Avionics & Shipboard Compliance Test Options

Common Features:

- Comprehensive Test coverage for Commercial and Military Aviation & Shipboard Compliance Test
- Test Report Generation Included to Meet Documentation Requirements
- Easy Customization of Provided Test Sequence Files Allows Greater Test Flexibility
- Ability to Integrate External Test and Measurement Equipment into Test Sequences Using Powerful VB Scripting Tools and VISA Drivers
- Runs on the power source controller and controlled via SmartSource Suite web browser interface

Available Test Standards:

- Airbus ABD0100.1.8 (A380)
- Airbus ABD0100.1.8.1 (A350)
- Airbus AMD24C (A400M)
- Boeing 787B3-0147 (787)
- RTCA/DO-160, Section 16
- MIL-STD 704
- MIL-STD 1399-300, Rev B & Part 1

Contact Pacific Power Source for availability of other Avionics test standard options.

SmartSource Suite
Web Browser Interface

The SmartSource Suite web interface allows control of test seqeunces from a web browser running on either a PC, Tablet or Smartphone. Sequences, test plans and custom reports.

Avionics & Shipboard Power Compliance Testing

All electrical equipment installed on commercial and military airframes must comply with regulatory power immunity standards to ensure safe operation of the aircraft. These standard can be divided into generic test standards or manufacturer specific test standards. Generic standards such as MIL-STD 704 are typically issued by either a government body such as the Department of Defense (DoD) or by a private enterprise in close cooperation with a government entity such as the Federal Aviation Administration (RTCA/DO160 test standard).

Manufacturer specific avionics test standards are generally based on an industry standard with specific variations and modifications deemed necessary by the manufacturer, in order to qualify equipment for suitability of use on its aircraft. Examples of some of these manufacturers are Airbus, Beechcraft, Boeing, Bombardier, Canadair, COMAC, Embraer, Gulfstream and Learjet. Airbus ABD0100.8.1 and Boeing 787-B3-0147 are manufacturer specific test standards.

All these test standards require application of power conditions and anomalies that can occur on the AC or DC power bus during aircraft operation. The fundamental AC frequency used during these tests is either 60Hz or 400Hz (fixed frequency) or ranges between 360Hz and 800Hz (wild frequency).

Available Avionics & Shipboard Test Standard Options

Manufacturer / Organization	Test Standard	Airframe	Revision	PPS Part Number
Airbus Industries, Europe	ABD0100.1.8	A380	E	149318
	ABD0100.1.8.1	A350	C	149319
	AMD24C	A400M	C	149322
Boeing, USA	787B3-0147	787 Dreamliner	C	149317
Radio Technical Commission for Aeronautics (RTCA)	DO160, Section 16	Commercial Aviation	G	149316
US Department of Defense (DoD)	MIL-STD-704	Military Aviation	A	149313
			D	149314
			F	149315
US Department of Defense (DoD)	MIL-STD-1399-300	Navy	Part 1	149308
			B	149309

Support for other avionics standards and revisions are being developed on an on-going basis so check with your local representative for up to date information on availability of test standards not listed in this data sheet.

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FREQUENCY CONVERSION   AEROSPACE   MILITARY   RENEWABLE ENERGY   EV CHARGING   PRODUCTION TEST
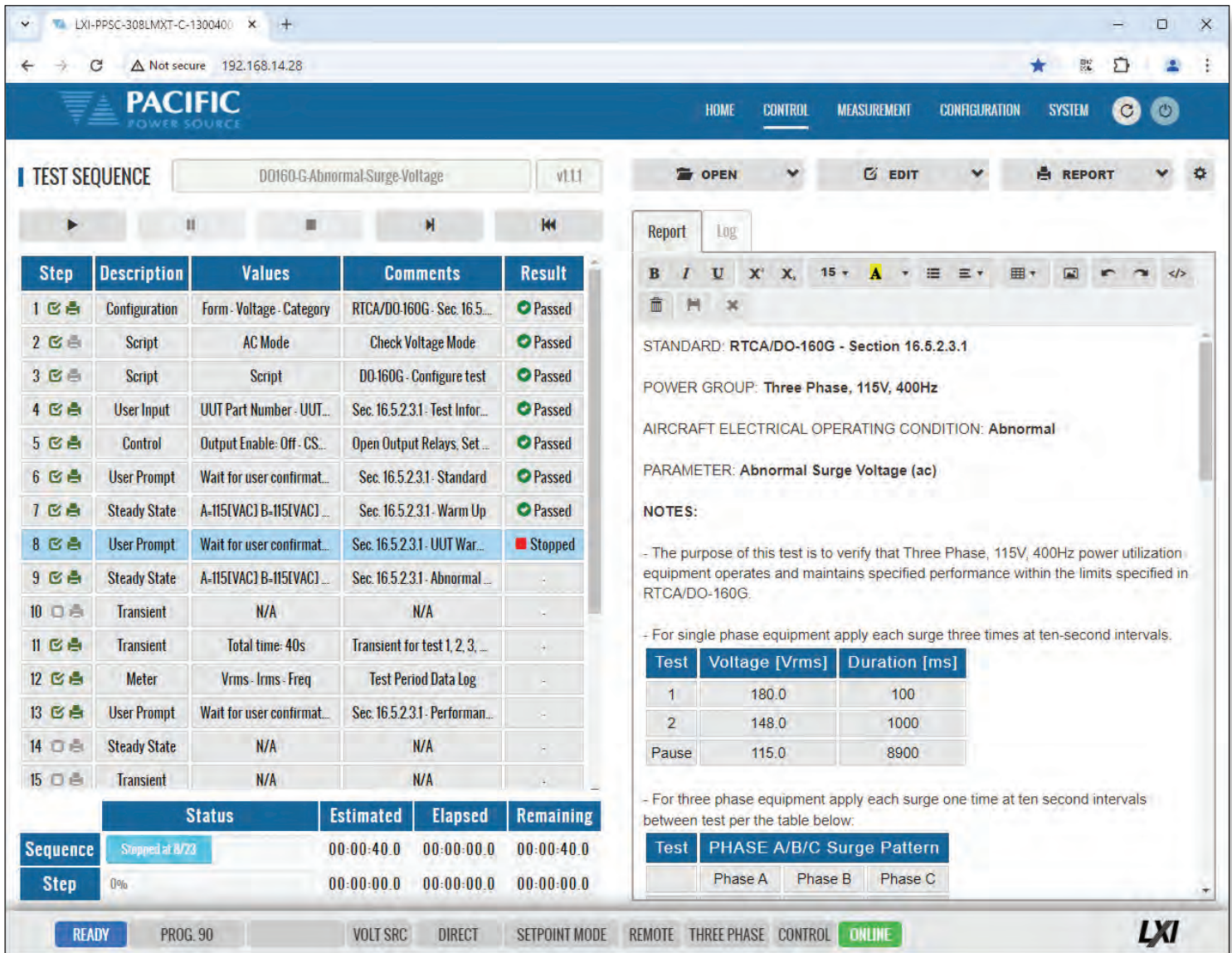
SmartSource Suite Based Test Sequence Engine

Rather than being fixed with no ability for customization or enhancements, Pacific Power Source's Web Based Test Sequences are developed to run on the power source's embedded SmartSource Suite web server. This allows easy access and control from a web browser on any suitable device.

It also supports powerful tools for controlling test execution, collecting measurement data from the AC or DC Power Source and or the unit under test. Since these test sequence option run on the power source controller, they can be accessed from any user ATE test program using standard SCPI commands for integration into a larger compliance test system ecosystem.

Figure 1: SmartSource Suite Web Browser RTCA/DO160 Rev G Test Sequence Control screen

Airbus ABD0100.1.8(A380)

Scope

The Airbus standard no. 100, Part 1, Chapter 8 (ABD0100.1.8) General Requirement for Suppliers is largely based on the RTCA/DO-160, Section 16 commercial aviation test standard. The ABD0100.1.8 standard is intended to ensure that electrical equipment connected to the AC or DC power bus of the Airbus A380 behaves in a predictable and safe way.

The ABD0100.1.8 standard covers both AC and DC power buses as well as Dielectric and Insulation Resistance test requirements. The Pacific Power Source ABD0100.1.8 test option covers all AC & DC[1] power groups contained in the test standard as shown in the table below.

