BOEING 787B3-0147 OPTION

787 Electrical Power Quality and Design Requirements Test Sequences

OPERATION MANUAL

Pacific Power Source, Inc.

Part Number: 149155

Version: 1.0

Document number: 149155-10

April 30, 2013

THIS PAGE INTENTIONALLY LEFT BLANK

SUPPLEMENTAL END USER LICENSE AGREEMENT FOR PACIFIC POWER SOURCE, INC. ADD-ON SOFTWARE

IMPORTANT – PLEASE READ CAREFULLY: This Pacific Power Source, Inc. ("Pacific Power Source") Supplemental End-User License Agreement ("Supplemental EULA") is a legal agreement between You (either an individual person or a single legal entity, who will be referred to in this Supplemental EULA as "You") and Pacific Power Source for the additional Pacific Power Source Software that accompanies this Supplemental EULA, including any associated media, printed materials and electronic documentation (the "Add-on Software"). This Add-on Software also includes any software updates, further add-on components, web services and/or supplements that Pacific Power Source may provide to You or make available to You after the date You obtain Your initial copy of the Add-on Software to the extent that such items are not accompanied by a separate license agreement or terms of use. By installing, copying, downloading, accessing or otherwise using the Add-on Software, You expressly and unequivocally agree to be bound by the terms and conditions of the original EULA under which you have licensed the underlying Pacific Power Source Software as well as this Supplemental EULA. However, if you do not have a valid EULA for the underlying Pacific Power Source Software, You are not authorized to install, copy, or otherwise use the Add-on Software and You have no rights under this Supplemental EULA. To the extent that any terms in this Supplemental EULA conflict with the terms in the applicable Pacific Power Source Software EULA, the terms of this Supplemental EULA control solely with respect to the Add-on Software.

SOFTWARE LICENSE

The Add-on Software is owned by Pacific Power Source and is protected by United States copyright and intellectual property laws and treaties.   Therefore You must treat the Add-on Software like any other copyrighted material. The Add-on Software is licensed, not sold. All instructions, methods, techniques and algorithms provided with the Add-on Software, including, but not limited to, Test Sequences, Test Steps, and Output Sequences, remain the sole property of Pacific Power Source, Inc.

1. GRANT OF LICENSE. This Section of the Supplemental EULA describes Your general rights to install and use the Add-on Software The license rights described in this Section are subject to all other terms and conditions of this Supplemental EULA. All rights not expressly granted are reserved by Pacific Power Source.

General License Grant to Install and Use Software. You may install and use one copy of the Add-on Software on a single computer, device, workstation, terminal, or other digital electronic or analog device ("Device"). If You have a multi-user license for the Add-on Software, then at any time You may have as many copies of the Add-on Software in use as are permitted by the multi-user license. A license for the Add-on Software may not be shared. If the number of users of the Add-on Software exceeds the number of users permitted by applicable license(s), You will be considered in material breach of this agreement. You may, however, either (a) make one copy of the Add-on Software solely for backup or archival purposes, or (b) transfer the Add-on Software to a single hard disk, provided You keep the original solely for backup or archival purposes. You may not copy the written materials accompanying the Add-on Software.

Additional License Grant for Other Media. The Add-on Software may include certain trademarks, photographs, art, graphics, sounds, music and/or video clips (together "Other Media"). If so, the following terms describe Your rights to the Other Media:

a.   You do not own any rights in the Other Media and the limited license herein shall be applicable to the Other Media. You may not sell, license or distribute copies of the Other Media on a stand-alone basis or as part of any collection, product or service.

b.   You may not use or distribute any of the Other Media that include representations of identifiable individuals, governments, logos, initials, emblems, or trademarks for any commercial purposes or to express or imply any endorsement or association with any product, service, entity, or activity.

c.   You must indemnify, hold harmless, and defend Pacific Power Source from and against any claims or lawsuits, including expert and attorneys' fees that arise from or result from the unauthorized use or distribution of the Other Media by You.

2. DESCRIPTION OF OTHER RIGHTS AND LIMITATIONS.

No Reverse Engineering, Decompilation, and Disassembly. You may not reverse engineer, decompile, or disassemble the Add-on Software, except and only to the extent that such activity is expressly permitted by applicable law notwithstanding this limitation.

Operating System Options. If the Add-on Software is distributed with multiple versions for compatibility with different operating systems, Your license grant extends to using only the applicable version for Your operating system.

Trademarks. This Supplemental EULA does not grant You any rights in connection with any trademarks or service marks of Pacific Power Source.

Support Services. Pacific Power Source may provide You with support services related to the Add-on Software ("Support Services"). Use of Support Services is governed by the Pacific Power Source policies and programs described in other Pacific Power Source-provided materials. Any further supplemental software and/or code provided to You as part of the Support Services are considered part of the Add-on Software and subject to the terms and conditions of this Supplemental EULA. You acknowledge and agree that Pacific Power Source may use technical information You provide to Pacific Power Source as part of the Support Services for its business purposes.

Software Transfer. Except as specified in this Section, the initial licensee of the Add-on Software may make a one-time permanent transfer of this Supplemental EULA and Add-on Software only directly to an end user, provided that the initial licensee has terminated its use of the Add-on Software. This transfer must include all of the Add-on Software (including all component parts, the media and printed materials, any upgrades, this Supplemental EULA, and, if applicable, the Certificate of Authenticity). Such transfer may not be by way of consignment or any other indirect transfer. The transferee of such one-time transfer must agree to comply with the terms of this Supplemental EULA, including the obligation not to further transfer this Supplemental EULA and Add-on Software.

Termination. Without prejudice to any other rights, Pacific Power Source may terminate this Supplemental EULA if You fail to comply with the terms and conditions of this Supplemental EULA. In such event, You agree to destroy all copies of the Add-on Software and all of its component parts.

3. INTELLECTUAL PROPERTY RIGHTS. All title and intellectual property rights in and to the Add-on Software (including but not limited to any images, photographs, animations, video, audio, music, text, and "applets" incorporated into the Add-on Software), the accompanying printed materials, and any copies of the Add-on Software are owned by Pacific Power Source or its suppliers. All title and intellectual property rights in and to the content that is not contained in the Add-on Software, but may be accessed through use of the Add-on Software, is the property of the respective content owners and may be protected by applicable copyright or other intellectual property laws and treaties. This Supplemental EULA grants You no rights to use such content. If this Add-on Software contains documentation that is provided only in electronic form, You may print one copy of such electronic documentation. You may not copy the printed materials accompanying the Add-on Software.

4. BACKUP COPY. After installation of one copy of the Add-on Software pursuant to this Supplemental EULA, You may keep the original media on which the Add-on Software was provided by Pacific Power Source solely for backup or archival purposes. If the original media is required to use the Add-on Software on the Device, You may make one copy of the Add-on Software solely for backup or archival purposes. Except as expressly provided in this

Supplemental EULA, You may not otherwise make copies of the Add-on Software or the printed materials accompanying the Add-on Software.

5. EXPORT RESTRICTIONS. You acknowledge that the Add-on Software is of U.S. origin. You agree to comply with all applicable international and national laws that apply to the Add-on Software, including the U.S. Export Administration Regulations, as well as end-user, end-use and destination restrictions issued by U.S. and other governments.

6. APPLICABLE LAW.

This Supplemental EULA is governed by the laws of the State of California without regard to conflicts of law principles and in respect of any dispute which may arise hereunder, You hereby consent to the jurisdiction of the federal or state courts sitting in Orange County, California. You also agree to accept service of process by mail, and waive any jurisdictional or venue defenses otherwise available.

7. LIMITED WARRANTY

LIMITED WARRANTY FOR ADD-ON SOFTWARE: Pacific Power Source warrants that the ADD-ON SOFTWARE will perform substantially in accordance with the accompanying materials for a period of ninety (90) days from the date of receipt. This Limited Warranty shall only apply to defects discovered in the ninety (90) day warranty period and as to any defects discovered after the ninety (90) day warranty period, THERE IS NO WARRANTY OF ANY KIND, to the fullest extent permissible by applicable law.

LIMITATION ON REMEDIES; NO CONSEQUENTIAL OR OTHER DAMAGES. Your exclusive remedy for any breach of this Limited Warranty is as set forth below. Except for any refund elected by Pacific Power Source, YOU ARE NOT ENTITLED TO ANY DAMAGES, INCLUDING BUT NOT LIMITED TO CONSEQUENTIAL DAMAGES, if the Add-on Software does not meet Pacific Power Source's Limited Warranty, and, to the maximum extent allowed by applicable law, even if any remedy fails of its essential purpose. The terms of Section 11 below ("Exclusion of Incidental, Consequential and Certain Other Damages") are also incorporated into this Limited Warranty.

