



# PROCESS CHANGE NOTIFICATION

## PCN2216

### Alternate Substrate Site for Arria® 10 Devices

This is not a new PCN issuance. This is a revision of the previous PCN2216 release. See Revision History (last page) for details.

#### Change Description:

Intel® is announcing the addition of UMTC S3 as an alternate substrate site for selected Arria 10 devices.

UMTC is a long-time qualified, high-volume site for Intel devices.

Table 1: Change Details

	Existing Substrate	Substrate from New Site UMTC S3
Build Up Material	GZ41	GY16B
Bump Pad Surface Finish	OSP (Organic Solderability Preservative) +Sn0.7Cu	ENEPIG (Electroless Nickel Electroless Palladium Immersion Gold) + Sn0.7Cu
Ball Pad Surface Finish	OSP+LFSOP (Lead-free Solder on Pad) SAC305	ENEPIG

**Note: The rest of the Bill of Material (BOM) remains the same**

#### Products Affected:

Table 2

Product Family	Pin Count
Arria 10	F780, F1152, F1517

The list of affected part numbers (OPNs) can be downloaded in Excel form:  
<https://www.intel.com/content/dam/support/us/en/programmable/support-resources/bulk-container/pdfs/literature/pcn/pcn2216-opn-list.xlsx>

## Recommended Action

Customers are requested to:

1. Acknowledge receipt of this notification.
2. Review and inform us, at the earliest convenience, of any questions or concerns regarding this change.

Please refer to the “Product Transition Dates” for the key milestones.  
Upon implementation, Intel will ship products using substrate from any of the qualified sites.

## Product Transition Dates:

Customers are requested to take note of the key dates shown in the table below.

Table 3: Key Dates

<i>Milestone</i>	<i>Date</i>
Last date to acknowledge receipt of this notification <sup>1</sup>	July 18, 2022
Earliest change implementation	Sept 30, 2022

Note 1: J-STD-046, section 3.2.3.1b, stipulates that lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.

## Reason for Change:

The qualification of an additional substrate site supports supply chain risk mitigation.

## Impact and Benefit of Change:

There is no impact to form, fit, and function. The products will meet existing electrical and mechanical specifications.

Quality and reliability were evaluated through qualification testing. (See Qualification Test Result, Table 4).

## Qualification Plan:

Qualification testing was performed to further evaluate the quality and reliability performance of UMTC S3 substrate for the products specific to this PCN.

Board Level Temperature Cycling estimated to complete by July 2022.

## Table 4: Reliability Test Result:

Vehicle Device: 10AXF40GAE

Test	Time point	Conditions	Standard	# of Lots/#of units	Result
Temperature Cycle Test (TCB)	1000 Cycles	-55°C /125°C	JESD22-A104	3 lots/150units	Pass
Temperature Humidity Bias (THB)	1000hrs	85°C/85% RH	JESD22-A101	3 lots/150units	Pass
Unbiased Highly Accelerated Stress Test (uHAST)	96hrs	130°C / 85%RH	JESD22-A118	3 lots/150units	Pass
High Temp Storage (HTS)	1000hrs	150°C	JESD22-A103	3 lots/150units	Pass
Warpage		25°C to 260°C (<10 mils)	SPP-024A	3 lots/150units	Pass
Board Level Temperature Cycling	2000 Cycles	0°C to 100°C/0.1%	IPC 9701	1lot/30 units	0 failure/6000 cycles

Note 1: Preconditioning performed according to J-STD-020, MSL3 @ 260C reflow

## Contact

For more information, please contact Sales in your region, or submit a Service Request at the [My Intel](#) support page.

## Customer Notifications Subscription

If you would like to receive customer notifications by email, please follow the instructions in [ADV 2209](#)

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*Intel references J-STD-046 guidelines for PCN.*

*In accordance with J-STD-046, this change is deemed acceptable to the customer if no acknowledgement is received within 30 days from date of notification.*

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## Revision History

Date	Rev	Description
06/17/2022	1.0.0	Initial Release
07/25/2022	1.1.0	Updated Table 4 Reliability Test Result to show the Board Level Temperature Cycling test results.

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