



Final Product Change Notification **Update**

202212023F01U01 : Dual-source TSMC / UMC Fabrication for AW690HNK

Note: This notice is NXP Company Proprietary.

Issue Date: Nov 04, 2024 **Effective Date:** May 30, 2025

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Management summary

Addition of second-source 28nm foundry to current AW690HNK/A2A part which is presently fabricated at TSMC-15 in Taichung, Taiwan. UMC-12A (Tainan, Taiwan) will be added as a second source foundry that will run concurrently with the original TSMC-15 wafer fabrication for the AW690HNK part.

Change Category

<input checked="" type="checkbox"/> Wafer Fab Process	<input type="checkbox"/> Assembly Process	<input checked="" type="checkbox"/> Product Marking	<input type="checkbox"/> Test Process	<input type="checkbox"/> Design
<input type="checkbox"/> Wafer Fab Materials	<input type="checkbox"/> Assembly Materials	<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Equipment	<input type="checkbox"/> Errata
<input checked="" type="checkbox"/> Wafer Fab Location	<input type="checkbox"/> Assembly Location	<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Location	<input type="checkbox"/> Electrical spec./Test coverage
<input type="checkbox"/> Firmware <input type="checkbox"/> Other				

Notification Overview

Update Information

Conversion timelines have been adjusted to allow for extended customer requalification period due to requirement to update radio firmware to achieve comparable performance between TSMC and UMC -sourced parts. Please see accompanying overview (PDF) for details.

Description

1. Addition of second-source 28nm foundry to current AW690HNK/A2A part which is presently fabricated at TSMC-15 in Taichung, Taiwan. UMC-12A (Tainan, Taiwan) will be added as a second source foundry that will run concurrently with the original TSMC-15 wafer fabrication for the AW690HNK part.

2. Planned Fabrication + Assembly + Final-Test flows are as follows:

Previously qualified flows:

- o TSMC-15 fabrication + SPIL assembly + SPIL-H final test
- o TSMC-15 fabrication + SPIL assembly + ASE-CL final test
- o TSMC-15 fabrication + SPIL assembly + NXP-ATKH final test

Newly qualified flows:

- o UMC-12A fabrication + SPIL assembly + SPIL-H final test
- o UMC-12A fabrication + SPIL assembly + ASE-CL final test
- o UMC-12A fabrication + SPIL assembly + NXP-ATKH final test

3. Parts fabricated with UMC vs. TSMC production flows will be distinguishable based on the first two letters in the third line of top-of-package markings, please see attached slides for explanation and illustration.

4. All final test sites will use identical ATE vendor equipment model, identical final test program, and ATE / FT-program configuration as the current TSMC-based AW690HNK/A2A product. Final test implementation into production will be cross-correlated across all sites to ensure manufacturing and quality equivalency.

5. AW690HNK parts fabricated at either of TSMC-15 or UMC-12A foundries will use the current / existing part numbers presently defined for the AW690HNK product. All customers will need to be ready to accept dual-sourced parts fabricated at either foundry by 30-May-2025. Please see attached overview for additional details.

6. Key milestones and sample / production availability are as follows:

- AW690HNK Datasheet update: Now
- AW690HNK UMC Customer Qualification Samples: Now
- AEC-Q100 Qualification report for AW690HNK UMC production flow: Now
- Updated AW690HNK PPAP: Now
- Required customer dual-source readiness: 30-May-2025

Reason

Foundry second-sourcing is being done to ensure robust supply throughout the life of the AW690 program.

Identification of Affected Products

Top Side Marking

Product Availability

Sample Information

Samples are available upon request

Production

Planned first shipment Jan 31, 2025

Anticipated Impact on Form, Fit, Function, Reliability or Quality

No Impact on form, fit, function, reliability or quality

No impact on form, fit, function, reliability, or quality.

All RF performance parameters for UMC-based product conform within 1dB (or better) vs. original TSMC-sourced production flow, with the following exceptions:

- Bluetooth / BLE performance degradation in Rx sensitivity on spur channel 2440 MHz
- Bluetooth / BLE performance degradation in Rx sensitivity on spur channel 2480 MHz

Please see AW690HNK Datasheet v.12, section 10.4.1 for details on spur channel Rx Sensitivity performance

Data Sheet Revision

No impact to existing data sheet

Disposition of Old Products

Existing inventory will be shipped until depleted
TSMC and UMC -fabricated parts will continue to be shipped for foreseeable future as part of dual-source strategy.

Additional information

Self qualification: [view online](#)

Additional documents: [view online](#)

Timing and Logistics

In compliance with JEDEC J-STD-046, your acknowledgement of this change is expected by Dec 04, 2024.

Remarks

Please see attached AEC-Q100 qualification report. Updated AW690HNK PCN will be published by 18-Oct-2023 and available to customers upon request.

Contact and Support

For all inquiries regarding the ePCN tool application or access issues, please contact NXP "Global Quality Support Team".

For all Quality Notification content inquiries, please contact your local NXP Sales Support team.

For specific questions on this notice or the products affected please contact our specialist directly:

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12NC	Orderable Part Number	Product Type	Product Description	Package Outline	Package Description	Product Status	Customer Specific Indicator	Product Line
935432106528	AW690HNNK/A2AMP	AW690HNNK/A2A	Seahawk	H(V)MRQFN148	SOT2111-2	CQS	No	BLT7
935432106557	AW690HNNK/A2AK	AW690HNNK/A2A	Seahawk	H(V)MRQFN148	SOT2111-2	CQS	No	BLT7
935445176557	AW690HNNK/A2WK	AW690HNNK/A2W	Seahawk	H(V)MRQFN148	SOT2111-2	CQS	No	BLT7