EXCLUSIVE REMEDY. Pacific Power Source's entire liability and Your exclusive remedy shall be, at Pacific Power Source's option, (a) return of the price paid (if any) for the Add-on Software, or (b) repair or replacement of the Add-on Software that does not meet this Limited Warranty and that is returned to Pacific Power Source with proof of payment. You will receive the remedy elected by Pacific Power Source without charge, except that You are responsible for any expenses You may incur (e.g. cost of shipping the Add-on Software to Pacific Power Source). This Limited Warranty is void if failure of the Add-on Software has resulted from accident, abuse, misapplication, abnormal use or a virus. Any replacement Add-on Software will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

8. DISCLAIMER OF WARRANTIES. THE LIMITED WARRANTY THAT APPEARS ABOVE IS THE ONLY EXPRESS WARRANTY MADE TO YOU AND IS PROVIDED IN LIEU OF ANY OTHER EXPRESS WARRANTIES (IF ANY) CREATED BY ANY DOCUMENTATION OR PACKAGING. EXCEPT FOR THE LIMITED WARRANTY AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, PACIFIC POWER SOURCE PROVIDE THE ADD-ON SOFTWARE AND SUPPORT SERVICES (IF ANY) *AS IS AND WITH ALL FAULTS*, AND HEREBY DISCLAIM ALL OTHER WARRANTIES AND CONDITIONS, EITHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY (IF ANY) IMPLIED WARRANTIES, DUTIES OR CONDITIONS OF MERCHANTABILITY, OF FITNESS FOR A PARTICULAR PURPOSE, OF ACCURACY OR COMPLETENESS OR RESPONSES, OF RESULTS, OF WORKMANLIKE EFFORT, OF LACK OF VIRUSES AND OF LACK OF NEGLIGENCE, ALL WITH REGARD TO THE ADD-ON SOFTWARE, AND THE PROVISION OF OR FAILURE TO PROVIDE SUPPORT SERVICES. ALSO, THERE IS NO WARRANTY OR CONDITION OF TITLE, QUIET ENJOYMENT, QUIET POSSESSION, OR CORRESPONDENCE TO DESCRIPTION OR NON-INFRINGEMENT WITH REGARD TO THE ADD-ON SOFTWARE. IN ANY JURISDICTION WHICH DOES NOT ALLOW THE EXCLUSION OR LIMITATION OF IMPLIED

WARRANTIES, ANY IMPLIED WARRANTIES, TO THE EXTENT PERMITTED BY THE APPLICABLE LAWS OF ANY SUCH JURISDICTION, SHALL BE LIMITED TO THE TERM OF THIS AGREEMENT.

PACIFIC POWER SOURCE SPECIFICALLY DISCLAIMS ANY WARRANTY RELATING TO ANY TEST PARAMETERS, RESULTS OR USE OF THE ADD-ON SOFTWARE OR THE DOCUMENTATION IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE AND DOES NOT WARRANT THAT THE OPERATION OF THE ADD-ON SOFTWARE WILL BE UNINTERRUPTED OR ERROR FREE.

9. WARNING. PACIFIC POWER SOURCE PRODUCTS ARE NOT DESIGNED WITH COMPONENTS AND TESTING FOR A LEVEL OF RELIABILITY SUITABLE FOR USE IN ANY MEDICAL DIAGNOSIS AND/OR TREATMENT OR AS CRITICAL COMPONENTS IN ANY LIFE SUPPORT SYSTEMS WHERE ANY FAILURE TO PERFORM CAN BE REASONABLY EXPECTED TO CAUSE INJURY OR DEATH.

RELIABILITY OF OPERATION OF THE ADD-ON SOFTWARE CAN BE IMPAIRED BY ADVERSE FACTORS, INCLUDING BUT NOT LIMITED TO FLUCTUATIONS IN ELECTRICAL POWER SUPPLY, COMPUTER HARDWARE MALFUNCTIONS, COMPUTER OPERATING SYSTEM SOFTWARE FITNESS, FITNESS OF COMPILERS AND DEVELOPMENT SOFTWARE USED TO DEVELOP AN APPLICATION, INSTALLATION ERRORS, SOFTWARE AND HARDWARE COMPATIBILITY PROBLEMS, MALFUNCTIONS OR FAILURES OF ELECTRONIC MONITORING OR CONTROL DEVICES, TRANSIENT FAILURES OF ELECTRONIC SYSTEMS (HARDWARE AND/OR SOFTWARE), UNANTICIPATED USES OR MISUSES, OR ERRORS ON THE PART OF THE USER OR APPLICATION DESIGNER. (ADVERSE FACTORS SUCH AS THESE ARE HEREAFTER COLLECTIVELY TERMED "SYSTEM FAILURES.")

ANY APPLICATION WHERE A SYSTEM FAILURE WOULD CREATE A RISK OF HARM TO PROPERTY OR PERSONS (INCLUDING THE RISK OF BODILY INJURY AND DEATH) SHOULD NOT BE RELIANT SOLELY UPON ELECTRONIC MONITORING DUE TO THE RISK OF SYSTEM FAILURE. TO AVOID DAMAGE, INJURY OR DEATH, THE USER OR APPLICATION DESIGNER MUST TAKE REASONABLY PRUDENT STEPS TO PROTECT AGAINST SYSTEM FAILURES, INCLUDING BUT NOT LIMITED TO BACK-UP OR SHUT DOWN MECHANISMS.

10. EXCLUSION OF INCIDENTAL, CONSEQUENTIAL AND CERTAIN OTHER DAMAGES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL PACIFIC POWER SOURCE OR ITS SUPPLIERS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFITS, LOST SAVINGS, OR CONFIDENTIAL OR OTHER INFORMATION, FOR BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, COST OF PROCUREMENT OF SUBSTITUTE TECHNOLOGY, FOR PERSONAL INJURY, FOR LOSS OF PRIVACY, FOR FAILURE TO MEET ANY DUTY INCLUDING OF GOOD FAITH OR OF REASONABLE CARE, FOR NEGLIGENCE, AND FOR ANY OTHER PECUNIARY OR OTHER LOSS WHATSOEVER) ARISING OUT OF OR IN ANY WAY RELATED TO THE USE OF OR INABILITY TO USE THE ADD-ON SOFTWARE, THE PROVISION OF OR FAILURE TO PROVIDE SUPPORT SERVICES, OR OTHERWISE UNDER OR IN CONNECTION WITH ANY PROVISION OF THIS SUPPLEMENTAL EULA, EVEN IN THE EVENT OF THE FAULT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, BREACH OF CONTRACT OR BREACH OF WARRANTY OF PACIFIC POWER SOURCE OR ANY SUPPLIER, AND EVEN IF PACIFIC POWER SOURCE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

11. LIMITATION OF LIABILITY AND REMEDIES. NOTWITHSTANDING ANY DAMAGES THAT YOU MIGHT INCUR FOR ANY REASON WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ALL DAMAGES REFERENCED ABOVE AND ALL DIRECT OR GENERAL DAMAGES), THE ENTIRE LIABILITY OF PACIFIC POWER SOURCE UNDER ANY PROVISION OF THIS SUPPLEMENTAL EULA AND YOUR EXCLUSIVE REMEDY FOR ALL OF THE FOREGOING (EXCEPT FOR ANY REMEDY OF REPAIR OR REPLACEMENT ELECTED BY PACIFIC POWER SOURCE WITH RESPECT TO ANY BREACH OF THE LIMITED WARRANTY) SHAL BE LIMITED TO THE GREATER OF THE AMOUNT ACTUALLY PAID BY YOU FOR THE ADD-ON SOFTWARE. THE FOREGOING LIMITATIONS, EXCLUSIONS AND DISCLAIMERS (INCLUDING SECTIONS 7, 8, AND 9 ABOVE) SHALL APPLY TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EVEN IF ANY REMEDY FAILS ITS ESSENTIAL PURPOSE.

12. INDEMNITY. You unequivocally and expressly agree to defend and indemnify Pacific Power Source against any claims, costs, liabilities or expenses ("Claims") incurred or suffered by Pacific Power Source relating to the physical injury to or death of any person, or damage to or loss or destruction of any tangible property, or infringement claims arising out of, as a result of, or in connection with Your use of the ADD-ON Software or this SUPPLEMENTAL EULA irrespective of causation or fault, except that the foregoing indemnity obligation shall not apply to the extent such Claim arises solely from the GROSS NEGLIGENCE OR willful misconduct of Pacific Power Source. In the event You fail to timely defend and indemnify Pacific Power Source for any Claim, Pacific Power source will have the right to defend itself and recover all costs associated therewith from You, including attorney's fees, expert fees and costs, in addition to any indemnity payments made to settle. In the event of a Claim, Pacific Power Source shall have the right to direct the litigation, approve of counsel and approve of any settlement with respect to the Claim. Pacific Power SOURCE will use best efforts to promptly notify You of any Claims. Pacific Power Source shall provide assistance to You in any defense undertaken by You by providing, if applicable, witnesses, documentary or other evidence and other assistance, as may be reasonably requested by You in connection with its defense, provided that the out-of-pocket cost of such assistance will be borne by You.

13. ENTIRE AGREEMENT. This SUPPLEMENTAL EULA (including any addendum or amendment to this Supplemental EULA which is included with the Add-on Software) is the entire (fully integrated) agreement between You and Pacific Power Source relating to the Add-on Software and the support services (if any) and they supersede all prior or contemporaneous oral or written communications, proposals and representations with respect to the Add-on Software or any other subject matter covered by this Supplemental EULA. To the extent the terms of any Pacific Power Source website or other policies conflict with the terms of this Supplemental EULA, the terms of this Supplemental EULA shall control.

14. GENERAL. (a) This Supplemental EULA is severable, such that the invalidity of any term of this Agreement shall not affect the validity of any other term. Any such invalid term shall be subject to partial enforcement to the maximum extent permitted under applicable law. (b) This Supplemental EULA may not be modified or amended except by a written instrument setting forth such modification or amendment which is signed by the parties and specifically states that it modifies or amends this Supplemental EULA. (c) The headings contained in this Supplemental EULA are for convenience only and shall not be deemed to be a substantive part of this Supplemental EULA; (d) This Supplemental EULA shall inure to the benefit of and be binding upon the parties, their successors and assigns. Except as set forth herein, this Supplemental EULA may not be assigned by either party without the prior written consent of the other party. (e) This Supplemental EULA will be deemed to have been prepared by each of the parties jointly and shall not be interpreted against either party on the ground that such party drafted the Supplemental EULA or caused it to be prepared. (f) In the event of a conflict between the Supplemental EULA and any other Software related agreement between You and Pacific Power Source, this Supplemental EULA shall control. (g) If any action is brought by either party to this Supplemental EULA against the other regarding the subject matter hereof, the prevailing party shall be entitled to recover, in addition to any relief granted, reasonable attorney fees, expert fees and court costs. (h) Any waiver of any kind by either Party of a breach of this Supplemental EULA shall not operate or be construed as a waiver of any subsequent breach.

