



APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: RF FLEXIBLE CABLE ASSEMBLY TNC, VERY HIGH POWER, 50 OHMS, DC TO 8GHZ
Executive Member:
Date: 21/04/2023

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

Table with 6 columns: ESCC COMPONENT NO., VARIANTS, RANGE OF COMPONENTS, BASED ON, TEST VEHICLE / S, COMPONENT SIMILAR. Row 1: 3408/001, 4 to 13, Frequency range 0-8 GHz Right angle and straight cable assembly for flexible 7,6 mm cable, TNC type, Variant 5, VHP Straight Plug/ TNC VHP Right Angle Plug, Cable assemblies R23008808100007.

Table with 3 columns: Component Manufacturer (RADIALL), Location of Manufacturing Plant(s) (RADIALL 39 RUE VELPEAU BP30-37110 Chateau Renault (France)), Date of original qualification approval (16/04/2018), Certificate Ref No. (348).

Table with 3 columns: ESCC Specifications used for Maintenance of qualification testing (Generic: 3408 Issue: 3, Detail(s): 3408/001 Issue: 1), Deviations to LVT testing and Detail Specification used (No [x] Yes [] (supply details in Box 15)), Deviation from current Specifications (No [x] Yes [] (Supply details)), Qualification Extension Report reference and date (TEST REPORT N° CHRC_2022.12.0054 rev.1, 16/02/2023).

Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

Table with 5 columns: Project Name, Testing Level, LAT, Date code, Quantity Delivered. Row 1: See files Vente_cordons_avec_connecteurs_ESA_2020-2021.pdf and Données ventes SHF8MS TNC VHP.pdf.

Table with 2 columns: PID changes since start of qualification (None [], Minor* [x], Major* [] *Provide details in box:), Current PID Verified by: A. Bonzi, CNES (Ref No: PAQ CHR 0014, Issue: H rev.2, Rev Date: 30/10/2020, Date: 11/04/2023).

Table with 1 column: Current Manufacturing facilities surveyed by: G. Quadri, CNES on 24/11/2020 (Name of Executive Representative) (Date). Satisfactory: Yes [x] No [] Explain. Report Reference: CNES certificate 13-98 issued.



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

Ref. No's and purposes: NCCS 2CRAD202 delay of extension of qualification CLOSED
NCCS 1CRAD301 discrepancies in RF power handling testing with respects to the conditions detailed in the ESCC 3408/001

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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: 21/04/2023

Gianandrea Quadri
G. QUADRI

(Signature of the Executive Coordinator)

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Continuation of Boxes above:

Box 12
NCCS 1CRAD301 discrepancies in RF power handling testing with respects to the conditions detailed in the ESCC 3408/001. OPEN: A DCR has to be issued to avoid any discrepancy between the tests conditions applied and the ones indicated in the ESCC 3408/001. 400 W is guaranteed by design and simulations but not tested

Box 11
SHF8MS cables take advantage of a CNES capability approval (Agrément Savoir Faire CNES pour interconnexions coaxiales souples) see ASF SHF RADIALL CHR.



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Non compliance to ESCC requirements:

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No.:	Specification	Paragraph	Non compliance
1	3408/001 issue 1	2.3 Environmental testing	Power RF handling performed at 355 W instead of 400 W

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

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See NCCS 1CRAD2301: A DCR is needed to avoid any discrepancy between the test conditions effectively applied for RF Power handling and the ones written in the detailed specifications in the ESCC 3408/001. 400 Watt are guaranteed by design but not tested. No blocking point for qualification extension

Executive Manager Disposition

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Application Approval: Yes No

Action / Remarks:

Date:

B. Schade: Head of the Product Assurance and Safety Department



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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 3408 generic specification; Chart F4B (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

TNC VHP Straight Plug (Side A) / TNC VHP Right Angle Plug (Side B) cable assemblies R23008808100007 batches 2213 and 2211	

Detail Specification reference: ESCC3408/001 issue 1

Chart F4B	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Sequence as detailed in the ESCC 3408 chart F4B	Visual Inspection & Interface Dimensions	<input checked="" type="checkbox"/>	ESCC Basic Specification No. 20500	2213, 2211	5	0	
	VSWR & Insertion Loss	<input checked="" type="checkbox"/>	As specified in Detail Specification	2213, 2211	5	0	
	Shielding Effectiveness (Initial)	<input checked="" type="checkbox"/>	IEC Publication No. 61726	2213, 2211	5	0	
	Thermal Stability of Insertion Loss (initial)	<input checked="" type="checkbox"/>	Para 8.35 (ESCC 3402)	2213, 2211	4	0	
	Thermal Cycles - C (100 cycles)	<input checked="" type="checkbox"/>	Para 8.17.3 (ESCC 3402)	2213, 2211	4	0	
	Thermal Stability of Insertion Loss (Final)	<input checked="" type="checkbox"/>	Para 8.35 (ESCC 3402)	2213, 2211	4	0	
	RF Power Handling	<input checked="" type="checkbox"/>	Para 8.33 (ESCC 3402)	2213, 2211	4	0	Performed at 355W instead of 400 W. A DCR is needed to fit the detailed specification 3408/001 with the current test capability
	RF Power Cycling	<input checked="" type="checkbox"/>	Para 8.34 (ESCC 3402)	2213, 2211	4	0	
	Shielding Effectiveness (Final)	<input checked="" type="checkbox"/>	IEC Publication No. 61726	2213, 2211	4	0	
	Electrical Measurement at room, High & Low temperature	<input checked="" type="checkbox"/>	Para 8.20.4 (ESCC 3402)	2213, 2211	4	0	
	Coupling proof torque	<input checked="" type="checkbox"/>	Para 8.18 (ESCC 3402)	2213, 2211	4	0	
	External Visual Inspection	<input checked="" type="checkbox"/>	Para 8.24 (ESCC 3402)	2213, 2211	4	0	
	Radiographic Inspection (X-Ray)	<input checked="" type="checkbox"/>	Para 8.22 (ESCC 3402)	2213, 2211	3	0	
DPA (Micro-sectioning)	<input checked="" type="checkbox"/>	Para 8.38 (ESCC 3402)	2213, 2211	3	0		



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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.
- 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.