# PRODUCT/PROCESS CHANGE NOTIFICATION
# PCN 9977 – Additional information

## Transfer assembly plant from Stats ChipPAC Shanghai China (SCC) to Stats ChipPAC Jiangyin China (JSCC) for products in UFQFPN 5x5 & 7x7 packages

## MDG - Microcontrollers Division (MCD)

### What are the changes?

| | Transfer location from: | to: |
|---|---|---|
| Assembly site | Stats ChipPAC Shanghai China (SCC) | Stats ChipPAC Jiangyin China (JSCC) |
| | Source closure | New source |
| Lead frame | Copper Frame Spot Ag | Copper Frame Spot Ag (1) |
| Leadfinishing | Pure Sn (e3) | Pure Sn (e3) |
| Mold compound | Sumitomo EME G770 | Sumitomo EME G770 |
| Die attach Glue | Ablestick 8290 | Ablestick 8290 |
| Wire | 0.8 mil Au | 0.8 mil 96.5% Ag |
| Enhanced traceability in marking | No digits | 2 digits added |
| Tray<br>UFQFPN 5x5 package<br>UFQFPN 7x7 package | <br>PEAK QFN0505 1.0 150°C<br>No change | <br>PEAK QFN0505 0.85 150°C<br>No change |

(1) Quality improvement through enhanced lead frame implementation:

- Down Bonds/Ground Bonds secured by groove.
- Better lead shape for sawing robustness thanks to neck design:

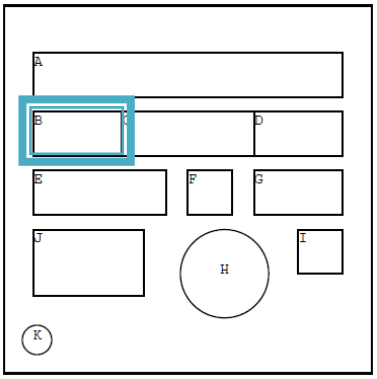
From


To

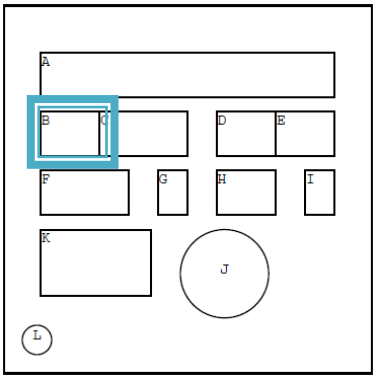

No impact on foot print and customer PCB (Printed Circuit Board).

**How can the change be seen?**

For products in UFQFPN 5x5 packages, the marking instruction of the assembly plant indicated on the products is changing from GH (in B) to GQ (in B).

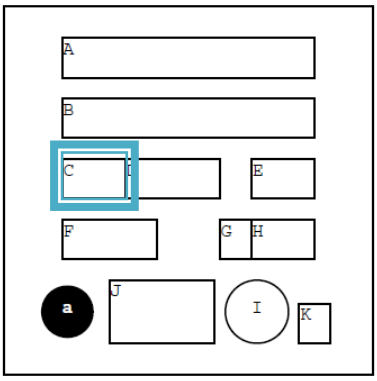



Example of previous marking

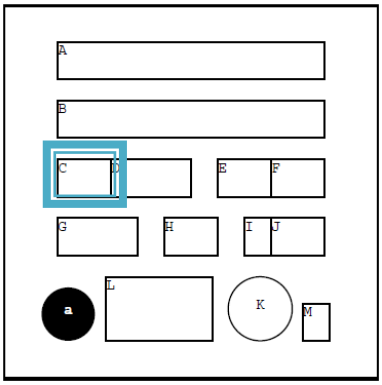



Example of new marking

For products in UFQFPN 7x7 packages, the marking instruction of the assembly plant indicated on the products is changing from GH (in C) to GQ (in C).