Should you have any questions concerning this Supplemental EULA, or if you desire to contact Pacific Power Source for any reason, please contact:

Pacific Power Source, Inc.,
17692 Fitch Irvine, California 92614
Tel: (800) 854-2433 or +1-949-251-1800
Email: support@pacificpower.com

TABLE OF CONTENTS   PAGE

LIST OF TABLES   PAGE

1 Introduction

Pacific Power Source has developed various test sequence packages to assist test engineers in performing standard military or industrial compliance tests. The BOEING 787B3-0147 test sequence option is one of many options associated with Test Manager that Pacific Power Source offers.

The BOEING 787B3-0147 test sequence option is based on the 787 Electrical Power Quality and Design Requirements Document, and consists of test sequences for single-phase and three-phase equipment in AC power categories. The Pacific Power Source Inc. BOEING 787B3-0147 option covers all AC power groups contained in the test standard.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes
AC	Single-Phase, 360-800 Hz VF, 115 V	115Vrms L-N	360 – 800Hz	Single Phase
AC	Three-Phase, 360-800 Hz VF, 115 V	115Vrms L-N	360 – 800Hz	Three Phase
AC	Single-Phase, 360-800 Hz VF, 235 V	235Vrms L-N	360 – 800Hz	Single Phase
AC	Three-Phase, 360-800 Hz VF, 235 V	235Vrms L-N	360 – 800Hz	Three Phase
AC	Ground Handling Equipment, 115V	115Vrms L-N	360 – 441Hz	Single Phase
AC	Ground Handling Equipment, 115V	115Vrms L-N	360 – 441Hz	Three Phase
AC	Ground Handling Equipment, 235V	235Vrms L-N	360 – 441Hz	Single Phase
AC	Ground Handling Equipment, 235V	235Vrms L-N	360 – 441Hz	Three Phase

A test report in Rich Text Format (.rtf) is automatically generated for each test sequence performed in UPC Test Manger. Test steps, parameter measurements, waveforms and pass/fail test results are recorded as appropriate in the test report. Test engineers can also modify any of the pre-built test sequences and reports to better suit their needs.

This manual is neither a handbook to BOEING 787B3-0147 compliance testing nor a step-by-step tutorial for operation of UPC Studio and UPC Test Manager. It is assumed that the test engineer is familiar with BOEING 787B3-0147 test procedures and setups as well as UPC studio and UPC Test Manager Operation before using this BOEING 787B3-0147 test sequence option.

For UPC studio and UPC Test Manager Operation, please refer to the Pacific Power Source UPC Studio and UPC Test Manager operation manuals.

Other test equipment in addition to a Pacific Power Source AC Source may be required for certain tests while using the BOEING 787B3-0147 test sequence option. These additional requirements are detailed in Section 7, Test Sequence Coverage.

2   Hardware Requirements

Pacific Power Source units must meet the following requirements to perform the BOEING 787B3-0147 compliance tests:

- Single-phase test: the power source must have dual-range capability: either single-phase/transformer coupled or split-phase output forms.

- Three-phase test: the power source must have dual-range capability: direct output mode and transformer coupled output mode.

The amount of power or current required will vary according to the demands of the load. For detailed output capabilities on each power source model, refer to the Pacific Power Source Operation Manuals for the preferred power source units.

3 Software Installation

The BOEING 787B3-0147 test sequence is distributed as a single install program. The following executable file constitutes the BOEING 787B3-0147 Option package:
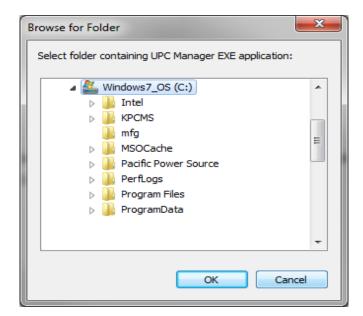
149126 Boeing 787B3-0147 Rev C Test Suite v1.0.exe

Note: The version number "v1.0" may vary as new updates are released.

Test Sequence software operation requires that Pacific's UPC Manager and Test Manager Software products must already be installed on the target PC. During installation, Pacific Power Source's test sequence files will be extracted into a default directory:

C:\Pacific Power Source\UPC Manager\Test Manager

If the setup installer cannot locate UPC Manager, a dialog appears asking test engineers to browse to the UPC Manager.exe application as shown below.

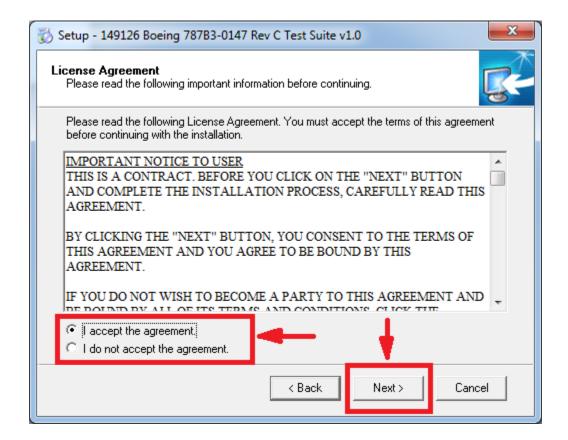To install the BOEING 787B3-0147 Option test sequences:

- Double click the executable file:

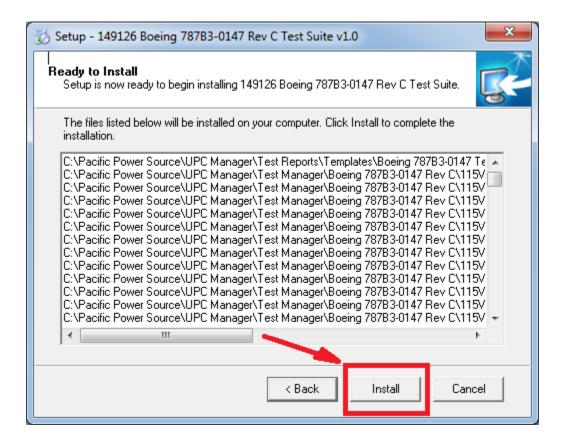149126 Boeing 787B3-0147 Rev C Test Suite v1.0.exe
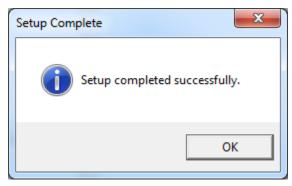
The Setup Wizard window appears as shown below.

- Click **Next** button to get to the License Agreement window.

- Read the License Agreement and check "I accept the agreement" to continue.
- Click **Next** button to get to Ready to install window as shown below.

- Click **Install** button to finish the installation.

- Depending on the size of the installed file, this process may take some amount of time. No activity is visible on the PC screen during this time but rest assured, the installation is progressing in the back ground.

- Wait till the dialog box shown below occurs to indicate the installation process has completed and click OK to complete the setup process.

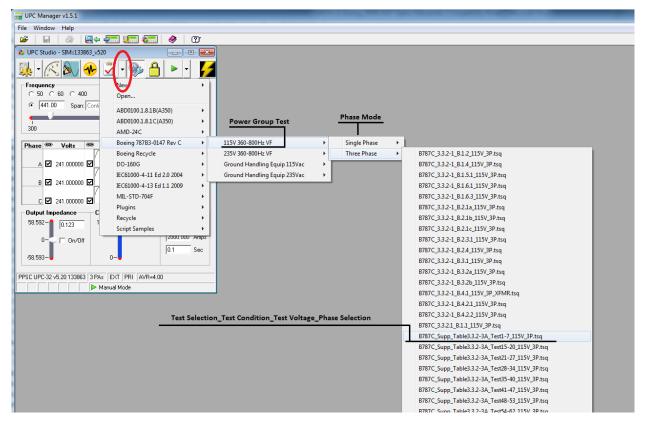# 4   Software Removal

To uninstall BOEING 787B3-0147 test sequence files or packages:

- Navigate to the directory where the test sequence files or folder are saved.

- Delete the desired files or folders from the directory.

Note: There are no Windows$^{®}$ System files or registration entries associated with the test sequences so no uninstall program is required to remove the option files from a PC.

5   BOEING 787B3-0147 Test Manager Window

After the test sequence software is successfully installed, the individual test sequences are accessed from the Test Manager menu in UPC Studio as shown.

BOEING 787B3-0147 test sequences are grouped based on categories of equipment defined in the test standard. The individual test sequence files (B787C_3.3.2-1_B.4.2.2_115V_3P.tsq) are named using the following naming convention:

Test Table No.	Test item No.	Test Voltage	Test Phase	AC source coupling	File Extension
N.N.N-N_	N.N.N.N_	NNNN_	NN_	Optional	.tsq
3.3.2-1	B.4.2.2	115V	3P	.. Direct Coupled _SPLIT Phase mode _XFMR Transformer coupled	

Thus, file B787C_3.3.2-1_B.4.2.2_115V_3P.tsq is the test file for three phase, and is implemented using the low voltage range of the AC Source (Direct coupled output).
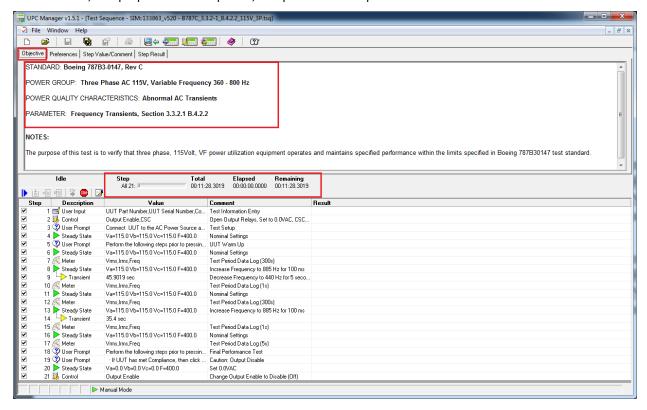
Note: While operation of individual test sequences is described in this document, normally it would be expected that the test engineers would use these test sequences to build a test plan. See Pacific Power Source UPC Test Manager Operation Manual for test plan detail.

