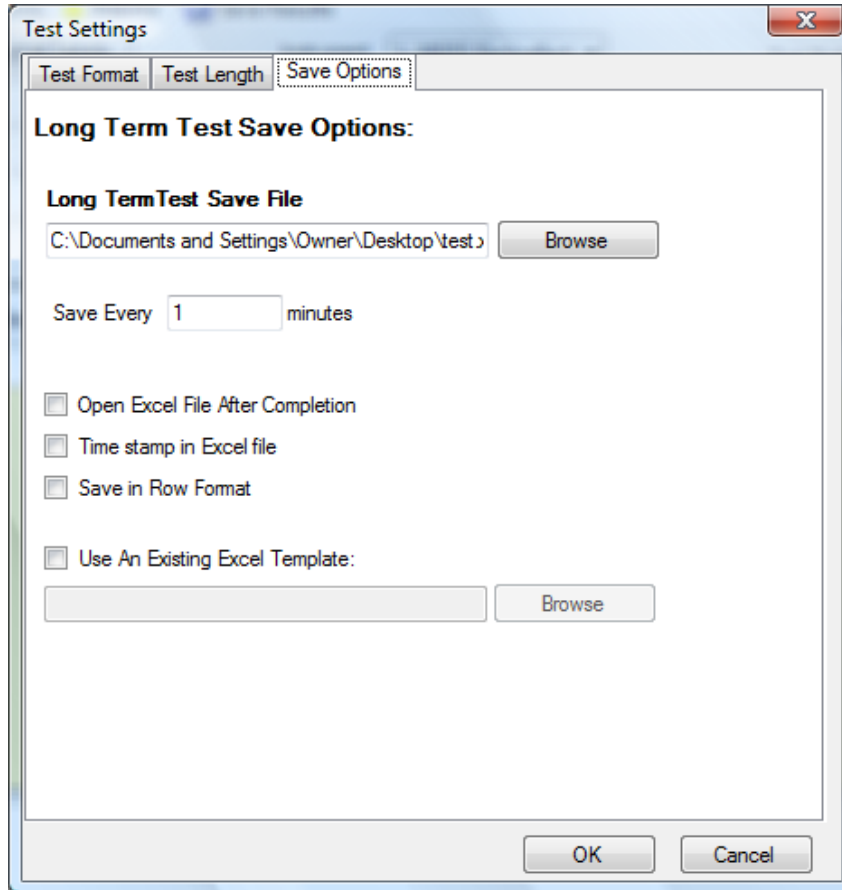


Figure 12: Long Term Test - Save Option Tab

4

SETTING UP A TEST PROFILE

A Test Profile contains a sequence of tests to be performed using one or several JGR test instruments. The Test Profile contains information regarding the instruments to be used and, channel, module, wavelength and detector settings that apply for each test and each instrument. A Test Profile also stores information regarding pass/fail criteria, the Microsoft Excel template to be used when saving the test results, and additional input fields as specified by the user. Once the Test Profile has been configured, it can be used for immediate testing or it can be saved for future use.

Creating a New Test Profile

When the GMS program is started, a new Test Profile is automatically opened. To start a new profile at any other time, select “New Profile” from the “File” menu or use the keyboard shortcut Ctrl + N.

If any changes have been made to the currently opened Test Profile, the user will be prompted to save the changes.

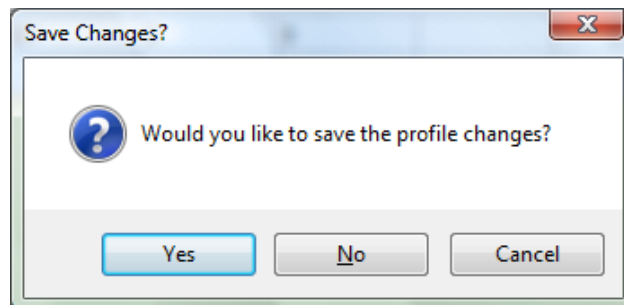


Figure 13: Save Changes? Dialog Box

Choosing to save the changes will bring up a “Save as” dialog box if the profile has not been previously saved and named. Choosing to “Cancel” will abort the new profile creation and will keep the existing profile opened.

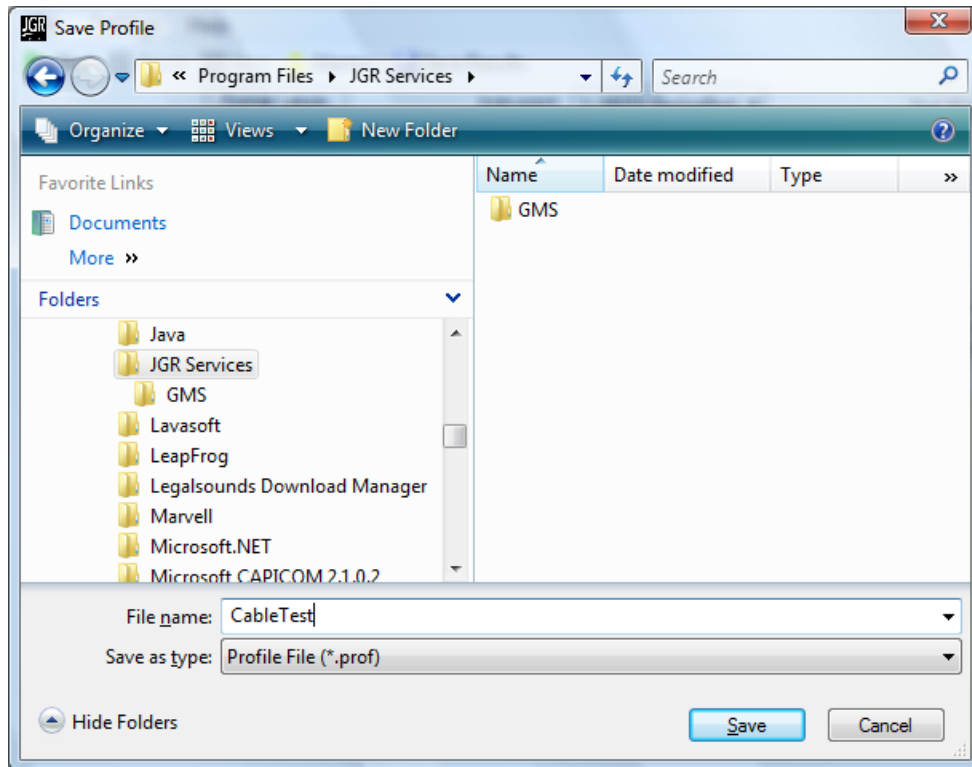


Figure 14: Save Profile - Save As Dialog Box

Building the Test List

Every Test Profile includes at least one test instrument but can include several different instruments (BR5, MBR5, etc.).

Make sure to properly configure all instruments to be used before beginning any test sequence. Refer to the “Configuring the Instruments” section on page 6 for more information.

Configuring the First Test

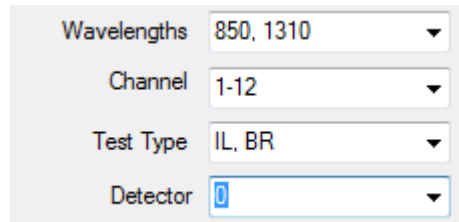
There are two methods to configure the first test and add it to the test list. It may be added via the Test Parameters or by editing the first row in the Test List.

First Method – Inserting the Test via Test Parameters

The Test Parameters provide the user with the ability to easily add the first test to the Test List. It may be defined either by using the dropdown lists to select each parameter value or by directly entering the parameter values into the input boxes.