Example of previous marking

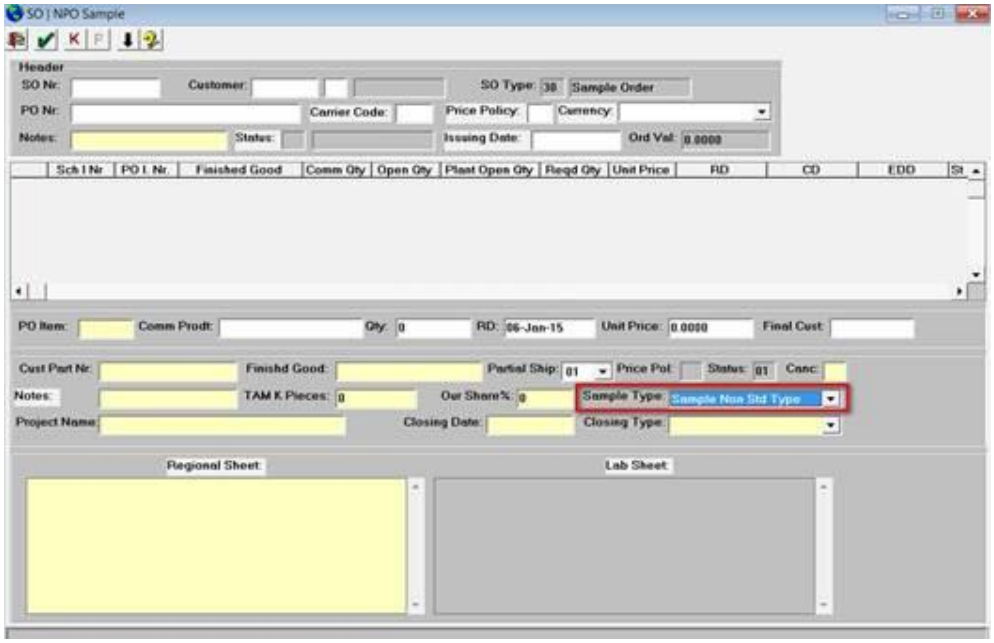


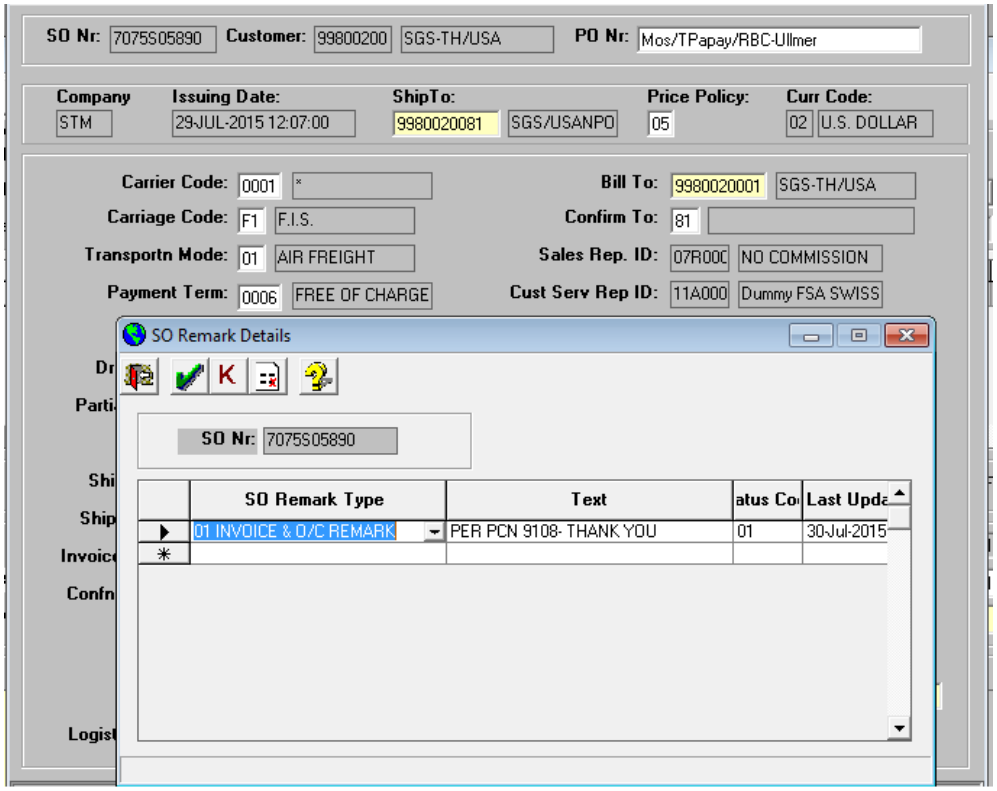

Example of new marking

**How to order samples?**

For all sample request linked to this PCN, please:

- request sample(s) through Notice tool, indicating a single Commercial Product for each request.
- insert “PCN 9977” into the remarks of your order.
- place **non standard** sample order using the following field in your system.



