



# PROCESS CHANGE NOTIFICATION

## PCN1904

### Alternate Assembly Site for Selected Stratix® Device Family Products

---

#### Change Description:

Intel Programmable Solutions Group (“Intel PSG”, formerly Altera) is announcing qualification of the Advanced Semiconductor Engineering Inc., Kaohsiung (ASEK) as an additional assembly site for selected Stratix device family products.

ASEK is a long-time qualified, high-volume assembly site for several Flip Chip product families. Please refer to PCN1205 for previous product qualification at ASEK:

<https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/pcn1205.pdf>.

**Table 1: Assembly Site Change**

|                          | <b>Current Site</b>                | <b>Additional Site</b>                                    |
|--------------------------|------------------------------------|---|
| <b>Assembly Site</b>     | Amkor Technology Korea, Inc. (ATK) | Advanced Semiconductor Engineering Inc., Kaohsiung (ASEK) |
| <b>Country of Origin</b> | Korea                              | Taiwan  |

Note 1: There are no changes to the Bill of Materials (BOM). ASEK will use the same materials as ATK.

## Products Affected:

**Table 2**

| Product Family | Package – Pin Count                        |
|----------------|--|
| Stratix II     | FBGA – 484/672/780/1020/1508<br>HBGA - 484 |
| Stratix V      | FBGA – 1152/1517/1760/1932                 |

The list of affected OPNs can be downloaded in Excel form:

<https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/pcn1904-opn-list.xlsx>

## Recommended Action

Customers are requested to:

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

Please refer to the “Product Transition Dates” for the key milestones.

Upon implementation, Intel will ship materials from either ATK or ASEK.

## Product Transition Dates:

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

**Table 3**

| <b>Milestone</b>   | <b>Date</b>        |
|--|--------------------|
| Last date to acknowledge receipt of this notification <sup>1</sup> | July 3, 2019       |
| Estimated earliest shipment date of changed products <sup>2</sup>  | September 27, 2019 |

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.

Note 2: Effective the earliest ship date listed above, Intel PSG may begin the shipment of changed products.

Intel reserves the right to continue shipment of pre-change product after the change implementation date, and customers will receive shipments of either pre-change or post-change product.

### **Reason for Change:**

The qualification of an additional production assembly site for the affected devices supports supply chain risk mitigation.

### **Impact and Benefit of Change:**

The change will not impact the form, fit, and function of the product. Product datasheet and package specifications remain the same. There is no change to the Bill of Materials (BOM).

Additional qualification has been performed to further evaluate the quality and reliability performance of ASEK for the products specific to this PCN (See Qualification Data Section, Table 4).

### **Method to Identify Change Product:**

COO (Country of Origin): Taiwan. This is visible on both the label and the top mark.

## Qualification Data:

Qualification testing was performed to further evaluate the quality and reliability performance of ASEK for the products specific to this PCN (See Qualification Data Section, Table 4).

**Table 4: ASEK Qualification Data**

**Note: All tests passed with zero failures**

| Test  | Time point  | Conditions    | Vehicle Device | Lot        | Results |
|---|-------------|---------------|----------------|------------|---------|
| Temperature Cycle Test (TCB) <sup>Note 1</sup>                    | 1000 Cycles | -55°C /125°C  | 5SGXA7 F1517   | H3020      | 0/30    |
|   |             |               | 5SGXA7 F1517   | H3021      | 0/30    |
|   |             |               | 5SGXA7 F1932   | H3022      | 0/29    |
|   |             |               | 5SEE9 H1517    | EAAAR00503 | 0/25    |
| Temperature Humidity Bias (THB) <sup>Note 1</sup>                 | 1000hrs     | 85°C/85% RH   | 5SGXA7 F1517   | H3037      | 0/26    |
|   |             |               | 5SGXA7 F1517   | H3038      | 0/27    |
|   |             |               | 5SGXA7 F1932   | H3022      | 0/29    |
|   |             |               | 5SEE9 H1517    | EAAAR00503 | 0/29    |
| Unbiased Highly Accelerated Stress Test (uHAST) <sup>Note 1</sup> | 96hrs       | 130°C / 85%RH | 5SGXA7 F1517   | H3020      | 0/26    |
|   |             |               | 5SGXA7 F1517   | H3021      | 0/30    |
|   |             |               | 5SGXA7 F1932   | H3022      | 0/30    |
|   |             |               | 5SEE9 H1517    | EAAAR00503 | 0/25    |
| Board Level Temp Cycling <sup>Note 2</sup>                        | 7259 Cycles | 0 / 100°C     | F1760          | N/A        | 0/30    |

Note 1: Preconditioning performed according to J-STD-020, MSL4 @ 260C reflow

Note 2: Rel#: 12040016, 12040017, 12040015, 13050006, 12050028, 12050030, 12040015, 13070016, 13050006

Note 3: Qualification testing and sample size based on standard J-STD-020 requirements

## Contact

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

## Customer Notifications Subscription

Customers that have subscribed to Intel PSG's customer notification mailing list will receive the PCN document automatically via email.

If you would like to receive customer notifications by email, please subscribe to our customer notification mailing list at:

<https://www.intel.com/content/www/us/en/programmable/my-intel/mal-emailsub/technical-updates.html>

---

*Intel PSG 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     |
|------------|-------|-----------------|
| 04/19/2019 | 1.0.0 | Initial Release |

---

©2019 Intel Corporation. All rights reserved. Intel, the Intel logo, Altera, Arria, Cyclone, Enpirion, Max, Nios, Quartus and Stratix words and logos are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. Other marks and brands may be claimed as the property of others. Intel reserves the right to make changes to any products and services at any time without notice. Intel assumes no responsibility or liability arising out of the application or use of any information, product, or service described herein except as expressly agreed to in writing by Intel. Intel customers are advised to obtain the latest version of device specifications before relying on any published information and before placing orders for products or services.