Supported Power Groups

The following test tables are included in the ABD0100.1.8 test option. DC tests require AFX, AGX or AZX Series.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes
Table A	AC Power, Constant Frequency	115Vrms L-N	400Hz	1 Phase and 3 Phase
Table B	AC Power, Constant Frequency	26Vrms L-N	400Hz	
Table C	AC Power , Wide Variable Frequency	115Vrms L-N	360 – 800Hz	
Table D	Conventional DC Power Test	28 Vdc	n/a	n/a
Table E	NBPT[1] DC Power Test	28 Vdc	n/a	n/a

AC Power Test Execution Samples – ABD0100.1.8

The following screens provide some typical captured output voltage waveforms from the AC Power Source during ABD0100.1.8 AC Test Sequence execution. Samples shown reflect two different test conditions on a three phase 115VLN/200VLL AC power bus.
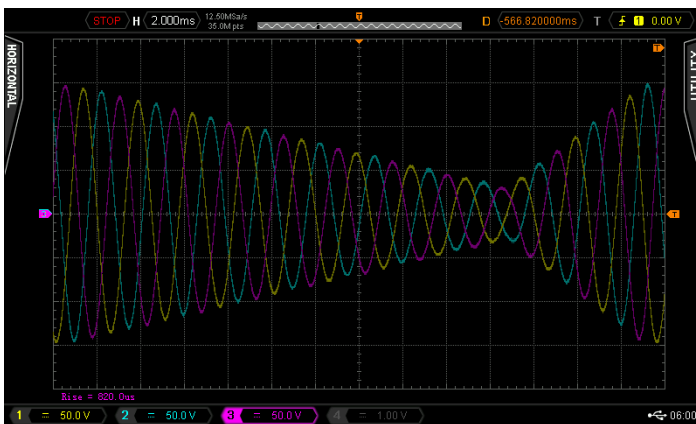
Figure 2:ABD0100.1.8 A380 Table A, Test Number 6, Three Phase Voltage Transient – short duration
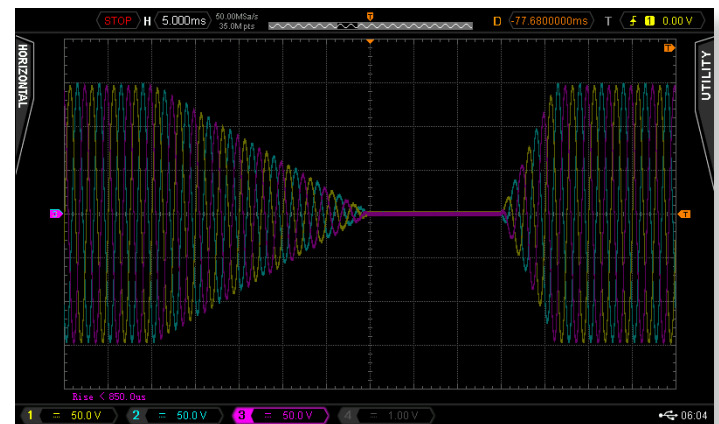
Figure 3: ABD0100.1.8 A380 Table A, Test Number 6, Three Phase Voltage Transient – long duration

DC Power Test Execution Samples – ABD0100.1.8

The following screens provide some typical captured output voltage waveforms from the DC Power Source during ABD0100.1.8 DC Test Sequence execution. Samples shown reflect two different test conditions, DC transient (Figure 3) and Load Square DC pulse (Figure 4).
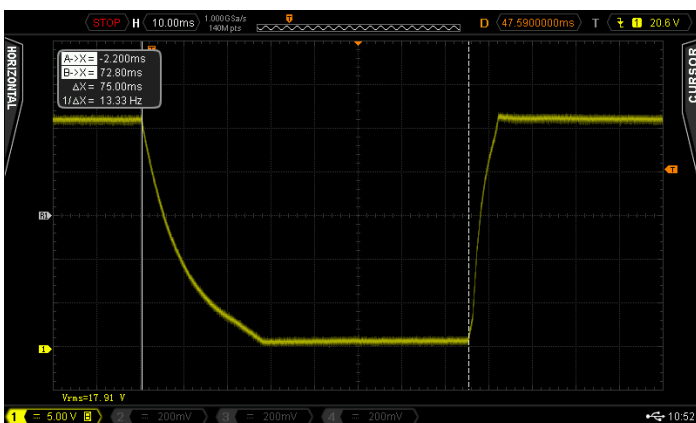
Figure 4: ABD0100.1.8E DC Table D, Test 6 per Fig1.2 Voltage Transient
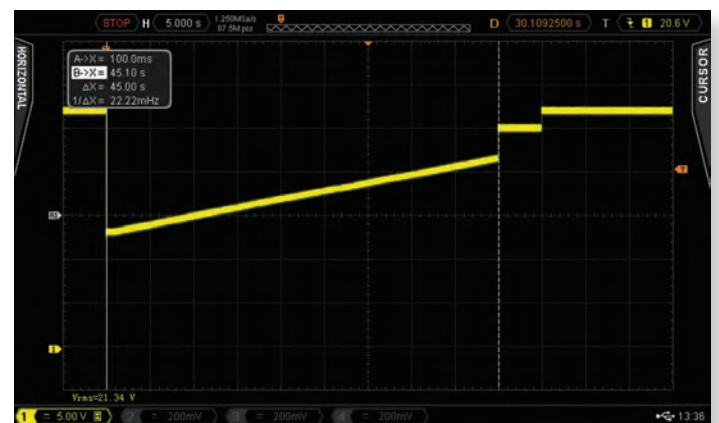
Figure 5: ABD0100.1.8E Table D, Test 7, A380 Heavy Load square DC pulse

Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series

Compliance Matrix ABD0100.1.8(A380)

The ABD0100.1.8 option supports all AC and DC power related tests that fall within the performance envelope of the power source model used. For optimal AC only performance, the LMX Series is recommended. For AC and DC requirements, the AFX, AGX or AZX Series power source is required. Note that the ABD test software will allow acquisition of measurement data during the test execution but additional external test equipment is generally required as well to monitor EUT performance. The compliance matrix shown here applies to the stimulus requirement of the test standard only.

The table below describes the available test coverage for each section of the test standard. Paragraph numbers shown refer to the relevant part of the standard document.

Table	Test No.	Description	Vnom	Freq	1 Phs	3 Phs	Notes
A	1	Steady state voltage and frequency: normal & emergency operation	115Vac	400Hz	Y	Y	
	2	Steady state voltage and frequency: abnormal operation			Y	Y	
	3	Voltage surge: normal transients			Y	Y	
	4	Voltage surge: abnormal transients			Y	Y	
	5	Voltage spikes			N	N	Not supported
	6	Switching transients			Y	Y	
	7	Voltage modulation			Y	Y	
	8	Frequency excursions in abnormal operation			Y	Y	
	9	Frequency modulation			Y	Y	
	10	Distorted voltage			Y	Y	
	11	Voltage DC content			Y	Y	

| Table	Test No.	Description	Vnom	Freq	1 Phs	3 Phs	Notes
B	1	Steady state voltage and frequency: normal & emergency operation	26Vac	400Hz CF	Y	N/A	
	2	Steady state voltage and frequency: abnormal operation			Y	N/A	
	3	Voltage surge: normal transients			Y	N/A	
	4	Voltage surge: abnormal transients			Y	N/A	
	5	Voltage spikes			N	N	Not supported
	6	Switching transients			Y	N/A	
	7	Voltage modulation			Y	N/A	
	8	Frequency excursions in abnormal operation			Y	N/A	
	9	Frequency modulation			Y	N/A	
	10	Distorted voltage			Y	N/A	
	11	Voltage DC content			Y	N/A	

Table	Test No.	Description	Vnom	Freq	1 Phs	3 Phs	Notes
C	1	Steady state voltage and frequency: normal & emergency operation	115Vac	360 - 800Hz VF	Y	Y	
	2	Steady state voltage and frequency: abnormal operation			Y	Y	
	3	Voltage surge: normal transients			Y	Y	
	4	Voltage surge: abnormal transients			Y	Y	
	5	Voltage spikes			N	N	Not supported
	6	Switching transients			Y	Y	
	7	Voltage modulation			Y	Y	
	8	Frequency excursions in abnormal operation			Y	Y	
	9	Frequency modulation			Y	Y	
	10	Distorted voltage			Y	Y	
	11	Voltage DC content			Y	Y	

Table	Test No.	Description	Vnom	Freq	1 O/P	3 O/P	Notes
D	1	Steady state voltage and frequency: normal & emergency operation	28Vdc	n/a	Y	Y	
	2	Steady state voltage and frequency: abnormal operation			Y	Y	
	3	Voltage surge: normal transients			Y	Y	
	4	Voltage surge: abnormal transients			Y	Y	
	5	Voltage spikes			N	N	Not supported
	6	Switching transients			Y	Y	
	7	Square waves due to large load variations in normal conditions			Y	Y	
	8	Ripple voltage			R, C	R, C	Up to 25kHz AC ripple

Table	Test No.	Description	Vnom	Freq	1 O/P	3 O/P	Notes
E	1	Steady state voltage and frequency: normal, abnormal & emergency operation	28Vdc NBPT	n/a	Y	Y	
	2	Voltage surge: normal transients			Y	Y	
	3	Voltage surge: abnormal transients			Y	Y	
	4	Voltage spikes			N	N	Not supported
	5	Switching transients			Y	Y	
	6	Ripple voltage			R, C	R, C	Up to 25kHz AC ripple

Notes:
Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
C = Frequency compensation required (page 16)
N = Not supported

N/A = Not Applicable - No Test required
NBPT = No Break Power Transfer DC network
DC Tests Table D & E are provided in both single or three phase mode versions

Airbus ABD0100.1.8.1(A350)

Scope

The Airbus standard no. 100, Part 1, Chapter 8, Section 1 (ABD0100.1.8.1) General Requirement for Suppliers is largely based on the RTCA/DO-160, Section 16 commercial aviation test standard. It is also closely related to the ABD0100.1.8 test standard. The ABD0100.1.8.1 is intended to ensure that electrical equipment connected to the AC power bus of the Airbus A350 behaves in a predictable and safe way.

