



**APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL**

Component Title: **54HC and 54HCT Series**

Executive Member: CNES

Date: 08/04/2026

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

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ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
As per QPL				<b>M54HC14KG</b>	As per QPL
				<b>M54HC74KG</b>	
				<b>M54H132KG</b>	
				<b>M54HC251KG</b>	
				<b>M54HC4006KG</b>	
				<b>M54HC08DG</b>	
				<b>HCC4013BKG</b>	

Component Manufacturer STMicroelectronics	2	Location of Manufacturing Plant(s) Rennes, FRANCE	3	Date of original qualification approval: Date: 01/11/1992  Certificate Ref No. 190	4
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ESCC Specifications used for Maintenance of qualification testing: Generic: 9000 Issue: 12  Detail(s): 9408/052 Issue: 5 9408/048 5 9201/120 5 9203/050 5 9409/007 5 9201/106 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:  <b>M54HC14KG - ID33344FCS01 - DC2350 - SG2</b> <b>M54HC14KG - ID33441FL901 - DC2446A - SG2</b> <b>M54HC74KG - ID33441FLA01 - DC2446A - SG2</b> <b>M54HC132KG - ID33344FCR01 - DC2351A - SG2</b> <b>M54HC251KG - ID33441FLB01 - DC2444A - SG2</b> <b>M54HC4066KG E - ID33344FCT01 - DC2350A - SG2</b> <b>M54HC08DG - ID33344FCP01 - DC2351A - Chart F4</b> <b>HCC4013BKG - ID33344FCQ01 - Chart F4 - DC2350A</b>	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	ESCC900 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: 14	9	Current PID Verified by: CNES Name of Executive Representative Ref No: PID GNERIQUE Ref. 8097046 revision 44.0, 18/08/2025, PID HCMOS Ref. 8237625 rev.18.0, 30/06/2025 Issue: 44.0 (Gen) & 18.0 (HCMOS) Date: 26/01/2026 Rev Date:	10
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Current Manufacturing facilities surveyed by:  Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain  Report Reference: CR-Visite octobre 2021 CR-Activités ST Juillet 2023	CNES	on	12/07/2023	(Name of Executive Representative)	(Date)	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)
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Failure Analysis, DPA, NCCS available: Yes  No  (Supply data)

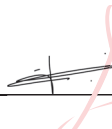
Ref. No's and purposes:

2CSTM501 : Wire bonding height marginally below 1.0 mil minimum within 5.0 mil radial distance from die bond perimeter - 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  
10:46:37 +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 :**

**CARROLLTON 4":**

**M54HC251KG ID33441FLB01 DC2444A ESCC 9000 Chart F4 SG2.**

**M54HC4066KG E ID33344FCT01 DC2350A ESCC 9000 ChartF4 SG2**

**AMK 5":**

**M54HC132KG ID33344FCR01 DC2351A ESCC 9000 ChartF4 SG2**

**M54HC74KG ID33441FLA01 DC2446A ESCC 9000 ChartF4 SG2**

**AMK 6":**

**M54HC14KG ID33441FL901 DC2446A ESCC 9000 ChartF4 SG2**

**M54HC14KG ID33344FCS01 DC2350A ESCC 9000 ChartF4\_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] Major PID changes:**

- PID GNERIQUE Ref. 8097046 → cf Histo\_GENERIC\_PID.txt
- PID HCMOS Ref. 8237625 → cf Histo\_PID\_HCMOS.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:

<p><b>CARROLTON 4":</b>  <b>M54HC251KG ID33441FLB01 DC2444A SG2</b>  <b>M54HC4066KG E ID33344FCT01 DC2350A SG2</b></p>	<p><b>AMK 5":</b>  <b>M54HC132KG ID33344FCR01 DC2351A SG2</b>  <b>M54HC74KG ID33441FLA01 DC2446A SG2</b>  <b>AMK 6": M54HC14KG ID33344FCS01 DC2350 SG2</b>  <b>M54HC14KG ID33441FL901 DC2446A SG2</b></p>
<p><b>Dual in Line: M54HC08DG ID33344FCP01 DC2351A</b>  <b>Flat pack: HCC4013BKG ID33344FCQ01 DC2350A</b></p>	
<p align="center"><b>Cover the validation of packages for both CMOS4000B and 54HCMOS families as agreed by Qualification Board at its march 2001 meeting.</b></p>	

Detail Specification reference: 9408/052 9408/048 9201/120 9203/050 9409/007 9201/106

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	CARROLLTON 4":	15	0	
	Intermediate and End-Point Electrical Measurements	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements in the Detail Specification	M54HC251KG ID33441FLB01 DC2444A SG2	15	0	
	Seal (Fine and Gross Leak)	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1014	M54HC4066KG E ID33344FCT01 DC2350A SG2	15	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	AMK 5":  M54HC132KG ID33344FCR01 DC2351A SG2  M54HC74KG ID33441FLA01 DC2446A SG2  AMK 6":  M54HC14KG ID33344FCS01 DC2350 SG2  M54HC14KG ID33441FL901 DC2446A SG2	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		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	Flat pack: HCC4013BKG ID33344FCQ01 DC2350A	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.
<b>Box 1</b>	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.
<b>Box 2; 3 and 4</b>	As per QPL entry; otherwise, an explanation of the changes must be supplied.
<b>Box 5</b>	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.
<b>Box 6</b>	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.
<b>Box 7</b>	Must reference the report(s) supplied in support of the application.
<b>Box 8</b>	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.
<b>Box 9</b>	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.
<b>Box 10</b>	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.
<b>Box 11</b>	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.
<b>Box 12</b>	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.
<b>Box 13</b>	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
<b>Box 14</b>	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.
<b>Box 15</b>	Fill in Table as requested.
<b>Box 16</b>	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.
<b>Box 17</b>	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.
<b>Box 18</b>	Fill in Table as requested.
<b>Box 19</b>	Confidential Details of PID changes including those of a confidential nature, shall be provided.
<b>Box 20</b>	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'.
<b>Box 21</b>	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.
<b>Box 22</b>	Additional Comments.