



APPLICATION FOR ESCC CAPABILITY APPROVAL

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CAPABILITY DOMAIN: Thin Film Hermetic Hybrid Microcircuits

384

Executive Member: ESA

Date: 02/11/2022

Capability domain submitted for approval

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Capability Domain Description	Capability Abstract Number	Based on Technology	Test Structures
Thin film Hybrids	NORS/2038/TPF/TNO001 Capability Abstract Kongsberg Hybrid Line	Thin film hybrid technology	STH-1080_TV STH-2130_TV STH-2291_TV STH-2915_TV STH-2923_TV


Component Manufacturer Kongsberg Defence & Aerospace AS	Location of manufacturing plant(s) Knudsrødveien 7 N-3189 Horten Norway	ESCC Specifications used for Capability Approval Generic: ESCC25600 Issue 1 Details: ESCC2566000 Issue 3
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Report reference: NORS/2038/TPF/QUR001 HYB PCA Test report ESA-TECQEC-LAB-TR-2022-002958 Date: 22/08/2022	PID used for manufacturing Approval Testing Lot Reference No.: NORS/HYBRID/GEN/MIF/PID1198 Issue: 3 Revision: - Date: 27/05/2021
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PID Changes since start of Capability Approval None <input type="checkbox"/> Minor* <input type="checkbox"/> * provide details in Box 12 Major* <input checked="" type="checkbox"/>	Current PID Verified by: <u>S. Hernandez, ESA</u> Name of Executive Representative Ref. No.: NORS/HYBRID/GEN/MIF/PID1198 Issue: 4 Date: 01/09/2022
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Current Manufacturing Facilities and Quality System audited		
by: <u>S. Hernandez, ESA</u>	<u>11/05/2022</u>	<u>NORS/2038/ECF/20220511 S Audit and Line Survey</u>
Name of Executive Representative Agency	Date	Report Reference Number
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"/>

Quality and Reliability Data	
Evaluation testing performed Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Failure Analysis, DPA, NCCS: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (supply data)
Report Ref. No.: <u>NORS/HYB PCA/ECF/MOM005</u> Equivalent data: ESA Contract No. 4000128544/19/NL/GLC/vr NORS/HYB_PCA/ECF/MOM005 Certification: Yes	Ref. Nos. and purpose: ESA-TECQEC-LAB-TR-2022-002958

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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 evidenced except as stated in box 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC Capability Approval status to be given to the capability domain defined herein.

Date:

Anastasia Pesce

 (Signature of the Executive Coordinator)

Digitally signed by Anastasia Pesce
 Date: 2022.11.25 09:56:03 +01'00'

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Continuation of Boxes above:

PID Change log from issue 3 to issue 4:

- Updated abbreviations list
- Added reference document RD-13 and RD-14 in section 1.2
- Updated number of employees in section 2.1.
- Updated organisation chart in section 2.2
- Updated manufacturing area figure in section 3.1.
- Added KASKo procedures to the relevant chapters in section 3.
- Specified that the portable particle sensor is also used for ISO class requalification purposes in section 3.4
- Added ATP (Applied Thinfilm Products) to list of suppliers in Table 4 1
- Updated maximum package and lid size in section 4.8.
- Added lead integrity test, solderability test, destructive bond pull test and die shear test in section 5.1.
- Updated PS-70617 to issue 4 (ref. RD-13) in Table 5 1
- Included PIND amplifier, accelerometer, and STU in Table 6 1
- Replaced Components with Component families in Section 7.6.1
- Included material, dimensions, and metallisation for item 98726 in section 7.6.1.6
- Updated elongation data on item 81914 section 7.6.1.19
- Updated text in section 7.6.1.31
- Updated adhesion layer specification item 96066 section 7.6.1.31
- Standardised item description section 7.6.1.38
- Added Hybrid types text in section 8
- Updated exceptions and added part on manufacturer "category 1" in section 9.



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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 Capability Approval or rationale for acceptability of noncompliance:

14

Executive Manager Disposition:

15

Application Approval: Yes ☒ No ☐

Action/Remarks:

Date:

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

CAPABILITY DOMAIN: Thin Film Hermetic Hybrid Microcircuits

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Date: 02/11/2022

GENERAL

ENTRIES

Form heading

shall indicate: - the title of the capability domain or the technology as given in the Capability Abstract - the Executive Member: - the entering date: - the serial number and the suffix of the form.

Box 1

shall provide under capability domain description the full name or a description statement of the capability domain – the number of the Capability Abstract document – the basic technology used for capability approval – the test structures specification numbers or identification numbers – the components which successfully passed component approval test and are proposed for qualification within the domain.

N.B. The capability abstract shall be attached as an Appendix.

Box 2 and 3

Manufacturer's name and location of the plant(s) where the capability domain is situated.

Box 4

The ESCC Generic and Detail specifications (including issue number and date) used during Capability Approval.

Box 5

Reference to test report(s) submitted in support of the application for capability approval and components proposed for qualification.

Box 6

Enter details to identify the PID that was applicable at the time of manufacturing of samples for capability approval testing.

Box 7

If the PID has been changed during or after capability approval testing, adequate details shall be provided together with the reasons for change. Major changes shall be clearly identified.

Box 8

The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this verification.

Box 9

The box can be completed only after a physical visit to the plant to confirm that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This audit shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and the results shall be formally recorded. The report number shall be referenced.

Box 10

Details entered shall be sufficient to evidenced that an evaluation programme according to ESCC Basic Specification No. 24300 has been performed and that the results thereof are summarised in the audit and test reports. If the evaluation programme has not been carried out according to established ESCC Specifications, the applicant Executive Member shall provide alternative data and declare the assessed degree of satisfactory compliance with the ESCC requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis reports as well as any Non Conformance (NCCS) issued during the Evaluation and/or capability approval testing.

Box 11

Enter the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature and date of the responsible Executive Coordinator.

Box 12

To be used when there is a need to expand any of the boxes from 1 through 10. Identify the Box affected and reference Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several boxes have to be expanded.

In the case of Application for the Extension of Capability Approval, the Box 12 may be used to provide a summary of lots of component types (types, date codes, quantity) manufactured and tested within the capability domain. Refer to ESCC 24300, paragraph 9.4.3 for complete requirements.

Box 13

State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 14 each nonconformance shall be sequentially numbered. If relevant state 'None'.

Box 14

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.

Box 15

All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the ESCC QPL entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the representative for ESA, and dated.