The ABD0100.1.8.1 standard covers both AC and DC power buses as well as Dielectric and Insulation Resistance test requirements. The Pacific Power Source ABD0100.1.8.1 test option covers all AC & DC[1] power groups contained in the test standard as shown in the table below.

Supported Power Groups - AC & DC

The following power groups are included in the ABD0100.1.8.1(A350) test option.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes	ABD0100.8.1 Table
SVF	Single-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Single Phase	C.3
TVF	Three-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Three Phase	C.4
SVFH	Single-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Single Phase	C.5
TVFH	Three-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Three Phase	C.6
SCF	Single-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Single Phase	C.7
TCF	Three-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Three Phase	C.8
SCFH	Single-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Single Phase	C.9
TCFH	Three-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Three Phase	C.10
LDC	28 VDC Equipment	28Vdc	n/a	n/a	C.11

Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series

Test Execution Samples – ABD0100.1.8.1(A350)

The following screens provide some typical captured output voltage waveforms from the AC Power Source during Airbus ABD0100.1.8.1 Test Sequence execution. Samples shown reflect two different test conditions from Power Group TCF (Three phase, fixed frequency), test TCF102 – Voltage Transients - and Test TCF201 – Abnormal Steady State Voltage and Frequency.
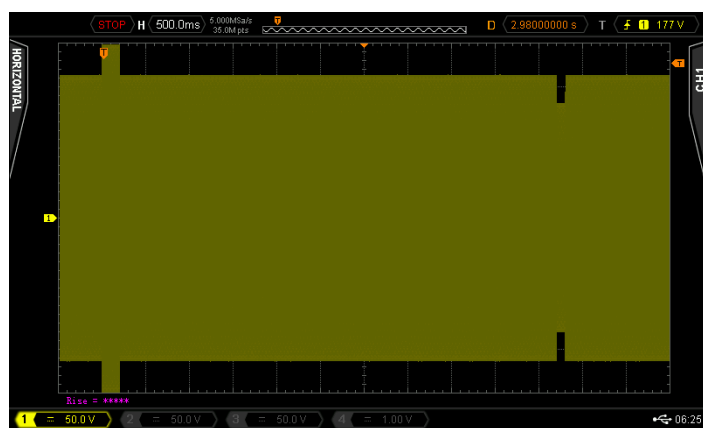

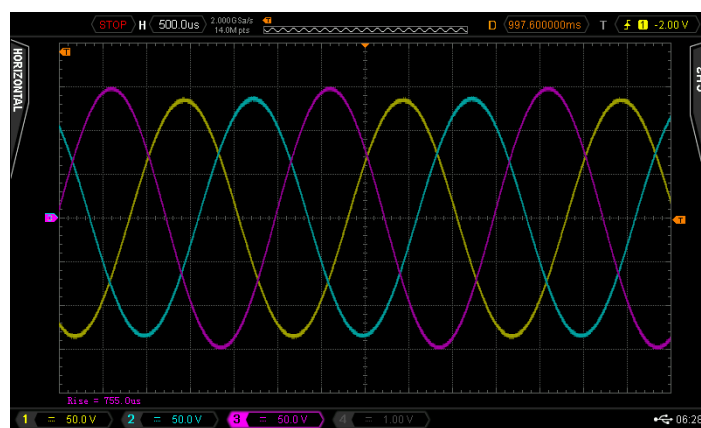Figure 6: ABD0100.1.8.1 A350 Voltage Transient Test TCF102, 5 second intervals

Figure 7: ABD0100.1.8.1 A350 Abnormal Voltage and Frequency Test TCF201.

Compliance Matrix ABD0100.1.8.1(A350)

Test VF	Test CF	Description	SVF	TVF	SVFH	TVFH	SCF	TCF	SCFH	TCFH	Notes
Normal Operation (1xx)											
101		Steady State Voltage and Frequency	Y	Y	Y	Y	Y	Y	Y	Y	
102		Voltage Transients	Y	Y	Y	Y	Y	Y	Y	Y	High voltage spikes up to 160V or 324V requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
103		Voltage Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
104		Voltage Spikes	R	R	R	R	R	R	R	R	Requires external Spike Generator with 1000V pos/neg capability
105		Current Distortion	R	R	R	R	R	R	R	R	Requires Spectrum Analyzer and CT's to monitor UUT current
106		Voltage Distortion 1	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load
107		Voltage Distortion 2	R	R	R	R	R	R	R	R	Requires External Signal Generator and Coupling Transformer
108		Voltage Distortion Transients	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load
109		Inrush Current	R, Z	R, Z	R, Z	R, Z	R, Z	R, Z	R, Z	R, Z	Requires measurement equipment to measure inrush current. May require special input cabling to meet impedance requirements
110		Frequency Variations	Y	Y	Y	Y					
111	110	Frequency Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
112	111	Voltage DC Content	R	R	R	R	R	R	R	R	Requires AFX, AGX or AZX Series
113	112	Voltage Modulation due to Equipment	R	R	R	R	R	R	R	R	May require special input cabling to meet impedance requirements
114	113	Voltage Spike due to Equip. Load Switching	R	R	R	R	R	R	R	R	Requires contactor/relay switching between AC Source and UUT
115	114	Voltage Unbalance Transient	N/A	Y	N/A	Y	N/A	Y	N/A	Y	
Adnormal Operation (2xx)											
201		Steady State Voltage and Frequency	Y	Y	Y	Y	Y	Y	Y	Y	
202		Voltage Transients	Y	Y	Y	Y	Y	Y	Y	Y	High voltage spikes up to 180V or 360V requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
203		Voltage Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
204		Frequency Transients	Y	Y	Y	Y	Y	Y	Y	Y	
Emergency Operation (3xx)											
301		Steady State Voltage and Frequency	Y	Y	Y	Y	Y	Y	Y	Y	
302		Voltage Distortion	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load
303		Voltage Distortion	R	R	R	R	R	R	R	R	Requires External Signal Generator and Coupling Transformer
304		Voltage Distortion Transients	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load
305		Inrush Current	Y	Y	Y	Y	Y	Y	Y	Y	Requires measurement equipment to measure inrush current. May require special input cabling to meet impedance requirements
306		Frequency Variations	Y	Y	Y	Y	Y	Y	Y	Y	
307		Voltage Modulation due to Equipment	Y	Y	Y	Y	Y	Y	Y	Y	May require special input cabling to meet impedance requirements
Switching Transients (4xx)											
401		Transparency Time	Y	Y	Y	Y	Y	Y	Y	Y	
402		Voltage Switching Transients 1	Y	Y	Y	Y	Y	Y	Y	Y	
403		Voltage Switching Transients 2, Part 1A	Y	Y	Y	Y	Y	Y	Y	Y	
404		Voltage Switching Transients w/Freq. Change	Y	Y	Y	Y	N/A	N/A	N/A	N/A	
Power Supply Removal (5xx)											
501		Power Line Disconnection	Y	Y	Y	Y	Y	Y	Y	Y	

DC Test[1]	Description	LDC	Notes	DC Test[1]	Description	LDC	Notes
Normal Operation (1xx)				**Emergency Operation (3xx)**			
101	Steady State Voltage	Y	Ext. Meas. Equipment	301	Steady State Voltage	Y	Ext. Meas. Equipment
102	Voltage Transients	Y		302	Voltage Ripple	C	
103	Voltage Ripple	C	Compensation	303	Inrush Current	Y	Ext. Meas. Equipment
104	Voltage Spikes	Y / R	Additional Equip. Req.	304	Equipment Current Ripple	Y	Additional Equip. Req.
105	Inrush Current	Y	Ext. Meas. Equipment	**Switching Transients (4xx)**			
106	Voltage Variation due to APU Starting	Y		401	Transparency Time	Y	
107	Equipment Current Ripple	Y / R	Additional Equip. Req.	402	Voltage Switching Transients 1	Y	
108	Voltage Spikes due to Equipment Loads	Y / R	Additional Equip. Req.	403	Voltage Switching Transients 2	Y	
109	EPDC Voltage Clamping Devices	Y / R	Additional Equip. Req.	**Power Supply Removal (5xx)**			
Abnormal Operation (2xx)				501	Power Line Disconnection	Y	
201	Steady State Voltage	Y	Ext. Meas. Equipment				
202	Voltage Transients	Y		*Note1 : All DC tests require AFX, AGX or AZX Series*			
203	Voltage Ripple	C					

Notes:
Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
N = Not supported

N/A = Not Applicable - No Test required
C = Frequency compensation required (page 16)
Z = Prog-Z required

Airbus AMD24C (A400M)

Scope

The Airbus standard AMD24C, "Electrical characteristics of aircraft AC and DC systems" is based on similar test procedures as are outlined in the RTCA/DO-160, Section 16 commercial aviation test standard. However, test levels and applicable levels are different and unique to the Airbus AMD24C standard. The AMD24C standard is intended to ensure that electrical equipment connected to the AC power bus of the Airbus M400 military cargo plane behaves in a predictable and safe way.

