
		APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL			Page 1 Appl. No. 73S	
Component Title: CMOS B, 4000B Series		Executive Member: CNES			Date: 19/03/2020	
Components (including series and families) submitted for Extension of Qualification Approval:					1	
ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR	
As per QPL				HCC4068BDG	As per QPL	
				HCC4011BKT		
				HCC4093BKT		
				HCC4077BKG HCC4014BDK		
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	
ESCC Specifications used for Maintenance of qualification testing: Generic: 9000 Issue: 10 Detail(s): 9201/061 Issue: 4 9201/043 4		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: HCC4068BDG ID 33807006ZW DC1909A HCC4011BKT ID 3314000EYD DC 1903A HCC4093BKT ID 33820008ZZ DC 1844A HCC4077BKG ID 330800302 DC1816A HCC4014BDK ID 3380700701 DC 1816A		7	
Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)					8	
Project Name	Testing Level	LAT	Date code	Quantity Delivered		
Various	ESCC 9000 Issue 10		Lots delivered from January 2018 to December 2019	38 441		
PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> *Provide details in box:		9	Current PID Verified by: CNES Name of Executive Representative Ref No: PID GENERIQUE Ref. 8097046 revision 23.0, 31/01/2020, PID CMOS Ref. 8237618 rev.11.0, 30/01/2020 Issue: 23.0 (Gen) & 11.0 (CMOS) Date: 20/02/2018 Rev Date: 31/01/2020			10
Current Manufacturing facilities surveyed by: CNES on 27-03-18 (Name of Executive Representative) (Date) Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain Report Reference: CR-ST-27-03-18					11	

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

Ref. No's and purposes: NC2CSTM001: HCC40103B lots Out Of PDA after reliability: NCCS considered minor. Product atypic with mobile charges inside. No explanation found for the origin of the problem. HCC4013 now produced in AMK 6" without problems. NCCS leaved open until final transfer of CMOS4000 products to AMK 6".

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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: 25/03/2020


 JP. BUSSENOT
 (Signature of the Executive Coordinator)

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Continuation of Boxes above:

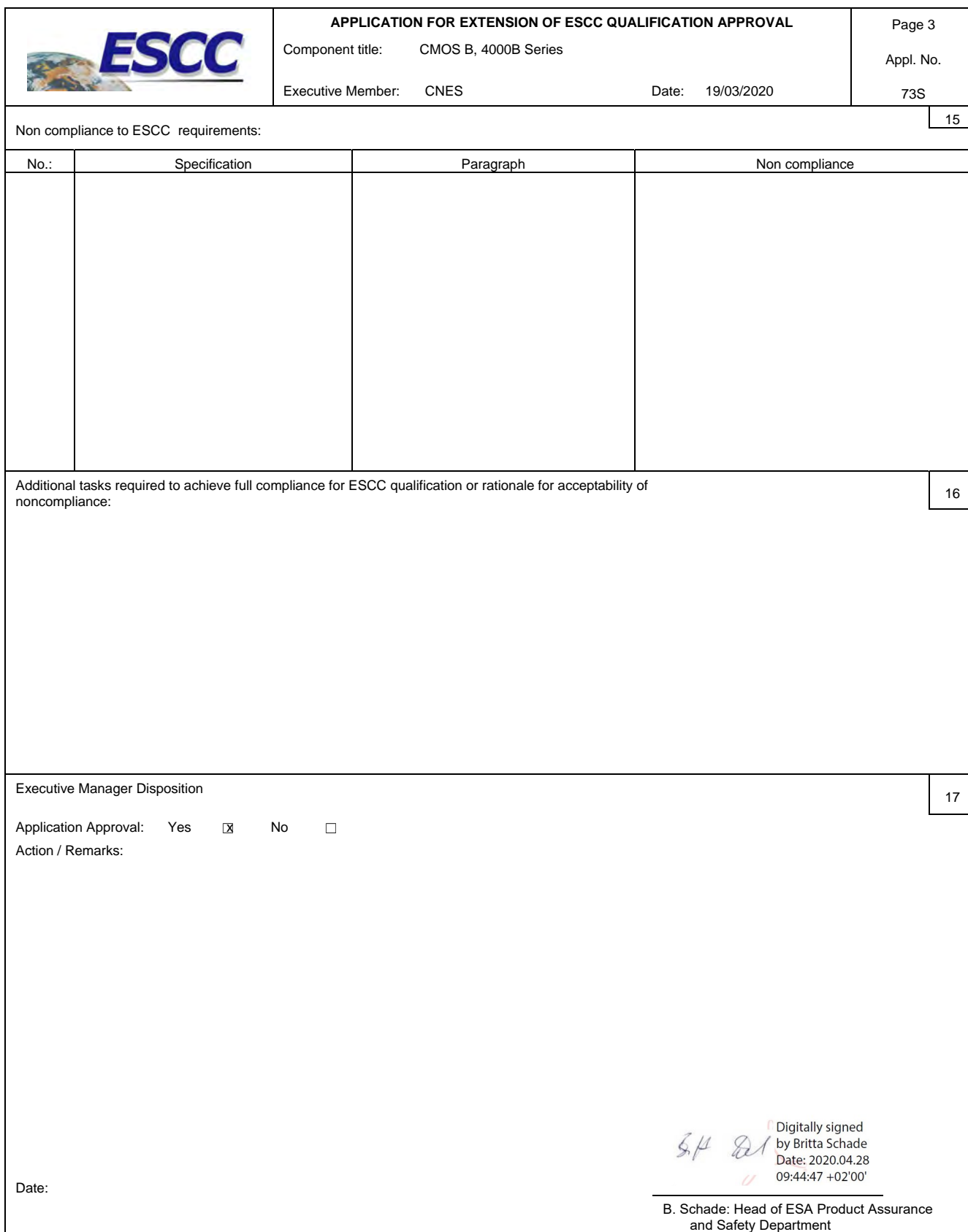
[7] Qualification Extension reports :
The extension is based on collection of 54HCMOS and CMOS 4000B data :

AMK 4" and 5":
 HCC4068BDG ID 33807006ZW DC1909A – ESCC9000 chart F4 sg1-3
 HCC4011BKT ID 3314000EYD DC 1903A – ESCC9000 chart F4 sg1-3
 HCC4093BKT ID 33820008ZZ DC 1844A – ESCC9000 Chart F4 Sg2
 HCC4077BKG ID 330800302 DC1816A – ESCC9000 Chart F4 sg2

AMK 6":
 HCC4014BDK ID 3380700701 DC 1816A – ESCC9000 chart F4 sg2

Package qualification:
 Dual in Line: M54HC74DT – ID33740004ZJ DC1901A - ESCC 9000 chart F4 sg1-3
 (also available, HCC4068BDG – ID33807006ZW DC1909A – ESCC 9000 chart F4 sg1-3)
 Flat pack: HCC4011BKT – ID3314000EYD DC1903A – ESCC 9000 chart F4 sg1-3
 (also available M54HC00KT – ID33126D17YY DC1902A – ESCC 9000 chart F4 sg1-3)
 Cover the validation of packages for both families as agreed by Qualification Board at its march 2001 meeting (minute 11.1 refers).

