Ansur QA-ES III

Plug-In

Users Manual

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Introduction

This Users Manual contains information on how to install and use the Ansur QA-ES III Plug-In (the Plug-In) and the Ansur QA-ES III Mini Plug-In with Ansur Test Executive software. This manual includes all Plug-In features. To use Ansur to effectively, Fluke Biomedical recommends that you have familiarity with the features of the Ansur software and Microsoft Windows.

Note

The Users Manual for the Analyzer contains the complete operating instructions and explains the Analyzer's capabilities.

Ansur Software

The Ansur Test Executive (Ansur) manages the test procedures for automated test sequences. The software works hand-in-hand with Fluke Biomedical analyzers and simulators. Ansur provides seamless integration for:

- Visual inspections

- Preventive maintenance

- Work procedures

- Performance tests

- Electrical safety tests

Ansur keeps the test procedures in Test Template or Test Sequence files (XML format) and keeps the results in the Test Result files (also in XML format). You can view and print test templates and results file with different detail levels.

Ansur Plug-Ins

Ansur uses plug-in and mini plug-in modules for many Fluke Biomedical instruments. Plug-ins are software interfaces that supply the test elements to Ansur and provide remote access to all functionality of the Analyzer. The plug-ins use the same interface for different analyzers and simulators.

In addition to the general test plug-ins, specialized plug-ins process all test requirements for specific instruments. There is a unique Ansur test element for each measurement available at the Analyzer.

For each plug-in module, use only the features necessary to do tests on the Device Under Test (DUT). Update the Ansur Test Executive and plug-ins on a regular basis. Updates for Ansur are published on the Fluke Biomedical web page: http://www.flukebiomedical.com

Installing the Plug-Ins

System Requirements

Before you install the Plug-Ins, make sure the PC meets these minimum requirements:

- IBM PC/XT-compatible Pentium II 350 MHz or faster processor

- 128 Mb RAM

- 50 Mb of unoccupied hard drive for software

- Hard drive space for result and template files

- 32 bit Microsoft Windows operating system (98SE/Me/NT/2000/XP/VISTA/WIN7/WIN8)

Installation

To install the Plug-Ins:

1. Go to the Fluke Biomedical website and locate the Ansur Plug-In or Mini Plug-In.

2. Enter the registration information and click **Get download now**.

3. Follow the on-screen instructions to download and install the software.

Terms and Abbreviations

Table 1 is a list of terms and abbreviations used in this manual.

Table 1. Terms and Abbreviations

Term	Description
Ansur	Ansur is a software suite that uses plug-ins to do test and inspection procedures with many Fluke Biomedical test instruments.
DUT	Device Under Test – the equipment that is connected to the Analyzer that the tests will measure.
DUT Info	Information used to identify one DUT including: DUT serial number, manufacturer, device type, and model. Ansur adds data fields such as location and status to the DUT info.
ESU	Electrosurgery Unit
QA-ES III	Fluke Biomedical QA-ES III Electrosurgical Analyzer (the Analyzer).
Field user	The person that does the tests on a DUT with Ansur.
Plug-In	A software application that lets Ansur do tests with specific Fluke Biomedical test instruments.
Test Element	The way Ansur shows test results. Ansur creates a test template from test elements.
Test Guide	The PC window shown by Ansur or any of its plug-ins when a test element is run.
Test Template	An Ansur file that contains a set of test elements that specifies how to test a DUT. A test template can contain instructions on how to do service, preventive maintenance, repair, and other tasks on a DUT.
Test Record	An Ansur file that contains the results for the test templates. The test record can be printed as a test report.

QA-ES III Plug-In

The QA-ES III Plug-In (the Plug-In) provides remote access to the QA-ES III Electrosurgical Analyzer (the Analyzer).

Use the Plug-In to customize tests that analyze specific performance requirements. Create unique test elements for each test, and simulations that run on the Analyzer. Use Ansur test procedures with the Analyzer test elements to incorporate the capabilities of an Analyzer into automated testing.

Test Elements

After installing the Plug-In, the performance tests for the Analyzer show in the Ansur Test Explorer menu. Each test shows as a light blue icon. Each test element uses measurements available on the Analyzer. Table 2 shows the test elements.

Table 2. QA-ES III Plug-In Performance Tests

Icon	Performance Tests	Units
	Power distribution test	W
	Output test	W
	H.F. leakage test	mA
	CQM test	Ω
	Vessel Sealing test	W

Test Element Definition

Each test element is defined by Custom Setup and Expected Results screens. As with most other Ansur test element definitions there are General Setup and Apply When screens.

Custom Setup

Use the Custom Setup screen to configure the test element on the hardware and software components. Table 3 shows the Custom Setup options for software. The actual values and settings depend on the test elements selected.

