

	APPLICATION FOR EXTENSION OF ESCC TECHNOLOGY FLOW QUALIFICATION APPROVAL	Page 1 Appl. No. 313C		
Technology Flow: Crystal SAW Filters within NORSF-C1 (crystal) and NORSF-A1 (assembly) processes Executive Member: ESA		Date:		
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Technology Flow submitted for Qualification Approval:				
SUMMARY DESCRIPTION	TEST STRUCTURES	COMPONENTS PROPOSED FOR QUALIFICATION		
Crystal SAW filters Technology Flow as in REP 006 Paragraph 5.3 with modifications / amendments as in Box 14 (below)	Transversal SAW filter designs. Package Type A (3502/002). SQF-4741 and SQF-6340.	3502/002, all variants		
2	3	4		
Component Manufacturer KONGSBERG NORSPACE	Location of Manufacturing Plant(s) Knutsrødveien 7 N-3189 Horten Norway	Date of original qualification approval: Date: 24/08/2011 Certificate Ref No. 313		
5	6	7		
ESCC Specifications used for Maintenance of qualification testing: Generic: 3502 Detail(s): 3502/002 Iss 3	Deviations to LVT testing and Detail Specification used: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (supply details in Box 15) Deviation from current Specifications: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (Supply details)	Qualification Extension Report reference and date: NORS\5006\TPFIQUR025_1, 31-Aug-2017 NORS\5006\TPFIQUR027_1, June-2018. SQF-4741 and SQF-6340		
8				
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)				
Project Name	Testing Level	LAT	Date code	Quantity Delivered
Several	ESCC		See Annex 2 (confidential)	
Several	ESCC-equivalent	LAT 3 (DPA)		
9				
PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box: <div style="border: 1px solid black; padding: 2px; display: inline-block;">See box 19</div>		Current PID Verified by: ESA Name of Executive Representative Ref No: PID 630 + PID 534 (for crystal manufacturing and assembly manufacturing , respectively) Issue: 6 and 6, respectively Date: 12/02/2018 (both) Rev Date: 14/02/2018		
10				
Current Manufacturing facilities surveyed by: ESA on 20/02/2018 <div style="text-align: center;">(Name of Executive Representative) (Date)</div>				
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain				
Report Reference: NOR-SUR-2018				
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<p>Failure Analysis, DPA, NCCS available: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Supply data)</p> <p>Ref. No's and purposes:</p>		12
<p>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.</p> <p>Date: 21/06/2018</p> <p align="right">  (Signature of the Executive Coordinator) </p>		13
<p>Continuation of Boxes above:</p> <p>Technology Flow Abstract.</p> <ol style="list-style-type: none"> 1. Technology Flow – unchanged vs. initial qualification in 2011 2. Design – unchanged vs. initial qualification in 2011 3. Fabrication – unchanged vs. initial qualification in 2011 4. Assembly – unchanged vs. initial qualification in 2011 5. Test – unchanged vs. initial qualification in 2011 6. Radiation – unchanged vs. initial qualification in 2011 <p>CONTINUATION OF BOX 9 – PID EVALUATION</p> <p>The technical note NORS\SAW\SAWTFQ\TPF\TNO021 issue 3 of 12-Feb-2018 provides the PID change record summary</p>		14



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance

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

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Executive Manager Disposition

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Application Approval: Yes ☐ No ☐

Action / Remarks:

Date:

Signature, ESA Representative



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ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION

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Tests conducted in compliance with:

- ESCC 3502 generic specification; Chart F4 (for ESCC/QPL parts);
- PID- 534 issue 6 (for ESCC/QML parts)
- TFD (for ESCC/QML parts) TNO629 issue 4


Tests vehicle identification/description:

NORS/SAW/SQF4741/DJF/ESCC350200201SQF4741
Package type A
9 pcs from date codes 1805

NORS/SAW/SQF6340/DJF/ESCC350200201SQF6340
Package type A
12 pcs from date codes 1805

