CHANGE / DEVIATION REQUEST

ULA™ United Launch Alliance

Supplier Name and Address L-3 Cincinnati Electronics 7500 Innovation Way Mason, OH 45040	Cage Code 80045	Date 8-15-2016	Request Number 4865O-004
		Purchase Order Number 4500030494 Line item 00036	Check Applicable Block ☒ Request for Deviation ☐ Change to Supplier Date ☐ Change to ULA Data
ULA Part Number 1F67700-1, 1F67700-501, 1F67700-503		Contract Number 4500030494	

End Item Nomenclature Ordnance Control Unit	End Item Part Number 1F67700-1,1F67700-501, 1F67700-503	Effect on Cost / Price N/A		
Name of Lowest Part Effected OCU Top Level	Lowest Part P / N 1F67700-1,1F67700-501, 1F67700-503	Data Cost $	Other Non-Rec. Cost $	Cost per Unit $

Product Effectively All OCU Top Level SNs upon approval	Effect on Delivery Schedule N/A
Spec. Effected? ☐ No ☐ Yes – Spec. Number:	
Drawing Numbers Effected 1F67700-1, 1F67700-501, 1F67700-503	Effect on Logistics N/A

Title / Description
Force Limit Adjusment File Document Modification and Control

Justification
Force limits in the ATP vibration as defined in the Acceptance Test Procedure are to adjusted according to ULA's force limit vibration theory. This adjustment is made via formulas in an Excel file provided by ULA. The purpose of this waiver to allow for the use of modified Excel files to prevent incorrect usage by the test operator. Each axis of vibration (ie X,Y,Z) has been split into its own file. Further, a separate file has been created for each vibration controller type to prevent incorrect adjustment. This results in six separate files for the OCU force limit adjustment. Approval of this wavier will allow these files to be controlled by L-3 CE configuration management and used for ATP vibration testing. See attachments

Configuration Requirements Effected by Request

☐ Safety	☐ Performance	☐ Service Life	☐ Interchangeability	☐ Op. Computer Program
☐ AGE / SE	☐ Interface	☐ Preset Adj.	☐ Physical Constraints	☒ Operating / Inst. Procedure
☒ Dwgs / Docs	☐ Spare Parts	☐ Rel. / Maintenance	☐ Wt., Bal. and Stability	☐ Maintenance Overhaul / Rework Method
☐ Price of Fee	☐ Delivery Sched.	☐ Electrical Interface	☐ First Article Inspection	

If Request is for Deviation		If Request is for Change				Scheduled Completion Date for Proposed Change
		Class	(Recommended Priority)		Origin	
☒ Minor	☐ Recurring	☐ Class I	☐ Emergency	☐ Routine	☐ ULA	
☐ Major	☒ Non-Recurring	☐ Class II	☐ Urgent	☐ Compatibility	☐ Supplier	
☐ Critical						

Retrofit Recommended? ☒ No ☐ Yes	Estimated Cost for Retrofit Kits	$
If Yes, State Reasons	Estimated Kit Delivery Schedule	
	Estimated M / Hrs per Unit	
Retroactive Effectivity by Serial or Part Number: N/A		
Special Tools / Test Equipment Required? ☒ No ☐ Yes		
If Yes, Describe	Estimated Cost	$
	Estimated Delivery Schedule	

8/23/2016	J.M. Williams 8-19-2016	
P.O. Authority Date Needed	Supplier Signature	Program Office Signature

See next page for Continuation Sheet.

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ULA Part Number 1F67700-1, 1F67700-501,1F67700-503		Contract Number 4500030494	
Continuation Sheet			

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
-	RELEASED	2016-08-10	MDF

APPLICATION	
NEXT ASSY	USED ON

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES: (MM)
TOLERANCES:
DECIMALS:
.XX±.05 (±0.5)
.XXX±.005 (±0.13)
FRACTIONS:
±1/64 (±0.4)
ANGLES: ±30'
INDUSTRY STANDARD TOLERANCES APPLY FOR GAUGE, TUBING, AND BAR STOCK.

3RD ANGLE PROJ

ALL SHEETS ARE THE SAME REVISION STATUS

CONTRACT NO.

