

User Guide: Device Manufacturing Test Plug-in

Device Manufacturing Test

ACME **PASS**

Test Specification Results Log Settings

Device Specification Loaded

Work Order Opened

VNA Configured

VNA Calibrated and Ready

Open Work Order

Calibrate VNA

Test Device

Close Work Order

Work Order: 1234

Part Number: GMT_TEMPLATE

Operator ID: ABC

☒ Auto Increment Device Serial Number

☒ Auto Save VNA Screenshots

☐ Auto Print VNA Screenshots

☐ ITAR

Device Serial Number: 0003

Tests Passed: 100%

Retests Passed: ---%

Passed: 2 Failed: 0 Devices Tested: 2

Passed: 0 Failed: 0 Devices Retested: 0

Instructions: Okay. Ready to test the next Device. Close the work order when all the Devices are tested by clicking the 'Close Work Order' button.

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⚙ Date: 2016-10-14 (October) Time: 17:18:13 (PM) C1209 READY SN 00000001 v16.3.1 v1.0.0 TRIAL


Plug-in Installation and Startup

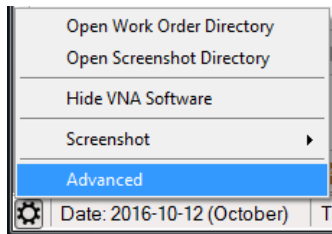
1. Close the VNA software application (if running).
2. Copy the file **Device Manufacturing Test.exe** into the **Plugins** directory (e.g. C:\VNA\S2VNA\Plugins).
3. Open the VNA software application.
4. From the VNA software, click **System > Misc Setup > Network Setup**. Be sure **Socket Server** is ON. Click the **Socket Server** button if it is OFF.

NOTE: You may see a Windows Firewall alert. If so be sure to click the **Allow access** button on this alert so the VNA software can use the TCP socket.