Multiple values available from the drop-down lists can manually be entered into each field when applicable. Values must then be separated by commas. For the

channel and detector parameters, a range of values may also be specified by entering the start and end of the range separated by a hyphen (Ex. “5-7” is 5, 6, and 7). The example shown in Figure 15 below would cause IL and BR tests to be inserted for wavelengths 850 nm and 1310 nm, and channels 1 to 12.



The screenshot shows a form with four dropdown menus. The 'Wavelengths' dropdown is set to '850, 1310'. The 'Channel' dropdown is set to '1-12'. The 'Test Type' dropdown is set to 'IL, BR'. The 'Detector' dropdown is set to '0'.

Figure 15: Test Parameters Settings

Remember that all parameters in the Test Parameters must be specified before a test can be inserted into the Test List. When all parameters have been entered click on the “Insert” button and the test will be added at the first row of the Test List.

Second Method – Editing the First Row of the Test List

The first row of the Test List is empty when a new test profile is created. The first test can be created by simply filling in each cell of the first row with the appropriate parameters. All parameters must be filled and contain valid information based on the specific instrument selected. A second row will automatically be added as soon as one cell is filled.

Adding a Test at the End the Test List

Adding a test at the end of the test list can be done in a very similar manner as creating the first test by using one of the methods described in the previous paragraphs.

First Method – Adding a Test via Test Parameters

In order to add a test at the end of the test list, all parameters required to define the tests must be selected in the Test Parameters.

When all parameters have been entered click on the “Insert” button and the test will be added at the end of the Test List.

Second Method – Editing the Last Row of the Test List

The last row of the Test List is always an empty row. The user may add tests one-by-one to the Test List by entering the parameters into the last row of the table. A new row is created automatically as soon as one cell of the last row is filled.

All required parameters for the test must be provided and must be valid.

Inserting Tests into the Middle of a Test List

To add a test in the middle of a Test List, only the Test Parameters method described above can be used. To insert a test, select the row of the list before which the new test is to be inserted by clicking on the row header (containing the row number). Define the new test to be added by using the Test Parameters and click “Insert” to add the new test in the Test List, before the selected row.

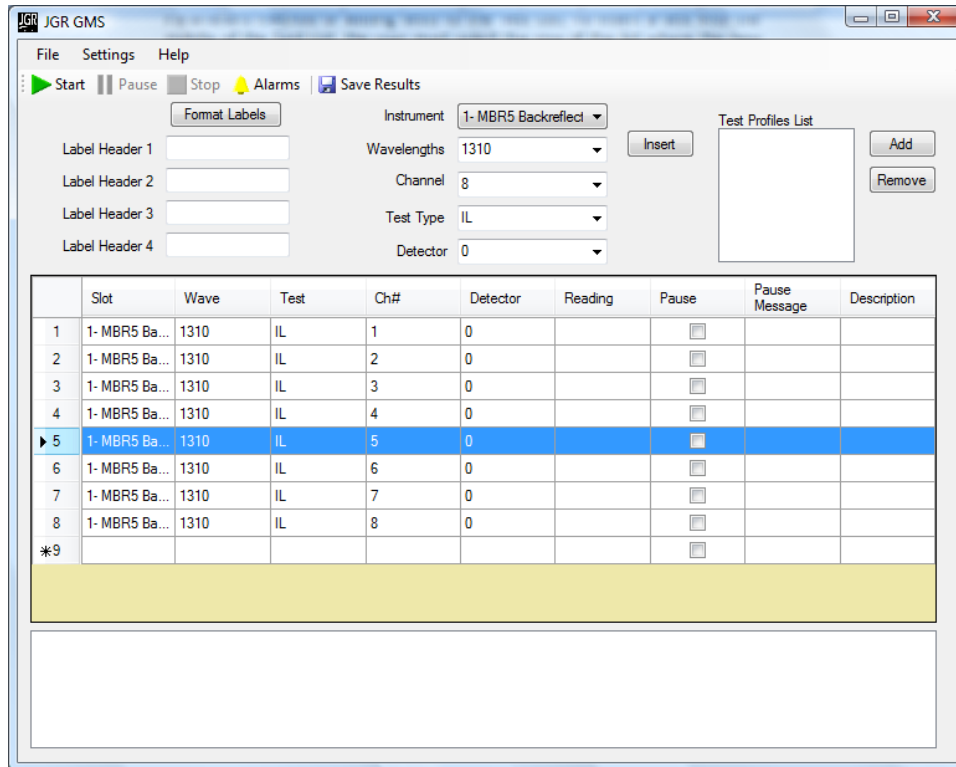


Figure 16: Selecting a row to insert a test

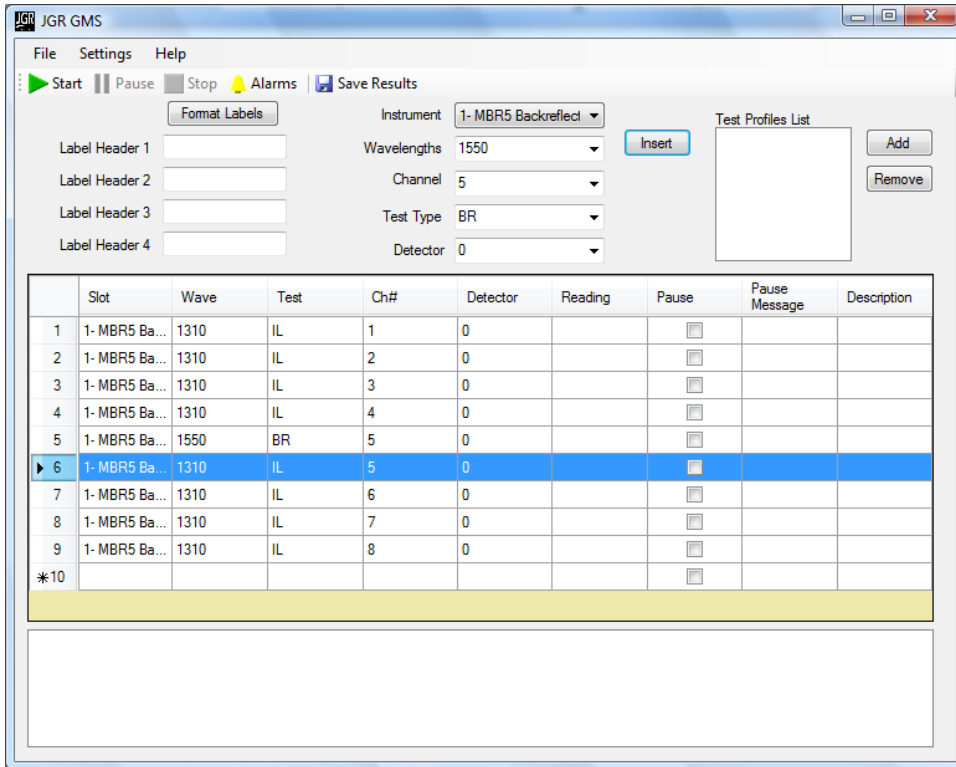


Figure 17: Inserts the test above the specified row

When multiple rows are selected from the Test List, the new test will be inserted into the list before each selected row. For example, if four rows are selected in the Test List like in Figure 18, the test will be inserted four times, once before each selected row like it is shown in Figure 19.