6 BOEING 787B3-0147 Test Sequence Windows

A typical test sequence is organized in five windows/ tabs: **Objective, Preferences, Step Value / Comment, Step Result, and Test Report**. The content and purpose of these windows are described in the following sections. For more definition of each field see Pacific Power Source UPC Test Manager Operation Manual.

6.1 Objective Window

In the **Objective** window, illustrated below, the BOEING 787B3-0147 section number, power group, operating condition, test purpose and time period, and parameter setup values are described in detail.

6.2   Preference Window

In the Preferences window shown below, "Allow Edit" is checked by default; The Pacific Power Source part number and version associated with the test sequence are indicated.
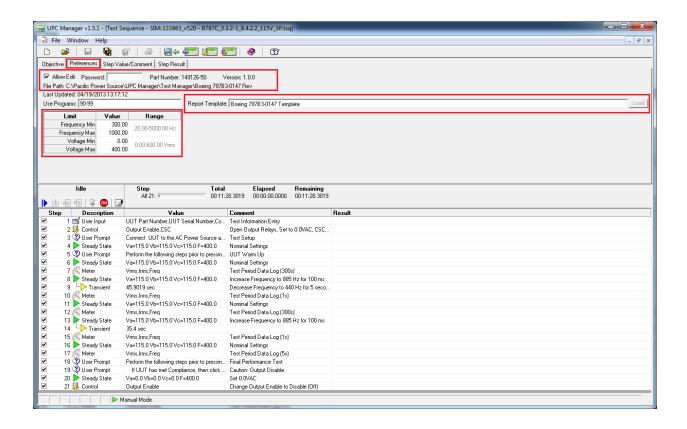
⚠	# CAUTION
Test Sequences are distributed unprotected, providing the test engineer with the ability to edit and modify individual test and output sequences. It is recommended that a back-up copy of the output sequences be maintained to prevent inadvertent corruption of the factory supplied sequences.	

The Report Template used with active test sequence is named "*Boeing 787B3-0147 Template*", and is automatically loaded from a default directory: *C:\Pacific Power Source\UPC Manager\Test Reports\Templates;*

If a "***" appears at the end of the template file name (i.e *Boeing 787B3-0147 Template*),* It means data has been collected during a test and the test report has been updated but the report file has NOT yet been saved.

6.3 Preference Window (continued)

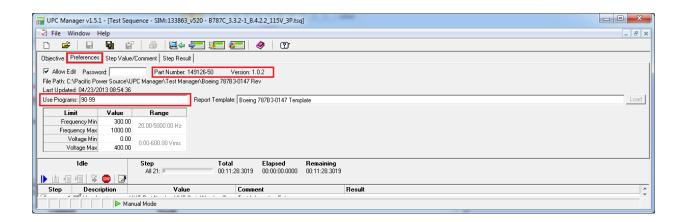"Use program" is set to use UPC programs 90-99 as default value; a set of suitable minimum and maximum values for each parameter are defined in the Limits table. "File path" and "Last update" information are updated each time when the test sequence is activated.
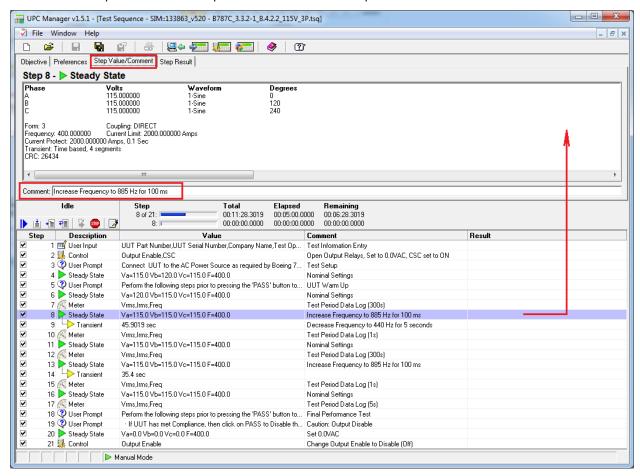
The BOEING 787B3-0147 test sequences are created to allow test engineers to modify test sequence settings based on their preferences and needs, as well as to keep track of how many times a file has been changed and saved. Each time a test sequence file is modified and saved under the original name, the 3rd digit of the version number, appearing in the **Preference** window, will increment by 1(i.e x.x.1). In the illustration below, the version 1.0.2 means the active test sequence file has been modified and saved twice.

If a test engineer will be modifying a test sequence, it is recommended that a copy of the original file first be saved in a different folder as changes overwrite the existing file. For detail information on test sequence modification, please see UPC Test Manager Operation Manual.
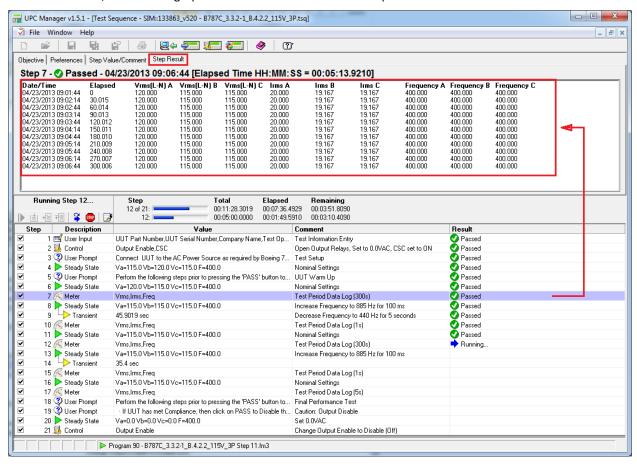
6.4 Step Value/Comment Window

In the **Step Value/Comment** window, the step settings are displayed for each selected item in the Step Table window. Purpose and test descriptions for individual test steps are summarized in the "Comment" text box.
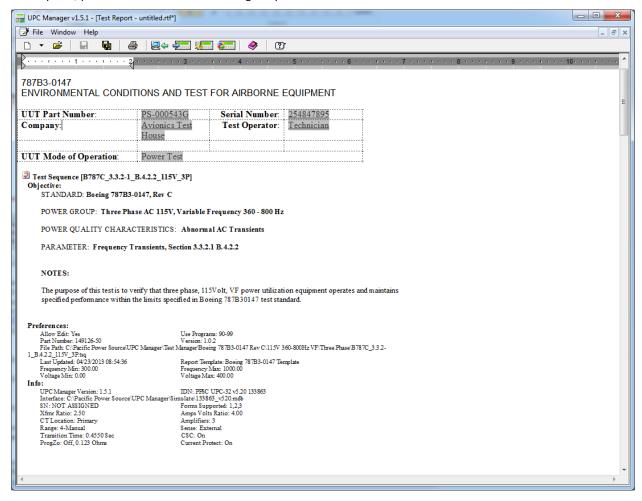
6.5   Step Result Window

In the **Step Result** window, the test result from each selected step is recorded. The results are recorded in the forms of text, numbers or graphs as defined in the active test sequence.

6.6   Test Report Window

After the test sequence execution is completed, a test report is generated using the template file defined in the **Preference** window. All test detail information including file name, objective, preference settings, and test results are recorded in the test report as shown below. For detailed information on viewing and saving test reports, please refer to UPC Test Manager Operation Manual.

7 Test Reports

Test reports are automatically created as each test sequence is executed. Generally, information contained in each step is added to the report as each step is executed. This includes the step type, parameters set, any measurement values recorded, comments and the result of each step (Pass or Fail).

Test reports can be used as is or further customized by the user. This chapter covers some of the possible changes that can be made as needed.

7.1 Template Files

Reports are based on a report template that is installed at the same time as the test sequences in the following directory:

"C:\Pacific Power Source\UPC Manager\Test Reports\Templates"

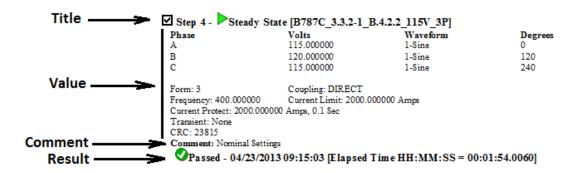Template files can be blank or contain introductory text, graphics, form fields, page / paragraph / character formatting, page header and footer (page numbering, date etc.).

7.2 Report Entries

Running a test sequence or test plan appends the results of each step at the end of test report. Running a test sequence from the beginning (using the Start icon in the Run Toolbar) initializes the test report from the selected template file then adds the test sequence Objective and Preferences. This creates a clean report each time the test sequence is run. Running a test sequence using the other controls does not clear the test report or add the Objective or Preferences, making it easier to troubleshoot (single step etc.) a test.

After each step runs, the information field about that step is appended to the test report as shown below. This information includes the Title, Value, Comment, Result and Data of each step.

Title includes the enable checkbox, step number, icon, type and test sequence file name. Value and Comment are the test sequence information from the Step Value/Comment tab (design window). Result shows the result icon, title, date/time the step completed and the elapsed time the step completed from the beginning of the test. Note that not all steps produce data. The data also includes any errors that occurred running the step. Result and Data are also shown in the Step Result tab in the test sequence window .

7.3   Customizing Test Reports

There are several ways to customize test reports. Some possibilities are:

1.   Change Headers and or Footers

2.   Reformat layout, format tables and or fonts after the report is saved.

7.3.1   Report Template Headers and Footers

The provided BOEING 787B3-0147 Report template files contain a simple footer which contains only basic information and no header.