5. Start the plug-in by selecting **System > Plugins > Device Manufacturing Test**.

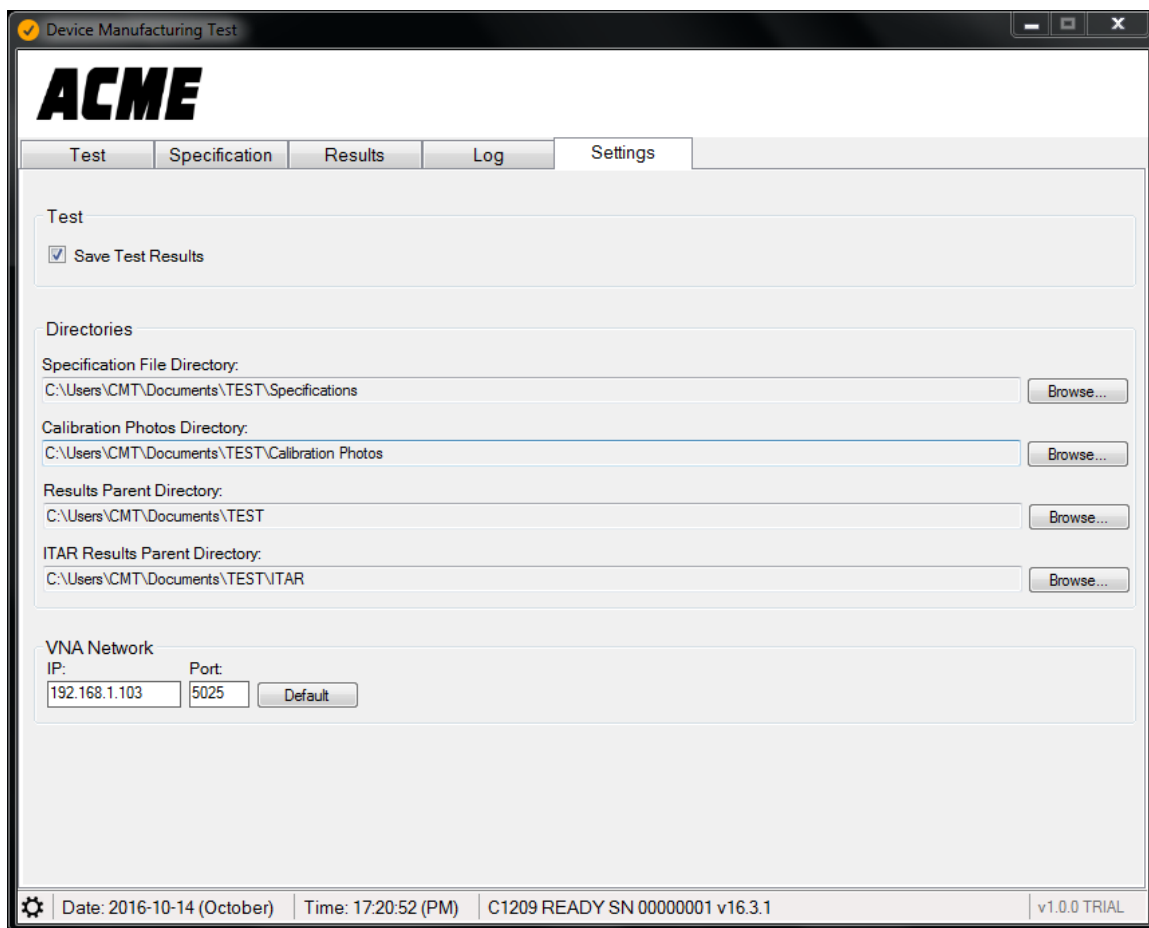
Setup

1. Click the  button in the lower left-hand corner of the plug-in and select **Advanced**.



Tabs allowing you to access advanced features become visible in the upper portion of the screen. You can toggle the tabs on and off by repeatedly selecting the **Advanced** menu item.

2. Select the **Settings** tab.



3. Click the **Browse...** button to the right of the **Specification File Directory** text box and browse to the folder where you keep your specification files. You only need to configure this once.
4. Click the **Browse...** button to the right of the **Calibration Photos Directory** text box and browse to the folder where you keep your calibration photos. You only need to configure this once.

5. Click the **Browse...** button to the right of the **Results Parent Directory** text box and browse to the folder that will become the root directory of your results sub-directories and files. You only need to configure this once.

Operation

1. Select the **Test** tab.

Device Manufacturing Test

ACME

Test | Specification | Results | Log | Settings

Device Specification Loaded

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Test Device

Work Order:

Part Number:

Operator ID:

☐ Auto Increment Device Serial Number

☐ Auto Save VNA Screenshots

☐ Auto Print VNA Screenshots

☐ ITAR

Device Serial Number:

Tests Passed: ---%

Retests Passed: ---%

Passed: 0

Failed: 0

Devices Tested: 0

Passed: 0

Failed: 0

Devices Retested: 0

Instructions:

Ready? Let's get started.

First enter the work order information.

Close Work Order

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⚙️ | Date: 2016-10-14 (October) | Time: 17:21:58 (PM) | C1209 READY SN 00000001 v16.3.1 | v1.0.0 TRIAL

