



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Appl. No.

Executive Member: CNES

Date: 27/11/2024

391

Components (including series and families) submitted for Qualification Approval

1

ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3401002	01	D-Subminiature for crimp contacts: 9, 15, 25, 37 and 50 size 20 contacts for standard density layout	SND Series	TV1-1, TV1-2, TV1-3, TV1-4, TV2, TV3, TV4, Contact set: Connectors: 340109802BDEM15SNMBSDD62 340100202BDEMA15PNMMD 340109801BDBM25SNMBSND62 340100201BDBMA25PNMMD 340109803BDAM3W3SNMBSCBM97 340100101BDAM3W3PNMMD 340109802BDEM15PNMBSDD97A175D 340100202BDEMA15SNMBA175 340109802BDDM78SNMBSDD62 340100202BDDMA78PNMMD 340109801BDDM50SNMBSND62 340100201BDDMA50PNMMD 340109803BDCM8W8PNMBSCBM97D 340100101BDCM8W8SNMB 340109801BDDM50SNMBSND97A175 340100201BDDMA50PNMBA175D Contacts: 340100501 340100509 340100510 340104018 340104019 340104020 340104021 340109901 340109902 Accessories: 340102299B	
3401002	02	D-Subminiature for crimp contacts: 15, 26, 44, 62, 78 and 104 size 22 contacts for high density layout	SDD Series		
3401005	11, 12	Range of Contacts (removable size 20 contacts)	SND Series		
3401005	09, 10	Range of Contacts (removable size 22 contacts)	SDD Series		
3401001	01	D-Subminiature connectors for removable crimp contacts: 3W3 to 8W8, combined contact arrangements	SCBM Series		
3401040	18, 19, 20, 21	Range of Contacts (removable size 8 power contacts)	SCBM Series		
3401098	01	D-Subminiature straight and right-angle press-fit connectors: 9, 15, 25, 37 and 50 size 20 contacts for standard density layout	SDD Series		
3401098	02	D-Subminiature straight and right-angle press-fit connectors: 15, 26, 44, 62, 78 and 104 size 22 contacts for high density layout	SND Series		
3401098	03	D-Subminiature straight connectors: 3W3 to 8W8, combined contact arrangements	SCBM Series		
3401099	01, 02	Range of Contacts (removable size 8 press-fit contacts)	SCBM Series		
3401022	99	D-Subminiature accessories	SND, SDD, SCBM Series		

Component Manufacturer Amphenol Positronic	2	Location of Manufacturing Plant Zone Industrielle d'Engachies 46 Route d'Engachies 32020 Auch France	3	ESCC Specification used for Qualification Generic: 3401 Issue 5 Detail/s: 3401/001 issue 12, 3401/002 issue 13, 3401/005 issue 10, 3401/022 issue 14, 3401/040 issue 7, 3401/098 issue 2, 3401/099 issue 2 Issue Click here to enter text.	4
---	---	--	---	--	---

Qualification Report Reference and date: TR2024-040, ESCC 3401 Test results summarize	5	PID used for manufacturing Qualification Lot	6
Date: 10/10/2024		Ref No: PM2_194 Issue: Rev 01 Date: 28/10/2024	

PID changes since start of qualification None <input checked="" type="checkbox"/> Minor* <input type="checkbox"/> Major* <input type="checkbox"/> (* Details not published, provided in confidential annex 2.) Click here to enter text.	7	Current PID Verified by Ref No: Issue Date	F. NOUALS - CNES Name of Executive Representative PM2_194 Rev 02 10/12/2024	8
--	---	---	---	---

Current Manufacturing facilities surveyed by:		9
Nouals François, CNES _____ (Name of Executive Responsible)		22/11/2024 _____ (Date)
Audit Report - ESA-TECQES-RP-2022-002422		
Report Reference		
Satisfactory: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Explain		
Quality and Reliability Data Evaluation testing performed Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Report Ref. No.: 2016900699-001 <input type="checkbox"/> Date: 08/08/2016 Equivalent Data: Certification:		10
		Failure analysis, DPA, NCCS available Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (supply data) Ref Nos. and purpose: <ul style="list-style-type: none"> • NC2CPOS201 (closed) • DPA : see Construction analysis CA0004772_Test_Report



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Executive Member: CNES

Date: 27/11/2024

Page 2

Appl. No.

391

11

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 13; that the reports and data are available at the ESCC Executive and therefore applies for ESCC qualification status to be given to the component(s) listed herein.

