



## Electrostatic Discharge per IEC / EN 61000-4-2

Manufacturer:	Aleph Objects Inc	Project Number:	B40815
Customer Representative:	Seth Sinnema	Test Area:	GP 2
Model:	KT-PR0016	S/N:	KT-PR0016-6616
Standard Referenced:	EN55024: 2010	Date:	August 19, 2014
Temperature:	24.9°C	Humidity:	61%
Input Voltage:	230VAC 50Hz	Pressure:	835mb
Configuration of Unit:	Printing test gcode file off SD card		
Test Engineer:	Mark Novak		

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Test Location	Voltage Level (kV)	Polarity		Number of Pulses	Pulses Per Second	Comments	Criteria Met	Pass / Fail
		+	-					
Indirect Discharge Points								
VCP	2, 4	x	x	10	1	Front Side -4kv rebooted Repeatable	C*	Pass
VCP	2, 4	x	x	10	1	Left Side -2kv caused unit to reboot Could not repeat	C*	Pass
VCP	2, 4	x	x	10	1	Right Side +4kv froze LED not repeatable	C*	Pass
VCP	2, 4	x	x	10	1	Back Side	A	Pass
HCP	2, 4	x	x	10	1	Edge of HCP at Front of UUT -2kv needed a full reboot. Second time, it stopped but rebooted itself.	C*	Pass
Contact Discharge Points - <b>RED</b> Arrows.								
Figure #2	2, 4	x	x	10	1	No consistencies in failures. Sometimes positive and sometimes negative. About 80% of test points cause unit to reboot itself OR needs operator intervention. This is true for all test points indicated on all pictures.	C*	Pass
Figure #3	2, 4	x	x	10	1		C*	Pass
Figure #4	2, 4	x	x	10	1		C*	Pass
Figure #5	2, 4	x	x	10	1		C*	Pass
Figure #6	2, 4	x	x	10	1		C*	Pass
Figure #7	2, 4	x	x	10	1		C*	Pass
Figure #8	---	---	---	---	---	No Discharge points found	---	---
Figure #9	---	---	---	---	---	No Discharge points found	---	---
Air Discharge Points - <b>BLUE</b> Arrows.								
Figure #2	2, 4, 8	x	x	10	1	At all voltages made the LCD brighter	C*	B*




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Test Location	Voltage Level (kV)	Polarity		Number of Pulses	Pulses Per Second	Comments	Criteria Met	Pass / Fail
		+	-					
						where tip touched LCD		
Figure #3	---	---	---	---	---	No Discharge points found	---	---
Figure #4	2, 4, 8	x	x	10	1		C*	Pass
Figure #5	---	---	---	---	---	No Discharge points found	---	---
Figure #6	---	---	---	---	---	No Discharge points found	---	---
Figure #7	---	---	---	---	---	No Discharge points found	---	---
Figure #8	2, 4, 8	x	x	10	1		C*	Pass
Figure #9	2, 4, 8	x	x	10	1		C*	Pass



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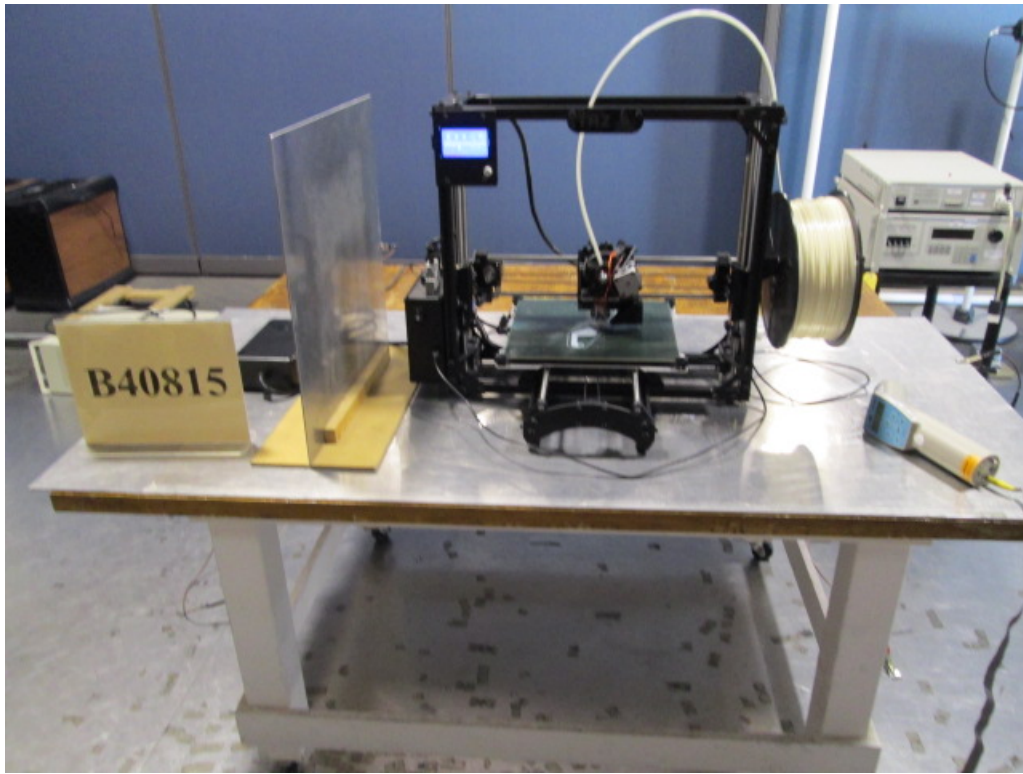