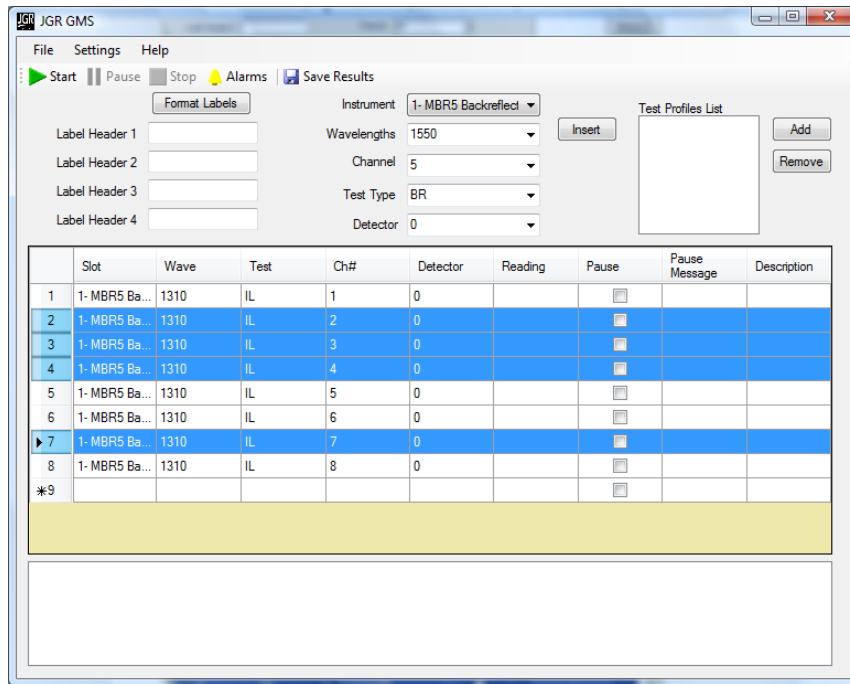


Figure 18: Selecting multiple rows to insert tests

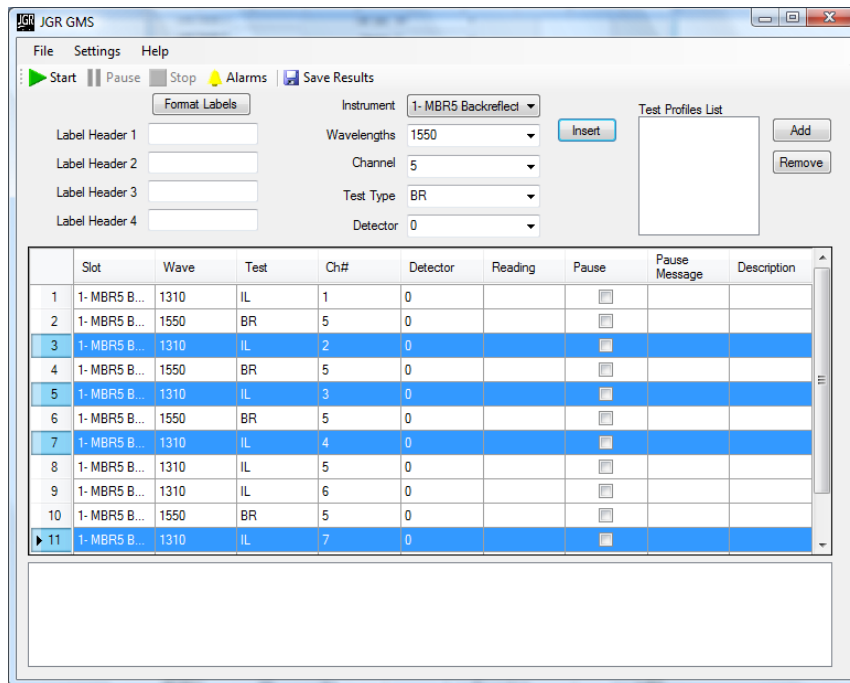


Figure 19: Insert tests above all selected rows

Editing Tests in a Test List

Any test in the Test List may be directly edited by the user. To edit a test, click on the cell in the Test List containing the test parameter that is to be changed. This will highlight the cell and a new value may be entered. Note that the new parameter value will completely overwrite the existing value and will be saved as soon as Enter is pressed. Editing existing text is possible by double clicking the cell containing the parameter to modify. The user can edit the text of the cell in the same manner as if it was a textbox.

When a user edits the value of a test parameter in the Test List, the new value must be a valid one for the selected instrument. A test sequence containing invalid test parameters cannot be run. When a test cycle is started, the Test List is checked for any tests containing illegal test parameters and if any such tests are detected in the Test List, the program will cancel the test sequence. A message indicating the presence of invalid test parameters will then appear and the invalid tests in the test lists will be highlighted.

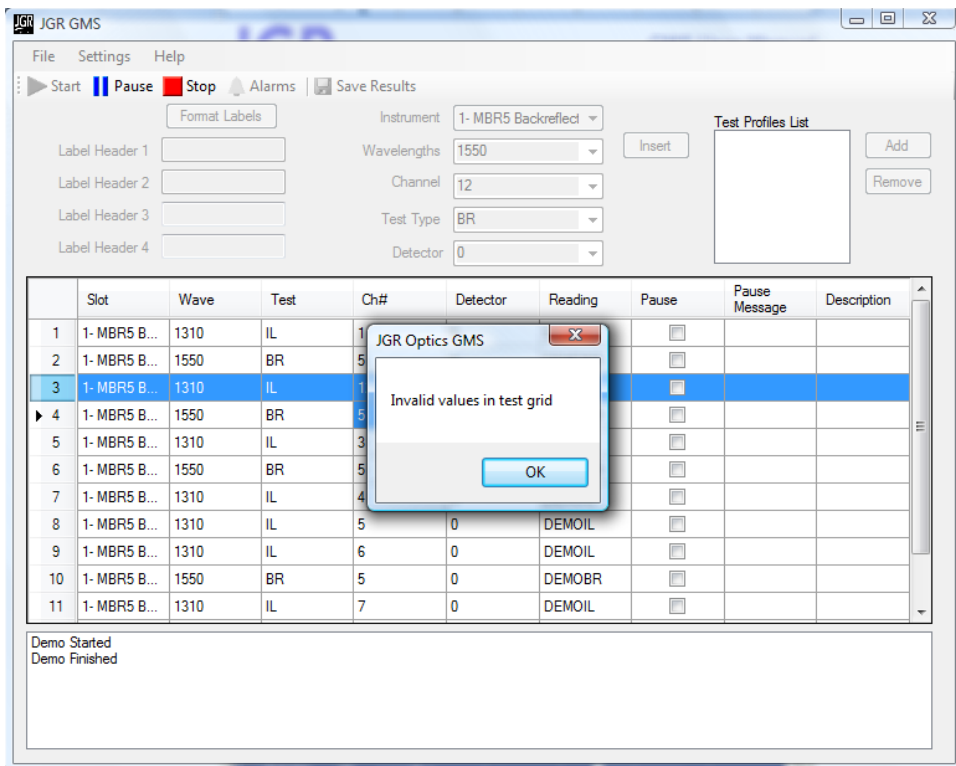


Figure 20: Invalid user inputs into test list

The invalid test parameters must be corrected or the invalid tests must be deleted from the Test List before the test sequence can be run.

Deleting Tests from the Test List

To delete one or more tests from the Test List, select the row (s) to be deleted from the Test List and click Delete.

To select a single test, click on the row header of the test to be deleted. To select multiple tests, select the first row to be deleted and, while holding the left button of the mouse down, drag it either up or down the Test List to select a group of tests. Multiple rows can also be selected by holding the CTRL button of the keyboard down and selecting the rows to delete with the mouse. The selected test(s) will be highlighted in the Test List. Make sure that only the test(s) to be deleted are selected in the Test List as all selected rows will be deleted from the list.