DRAWN	C. YOUNG	DATE 2016-07-28
CHECKED	D. McELROY	DATE 2016-08-03
APPROVED	P. POPPLETON	DATE 2016-08-03
QUALITY	C. BARRERA	DATE 2016-08-02

Cincinnati Electronics
7500 Innovation Way
Mason, OH 45040

TITLE

OCU Y-AXIS WEIGHT CHECKOUT
IAT 8CH

SIZE	CAGE CODE	DWG NO.	REV
A	**80045**	**ENV1F67700-1-Y-8**	**-**

SCALE **NONE** SHEET 1 OF 2

OCU Static Weight	Y-Axis New Weight IAT
36.2	46

Y-Axis Delta dB
2.58

Y-Axis Factor Increase
1.81

DO NOT CHANGE DATA BELOW
Y-Axis Qual Delta dB
2.21

-0.37

Frequency	OCU FSD Y-Axis MPE (Level from Spec) 445 lb-rms, 60 sec/axis	Frequency	Y-Axis OCU FSD IAT
20	88	20	159
40	714	40	1294
70	714	70	1294
110	287	110	520
180	287	180	520
280	203	280	368
370	85	370	154
630	75	630	136
1400	51	1400	92
1800	51	1800	92
2000	35	2000	63
Overall	445	Duration	60 sec/axis
Duration	60 sec/axis		

Weight Checkout Method:

1. Verify FSD MPE Axis Levels are correct. Should be IAT levels listed in ATP.
2. Paste Unholtz Dickie Controller Data into appropriate axis tab
3. New FSD environments will automatically be generated in the green boxes. Delta dB and scaling factor for each axis are noted in boxes above. If boxes are **GREEN,** weight checkout **does not require** ULA Dyn Environments approval. If boxes are **RED**, ULA Dynamic Environments **must be notified** before random vibe test for the axis.

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QUALITY	C. BARRERA	DATE 2016-08-02

TITLE

OCU X-AXIS WEIGHT CHECKOUT
IAT 4CH

SIZE	CAGE CODE	DWG NO.	REV
A	**80045**	**ENV1F67700-1-X-4**	**-**

SCALE **NONE** SHEET 1 OF 2

OCU Static Weight	X-Axis New Weight IAT
36.2	43.2

X-Axis Delta dB
2.04

X-Axis Factor Increase
1.60

DO NOT CHANGE DATA BELOW
X-Axis Qual Delta dB
1.75

-0.29

Frequency	OCU FSD X-Axis MPE (Level from Spec) 420 lb-rms, 60 sec/axis	Frequency	X-Axis OCU FSD IAT
20	50	20	80
25	82	25	131
55	445	55	711
75	445	75	711
110	202	110	323
180	202	180	323
210	202	210	323
320	202	320	323
400	90	400	144
710	75	710	120
1400	51	1400	81
1800	51	1800	81
2000	35	2000	56
Overall	420	Duration	60 sec/axis
Duration	60 sec/axis		

Weight Checkout Method:

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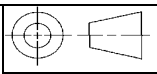

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DRAWN C. YOUNG	DATE 2016-07-28	TITLE
CHECKED D. McELROY	DATE 2016-08-03	**OCU Z-AXIS WEIGHT CHECKOUT IAT 8CH**
APPROVED P. POPPLETON	DATE 2016-08-03	
QUALITY C. BARRERA	DATE 2016-08-02	

SIZE	CAGE CODE	DWG NO.	REV
A	**80045**	**ENV1F67700-1-Z-8**	**-**

SCALE **NONE** SHEET 1 OF 2

OCU Static Weight	Z-Axis New Weight IAT
36.2	42.6

Z-Axis Delta dB
1.91

Z-Axis Factor Increase
1.55

DO NOT CHANGE DATA BELOW
Z-Axis Qual Delta dB
1.40

-0.51

Frequency	OCU FSD Z-Axis MPE (Level from Spec) 524 lb-rms, 60 sec/axis	Frequency	Z-Axis OCU FSD IAT
20	900	20	1398
25	2100	25	3263
35	2100	35	3263
40	1800	40	2797
60	1800	60	2797
120	259	120	402
190	259	190	402
220	259	220	402
320	259	320	402
420	75	420	117
630	75	630	117
1400	51	1400	79
1800	51	1800	79
2000	35	2000	54
Overall	524	Duration	60 sec/axis
Duration	60 sec/axis		

Weight Checkout Method:

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IAT 4CH

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