


PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 1
FR0014; issue 3; date: 14-10-2016	Version 1	

Product Change Request

Product: NanEye camera modules


Change Number: 07

Title: Cable Supplier


PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 2
FR0014; issue 3; date: 14-10-2016	Version 1	

Table of Contents

1 Information	4
2 Description of change:.....	4
2.1 New Cable Supplier	4
3 Motivation for change	4
4 Risk assessment / Evaluation of Impact	5
4.1 Cost of change	5
4.2 Impact on product pricing	5
4.3 Impact on schedule	5
4.4 Impact on design.....	5
4.5 Impact on product performance	5
4.6 Impact on yield or process stability	5
4.7 Impact on supply chain	5
4.8 Impact on inventory	5
4.9 Impact on tooling and equipment	5
4.10 Impact on reliability/qualification status	5
4.11 Impact on packing & shipment	5
4.12 Impact on other customers/existing applications	6
5 Implementation of Change	6
5.1 Implementation date and schedule.....	6
5.2 Verification strategy	6
5.3 Traceability.....	6
5.4 Marking	6
5.5 Documents to be updated.....	6
6 Verification of implementation	6
7 Comments	6
8 Attachments	7
8.1 Qualification Report: Frequent Flexion	7

PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 3
FR0014; issue 3; date: 14-10-2016	Version 1	

8.1.1	Test equipment:	7
8.1.2	Test conditions:	7
8.1.3	Test Results	8
8.1.4	Comparison test.....	8
	Parameter table: Stretching speed: 100 mm/min	8
8.1.5	Trend graphic	9
9	Approvals	10

PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 4
FR0014; issue 3; date: 14-10-2016	Version 1	

1 Information

Product ID: *General NanEye camera modules*

Date of request: *01 of August 2017*

Category: Cat 1 (Major) Cat 2 (Minor)

2 Description of change:

2.1 New Cable Supplier

To reinforce the supply chain, ams decided to qualify a new cable supplier for the current NanEye Camera Modules. The second source strategy strengthens ams supply chain, assuring the supply of NanEye cameras in situations such as EOL (End Of Life) and material shortage in one of the suppliers.

ams does not intend to skip current cable supplier but keep all qualified sources running in parallel. This strategy will reinsure the continuous delivery of cable satisfying current client's demands.

Type of change:

- Material change
- Process change
- Method change
- Other: New Cable Supplier

3 Motivation for change

- Yield enhancement
- Continuous improvement
- Quality / reliability
- Process stability
- Cost reduction
- Customer request

PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 5
FR0014; issue 3; date: 14-10-2016	Version 1	

other:

The current Supply Chain is vulnerable towards a EOL situation. As part of ams continuous improvement programs, the SCM decided to impose a second source strategy in some of the most critical components such as the cable used for the NanEye camera modules.

4 Risk assessment / Evaluation of Impact

4.1 Cost of change

There will be no impact.

4.2 Impact on product pricing

There will be no impact.

4.3 Impact on schedule

There will be no impact.

4.4 Impact on design

There will be no impact.

4.5 Impact on product performance

There will be no impact.

4.6 Impact on yield or process stability

There will be no impact.

4.7 Impact on supply chain

Supply Chain will be reinforced with a new cable supplier.

4.8 Impact on inventory

There will be no impact.

4.9 Impact on tooling and equipment


There will be no impact.

4.10 Impact on reliability/qualification status

The qualification report is attached (Section 8.1).

4.11 Impact on packing & shipment

There will be no impact.

PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 6
FR0014; issue 3; date: 14-10-2016	Version 1	

4.12 Impact on other customers/existing applications

There will be no impact.

5 Implementation of Change

5.1 Implementation date and schedule

The new cable supplier will be immediately introduce in the supply chain.

5.2 Verification strategy

Not applicable.

5.3 Traceability

The traceability of each cable supplier is being used in our products is assured by our current SAP system as well as in our Assy Subcon.

5.4 Marking

Not applicable.

5.5 Documents to be updated


Not applicable.

6 Verification of implementation

Approval of the WI change by ams.

7 Comments

Not applicable.

PCR	am 	
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 7
FR0014; issue 3; date: 14-10-2016	Version 1	

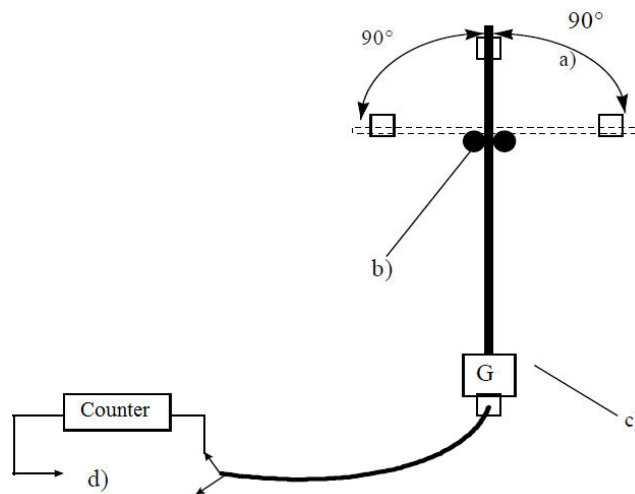
8 Attachments

8.1 Qualification Report: Frequent Flexion

In order to qualify the new cable, a frequent flexion test was perform in order to determine cable robustness:


8.1.1 Test equipment:

- a) Swing angle
- b) Rotary Bearings
- c) Resilience
- d) Monitoring unit:
 - a. Termination criterion = conductor breakage



8.1.2 Test conditions:

- Castors - \varnothing : 5 mm
- Distance between rollers: = cable \varnothing x 1.1
- Weight load: 0.25 N
- Speed: 37 cycles / min.
- Num. Of samples: 3
- Sample length: 900 mm

PCR		
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 8
FR0014; issue 3; date: 14-10-2016	Version 1	

Abort criterion is a ladder break.