The test(s) may now be deleted by the using the Delete button. **Note that this process cannot be undone and that once a test has been deleted from the list, the only way to undelete the test is to add it again to the Test List.**

Adding Pauses to the Test Sequence

To add a pause to the test sequence, click the Pause checkbox of the row where the pause needs to be inserted. Test list execution will stop after the test to which the pause has been added.

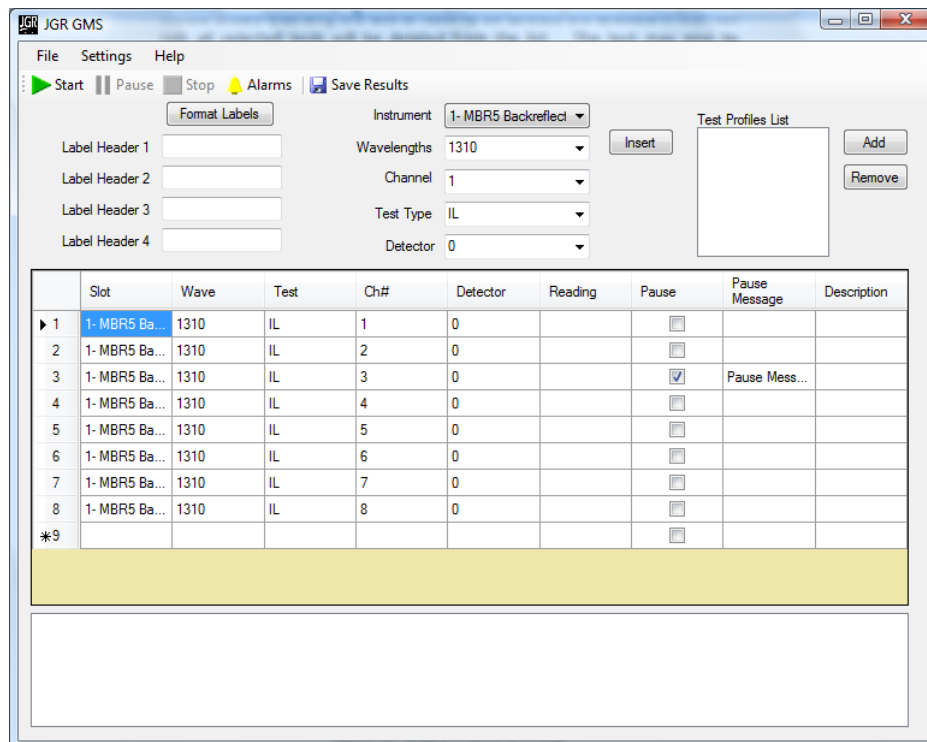


Figure 21: Adding a pause to a test

A message to appear when the pause occurs can also be specified in the “Pause Message” cell. The pause dialog box will appear when the test list execution is stopped and real-time instrument reading will be displayed. The user may resume the test sequence by clicking the “OK” button.

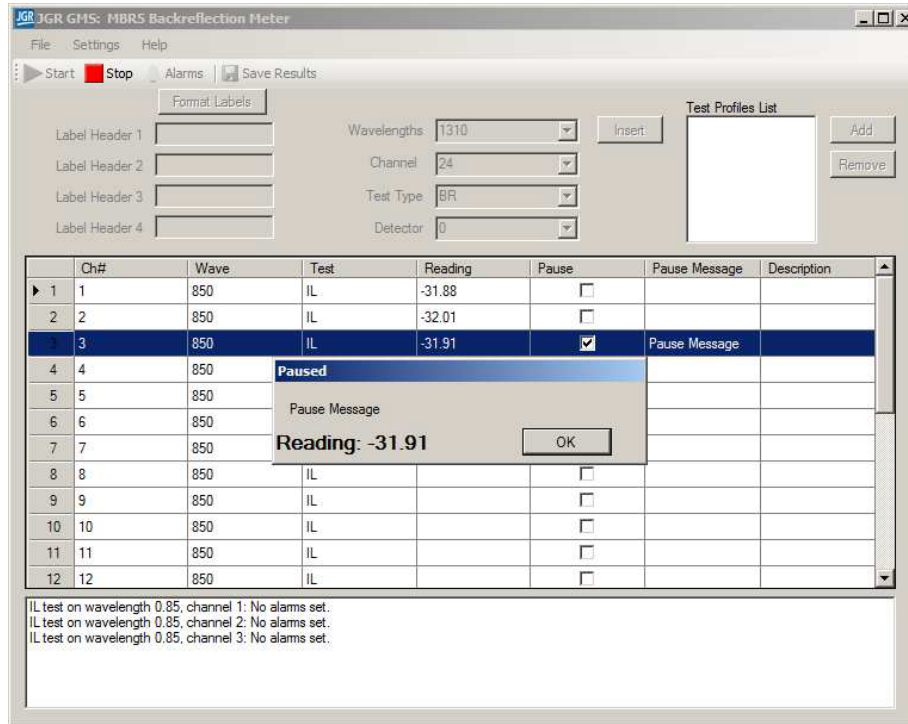


Figure 22: Pause message box

Configuring Header Labels

The header labels (Figures 6 and 9.) allow the user to specify additional information about the instrument or about the test sequence. Up to 9 label headers can be defined. Examples of these fields include “Serial Number”, “Part Number”, “Connector Side”, and “Test Number”.

Each user-input field consists of a field name, saved as part of the test profile, and the field’s content, specified by the user at some point prior to saving the test results. Both the field’s name and its content are saved with the test results.

To configure the headers for the user-input fields, click on the “Format Labels” button to open the following formatting dialog:

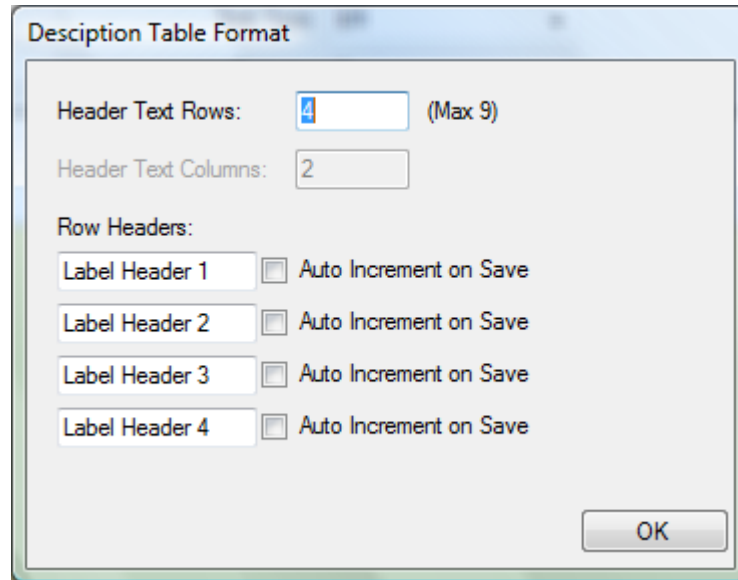


Figure 23: Format Labels window

The names of the fields can be edited via the textboxes located under the “Row Headers” title.

When the “Auto increment on Save” checkbox is checked for a given header, the field content will be incremented by 1 after the test results are saved. If the field content is empty, then it will be set to 1. Any non-numerical field content will generate an error.

Alarms

Alarms allow the user to be immediately notified when a measured value does not fall within specifications.

When a measured value is out of the acceptable range defined, the related test row is highlighted. Alarms can be specified as either warnings or failures and if triggered, will cause the test to be highlighted in the appropriate colour (warning colour or failure colour). If a measurement triggers both a warning and a failure, a test failure will be displayed as it is the alarm with the highest priority.

To configure alarms, click on the “Alarm” button to bring up the configuration dialog box.