The footer contains the following information.

Pacific Power Source, Inc.	25 of 43	5/23/2013 10:39:40 AM
149153-10_BOEING 787B3-0147 Option Manual.doc v1.0.0		
	Irvine CA, USA	

A Header can be added by opening either of the two provided template files using MS Word.

Boeing 787B3-0147 Template.rtf

Open the template file and select the "Insert" Ribbon tab. Click on "Header" in the Header & Footer" section. Select form the available list of header formats. This will insert a header on the first page and every subsequent page. You can insert your company's logo to create a custom look for your reports.
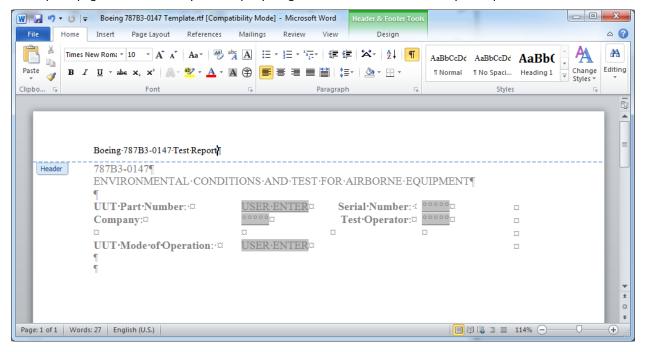
Figure 1: Adding Custom Report Headers to Report Template using MS Word

The same feature can be used to edit the existing report footer as needed.

Once satisfied with the look, save the report template. If you want to preserve the original templates provided, rename them to a different file name before saving your customer version. You can also restore the original report template files by re-installing the BOEING 787B3-0147 option but this will also re-install all test sequences.
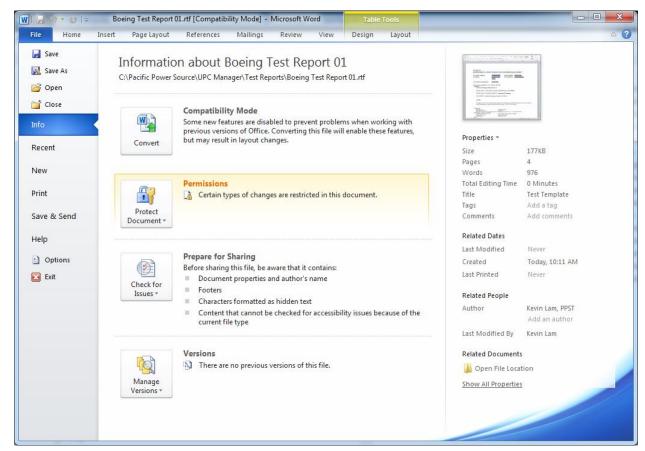
7.3.2   Editing existing Reports
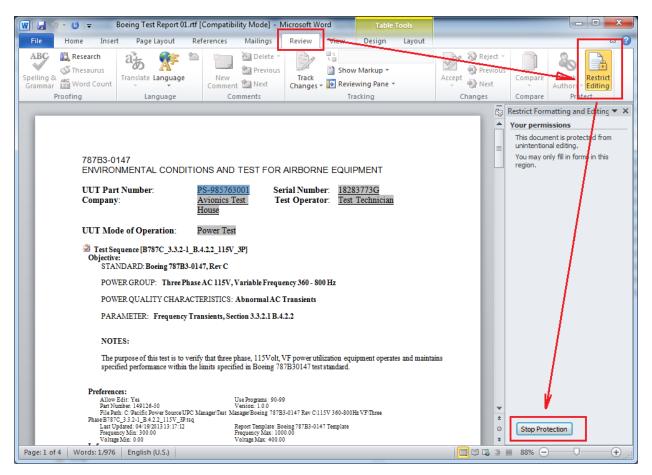
As a rule, test reports generated by executing a test sequence are locked and cannot be edited. If needed, it is possible to unlock a report in order to add additional information or format data is a different way than the standard report provides.

To edit an existing test report, proceed as follows:
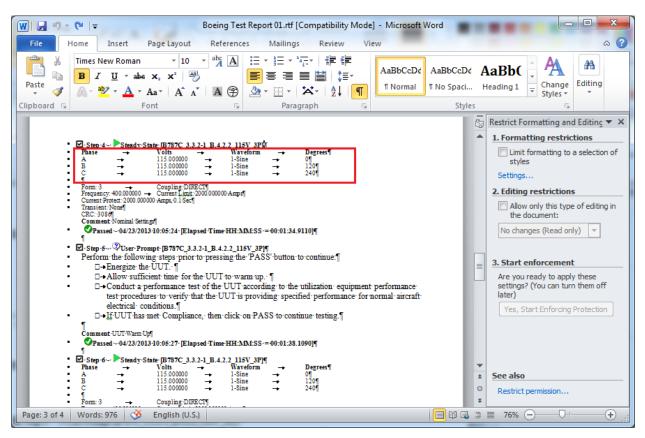
1. Complete the test sequence and save the report when prompted as the end of the test sequence.

2. Use MS Word to open the file located in the Reports directory of UPC Studio, typically:

    C:\Pacific Power Source\UPC Manager\Test Reports

3. Clicking with the mouse on any area or page of the test report will take you to the top of the first page of the report. This is due to the fact that all sections of the report are restricted for editing.

4. To verify this, select the File menu tab in MS Word and select "Info" on the left bar.

5. The second tile down is labeled "Protect Document" and shows the Permissions that apply to this document.
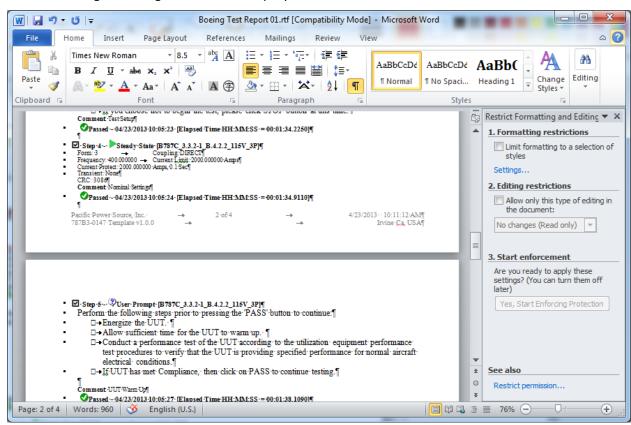
6. To change permissions, select the "Review" ribbon in MS Word and click on the far right Button labeled "Restrict Editing".

7. This brings up a "Restrict Formatting and Editing" column on the right side of the screen. At the bottom of this bar is a button called "Stop Protection". Click this button to disable the editing restrictions that are in effect.
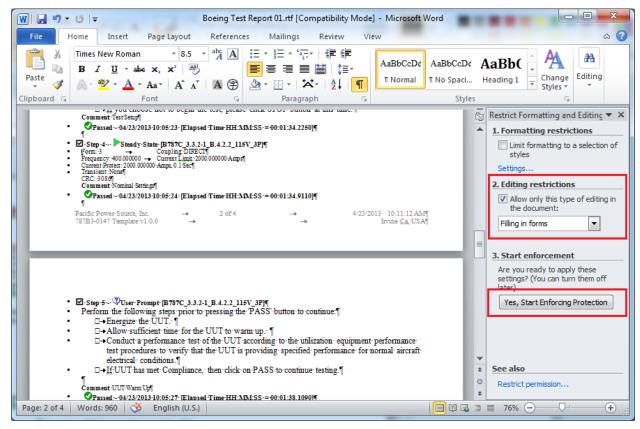
8. Once unlocked, changes may be made to any test step. For example, the setting information for step 4 could be removed as follow. Below is what the step 4 entry in the report.

9. Deleting the setting information of Step 4 yields the result shown below.

10. When all formatting changes are completed, you can lock down the file using the same "Restrict Formatting and Editing" column on the right side of the screen.

11. To set back to the original report restrictions, Select 2. Editing restrictions and check the box "Allow only this type of editing in the document:". Select "Filling in forms" from the dropdown box and click the "Yes, Start Enforcing Protection" button below.

12. When prompted for a password, you can provide one if desired or leave blank and click on the OK button. Leaving password field blank means no password is required to unlock the document.

13. Any changes should be saved using the orignal file name that was assigned when first created.

8 BOEING 787B3-0147 Test Sequence Coverage

8.1 Power Group Coverage

The BOEING 787B3-0147 power groups supported by this option are shown in Table 1.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes
AC	Single-Phase, 360-800 Hz VF, 115 V	115Vrms L-N	360 – 800Hz	Single Phase
AC	Three-Phase, 360-800 Hz VF, 115 V	115Vrms L-N	360 – 800Hz	Three Phase
AC	Single-Phase, 360-800 Hz VF, 235 V	235Vrms L-N	360 – 800Hz	Single Phase
AC	Three-Phase, 360-800 Hz VF, 235 V	235Vrms L-N	360 – 800Hz	Three Phase
AC	Ground Handling Equipment, 115V	115Vrms L-N	360 – 441Hz	Single Phase
AC	Ground Handling Equipment, 115V	115Vrms L-N	360 – 441Hz	Three Phase
AC	Ground Handling Equipment, 235V	235Vrms L-N	360 – 441Hz	Single Phase
AC	Ground Handling Equipment, 235V	235Vrms L-N	360 – 441Hz	Three Phase

Table 1: BOEING 787B3-0147 Option Power Group Coverage

8.2 Test Coverage Summary

The BOEING 787B3-0147 test sequence coverage is summarized in Table 2. Tests marked with "Y" are covered in BOEING 787B3-0147 option. Tests marked with "N/A" are not applicable to the related sections for BOEING 787B3-0147.

