

		<b>APPLICATION FOR ESCC TECHNOLOGY FLOW QUALIFICATION EXTENSION</b>			Page 1
		Component Title:	Custom Magnetics (Inductors, Chokes and Transformers)		Appl. No.
Executive Member:	ESCC / ESA	Date:	27/03/2024	364B	
Technology Flow submitted for qualification					1
Summary Description of Technology flow	Detailed Technology Flow Description No.	BASED On Technology	Test Structures	Components Proposed for Qualification	
The Technology Flow covers custom magnetic components at Flux/SA for the domain as described in FT08699015-9, PID and QML document.	It includes customized inductors, chokes and transformers. Combined Magnetics family (sub-assemblies) are not included into the domain.	Inductors, chokes, transformers & Data Transmission.		Various topologies covering the domain. List included into the test report FT08699028-2 and into the PID. Summary provided into box 12.	
Component Manufacturer Flux A/S	2	Location of Manufacturing Plant Industrivangen 5 4550 Asnaes Denmark	3	ESCC Specification used for Qualification Generic: ESCC3201 issue 7 Detail/s: ESCC3201/013 issue 3	
Qualification Report Reference and date: FT08699028-2  Date: 11/06/2024			5	PID used for manufacturing Qualification Lot  Ref No: FT088699015 Issue: 9 Date: 26/06/2024	
PID changes since Original Qualification or last extension of Qualification. None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> Domain extended on frequency level resulting from ESCC Qualification. Frequency sweep performed on all new designs		7	Current PID Verified by: <u>ESA</u> Name of Executive Representative  Ref No: FT088699015 Issue: 9 Date: 26/06/2024		8
Current Manufacturing facilities surveyed by: <u>S. Hernandez, ESA</u> on <u>04/06/2024</u> (Name of Executive Responsible Agency) (Date)					9
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Corrective Actions closed out Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>					
Report: ESA-TECQES-RP-2024-001812					
Quality and Reliability Data Evaluation testing performed Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			Failure analysis, DPA, NCCS available Yes <input type="checkbox"/> No <input type="checkbox"/>		
Report Ref. No.:			Date:		
Equivalent Data: Design, Manufacturing and test heritage for space			CA on 5 different topologies Reports CA0004175 and CA CA0004176. Flux CA reply: report 08699023		



**APPLICATION FOR ESCC TECHNOLOGY FLOW QUALIFICATION EXTENSION**

Component Title: Custom Magnetics (Inductors, Chokes and Transformers)  
 Executive Member: ESCC / ESA Date: 27/03/2024

Page 2  
 Appl. No.  
 364B

11

The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; -that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence except as stated in box 15; - that the reports and data are available at the ESCC Executive and therefore applies on behalf of ESA as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 18/07/2024

**Denis Lacombe**

Digitally signed by Denis Lacombe  
 Date: 2024.07.22 10:20:52 +02'00'

(Signature of the Executive Coordinator)

Continuation of Boxes above:

12

Test vehicles:

Evaluation Sample	Flux Part No	Description	Quantity
Q1	12181014-1-C	Inductor 195µH 1.9A (Attrition lager 3-2)	5
Q2	12900107-1-C	Flux Standard CM Toroid	5
Q3	12251047-1-C	Coupled Inductor	5
Q4	14890203-1-C	Gate Transformer	5
Q5	12311058-1-C	R12-I-5796 Inductor	5
Q6	14230080-2-C	Transformer EFD-3032	5
Q7	14280078-1-C	IM2 DCDC UDCA GTS	5
Q8	12800484-1-C	EP5 Inductor SMD (XAL)	5
Q9	14270167-1-C	Hi Power Inductor	5
Q10	15530201-1-C	1553 Bus transformer	5
Q11	14381003-1-C	EE43/10/28 3C95 Housing	5
Q12	14391002-1-C	Planar Transformer 450 V 2.5 kW	5
Q13	12391001-2-C	Ion motor inductor	5
Q14	12819002-1-C	ER 14,5 Inductor 27nH	5
Q15	12829003-1-C	E18 Inductor	5
Q16	12839009-1-C	E22 Inductor 82,5nH	5
Q17	14229007-1-C	RM8-SMD/THT-L25-20P Pin SMD	5
Q18	14229006-2-C	RM8-SMT-L32-20P GW SMD	5
Q19	14260119-1-C	Transformer 180W	5

Qualification testing performed:

Group and Test		Sample					Method (Para)	Requirement (Para)
		1	2	3	4	5		
Environmental/Mech	Electrical characteristics	✓	✓				5.7.1	5.7.2
	Mechanical Shock	✓	✓				5.10.1	5.10.2
	Vibration (random)	✓	✓				5.9.1	5.9.2
	Moisture Resistance	✓	✓				5.15.1	5.15.2
	Electrical characteristics	✓	✓				5.7.1	5.7.2
	Thermal Shock	✓	✓				5.17.1	5.17.2
	Partial Discharge (Hi Power Transformer only)	✓	✓				5.13.1	5.13.2



**APPLICATION FOR ESCC TECHNOLOGY FLOW QUALIFICATION EXTENSION**

Component Title: Custom Magnetics (Inductors, Chokes and Transformers)

Executive Member: ESCC / ESA

Date: 27/03/2024

Page 3

Appl. No.

364B

Non compliance to ESCC requirements:

13

No.:	Specification	Paragraph	Non compliance

Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

N/A

14

Executive Manager Disposition

Application Approval: Yes  No

Action / Remarks:

15

Date:

B. Schade: Head of the Product Assurance and Safety Department

	Temperature Rise (selected units)	✓					5.18	
	Overload	✓	✓				5.16.1	5.16.1
	Induced Voltage	✓	✓				5.5.1	5.5.2
	Dielectric Withstanding Voltage (at	✓	✓				5.6.1	5.6.2
	Electrical characteristics	✓	✓				5.7.1	5.7.2
	Visual Inspection	✓	✓				5.2.2.1	5.2.2.2
	Resistance to soldering heat	✓	✓				5.3.1	5.3.2
	DPA	✓					5.14.1	5.14.2
Endurance	Life			✓	✓	✓	5.11.1	5.11.2
	Permanence of Marking			✓	✓	✓	5.8.1	5.8.2
	Electrical characteristics			✓	✓	✓	5.7.1	5.7.2
	Visual Inspection			✓	✓	✓	5.2.2.1	5.2.2.2
Assembly	Solderability					✓	5.3.1	5.3.2
	Terminal Strength					✓	5.4.1	5.4.2
	Visual Inspection					✓	5.2.2.1	5.2.2.2
Sample Size = 5							Failures Allowed = 0	