Figure A1. Electrostatic Discharge Test Setup.



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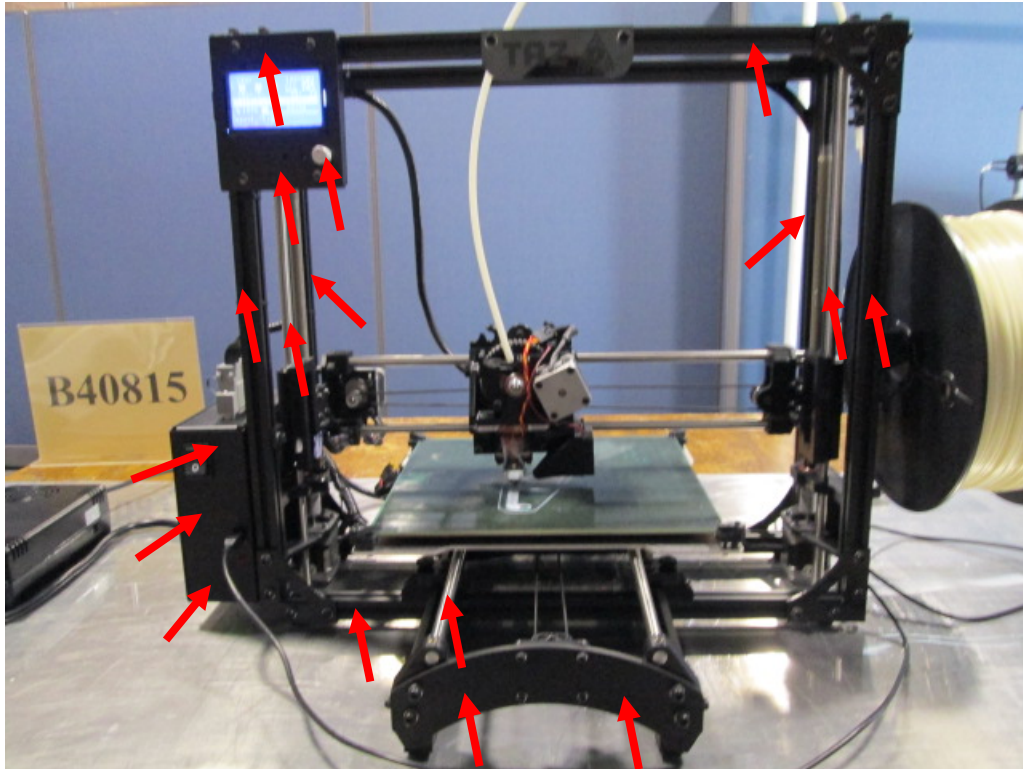


Figure A2. Electrostatic Discharge Test Setup.



