

# Platform Flash and XC18V Flash Memory Device Test Location Change

## *Qualification Report*

RPT118 (v1.0) February 16, 2009



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## Revision History

### Platform Flash and XC18V Flash memory Device Test Location Change RPT118 (V1.0) February 16, 2009

The following table shows the revision history for this document.

Date	Version	Revision
2/16/09	1.0	Initial Xilinx release.

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# Platform Flash and XC18V Flash Memory Device Test Location Change

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## Overview

This report summarizes the results of the validation and correlation that were performed to qualify production test location change from the Amkor Philippines test facility to the Numonyx test facility in Muar, Malaysia.

## Qualification Objective

The objective of this qualification is to qualify the Numonyx test facility in Muar, Malaysia as the production Final Test and Finishing facility for the Platform Flash and XC18V Flash memory devices listed in Table 1.

**Table 1: Affected Products**

XC18V Family			
XC18V01PC20C	XC18V02PC44C	XC18V04PC44C	XC18V512PC20C
XC18V01PCG20C	XC18V02PCG44C	XC18V04PCG44C	XC18V512PCG20C
XC18V01SO20C	XC18V02VQ44C	XC18V04VQ44C	XC18V512SO20C
XC18V01SOG20C	XC18V02VQG44C	XC18V04VQG44C	XC18V512SOG20C
XC18V01VQ44C		XQ18V04VQ44N	XC18V512VQ44C
XC18V01VQG44C			XC18V512VQG44C

Platform Flash Family			
XCF01SVO20C	XCF08PFS48C	XCF16PFS48C	XCF32PFS48C
XCF01SVOG20C	XCF08PFSG48C	XCF16PFSG48C	XCF32PFSG48C
XCF02SVO20C	XCF08PVO48C	XCF16PVO48C	XCF32PVO48C
XCF02SVOG20C	XCF08PVOG48C	XCF16PVOG48C	XCF32PVOG48C
XCF04SVO20C			XQF32PVO48M
XCF04SVOG20C			

## Validation and correlation test Results

XCF08PVOG48C and XCF16PVOG48C were selected as the qualification vehicle. Repeatability and Reproducibility (R&R) of measures were done in Amkor facility, and repeated in Muar facility to validate the device excursion. Good Muar's units were confirmed to be good in Amkor. Amkor's rejects were confirmed as well as in Muar, category by category. Table 2 provides a summary of the qualification.

**Table 2: Test and Finishing qualification plan, criteria and results**

Sub-group	Process	Item	Aim/Criteria	Quantity (units)	Result
1	Mechanical	Advantest new HF CK Mechanical check	To check for possible package crack or other damages	500	Pass
2	Testing	Advantest equipment: handling of good and failing parts	To check right sorting	32 good 32 O/S failures 32 functional failures	Pass
3	Testing	Gauge R&R	To check R&R of Measures	20 good	Pass
4	Testing	Line charge stressing	To ensure the capacity of the line	~10 to 20k	Pass
5	Testing program tape out	Final Test tape validation. Data comparison and Pass/Fail criteria	To correlate the yield and performances	3 split lots <sup>(1)</sup>	Pass <sup>(2)</sup>
6	Testing program tape out	QA acceptance and Engineering programs	To validate tools for QA and Engineering analysis	QA0, QR, Engineering pgm and R&R	Pass
7	Finishing	Visual inspection, reeling, dry pack			Pass
8	Finishing	Specifications	To ensure deployment of the customer requirements		Pass
9	All	Review board	To present data that assess qualification		Pass

**Notes:**

1. Lots tested in Muar were sent back to Amkor for 100% testing (see Table 3).
2. See Table 3 for Correlation results.

Muar production Test and Finishing line is previously qualified for Xilinx Platform Flash XL device, XCF128X. This qualification emphasizes on the tester correlation between the Amkor Philippines test facility and the Muar, Malaysia test facility because test platforms are different in the two facilities. Raw lines from three assembly lots were each split into two equal halves. One half was tested on Nextest in Amkor facility. The other half was tested on Advantest in Muar facility first, then on Nextest in Amkor facility. The results were compared and correlated. The details are shown in Table 3.

**Table 3: Details of Tester Correlation**

Product	Test Facility	Quantity (units)	Correlation Result
XCF16PV0G48C	Amkor	649	Pass
	Muar	649 <sup>(1)</sup>	
XCF16PV0G48C	Amkor	2508	Pass
	Muar	2508 <sup>(1)</sup>	
XCF08PV0G48C	Amkor	2152	Pass
	Muar	2152 <sup>(1)</sup>	

**Notes:**

1. Then retested in Amkor facility.

## Conclusion

Based on the data gathered to date, the Muar test facility has demonstrated a satisfactory result meeting qualification requirements for production testing of the Platform Flash and XC18V Flash memory devices.