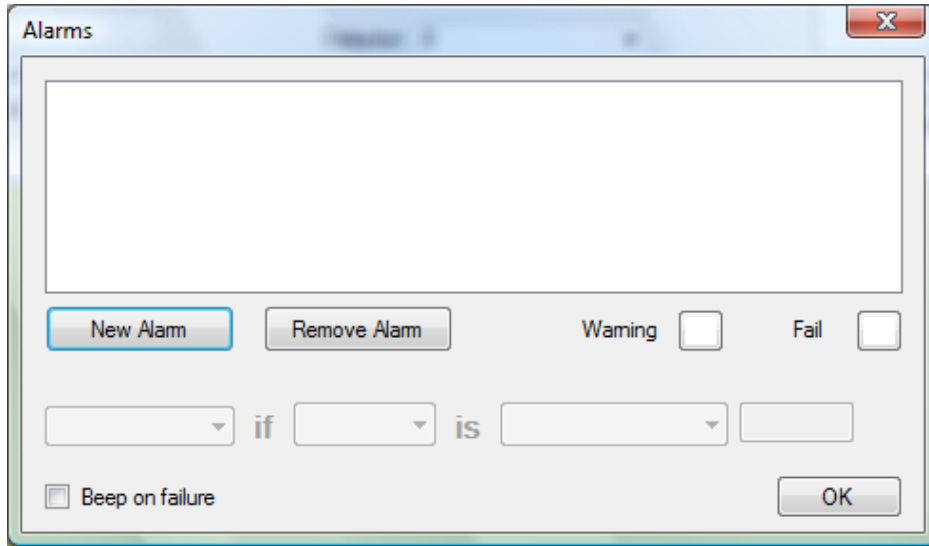


Figure 24: Alarm configuration window

Adding an Alarm

To add a new alarm to the list, click the “New Alarm” button. The alarm will be added to the list and selected for editing. Once an alarm has been added to the list, its parameters may be defined. The user must select the warning type, test type and alarm criteria from the three dropdown lists as well as specify the threshold value using the parameter specification. For example, if the maximum acceptable value for an insertion loss measurement is -6 dB, the user would select:

- “Failure” for the warning type
- “IL” for the test type
- “Less Than” for the criteria and would specify “-6” as the threshold value.

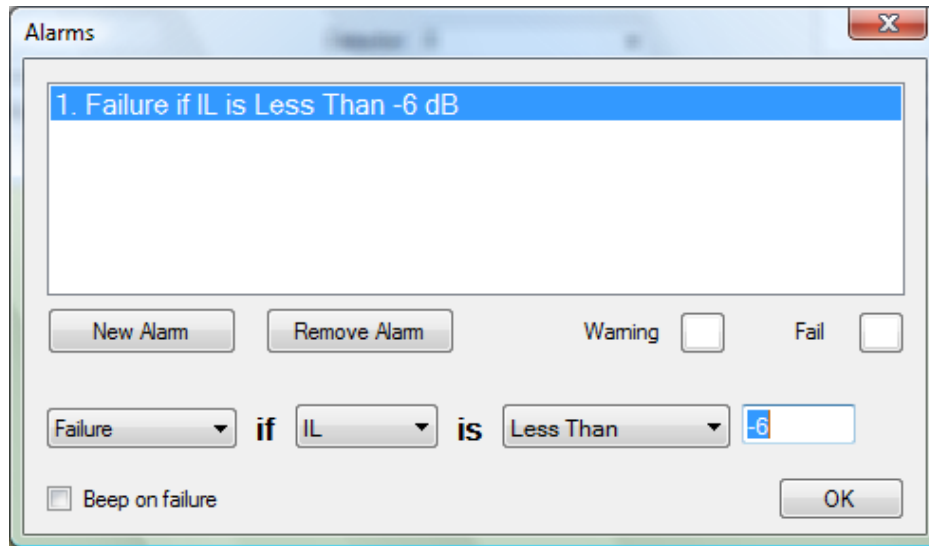


Figure 25: Adding a new alarm

Editing an Alarm

An alarm may be edited by clicking on the alarm in the list. The selected alarm will be highlighted and its parameters will appear. Any of the alarm parameters may now be modified.

Deleting an Alarm

To delete an alarm from the list, select the alarm by clicking on it. The selected alarm will be highlighted. It can now be deleted by clicking the “Remove Alarm” button.

Alarm Colors

Each alarm type has a color associated with it. When an alarm is triggered, the entire row of the test which met the alarm criteria will be highlighted using the alarm type color. When a test meets multiple criteria, the alarm with the largest value will be used.

To specify the color of an alarm type, click on the box next to the alarm type to bring up the color selection dialog box.

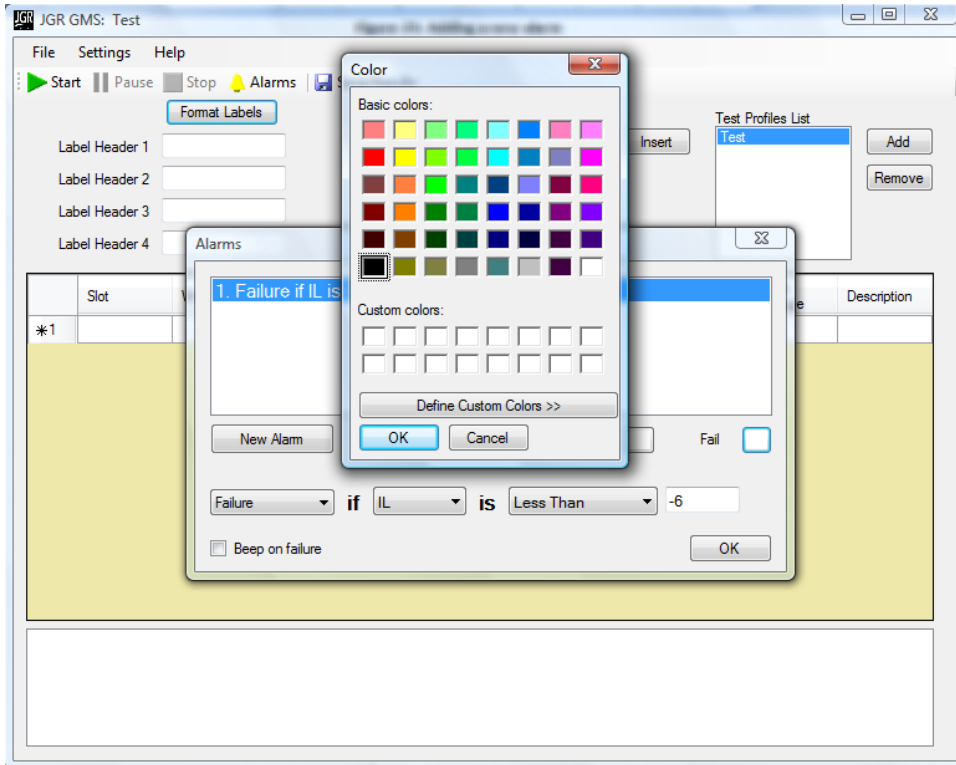


Figure 26: Selection of color to display

The user may either select from the pre-set colors or click the “Define Custom Colors” button to reveal color customization options. When changes to the color associated with an alarm type are accepted, the box next to the alarm type will change to match the new color. **Note that black cannot be chosen as an alarm type color and it is recommended that users avoid using dark colors as dark colors will make it difficult to read the information in the Test List.**

See an example in Figure 27 where red is selected as the Failure color.