2. Enter a **Work Order** number.

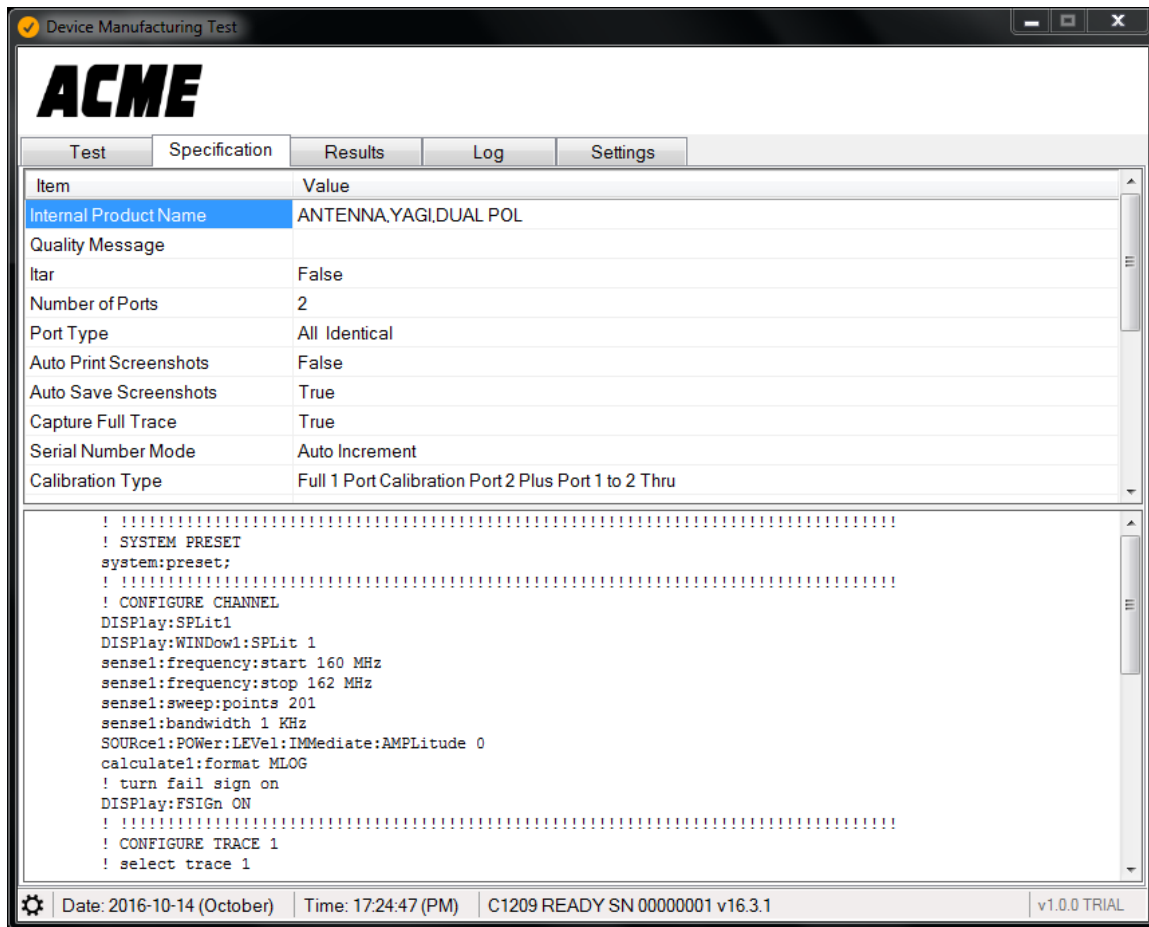
NOTE: Because the **Work Order** number is used in path names you are not allowed to enter illegal filename characters in the **Work Order** text box. However you can use control characters such as CTRL+V for paste.

3. The **Part Number** combo box lists all specification files found in your specification folder. Select the appropriate specification file in the **Part Number** combo box.

IMPORTANT: If the **Part Number** combo box is empty or contains unfamiliar items make sure you've selected the correct **Specification File Directory** on the **Settings** tab and that there are specification files located in that directory.

The **Device Specification Loaded** indicator is lit as soon as you select a specification file.

4. Select the **Specification** tab to view the contents of the specification file you've loaded.



IMPORTANT: You can only view the contents of a specification file on the **Specification** tab. You cannot edit the contents.

Return to the **Test** tab.