This test standard covers both AC and DC[1] power buses. The Pacific Power Source AMD24C test option covers both AC and DC power groups contained in the test standard as shown in the table below. Some tests may require additional equipment in addition to he AC power source. Refer to compliance matrix on next page for more details.

Supported Power Groups - AC & DC

The following power groups are included in the AMD24C (M400) test option.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes	AMD24C Table
SVF	Single-Phase, Variable Frequency, 115 V	115Vrms L-N	390 – 620Hz	Single Phase	C.3
TVF	Three-Phase, Variable Frequency, 115 V	115Vrms L-N	390 – 620Hz	Three Phase	C.4
SCF	Single-Phase, Constant Frequency, 115 V	115Vrms L-N	400Hz	Single Phase	C.5
TCF	Three-Phase, Constant Frequency, 115 V	115Vrms L-N	400Hz	Three Phase	C.6
LDC	DC Voltage, 28V	28 Vdc	DC	n/a	C.7

Test Execution Samples – AMD24C (M400)

The following screens provide some typical captured output voltage waveforms from the AC Power Source during Airbus AMD24C Test Sequence execution. Samples shown reflect two different test conditions from Power Group TVF (Three phase, variable frequency), test TCF102 – Voltage Transients - and Test TCF201 – Abnormal Steady State Voltage and Frequency.
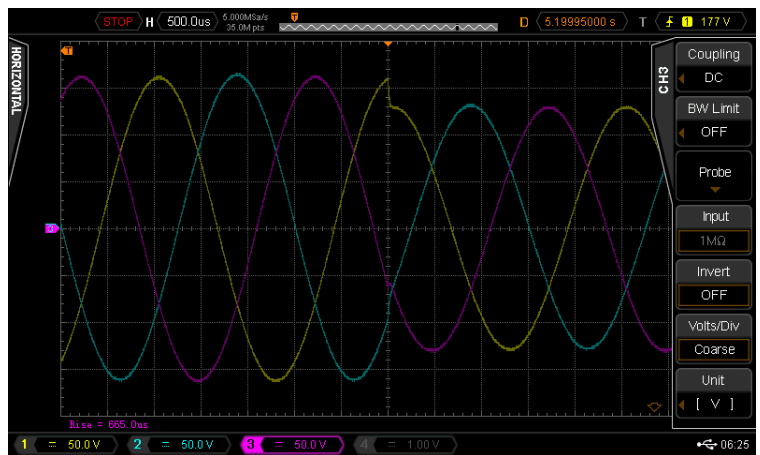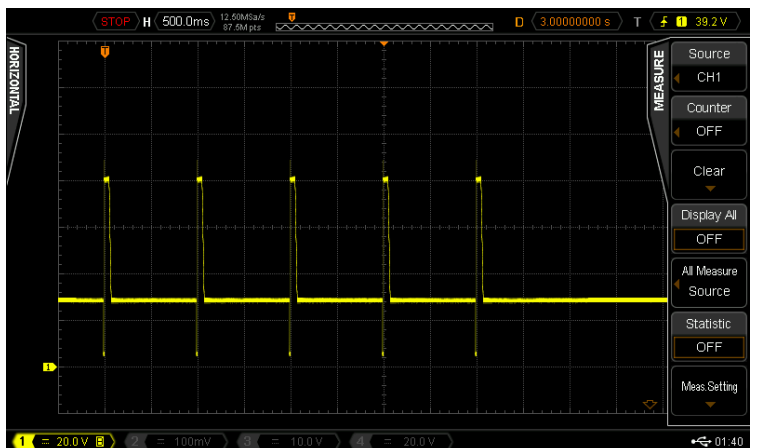

Figure 8: AMD24C Abnormal Test TCF201.

Figure 9: AMD24C LDC DC Transient Test, 5 second intervals

Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series

Compliance Matrix AMD24C (A400M)

Test VF	CF	Description	SVF	TVF	SCF	TCF	Notes
Normal Operation (1xx)							
101		Steady State Voltage and Frequency	Y	Y	Y	Y	
102		Voltage Transients	Y	Y	Y	Y	High voltage spikes up to 160V requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
103		Voltage Modulation	Y	Y	Y	Y	
104		Voltage Spikes	R	R	R	R	Requires external Spike Generator with 1000V pos/neg capability
105		Current Distortion	R	R	R	R	Requires Spectrum Analyzer and CT's to monitor UUT current
106		Voltage Distortion	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load (AC)
107		Inrush Current	R, Z	R, Z	R, Z	R, Z	Requires measurement equipment to measure inrush current. May require special input cabling to meet impedance requirements
108	-	Frequency Variations	Y	Y			
109	108	Frequency Modulation	Y	Y	Y	Y	Discrete frequency steps
110	109	Voltage DC Content	R	R	R	R	Requires AFX, AGX or AZX Series
111	110	Voltage Modulation due to Equipment	R	R	R	R	May require special input cabling to meet impedance requirements
112	111	Voltage Spike due to Equip. Load Switching	R	R	R	R	Requires contactor/relay switching between AC Source and UUT
Adnormal Operation (2xx)							
201		Steady State Voltage and Frequency	Y	Y	Y	Y	
202		Voltage Transients	Y	Y	Y	Y	High voltage spikes up to 180V requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
203		Voltage Modulation	Y	Y	Y	Y	
-	204	Frequency Variations	N/A	N/A	Y	Y	
Emergency Operation (3xx)							
301	-	Steady State Voltage and Frequency	Y	Y	Y	Y	
302	-	Voltage Distortion	Y	Y	Y	Y	Requires adjustable full- bridge rectifier load (AC)
303	-	Voltage Distortion Transients	R	R	R	R	Requires adjustable full- bridge rectifier load (AC)
304	-	Frequency Variations	Y	Y	N/A	N/A	
305	-	Voltage Modulation due to Equipmnt	Y	Y	Y	Y	Requires measurement equipment to measure inrush current. May require special input cabling to meet impedance requirements
Switching Transients (4xx)							
401		Transparency Time	Y	Y	Y	Y	
402		Voltage Switching Transients 1	Y	Y	Y	Y	
403		Voltage Switching Transients 2	Y	Y	Y	Y	
404	-	Voltage Switching Transients w/Freq. Change	Y	Y	N/A	N/A	
Undervoltage Operation (5xx)							
501		Power Failure	Y	Y	Y	Y	

LDC Test[1]	Description	LDC	Notes	LDC Test[1]	Description	LDC	Notes
Normal Operation (1xx)				**Emergency Operation (3xx)**			
101/APU	Steady State Voltage	Y		301	Steady State Voltage	Y	
102/APU	Voltage Transients	R	AC&DC not supported	302	Voltage Ripple	R, C	
103/APU	Voltage Ripple	R, C	Up to 25kHz or ext. generator and coupling transformer	303	Inrush Current	Y	
104	Voltage Spikes	R	Requires Spike Generator	**Transfer Operation (4xx)**			
105/APU	Inrush Current	Y		401/APU	Transparency Time	Y	
106	Voltage Variations due to APU start	Y		402/APU	Voltage Switching Transients 1	Y	
107	DC Ripple Voltage due to Equipment	R, C	Requires Spectrum Analyzer	403/APU	Voltage Switching Transients 2	Y	
108	Voltage Spike due to Equip. Load	Y		**Undervoltage Operation (5xx)**			
109	Compatability with SEPDC clipping	Y		501	Power Failure	Y	
Abnormal Operation (2xx)							
201/APU	Voltage Transients	R	AC&DC not supported				

Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series

Notes: Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
N = Not supported
N/A = Not Applicable - No Test required
C = Frequency compensation required (page 16)
Z = Prog-Z required

Boeing 787B3-0147 (B787)

Scope

The Boeing Company 787B3-0147 Test Standard is generally based on the RTCA/DO-160, Section 16 commercial aviation test standard but has several additional test requirements. This standard is intended to insure that electrical equipment connected to the AC or DC power bus of the 787 Dreamliner behaves in a predictable and safe way.

The Pacific Power Source, Inc. BOEING 787B3-0147 test sequence option is based on the 787 Electrical Power Quality and Design Requirements Document revision C, and consists of test sequences for single-phase and three-phase equipment in AC power categories. This Boeing 787B3-0147 option covers AC and DC power groups as listed in the tables below.

Supported Power Groups

The following power groups are included in the 787B3-0147 test option. Note that some tests require other equipment than just an AC or DC power source. This other equipment may not be available from Pacific Power Source.

Power Group	Description	Power Group	Description
AC	All AC Power Groups	DC	DC Power Groups, 28Vdc, ±270Vdc, ±130Vdc

Compliance Matrix 787B3-0147

The Boeing 787B3-0147 option supports AC power related tests that fall within the performance envelope of the AC power source model used. For optimal performance, the LMX Series is recommended. Alternatively, the AFX, AGX or AZX Series may be used to support 787B3-0147 testing including DC power groups. Note that the 787 test software will allow acquisition of measurement data during the test execution but additional external test equipment is generally required as well to monitor EUT performance. The compliance matrix shown here applies to the stimulus requirement of the test standard only.