# PCN 9977 - MCDRER1622 Qualification Plan UQFN5x5_7x7 Transfer assembly plant from Stats ChipPAC Shanghai China (SCC) to Stats ChipPAC Jiangyin China (JSCC)

Dec 13th 2016

MDG MCD Quality & Reliability Department

life.augmented

# PCN 9977- MCDRER1622 Qualification Plan JSCC plant for UQFN5x5-7x7 packages



- Qualification plan for changes described in the PCN 9977
- Reliability report: RERMCD1622
- Test Vehicles

| Package line | Assembly Line | Package | Device (Partial RawLine Code) | Diffusion Process | Number of qual Lots |
|---|---|---|---|---|---|
| UQFN | UQFN 5*5-7*7 | UQFN5*5 32L | STM32(MG*440) | TSMC0.18 | 1 |
| | | | STM32(MG*417) | F9GO2S | 1 |
| | | | STM8(MG*767) | F9GO1 | 1 |
| | | UQFN7*7 48L | STM32(MI*423) | M10 | 1 |
| | | | STM32(MI*435) | TSMC90nm | 1 |
| | | | STM8(MI*764) | F9GO2 | 1 |

**Package Reliability Trials :**
(*) tests performed after preconditioning

# PCN 9977- RERMCD1622

# JSCC UQFN5x5-7x7 RELIABILITY TRIALS



| Reliability Trial | | Test Conditions | Pass Criteria | Unit per Lot | Lot qty |
|---|---|---|---|---|---|
| **PC** | Pre Conditioning: Moisture Sensitivity Jedec Level 3<br><br>J-STD-020/ JESD22-A113 | Bake (125°C / 24 hrs)<br>Soak (30°C / 60% RH / 192 hrs) for level 3<br>Convection reflow: 3 passes | 3 passes MSL3 | 308 | **1/ device qual** |
| **AC or Uhast(*)** | Autoclave<br>JESD22 A102<br>or<br>UnBiased Highly Accelerated Temperature and Humidity Stress<br>JESD22 A118 | 121°C, 100% RH, 2 Atm<br><br>130°C, 85%RH, 2 atm | 96h | 77 | **1/ device qual** |
| **TC(*)** | Thermal Cycling<br><br>JESD22 A104 | -50°C, +150°C<br>Or equivalent<br>-65°C +150°C | 1000Cy<br><br>500Cy<br>*(1000cy/2000cy as monitoring)* | 77 | **1/ device qual** |
| **WPT/WBS After TC** | Wire Bond Pull- Mil Std883 method 2011<br>Wire Bond Shear ,AECQ100-001 | 3g min pull strengh<br><br>15g min bond shear | 500Cy<br>1000Cy<br>2000Cy | | |
| **THB(*)**<br><br>**or**<br><br>**HAST(*)** | Temperature Humidity Bias<br>JESD22 A101 | 85°C, 85% RH, bias | 1000h | 77 | **1/ device qual** |
| | Biased Highly Accelerated temperature & humidity stress<br>JESD22 A110 | 110°C, 1.2 atm , 85% RH bias | 264h | 77 | |
| **HTSL** | High Temperature Storage Life<br><br>JESD22 A103 | 150°C- no bias | 1000h | 77 | **1/ device qual** |
| **Construction analysis including Solderability, Physical demensions** | JESD 22B102<br>JESDB100/B108 | | | 15<br>10 | **1/ Lead frame and Front end technology** |
| ESD | ESD Charge Device Model<br>ANSI/ESD STM5.3.1 | 250V / 500V/ 750V depending on device datasheet | 250V or 500V or 750V | 3 | **1/ device qual** |

## Public Products List

Publict Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

***PCN Title :*** Transfer assembly plant from Stats ChipPAC Shanghai China (SCC) to Stats ChipPAC Jiangyin China (JSCC) for products in UFQFPN 5x5 & 7x7 packages

