



**QUANTA
LABORATORIES**

3199 De La Cruz Boulevard • Santa Clara, CA 95054-2483
TEL: (408) 988-0770 FAX: (408) 988-0762
E-MAIL: test@quantalabs.com

Certificate of Conformance

This is to certify that the results from the test(s) requested by

Alpha Novatech, Inc. are on file under
Quanta Laboratories Job No. QL-19-0234 and conform
to the specification(s) stated in P.O. No. 20190227A0C

These results apply to the following equipment and are
available for review upon request.

Model No: 2.5mm Pushpin & QT series Heat Sink (Total 9 units)

S/N: N/A

*** Sine Sweep, Random Vibration and Shock Tests ***

*** Client's specification ***



Maris Delos Reyes
Quanta Laboratories

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Quanta Laboratories

03/28/2019
Date

MULTI VIBRATION & SHOCK TEST DATA



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CLIENT: Alpha Novatech, Inc.	P.O. NO: 20190227A0C
SPECIMEN: 2.5mm Pushpin & QT series Heat Sink (Total 9 units)	JOB NO: QL-19-0234
SPECIFICATION: Client's Specification	PAGE 1 OF 1

DATE	S/N	AXIS	VIBRATION AND SHOCK SEQUENCE	REMARKS
03/18/2019	N/A	X	<p><u>Non-Operational Test</u></p> <p>1. Sine Sweep Vibration Test 5-500 Hz 5Hz @0.5g 10-500Hz @ 2g 1 Octave/minute</p> <p>1 sweep cycle/Axis (13 min 17 sec)</p>	<p>Multiple Vibration and Shock tests</p> <p>The test completed to the specification requirement</p>
		Y	<p>2. Random Vibration Test</p> <p>5-500Hz 5Hz, @ 0.002g²/Hz 10-100Hz @ 0.0064g²/Hz 500 Hz 0.0005g²/Hz</p> <p>30min/axis Overall: 1.12 Grms</p>	
		Z	<p>3. Trapezoid Shock Test</p> <p>40g/18ms</p> <p>3 Shock/axis Total 18 shocks</p>	<p>DEFINITION OF AXES</p> <p>See Photos Page</p>

TEST ENGINEER: Max Murphy		DATE: 03/18/2019
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Alpha Novatech, Inc.
Sine Sweep and Random Vibration Tests



X-axis



Y-axis



Z-axis

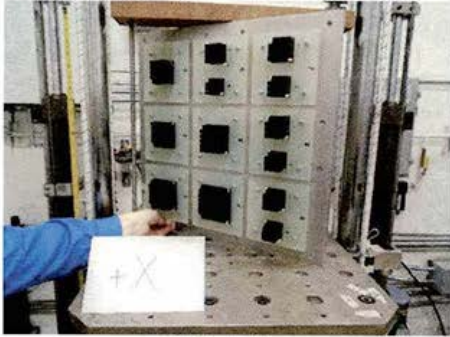
TTS:LSZ

10/26/2018

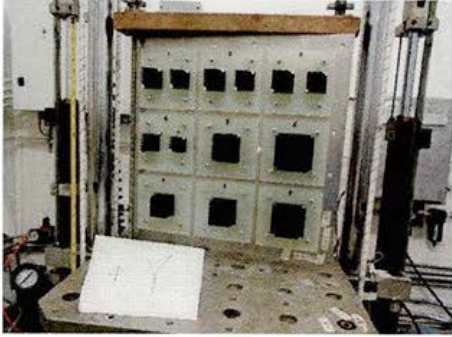
JOB NO. : QL-19-0234

03/18/2019

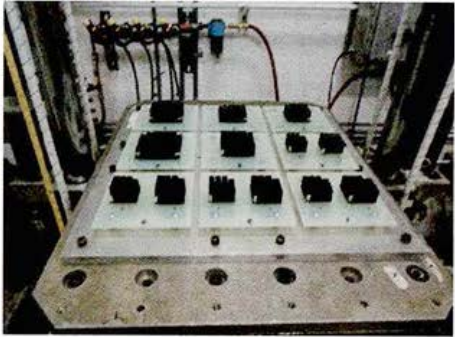
Alpha Novatech, Inc.
Trapezoid Shock Test



