



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: CMOS B, 4000B Series

Executive Member: CNES

Date: 08/04/2026

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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
As per QPL				HCC4013BHG	As per QPL
				HCC4017BKG	
				HCC4060BKG	
				HCC40106BKGE	
				M54HC08DG	
				HCC4013BKG	

Component Manufacturer STMicroelectronics	2	Location of Manufacturing Plant(s) Rennes, FRANCE	3	Date of original qualification approval: Date: 01/04/1981 Certificate Ref No. 73	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: 9000 Issue: 12 Detail(s): 9203/023 Issue: 6 9204/020 6 9204/052 6 9409/005 5	5	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)	6	Qualification Extension Report reference and date: HCC4013BKG - ID33441FL601 DC2446A - SG2 HCC4017BKG - ID33441FL701 DC2444A - SG2 HCC4060BKG - ID33344FCV01 DC2350A - SG2 HCC40106BKGE - ID33344FCY01 DC2350A - SG2 M54HC08DG - ID33344FCP01 - DC2351A - Chart F4 HCC4013BKG - ID33344FCQ01 - Chart F4 - DC2350A	7
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Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

Customer Name	Testing Level	LAT	Date code	Quantity Delivered
See Excel File	ESCC9000 Issue 12			

PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box:	9	Current PID Verified by: CNES Name of Executive Representative Ref No: PID GNERIQUE Ref. 8097046 revision 44.0, 18/08/2025, PID CMOS4000B Ref. 8237618 rev.19.0, 3/09/2025 Issue: 44.0 (Gen) & 19.0 (CMOS) Date: 11/03/2026 Rev Date:	10
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Current Manufacturing facilities surveyed by: CNES on 12/07/2023 (Name of Executive Representative) (Date)	11
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain MoM Quality Meeting held on the 7-8th of Octobre 2021 (generic PID audit) MoM Quality Meeting held on the 12th of July 2023 (B2015)	
Report Reference: CR-Visite octobre 2021 CR-Activités ST Juillet 2023	



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

Ref. No's and purposes: 2CSTM001: HCC40103B-out of PDA - CLOSED

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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 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: 08/04/2026

Signature
numérique de
Fontaine Lya
Date :
2026.04.08
11:03:28
+02'00'

L. FONTAINE

(Signature of the Executive Coordinator)

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Continuation of Boxes above:

[7] Qualification Extension reports :

The extension is based on collection of 54HCMOS and CMOS 4000B data :

AMK 5":

HCC4013BKG - ID33441FL601 DC2446A - ESCC9000 Chart F4 sg2

HCC40106BKGE - ID33344FCY01 DC2350A - ESCC9000 Chart F4 sg2

AMK 6":

HCC4017BKG - ID 33441FL701 DC2444A - ESCC9000 Chart F4 sg2

HCC4060BKG - ID 33344FCV01 DC2350A - ESCC9000 Chart F4 sg2

Package qualification:

Dual in Line: HCC4013BKG ID33344FCQ01 DC2350A ESCC Chart F4 SG 1-2-3

Flat pack: M54HC08DG ID33344FCP01 DC2351A ESCC Chart F4 SG 1-2-3

Cover the validation of packages for both families as agreed by Qualification Board at its march 2001 meeting.

[9] Minor PID changes:

- PID GENERIQUE Ref. 8097046 → cf Histo_GENERIC_PID.txt
- PID CMOS Ref. 8237618 → cf Histo_PID_CMOS.txt



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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: 30/04/2026

A. Zadeh: Head of the Avionics and EEE Division



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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 9000 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

AMK 5": HCC4013BKG - ID33441FL601 DC2446A HCC40106BKGE - ID33344FCY01 DC2350A	AMK 6": HCC4017BKG - ID 33441FL701 DC2444A HCC4060BKG - ID 33344FCV01 DC2350A
Dual in Line: M54HC08DG ID33344FCP01 DC2351A Flat pack: HCC4013BKG ID33344FCQ01 DC2350A	Cover the validation of packages for both CMOS4000B and 54HC MOS families as agreed by Qualification Board at its march 2001 meeting.

Detail Specification reference: 9203/023 9204/020 9204/052 9409/005...

Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental/Mechanical Subgroup	Mechanical Shock	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 2002	Dual in Line: M54HC08DG ID33344FCP01 DC2351A Flat pack: HCC4013BKG ID33344FCQ01 DC2350A	15	0	
	Vibration	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 2007		15	0	
	Constant Acceleration	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 2001		15	0	
	Seal (Fine and Gross Leak)	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1014		15	0	
	Intermediate and End-Point Electrical Measurements	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements in the Detail Specification		15	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500		15	0	
	Thermal Shock	<input checked="" type="checkbox"/>	MIL-STD-883. Test Method 1011		15	0	
	Temperature cycling	<input checked="" type="checkbox"/>	MIL-STD-883. Test Method 1010		15	0	
	Moisture Resistance	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1004		15	0	
	Seal (Fine and Gross Leak)	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1014		15	0	
	Intermediate and End-Point Electrical Measurements	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements in the Detail Specification		15	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500		15	0	



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Chart F4	Test	Tick when done	Conditions	Date Code Diffusion Lot	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Endurance Subgroup	Operating Life	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1005	AMK 5": HCC4013BKG - ID33441FL601 DC2446A	15	0	
	Intermediate and End-Point Electrical Measurements	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements in the Detail Specification	HCC40106BKGE - ID33344FCY01 DC2350A	15	0	
	Seal (Fine and Gross Leak)	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1014	AMK 6": HCC40109BKG - ID33548003Y3 DC2220A	15	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	HCC4047BKG - ID33312F6801 DC2314A	15	0	
Assembly Capability Subgroup	Permanence of Marking	<input type="checkbox"/>	ESCC Basic Specification No. 24800	Dual in Line: M54HC08DG ID33344FCP01 DC2351A			Not applicable
	Terminal Strength	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 2004	Flat pack: HCC4013BKG ID33344FCQ01 DC2350A	5	0	
	Internal Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20400		5	0	
	Bond Strength	<input checked="" type="checkbox"/>	MIL-STD-883 Test Method 2011		2	0	
	Die Shear or Substrate Attach Strength	<input checked="" type="checkbox"/>	MIL-STD-883 Test Method 2019 or 2027		2	0	
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					



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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.