Date: 27/11/2024

L. FONTAINE, CNES

(Signature of the Executive Coordinator)

12

Continuation of Boxes above: (Only non-confidential comments)

Signature
numérique de
Fontaine Lya-
Cnes
Date :
2024.11.27
10:29:50 +01'00'



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Executive Member: CNES

Date: 27/11/2024

Page 3

Appl. No.

391

Non compliance to ESCC requirements:

13

No.:	Specification	Paragraph	Non compliance

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

14

Executive Manager Disposition

Application Approval: Yes No

Action / Remarks:

15

Date:

B. Schade: Head of the Quality Department



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Executive Member: CNES

Date: 27/11/2024

ANNEX 1: LIST OF TESTS DONE TO SUPPORT QUALIFICATION

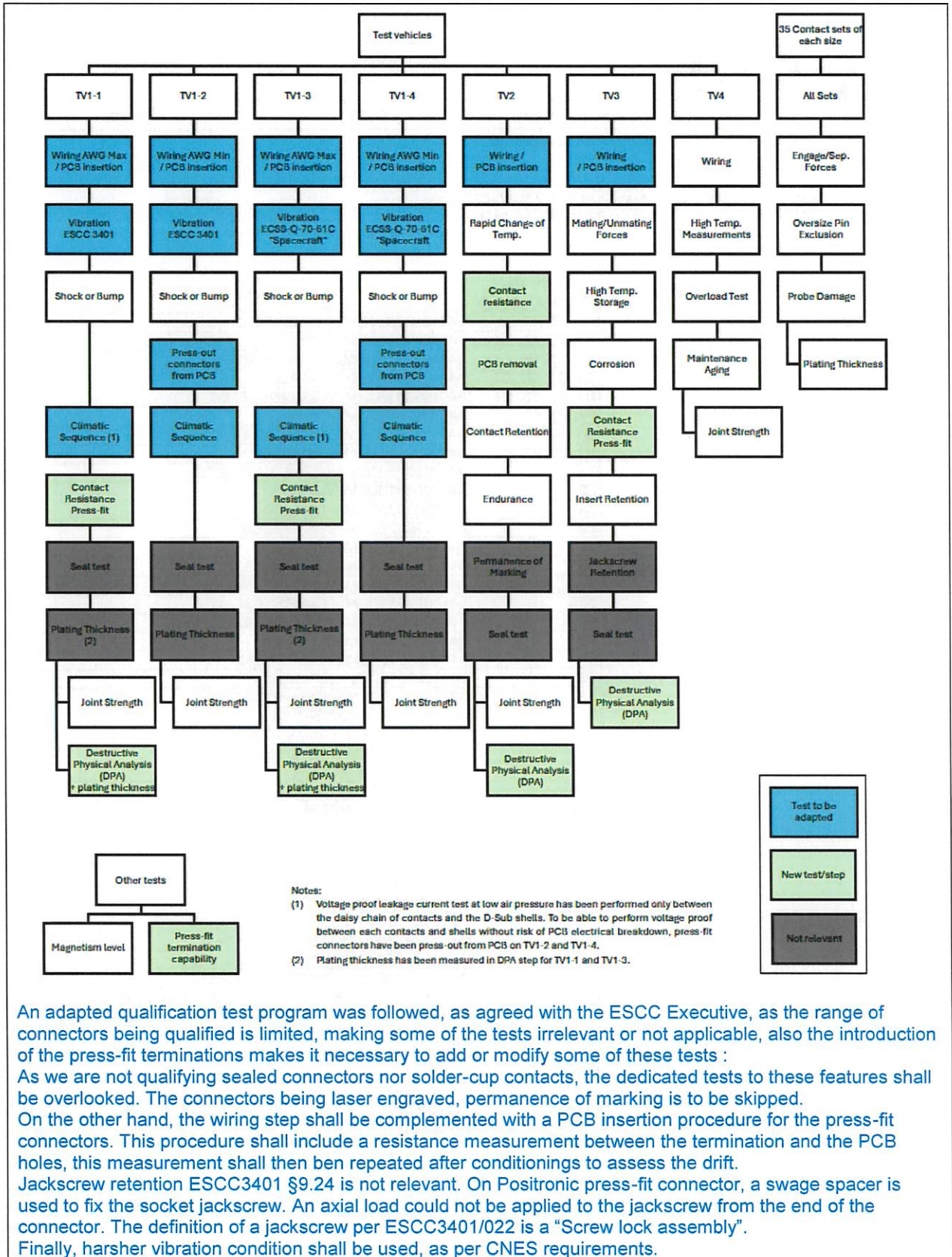
Tests conducted in compliance with:

