



# INTEGRATED TECHNOLOGIES MWD/LWD Forum

Keeping Your Finger On The Pulse



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# Welcome

# Speaker Information

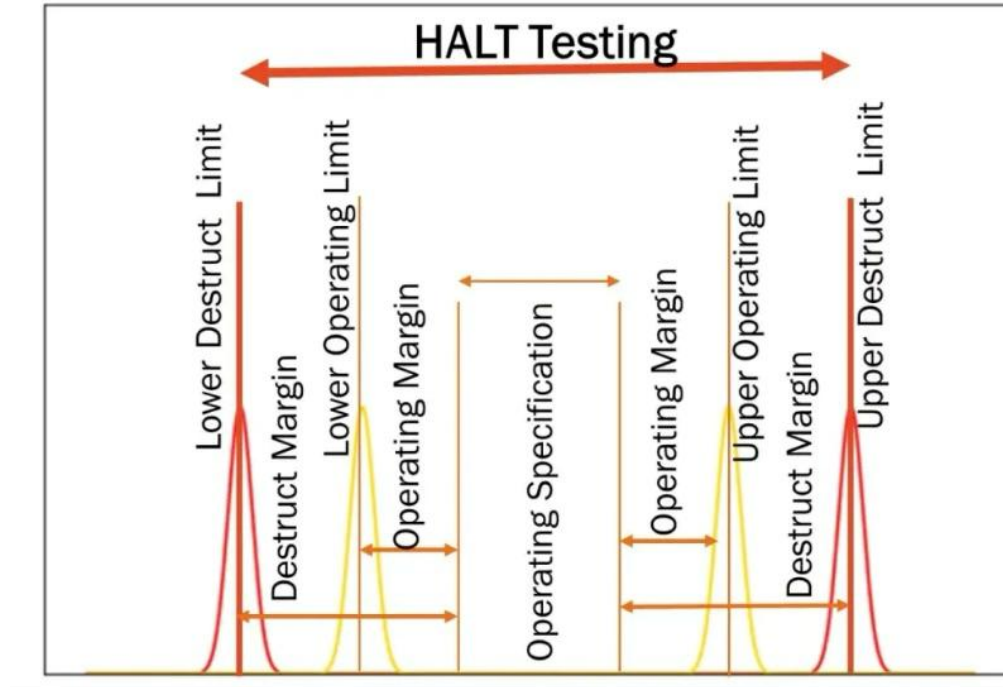
Steve Krase

## **The Role of HALT**

Sept. 18, 2025

**Hephae Energy Technology**

# Highly Accelerated Life Testing



# Hephae Testing

## Temperature test results

### Hephae Pandora 210 PCBA Thermal Testing

PN	Name	210°C	215°C	220°C	225°C	230°C
PC40001	Controller	FULL	FULL	FULL	FULL/500	SURVIVE
PC40002	Pulser - Distributor	FULL	FULL/500	FULL	FULL	SURVIVE
PC40003	Sensor- Mag Drive	FULL	FULL	FULL/500	FULL	SURVIVE
PC40004	Sensor- Acquisition	FULL	FULL/500	PARTIAL	SURVIVE	SURVIVE
PC40005	Sensor - Distributor	FULL	FULL/500	FULL	FULL	SURVIVE
PC40006	Power - Sensor	FULL	FULL/500	PARTIAL	SURVIVE	SURVIVE
PC40007	Power - Controller	FULL	FULL	FULL	FULL/500	SURVIVE
PC40008	Power - Gate Drive	FULL	FULL	FULL	FULL/500	SURVIVE
PC40009	Phase - Gate Drive	FULL	FULL	FULL/500	FULL	SURVIVE
PC90001	Sensor- Vibration	FULL	FULL	FULL	FULL	FULL

**FULL = Full Functionality**

**PARTIAL = Reduced/limited Accuracy/Functionality**

**SURVIVE = Does not permanently damage when exposed <100 hrs**

**500 = Tested at this temperature for >500 hours with full functionality**

# Hephae Testing

## HALT testing update

### Hephae Pandora 210 PCBA Shock & Vibration Testing

PN	Name	Vibe 30G RMS	Shock XY 500G+	Shock XY 1000G+	Shock Z 500G+	Shock Z 1000G+
PC40001	Controller	PASS@220C	PASS-6 shocks	PASS-7 Shocks	PASS-6 shocks	PASS-12 Shocks
PC40002	Pulser - Distributor	TBD	TBD	TBD	TBD	TBD
PC40003	Sensor- Mag Drive	PASS@220C	PASS-5 shocks	PASS-10 Shocks	PASS-5 shocks	PASS-10 Shocks
PC40004	Sensor- Acquisition	PASS@215C	PASS-5 shocks	PASS-10 Shocks	PASS-8 shocks	PASS-10 Shocks
PC40005	Sensor - Distributor	PASS@220C	PASS-6 shocks	PASS-7 Shocks	PASS-6 shocks	PASS-12 Shocks
PC40006	Power - Sensor	PASS@215C	PASS-5 shocks	PASS-10 Shocks	PASS-5 shocks	PASS-10 Shocks
PC40007	Power - Controller -1.9V	PASS@215C	PASS-5 shocks	PASS-10 Shocks	PASS-5 shocks	PASS-10 Shocks
	Power - Controller -3.3V	PASS@215C	PASS-5 shocks	PASS-10 Shocks	PASS-5 shocks	PASS-10 Shocks
	Power - Controller -3.3V*	PASS@215C	PASS-10 shocks	PASS-20 Shocks	PASS-8 shocks	PASS-20 Shocks
PC40008	Power - Gate Drive	PASS@220C	PASS-5 shocks	PASS-10 Shocks	PASS-5 shocks	PASS-10 Shocks
PC40009	Phase - Gate Drive	PASS@220C	PASS-12 Shocks	PASS-5 shocks	PASS-5 shocks	PASS-10 Shocks
PC90001	Sensor- Vibration	PASS@230C	PASS-4 shocks	PASS-3 Shocks	PASS-4 shocks	PASS-9 Shocks

PASS - Full functionality

PASS - Post Functional Testing

FAIL

Passed @temp however Failed during -60C high speed cooling @ end of testing

\*\* Requirement 210C @ 30Grms, 2 Shocks each axis 1000G

# Speaker Information

- Presenter's Name  
Arial 24 Point
  - Presenter's Title
  - Month Day, Year
  - Affiliation
- Optional – Brand / Marketing / Sales  
May be used for Organization  
Affiliation or Company  
(Branding/Marketing)  
Overview of Area of Study  
(Academia)  
Services or Products Offered  
(Industry Affiliation)



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# Thank You