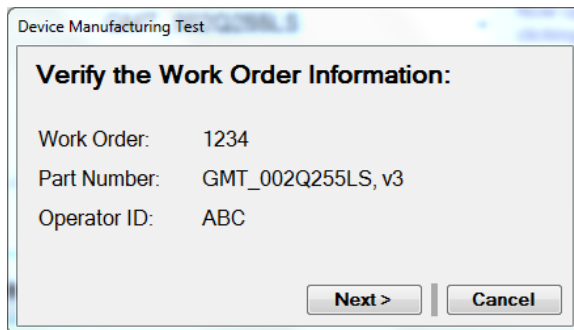
5. Enter an **Operator ID**.
6. On the **Test** tab click the **Open Work Order** button.

NOTE: You will see the Open Work Order button become enabled when the Work Order, Operator ID, and Part Number have all been entered.

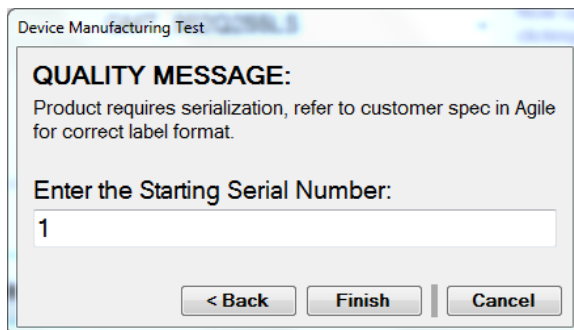
The open work order dialog will appear.



If a **Quality Message** exists in the selected specification file it is displayed on the first screen of the open work dialog. Click the **Next >** button.



Verify the work order information and click the **Next >** button.