Table 3. Custom Setup Options for Software

		Menu Item	Description
🖨		**Report Settings**	
	☐	**Crest factor**	Select to show the Crest factor on the final report.
	☐	**Current**	Select to show the Current on the final report.
	☐	**Peak-to-peak voltage**	Select to show the Peak-to-peak value on the final report.
▭		**Test Guide Settings**	
	☑	**Enable NA button**	Enable or disable the **NA** button in the Test Guide. (Default is enabled.)
	☑	**Enable Skip button**	Enable or disable the **Skip** button in the Test Guide. (Default is enabled.)
	☐	**Auto Advance**	Select to advance the Test Guide to the next test automatically. When the test advances, the field user does not need to click **Start** or **Next** to advance the test. (Default is disabled.) *Note* *The test does not advance automatically if the test fails.*

Table 4 shows the available hardware settings in the **Test settings** section of the Custom Setup screen.

Table 4. Custom Setup - Test Settings

Test Setting	Options	Description
Footswitch	Cut Coag	The type of footswitch the ESU is using. The footswitch determines the type of waveform applied to the electrodes. This is not set remotely.
Delay	Numeric entry	The delay (in ms) between the time the ESU changes the loads and takes the power measurement. In **Test details** set the number and range of load measurements.
Load Setting		The constant load value (in Ω) for taking a single power output measurement. You can enter a load value directly or select a valid load from the list box. In **Test details**, set the number and range of load measurements to take.
Polarity	Monopolar Bipolar	The type of ESU under test.
Active	Numeric entry	The number of active electrodes at the ESU.
Neutral	Numeric entry	The number of neutral electrodes at the ESU.

Table 5 shows the details in the Test Details section at the left of the Custom Setup screen. Each line defines the individual load settings and the power for a single measurement. Use the toolbar to add or delete individual settings. If [!] is shown then that particular measurement setting is invalid. The actual values and settings depend on the test elements selected.

Table 5. Custom Setup - Test Details

Test Setting	Options	Description
Footswitch	**Cut** **Coag**	The type of footswitch used by the ESU. The footswitch determines the type of waveform applied to the electrodes. This is not set remotely.
Expected Power	Numeric entry	The expected power measurement from the ESU.
ESU Power Setting	Numeric entry	The power value on the ESU required for the test. This optional entry gives the dial setting appropriate to the power value. Each load setting has a unique power value.
Units	**W** **mA** **Ohms**	The units for the settings
Load Setting	**200** **225** **250** **275** **300**	(Optional) Defines the load setting.

Expected Results

Use the Expected Results screen to set the pass criteria for the test element measurement. International standards are not included with the Plug-In and there is no facility for referenced limits.

Each measurement returns a value for Power, Crest factor, Current, and Peak-to-peak voltage so limits can be placed against any of them. See Figure 1.
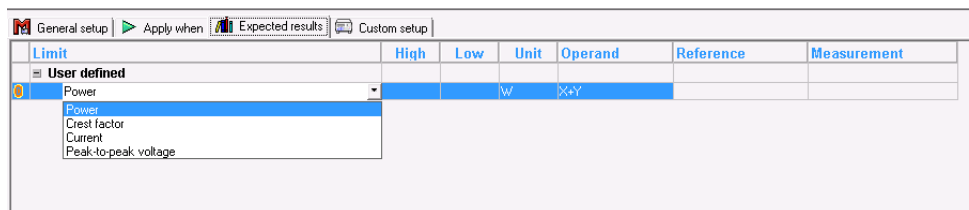
hyy03.bmp

Figure 1. Example of Expected Results

To set the expected result:

1. From the Limit menu, choose the value for which the limit applies. Options are:

    - **Power**

    - **Crest factor**

    - **Current**

    - **Peak-to-peak voltage**

2. Enter a High limit and a Low limit and select the units.

    For all values except the Power value, the value returned from the DUT must be within the given limits for the duration of the test.

    For the Power value, Ansur compares the user-defined Power value in the **Test details** to the actual measurement. The limits define the acceptable range around this Power value.

    Use the Operand menu to select how Ansur calculates the limit using the Power values defined in **Test details**. The operand can be:

    - **Y** – The limit is the absolute Power value.

    - **X + Y** – The limit is the defined Power value + the High or Low limit.

    - **X + (X * Y%)** – The limit is a percentage deviance from the defined Power value.

3. To add or delete a limit, move the cursor to the limit and right-click, then select the action.

Test Element: Power Distribution

Use the Power Distribution test element to determine the power performance of the DUT over a range of loads across the electrodes of the DUT.

