



PRODUCT/PROCESS CHANGE NOTIFICATION

PCN MMS-MMY/14/8411
Dated 26 Mar 2014

**AMKOR new and additional SO8N assembly & test line for
CMOSF8H+ Industrial Range EEPROM**

Table 1. Change Implementation Schedule

Forecasted implementation date for change	19-Mar-2014
Forecasted availability date of samples for customer	16-May-2014
Forecasted date for STMicroelectronics change Qualification Plan results availability	16-May-2014
Estimated date of changed product first shipment	25-Jun-2014

Table 2. Change Identification

Product Identification (Product Family/Commercial Product)	EEPROM (industrial range) in SO8N / CMOSF8H+
Type of change	Assembly additional location
Reason for change	Second source creation
Description of the change	AMKOR subcontractor (Philippines) new assembly line for all EEPROM (industrial range) in SO8N / CMOSF8H+
Change Product Identification	First digit of date code is "B" when last is "T"
Manufacturing Location(s)	

DOCUMENT APPROVAL

Name	Function
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What is the change?

The EEPROM products (industrial range) processed with CMOSF8H+ process technology at ST Rousset (France) and assembled/tested in SO8N package at ST Shenzhen (China) will be also assembled/tested on new AMKOR *extra high density lead frame* (XDLF) assembly line (also using 0.8 mil Copper bonding wire).

Why?

The strategy of STMicroelectronics Memory Division is to support our customers on a long-term basis. In line with this commitment, the qualification of the AMKOR new XDLF SO8N assembly line for the EEPROM products (industrial range) in CMOSF8H+ will increase the production capacity throughput and consequently improve the service to our customers.

When?

The production of the EEPROM (industrial range) in CMOSF8H+ on the new XDLF SO8N assembly line at AMKOR will ramp up from middle of May 2014 and shipments can start from middle of June 2014 onward (or earlier upon customer approval).

How will the change be qualified?

The EEPROM products (industrial range) in CMOSF8H+ assembled on the new XDLF SO8N assembly line at AMKOR will be qualified following the standard ST Microelectronics Corporate Procedures for Quality & Reliability.

Qualification Plan QPMMY1304 is included inside this document.

What is the impact of the change?

- **Form:** Marking change
- **Fit:** No change
- **Function:** No change

How can the change be seen?

- **BOX LABEL MARKING**

On the BOX LABEL MARKING, the difference is visible inside the **Finished Good Part Number** where the “**Assembly and Test & Finishing plants**” identifier is “**X**” for products assembled on XDLF line at **AMKOR**, this digit being “**H**” for current products assembled at ST Shenzhen. Also **Country of origin** will change from China to **Philippines**. In the **Trace code**, the identifiers for “**Assembly country & plant**” and “**Test & Finishing country & plant**” will change from “**GK**” to “**7B**”.

→ Example for M24C16-RMN6TP

STMicroelectronics

Manufactured under patents or patents pending

Country Of Origin: **Philippines**

Pb-free 2nd Level Interconnect

MSL: 1 NOT MOISTURE SENSITIVE

PBT: 260 °C Category: e4 ECOPACK2/ROHS

TYPE: M24C16-RMN6TP
M24C16-RMN6TP/T X A

Total Qty: **2500**

Process Technology:
"T" for CMOSF8H+

Wafer fab / Mask revision


Trace Codes 7BYWWLLL WX 7B

Assembly and Test & Finishing plant:

- “X” for AMKOR subcon (Philippines)
- “H” for ST Shenzhen (China)

Marking 24C16RP

Bulk ID X0X00XXX0000



Please provide the bulk ID for any inquiry

How can the change be seen?

- SO8N DEVICE MARKING

The difference is visible inside the Trace Code *PYWWT* (*) where the first digit *P* for *Assembly plant* is “**B**” for AMKOR, this digit being “**K**” for current ST Shenzhen assembly plant.

**New
Assembly & Test
at AMKOR**

**Current
Assembly & Test
at ST SHENZHEN**

Example:
M24C16-RMN6TP



(*) Legend:

P = Assembly plant
Y = Assembly year
WW = Assembly week
T = Process technology

Appendix A- Product Change Information

Product family / Commercial products:	EEPROM (industrial range) in SO8N / CMOSF8H+
Customer(s):	All
Type of change:	New assembly line
Reason for the change:	Second source creation
Description of the change:	AMKOR subcontractor (Philippines) new assembly line for all EEPROM (industrial range) in SO8N / CMOSF8H+
Forecast date of the change: (Notification to customer)	Week 12 / 2014
Forecast date of <u>Qualification samples</u> availability for customer(s):	See Appendix B
<u>Qualification Report</u> availability:	Qualification Plan QPMMY1304 is included inside this document
Marking to identify the changed product:	First digit of date code is "B" when last is "T".
Description of the qualification program:	Standard ST Microelectronics Corporate Procedures for Quality and Reliability
Product Line(s) and/or Part Number(s):	See Appendix B
Estimated date of first shipment:	Week 26 / 2014

Appendix B: Concerned Commercial Part Numbers:

Commercial Part Numbers	Samples availability
M24C01-WMN6TP	Week 20 / 2014
M24C01-RMN6TP	Week 20 / 2014
M24C02-WMN6TP	Week 20 / 2014
M24C02-RMN6TP	Week 20 / 2014
M24C02-FMN6TP	Week 20 / 2014
M24C04-WMN6TP	Week 20 / 2014
M24C04-RMN6TP	Week 20 / 2014
M24C04-FMN6TP	Week 20 / 2014
M24C08-WMN6TP	Week 20 / 2014
M24C08-RMN6TP	Week 20 / 2014
M24C08-FMN6TP	Week 20 / 2014
M24C16-RMN6TP	Week 18 / 2014
M24C16-FMN6TP	Week 18 / 2014
M24C16-WMN6TP	Week 18 / 2014

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Appendix C: Qualification Plan:

Test	Method	Conditions	Sample size	Lots	Acceptance Criteria
General					
Bonding DOE				3 lots	No major concern
Construction analysis			30 parts	1 lot	No Major Concern
Assembly report				3 lots	No major concern
Test report				3 lots	Yield > 95%
POA			10 parts	1 lot	No major concern
Reliability (note a)					
TMCL	JESD22-A104	-65°C/+150°C	77	3 lots	AOR1 at 500 cycles
HTS	JESD22-A103	150°C	77	3 lots	AOR1 at 1000 hrs
THB	JESD22-A101	85°C/85%RH	77	3 lots	AOR1 at 1000 hrs
PPT	JESD22-A102	121°C, 2atm	77	3 lots	AOR1 at 96 hrs
TMSK	JESD22-A106	-55°C/+125°C	77	3 lots	AOR1 at 200 shocks

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Appendix D: BOM comparison:

Material	New BOM at AMKOR	Current BOM at ST Shenzhen
LEAD FRAME	SO-8	SO-8
MOLDING COMPOUND	SUMITOMO G700	SUMITOMO G700
COPPER WIRE	0.8 mil (*)	0.8 mil (**)
GLUE DIE ATTACH	Ablestik 8290	Alebond 8611

(*) Palladium Coated Copper

(**) Bare Copper

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