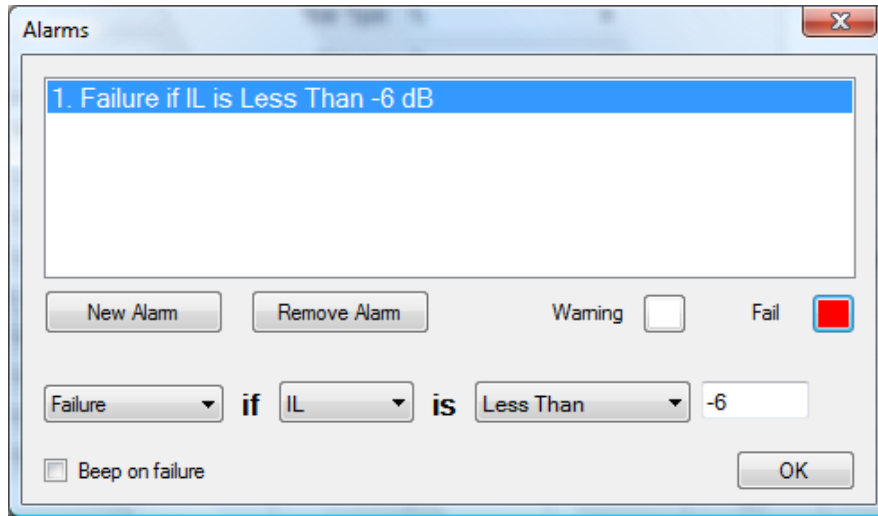


Figure 27: Red color selected for Fail condition

Beep on Failure

When the “Beep on failure” option is enabled, any measurement that causes a failure will additionally cause the computer to beep, alerting the user that a failure occurred during one of the tests. **Note that the computer’s sound must be turned on in order for the beep to occur.** It is also recommended that the user turn up the beep volume so that it can easily be heard.

To enable the “Beep on failure” option, check the labelled checkbox.

Committing Changes

Any changes made in the alarm configuration dialog will not be committed until changes are accepted by clicking “OK”. Additionally, the changes cannot be committed until all alarms in the alarm list contain valid parameters. If the user attempts to accept the changes when not all alarm parameters are entered or valid, an error message will be displayed and the alarm configuration dialog box will remain opened. An alarm is confirmed to be valid when all of its parameters are specified and it is listed in the alarm list in the form “<alarm #>. <alarm type> if <test type> is <alarm criteria> <threshold value> <“dB” or “dBm”>”).

Test Template

The test template allows user to specify a Microsoft Excel template to use when saving the results of a test sequence. The test template can be accessed from the “Test Settings.” To access the “Test Settings”, either select it under “Settings” or press Ctrl + T on the keyboard. Navigate to the “Save Options” tab.

Check the checkbox labelled “Use an Existing Excel Template” to enable the use of an Excel template.

Select the template by entering the template’s full path name into the textbox or by selecting the desired template using the file browser accessible by clicking the “Browse” button.

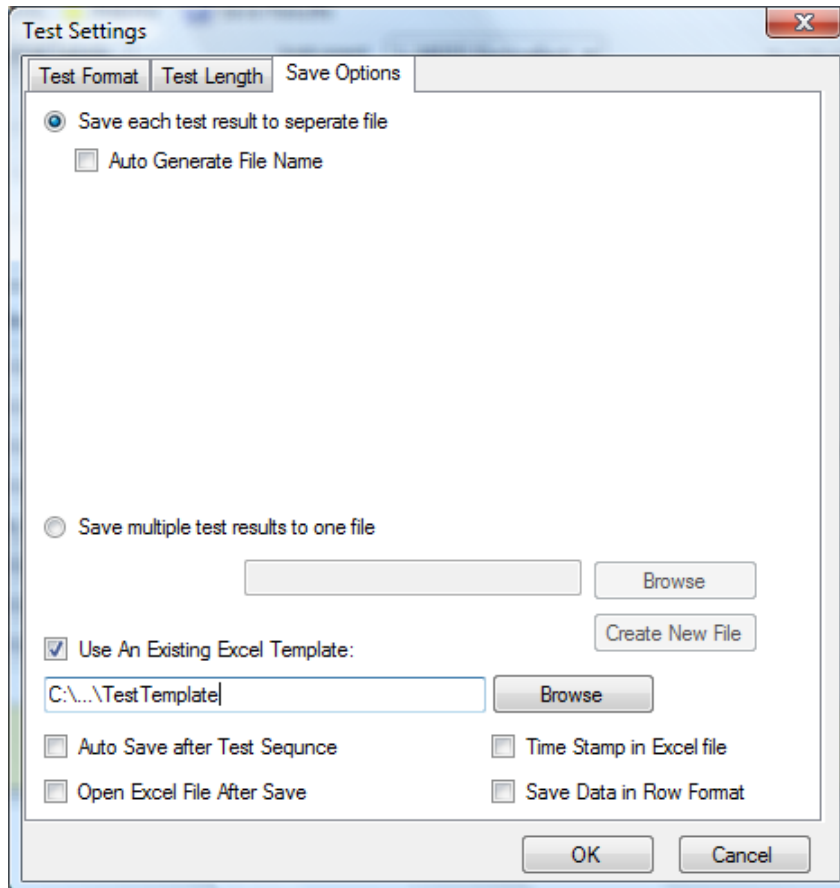


Figure 28: Selecting an EXCEL template to use

Saving and Loading Test Profiles

Saving a Test Profile

A new test profile may be saved by selecting “Save Profile as...” from the “File” menu or using the keyboard shortcut Ctrl + S. This will open a “Save as” dialog box where the profile name and save location may be specified.

When saving changes to a previously saved profile, the user may also choose the “Save” option from the “File” menu.

For previously saved test profiles, the keyboard shortcut for the “Save” option is Ctrl + S. The option “Save Profile as...” is still available to let the user save the test profile under a new name using the keyboard shortcut Ctrl + Shift + S.

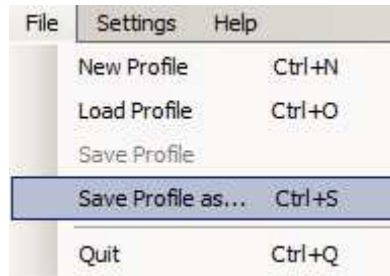


Figure 29: Profile options in File Menu

Loading a Test Profile

Using the “Load Profile” Function

The first possible approach to load an existing profile is to select “Load Profile” from the “File” menu (Figure 29) or use the keyboard shortcut Ctrl + O.

If a test profile is currently opened and changes have been made, the user will be prompted to save the changes first. Choosing to save the changes will bring up a “Save as” dialog box if the profile has not previously been saved and named. Choosing to “Cancel” will abort the load profile process and will keep the existing profile opened.

Once changes have been saved or discarded, an open file dialog box will appear. Navigate to the system location of the desired profile and select the profile. Select “Open” to load the profile or “Cancel” to keep the current test profile open.

Using the Test Profiles List

The other method to load a test profile is to use the Test Profiles List. It allows quick loading of commonly used test profiles. When the GMS program is started, the Test Profiles List is loaded. Each profile is checked to ensure it still exists. If a profile does not exist or its system location has changed, the profile is automatically removed from the Test Profiles List.

To add a profile to the list, click the “Add” button in the Main Window.

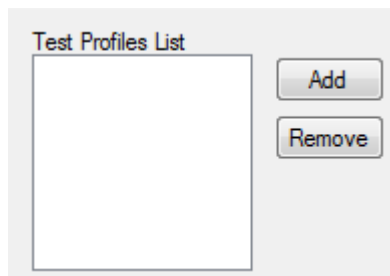


Figure 30: Empty Test Profile List

From the open file dialog box, navigate to system location of the desired profile and select the profile. Select “Open” to add the profile to the list or “Cancel” to cancel the process.

