


**PRODUCT / PROCESS CHANGE NOTIFICATION**

**1. PCN basic data**

<b>1.1 Company</b>		STMicroelectronics International N.V
<b>1.2 PCN No.</b>	ANALOG MEMS SENSORS/24/14722	
<b>1.3 Title of PCN</b>	Qualification of ST Bouskoura as Back end plant for selected product (GPA Division)	
<b>1.4 Product Category</b>	See product list	
<b>1.5 Issue date</b>	2024-04-22	

**2. PCN Team**

<b>2.1 Contact supplier</b>	
<b>2.1.1 Name</b>	PIKE EMMA
<b>2.1.2 Phone</b>	+44 1628896111
<b>2.1.3 Email</b>	emma.pike@st.com
<b>2.2 Change responsibility</b>	
<b>2.2.1 Product Manager</b>	Marcello SAN BIAGIO
<b>2.1.2 Marketing Manager</b>	Salvatore DI VINCENZO
<b>2.1.3 Quality Manager</b>	Jean-Marc BUGNARD

**3. Change**

<b>3.1 Category</b>	<b>3.2 Type of change</b>	<b>3.3 Manufacturing Location</b>
Transfer	Product transfer from one site to another site, even if test or process line is qualified	New back end plant : ST Bouskoura

**4. Description of change**

	<b>Old</b>	<b>New</b>
<b>4.1 Description</b>	Standard products : - ST Shenzhen - TSHT Automotive Grade products : - ST Shenzhen	Standard products : - TSHT - ST Bouskoura Automotive Grade products : - ST Bouskoura
<b>4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?</b>	No impact	

**5. Reason / motivation for change**

<b>5.1 Motivation</b>	Increase Assembly and Test Volume Capacity
<b>5.2 Customer Benefit</b>	MANUFACTURING FLEXIBILITY

**6. Marking of parts / traceability of change**

<b>6.1 Description</b>	New Finished good codes
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**7. Timing / schedule**

<b>7.1 Date of qualification results</b>	2024-04-18
<b>7.2 Intended start of delivery</b>	2024-07-30
<b>7.3 Qualification sample available?</b>	Upon Request

**8. Qualification / Validation**

<b>8.1 Description</b>	14722 RER 6088-1879-W-2024_SO8 assembled in BSK_L4931_Auto_STD.pdf		
<b>8.2 Qualification report and qualification results</b>	Available (see attachment)	<b>Issue Date</b>	2024-04-22

**9. Attachments (additional documentations)**

**10. Affected parts**

<b>10. Affected parts</b>		
<b>10. 1 Current</b>		<b>10.2 New (if applicable)</b>
<b>10.1.1 Customer Part No</b>	<b>10.1.2 Supplier Part No</b>	<b>10.1.2 Supplier Part No</b>
L4931ABD33-TR	L4931ABD33-TR	

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## Public Products List

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**PCN Title** : Qualification of ST Bouskoura as Back end plant for selected product (GPA Division)

**PCN Reference** : ANALOG MEMS SENSORS/24/14722

**Subject** : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

L4931CD33-TR	L4931ABD33-TR	L4931CD33-TRY
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## Reliability Evaluation Report

L4931 SO 08 ST BOUSKOURA – MOROCCO  
Automotive/Industrial version

General Information	
Product Line	LW3301
C/P	L4931CD33-TRY L4931CD33-TR L4931ABD33-TR
Product Division	AMS
Package	SO 08
Silicon process technology	BIP

Location	
Wafer fab	AM6F-Singapore SG6
Assembly Plant	ST BOUSKOURA – MOROCCO
Results	
Reliability Assessment	PASS

### DOCUMENT INFORMATION

Version	Date	Pages	Comment
1.1	02 April 2024	4	

Note: This report is a summary of the reliability trials performed in good faith by STMicroelectronics in order to evaluate the potential reliability risks during the product life using a set of defined test methods.

