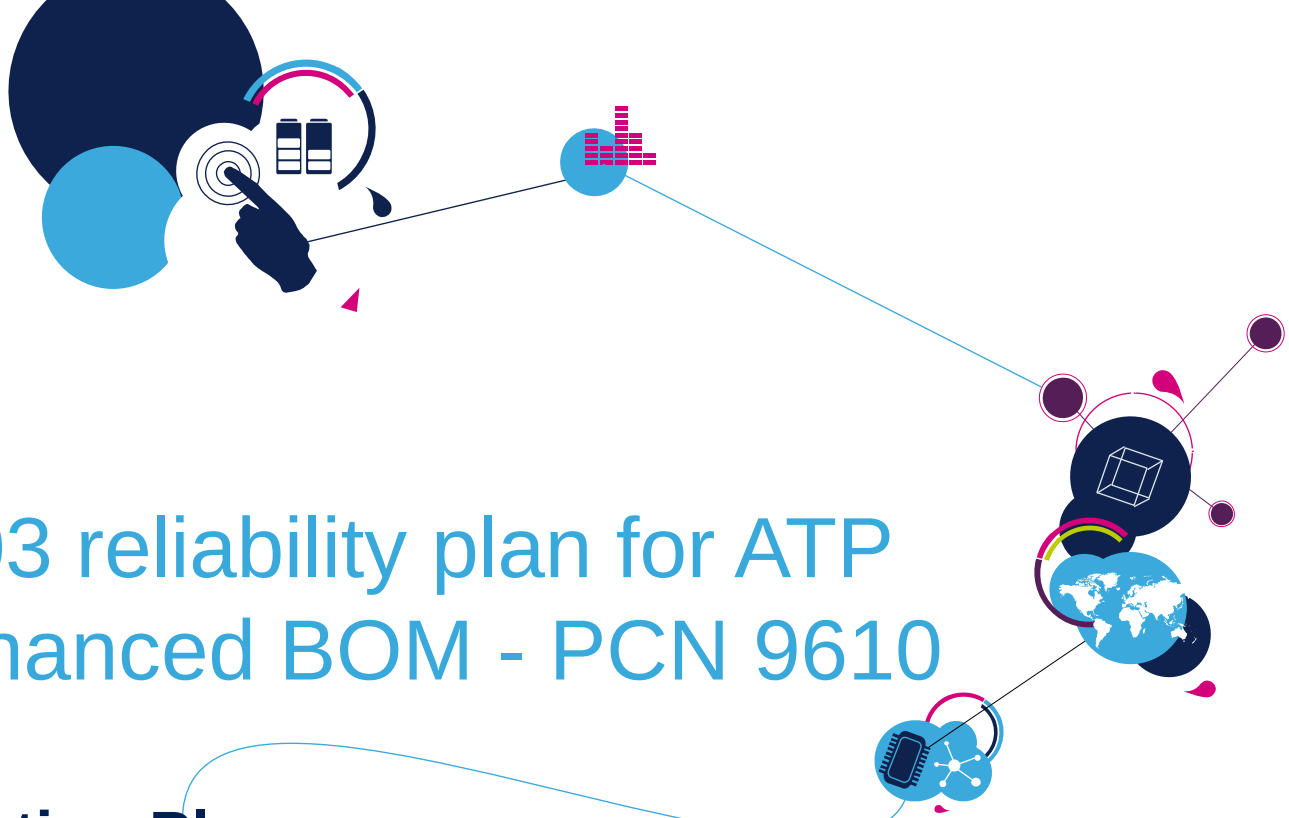

RERMCD1603 reliability plan for ATP UQFN3*3 enhanced BOM - PCN 9610

Reliability Evaluation Plan

Mar 7th, 2016

MMS MCD Quality & Reliability Department

life.augmented

PCN 9610- RERMCD1603 reliability plan for AMKOR ATP UQFN3*3 COL enhanced BOM

Context :

- Die Attach Film supplier stops its activity at NSCC location. STMicroelectronics will qualify new supplier location at Fujikura.
- Moreover, ST Microcontrollers Division takes the opportunity to improve package processability by changing the resin.

RERMCD1603 STM8S/L TEST VEHICLES

Package line	Assembly Line	Package	Device (Partial RawLine Code)	Diffusion Process	Number of Lots
UQFN	UQFN3*3 COL	UQFN3*3 COL 20L	STM8S(E4*767)	F9GO1	**1**
			STM8L(E4*761)	F9GO2	**1**
			STM8L(E4*758)	F9GO2	**1**

RERMCD 1602 - STM8S/L - UQFN RELIABILITY TRIALS

Package Reliability Trials :

(*) tests performed after preconditioning

Reliability Trial		Test Conditions	Pass Criteria	Unit per Lot	Lot qty
PC	Pre Conditioning: Moisture Sensitivity Jedec Level 1 J-STD-020/ JESD22-A113	Bake (125°C / 24 hrs) Soak (85°C / 85% RH / 168 hrs) for level 1 Convection reflow: 3 passes with Jedec level 1	3 passes MSL1	308	**1/ device**
AC or Uhast(*)	Autoclave JESD22 A102 or UnBiased Highly Accelerated Temperature and Humidity Stress JESD22 A118	121°C, 100% RH, 2 Atm 130°C, 85%RH, 2 Atm	96h	77	**1/ device**
TC(*)	Thermal Cycling JESD22 A104	-50°C, +150°C Or equivalent -65°C +150°C	1000Cy 500Cy	77	**1/ device**
WPT/WBS After TC	Wire Bond Pull- Mil Std883 method 2011 Wire Bond Shear AECQ100-001	3g min pull strengh 15g min bond shear	500Cy or 1000Cy upon test conditions	3 (30 wires) 3 (30 wires)	**1/ device**
THB or THS(*)	Temperature Humidity Bias JESD22 A101 Or Temperature Humidity Storage JESD22 A110	85°C, 85% RH, bias 85°C, 85% RH, no bias	1000h 1000h	77	**1/ device**
HTSL	High Temperature Storage Life JESD22 A103	150°C- no bias	1000h	77	**1/ device**
Construction analysis including Solderability, Physical dimensions	 JESD 22B102 JESDB100/B108			 15 10	**1/ Front end technology**
ESD	ESD Charge Device Model ANSI/ESD STM5.3.1	500V depending on device datasheet	500V	3	**1/ device**