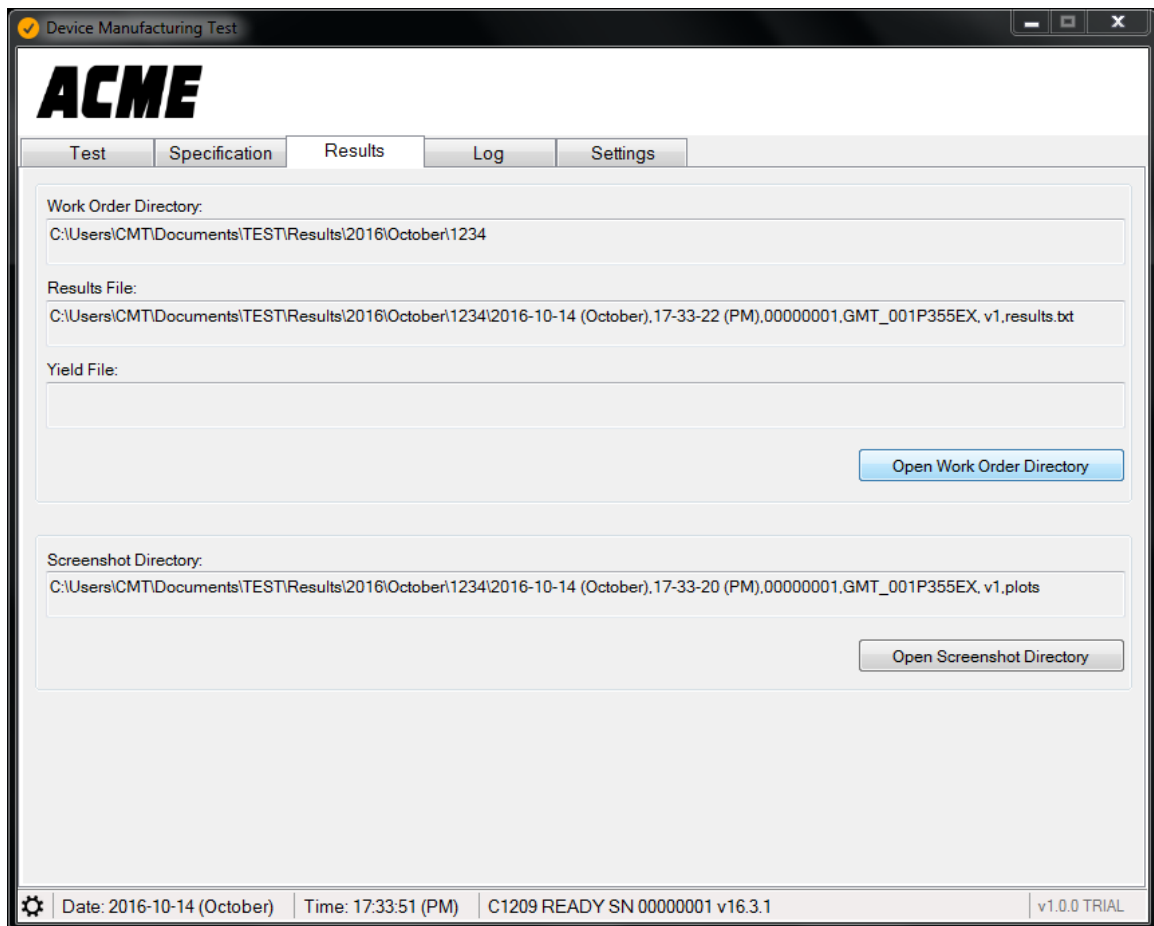


When the **Auto Increment Device Serial Number** box is checked on the **Test** tab the next screen on the open work order dialog allows you to enter the starting serial number.

Click **Finish** to open the work order. The **Work Order Opened** indicator is lit.


NOTE: You can see the configuration commands executing in the VNA software.

Click the **Results** tab.



Notice a **Work Order Directory**, **Results File**, and **screenshot Directory** have been created. The **Yield File** is created upon closing the work order.

Click the **Open Work Order Directory** or **Open Screenshot Directory** buttons to easily open these directories.

NOTE In the case where the tabs are hidden you can also quickly open these directories from the  button.

Return to the **Test** tab.

On the **Test** tab the **Open Work Order** button is now disabled and the **Calibrate VNA** button is enabled.

7. Click the **Calibrate VNA** button.

The VNA **calibration dialog** appears. The type of calibration is displayed at the top of the **calibration dialog**.

IMPORTANT: The type of calibration is determined from the **Calibration Type** item in the specification file. See the template specification file for more information.

Select the desired **Calibration Kit** on the first screen of this dialog.

IMPORTANT: When a list of calibration kits (**_Cal Kit_**) exists in the specification file the combo box lists only those calibration kits stored on the VNA that have a label matching one of the calibration kits listed in the specification file. If there is no list of calibration kits (**_Cal Kit_**) in the specification file the combo box lists all calibration kits stored on the VNA.

Click the **Next >** button. The **calibration dialog** now sequences through each step of the calibration process.

- A text description and instructional photo is displayed for each connection step of the calibration standard.
- The filenames for the instructional photos for each step are defined in the specification file. An associated **jpeg** file must be located in the **Calibration Photos Directory** configured on the **Settings** tab.

IMPORTANT: If a file with a matching filename does not exist in this directory the photo cannot be displayed.

Click **Next >** upon completing each step of the calibration process. Click the **Apply** button after completing all calibration steps. The calibration is applied to the VNA and the **calibration dialog** closes.

8. Back on the **Test** tab the **Calibrate VNA** button is now disabled and the **Test Device** button becomes enabled.

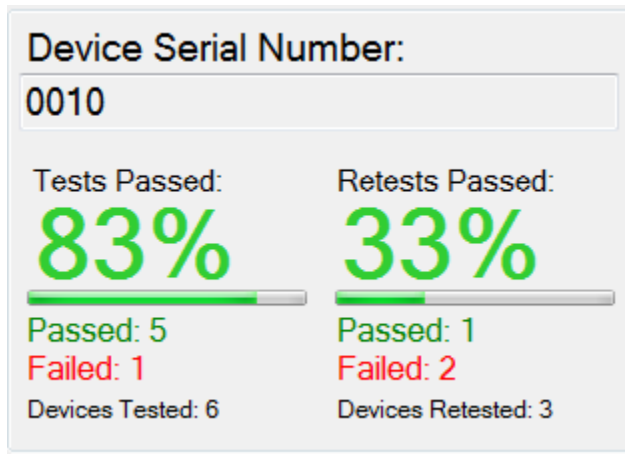
When the **Auto Increment Device Serial Number** box is checked the **Device Serial Number** text box displays the starting serial number and is not be editable.

