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|  | | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | | | Page 1 |
| | | Component Title: RF FLEXIBLE CABLE ASSEMBLY TNC, VERY HIGH POWER, 50 OHMs, DC TO 8 GHz | | | Appl. No. |
| | | Executive Member: CNES | | | Date: 17/06/2025 348C |

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 |
|--------------------|------------|---|----------|--|-------------------|
| 3408/001 | 4, 5 and 6 | Frequency range 0-8 GHz Right angle and straight cable assembly for flexible 7.6mm cable Temperature range - 165/+165°C | TNC Type | Variant 5, TNC VHP Straight Plug/TNC VHP Right Angle Plug, cable assemblies R23008808100007 ESCC 3408001051.80 | |
| 3408/001 | 7 to 13 | Frequency range 0-8 GHz Straight cable assembly for flexible 7.6mm cable Temperature range - 165/+165°C | TNC Type | Variant 10, TNC VHP Straight Plug/TNC VHP Straight Jack Plug, cable assemblies R230088083000003 ESCC 3408001101.80 | |
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| Component Manufacturer RADIALL | 2 | Location of Manufacturing Plant(s) RADIALL 39 RUE VELPEAU BP30-37110 CHATEAU-RENAULT (FRANCE) | 3 | Date of original qualification approval: Date: 16/04/2018 Certificate Ref No. 348 | 4 |
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|---|---|--|---|--|---|
| ESCC Specifications used for Maintenance of qualification testing: Generic: 3408 Issue: 4 Detail(s): 3408/001 Issue 2 : | 5 | Deviations to LVT testing and Detail Specification used: No <input type="checkbox"/> Yes <input checked="" 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: CHR_2023.41.0134; date : 25/07/2024 CHR_C2023.42.0140; date: 16/04/2025 | 7 |
|---|---|--|---|--|---|

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 documents "Données ventes SHF 8MS TNC VHP_2023-24 » | | | | |
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|---|---|---|----|
| PID changes since start of qualification None <input type="checkbox"/> Minor* <input checked="" type="checkbox"/> Major* <input type="checkbox"/> | 9 | Current PID Verified by: <u>Audrey Bonzi, CNES</u> Name of Excutive Representative Ref No: PAQ CHR 0014 Issue: H rev 4 Date: Rev Date: 27/03/2025 | 10 |
| *Provide details in box: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px auto;"></div> | | | |



11

Current Manufacturing facilities surveyed by: François Nouals on 09/10/2024
 (Name of Executive Representative)

Satisfactory: Yes ☒ No ☐ Explain **CNES visit on Radiall CHR site on 09/10/2024**

Report Reference: CR CNES_Visite du 09/10/2024

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| <p>Failure Analysis, DPA, NCCS available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (Supply data)</p> <p>Ref. No's and purposes: NC-2-C-RAD-4-02: Radial RF Power test equipment limitation for male/male configuration (318W < 355W) with respects to the condition detailed in the ESCC3408/001 - CLOSED</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: 17/06/2025</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <p>Fontaine Lya</p> </div> <div> <p>Signature numérique de Lya Fontaine Fontaine Lya (Signature of the Executive Coordinator) Date : 2025.06.17 16:58:09 +02'00'</p> </div> </div> | | |
| <p>Continuation of Boxes above:</p> <p>No</p> | | |

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|  | APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL | | Page 3 |
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| | Executive Member: CNES | Date: 17/06/2025 | 348C |
| Non compliance to ESCC requirements: | | | 15 |
| No.: | Specification | Paragraph | Non compliance |
| 1 | 3408/001 Issue 2 | 2.3 Environmental and mechanical tests + appendix A | Power RF handling performed at 318W instead of 355W + Late of delivery on test reports and documentation (outside ESA certification deadlines) |
| Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance: See explanations on NC-2-C-RAD-4-02. | | | 16 |
| Executive Manager Disposition | | | 17 |
| Application Approval: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | | | |
| Action / Remarks: | | | |
| Date: | | | <div> A. Zadeh: Head of the Avionics and EEE Division</div> |



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

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Executive Member: CNES

Date: 17/06/2025

Page 4

Appl. No.