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## 1 APPLICABLE AND REFERENCE DOCUMENTS

Document reference	Short description
JESD47	Stress-Test-Driven Qualification of Integrated Circuits
AEC Q100	Failure Mechanism Based stress test Qualification for Integrated Circuits

## 2 GLOSSARY

Item	Short description
T <sub>j</sub>	Temperature at junction of the device
T <sub>A</sub>	Temperature of ambient air
RH	Relative Humidity
V <sub>cc</sub> max	Max Operative Voltage

## 3 RELIABILITY EVALUATION OVERVIEW

### 3.1 Objectives

Reliability evaluation of the products with the attributes reported in the table below

Attributes	Value		
Product	L4931CD33-TRY	L4931CD33-TR	L4931ABD33-TR
Process Technology	BCD6	BCD6	BCD6
Diffusion Plant	AM6F-Singapore SG6	AM6F-Singapore SG6	AM6F-Singapore SG6
Package	SO 08	SO 08	SO 08
Assembly Plant	ST BOUSKOURA – MOROCCO	ST BOUSKOURA – MOROCCO	ST BOUSKOURA – MOROCCO
Market Segment	AUTOMOTIVE	INDUSTRIAL	INDUSTRIAL

### 3.2 Conclusion

Qualification requirements have been fulfilled without exception. Reliability tests have shown that the devices behave correctly against environmental tests (no failure). The stability of electrical parameters during the accelerated tests demonstrates the ruggedness of the products and safe operation, which is consequently expected during their lifetime.



## 4 TESTS PLAN

ST refers to the AEC Q100 for Automotive products and JEDEC 47 for Industrial products when conducting reliability tests for the qualification of new products.

### 4.1 Test plan and results summary

STRESS	Reference	Test Conditions	AECQ Requirements			Results	Note
			Sample Size/Lot	Number of Lots	Duration or Level		
<b>ACCELERATED ENVIRONMENT STRESS TESTS</b>							
Preconditioning (PC)	JESD22 A113 J-STD-020	Preconditioning: (Test @ Rm) SMD only; Moisture Preconditioning for THB, UHAST, TC, Peak Reflow Temp = 260C	MSL 1				
Temperature-Humidity-Bias (THB)	JESD22 A101	THB, 85°C, 85% RH Vcc max Test @ Room/Hot Temperature	77	3	1000hrs	0/231	1,3
Unbiased HAST (uHAST)	JESD22 A118	130°C/85%RH Test @ Room Temperature	77	4	96hrs	0/308	1,2
Temperature Cycling (TC)	JESD22 A-104	TC, -65°C to +150°C Test @ Hot temperature 5 units Post-T/C WBP sampled	77	4	1000cycles	0/308	1,2
High Temperature Storage Life (HTSL)	JESD22 A103	HTSL, T <sub>A</sub> =150°C, no bias Test @ Room/Hot Temperature	77	4	1000hrs	0/308	2
High Temperature Operating Life (HTOL)	JESD22 A108	HTOL, T <sub>J</sub> =150°C, Vcc Max Test @ Room/Cold/Hot Temperature	77	3	1000hrs	0/231	3

STRESS	Reference	Test Conditions	AECQ Requirements			Results	Note
			Sample Size/Lot	Number of Lots	Duration or Level		
<b>PACKAGE ASSEMBLY INTEGRITY TESTS</b>							
Wire Bond Shear (WBS)	AEC-Q100-001 AEC-Q003	WBS, Cpk >1.67	10	3	-	PASS Cpk>1.67	3
Wire Bond Pull (WBS)	Mil-STD-883, Method 2011 AEC-Q003	WBP at time 0 and after 1000cyc T/C, Cpk >1.67	10	3	-	PASS Cpk>1.67	3
Solderability (SD)	JSTD-002D	SD, Surface mount process simulation test	10	3	-	PASS	3
Physical Dimension (PD)	JESD22 B100, JESD22 B108 AEC-Q003	PD, Cpk > 1.67	10	3	-	PASS Cpk>1.67	3

Notes:

1. Preconditioning with soak per J-STD-020 at rated moisture sensitivity level prior to acceleration stress testing.
2. It has been performed on 3 different lots of L4931CD33-TRY and 1 lot of L4931CD33-TR
3. It has been performed on 3 different lots of L4931CD33-TRY