- ESCC 3401 generic specification; Chart IV (for ESCC/QPL parts);
- Or PID-TFD (for ESCC/QML parts)

Tests vehicle identification/description:

	Test Vehicle	Connector / Contact test S/N	According to ESCC Ref.	Date/code (year/week)		
Subgroup I	TV1	A1, A2, A3, A4	340109802BDEM15SNMBSDD62	2345		
		B1, B2, B3, B4	340100202BDEMA15PNMNB	2345		
		C1, C2, C3, C4	340109801BDBM25SNMBSND62	2347		
		D1, D2, D3, D4	340100201BDBMA25PNMNB	2328		
		E1, E2, E3, E4	340109803BDAM3W3SNMBSCBM97	2346		
		F1, F2, F3, F4	340100101BDAM3W3PNMNB	2343		
		G1, G2, G3, G4	340109802BDEM15PNMBSDD97A175D	2347		
		H1, H2, H3, H4	340100202BDEMA15SNMBA175	2341		
Subgroup II	TV2	7A	340109803BDCM8W8PNMBSCBM97D	2011		
		7B	340100101BDCM8W8SNMB	1951		
		8A	340100202BDDMA78PNMNB	2006		
		8B	340109802BDDM78SNMBSDD62	2003		
		9A	340100201BDDMA50PNMNB	2005		
		9B	340109801BDDM50SNMBSND62	2010		
		10A	340100201BDDMA50PNMBA175D	1951		
		10B	340109801BDDM50SNMBSND97A175	2007		
		A5	340109802BDDM78SNMBSDD62	2347		
		B5	340100202BDDMA78PNMNB	2345		
Subgroup III	TV3	C5	340109801BDBM25SNMBSND62	2347		
		D5	340100201BDBMA25PNMNB	2328		
		E5	340109803BDAM3W3SNMBSCBM97	2346		
		F5	340100101BDAM3W3PNMNB	2343		
		G5	340109802BDEM15PNMBSDD97A175D	2347		
		H5	340100202BDEMA15SNMBA175	2347		
		19A	340109803BDCM8W8PNMBSCBM97D	2011		
		19B	340100101BDCM8W8SNMB	1951		
Subgroup IV	TV4	20A	340100201BDDMA50PNMNB	2005		
		20B	340109801BDDM50SNMBSND62	2010		
		21A	340100201BDDMA50PNMBA175D	1951		
		21B	340109801BDDM50SNMBSND97A175	2007		
		22A	340100202BDDMA78PNMNB	2006		
		22B	340109802BDDM78SNMBSDD62	2003		
		Subgroup V	Contact sets	1 to 10	Part of 340109802BD*M*PNMBSDD97*D	2002
				11 to 20	Part of 340109802BD*M*SNMBSDD62*	2002
Part of 340109802BD*M*PNMBSND97*D	2002					
21 to 30	Part of 340109802BD*M*SNMBSND62*			2002		
	Part of 340109803BD*M*PNMBSCBM97*D and 340109901			2002		
31 to 40	Part of 340109803BD*M*SNMBSCBM97* and 340109902			2002		
	340100509			2002		
41 to 50	340100510			2002		
	340100511			2002		
51 to 60	340100512			2002		
	340104020	2002				
		340104019	2002			

Detail Specification reference:





APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Executive Member:

CNES

Date: 27/11/2024

Page 5

Appl. No.

391

Chart IV	Test	Tick when done	Conditions	Date Code	Tested Qty	N° of Rejects	Comments if not performed. Comments on Rejection
Subgroup I TV1-1	Wiring	<input checked="" type="checkbox"/>	ESCC 3401/098 §4.2.4 for Press-fit and ECSS-Q-ST-70-26 for Crimp	2345	1	0	Adapted for press fit
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						
	Vibration	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.11	2345	1	0	
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						
	Shock or Bump	<input checked="" type="checkbox"/>	IEC Publication No. 512-4	2345	1	0	
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						
	Climatic sequence	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.13	2345	1	0	Note that voltage proof current test at low air pressure has been performed only between the daisy chain of contacts and the D-sub shells.
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						
	Seal	<input type="checkbox"/>	ESCC 3401 Para. 9.9	-	-	-	Not performed - as agreed
	Plating thickness	<input checked="" type="checkbox"/>	ESCC 3401 Para. 5.2.3	2345	1	0	Done during DPA as agreed
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						
	Joint strength	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.15	2345	1	0	
				2345	1		
				2347	1		
				2328	1		
				2346	1		
				2343	1		
				2347	1		
2341	1						