348C

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

18

Tests conducted in compliance with:


- ESCC 3408 generic specification; Chart F4 (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

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|--|--|
| TNC VHP Straight Plug/TNC VHP Right Angle Plug, cable assemblies R23008808100007 batch DC2330 (ESCC 3408001051.80) | |
| TNC VHP Straight Plug/TNC VHP Straight Jack Plug, cable assemblies R23008808300003 batch DC2337 (ESCC 3408001101.80) | |

Detail Specification reference: ESCC3408/001 issue 2

| Chart F4B | Test | Tick when done | Conditions | Date Code | Tested Qty | No. of Rejects | Comments if not performed. Comments on Rejection |
|---|--|-------------------------------------|---|--------------|------------|----------------|--|
| Column 1 Sequence as detailed in ESCC 3408 chart F4B | Shielding Effectiveness | <input checked="" type="checkbox"/> | ESCC 3408 §8.25 ESCC 3408/001 §2.5 | 2330 2337 | 4 | 0 | |
| | External Visual inspection (added) | <input checked="" type="checkbox"/> | ESCC 20500 § 4.4 ESCC 3408/001 §1.6.3 | 2330 2337 | 5 | 0 | |
| | Connector Interface Dimensions (added) | <input checked="" type="checkbox"/> | ESCC 20500 § 4.4 ESCC 3408/001 §1.6.3 | 2330 2337 | 5 | 0 | |
| | Thermal stability of Insertion Loss | <input checked="" type="checkbox"/> | ESCC 3408 §8.35 | 2330 2337 | 4 | 0 | |
| | VSWR & Insertion Loss (added) | <input checked="" type="checkbox"/> | ESCC 3408/001 §2.4 | 2330 2337 | 5 | 0 | |
| | Thermal cycles 100 cycles | <input checked="" type="checkbox"/> | ESCC 3408 §8.17.3 ESCC 3408/001 §2.5 & 2.4 | 2330 2337 | 5 | 0 | |
| | Thermal Stability of Insertion Loss | <input checked="" type="checkbox"/> | ESCC 3408 §8.35 | 2330 2337 | 4 | 0 | |
| | RF Power handling | <input checked="" type="checkbox"/> | ESCC 3408 §8.33 ESCC 3408/001 §2.4 | 2330 2337 | 4 | 0 | Performed at 318W instead of 355W : cf NC-2-C-RAD-4-02 |
| | RF Power cycling | <input checked="" type="checkbox"/> | ESCC 3408 §8.34 ESCC 3408/001 §2.4 | 2330 2337 | 4 | 0 | |
| | Shielding effectiveness | <input checked="" type="checkbox"/> | ESCC 3408 §8.34 ESCC 3408/001 §2.4 | 2330 2337 | 4 | 0 | |
| | Electrical measurements at room high and low temperature | <input checked="" type="checkbox"/> | ESCC 3408/001 §2.5 | 2330 2337 | 4 | 0 | |
| | Coupling Proof torque and connector interface dimensions | <input checked="" type="checkbox"/> | ESCC 3408 §8.20.4 ESCC 3408/001 §2.5 ESCC 3402 §8.10 ESCC3408/001 §1.6.3 | 2330 2337 | 4 | 0 | |
| | Mating and unmating forces | <input checked="" type="checkbox"/> | ESCC3408/001 §2.3 | 2330 2337 | 4 | 0 | |
| | External visual inspection | <input checked="" type="checkbox"/> | ESCC 20500 | 2330 2337 | 4 | 0 | |
| | Permanence of marking | <input checked="" type="checkbox"/> | ESCC 24800 | 2330 2337 | 4 | 0 | |
| | Radiographic inspection | <input checked="" type="checkbox"/> | ESCC 3408 §8.22 | 2330 2337 | 3 | 0 | |
| | Destructive Physical Analysis | <input checked="" type="checkbox"/> | ESCC 21001 | 2330 2337 | 3 | 0 | |

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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> | |