

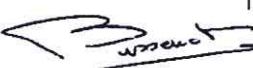


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|---|---------------|--|---|--|--------------------|
|  | | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | | | Page 1 |
| Component Title: Quartz Crystal Units in metal holder TO8 | | Executive Member: CNES | | | Date: 05/10/2017 |
| | | | | | Appl. No. 334A |
| 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 |
| 3501019 | All | Frequency Range :2.5 to 140 MHz | Type T1507 | ESCC 3501/019 , C0073/STC 5488 | All other variants |
| | | | | | |
| 2 | | 3 | | 4 | |
| Component Manufacturer RAKON France | | Location of Manufacturing Plant(s) 2 Rue Rober Keller 10 150 Pont Sainte Marie | | Date of original qualification approval: Date: 01/09/2015 Certificate Ref No. 334 | |
| 5 | | 6 | | 7 | |
| ESCC Specifications used for Maintenance of qualification testing: Generic: 3501 Issue: 4 Detail(s): 019 Issue: 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) | | Qualification Extension Report reference and date: VOQ_T1507_51002109-A0 570-Is02_Dossier 6190_DC1704_Dossier 6193_DC1705 (25/07/2017) and Test report 150812RQrev02_Q11_13.448192MHZ(12/08/2017) | |
| 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 | |
| See CDROM | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 9 | | 10 | | | |
| PID changes since start of qualification None <input type="checkbox"/> Minor* <input type="checkbox"/> Major* <input checked="" type="checkbox"/> *Provide details in box: | | Current PID Verified by: CNES Name of Excutive Representative Ref No: PID ARG_PSM 51001881_B0 Issue: B0 Date: 05/10/2017 Rev Date: 21/07/2017 | | | |
| 11 | | | | | |
| Current Manufacturing facilities surveyed by: | | | CNES & ESA on 19/03/2015 (Name of Executive Representative) (Date) | | |
| Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain | | | | | |
| Report Reference: RAKPSM-AUD-2015-01 V1 annexes | | | | | |

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|  | <p align="center">APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL</p> <p>Component title: Quartz Crystal Units in metal holder TO8</p> <p>Executive Member: CNES Date: 05/10/2017</p> | <p>Page 2</p> <p>Appl. No.</p> <p>334A</p> |
| <p>Failure Analysis, DPA, NCCS available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Supply data)</p> <p>Ref. No's and purposes: Closed NCCS 2NCRK601 is appended (drift in endurance problems solved with the implementation of Argenteuil metallization equipment)</p> | | <p align="center">12</p> |
| <p>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.</p> <p>Date: 05/10/2017</p> <p align="right">  JP. BUSSENOT (Signature of the Executive Coordinator) </p> | | <p align="center">13</p> |
| <p>Continuation of Boxes above:</p> <p>PID evolutions :</p> <ul style="list-style-type: none"> - Clean robot qualification (report 3-RES150.252.A0) - Qualification of metallization with BA150 (NCCS corrective action report :3-RES-152.252-A0) - Qualification of stabilization 3 days at 165°C (NCCS correctives actions , report 51001866.410) - Minor evolution of PID du to customer specification evolution. | | <p align="center">14</p> |





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

18

Tests conducted in compliance with:

- ESCC 3501 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

| | |
|--|-----------------------------|
| ESCC 3501/019, 60073/STC-5488 | P/N 515831, STC 5864, #1705 |
| P/N 509946, STC 3987, #1704 | |

Detail Specification reference:

| 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) | Shock | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-27 | 17-04 | 123 | 0 | |
| | Vibration | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-6 | 17-04 | 123 | 0 | |
| | Seal Test | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-17 | 17-04 | 123 | 0 | |
| | Electrical Measurements at Reference Temperature | <input checked="" type="checkbox"/> | Table 2 of the Detail Specification | 17-04 | 123 | 0 | |
| | External Visual Inspection | <input checked="" type="checkbox"/> | ESCC Basic Specification No. 20500 | 17-04 | 123 | 0 | |
| Environmental/Mechanical Subgroup (Column 2) | Climatic Sequence | <input checked="" type="checkbox"/> | ESCC 3501 Para. 9.14 | 17-04 | 123 | 0 | |
| | Rapid Change of Temperature | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-14 | 17-04 | 123 | 0 | |
| | Seal Test | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-17 | 17-04 | 123 | 0 | |
| | Electrical Measurements at Reference Temperature | <input checked="" type="checkbox"/> | Table 2 of the Detail Specification | 17-04 | 123 | 0 | |
| | External Visual Inspection | <input checked="" type="checkbox"/> | ESCC Basic Specification No. 20500 | 17-04 | 123 | 0 | |
| Endurance Subgroup | Life Test | <input checked="" type="checkbox"/> | ESCC 3501 Para. 9.17 | 17-0405 | 125 | 0 | |
| | Electrical Measurements during Endurance Testing | <input checked="" type="checkbox"/> | Table 6 of the Detail Specification | 17-0405 | 125 | 0 | |
| | External Visual Inspection | <input checked="" type="checkbox"/> | ESCC Basic Specification No. 20500 | 17-0405 | 125 | 0 | |
| Electrical Subgroup - Electr. Meas. | Electrical Measurements at Reference Temperature | <input checked="" type="checkbox"/> | Table 2 of the Detail Specification | 17-0405 | 53 | 0 | |
| | Electrical Measurements at High and Low Temperatures | <input checked="" type="checkbox"/> | Table 3 of the Detail Specification | 17-0405 | 53 | 0 | |



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Executive Member: CNES


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| Chart V | Test | Tick when done | Conditions | Date Code | Tested Qty | No. of Rejects | Comments if not performed. Comments on Rejection |
|---|----------------------------|-------------------------------------|------------------------------------|-----------------------------------|------------|----------------|---|
| Electrical Subgroup – Ass. Capab. Tests | Solderability | <input checked="" type="checkbox"/> | IEC Publication No. 68-2-20 | 17-04 05 ⁰⁵ | 52 | 0 | |
| | Permanence of Marking | <input checked="" type="checkbox"/> | ESCC Basic Specification No. 24800 | 17-04 05 ⁰⁵ | 52 | 0 | |
| | Robustness of Terminations | <input checked="" type="checkbox"/> | ESCC 3501 Para. 9.16 | 17-04 05 ⁰⁵ | 52 | 0 | |
| Additional Tests | | <input type="checkbox"/> | | | | | |
| | | <input type="checkbox"/> | | | | | |
| | | <input type="checkbox"/> | | | | | |

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|--|--|---|
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| <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> | |