APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: CRYSTAL OSCILLATOR RK135, CLASS 2, 4MHz to 100MHz, AHCMOS compatible output, RAD-HARD

Executive Member: CNES Date: 31/10/2025

Appl. No. 371B

1

Components (including series and families) submitted for Extension of Qualification Approval:

ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3503001	01 to 04	FP1, FP2, FP3, FP4 packages	RK135 type	350300102R100M000000HC	
				350300104R40M000000HC	
				350300104R48M000000HC	
				350300104R96M000000AC	

2 Component Manufacturer

RAKON France

3 Location of Manufacturing Plant(s)

2 rue Robert Keller 10150 Pont-Sainte-Marie

4

Date of original qualification approval:

Date: 15/02/2021

Certificate Ref No. 371

5

ESCC Specifications used for Maintenance of qualification testing:

Generic: ESCC 3503 Issue: 05

Detail(s): 3503/001 Issue : 08

6

Deviations to LVT testing and Detail Specification used:

No ☒ Yes ☐ (supply details in Box 15)

Deviation from current Specifications:

No ☒ Yes ☐ (Supply details)

7

Qualification Extension Report reference and date:

522579_Acceptance_Test_Report_350300102R100M000000HC_DC2427 du 14/11/2024
519993_Acceptance_Test_Report_350300104R40M000000HC_DC2317 du 15/09/2023
521652_Acceptance_Test_Report_350300104R48M000000HC_DC2326 du 19/12/2023
521077_Acceptance_Test_Report_350300104R96M000000AC_DC2326_Is 02 du 19/01/2024
LVT report_51002685.570.00-A0_Chart F4_350300102R100M000000HC_DC2427du 23/04/2025
LVT report_51002685.570.00-A0_Chart F4_350300104R40M000000HC_DC2317 du 03/03/2025
LVT report_51002685.570.00-A0_Chart F4_350300104R48M000000HC_DC2326 du 03/03/2025
LVT report_51002685.570.00-A0_Chart F4_350300104R96M000000AC_DC2326 du 23/04/2025

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
SalesOverview_February2023-January2025				

PID changes since start of qualification 9

None ☐

Minor* ☒

Major* ☐ *Provide details in box: 19

10

Current **PID** Verified by: CNES

Name of Excutive Representative

Ref No: 51001742-E0_RK1x5 series Process Iidentification Document

Issue: F0 Date: 15/02/2013

Rev Date: 16/10/2025

11

Current Manufacturing facilities surveyed by: CNES and ESA on 02/2024

(Name of Executive Representative) (Date)

Satisfactory: Yes ☒ No ☐ Explain

Report Reference: ESCC Audit Report Rakon - DTN/QE/CQ-2024.0003926

12

Failure Analysis, DPA, NCCS available: Yes ☒ No ☐ (Supply data)

Ref. No's and purposes: NC2RAKC2408 : detachment of quartz lens after constant acceleration testing CLOSED
NC2RAK2409 : Frequency drift and variation vs temp after operating life CLOSED
NC1RAKC2410 : Manufacturing steps durations exceeded CLOSED
NC2RAKC2511 : Frequency drift and variation vs temp after operating life -> DCR1768 CLOSED

13

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 CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 31/10/2025

Signature numérique de Fontaine Lya
Date : 2025.10.31 11:32:03 +01'00'

L. FONTAINE
(Signature of the Executive Coordinator)

Continuation of Boxes above:

14

15

Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

16

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

17

Executive Manager Disposition

Application Approval: Yes X No ☐

Action / Remarks:

Date: 30/11/2025

A. Zadeh: Head of the Avionics and EEE Division

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

18

Tests conducted in compliance with:

- ESCC 3503 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD [illegible] (for ESCC/QML parts)

Tests vehicle identification/description:

350300102R100M000000HC	DC2427
350300104R40M000000HC	DC2317
350300104R48M000000HC	DC2326
350300104R96M000000AC	DC2326

Detail Specification reference: 3503001

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental/Mechanical Subgroup	Mechanical Shock	☒	MIL-STD-202, Test Method 213	2427	5	0	
	Random Vibration	☒	MIL-STD-202, Test Method 214	2427	5	0	
	Temperature Cycling	☒	MIL-STD-883, Test Method 1010	2427	5	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2427	5	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2427	5	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2427	5	0	
	DPA	☒	MIL-STD-1580	2427	5	0	
	Thermal Shock	☒	MIL-STD-883, Test Method 1011	2427	2	0	
	Moisture Resistance	☒	MIL-STD-883, Test Method 1004	2427	2	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2427	2	0	
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2427	2	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2427	2	0	
Endurance Subgroup	Operating Life	☒	MIL-STD-883, Test Method 1005	2427/2317/ 2326/2326	6/2/ 2/2	5/0/0/1	Accepted in NC2RAK2409, NC2RAKC2511 and covered by DCR1768
	Intermediate and End-Point Electrical Measurements	☒	Intermediate and End-Point Electrical Measurements in the Detail Specification	2427/2317/ 2326/2326	6/2/ 2/2	5/0/0/1	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883, Test Method 1014	2427/2317/ 2326/2326	6/2/ 2/2	0/0/0/0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2427/2317/ 2326/2326	6/2/ 2/2	0/0/0/0	

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Radiation Subgroup	Radiation	☐	ESCC Basic Specification No. 22900				NA : As per PID
Assembly Capability Subgroup	Lead Integrity	☒	MIL-STD-883, Test Method 2004	2427	3	0	
	External Visual Inspection	☒	ESCC Basic Specification No. 20500	2427	3	0	
	Permanence of Marking	☐	ESCC Basic Specification No. 24800				
	Solderability	☒	MIL-STD-883 Test Method 2003 ESCC-Q-ST-70-08	2427	3	0	
	Seal (Fine and Gross Leak)	☒	MIL-STD-883 Test Method 1014	2427	3	0	
	Internal Water Vapour	☒	MIL-STD-883 Test Method 1018	2427	3	0	
Additional Tests		☐					
		☐					
		☐					

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL

ENTRIES

Form heading	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.
Box 1	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.
Box 2; 3 and 4	As per QPL entry; otherwise, an explanation of the changes must be supplied.
Box 5	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.
Box 6	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.
Box 7	Must reference the report(s) supplied in support of the application.
Box 8	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.
Box 9	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.
Box 10	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.
Box 11	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.
Box 12	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.
Box 13	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
Box 14	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.
Box 15	Fill in Table as requested.
Box 16	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 17	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.
Box 18	Fill in Table as requested.
Box 19	Confidential Details of PID changes including those of a confidential nature, shall be provided.
Box 20	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'.
Box 21	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 22	Additional Comments.