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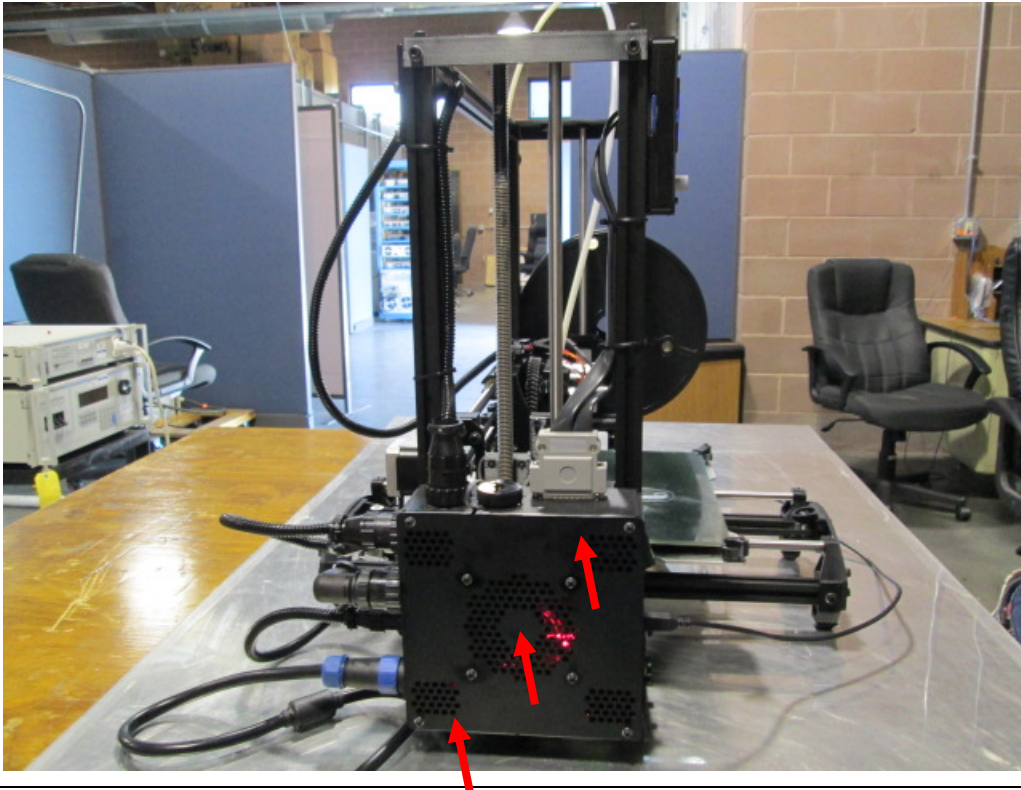


Figure A3. Electrostatic Discharge Test Setup.





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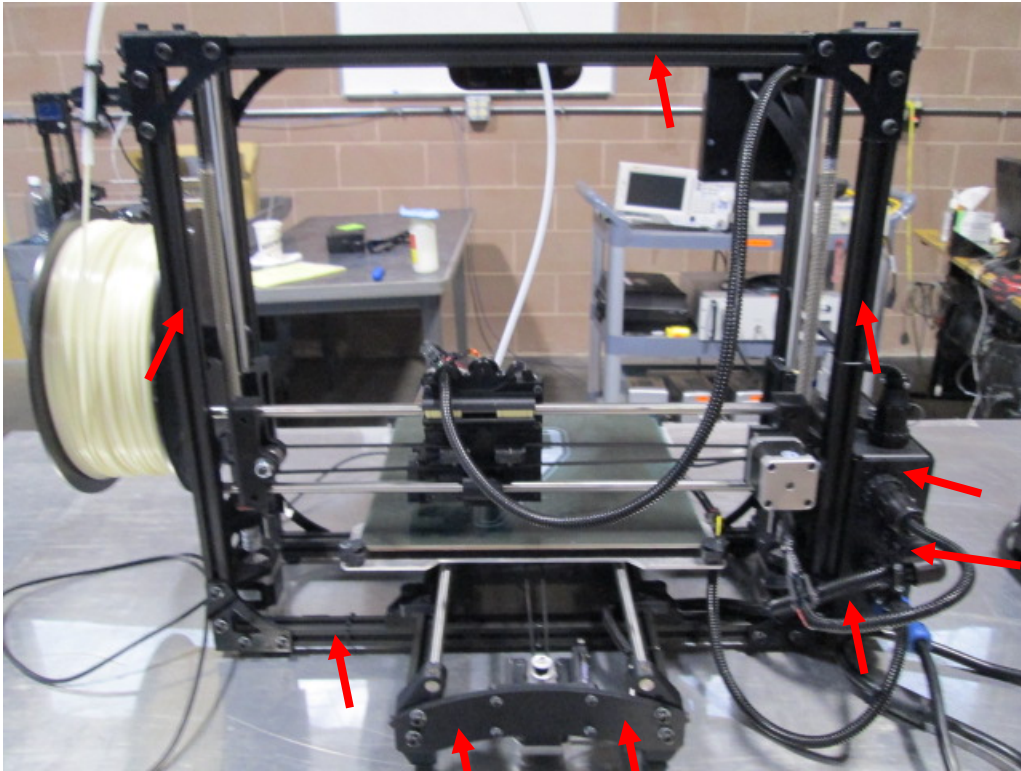


Figure A4. Electrostatic Discharge Test Setup.