Subgroup I (additional testing) TV1-3	Wiring	<input checked="" type="checkbox"/>	ESCC 3401/098 §4.2.4 for Press-fit and ECSS-Q-ST-70- 26 for Crimp	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	Performed in addition to Subgroup 1 - as agreed
	Vibration	<input checked="" type="checkbox"/>	ECSS-Q-70-61C "Spacecraft"	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
	Shock or Bump	<input checked="" type="checkbox"/>	IEC Publication No. 512-4	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
	Climatic sequence	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.13	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	Note that voltage proof current test at low air pressure has been performed only between the daisy chain of contacts and the D-sub shells.
	Seal	<input type="checkbox"/>	ESCC 3401 Para. 9.9	-	-	-	Not performed - as agreed
	Plating thickness	<input checked="" type="checkbox"/>	ESCC 3401 Para. 5.2.3	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	Done during DPA as agreed
	Joint strength	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.15	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
Additional testing	Destructive Physical Analysis (DPA)	<input checked="" type="checkbox"/>	ESCC21001	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
Subgroup I (additional testing)	Wiring	<input checked="" type="checkbox"/>	ESCC 3401/098 §4.2.4 for Press-fit and ECSS-Q-ST-70- 26 for Crimp	2345 2345 2347 2328 2346	1 1 1 1 1	0	Performed in addition to Subgroup 1 - as agreed

				2343 2347 2341	1 1 1		
	Vibration	<input checked="" type="checkbox"/>	ECSS-Q-70-61C "Spacecraft"	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
	Shock or Bump	<input checked="" type="checkbox"/>	IEC Publication No. 512-4	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
	Press-Out connectors from PCB	<input checked="" type="checkbox"/>		2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	To be able to perform voltage proof between each contacts and shells without risk of PCB electrical breakdown, press-fit connectors have been pressed-out from PCB.
	Climatic sequence	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.13	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	Note that voltage proof current test at low air pressure has been performed only between the daisy chain of contacts and the D-sub shells.
	Seal	<input type="checkbox"/>	ESCC 3401 Para. 9.9	-	-	-	Not performed - as agreed
	Plating thickness	<input type="checkbox"/>	ESCC 3401 Para. 5.2.3	-	-	-	Not performed - as agreed
	Joint strength	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.15	2345 2345 2347 2328 2346 2343 2347 2341	1 1 1 1 1 1 1 1	0	
Subgroup II	Wiring	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.10	2011 1951 2006 2003 2005 2010 1951 2007	1 1 1 1 1 1 1 1	0	
	Rapid change of temperature	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.16	2011 1951 2006 2003 2005	1 1 1 1 1	0	

				2010 1951 2007	1 1 1		
Additional testing	Contact resistance	<input checked="" type="checkbox"/>	NF EN 60352-5, §5.2.3.1	2011 1951 2006 2003 2005 2010 1951 2007	1 1 1 1 1 1 1 1	0	
	Contact retention	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.17	2011 1951 2006 2003 2005 2010 1951 2007	1 1 1 1 1 1 1 1	0	
	Endurance	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.18	2011 1951 2006 2003 2005 2010 1951 2007	1 1 1 1 1 1 1 1	0	
	Permanence of marking	<input checked="" type="checkbox"/>	ESCC 24800	-	-	-	Not performed - as agreed
	Seal	<input type="checkbox"/>	ESCC 3401 Para. 9.9	-	-	-	Not performed - as agreed
	Joint strength	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.15	2011 1951 2006 2003 2005 2010 1951 2007	1 1 1 1 1 1 1 1	0	
Additional testing	DPA	<input checked="" type="checkbox"/>	ESCC21001	2011 2003 2010 2007	1 1 1 1	0	
Subgroup III	Wiring	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.10	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
	Mating / Unmating forces	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.20	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
	High temperature storage	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.21	2347 2345 2347	1 1 1	0	

