Multi-group Pulse Test System/ Main Circuit Chassis

ETS 160MB/ETS 160ML

- DO-160G S22:2010
- MIL-STD-461G:2015
- GJB 8848:2016
- HB 6167.24
- AECTP 250
- AECTP 500
- GJB 151C

Features

> 5.7-inch color touch screen control, simple and intuitive interface operation
> Modular design, the waveform module is detachable
> Capable of performing signal pins & power pins - direct injection method and cable bundle - cable induction method;
> Capable of generating waveforms 2, 3 and 6(level 1 ~ 5)
> When the signal/power pin is directly injected into the test (PI), it automatically synchronizes with the EUT AC power peak or 0° ~ 359°(resolution 1°)
> Can be remotely controlled with Corelab software

Introduction

When an aircraft is flying in severe convection environment, it will be frequently affected by lightning stroke, which will generate transient induced voltage or current on circuits and cables of airborne equipment, such phenomenon is called indirect lightning effect. It may make the aircraft get out of control, even bring about fuselage fire and other serious accidents. For safety reasons, the airborne equipment must be designed properly and tested completely to ensure the system and equipment with critical safety function to perform normally and its flight security when the aircraft is influenced by lightning stroke.

The ETS 160MB test system is capable of generating waveforms 2,3 and 6 specified in RTCA/DO-160 Section 22, test level is from 1 to 5 for pins direct injection method and cable bundle cable induction method; Additionally, the test system is not only meet the test requirement of lightning induced transients conducted susceptibility in MIL-STD-461G CS117, but also the A/B/C/D EUT pulse injection level requirement in GJB 8848: 2016 is satisfied.

The test system includes various test auxiliary equipment to make it convenient to conduct tests, such as coupling transformer, power blocking device, transient blocking device, pin injection probe etc. What's more, the Corelab software is also available for test remote control, which makes your test easy and convenient.

Application Areas

Technical Parameters

Voltage W2 Cable Bundle Cable Induction Tests	
Coupling Mode	Cable Induction
Rise Time	< 100 ns
Duration	6.4 μs ± 20%
Test Level for Single Stroke Tests	50 V ~ 2000 V(-0% ~ +20%)
Test Level for Multiple Stroke Tests	50 V ~ 2000 V (first wave, -0% ~ +20%) 25 V ~ 1000 V (subsequent wave, -0% ~ +50%)
Polarity	Positive,negative
Coupling Transformer	LVT-2
Voltage W3-1MHz-H Signal Pins & Power Pins Injection Tests	
Coupling Mode	Pin Injection
Output Impedance	25 Ω
Frequency	1 MHz ± 20%
Decay Rate of 5th Waveshape	25% ~ 75% of the first wave
Test Level for Single Stroke Tests	100 V ~ 4500 V(-0% ~ +10%) 4 A ~ 180 A (short-circuit current,-0%~+10%)
Polarity	Positive,negative
Phase Sync	0°~ 359°, resolution 1°
EUT Maximum AC voltage	230 V
EUT Maximum Power Supply Frequency	800 Hz
EUT Maximum DC Voltage	±50 V
Voltage W3-1MHz Cable Bundle Cable Induction Tests	
Coupling Mode	Cable Induction
Frequency	1 MHz ± 20%
Decay Rate of 5th Waveshape	25% ~ 75% of the first wave
Test Level for Single Stroke Tests	50 V ~ 4500 V(-0% ~ +20%)
Test Level for Multiple Stroke Tests	50 V ~ 4500 V (first wave, -0% ~ +20%) 50 V ~ 2250 V (subsequent wave, -0% ~ +50%)
Polarity	Positive,negative
Coupling Transformer	LVT-2
Voltage W3-1MHz-MB Cable Bundle Cable Induction Multiple Burst	
Coupling Mode	Cable Induction
Frequency	1 MHz ± 20%
Test Level for Single Stroke Tests	60 V ~ 1920 V(-0% ~ +20%)
Decay Rate of 5th Waveshape	25% ~ 75% of the first wave
Output Impedance	≥60 Ω
Coupling Transformer	LVT-2
Voltage Waveform 3 (10 MHz) Cable Bundle Cable Induction Tests	
Coupling Mode	Cable Induction
Frequency	10 MHz ± 20%
Decay Rate of 5th Waveshape	25% ~ 75% of the first wave
Test Level for Single Stroke Tests	50 V ~ 4000 V(-0% ~ +20%)
Test Level for Multiple Stroke Tests	50 V ~ 4000 V (first wave, -0% ~ +20%) 50 V ~ 2000 V (subsequent wave, -0% ~ +50%)
Polarity	Positive,negative
Coupling Transformer	LVT-2