The table below summarizes the available test coverage for the test standard. For details, refer to the Boeing standard document.

AC Power	115Vac	235Vac	Notes
Individual Phase Voltage	Y	Y	
Average of Three Phase Voltages	Y	Y	
Phase Displacement	N/A	N/A	
Phase Voltage Unbalance	Y	Y	
Voltage Modulation	Y	Y	
Total Harmonic Content	Y	Y	Requires arbitrary waveform capability
Individual Harmonic Content	R	R	Not supported, requires additional equipment
DC Content	R	R	Requires AFX, AGX or AZX Series
Frequency Modulation	Y	Y	
Voltage Transients	Y	Y	
Voltage Spikes	R	R	Not supported, requires additional equipment
Maximum Ramp Rate	Y	Y	
Frequency Transients	Y	Y	
Multiple Stroke Power Interruptions	Y	Y	
Abnormal Individual Phase Voltage	Y	Y	
Abnormal Average of Three Phase Voltages	Y	Y	
Abnormal Voltage Transients	Y	Y	
Abnormal Maximum Ramp Rate	Y	Y	
Abnormal Frequency Transients	Y	Y	
Abnormal DC Content	N	N	Requires AFX, AGX or AZX Series
Supplementary Transient Tests	Y	Y	

Test No.	Description	I	II	III	IV	V	VI	Notes
3.3.3.1_B.5.1	Normal 28V DC Power Steady-State and Transient	Y						
3.3.3.1_B.5.2			Y					
3.3.3.1_B.5.3				Y				
3.3.3.1_B.5.4					Y			
3.3.3.1_B.6.1	Normal Voltage Transients	Y	Y	Y	Y			
3.3.3.1_B.6.2	Voltage Spikes							
3.3.3.1_B.6.3	Multiple Stroke Power Interrupts	Y	Y	Y	Y			
3.3.3.1_B.7.1	Abnormal Steady-State 28V DC Voltage	Y						
3.3.3.1_B.7.2			Y					
3.3.3.1_B.7.3				Y				
3.3.3.1_B.7.4					Y			
3.3.3.1_B.8.1	Abnormal Voltage Transients	Y	Y	Y	Y			
3.3.3.3_B.9.1.1	Engine Start				Y			These bipolar DC mode tests use 2 phases (A,B) in 3 Phase mode
3.3.3.3_B.9.1.2	Steady State				Y			
3.3.3.3_B.10.1	Normal Voltage Transients				Y			
3.3.3.4_B.11.1	Abnormal Steady State				Y			
3.3.3.4_B.12.1	Abnormal Voltage Transients				Y			
3.3.3.5_B.13.1	Steady State					Y		These bipolar DC mode tests use 2 phases (A,B) in 3 Phase mode
3.3.3.5_B.13.2	Common Mode Voltage					Y		
3.3.3.5_B.14.1	Normal Voltage Transients					Y		
3.3.3.6_B.16.1	Abnormal Voltage Transients						Y	

Notes: Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
N = Not supported

N/A = Not Applicable - No Test required
Z = Prog-Z required
DC: Type I, II, III & IV = 28Vdc. Type V = ±270Vdc, Type VI = ±130Vdc Nominal

MIL-STD-704, Rev A and Rev F.

Scope

MIL-STD-704 is published by the US Department of Defense and provides test requirements for both AC and DC power buses on military aircraft. Both fixed 400Hz and 60Hz frequency power buses as well as variable (wild) frequency power buses ranging from 360Hz to 800Hz are covered by Revision F of the standard. These tests are performed to ensure compliance of electrical equipment used on military airplanes. The MIL-STD-704A test option is available to support legacy avionics systems that were placed in operation under revision A. Both versions can be installed on the same PC.

The MIL-STD-704 standard covers both AC and DC power applications. The Pacific Power Source MIL-STD-704 A & F test options covers all AC power groups contained in the test standard as shown in the table below.

Supported Power Groups

The following power groups are included in the MIL-STD-704F test option. MIL-STD-704A covers fixed frequency only.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes
SAC	Single-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Single Phase
TAC	Three-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Three Phase
SVF	Single-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Single Phase
TVF	Three-Phase, Variable Constant Frequency, 115 V	115Vrms L-N	360 – 800Hz	Three Phase
SXF	Single-Phase, 60 Hz Constant Frequency, 115 V	115Vrms L-N	60Hz	Single Phase
LDC[1]	28VDC utilization equipment MIL-STD-704 compliance tests	28Vdc	n/a	n/a
HDC[1]	270VDC utilization equipment MIL-STD-704 compliance tests	270Vdc	n/a	n/a

Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series

AC Power Test Execution Samples – MIL-STD-704

The following screens provide some typical captured output voltage waveforms from the AC Power Source during MIL-STD-704 Test Sequence execution. Samples shown reflect two different test conditions from Table I, Figure 3 in the MIL-STD-704 document (Voltage Transients) see Figure 10 and a Momentary Power Interruption, see Figure 11.

Figure 10: MIL-STD-704F, Power Group TAC, Section 109, Test Condition KK

Figure 11: MIL-STD-704F, Power Group TAC, Section 601, Test Condition A

DC Power Test Execution Samples – MIL-STD-704

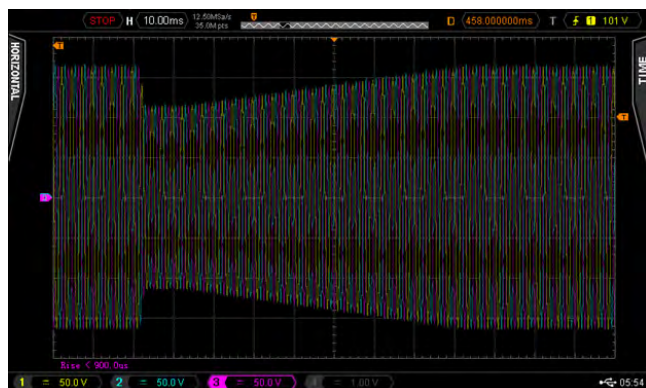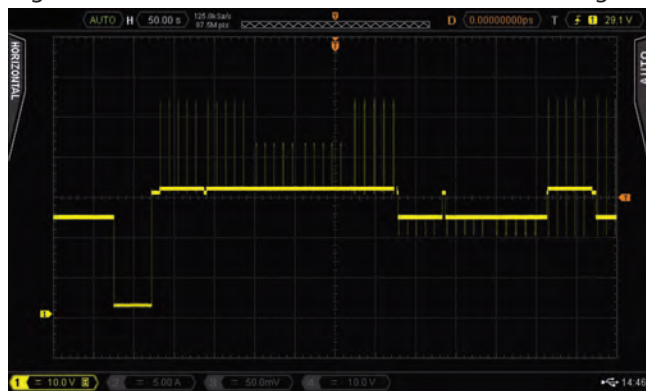The following screens provide some typical captured output voltage waveforms from the DC Power Source during MIL-STD-704 Test Sequence execution. Samples shown reflect two different test conditions, LDC105 complete sequence (Figure 12) and HDC 201 detail view (Figure 13).

Figure 12: MS704F, LDC 105 sequence @ 50 S/div – Multiple Test Conditions

Figure 13: MIL-STD-704 Rev F, HDC 201 Cond K @ 10 mS/div – Detail

Compliance Matrix MIL-STD-704F

Test	Description	SAC	TAC	SVF	TVF	SXF	Notes
Normal Operation (1xx)							
101	Load and Current Harmonics Measurements	Y	Y	Y	Y	Y	Additional Power Measurement Equipment recommended for capturing for UUT performance
102	Steady State Limits	Y	Y	Y	Y	Y	
103	Voltage Phase Difference	N/A	Y	N/A	Y	N/A	Not applicable for Single phase UUT's
104	Voltage Modulation	Y	Y	Y	Y	Y	
105	Frequency Modulation	Y	Y	Y	Y	Y	
106	Voltage Distortion Spectrum	M/R	M/R	M/R	M/R	M/R	Requires Function Generator, Spectrum Analyzer, 50uH inductors, 10uF Cap
107	Total Voltage Distortion	Y	Y	Y	Y	Y	
108	DC Voltage Component	Y	Y	Y	Y	Y	Requires AFX, AGX or AZX in AC+DC Mode
109	Normal Voltage Transients	Y	Y	Y	Y	Y	Requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
110	Normal Frequency Transients	Y	Y	Y	Y	Y	
Transfer (2xx)							
201	Power Interrupt	Y	Y	Y	Y	Y	Requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
Abnormal Operation (3xx)							
301	Abnormal Limits for Voltage and Frequency	Y	Y	Y	Y	Y	
302	Abnormal Voltage Transients	Y	Y	Y	Y	Y	Requires Split Phase mode (FORM2) or Transformer (XFMR) for Single Phase, and Transformer(XFMR) for Three Phase UUT's
303	Abnormal Frequency Transients	Y	Y	Y	Y	Y	
Emergency Operation (4xx)							
401	Emergency Limits for Voltage and Frequency	Y	Y	Y	Y	Y	
Starting (5xx)							
501	Not Typically Required	N/A	N/A	N/A	N/A	N/A	Not applicable to AC powered equipment
Power Failure (6xx)							
601	Power Failure	Y	Y	Y	Y	Y	
602	One Phase and Two Phase Power Failures	N/A	Y	N/A	Y	N/A	
603	Phase Reversal	Y	Y	Y	Y	Y	