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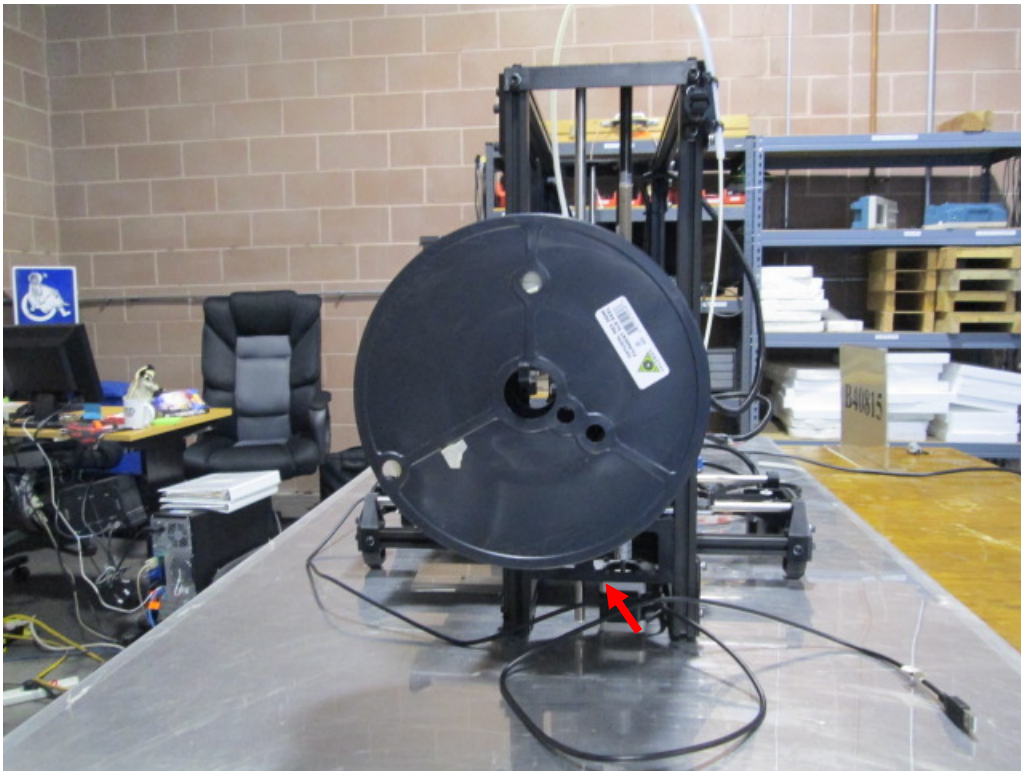


Figure A5. Electrostatic Discharge Test Setup.



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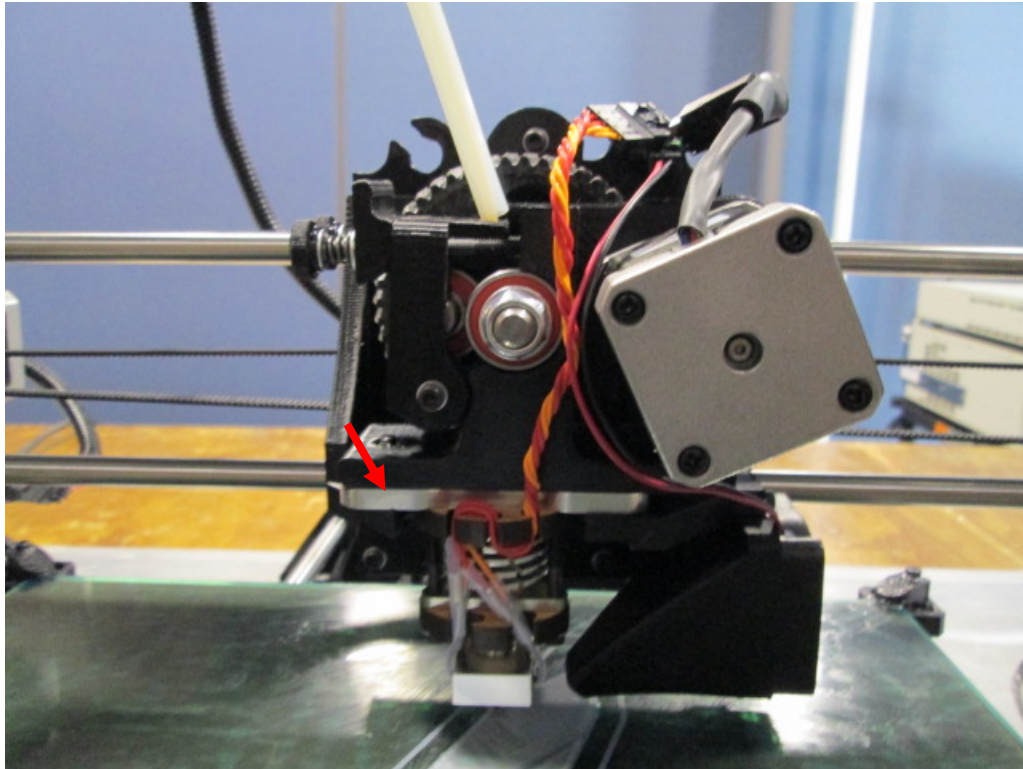