Technical Parameters

Current W6 Cable Bundle Cable Induction Tests	
Coupling Mode	Cable Induction
Current Range	5 A ~ 160 A
Rise Time	0.25 μs ± 20%
Duration	4 μs ± 20%
Coupling Transformer	LVT-3

General Parameters

Display Screen	5.7-inch TFT touch screen
Working Power	AC 220 V ± 10%,50/60 Hz
Fuses	6 A
Maximum Power Consumption	200 W
Memory Space	Infinite (PC)
Communication Methods	Ethernet LAN, RJ45
Working Status Indication	Front panel LED indication, LCD display
Grounding Connection Method	Use a flat grounding wire
Dimension	ETS 160MB/4U 450 mm(W)*190 mm(H)* 620 mm(D) ETS 160ML/4U 450 mm(W)*190 mm(H)* 550 mm(D)
Weight	Two hosts weighing a total of 37 kg
Ambient Temperature	15℃ ~ 35℃
Relative Humidity	45% ~ 75% ,RH(no condensation)
Atmospheric Pressure	86 kPa ~ 106 kPa

Standard Accessories

Power Cord, Instruction Manual, Flat Grounding Wire, Fuse, RF Cable, Calibration Report, Test Line, Product Warranty Certificate

Optional Accessories

1	Coupling Transformer	Model: LVT-2 Used for coupling W2 and W3 (1 MHz, 10 MHz) voltage waveforms, it can meet the single return stroke, multiple return stroke, and multiple pulse group level 1-5 testing of cable bundle W2 and W3 voltage waveforms. The maximum coupling W2 voltage waveform is 2000 V. The maximum coupled W3 voltage waveform is 4000 V.	
2	Coupling Transformer	Model: LVT-3 Used for W6 current waveform coupling, it can meet multiple pulse group level 1 ~ 5 tests for cable bundle W6 current waveform, with a maximum coupling of 160 A forW6 current waveform.	

Optional Accessories

3	Power Blocking Device	Model: CN-2 The CN-2 is used to isolate voltages at the pins of the EUT from the low generator impedance in waveform 3 pins direct injection test	
4	Decoupling Network	Model: DN 6020T The AC power supply voltage is 3-phase 400 V 20 A, and the DC power supply voltage is 600 V 20 A. Can meet the requirement of direct injection of W3, W4, W5A, W5B waveforms with power supply testing.	
5	Decoupling Network	Model: DN 8020T The AC power supply voltage is 3-phase 400 V 20 A, and the DC power supply voltage is 800 V 20 A. Can meet the requirement of direct injection of W3, W4, W5A, W5B waveforms with power supply testing.	
6	Decap Cell	Model: DN-4200T The AC power supply voltage is 3-phase 400 V 200 A, and the DC power supply voltage is 400 V 200 A. Can meet the requirement of direct injection of W4, W5A, and W5B waveforms with power supply testing.	
7	Handheld Pin Injection Probe	Model: HIP 5000 The probe is used in pin injection tests of waveform 3 (1 MHz), Handheld structure design makes pin injection tests convenient.	
8	Current Divider	Model: MCS 01 The MCS 01 is used to measure current of waveforms 2,3 and 6.	
9	35U Rack	Model: ETS 160MB-35U The ETS 160MB-35U is used to place all devices and accessories to makes the storage in order. There are two main unit storage tanks and four waveform input modules storage tanks, and each tank having sliding rail, which makes it easy to insert or pull out the modules.	
10	Digital Oscilloscope	Model: MDO3012 Frequency 100 MHz. Sample Rate 1.25 GS/s. Record length 10 Mb.	
11	Differential Probe	Model: THDP0100(Tektronix) It is used to measure voltage of all waveforms. 6 kV differential mode, 100 MHz.	

Optional Accessories

12	Wide-band Current Monitor	Model: CM 0103M The CM 0103M is used to measure W2, W3(1 & 10 MHz) and W6. Max. peak current 5 kA Sensitivity 0.1 V/A Frequency: 200 Hz ~ 20 MHz Current time product: 0.2 A·s	
13	Immunity Testing Software	Model: Corelab Compatible with Windows 7/8/10 /11 operating systems. Supports Ethernet interface and serial communication mode. Support parameter scheduling testing, testing sequences, one click testing, easy operation. Customer information can be set, test reports can be automatically generated, and export of test reports is supported, making it convenient for users to record real-time data.	

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