DC Test[1]	Description	LDC	HDC	Notes	DC Test[1]	Description	LDC	HDC	Notes
Normal Operation (1xx)					**Abnormal Operation (3xx)**				
101	Load Test	Y	Y	Ext. Meas. Equipment	301	Abnormal Steady State Voltage	Y	Y	
102	Steady State Limits for voltage	Y	Y		302	Abnormal Voltage Transients	Y	Y	
103	Voltage Distortion Spectrum	R	R	Additional Equip. Req.	**Emergency Operation (4xx)**				
104	Total Ripple	R, C	R, C	Some switching noise	401	Transparency Time	Y	Y	
105	Normal Voltage Transients	Y	Y		**Starting Operation (5xx)**				
Transfer Operation (2xx)					501		Y	Y	
201	Power Interrupt	Y	Y		**Power Failure Operation (5xx)**				
					601	Power Failure	Y	Y	
Note1 : All DC tests require AFX, AGX, AZX, GSZ or RGS Series					602	Polarity Reversal	Y	Y	

Notes: Y = Full support. No additional equipment is needed to perform the required AC stimulus   N/A = Not Applicable - No Test required
R = Requires additional equipment. Refer to actual Test Standard Documents for details.   M = Additional Measurement Equipment required
N = Not supported   C = Frequency compensation required (page 16)
Z = Prog-Z required

MIL-STD-1399-300, Rev B. / MIL-STD-1399-300, Part 1

Scope

MIL-STD-1399-300 is published by the US Department of Defense, Navy and provides test requirements for shipboard AC power. Both fixed 400Hz and 60Hz frequency power buses are covered by Revisions B and Part 1of the standard. These tests are performed to ensure compliance of electrical equipment used on Navy vessels.

The MIL-STD-1399-300 standard covers AC power applications only. The Pacific Power Source MIL-STD-1399-300B test option covers all power groups contained in the test standard as shown in the table below.

Supported Power Groups

The following power groups are included in both MIL-STD-1399-300 test options.

Type	Description	Nominal Vac	Frequency	Form
I	Single-Phase, 60 Hz, 115 V	115 Vrms	60Hz	Single Phase
	Single-Phase, 60 Hz, 440 V	440 Vrms	60Hz	Single Phase
	Single-Phase, Grounded, 60 Hz, 115 V (avionic shops)	115 Vrms	60Hz	Single Phase
	Three-Phase, 60 Hz, 115/200 V	115/200 Vrms	60Hz	Three Phase
	Three-Phase, 60 Hz, 254/440 V	254/440 Vrms	60Hz	Three Phase
	Three-Phase, Grounded, 60 Hz, 115/200 V (avionic shops)	115/200 Vrms	60Hz	Three Phase
II	Single-Phase, 400 Hz, 115 V	115V rms	400Hz	Single Phase
	Single-Phase, 400 Hz, 440 V	440 Vrms	400Hz	Single Phase
	Three-Phase, 400 Hz, 115 /200V	115/200 Vrms	400Hz	Three Phase
	Three-Phase, 400 Hz, 254/440 V	254/440 Vrms	400Hz	Three Phase
III	Single-Phase, 400 Hz, 115 V	115 Vrms	400Hz	Single Phase
	Single-Phase, 400 Hz, 440 V	440 Vrms	400Hz	Single Phase
	Single-Phase, Grounded, 400 Hz, 115 V (avionics shops/service)	115 Vrms	400Hz	Single Phase
	Three-Phase, 400 Hz, 115/200 V	115/200 Vrms	400Hz	Three Phase
	Three-Phase, 400 Hz, 254/440 V	254/440 Vrms	400Hz	Three Phase
	Three-Phase, Grounded, 400 Hz, 115/200 V (avionics shops/service)	115/200 Vrms	400Hz	Three Phase

Test Execution Sample – MIL-STD-1399-300B

The following screens provides a typical captured output voltage waveforms from the AC Power Source during MIL-STD-1399 Test Sequence execution.

Figure 14: MIL-STD-1399-300 Rev B, Type I, Section 5.3.2.2

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Compliance Matrix MIL-STD-1399-300, Rev B

MIL-STD-1399	Test Description	Test Category		
SECTION No.		Type I	Type II	Type III
5.3.1.2	Voltage and frequency tolerance test	T	T	T
5.3.2.2	Voltage and frequency transient tolerance and recovery test	T	T	T
5.3.3	Voltage spike test	N	N	N
5.3.4.2.1	Emergency condition test - 70 msec power interruption test	T	T	T
5.3.4.2.2	Emergency condition test - 2-Minute power interruption test	T	T	T
5.3.4.2.3	Emergency condition test - Power source decay test	T & F	T	T
5.3.4.2.4	Emergency condition test - Positive excursion test	T	T	T
5.3.5.2	Grounding test	R	R	R
5.3.6	User equipment power profile test	N	N	N
5.3.7	Current waveform test	N	N	N
5.3.8.2a	Voltage and frequency modulation test - Voltage modulation test	T	T	T
5.3.8.2b	Voltage and frequency modulation test - Frequency modulation test	T	T	T
5.3.8.2c	Voltage and frequency modulation test - Combined voltage and frequency modulation test	T	T	T
5.3.9.2	Simulated human body leakage current tests for personnel safety	T	T	T

Compliance Matrix MIL-STD-1399-300, Part 1

MIL-STD-1399	Test Description	Test Category		
SECTION No.		Type I	Type II	Type III
5.3.1.2	Grounding susceptibiltiy test	R	R	R
5.3.2	User equipment power profile test	N	N	N
5.3.3.2	Voltage and frequency maximum departure tolerance test	T	T	T
5.3.4.2	Voltage and frequency transient tolerance and recovery test	T	T	T
5.3.5	Voltage spike test	N	N	N
5.3.6.2.1	Emergency condition test - 70 msec power interruption test	T	T	T
5.3.6.2.2	Emergency condition test - 2-Minute power interruption test	T	T	T
5.3.6.2.3	Emergency condition test - Power source decay test	T & F	T	T
5.3.6.2.4	Emergency condition test - Positive excursion test	T	T	T
5.3.7	Current waveform test	N	N	N
5.3.8.2a	Voltage and frequency modulation test - Voltage	T	T	T
5.3.8.2b	Voltage and frequency modulation test - Frequency	T	T	T
5.3.8.2c	Voltage and frequency modulation test - Combined	T	T	T
5.3.9.2	Simulated human body leakage current tests for personnel safety	T	T	T

Notes:
Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
F = Requires AC Source with 15Hz minimum setting range for Frequency
N = Not supported
N/A = Not Applicable - No Test required
Z = Prog-Z required
T = This test may require a Transformer Option for high nominal voltage test groups to support higher voltages depending on AC Source model used.

RTCA/DO-160, Section 16, Rev G.

Scope

The Radio Technical Commission for Aeronautics (RTCA) is an industry organization that publishes the DO-160 Commercial Avionics Test standard which covers Environmental Conditions and Test Procedures for Airborne Equipment. These tests are performed to ensure compliance of electrical equipment used on commercial airplanes.

Supported Power Groups

The following power groups are included in the RTCA/DO-160 test option. DC Power Tests require AFX, AGX, AZX, GSZ or RGS Series.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes
ACF	AC Power, Constant Frequency	115Vrms L-N	400Hz	1 Phase and 3 Phase
		230Vrms L-N		
ANF	AC Power, Narrow Variable Frequency	115Vrms L-N	360 – 800Hz	
		230Vrms L-N		
AWF	AC Power , Wide Variable Frequency	115Vrms L-N	360 – 800Hz	
		230Vrms L-N		
Cat.A, 28dc	DC Power Test	28 Vdc	n/a	n/a
Cat B, 14Vdc	DC Power Test	14 Vdc	n/a	n/a
Cat B, 28Vdc	DC Power Test	28 Vdc	n/a	n/a
Cat Z, 28Vdc	DC Power Test	28 Vdc	n/a	n/a
Cat D, 270Vdc	DC Power Test	270 Vdc	n/a	n/a

AC Power Test Execution Samples – DO160

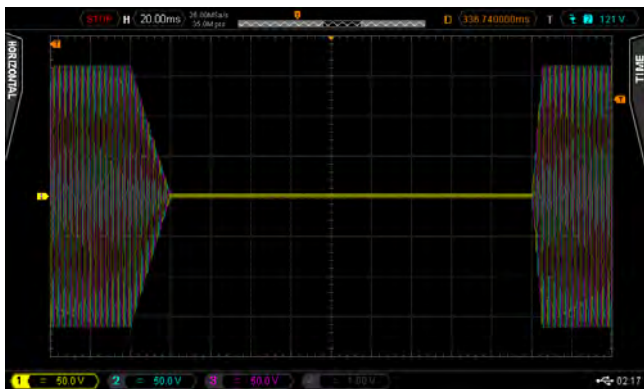The following screens provide some typical captured output voltage waveforms from the AC Power Source during RTCA/DO-160 Test Sequence execution. Samples shown reflect two different test conditions from Section 16.5.1.4, Momentary Power Interruptions.