To remove a profile from the Test Profiles List, select the profile to be deleted by clicking on it in the list and click the “Remove” button to remove it from the list.

To load a profile from the Test Profiles List, double-click on the desired profile.

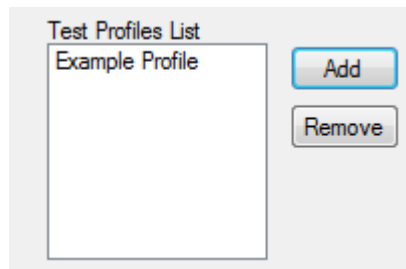


Figure 31: Test Profile List

As with loading a test profile via the “Load Profile” option, if any changes have been made to the current profile, the user will be prompted to save the changes (see the Using the “Load Profile” Function section for more information).

Note that changes to the Test Profiles List are saved when the program is closed normally. Any changes made will not be saved if the program crashes or is exited by any means other than the “Quit” option under the “File” menu or the close button located at the upper right of the program.

5

RUNNING A TEST

Configuring the Instrument

Meter (BR5, MBR5 and MLT)

1. Connect the meter to the computer using the serial or GPIB port;
2. Click the “Settings” file menu, then select “Instrument Settings” (or press Ctrl + I);
3. From the Instruments drop down list, select the instrument to use for the test;
4. Select the communication port (Serial or GPIB);
5. Specify the port number (if using serial) or address (if using GPIB) of the instrument connected;
6. Specify the meter’s number of channels in the “Channels” textbox;
7. Select from the pre-defined wavelengths that apply to the meter or type in the wavelengths in the “Wavelengths” textbox if the one desired is not listed (separate multiple entries with a comma);
8. If using serial communication, specify the port settings on the right of the form (Baudrate, Parity, Databits, Stopbits); if unsure of these settings, just leave them as the default;
9. Test communication by clicking the Test Port button. If the message “Port is active” appears then click OK on the Instrument Settings form. If the port is not active, verify that the meter is connected properly and the address is correct. If it still doesn’t respond, turn the meter off and on.

Switch

1. Connect the meter to the computer using the Serial or GPIB port;
2. Click the “Settings” file menu, then select “Instrument Settings” (or press Ctrl + I);

3. From the Instruments drop down list, select the instrument to use for the test;
4. Select the communication port (Serial or GPIB);
5. Specify the port number (if using serial) or address (if using GPIB) of the instrument connected;
6. Enter the total number of modules of the switch;
7. For each module (select through the module drop down list), enter the number of channels that the module has in the Channels textbox;
8. If using serial communication, specify the port settings on the right of the form (Baudrate, Parity, Databits, Stopbits); if unsure of these settings, just leave them as the default;
9. Test communication by clicking the Test Port button. If the message "Port is active" appears click OK. If the port is not active, verify that the meter is connected properly and the address is correct. If it still doesn't respond, turn the meter off and on.

Configuring Test Settings

1. Click on the "Settings" menu, select "Test Settings" (or press Ctrl + T);
2. Select the Test Format tab. The test order refers to the test parameter columns and their order. For the format, see the example at the bottom of this form;
3. Click the Test Length tab. If running a normal 1-cycle test, make sure that Iteration test is selected and that the number of iterations is set to 1. If running a long term test, specify the duration of the test in terms of # of cycles (iterations) or length of time (duration). Specify the delay after each command (each row in the test grid);
4. Click the Save Options tab.

Single Cycle Tests

5. To save each test result to a separate file, select "Save each test result to a separate file". Otherwise, select "Save multiple test results to one file".

Save each test result to a separate file:

6. To auto-generate a file name upon saving, check the related checkbox. Select a directory to save to, then select from the checkbox list, which parameters will go in the file name (in order from the top of the list to the bottom). Use the arrows to change the order.

Save multiple test results to one file:

6. Click “Browse” to browse for the file (will save to the bottom of the file), or click “Create New” to start a new Excel file to save to.
7. Specify a template by checking the “Use an Existing Template” checkbox then browse for the desired excel file. If no template is to be used then leave the checkbox unchecked.
8. Auto-Save will automatically save to the specified excel file after a test is completed. The Time Stamp option will add the time of test to the excel file and Open Excel File After Save will open the saved excel file after a successful save.
9. Click OK.

Long-term Test (more than 1 Cycle)

5. Specify the file into which test results will be saved (the software will periodically export the data to this file as the test is running.).
6. Specify how often the software should save results in the “Save Every” textbox.
7. Check any other save options as required.
8. Click OK.

Note: both instrument settings and test settings (except for save template and autogenerate name) are saved as part of the software, and therefore only need to be configured once. These settings are NOT saved as part of a test profile.

On the Main Form

Make sure that the Instrument and Test Settings have been properly completed before moving to the next step.

If using a saved profile, simply click File >> Load Profile, select the desired profile file, open it and click “Start”. Otherwise, start a new profile and enter the complete test information (see the SETTING UP A TEST PROFILE section) and click “Start”.

Below is a brief list of instructions for running a test:

1. Input the desired header labels. Click the Format Labels button to set the row headers.
2. Define the test parameters. If the instrument is a meter, enter the wavelengths, channels, detectors, test type to test (some options may be disabled depending on the instrument selected). If using a switch, enter module and channels.

3. Click Insert.
4. The information in the data grid is editable. Check that all test information is correct.
5. Click Start.

The test can be stopped at anytime by pressing the stop button. While the test is running, all other controls are disabled.

Once the test is completed, the results can be saved by clicking the “Save Results” button on the control bar near the top (or if the “Auto Save” option is checked in the Test Settings menu then the software will attempt to save automatically).

The following figure demonstrates an example showing fail conditions if BR is less than -27.6 (shown in red).

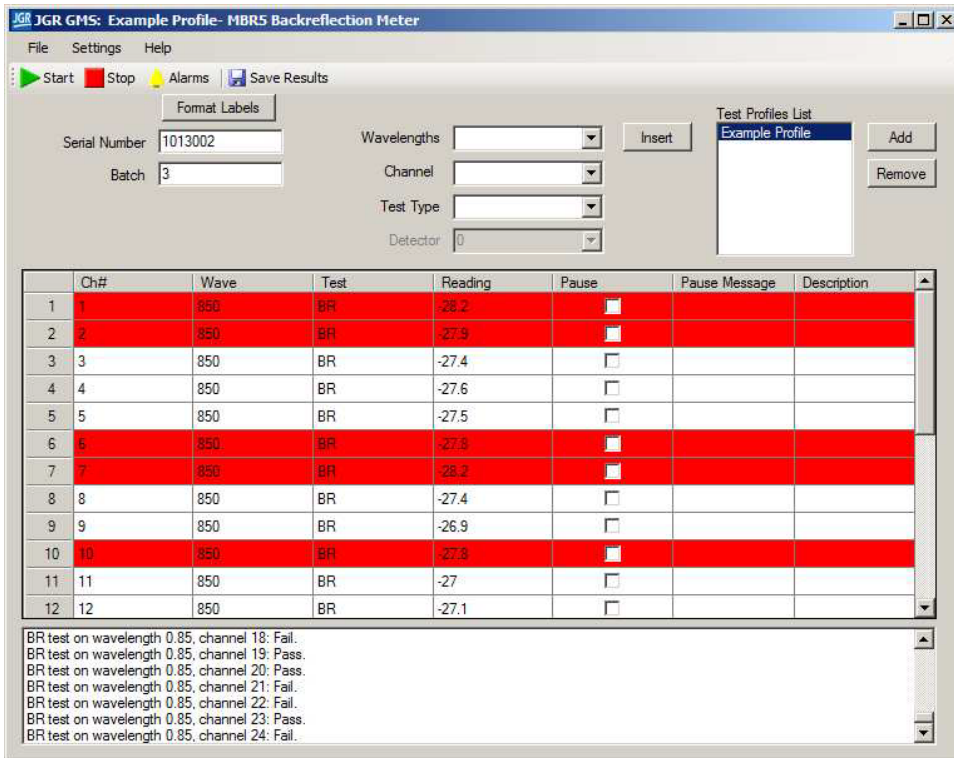


Figure 32: Running a test

Test results are then saved in EXCEL.