Figure A6. Electrostatic Discharge Test Setup.





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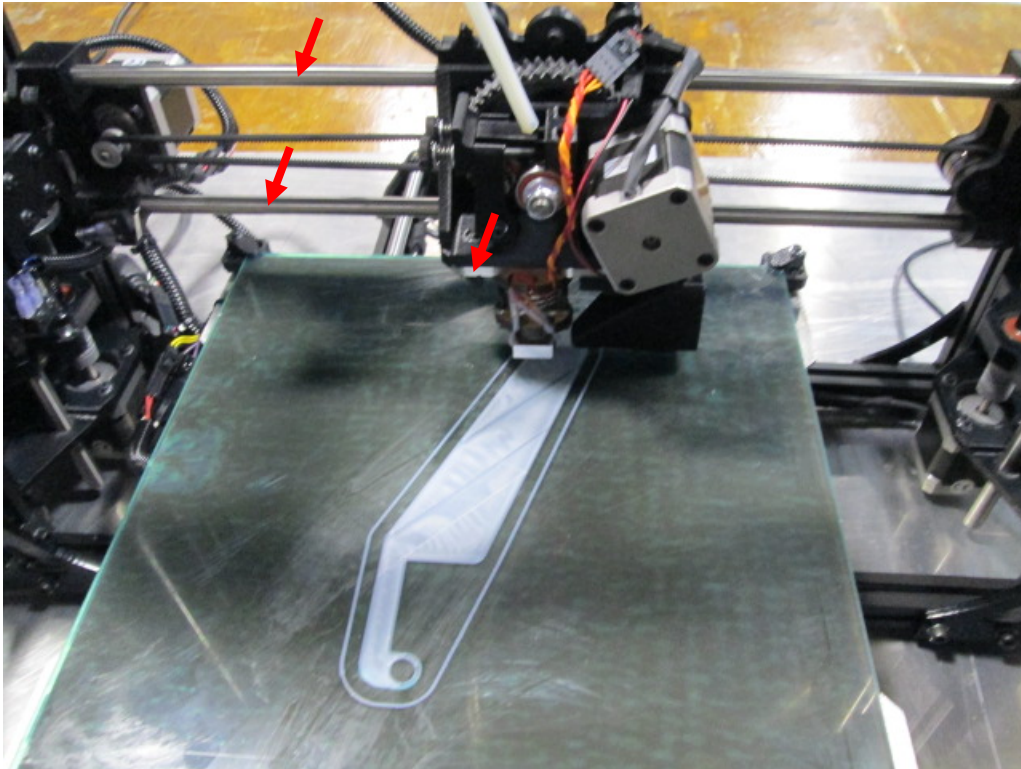


Figure A7. Electrostatic Discharge Test Setup.



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Figure A8. Electrostatic Discharge Test Setup.



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Figure A9. Electrostatic Discharge Test Setup.




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Model:	<u>KT-PR0016</u>	S/N:	<u>KT-PR0016-6616</u>
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**Test Equipment List**

ID Number	Manufacturer	Model #	Serial #	Description	Cal Date	Cal Due
1333	EMC Partner	ESD3000	395	ESD Test System	03/06/2014	03/06/2015
1536	Extech Instruments	445715	Z315811	Hygro-Thermometer	03/21/2014	03/21/2015
1550	California Instruments/A metek	1251P	1423A05346	AC Power Supply	NA	NA