[9] Minor PID changes:
 - Wafer fab updated to AMK 6" for some products
 - Removal of products HCC4012B, HCC4025B, HCC4042B, HCC4082B (terminated products)




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ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION						
Tests conducted in compliance with: <ul style="list-style-type: none"> – ESCC 9000 generic specification; Chart F4 (for ESCC/QPL parts); – Or PID-TFD (for ESCC/QML parts) 						
Tests vehicle identification/description:						
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; border-right: 1px solid black; padding: 2px;"> AMK 4" and 5": HCC4068BDG ID33807006ZW DC1909A HCC4011BKT ID3314000EYD DC 1903A HCC4093BKT ID33820008ZZ DC 1844A HCC4077BKG ID 330800302 DC1816A AMK 6": HCC4014BDK ID 3380700701 DC 1816A </td> <td style="width: 60%; padding: 2px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Dual in Line : M54HC74DT – ID33740004ZJ DC1901A Flat-pack : HCC4011BKT ID 3314000EYD DC 1903A </td> <td style="padding: 2px;"> Cover the validation of packages for both families as agreed by Qualification Board at its march 2001 meeting (minute 11.1 refers). </td> </tr> </table>			AMK 4" and 5": HCC4068BDG ID33807006ZW DC1909A HCC4011BKT ID3314000EYD DC 1903A HCC4093BKT ID33820008ZZ DC 1844A HCC4077BKG ID 330800302 DC1816A AMK 6": HCC4014BDK ID 3380700701 DC 1816A		Dual in Line : M54HC74DT – ID33740004ZJ DC1901A Flat-pack : HCC4011BKT ID 3314000EYD DC 1903A	Cover the validation of packages for both families as agreed by Qualification Board at its march 2001 meeting (minute 11.1 refers).
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Detail Specification reference:						

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 : M54HC74DT – ID33740004ZJ DC1901A Flat-pack : HCC4011BKT ID3314000EYD DC 1903A	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	
	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 4" and 5": HCC4068BDG ID33807006ZW DC1909A HCC4011BKT ID3314000EYD DC 1903A HCC4093BKT ID33820008ZZ DC 1844A HCC4077BKG ID330800302 DC1816A AMK 6": HCC4014BDK ID3380700701 DC 1816A	15	0	
	Intermediate and End-Point Electrical Measurements	<input checked="" type="checkbox"/>	Intermediate and End-Point Electrical Measurements in the Detail Specification		15	0	
	Seal (Fine and Gross Leak)	<input checked="" type="checkbox"/>	MIL-STD-883, Test Method 1014		15	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500		15	0	
Assembly Capability Subgroup	Permanence of Marking	<input type="checkbox"/>	ESCC Basic Specification No. 24800	Dual in Line : M54HC74DT – ID33740004ZJ DC1901A Flat-pack : HCC4011BKT ID3314000EYD DC 1903A			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		2	0	
Additional Tests		<input type="checkbox"/>					
		<input type="checkbox"/>					
		<input type="checkbox"/>					

	<p align="center">APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL</p> <p>Component title: CMOS B, 4000B Series</p> <p>Executive Member: CNES Date: 19/03/2020</p>	<p align="center">Page 7</p> <p align="center">Appl. No.</p> <p align="center">73S</p>
<p align="center">NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL</p>		
<p>ENTRIES Form heading</p>	<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>	
<p>Box 1</p>	<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>	
<p>Box 2; 3 and 4</p>	<p>As per QPL entry; otherwise, an explanation of the changes must be supplied.</p>	
<p>Box 5</p>	<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>	
<p>Box 6</p>	<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>	
<p>Box 7</p>	<p>Must reference the report(s) supplied in support of the application.</p>	
<p>Box 8</p>	<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>	
<p>Box 9</p>	<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>	
<p>Box 10</p>	<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>	
<p>Box 11</p>	<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>	
<p>Box 12</p>	<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>	
<p>Box 13</p>	<p>Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.</p>	
<p>Box 14</p>	<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>	
<p>Box 15</p>	<p>Fill in Table as requested.</p>	
<p>Box 16</p>	<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>	
<p>Box 17</p>	<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>	
<p>Box 18</p>	<p>Fill in Table as requested.</p>	
<p>Box 19</p>	<p>Confidential Details of PID changes including those of a confidential nature, shall be provided.</p>	
<p>Box 20</p>	<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>	
<p>Box 21</p>	<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>	
<p>Box 22</p>	<p>Additional Comments.</p>	