Detail Specification reference: 3502/002

F4	Test		Conditions		Qty	Rejects	Comments on Rejection
	Mechanical Shock	<input checked="" type="checkbox"/>	MIL-STD-883 2002 B	1805	6	0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-883 2007 A	1805	6	0	
	Constant Acceleration	<input checked="" type="checkbox"/>	MIL-STD-883 2001 B	1805	6	0	
	Seal	<input checked="" type="checkbox"/>	MIL-STD-883 1014 CH2	1805	6	0	
		<input checked="" type="checkbox"/>	MIL-STD-883 2009	1805	6	0	
	Temperature Cycling	<input checked="" type="checkbox"/>	MIL-STD-883 1010 B	1805	6	0	
	Moisture Stress	<input checked="" type="checkbox"/>	ESCC 3502, 8.12 MIL-STD-883 1010 B	1805 1805	6	0	
	Seal	<input checked="" type="checkbox"/>	MIL-STD-883 1014 CH2	1805	6	0	
		<input checked="" type="checkbox"/>	MIL-STD-883 2009	1805	6	0	
Subgroup 2	Operating Life	<input checked="" type="checkbox"/>	MIL-STD-883, 1005	1805 1805	6	0	
	Seal	<input checked="" type="checkbox"/>	MIL-STD-883, 1014, CH2	1805 1805	6	0	
	Inspection	<input checked="" type="checkbox"/>	MIL-STD-883, 2009	1805 1805	6	0	
Subgroup 3		<input checked="" type="checkbox"/>	MIL-STD-883 1018	1805	1	0	
		<input type="checkbox"/>	ESCC 24800				N/A as the packages are laser-
	Terminal Strength	<input checked="" type="checkbox"/>	IEC 60068-2-20 test Ta	1805	3	0	
		<input checked="" type="checkbox"/>	MIL-STD-883 1013	1805	3	0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-883 2011	1805	3	0	
	Solderability	<input checked="" type="checkbox"/>	MIL-STD-883 2003	1805	3	0	
		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					

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<p align="center">NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL</p>		
<p>ENTRIES</p>		
Form heading	<p>shall indicate: - the title of the component as given in its detail specification or the name of the series, family; - the Executive Member; - the entering date; - the certificate number and its sequential suffix.</p>	
Box 1	<p>shall provide details given in the table; in particular there shall be listed: - the variants or range of variants; - the range of components (the ESCC code is recommended to indicate the values or values range, the tolerance, the voltage, etc); the designation given in the detail specification as 'base on'; - under Test Vehicle enter either an ESCC code or the specific characteristic capable of identifying the component tested (e.g., voltage of coil for a relay); - under component similar enter a cross if relevant.</p>	
Box 2; 3 and 4	<p>As per QPL entry; otherwise, an explanation of the changes must be supplied.</p>	
Box 5	<p>Will show the ESCC Generic and Detail specifications, including issue number and revision letter, current at the time the tests reported were performed. If the specifications are different from those current on the date of the application, see Box 6.</p>	
Box 6	<p>Will show the deviations from the Generic and Detail Specifications listed in Box 5, in particular deviations from testing. In case of deviations this must be listed in Box 15. In case the referenced specification in Box 5 have currently a different issue and/or revision indicate also whether the test data deviates or not from such current documents.</p>	
Box 7	<p>Must reference the report(s) supplied in support of the application.</p>	
Box 8	<p>Should provide the details of procurement to the full ESCC System, documentation of all of which should already have been delivered to the ESCC Executive under the terms of the relevant Generic Specification. An appropriate table has been drawn in this box.</p>	
Box 9	<p>If the PID evolved after the Original Qualification or after the last Extension of Qualification, adequate details of such evolution shall be provided together with the reasons for the changes. Major changes shall be clearly marked.</p>	
Box 10	<p>Identify the current PID issue status, date and actual date of verification. The date of verification of the current PID should be arranged as close as possible to the required date of extension.</p>	
Box 11	<p>This box can be completed only after a physical visit to the plant to confirm that no unexplained changes occurred and that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded.</p>	
Box 12	<p>Provide details of, or reference to, any Destructive Physical Analysis (DPA) and Failure Analysis reports as well as any Nonconformance(s) (NCCS) occurred during the qualification validity period, stating if established corrective action have produced satisfactory results.</p>	
Box 13	<p>Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.</p>	
Box 14	<p>To be used when there is a need to expand any of the boxes from 1 through 12. Identify box affected and reference the Box 14 in the relevant Box. Box 14 can be broken into 14a, 14b, etc. if several boxes have to be expanded.</p>	
Box 15	<p>Fill in Table as requested.</p>	
Box 16	<p>Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.</p>	
Box 17	<p>All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the QPL or QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 19, signed by the representative for ESA, and dated.</p>	
Box 18	<p>Fill in Table as requested.</p>	
Box 19	<p>Confidential Details of PID changes including those of a confidential nature, shall be provided.</p>	
Box 20	<p>State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 16 each nonconformance shall be sequentially numbered. If relevant state 'None'.</p>	
Box 21	<p>Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.</p>	
Box 22	<p>Additional Comments.</p>	