



PROCESS CHANGE NOTIFICATION

PCN2216

Alternate Substrate Site for Arria® 10 Devices

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 ¹ | 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 | 1 lot/30 units | Due in July 2022 |

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](#)

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.

Revision History

| Date | Rev | Description |
|------------|-------|-----------------|
| 06/17/2022 | 1.0.0 | Initial Release |

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