Should: record cycles

8.1.3 Test Results

Sample Nr.	Cycles	Test result
1. (R0,18mm)	3470	broken wire
2. (R0,18mm)	4090	broken wire
3. (R0,18mm)	5290	broken wire


8.1.4 Comparison test

In order to compare the cables being supplied by the current supplier and the one being qualified a new test was performed to test the elongation spec. of the cables from both suppliers.

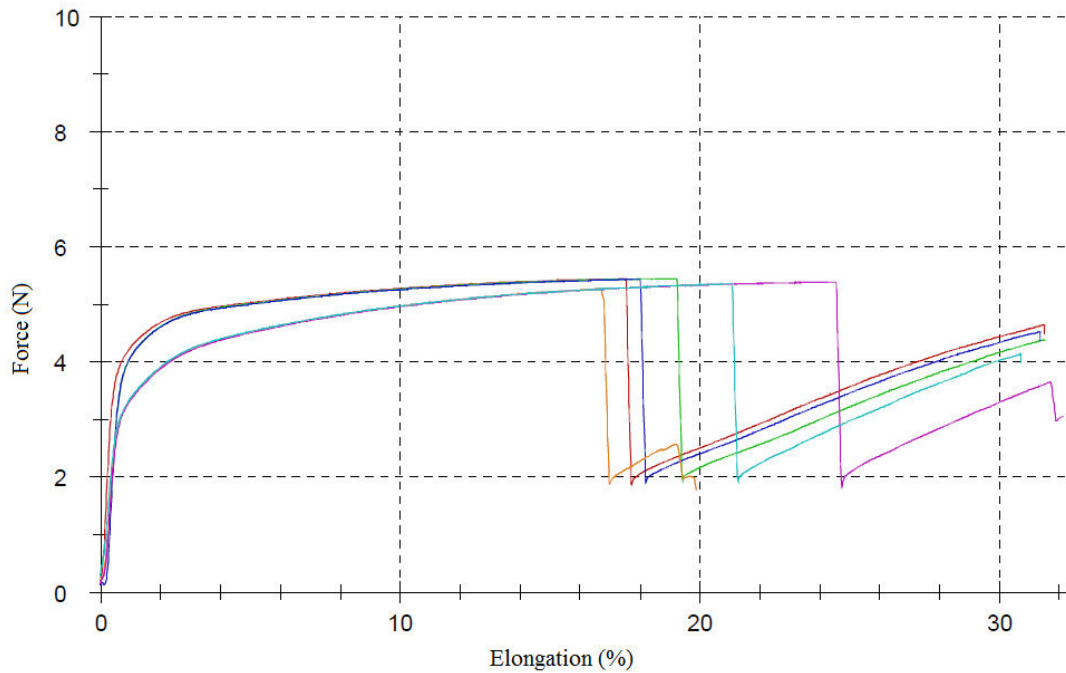
Test Conditions: Same as 8.1.1 and 8.1.2

Parameter table: Stretching speed: 100 mm/min

Sample number	Sample no.	Description Sub - series 1	F _{max} (N)	dL by F _{max} (mm)	F _{Brunch} (N)	dl by Brunch (mm)
1.1	1	New Supplier	5,44	17,4	4,47	31,5
1.2	2		5,44	19,1	4,36	31,5
1.3	3		5,42	18	4,35	31,4
2.1	4	Current Supplier	5,26	16,7	1,77	19,9
2.2	5		5,38	24,4	3,04	32,1
2.3	6		5,35	21	3,98	30,7

PCR	am 	
Reference: NanEye-PCR-07	Date: 01.08.2017	Page 9
FR0014; issue 3; date: 14-10-2016	Version 1	

8.1.5 Trend graphic





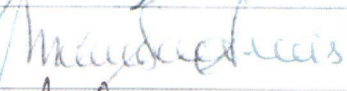
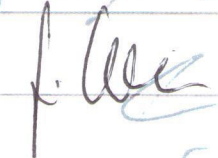
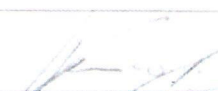

8.1.6 Conclusion

If we observed the general results obtained during the qualification of the new cable supplier, it is clear that the new cable presents a better performance when compared with the old cable. Therefore, and by comparing the two results, we considered it to be qualify and ready to be used into the ams supply chain.

PCR	ams	
Reference: Nanaeye-PCR-07	Date: 01.08.2017	Page 10
FR0014; issue 3; date: 14-10-2016	Version 1	

9 Approvals

CMOSIS:

Dept	Name	Date	Signature
Product Engineering	Xavier Salmon	19.09.2017	
Sales/Marketing/Product Management	Antonio Gomes	01.09.2017	
Operations/ Planning	Hónica Dinis	01.09.2017	
Project Management	Stephan Voltz	19.09.2017	
Quality	Uc Freytag	14.9.17	
Assembly Engineering	Francisco Dinis	07.08.2017	

Customer:

Dept	Name	Date	Signature