Test No.	Description	115VAC	235VAC	Comments
1.1	Individual Phase Voltage	Y	Y	
1.2	Average of Three Phase Voltages	Y	Y	
1.3	Phase Displacement	Y	Y	Three phase equipment only
1.4	Phase Voltage Unbalance	Y	Y	
1.5	Voltage Modulation	Y	Y	
1.6.1	Total Harmonic Content	Y	Y	
1.6.2	Individual Harmonic Content	R	R	Requires external audio generator
1.6.3	DC Content	R	R	Requires external DC power supplies
1.8	Frequency Modulation	Y	Y	
2.1	Voltage Transients	Y	Y	
2.2	Voltage Spikes	N	N	Not supported, requires additional equipment
2.3.1	Maximum Ramp Rate	Y	Y	
2.3.2	Frequency Transients	Y	Y	

Test No.	Description	115VAC	235VAC	Comments
2.4	Multiple Stroke Power Interruptions	Y	Y	
3.1	Abnormal Individual Phase Voltage	Y	Y	Single phase equipment only
3.2	Abnormal Average of Three Phase Voltages	Y	Y	
4.1	Abnormal Voltage Transients	Y	Y	
4.2.1	Abnormal Maximum Ramp Rate	Y	Y	
4.2.2	Abnormal Frequency Transients	Y	Y	
4.3	Abnormal DC Content	N	N	Not supported due to power source capabilities
SUPP	Supplementary Transient Tests	Y	Y	

Table 2: BOEING 787B3-0147 Test Coverage Summary Table

Legend: Y = Full support   N/A = Not Applicable – No Test Required
R = Requires Additional Equipment   Z = Requires Prog-Z Option
N = Not supported

8.3   Test Sequence Files by Power Group Tables

For each supported AC Power Group, the tables in this section show the test numbers, a short description of the test, and associated test sequence file names as provided by this option.

NOTE: Depending on the power source used to perform tests with the BOEING 787B3-0147 option, additional equipment may be required if the test or load requirements are beyond the power source capabilities. These additional requirements are specified in the above Test Coverage Summary Table, "Comments" column.

Test	Description	Test File Name
115V 360-800Hz VF	**Single Phase**	
1.1	Individual Phase Voltage	B787C_3.3.2.1_B.1.1_115V_1P.tsq
1.2	Average of Three Phase Voltages	B787C_3.3.2-1_B.1.2_115V_1P.tsq
1.4	Phase Voltage Unbalance	B787C_3.3.2-1_B.1.4_115V_1P.tsq
1.5.1	Voltage Modulation	B787C_3.3.2-1_B.1.5.1_115V_1P.tsq
1.6.1	Total Harmonic Content	B787C_3.3.2-1_B.1.6.1_115V_1P.tsq
1.6.2	Individual Harmonic Content	B787C_3.3.2-1_B.1.6.2_115V_1P.tsq
1.6.3	DC Content	B787C_3.3.2-1_B.1.6.3_115V_1P.tsq
2.1a	Voltage Transients	B787C_3.3.2.1_B.2.1a-1_115V_1P.tsq
2.1b	Voltage Transients	B787C_3.3.2.1_B.2.1a-3_115V_1P.tsq
2.1c	Voltage Transients	B787C_3.3.2.1_B.2.1a-5_115V_1P.tsq
2.3.1	Maximum Ramp Rate	B787C_3.3.2-1_B.2.3.1_115V_1P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_3.3.2-1_B.2.4_115V_1P.tsq
3.1	Abnormal Individual Phase Voltage	B787C_3.3.2-1_B.3.1_115V_1P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2a_115V_1P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2b_115V_1P.tsq
4.1 (XFMR)	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_115V_1P_XFMR.tsq
4.1 (SPLIT)	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_115V_SPLIT.tsq
4.2.1	Abnormal Maximum Ramp Rate	B787C_3.3.2-1_B.4.2.1_115V_1P.tsq
4.2.2	Abnormal Frequency Transients	B787C_3.3.2-1_B.4.2.2_115V_1P.tsq
SUPP	Table3.3.2-3A Test 1 - 7	B787C_Supp_Table3.3.2-3A_Test1-7_115V_1P.tsq
SUPP	Table3.3.2-3A Test 8 - 14	B787C_Supp_Table3.3.2-3A_Test8-14_115V_1P.tsq
SUPP	Table3.3.2-3A Test 15 - 20	B787C_Supp_Table3.3.2-3A_Test15-20_115V_1P.tsq
SUPP	Table3.3.2-3A Test 21 - 27	B787C_Supp_Table3.3.2-3A_Test21-27_115V_1P.tsq
SUPP	Table3.3.2-3A Test 28 - 34	B787C_Supp_Table3.3.2-3A_Test28-34_115V_1P.tsq

Test	Description	Test File Name
SUPP	Table3.3.2-3A Test 35 - 40	B787C_Supp_Table3.3.2-3A_Test35-40_115V_1P.tsq
SUPP	Table3.3.2-3A Test 41 - 47	B787C_Supp_Table3.3.2-3A_Test41-47_115V_1P.tsq
SUPP	Table3.3.2-3A Test 48 - 53	B787C_Supp_Table3.3.2-3A_Test48-53_115V_1P.tsq
SUPP	Table3.3.2-3A Test 54 - 62	B787C_Supp_Table3.3.2-3A_Test54-62_115V_1P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_115V_1P_XFMR.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_115V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 6	B787C_Supp_Table3.3.2-3B_Test1-6_115V_1P.tsq
SUPP	Table3.3.2-3B Test 7 - 12	B787C_Supp_Table3.3.2-3B_Test7-12_115V_1P.tsq
SUPP	Table3.3.2-3B Test 13 - 18	B787C_Supp_Table3.3.2-3B_Test13-18_115V_1P.tsq
SUPP	Table3.3.2-3B Test 19	B787C_Supp_Table3.3.2-3B_Test19_115V_1P.tsq
115V 360-800Hz VF	**Three Phase**	
1.1	Individual Phase Voltage	B787C_3.3.2.1_B.1.1_115V_3P.tsq
1.2	Average of Three Phase Voltages	B787C_3.3.2-1_B.1.2_115V_3P.tsq
1.3	Phase Displacement (120.0 ± 4°)	B787C_3.3.2.1_B.1.3_115V_3P.tsq
1.4	Phase Voltage Unbalance	B787C_3.3.2-1_B.1.4_115V_3P.tsq
1.5.1	Voltage Modulation	B787C_3.3.2-1_B.1.5.1_115V_3P.tsq
1.6.1	Total Harmonic Content	B787C_3.3.2-1_B.1.6.1_115V_3P.tsq
1.6.2	Individual Harmonic Content	B787C_3.3.2-1_B.1.6.2_115V_3P.tsq
1.6.3	DC Content	B787C_3.3.2-1_B.1.6.3_115V_3P.tsq
2.1a	Voltage Transients	B787C_3.3.2.1_B.2.1a-1_115V_3P.tsq
2.1b	Voltage Transients	B787C_3.3.2.1_B.2.1a-3_115V_3P.tsq
2.1c	Voltage Transients	B787C_3.3.2.1_B.2.1a-5_115V_3P.tsq
2.3.1	Maximum Ramp Rate	B787C_3.3.2-1_B.2.3.1_115V_3P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_3.3.2-1_B.2.4_115V_3P.tsq
3.1	Abnormal Individual Phase Voltage	B787C_3.3.2-1_B.3.1_115V_3P.tsq

Test	Description	Test File Name
3.2a	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2a_115V_3P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2b_115V_3P.tsq
4.1	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_115V_3P_XFMR.tsq
4.2.1	Abnormal Maximum Ramp Rate	B787C_3.3.2-1_B.4.2.1_115V_3P.tsq
4.2.2	Abnormal Frequency Transients	B787C_3.3.2-1_B.4.2.2_115V_3P.tsq
SUPP	Table3.3.2-3A Test 1 - 7	B787C_Supp_Table3.3.2-3A_Test1-7_115V_3P.tsq
SUPP	Table3.3.2-3A Test 8 - 14	B787C_Supp_Table3.3.2-3A_Test8-14_115V_3P.tsq
SUPP	Table3.3.2-3A Test 15 - 20	B787C_Supp_Table3.3.2-3A_Test15-20_115V_3P.tsq
SUPP	Table3.3.2-3A Test 21 - 27	B787C_Supp_Table3.3.2-3A_Test21-27_115V_3P.tsq
SUPP	Table3.3.2-3A Test 28 - 34	B787C_Supp_Table3.3.2-3A_Test28-34_115V_3P.tsq
SUPP	Table3.3.2-3A Test 35 - 40	B787C_Supp_Table3.3.2-3A_Test35-40_115V_3P.tsq
SUPP	Table3.3.2-3A Test 41 - 47	B787C_Supp_Table3.3.2-3A_Test41-47_115V_3P.tsq
SUPP	Table3.3.2-3A Test 48 - 53	B787C_Supp_Table3.3.2-3A_Test48-53_115V_3P.tsq
SUPP	Table3.3.2-3A Test 54 - 62	B787C_Supp_Table3.3.2-3A_Test54-62_115V_3P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_115V_3P_XFMR.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_115V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 6	B787C_Supp_Table3.3.2-3B_Test1-6_115V_3P.tsq
SUPP	Table3.3.2-3B Test 7 - 12	B787C_Supp_Table3.3.2-3B_Test7-12_115V_3P.tsq
SUPP	Table3.3.2-3B Test 13 - 18	B787C_Supp_Table3.3.2-3B_Test13-18_115V_3P.tsq
SUPP	Table3.3.2-3B Test 19	B787C_Supp_Table3.3.2-3B_Test19_115V_3P.tsq
235V 360-800Hz VF	**Single Phase**	
1.1	Individual Phase Voltage	B787C_3.3.2.1_B.1.1_235V_1P.tsq
1.2	Average of Three Phase Voltages	B787C_3.3.2-1_B.1.2_235V_1P.tsq
1.4	Phase Voltage Unbalance	B787C_3.3.2-1_B.1.4_235V_1P.tsq
1.5.1	Voltage Modulation	B787C_3.3.2-1_B.1.5.1_235V_1P.tsq