When the **Auto Increment Device Serial Number** box is not checked the **Device Serial Number** text box is editable and blank. In this case you should now enter the serial number of the device to be tested.

NOTE: The default state of the **Auto Increment Device Serial Number** box is defined in the specification file. See the template specification file for more information.

NOTE: Because the **Device Serial Number** is used in path names you are not allowed to enter illegal filename characters in the **Device Serial Number** text box. However you can use control characters such as CTRL+V for paste.

9. Connect the first device to be tested and click the **Test Device** button.



Upon **testing** a device for the first time:

- If the device **passed**:
 - The number of passed **tests** will increment.
 - The number of **Devices Tested** will increment.
 - The **Percentage of Tests Passed** will update. The **Percentage of Tests Passed** is calculated as: $\text{Tests Passed} / \text{Devices Tested} \times 100$.
 - If the **Auto Increment Device Serial Number** box is checked the serial number will increment.
- If the device **failed** an alert dialog is displayed asking if you want to retest.
 - If you click **No**:
 - The number of failed **tests** will increment.
 - The number of **Devices Tested** will increment.
 - The **Percentage of Tests Passed** will update.
 - If the **Auto Increment Device Serial Number** box is checked the serial number will increment.
 - If you click **Yes**:
 - The device will be retested.

Upon **retesting** a device:




- If the device **passed**:
 - The number of passed **retests** will increment.
 - The number of **Devices Retested** will increment.
 - The **Percentage of Retests Passed** will update. The **Percentage of Retests Passed** is calculated as: **Retests Passed** / **Devices Retested** X 100.
 - If the **Auto Increment Device Serial Number** box is checked the serial number will increment.
- If the device **failed** an alert dialog is displayed asking if you want to retest.
 - If you click **No**:
 - The number of failed **retests** will increment.
 - The number of **Devices Retested** will increment.
 - The **Percentage of Retests Passed** will update.
 - If the **Auto Increment Device Serial Number** box is checked the serial number will increment.
 - If you click **Yes**:
 - The device will be retested.

