APPLICATION FOR ESCC QUALIFICATION APPROVAL

Page 1

Component Title: Optical Fibre Cable Assemblies based on type mini AVIM

Appl. No. 355

Executive Member: ESA Date: 15/10/2018

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Components (including series and families) submitted for Qual. App.

ESA/ESCC COMP. NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3420/001	01	Optical fiber cable assembly SM and PM fiber, acrylate coated, PEEK loose tube	PM fiber 9/125/250 at 1550nm	342000101-01P-M8P-M8P-6000	
3420/001	02	Mating Adapter with Square flange	5219572	342000102	
.				.	

2 Component Manufacturer

Diamond

3 Location of Manufacturing Plant

Via dei Patrizi 5,
6616 Losone,
Switzerland

4 ESCC Specification used for Qualification

Generic: 3420, issue 1

Detail/s: 3420/001, issue 2

5 Qualification Report Reference and date:

STS0333 laboratory, Report 3354

Date: 23/03/2018

6 **PID** used for manufacturing Qualification Lot

Ref No: DIS 1082085, DIS 1070158
Issue: 00
Date: 19/09/2017

7 **PID** changes since start of qualification

None ☐
Minor* ☒
Major* ☐

*Provide detail.

See explanation in attachement

8 Current **PID** Verified by ESA

Ref No: PID_342000101
Issue: 00
Date: 11/10/2018

9 Current Manufacturing facilities surveyed by:

ESA 13/12/2017

(Name of Executive Responsible) (Date)

Satisfactory: Yes ☒ No ☐ Explain Report ESCC-AUD-DIAM2017v1

10 Quality and Reliability Data

Evaluation testing performed Yes ☒ No ☐

Report Ref. No.: Report 2401 2 Date: 26/03/2012

Equivalent Data:

Certification:

Failure analysis, DPA, NCCS available Yes No ☒

(supply data)

Ref. Nos. and purpose: CA ESTEC laboratory report CA0626

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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 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: 18/10/2018

A. Pesce

12

Continuation of Boxes above:

13

Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

14

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

15

Executive Manager Disposition

Application Approval: Yes ☒ No ☐

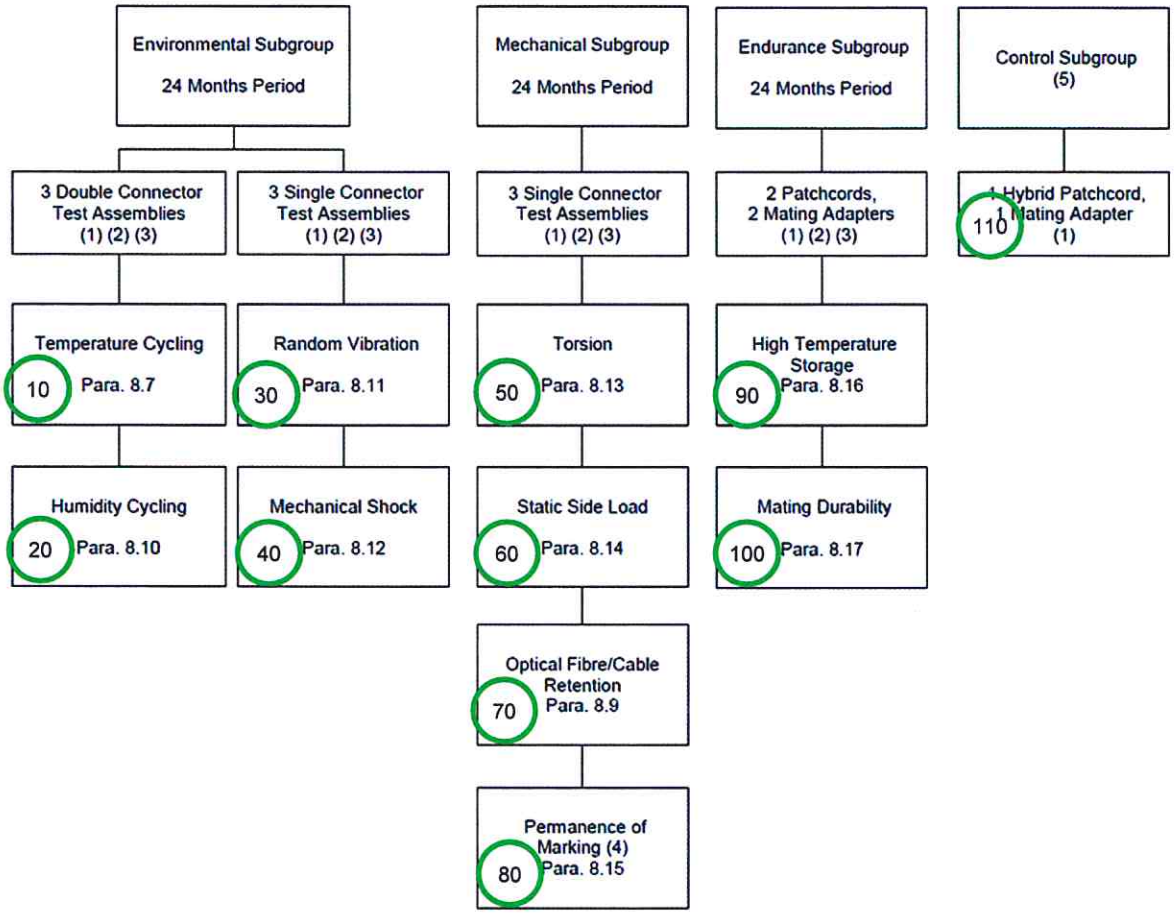
Action / Remarks:

Date: Click here to enter a date.

Signature, B. Schade, Head of the Product Assurance and Safety Dept. -ESA Representative

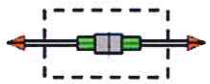
Annex 1: List of tests done to support qualification

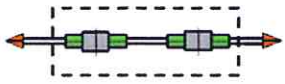
Performed in compliance with ESCC 3420, chart F4 or PID-342000101_00, §6, displayed below



Quantity of component for Qualification - Length of fiber

SCTA Single connector test assembly	2 HP		1 MA
DCTA Double connector test assembly	2 HP	1 P	2 MA





Subgroup	Hybrid Patchcords	Patchcords	Mating adapter	SM CG Patchcord
Environmental	12	6	12	2
Mechanical	6		3	
Endurance	2		2	1
Control	1			
Total	20	6	17	3

POS	Process step	Description	Standard	Comments
	Initial measurments	Length measurement with a ruler		
		Enface interferrometric measurement	IEC 61300-3-47	
		Visual endface inspection	DC-086 or DC-042	
		Insertion Loss, IL	IEC 61300-3-4 met. B	at fiber wavelength
		Extinction ratio, ER and orientation angle, α	Diamond method similar to IEC 61300-3-40	at fiber wavelength
		Return Loss, RL	IEC 61300-3-6, OTDR, OFDR	1310/1550nm SM, PM
		Return Loss, RL	IEC 61300-3-6, OCWR	other wavelength, fibers
10	Thermal cycles	100 cycles, Tmin=-55°C, Tmax=+85°C, 1°/min, 60min dwell at extremes, total 670h	IEC 61300-2-22	Mated DCTA, IL monitored
20	Humidity cycles	6 cycles, Tmin=+25°C, Tmax=+55°C, 95% r.h., 10°/h, 9h dwell at extremes, total 144h	IEC 61300-2-46	Mated DCTA, IL monitored
30	Random Vibration	20Hz +12dB/oct. 100Hz +6dB/oct 300Hz 1.95 g2/Hz 1000Hz -5dB/oct Total 34.8gRMS, on all 3 axis, 7.5min per ax	IEC 61300-2-64	Mated SCTA, IL and transient monitored
40	Shock	Pulse type not defined, 500g, ca. 2ms, positive, on all axis, 3 shock per axis	IEC 61300-2-27	Mated SCTA, IL and transient monitored
50	Torsion	F=3N, connector longitudinal axis, ±180°, 30cm free cable length, 25 cycles	IEC 61300-2-5	Mated SCTA, IL monitored
60	Static Side Load	F=0.2N, 90° respect to connector longitudinal axis, 30cm free cable length, 1h duration	IEC 61300-2-42	Mated SCTA, IL monitored
70	Fiber/cable retention	F=5N, on connector longitudinal axis, 30cm free cable length, 2min duration	IEC 61300-2-4	Mated SCTA, IL monitored
80	Permanence of Marking	Isopropyl alcohol 99%, +23°C, 1 immersion	ESCC 24800	Unmated
90	High temperature Storage	+85°C, 1000h, no humidity control	IEC 61300-2-18	Unmated
100	Mating durability	100 cycles,	IEC 61300-2-2	Mated SCTA, IL monitored
110	Control parts			
	Final Measurments	Enface interferrometric measurement	IEC 61300-3-47	
		Visual endface inspection	DC-086 or DC-042	
		Insertion Loss, IL	IEC 61300-3-4 met. B	at fiber wavelength
		Extinction ratio, ER and orientation angle, α	Diamond method similar to IEC 61300-3-40	at fiber wavelength
		Return Loss, RL	IEC 61300-3-6, OTDR, OFDR	1310/1550nm SM, PM
		Return Loss, RL	IEC 61300-3-6, OCWR	other wavelength, fibers
		Component visual check		