ESCC

**APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL**

Component Title: **Capacitors, Ceramic, Type II, types CNC53 to CNC56**

Executive Member: CNES Date: 13/05/2019

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Appl. No. **306D**

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 |
|---|---|---|---|---|---|
| **3001 038** | **01 to 04** | | **CNC5XNE** | See box 14 | |
| | **08 to 11** | **All values** | **CNC5XPE** | See box 14 | |
| | **15 to 18** | **50V to 500V** | **CNC5XPLE** | | **X** |
| | **22 to 25** | | **CNC5XLE** | See box 14 | |

2 Component Manufacturer
**EXXELIA Technologies**

3 Location of Manufacturing Plant(s)
**1, rue des Temps Modernes**
**77600 CHANTELOUP EN BRIE**
**FRANCE**

4 Date of original qualification approval:
Date: **01/03/2011**
Certificate Ref No. **306**

5 ESCC Specifications used for Maintenance of qualification testing:
Generic: **3001** Issue: **1**
Detail(s): **3001038** Issue: **1**

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:
**EXXELIA test report N° 19/0667 to 19/0675, dated January 2019 (9 reports)**

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 |
|---|---|---|---|---|
| ALTER Technology EREMS | | | | March 2017 to Dec. 2018 – 20 lots, 1 039 parts (See appendices) |
| | | | | |
| | | | | |
| | | | | |

9 PID changes since start of qualification
None ☒
Minor* ☐
Major* ☐ *Provide details in box:

10 Current PID Verified by: CNES
Name of Agency Representative
Ref No: 644.03.390
Issue: L Date: 21/08/2019
Rev Date: 02/08/2019

11 Current Manufacturing facilities surveyed by: CNES on 23/07/2019
Name of Agency (Date)
Satisfactory: Yes ☒ No ☐ Explain

Report Reference: 2019.0013650

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Failure Analysis, DPA, NCCS available: Yes ☒ No ☒ (Supply data) 2CETE801

Ref. No's and purposes: 2CETE801: Late Delivery of MoQ testing reports (See appendices)

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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: 13/05/2019

JP. BUSSENOT

(Signature of the Executive Coordinator)

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Continuation of Boxes above:

Box 1 – Test Vehicles

| | LVT 1A | LVT 1B | LVT 2A | LVT 2B | LVT 3 |
|---|---|---|---|---|---|
| CNC53NE 6.8µF +/-10% 100 V | NA | NA | NA | 3 | NA |
| CNC55NE 33µF +/-10% 100 V | NA | NA | NA | 3 | NA |
| CNC53NE 10µF +/-10% 100 V | NA | NA | NA | NA | 3 |
| CNC55PE 33µF +/-10% 100 V | 20 | NA | NA | NA | NA |
| CNC56PE 10µF +/-10% 200 V | NA | 3 | NA | NA | NA |
| CNC53PE 2.2µF +/-10% 100 V | NA | NA | 10 | NA | NA |
| CNC53PE 5.6µF +/-10% 100 V | NA | NA | 10 | NA | NA |
| CNC53PE 4.7µF +/-10% 100 V | NA | NA | NA | NA | 3 |
| | | | | | |
| CNC53LE 10µF +/-10% 50 V | NA | 3 | NA | NA | NA |

(1)

(1) Due to lack of availability at the time of testing, CNC53NE 6,8µF ±10% 100V test vehicle has been replaced with CNC53NE 8.2µF ±10% 100V vehicle

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Non compliance to ESCC requirements:

| No.: | Specification | Paragraph | Non compliance |
|---|---|---|---|
| 1 | 3001 & 3001/038 | | ESCC 3001 issues 2, 3 (implementation of periodic testing ...) and corresponding ESCC 3001/038 issues 2 to 4 not yet fully implemented by EXXELIA. Nevertheless, Chart F4 testing has been implemented for the maintenance activity (replacing Chart V requirements) |

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

None – ESCC 3001 issue 1 and 3001/038 issue 1 requirements are reflected in current PID
A revision of the PID is in progress, it should be implemented by July 2019.