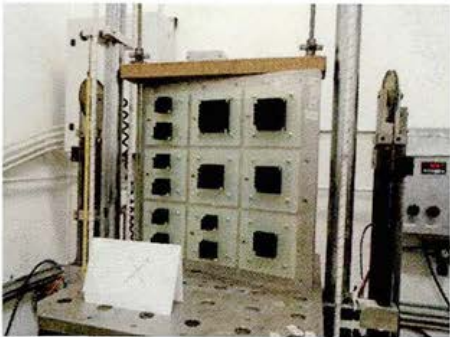
+X-axis



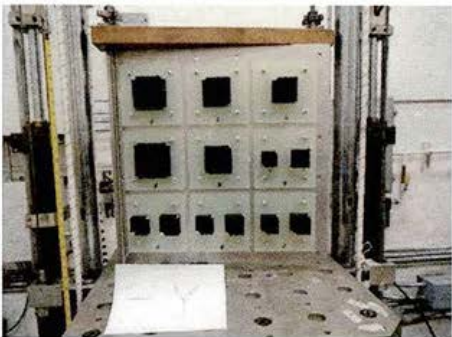
+Y-axis



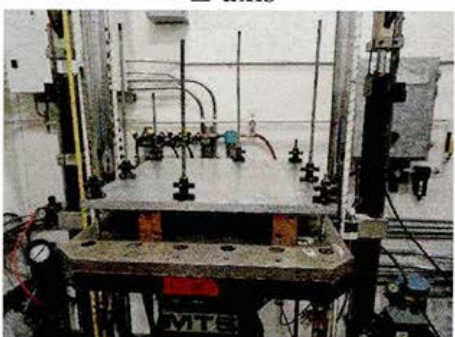
+Z-axis



-X-axis



-Y-axis



-Z-axis

TTS-152
10/26/2018

JOB NO. : QL-19-0234

03/18/2019

QUANTA LABORATORIES EQUIPMENT LIST



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Client:	Alpha Novatech, Inc.			P.O. NO:	20190227A0C	
				JOB NO.:	QL-19-0234	
DIGITAL SYSTEM LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Shaker Control System	VC-07	JAC VICO-8 8 inputs	0.1Hz - 3 KHz RES. 0.1dB	QL-0786	177247011	06/27/2019
Current Source	VC-07	Dytran 4123 8 Inputs		QL-0218	119	05/07/2019
Data Acquisition System	DAS-4	ECON		QL-0332	HW128992257	07/23/2019
MECHANICAL SYSTEM LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Shaker Amplifier	Red/Green	Ling DMA-48		QL-0504	46	Calibration Not Required
Electrodynamic Shaker	Red/Green	Ling B-335 (Red)	5Hz - 3 KHz	QL-0256	3	Calibration Not Required
Electrodynamic Shaker	Red/Green	Ling B-335 (Green)	5Hz - 3 KHz	QL-0253	91	Calibration Not Required
Shock Machine	MTS Shock Table	MTS 846.24	70" Drop	QL-0009	1077	Calibration Not Required
SENSOR LIST						
Device Type	Description	Make & Model	Range	Asset #	Serial #	Due Date
Accelerometers	Single-Axial	DYTRAN 3200B5T	20-2000 Hz 5000 G	QL-0390	5353	04/18/2019
Accelerometers	Single-Axial	DYTRAN 3256A2	5-2000 Hz 50 G	QL-0872	10892	01/25/2020

Notes:

1. All calibrations have been performed using standards having an accuracy traceable to NIST or derived from acceptable values of natural physical constants and complies with ISO-17025 and A2LA requirements.
2. Measurement uncertainty are calculated using a confidence level of 95% with a coverage factor of 2 (k=2)



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Quanta Laboratories Test Report

Quanta Laboratories submits this report with our Certificate of Conformance to the requirements of the applicable specifications and with appropriate supporting data, but with no other expressed or implied warranty. Customer assumes full responsibility when using or interpreting the data herein for evaluation and/or reporting purposes.

End of Report
QL-19-0234