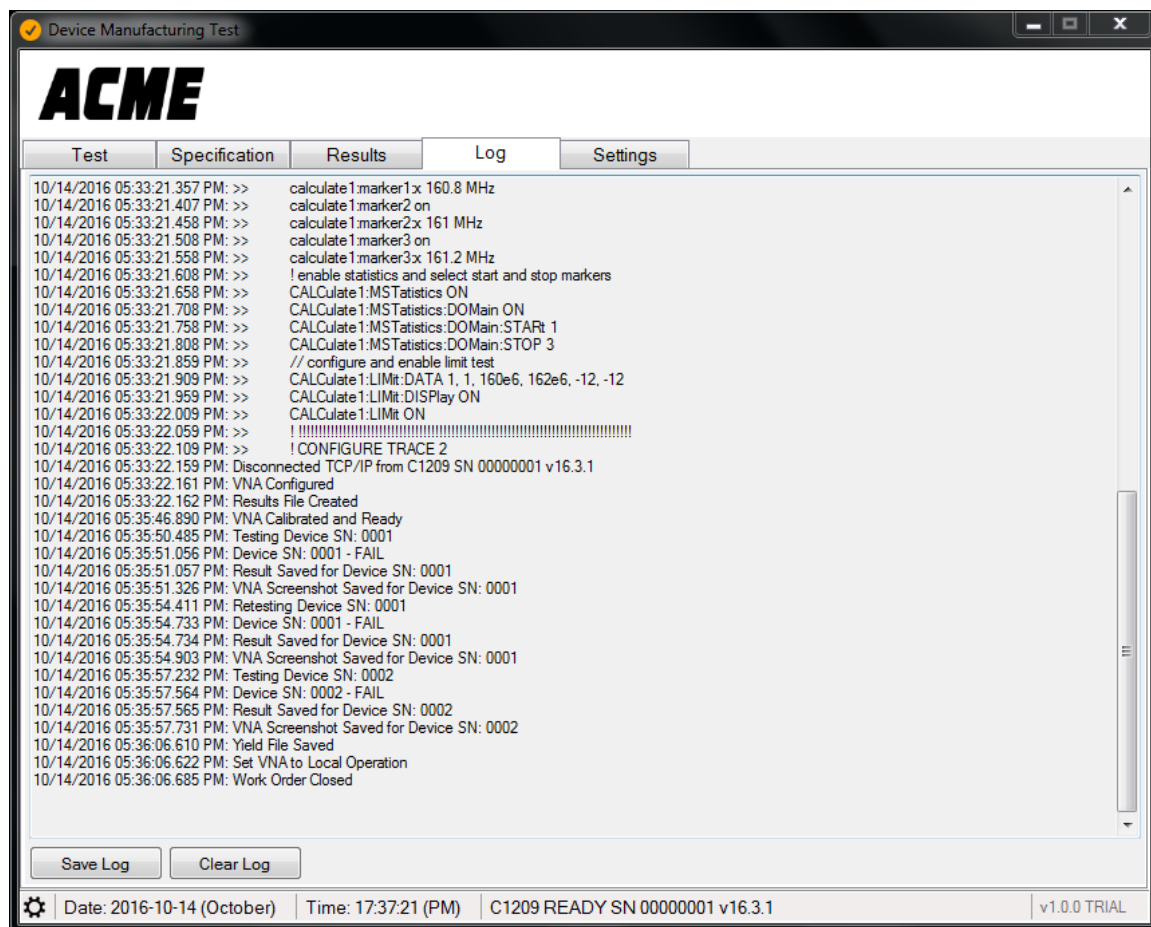
10. When all devices have been tested click the **Close Work Order** button. A dialog is displayed to verify you intend to close the work order. Click **Yes**.

Upon closing the work order:

- A **yield file** is created in the work order directory.
- The user interface is initialized and is ready for the next work order.

Additional Features


- Click the  button and select **Screenshot > Print This Screen** at any time to print a screenshot of the **Test** tab.
- Click the  button and select **Screenshot > Save VNA Screenshot** button at any time to save a **.png** file of the current VNA screen. A **Save As** dialog appears allowing you to save the file.
 - The default location is the **screenshot directory** if it exists or otherwise defaults to your **My Documents** directory.
 - The default filename is a time stamp of the current date and time.
- Click the  button and select **Screenshot > Print VNA Screen** button at any time to send the current VNA screen directly to your default printer.
- Select the **Log** tab to view a log of all events that have occurred since starting the plug-in. This is useful for debugging purposes.



Click the **Save Log** button to save the log to a text file. A **Save As** dialog appears allowing you to save the file.

- The default location is the **work order directory** if it exists or otherwise defaults to your **My Documents** directory.
- The default filename is a time stamp of the current date and time.

Click the **Clear Log** button to clear the log. A dialog is displayed to verify you intend to clear the log.

- The **current date, time, VNA status, VNA serial number, VNA software version, and VNA model number** are displayed on the status bar at the bottom of the application window. The **version of the plug-in** is displayed in the bottom right corner of the status bar.
- If you want to run a test without saving the results or yield files un-check the **Save Test Results** check box on the **Settings** tab.
- You can hide or show the VNA screen at any time by clicking the  button and selecting **Hide VNA Software** or **Show VNA Software**.
- The VNA is in **Remote Mode** while a work order is open. It is possible to lock remote mode so it will not be possible to change the VNA settings from the VNA software user interface. See the Remote Lock option in the specification file template for more information.

NOTE: The Remote Lock feature is not available on the RVNA (R family) software.