1. In the Custom Setup screen, select the **Report Settings** and the **Test Guide Settings**.

2. In the Custom Setup screen, define the **Test settings** for Power.

3. In **Test details**, enter a specific load for each power measurement.

4. In the Expected Results screen, define the acceptable deviation to the power performance. If one measurement fails to meet these limits, then the test fails.

Test Element: Output

Use the Output test element to determine the power performance of a DUT over a range of power values with a constant load across the electrodes of the DUT.

1. In the Custom Setup screen, define the **Report Settings** and the **Test Guide Settings**.

2. In the Custom Setup screen, select the type of footswitch and define the **Test settings** for Delay, and the Load Setting.

3. In **Test details**, enter the Expected Power, ESU Power Setting, and select the Units.

4. Select **Expected Results** and define the acceptable deviation for the power performance. If one measurement fails to meet these limits, then the test fails.

Test Element: HF Leakage

Use HF Leakage test element to check that all electrodes on a DUT have leakage currents within acceptable limits over a range of power and load settings.

Configure the HF Leakage test element to take measurements for each electrode, each with a different setup. The setup depends on whether the DUT is grounded or isolated (see the Users Manual or the Service Manual for the Analyzer). All HF leakage current measurements within the Ansur test element are taken for one electrode before the test runs on the next electrode.
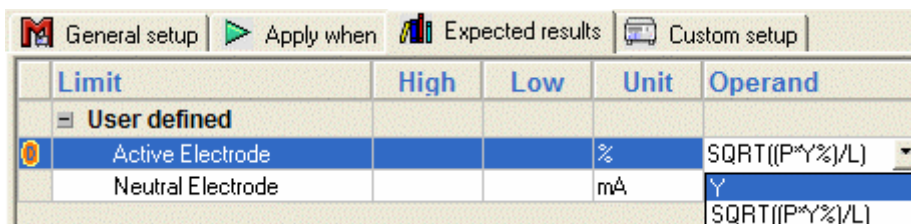
1. In the Custom Setup screen, define the **Test Guide Settings**.

2. In the Custom Setup screen, define the **Test settings** for Delay, Polarity, Active, and Neutral.

3. In **Test details**, select the type of footswitch, Expected Power, ESU Power Settings, Load Settings, and the Units.

4. Select **Expected Results** and define the acceptable leakage range for each electrode type. Define the absolute values. If one measurement fails to meet these limits, then the test fails.

   For DUTs with BF or Monopolar electrodes, define one limit for the Active electrode and one limit for the Neutral electrode. See Figure 2.

   For DUTs with bipolar electrodes, define one limit.

   You can specify the limits as a percentage of the Power defined in **Test details**. Use the Operand menu to select this limit. The limit is calculated as $I = \sqrt{((Y\% * P) / R)}$, where:

   - Y is the value entered in Expected Results

   - P is the Power defined in Test details.

   - R is the Load setting defined in Test details.

hyy010.bmp

Figure 2. Expected Results Details

Test Element: CQM Alarm

Use the CQM alarm to make sure that the DUT sounds an alarm if the resistance between the two electrodes exceeds a specified limit. The Analyzer gradually increases the resistance, starting at 10 Ω and increasing through all available load settings. The DUT should sound an alarm and sends the value when it reaches its limit.

1. In the Custom Setup screen, define the **Test Guide Settings**.

2. In the Custom Setup screen, define the **Test settings** for Delay.

3. Select **Expected Results** and define the acceptable upper limit for the CQM Load.

Test Element: Vessel Sealing

Use the Vessel Sealing test element to do a Vessel Sealing test.

1. In the Custom Setup screen, define the **Test Guide Settings**.

2. In the Custom Setup screen, select the type of footswitch and define the **Test settings** for Delay, and the Load Setting.

3. In **Test details**, enter the Expected Power, ESU Power Setting, and select the Units.

4. Select **Expected Results** and define the acceptable deviation for the power performance. If one measurement fails to meet these limits, then the test fails.

Test Guide

The test guide interfaces with the Analyzer as the test template runs. Use the test guide to record the information about the DUT and the test and to control the test elements. Figure 3 is an example of the test guide.