Serial Number	Batch	Ch#	Wave	Test	Reading	Alarm Status
1013002	3	1	850	BR	-28.2	Fail
		2	850	BR	-27.9	Fail
		3	850	BR	-27.4	Pass
		4	850	BR	-27.6	Pass
		5	850	BR	-27.5	Pass
		6	850	BR	-27.8	Fail
		7	850	BR	-28.2	Fail
		8	850	BR	-27.4	Pass
		9	850	BR	-26.9	Pass
		10	850	BR	-27.8	Fail
		11	850	BR	-27	Pass
		12	850	BR	-27.1	Pass
		13	850	BR	-27.3	Pass
		14	850	BR	-26.7	Pass
		15	850	BR	-28.2	Fail
		16	850	BR	-27.2	Pass
		17	850	BR	-27.7	Fail
		18	850	BR	-28.3	Fail
		19	850	BR	-27.4	Pass
		20	850	BR	-27.4	Pass
		21	850	BR	-28.2	Fail
		22	850	BR	-28.7	Fail
		23	850	BR	-27.5	Pass
		24	850	BR	-28.1	Fail

Figure 33: Example of test results

Fail	Serial Number	Batch	Test	Wave	Chan:1	Chan:2	Chan:3	Chan:4	Chan:5	Chan:6
	1013002	3	BR	850	-28.2	-27.9	-27.4	-27.6	-27.5	-27.8

Figure 34: Example of test results in row format

6

TAKING A REFERENCE

The GMS software allows the user to take IL and BR. To do so, click the “Settings” menu then select “Take Reference”. The following window should appear:

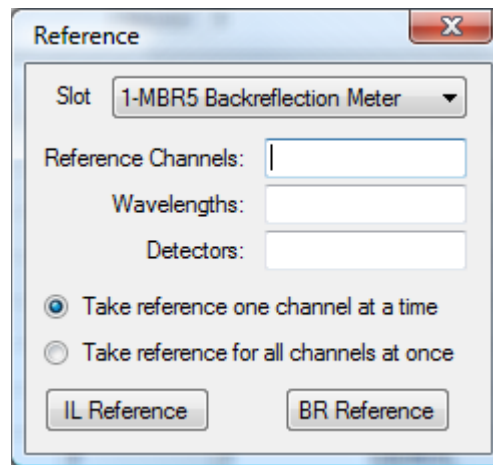


Figure 35: Reference window

In the textboxes, enter the channels and wavelengths for which it is required to take the reference.

If you have all the channels connected to the detector already, select the second radio button: “Take reference for all channels at once”. The software will automatically run through the specified channels and take the reference.

If you would like to connect and take reference one channel at a time, select the first radio button: “Take reference one channel at a time”. The software will prompt the user one channel at time through the channels.

Following that selection, select which type of reference you would like to perform.

Taking References One Channel at a Time

For this example, we will only look at IL reference. The procedure to take a BR Reference is identical.

Example:

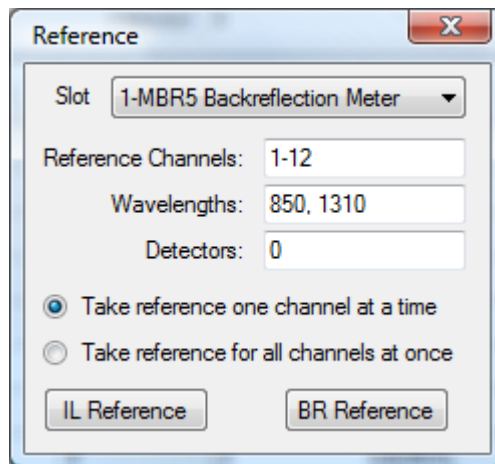


Figure 36: Reference window - One channel at a time

After clicking the “IL Reference” button, the following window should pop up:

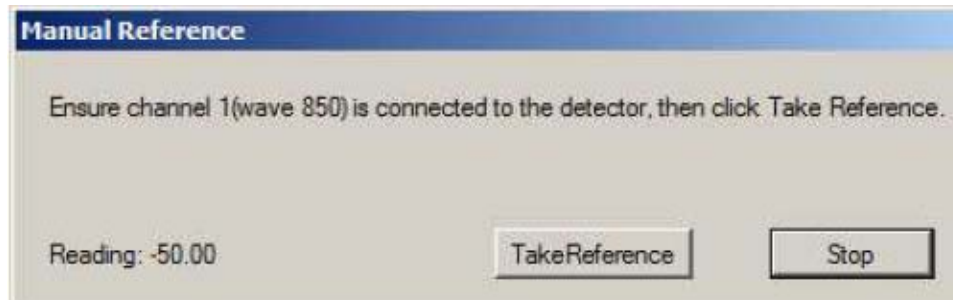


Figure 37: Manual reference - one channel

Channel number and wavelength for which the reference is to be made are clearly specified in the dialog box. The Reference procedure has to be performed for all channels and all wavelengths. The GMS software will automatically prompt the user to take the reference measurement for each possible combination. The “Reading” label at the bottom left of the dialog box shows the real time power reading as seen by the meter (if taking IL Reference, the meter will be in Relative Power Mode; if taking BR Reference, the meter will be in Backreflection Mode). To take the reference for the specified channel/wavelength, click “Take Reference”. The software will proceed to the next channel/wavelength and the user can now connect the next channel to the detector, by selecting “Take Reference”. Repeat until all channels/wavelengths have been referenced.

To stop taking references, click “Stop”. All previously taken references will remain.

Taking References for All Channels at Once

If all the channels being referenced are already connected to the detector, then the user may choose to take the reference for all channels automatically without having to specify one channel at a time.

Example:

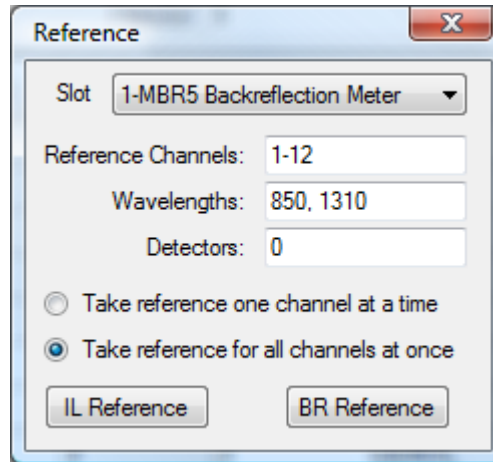


Figure 38: Reference window - all channels

Upon clicking the “IL Reference” button, the following window should pop up:

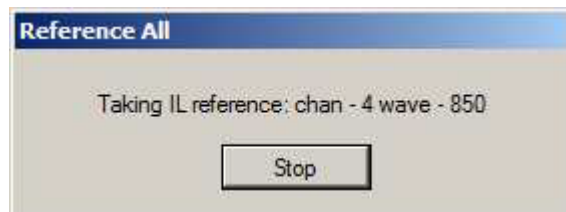


Figure 39: Reference all window

This window merely shows the reference taking. To stop taking the references, click the “Stop” button. All previously taken references will remain.