

<b>PCN Number:</b>	20230816003.1		<b>PCN Date:</b>	December 06, 2023															
<b>Title:</b>	Qualification of Additional Assembly & Test site options for select Devices																		
<b>Customer Contact:</b>	Change Management team	<b>Dept:</b>	Quality Services																
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Mar 5, 2024	<b>Sample requests accepted until:</b>	Jan 6, 2024*																
<b>*Sample requests received after Jan 6, 2024 will not be supported.</b>																			
<b>Change Type:</b>																			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material														
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process														
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Fab Site														
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Material														
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Process														
<b>PCN Details</b>																			
<b>Description of Change:</b>																			
Texas Instruments is pleased to announce the qualification of FMX as an additional Assembly Site for Select Devices listed in the "Product Affected" Section.																			
<b>Construction differences are as follows:</b>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><b>ASESH</b></th> <th style="text-align: center;"><b>FMX</b></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Mount Compound</td> <td style="text-align: center;">EY1000063</td> <td style="text-align: center;">4147858</td> </tr> <tr> <td style="text-align: center;">Mold Compound</td> <td style="text-align: center;">SID#EN2000506</td> <td style="text-align: center;">4211880</td> </tr> <tr> <td style="text-align: center;">Lead finish</td> <td style="text-align: center;">Matte Sn</td> <td style="text-align: center;">NiPdAu</td> </tr> <tr> <td style="text-align: center;">Bond wire composition, diameter</td> <td style="text-align: center;">Au, 1.0 mil</td> <td style="text-align: center;">Cu, 0.96 mil</td> </tr> </tbody> </table>						<b>ASESH</b>	<b>FMX</b>	Mount Compound	EY1000063	4147858	Mold Compound	SID#EN2000506	4211880	Lead finish	Matte Sn	NiPdAu	Bond wire composition, diameter	Au, 1.0 mil	Cu, 0.96 mil
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Upon expiry of this PCN TI will combine lead free solutions in a single <u><a href="#">standard part number</a></u> . For example; <u><a href="#">MUX508ID</a></u> – can ship with both Matte Sn and NiPdAu.																			
Example:																			
<ul style="list-style-type: none"> <li>– Customer order for 7500 units of MUX508ID with 2500 units SPQ (Standard Pack Quantity per Reel).</li> <li>– TI can satisfy the above order in one of the following ways. <ul style="list-style-type: none"> <li>I. 3 Reels of NiPdAu finish.</li> <li>II. 3 Reels of Matte Sn finish</li> <li>III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.</li> <li>IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.</li> </ul> </li> </ul>																			
<b>Reason for Change:</b>																			
Continuity of supply. Enable additional A/T capacity to support high volume ramps.																			
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>																			
None																			
<b>Impact on Environmental Ratings</b>																			
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.																			
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<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change																
<b>Changes to product identification resulting from this PCN:</b>																			

**Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
TI Mexico	MEX	MEX	Aguascalientes

Sample product shipping label (not actual product label)

**Product Affected:**

MUX508ID	MUX508IDR	MUX509ID	MUX509IDR
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TI Information  
Selective Disclosure

## Qualification Report

**Add FMX as Second Source Assembly Site for TMUX508 & TMUX509 SOIC Devices with BOM: NIPDAU LF/QMI-505MT/CU WIRE/EME-G633C**  
**Approve Date: 27 January 2023**

**Product Attributes**

Attributes	QBS Device: ADS1131IDR	QBS Device: OPA2313QDRQ1	QBS Device: TLC5973DR	QBS Device: TL494IDR
Assembly Site	FMX	FMX	FMX	FMX
Pin Count	16	8	8	16
Package Designator	D	D	D	D
Wafer Fab Supplier	DP1DM5	AIZU	MH8	SH-BIP-1
Wafer Process	50HPA07	50HPA07	LBC7	J11
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0

- Qual Device ADS1131IDR is qualified at MSL2-260C
- Qual Device OPA2313QDRQ1 is qualified at MSL2-260C
- Qual Device TLC5973DR is qualified at MSL1-260C
- Qual Device TL494IDR is qualified at MSL1-260C

**Qualification Results**  
**Data Displayed as: Number of lots / Total sample size / Total failed**

Type	Test Name / Condition	Duration	QBS Device: ADS1131IDR	QBS Device: OPA2313QDRQ1	QBS Device: TLC5973DR	QBS Device: TL494IDR
PC	Preconditioning	Level 1 - 260C	--	--	3/924/0	3/1155/0
PC	Preconditioning	Level 2 - 260C	3/693/0	3/865/0	--	--
AC	Autoclave, 121C	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0
BHAST	Biased HAST, 130C	96 Hours	--	3/231/0	3/231/0	3/231/0
CHAR	Electrical Characterization	Per datasheet	--	Pass	Pass	Pass
HTOL	Life Test, 150C	300 Hours	--	--	--	3/231/0
HTOL	Life Test, 125C	1000 Hours	--	3/231/0	1/77/0	--
HTSL	High Temp Storage Bake, 170C	600 Hours	3/231/0	1/45/0	--	3/231/0
HTSL	High Temp Storage Bake, 150C	1000 Hours			3/231/0	
MQ	Manufacturability (Assembly)	Per mfg. site spec	Pass	Pass	Pass	Pass
MSL	Moisture Sensitivity	Level 1-260C	3/36/0	3/36/0	3/36/0	3/36/0
TC	Temperature Cycle, -65C/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0
TS	Thermal Shock, -65C/150C	500 Cycles	--	--	--	3/231/0
SD	Solderability, Pb-Free	Steam Age Precon	--	1/15/0	--	3/66/0
SD	Solderability, Pb	Steam Age Precon	--	1/15/0	3/66/0	3/66/0
DSS	Die Shear Strength	Die	3/30/0	3/30/0	3/30/0	3/30/0
WBP	Wire Bond Pull	Wires	3/228/0	3/184/0	3/228/0	3/228/0
LP	Lead Pull	Leads	3/66/0	--	--	3/66/0
VM	Visual Mechanical	Per mfg. site spec	--	--	Pass	Pass
XR	Internal X-Ray	Top Down	--	--	3/15/0	3/15/0
FL	Flammability	IEC 695-2-2	--	--	--	3/15/0
FL	Flammability	UL 94V-0	--	--	--	3/15/0
FL	Flammability	UL-1694	--	--	--	3/15/0

• Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV: 125C/1000 Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV: 150C/1000 Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JEDEC47: -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

**Green/Pb-free Status:**

Qualified Pb-Free (SMT) and Green

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

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