Prior to each measurement within a test Ansur prompts you to set the power, the mode, and set up the next electrode on the DUT. If the setup is identical between two measurements, or when running a CQM Alarm test, the prompt is not shown.
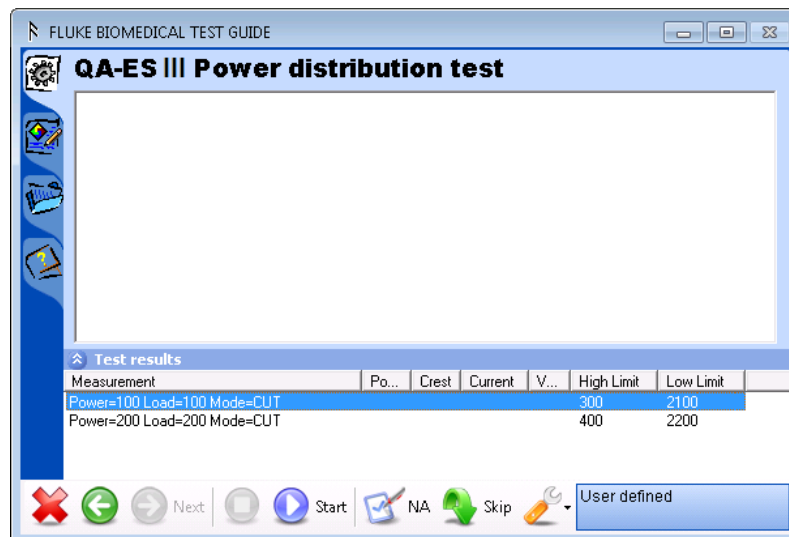
hyy023.bmp

Figure 3. Test Guide - Power Distribution

Test Guide Options

Use the test guide options to record information about the test and the DUT. Table 6 shows the options for the Test Guide.

Table 6. Test Guide Options

Tab		Description
	User Comments	Enter comments or remarks regarding the test.
	DUT info	Enter information about the Device Under Test.
	Test Procedure	See the test procedure. To see the connection diagram between the Analyzer, ESU, and PC click **diagram** or **Connecting the test instrument**.

Toolbar Buttons

Use the toolbar buttons to control the test elements. Table 7 shows the toolbar buttons.

Table 7. Toolbar Buttons

Button	Label	Description
	Abort	Quit the test template.
	Previous	Go to the previous dialog screen.
	Next	Go to the next dialog screen.
	Start	Start the test.
	Stop	Stop the test.
	Not applicable	Flag the test as not applicable.
	Skip	Skip the test and go to the next test.
	Additional Features	Access standards and customize toolbar menu. Also enables Bluetooth.

Communications Setup

Configure communication between the PC and the Analyzer using 802.15.1 wireless (not available on all models) or connect the PC to the Analyzer with a USB cable.

If your PC has built-in 802.15.1 (Bluetooth) communication, make sure it is turned ON and enabled. If your PC does not have built-in communication, plug in a 802.15.1 dongle and make sure the Analyzer is added and paired.

Note
For best results use the Laird dongle available from Fluke.

To add 802.15.1 communication to the PC running Ansur:

1. Click ⁂ in the notification area or click **Start | Devices and Printers**.

2. Click **Add a Device**.

3. Select the Analyzer by selecting the serial number.

4. At the prompt, select **Yes** and click **Next**.

5. At the confirmation message, click **Close**.

Note
If the Analyzer is added and paired with the PC, the Analyzer is listed on the Devices and Printers in the Control Panel.

6. To enable communication, in the Test Guide, click ⬚ and then click **Enable Bluetooth**.

QA-ESIII Mini Plug-In

The QA-ESIII Mini Plug-In (the Mini Plug-In) is an Ansur extension used to get and manage data from the Analyzer. The Mini Plug-In can:

- Get and Export results files from the Analyzer in CSV format.

- Print the CSV file as a report.

Note
You must have Ansur Test Executive version 3.0.0 or higher installed on your PC to use the Mini Plug-In.

Table 8 is a list of the controls and icons for the Mini Plug-In.

Table 8. Controls for the Mini Plug-In

Control	Description
Refresh	Reconnects to the Analyzer and loads the presets.
⁑	Indicates the Analyzer is connected using 802.15.1
⺪	Indicates the Analyzer is connected using USB
Get Results	Downloads test results data from the Analyzer
…	To navigate to the print results file location
Print	Prints the exported file

Open the Mini Plug-In

Choose a method to open the Mini Plug-In:

- Open the Ansur Test Executive and select **Tools | QA-ESIII Mini Plug-In**.

- Click the QA-ESIII Mini Plug-In shortcut on the desktop.

- Click **Start | All Programs | Fluke | QA-ESIII Mini Plug-In**.

Manage Test Results

Use the 802.15.1 protocol to download the test results from the Analyzer or use the Mini Plug-in and connect a USB cable.

Download Test Results

To download test results:

1. Open the Mini Plug-In.

   The test results file is in My Documents\Ansur\QAESIII and has a default name of QA_ES_III_Date_Time.CSV. You can change this name as needed. All test results in the QA-ES III Electrosurgical Analyzer are in a single file.

2. Click **Get Results**.

Print Test Results

When the test results have been transferred to the PC, you can print the results. To print test results:

1. Use the location in the browse field, or click [...] to browse to the file location.

2. To change the Print Title, enter a new title.

3. Click **Print**.