Test	Description	Test File Name
1.6.1	Total Harmonic Content	B787C_3.3.2-1_B.1.6.1_235V_1P.tsq
1.6.2	Individual Harmonic Content	B787C_3.3.2-1_B.1.6.2_235V_1P.tsq
1.6.3	DC Content	B787C_3.3.2-1_B.1.6.3_235V_1P.tsq
2.1a	Voltage Transients	B787C_3.3.2.1_B.2.1a-1_235V_1P.tsq
2.1b	Voltage Transients	B787C_3.3.2.1_B.2.1a-3_235V_1P.tsq
2.1c	Voltage Transients	B787C_3.3.2.1_B.2.1a-5_235V_1P.tsq
2.3.1	Maximum Ramp Rate	B787C_3.3.2-1_B.2.3.1_235V_1P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_3.3.2-1_B.2.4_235V_1P.tsq
3.1	Abnormal Individual Phase Voltage	B787C_3.3.2-1_B.3.1_235V_1P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2a_235V_1P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2b_235V_1P.tsq
4.1	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_235V_1P.tsq
4.1 (SPLIT)	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_235V_SPLIT.tsq
4.2.1	Abnormal Maximum Ramp Rate	B787C_3.3.2-1_B.4.2.1_235V_1P.tsq
4.2.2	Abnormal Frequency Transients	B787C_3.3.2-1_B.4.2.2_235V_1P.tsq
SUPP	Table3.3.2-3A Test 1 - 7	B787C_Supp_Table3.3.2-3A_Test1-7_235V_1P.tsq
SUPP	Table3.3.2-3A Test 8 - 14	B787C_Supp_Table3.3.2-3A_Test8-14_235V_1P.tsq
SUPP	Table3.3.2-3A Test 15 - 20	B787C_Supp_Table3.3.2-3A_Test15-20_235V_1P.tsq
SUPP	Table3.3.2-3A Test 21 - 27	B787C_Supp_Table3.3.2-3A_Test21-27_235V_1P.tsq
SUPP	Table3.3.2-3A Test 28 - 34	B787C_Supp_Table3.3.2-3A_Test28-34_235V_1P.tsq
SUPP	Table3.3.2-3A Test 35 - 40	B787C_Supp_Table3.3.2-3A_Test35-40_235V_1P.tsq
SUPP	Table3.3.2-3A Test 41 - 47	B787C_Supp_Table3.3.2-3A_Test41-47_235V_1P.tsq
SUPP	Table3.3.2-3A Test 48 - 53	B787C_Supp_Table3.3.2-3A_Test48-53_235V_1P.tsq
SUPP	Table3.3.2-3A Test 54 - 62	B787C_Supp_Table3.3.2-3A_Test54-62_235V_1P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_235V_1P.tsq

Test	Description	Test File Name
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_235V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 6	B787C_Supp_Table3.3.2-3B_Test1-6_235V_1P.tsq
SUPP	Table3.3.2-3B Test 7 - 12	B787C_Supp_Table3.3.2-3B_Test7-12_235V_1P.tsq
SUPP	Table3.3.2-3B Test 13 - 18	B787C_Supp_Table3.3.2-3B_Test13-18_235V_1P.tsq
SUPP	Table3.3.2-3B Test 19	B787C_Supp_Table3.3.2-3B_Test19_235V_1P.tsq
235V 360-800Hz VF	**Three Phase**	
1.1	Individual Phase Voltage	B787C_3.3.2.1_B.1.1_235V_3P.tsq
1.2	Average of Three Phase Voltages	B787C_3.3.2-1_B.1.2_235V_3P.tsq
1.3	Phase Displacement (120.0 ± 4°)	B787C_3.3.2.1_B.1.3_235V_3P.tsq
1.4	Phase Voltage Unbalance	B787C_3.3.2-1_B.1.4_235V_3P.tsq
1.5.1	Voltage Modulation	B787C_3.3.2-1_B.1.5.1_235V_3P.tsq
1.6.1	Total Harmonic Content	B787C_3.3.2-1_B.1.6.1_235V_3P.tsq
1.6.2	Individual Harmonic Content	B787C_3.3.2-1_B.1.6.2_235V_3P.tsq
1.6.3	DC Content	B787C_3.3.2-1_B.1.6.3_235V_3P.tsq
2.1a	Voltage Transients	B787C_3.3.2.1_B.2.1a-1_235V_3P.tsq
2.1b	Voltage Transients	B787C_3.3.2.1_B.2.1a-3_235V_3P.tsq
2.1c	Voltage Transients	B787C_3.3.2.1_B.2.1a-5_235V_3P.tsq
2.3.1	Maximum Ramp Rate	B787C_3.3.2-1_B.2.3.1_235V_3P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_3.3.2-1_B.2.4_235V_3P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2a_235V_3P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_3.3.2-1_B.3.2b_235V_3P.tsq
4.1	Abnormal Voltage Transients	B787C_3.3.2-1_B.4.1_235V_3P.tsq
4.2.1	Abnormal Maximum Ramp Rate	B787C_3.3.2-1_B.4.2.1_235V_3P.tsq
4.2.2	Abnormal Frequency Transients	B787C_3.3.2-1_B.4.2.2_235V_3P.tsq
SUPP	Table3.3.2-3A Test 1 - 7	B787C_Supp_Table3.3.2-3A_Test1-7_235V_3P.tsq

Test	Description	Test File Name
SUPP	Table3.3.2-3A Test 8 - 14	B787C_Supp_Table3.3.2-3A_Test8-14_235V_3P.tsq
SUPP	Table3.3.2-3A Test 15 - 20	B787C_Supp_Table3.3.2-3A_Test15-20_235V_3P.tsq
SUPP	Table3.3.2-3A Test 21 - 27	B787C_Supp_Table3.3.2-3A_Test21-27_235V_3P.tsq
SUPP	Table3.3.2-3A Test 28 - 34	B787C_Supp_Table3.3.2-3A_Test28-34_235V_3P.tsq
SUPP	Table3.3.2-3A Test 35 - 40	B787C_Supp_Table3.3.2-3A_Test35-40_235V_3P.tsq
SUPP	Table3.3.2-3A Test 41 - 47	B787C_Supp_Table3.3.2-3A_Test41-47_235V_3P.tsq
SUPP	Table3.3.2-3A Test 48 - 53	B787C_Supp_Table3.3.2-3A_Test48-53_235V_3P.tsq
SUPP	Table3.3.2-3A Test 54 - 62	B787C_Supp_Table3.3.2-3A_Test54-62_235V_3P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_235V_3P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_Supp_Table3.3.2-3A_Test63-74_235V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 6	B787C_Supp_Table3.3.2-3B_Test1-6_235V_3P.tsq
SUPP	Table3.3.2-3B Test 7 - 12	B787C_Supp_Table3.3.2-3B_Test7-12_235V_3P.tsq
SUPP	Table3.3.2-3B Test 13 - 18	B787C_Supp_Table3.3.2-3B_Test13-18_235V_3P.tsq
SUPP	Table3.3.2-3B Test 19	B787C_Supp_Table3.3.2-3B_Test19_235V_3P.tsq
Ground Handling Equip	**115VAC - Single Phase**	
1.1	Individual Phase Voltage	B787C_GHE_3.3.2.1_B.1.1_115V_1P.tsq
1.2	Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.1.2_115V_1P.tsq
1.4	Phase Voltage Unbalance	B787C_GHE_3.3.2-1_B.1.4_115V_1P.tsq
1.5.1	Voltage Modulation	B787C_GHE_3.3.2-1_B.1.5.1_115V_1P.tsq
1.6.1	Total Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.1_115V_1P.tsq
1.6.2	Individual Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.2_115V_1P.tsq
1.6.3	DC Content	B787C_GHE_3.3.2-1_B.1.6.3_115V_1P.tsq
2.1a	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-1_115V_1P.tsq
2.1b	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-3_115V_1P.tsq
2.1c	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-5_115V_1P.tsq

Test	Description	Test File Name
2.3.2	Maximum Ramp Rate	B787C_GHE_3.3.2-1_B.2.3.2_115V_1P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_GHE_3.3.2-1_B.2.4_115V_1P.tsq
3.1	Abnormal Individual Phase Voltage	B787C_GHE_3.3.2-1_B.3.1_115V_1P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2a_115V_1P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2b_115V_1P.tsq
4.1 (XFMR)	Abnormal Voltage Transients	B787C_GHE_3.3.2-1_B.4.1_115V_1P_XFMR.tsq
4.1 (SPLIT)	Abnormal Voltage Transients	B787C_GHE_3.3.2-1_B.4.1_115V_SPLIT.tsq
4.2.2	Abnormal Frequency Transients	B787C_GHE_3.3.2-1_B.4.2.2_115V_1P.tsq
SUPP	Table3.3.2-3A Test 1 - 10	B787C_GHE_Supp_Table3.3.2-3A_Test1-10_115V_1P.tsq
SUPP	Table3.3.2-3A Test 11 - 20	B787C_GHE_Supp_Table3.3.2-3A_Test11-20_115V_1P.tsq
SUPP	Table3.3.2-3A Test 21 - 30	B787C_GHE_Supp_Table3.3.2-3A_Test21-30_115V_1P.tsq
SUPP	Table3.3.2-3A Test 31 - 40	B787C_GHE_Supp_Table3.3.2-3A_Test31-40_115V_1P.tsq
SUPP	Table3.3.2-3A Test 41 - 50	B787C_GHE_Supp_Table3.3.2-3A_Test41-50_115V_1P.tsq
SUPP	Table3.3.2-3A Test 51 - 62	B787C_GHE_Supp_Table3.3.2-3A_Test51-62_115V_1P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_115V_1P_XFMR.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_115V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 11	B787C_GHE_Supp_Table3.3.2-3B_Test1-11_115V_1P.tsq
SUPP	Table3.3.2-3B Test 12 - 19	B787C_GHE_Supp_Table3.3.2-3B_Test12-19_115V_1P.tsq
Ground Handling Equip	**115VAC - Three Phase**	
1.1	Individual Phase Voltage	B787C_GHE_3.3.2.1_B.1.1_115V_3P.tsq
1.2	Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.1.2_115V_3P.tsq
1.3	Phase Displacement (120.0 ± 4°)	B787C_GHE_3.3.2.1_B.1.3_115V_3P.tsq
1.4	Phase Voltage Unbalance	B787C_GHE_3.3.2-1_B.1.4_115V_3P.tsq
1.5.1	Voltage Modulation	B787C_GHE_3.3.2-1_B.1.5.1_115V_3P.tsq
1.6.1	Total Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.1_115V_3P.tsq