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Executive Manager Disposition

Application Approval: Yes ☑ No ☐

Action / Remarks:

Date:

B. Schade, Head of ESA Product Assurance and Safety Department

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

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Tests conducted in compliance with:

- ESCC 3001 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

| | |
|---|---|
| **CNC53NE 33µF ±10% 100V DC 1714** | **CNC56PE 10µF ±10% 200V DC 1817**<br>**CNC53PE 2.2µF ±10% 100V DC 1743** |
| **CNC53NE 8,2µF ±10% 100V DC 1837**<br>**CNC53NE 10µF ±10% 100V DC 1805**<br>**CNC55PE 33µF ±10% 100V DC 1837A** | **CNC53PE 5.6µF ±10% 100V DC 1808**<br>**CNC53PE 4.7µF ±10% 100V DC 1734**<br>**CNC53LE 10µF ±10% 50V DC 1725** |

Detail Specification reference: 3001/038

| Chart V | Test | Tick when done | Conditions | Date Code | Tested Qty | No. of Rejects | Comments if not performed. Comments on Rejection |
|---|---|---|---|---|---|---|---|
| Environmental / Mechanical Subgroup (Column 1) | Robustness of Terminations | ☐ | IEC 68-2-21 | | | | Testing based on Chart F4 |
| | Resistance to Soldering Heat | ☐ | IEC 68-2-20 | | | | |
| | External Visual Inspection | ☐ | ESCC 20500 | | | | |
| | Climatic Test Sequence | ☐ | ESCC 3001, Para. 9.13 | | | | |
| Environmental / Mechanical Subgroup (Column 2) | Rapid Change of Temperature | ☒ | IEC 68-2-14 | 1725<br>1817 | 3<br>3 | 0 | Correspond to Chart F4 1B |
| | Vibration | ☒ | IEC 68-2-6 | 1725<br>1817 | 3<br>3 | 0 | |
| | Shock or Bump | ☒ | ESCC 3001, Para. 9.12 | 1725<br>1817 | 3<br>3 | 0 | |
| | External Visual Inspection | ☒ | ESCC 20500 | 1725<br>1817 | 3<br>3 | 0 | |
| | Climatic Test Sequence | ☐ | ESCC 3001, Para. 9.13 | | | | |
| Endurance Subgroup | Operating Life | ☒ | ESCC 3001, Para. 9.15 | 1743<br>1808 | 10<br>10 | 0 | Correspond to Chart F4 2A |
| | Electrical Meas. during Endurance Testing | ☒ | ESCC 3001, Para. 9.5.5 | 1743<br>1808 | 10<br>10 | 0 | |
| Electrical Subgroup (Electrical Measurements) | Temperature Coefficient (Type I) | ☐ | ESCC 3001, Para. 9.16 | | | | |
| | Temperature Characteristic (Type II) | ☒ | ESCC 3001, Para. 9.17 | 1837<br>1714 | 3<br>3 | 0 | Correspond to Chart F4 2B |
| Electrical Subgroup (Assembly / Capability Tests) | Solderability | ☒ | IEC 68-2-20 | 1734<br>1805 | 3<br>3 | 0 | Correspond to Chart F4 3 –Test 1 |
| | Permanence of Marking | ☒ | ESCC 24800 | 1734<br>1805 | 3<br>3 | 0 | Correspond to Chart F4 3 – Test 3 |

| Chart F4 | Test | Tick when done | Conditions | Date Code | Tested Qty | No. of Rejects | Comments if not performed. Comments on Rejection |
|---|---|---|---|---|---|---|---|
| Additional Tests | Resistance to Soldering Heat | ☒ | ESCC 3001 Para 8.9 | 1734<br>1805 | 3<br>3 | 0 | Correspond to Chart F4 3 – Test 2 |
| | Rapid Change of Temperature | ☒ | ESCC 3001 Para 8.5 | 1837A | 20 | 0 | Correspond to Chart F4 1A |
| | Steady State Humidity (85/85) | ☒ | ESCC 3001 Para 8.2 | 1837A | 20 | 0 | Correspond to Chart F4 1A 1 000H |

***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. |