				2328 2346 2343 2347 2347	1 1 1 1 1		
	Corrosion	<input checked="" type="checkbox"/>	IEC Publication No. 68-2-11	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
Additional testing	Contact resistance Press-Fit	<input checked="" type="checkbox"/>	NF EN 60352-5, §5.2.3.1	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
	Insert retention	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.23	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
	Jackscrew retention	<input type="checkbox"/>	ESCC 3401 Para. 9.24	-	-	-	Not performed - as agreed
	Seal	<input type="checkbox"/>	ESCC 3401 Para. 9.9	-	-	-	Not performed - as agreed
Additional testing	DPA	<input checked="" type="checkbox"/>	ESCC21001	2347 2345 2347 2328 2346 2343 2347 2347	1 1 1 1 1 1 1 1	0	
Subgroup IV	Wiring	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.10	2011 1951 2005 2010 1951 2007 2026 2003	1 1 1 1 1 1 1 1	0	
	High temperature measurement	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.25	2011 1951 2005 2010 1951 2007 2026 2003	1 1 1 1 1 1 1 1	0	
	Overload test	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.26	2011 1951 2005 2010 1951 2007	1 1 1 1 1 1	0	

				2026 2003	1 1		
	Maintenance aging	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.27	2011 1951 2005 2010 1951 2007 2026 2003	1 1 1 1 1 1 1 1	0	
	Joint strength	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.15	2011 1951 2005 2010 1951 2007 2026 2003	1 1 1 1 1 1 1 1	0	
Subgroup V	Engagement / Separation forces	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.28	2002	60	0	
	Oversize pin Excursion	<input checked="" type="checkbox"/>	ESCC 3401 Para. 9.29	2002	60	0	
	Probe damage	<input checked="" type="checkbox"/>	IEC Publication No. 512-8	2002	60	0	
	Plating thickness	<input checked="" type="checkbox"/>	ESCC 3401 Para. 5.2.3	2002	60	0	



APPLICATION FOR ESCC QUALIFICATION APPROVAL

Component Title: Connectors Electrical Rectangular Non-Removable Solder Bucket PCB and Wire-Wrap Contacts and Removable Coaxial and Power Contact and Removable Crimp Contacts, and press fit contact based on type D*M

Executive Member: CNES

Date: 27/11/2024

Page 7

Appl. No.

391

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION APPROVAL

ENTRIES

- Form Heading** shall indicate:— the title of the component as given in its detail specification or the name of the series or family; — the entering date; — the serial number and the suffix of the form.
- Box 1** shall provide details given in table; in particular there shall be listed - the variants or range of variants; the range of components by using the ESCC code for values tolerances, etc.; the designation given in detail specification as 'based on'; ---under Test Vehicle enter either a cross or the specific characteristic capable to identify the component tested; — under component similar enter a cross.
- Box 2 and 3** Manufacturer's name and location of plant where the components were manufactured and tested.
- Box 4** Generic and detail specifications used during qualification program.
- Box 5** Reference to test report(s) submitted in support of application.
- Box 6** Enter details to identify the PID that was applicable at the time the qualification lot was manufactured.
- Box 7** If the PID was evolved after qualification lot manufacture, adequate details of such evolution shall be provided together with reasons for changes. Major changes shall be clearly marked.
- Box 8** The box serves to identify the current PID and the Executive Representative that has verified it together with the date of this occurrence.
- Box 9** This box can be completed only after a physical visit to the plant to confirm that the practices, procedures, materials, 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 10** Details entered shall be sufficient to evidence that an evaluation program according to ESCC Basic Specification No. 22600 has been performed and that the results thereof are summarized in the survey and test reports. If the evaluation program has not been carried out according to established ESCC documents, the applicant Executive Representative shall provide alternative data and declare its assessed degree of satisfactory compliance with the ESCC basic requirements. Reference shall be made to the reports on Destructive Physical Analysis (DPA), Failure Analysis and Non conformance (NCCS) issued during the Evaluation and/or Qualification Phase.
- Box 11** Enter the name of the Executive Coordinator and the signature.
- Box 12** To be used when there is a need to expand any of the boxes from 1 through 10. Identify box affected and reference the Box 12 in the relevant Box. Box 12 can be broken into 12a, 12b, etc. if several Boxes have to be expanded.
- Box 13** Fill table as requested.
- Box 14** Fill in any additional tasks required to achieve full compliance.
- Box 15** All Executive recommendations on the application itself, special conditions or restrictions, modifications of the QPL or ESCC QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 15, signed by the ESA Representative.
- Box 16** Fill in Table as requested.
- Box 17** Confidential details of PID changes shall be provided.
- Box 18** State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 18 each nonconformance shall be sequentially numbered. If relevant state 'None'
- Box 19** Any additional action deemed necessary by the Executive Representative 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 nonconformance.
- Box 20** Additional Comments