Test	Description	Test File Name
1.6.2	Individual Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.2_115V_3P.tsq
1.6.3	DC Content	B787C_GHE_3.3.2-1_B.1.6.3_115V_3P.tsq
2.1a	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-1_115V_3P.tsq
2.1b	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-3_115V_3P.tsq
2.1c	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-5_115V_3P.tsq
2.3.2	Maximum Ramp Rate	B787C_GHE_3.3.2-1_B.2.3.2_115V_3P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_GHE_3.3.2-1_B.2.4_115V_3P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2a_115V_3P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2b_115V_3P.tsq
4.1 (XFMR)	Abnormal Voltage Transients	B787C_GHE_3.3.2-1_B.4.1_115V_3P_XFMR.tsq
4.2.2	Abnormal Frequency Transients	B787C_GHE_3.3.2-1_B.4.2.2_115V_3P.tsq
SUPP	Table3.3.2-3A Test 1 - 10	B787C_GHE_Supp_Table3.3.2-3A_Test1-10_115V_3P.tsq
SUPP	Table3.3.2-3A Test 11 - 20	B787C_GHE_Supp_Table3.3.2-3A_Test11-20_115V_3P.tsq
SUPP	Table3.3.2-3A Test 21 - 30	B787C_GHE_Supp_Table3.3.2-3A_Test21-30_115V_3P.tsq
SUPP	Table3.3.2-3A Test 31 - 40	B787C_GHE_Supp_Table3.3.2-3A_Test31-40_115V_3P.tsq
SUPP	Table3.3.2-3A Test 41 - 50	B787C_GHE_Supp_Table3.3.2-3A_Test41-50_115V_3P.tsq
SUPP	Table3.3.2-3A Test 51 - 62	B787C_GHE_Supp_Table3.3.2-3A_Test51-62_115V_3P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_115V_3P_XFMR.tsq
SUPP	Table3.3.2-3B Test 1 - 11	B787C_GHE_Supp_Table3.3.2-3B_Test1-11_115V_3P.tsq
SUPP	Table3.3.2-3B Test 12 - 19	B787C_GHE_Supp_Table3.3.2-3B_Test12-19_115V_3P.tsq
Ground Handling Equip	**235VAC - Single Phase**	
1.1	Individual Phase Voltage	B787C_GHE_3.3.2.1_B.1.1_235V_1P.tsq
1.2	Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.1.2_235V_1P.tsq
1.4	Phase Voltage Unbalance	B787C_GHE_3.3.2-1_B.1.4_235V_1P.tsq
1.5.1	Voltage Modulation	B787C_GHE_3.3.2-1_B.1.5.1_235V_1P.tsq

Test	Description	Test File Name
1.6.1	Total Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.1_235V_1P.tsq
1.6.2	Individual Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.2_235V_1P.tsq
1.6.3	DC Content	B787C_GHE_3.3.2-1_B.1.6.3_235V_1P.tsq
2.1a	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-1_235V_1P.tsq
2.1b	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-3_235V_1P.tsq
2.1c	Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-5_235V_1P.tsq
2.3.2	Maximum Ramp Rate	B787C_GHE_3.3.2-1_B.2.3.2_235V_1P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_GHE_3.3.2-1_B.2.4_235V_1P.tsq
3.1	Abnormal Individual Phase Voltage	B787C_GHE_3.3.2-1_B.3.1_235V_1P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2a_235V_1P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.3.2b_235V_1P.tsq
4.1	Abnormal Voltage Transients	B787C_GHE_3.3.2-1_B.4.1_235V_1P.tsq
4.1 (SPLIT)	Abnormal Voltage Transients	B787C_GHE_3.3.2-1_B.4.1_235V_SPLIT.tsq
4.2.2	Abnormal Frequency Transients	B787C_GHE_3.3.2-1_B.4.2.2_235V_1P.tsq
SUPP	Table3.3.2-3A Test 1 - 10	B787C_GHE_Supp_Table3.3.2-3A_Test1-10_235V_1P.tsq
SUPP	Table3.3.2-3A Test 11 - 20	B787C_GHE_Supp_Table3.3.2-3A_Test11-20_235V_1P.tsq
SUPP	Table3.3.2-3A Test 21 - 30	B787C_GHE_Supp_Table3.3.2-3A_Test21-30_235V_1P.tsq
SUPP	Table3.3.2-3A Test 31 - 40	B787C_GHE_Supp_Table3.3.2-3A_Test31-40_235V_1P.tsq
SUPP	Table3.3.2-3A Test 41 - 50	B787C_GHE_Supp_Table3.3.2-3A_Test41-50_235V_1P.tsq
SUPP	Table3.3.2-3A Test 51 - 62	B787C_GHE_Supp_Table3.3.2-3A_Test51-62_235V_1P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_235V_1P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_235V_SPLIT.tsq
SUPP	Table3.3.2-3B Test 1 - 11	B787C_GHE_Supp_Table3.3.2-3B_Test1-11_235V_1P.tsq
SUPP	Table3.3.2-3B Test 12 - 19	B787C_GHE_Supp_Table3.3.2-3B_Test12-19_235V_1P.tsq
Ground Handling Equip	**235VAC - Three Phase**	

Test	Description	Test File Name
1.1	Individual Phase Voltage	B787C_GHE_3.3.2.1_B.1.1_235V_3P.tsq
1.2	Average of Three Phase Voltages	B787C_GHE_3.3.2-1_B.1.2_235V_3P.tsq
1.3	Phase Displacement (120.0 ± 4°)	B787C_GHE_3.3.2.1_B.1.3_235V_3P.tsq
1.4	Phase Voltage Unbalance	B787C_GHE_3.3.2-1_B.1.4_235V_3P.tsq
1.5.1	Voltage Modulation	B787C_GHE_3.3.2-1_B.1.5.1_235V_3P.tsq
1.6.1	Total Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.1_235V_3P.tsq
1.6.2	Individual Harmonic Content	B787C_GHE_3.3.2-1_B.1.6.2_235V_3P.tsq
1.6.3	DC Content	B787C_GHE_3.3.2-1_B.1.6.3_235V_3P.tsq
2.1a	Voltage Transients	B787C_GHE_3.3.2-1_B.2.1a_235V_3P.tsq
2.1b	Voltage Transients	B787C_GHE_3.3.2-1_B.2.1b_235V_3P.tsq
2.1c	Voltage Transients	B787C_GHE_3.3.2-1_B.2.1c_235V_3P.tsq
2.3.2	Maximum Ramp Rate	B787C_GHE_3.3.2-1_B.2.3.2_235V_3P.tsq
2.4	Multiple Stroke Power Interruptions	B787C_GHE_3.3.2-1_B.2.4_235V_3P.tsq
3.2a	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2.1_B.2.1a-1_235V_3P.tsq
3.2b	Abnormal Average of Three Phase Voltages	B787C_GHE_3.3.2.1_B.2.1a-3_235V_3P.tsq
4.1	Abnormal Voltage Transients	B787C_GHE_3.3.2.1_B.2.1a-5_235V_3P.tsq
4.2.2	Abnormal Frequency Transients	B787C_GHE_3.3.2-1_B.4.2.2_235V_3P.tsq
SUPP	Table3.3.2-3A Test 1 - 10	B787C_GHE_Supp_Table3.3.2-3A_Test1-10_235V_3P.tsq
SUPP	Table3.3.2-3A Test 11 - 20	B787C_GHE_Supp_Table3.3.2-3A_Test11-20_235V_3P.tsq
SUPP	Table3.3.2-3A Test 21 - 30	B787C_GHE_Supp_Table3.3.2-3A_Test21-30_235V_3P.tsq
SUPP	Table3.3.2-3A Test 31 - 40	B787C_GHE_Supp_Table3.3.2-3A_Test31-40_235V_3P.tsq
SUPP	Table3.3.2-3A Test 41 - 50	B787C_GHE_Supp_Table3.3.2-3A_Test41-50_235V_3P.tsq
SUPP	Table3.3.2-3A Test 51 - 62	B787C_GHE_Supp_Table3.3.2-3A_Test51-62_235V_3P.tsq
SUPP	Table3.3.2-3A Test 63 - 74	B787C_GHE_Supp_Table3.3.2-3A_Test63-74_235V_3P.tsq
SUPP	Table3.3.2-3B Test 1 - 11	B787C_GHE_Supp_Table3.3.2-3B_Test1-11_235V_3P.tsq

Test	Description	Test File Name
SUPP	Table3.3.2-3B Test 12 - 19	B787C_GHE_Supp_Table3.3.2-3B_Test12-19_235V_3P.tsq

Table 3: Section Coverage Table - Power Group - AC

INDEX