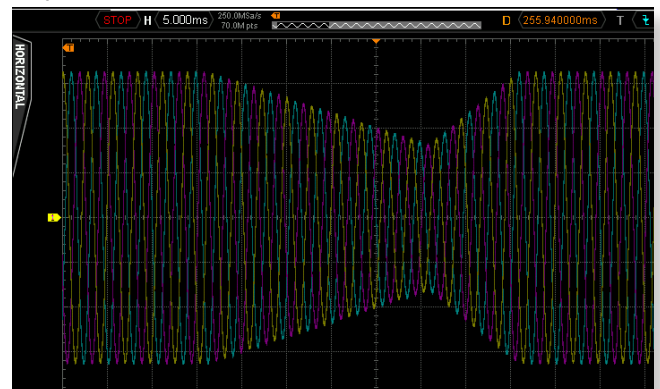
Figure 15: DO-160G Section 16.5.1.4 b Test Condition 7

Figure 16: DO-160G Section 16.5.1.4 b-Test Condition 9

DC Power Test Execution Samples – DO160

The following screens provide some typical captured output voltage waveforms from the DC Power Source during DO160 Test Sequence execution. Samples shown reflect two different test conditions, 16.6.2.4d Cat B, 28Vdc (Figure 17) and 16.6.1.4c Cat D, 270Vdc (Figure 18).
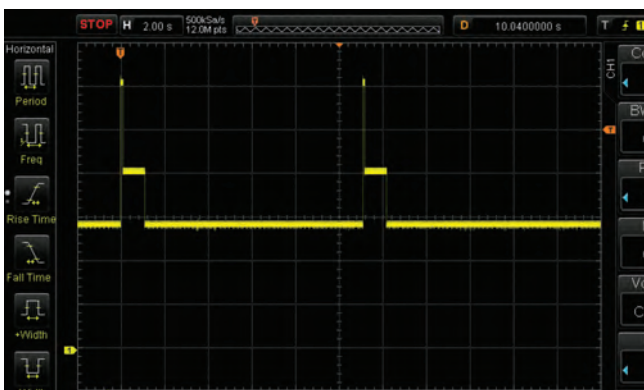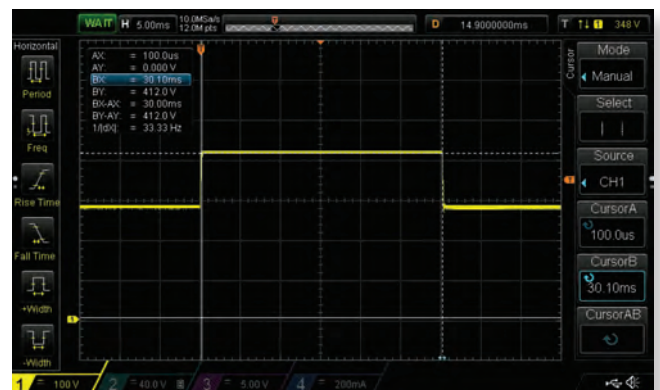

Figure 17: DO160G_16.6.2.4d_catB_28V_Abnormal_Surges

Figure 18: DO160G_16.6.1.4c_catZ_270V_Normal_Surge

Compliance Matrix RTCA/DO-160

Phases	Section	Description	ACF	ANF	AWF	Notes
Single Phase	16.5.1.1.b1	Normal Voltage & Frequency	Y	Y	Y	
	16.5.1.1.b2	Emergency Voltage and Frequency	Y			
	16.5.1.2	Normal Voltage Modulation	Y	Y	Y	
	16.5.1.3	Normal Frequency Modulation	Y	Y	Y	
	16.5.1.4.b	Normal Momentary Power Interruptions - Test 1	Y	Y	Y	
	16.5.1.4.c	Normal Momentary Power Interruptions - Test 2	N/A	Y	Y	
	16.5.1.5.1.b	Normal Surge Voltage	Y	Y	Y	High voltage spikes up to 160VAC or 320VAC, requires Split Phase mode (FORM2) or Transformer (XFMR)
	16.5.1.5.2.b	Normal Frequency Transients	Y	Y	Y	
	16.5.1.6.b	Normal Frequency Variations	Y	Y	Y	
	16.5.1.7	Normal Voltage DC Content	Y / R	Y / R	Y / R	Requires AFX. AGX or AZX Series
	16.5.1.8.2	Normal Total Harmonic Distortion	Y	Y	Y	Specification allows either clipped waveform or full-wave bridge rectifier load
	16.5.2.1.b	Abnormal Volt/Freq Limit Steady State	Y	Y	Y	
	16.5.2.2	Momentary Undervoltage Operation	Y	Y	Y	
	16.5.2.3.1	Abnormal Surge Voltage	Y	Y	Y	High voltage spikes up to 180VAC or 360VAC, requires Split Phase mode (FORM2) or Transformer (XFMR)
	16.5.2.3.2	Abnormal Frequency Transients	Y	Y	Y	
	16.5.2.3.3	Abnormal FrequencyVariations	N/A	Y	Y	
Three Phase	16.5.1.1.c	Normal Voltage & Frequency	Y	Y	Y	
	16.5.1.1.ce	Emergency Voltage & Frequency	Y	Y	Y	
	16.5.1.2	Normal Voltage Modulation	Y	Y	Y	
	16.5.1.3	Normal Frequency Modulation	Y	Y	Y	
	16.5.1.4.b	Normal Momentary Power Interruptions - Test 1	Y	Y	Y	
	16.5.1.4.c	Normal Momentary Power Interruptions - Test 2	N/A	Y	Y	
	16.5.1.5.1.b	Normal Surge Voltage	Y	Y	Y	High voltage spikes up to 160VAC or 320VAC, requires Transformer(XFMR)
	16.5.1.5.2.b	Normal Frequency Transients	Y	Y	Y	
	16.5.1.6.b	Normal Frequency Variations	Y	Y	Y	
	16.5.1.7	Normal Voltage DC Content	Y / R	Y / R	Y / R	Requires AFX. AGX or AZX Series
	16.5.1.8.2	Normal Total Harmonic Distortion	Y	Y	Y	Specification allows either clipped waveform or full-wave bridge rectifier load
	16.5.2.1.c	Abnormal Volt/Freq Limit Steady State	Y	Y	Y	
	16.5.2.2	Momentary Undervoltage Operation	Y	Y	Y	
	16.5.2.3.1	Abnormal Surge Voltage	Y	Y	Y	High voltage spikes up to 180VAC or 360VAC, requires "Transformer Coupled" AC Source capability
	16.5.2.3.2	Abnormal Frequency Transients	Y	Y	Y	
	16.5.2.3.3	LAbnormal Frequency Variations	N/A	Y	Y	
	16.5.2.4.ab	Loss Of Phase Input	N/A	Y	Y	
	16.5.2.4.cd	Loss Of Phase Input	N/A	Y	Y	

DC Test	Description	B.14V	A.28V	B.28V	Z.28V	D.270V	Notes - All DC tests require AFX, AGX or AZX Series
16.6.1.1 - .4	Normal Voltage, Ripple, Interrupts, Surge	Y	Y	Y	Y	Y	
16.6.1.2	Ripple	R, C	R, C	R, C	R, C	R, C	
16.6.1.5	Engine Starting Under Voltage	Y	N/A	Y	Y	N/A	
16.6.1.6	Exposed Voltage Decay Time	N/A	N/A	N/A	N/A	R	
16.6.2.1	Voltage Steady State	Y	Y	Y	Y	Y	
16.6.2.2	Low Voltage Conditions	Y	N/A	Y	N/A	N/A	
16.6.2.3	Momentary Under Voltage	Y	Y	Y	Y	Y	
16.6.2.4	Abnormal Surge Voltage	Y	Y	Y	Y	Y	

Notes:
Y = Full support. No additional equipment is needed to perform the required AC stimulus
R = Requires additional equipment. Refer to actual Test Standard Documents for details.
N = Not supported

N/A = Not Applicable - No Test required
C = Frequency compensation required (page 16)
Z = Prog-Z required
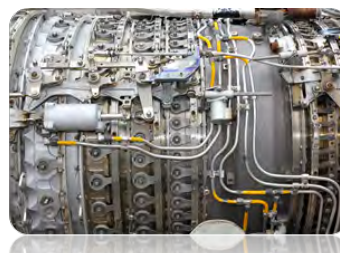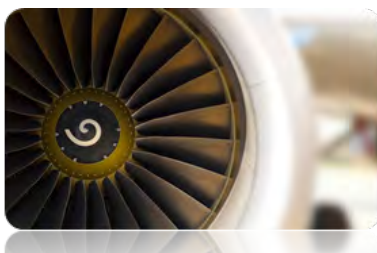
Common Features

Since all available avionics test options controlled via the SmartSource web interface, they share a common set of features and capabilities which makes it easy for the operator to perform these tests. It also ensures consistency of user interface and operation when moving between different test standards.