***PCN Reference :*** MDG/17/9977

***Subject :*** Public Products List

Dear Customer,

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

| | | |
|---|---|---|
| STM8L151C8U3 | STM8TL53C4U6 | STM32L151C8U6TR |
| STM32F101C8U6TR | STM32L152C8U6A | STM32L152C6U6A |
| STM32F071CBU6 | STM32F410CBU6 | STM32L152CBU6 |
| STM32F401CCU6TR | STM32F042C6U6 | STM32F411CEU6TR |
| STM32F078CBU6 | STM8L151C8U6 | STM32L151CBU6TR |
| STM32F091CCU7 | STM32L151CBU6D | STM32F401CBU6 |
| STM32F101CBU6TR | STM32F091CCU6TR | STM8L152C4U6 |
| STM32L151C6U6ATR | STM32L152C8U6 | STM32L151C8U6 |
| STM32F051C8U6TR | STM32F103CBU6 | STM32F098CCU6 |
| STM32F072C8U7 | STM32F072CBU6TR | STM32L152C6U6 |
| STM32F411CEU7 | STM32L100C6U6A | STM32F042C6U7 |
| STM32L433CCU6 | STM32F101C8U6 | STM8L151C4U6 |
| STM32F071CBU7TR | STM32F401CBU7 | STM32F071CBU7 |
| STM32F410C8U6 | STM32F051C8U7 | STM8L151C6U3 |
| STM32F051C4U6 | STM32L151CCU6TR | STM32F103CBU6TR |
| STM32F071CBU6TR | STM32L443CCU6 | STM32F051C8U6 |
| STM32F072C8U6TR | STM32F411CEU6 | STM32F051C6U6 |
| STM32L151C8U6A | STM32F091CBU6 | STM32F058C8U6 |
| STM32L152CBU6A | STM32F401CDU6TR | STM32F072CBU6 |
| STM32F072C8U6 | STM32F048C6U6 | STM8L152C6U3 |
| STM32L100C6U6 | STM32F401CDU6 | STM32F401CBU6TR |
| STM32L152CCU6 | STM32F101CBU6 | STM32F411CCU6TR |
| STM32F091CCU6 | STM32F401CCU6 | STM32L151C6U6TR |
| STM32L151C6U6 | STM32F401CEU6 | STM32F103C6U6A |
| STM32F048C6U6TR | STM8L151C4U6TR | STM32L151CCU6 |
| STM8L151C8U6TR | STM8L152C6U6 | STM8L151C6U6 |
| STM32L100C6U6TR | STM8L151C6U6TR | STM32L100C6U6ATR |
| STM8L152C8U6 | STM32L151CBU6A | STM32L151CBU6 |
| STM32L151C6U6A | STM32F051K6U6 | STM32F302K8U6TR |
| STM32F051K8U7TR | STM32L051K8U6TR | STM32F302K8U6 |
| STM8S105K6U3A | STM8S103K3U6 | STM32L011K3U6 |
| STM8S105K6U6A | STM32L031K6U6TR | STM32L052K8U6D |
| STM8S103K3U6TR | STM8S105K4U6A | STM32L442KCU6 |
| STM32F051K6U6TR | STM32L052K8U3 | STM32L051K6U6 |
| STM32F031K6U7 | STM32F051K4U6TR | STM32F031K6U6 |

| | | |
|---|---|---|
| STM32L052K8U6TR | STM32L432KCU6 | STM32L071KZU3 |
| STM32F031K4U6 | STM32F042K6U6 | STM32F301K8U7 |
| STM32L052K6U6TR | STM8L151K4U6TR | STM32F042K6U7 |
| STM32F301K6U6 | STM32F051K4U7 | STM32L071K8U6 |
| STM8S903K3U6TR | STM32L031K4U6 | STM32F301K6U7 |
| STM32L041K6U7 | STM8L151K6U6 | STM8S903K3U3 |
| STM32L011K4U6 | STM32L052K6U6 | STM32L011K4U3 |
| STM8L101K3U6 | STM8L151K3U6 | STM8L152K4U6 |
| STM32L072KBU7 | STM32F302K6U6 | STM32F042K4U6 |
| STM32F302K8U7 | STM32L041K6U6D | STM32L031K4U6TR |
| STM32F051K4U7TR | STM32F051K6U7TR | STM32L062K8U6 |
| STM32F051K8U7 | STM8L152K6U6TR | STM32L031K6U7 |
| STM8S105K6U6ATR | STM32L051K8U7TR | STM8L101K3U6TR |
| STM8L151K3U3 | STM32L072KBU6 | STM32F301K8U7TR |
| STM32F318K8U6 | STM32F031K4U6TR | STM32F038K6U6 |
| STM8S903K3U3TR | STM32L082KBU6 | STM32L051K8U6DTR |
| STM8S105K4U6ATR | STM32L071KBU6 | STM8S105K4U3A |
| STM32F051K6U7 | STM32F051K8U6TR | STM32L072KZU6 |
| STM32L051K8U7 | STM32F301K6U6TR | STM8L151K4U6 |
| STM8L151K2U6 | STM32L081KZU6 | STM32L071K8U3 |
| STM32F051K8U6 | STM32L052K8U6DTR | STM8L151K6U3 |
| STM8L152K6U6 | STM32F031K6U6TR | STM8L151K3U3TR |
| STM32L041K6U6 | STM32L041K6U6TR | STM32L071KBU3 |
| STM32L052K8U3TR | STM32L051K8U6 | STM32F318K8U7 |
| STM32L082KZU6 | STM8L151K6U6TR | STM32L031K6U6 |
| STM32F301K8U6TR | STM32L051K6U6TR | STM32L052K8U6 |
| STM32F301K8U6 | STM8S903K3U6 | STM32L051K8U3 |
| STM32L071KZU6 | STM32F051K4U6 | STM32F072CBU7TR |
| STM32F072CBU7 | | |

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