Test Execution Control

The operator has complete control over Test Sequence execution by running the entire Test Sequence or single stepping through one test condition at a time. This allows for any anomaly observed on the UUT to be analyzed in more detail by stepping or looping on an individual stimulus test condition. If needed, specific test conditions can be skipped by deselecting the Step selection check box that precedes each step in the Test Sequences. This allows selective execution of test conditions in a Test Sequence to be setup. A set of execution controls is located above the Test Sequence listing in the UPC Test Manager window. Available options are Start, Continue, Run Step, Run to Next Step (Single step mode) and Stop.
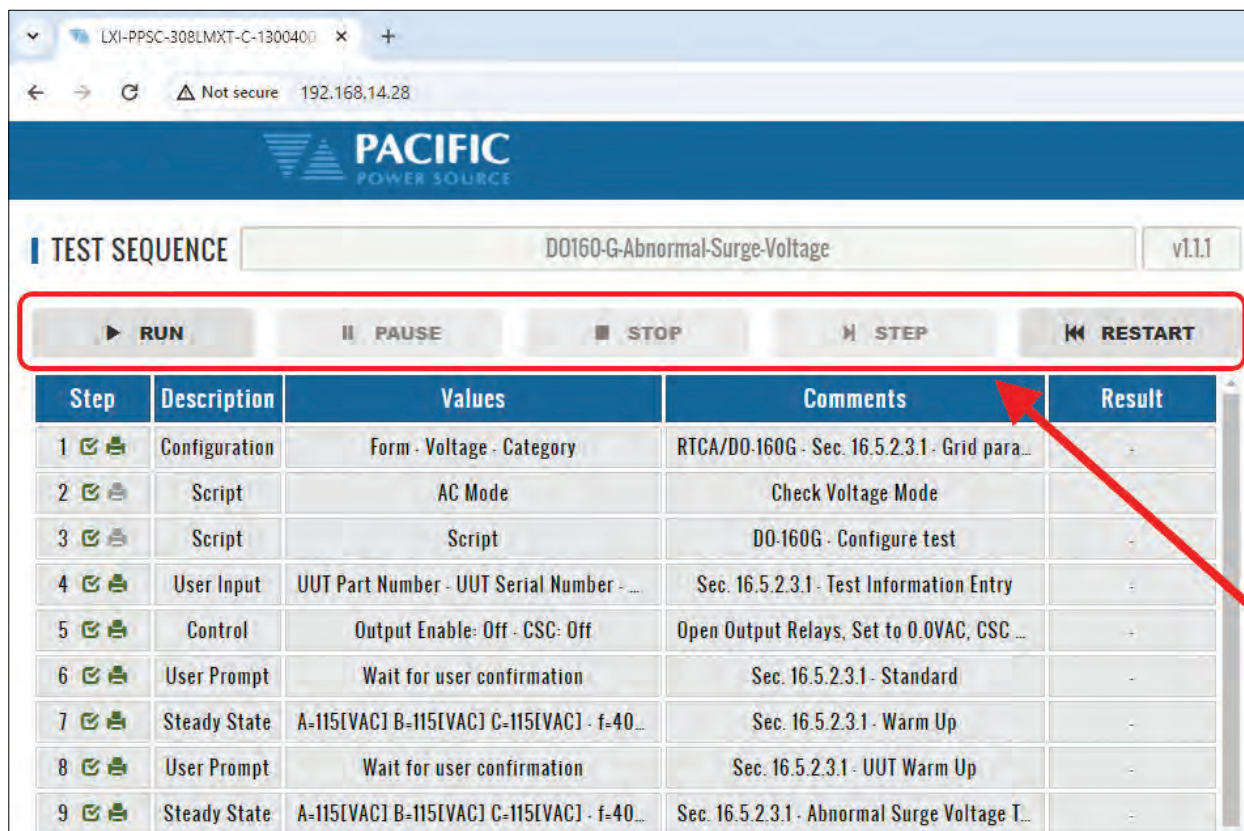

Figure 19: SmartSource Suite Web Browser User Execution Controls

Customization of Test Routines

All Test Sequence files are provided from the factory to comply with the relevant test standard requirements. Modified Test Sequences may be used to support future revision changes to the standard or to provide additional AC or DC power stimulus beyond the standard requirements.

For tests requiring the output of small signal frequencies higher than the frequency range of the AC power source used, it may be necessary to boost the output amplitude of these higher frequency components to compensate for amplitude attenuation at these high frequencies. (Frequency Compensation). The test sequences engine supports a compensation table function in test sequences where this may be the case to support this type of compensation to obtain better compliance to the test standard. Such compensation may be load dependent and thus the test sequence may have to be modified and saved for a given EUT type.

If any compensation, modification or changes are needed, it is recommended to save the original files provided as a restore point or retain the original distribution file so the original version of the Test Sequences can be restored at any time.

Comprehensive Test Reports

Properly documenting the power sequences applied to the unit under test is a key requirement for vendors to prove compliance with relevant Avionics test standards. This involves detailed documentation on AC power stimulus, conditions and EUT performance as evidenced by voltage, current and power measurements.

The Pacific Power Source's test sequences provide built-in report generation using a HTML report file which can be printed or converted to several other formats such as Adobe Acrobat or MS Word.

Test reports include details for each power group on the nature and duration of power stimulus patterns, measured data and any comments and test results entered by the operator during the test based on his observations of the Equipment under test. A report template is used to format these reports and the user has the ability to customize these reports by adding company logo's and names to the provided report templates.

At any time during the execution of the Test Sequence, the test report that is being generated can be pre-viewed on screen. At the end of the test, the report is saved.
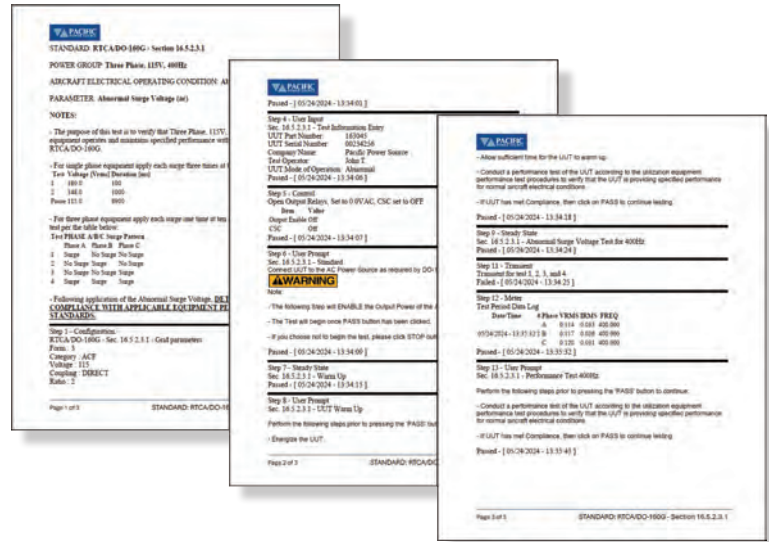

Figure 20: Sample Test Report -DO160

Ordering Information

TEST SEQUENCE	REVISION	P/N	DESCRIPTION
☐ ABD0100.1.8E (A380)	E	149318	Airbus ABD0100.1.8, Rev E, Test Sequences
☐ ABD0100.1.8.1C (A350)	C	149319	Airbus ABD0100.1.8.1, Rev C, Test Sequences
☐ AMD24C (A400M)	C	149322	Airbus AMD24C, Rev C, Test Sequences
☐ Boeing 787B3-0147 (787)	C	149317	Boeing 787B3-0147 (787), Rev C, Test Sequences
☐ MIL-STD-704A	A	149313	DoD MIL-STD-704, Rev A, Test Sequences
☐ MIL-STD-704D	D	149314	DoD MIL-STD-704, Rev D, Test Sequences
☐ MIL-STD-704F	F	149315	DoD MIL-STD-704, Rev F, Test Sequences
☐ MIL-STD-1399-300-1	1	149308	DoD MIL-STD-1399, Part 1, Test Sequences
☐ MIL-STD-1399-300-B	B	149309	DoD MIL-STD-1399, Rev 1, Test Sequences
☐ RTCA/DO-160G	G	149316	RTCA/DO-160, Section 16, Rev G, Test Sequences

Order Example

- P/N 149316   RTCA/DO-160G
- UPC Test Manager License
  - Licenses for RTCA/DO-160 Rev G Test Sequence and UPC Test Manager

Typical Delivery Items

- Test Sequence Files FTP Download
- User Documentation in PDF Format

Support Power Sources

- AFX Series
- AGX Series (Regenerative)
- AZX Series (Regenerative)
- LMX Series (AC only)
- LSX Series (AC only)