12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20170216000A
Qualification of NFME as an additional Assembly & Test site for select devices
Change Notification / Sample Request

Date: March 28, 2017
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

Revision A is to announce the addition of new devices that were not included on the original PCN notification.

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

20170216000A
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
ATL432AIDBZR	null
ATL431AQDBZR	null
ATL431BIDBZR	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20170216000A	PCN Date:	Mar 28, 2017
Title:	Qualification of NFME as an additional Assembly & Test site for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	June 28, 2017	Estimated Sample Availability:	Date Provided at Sample request

Change Type:					
☒	Assembly Site	☐	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☒	Test Site	☐	Wafer Fab Site
☒	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Revision A is to announce the addition of new devices that were not included on the original PCN notification. These new devices are highlighted and **bolded** in the device list below. The expected first shipment date for these new devices will be 90 days from this notice for these newly added devices only.

Texas Instruments Incorporated is announcing the qualification NFME as Additional Assembly and Test Site for select devices listed in the "Product Affected" Section. Current assembly sites and Material differences are as follows.

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
ASEWH	AWH	CHN	Weihai
UTAC	NS2	THA	Bangpakong
HANA	HNT	THA	Ayutthaya
NFME	**NFM**	**CHN**	**Nantong**

Material Differences:

	ASEWH	UTAC	HANA	NFME
Mount compound	1120999A1	PZ0001	400154	A-03
Mold compound	4020039A1	CZ0096	450179	R-27
Wire type	Au	Au	Au	Cu
Lead Finish	NiPdAu	NiPdAu	NiPdAu	Matte Sn

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

Upon expiration of this PCN, TI will combine lead free solutions in a single ***standard part number***, for example; ***TL431ACDBZR*** – can ship with both Matte Sn and NiPdAu.

When available customers may specify NiPdAu finish by ordering the part with the G4 suffix, e.g. ***TL431ACDBZRG4***

Reason for Change:

Continuity of supply.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Anticipated impact on Material Declaration

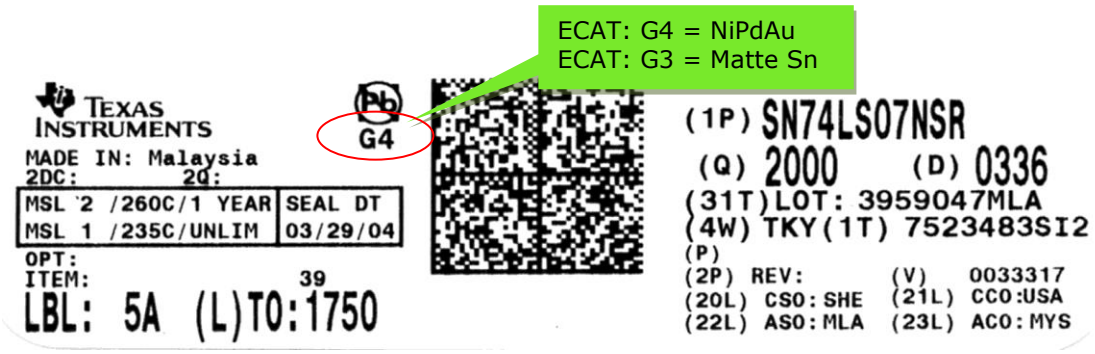
☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be

			obtained from the TI Eco-Info website. There is no impact to the material meeting current regulatory compliance requirements with this PCN change.

Changes to product identification resulting from this PCN:

Assembly Site			
ASEWH	Assembly Site Origin (22L)	ASO: AWH	ECAT:G4
UTAC	Assembly Site Origin (22L)	ASO: NS2	ECAT:G4
HANA	Assembly Site Origin (22L)	ASO: HNT	ECAT:G4
NFME	Assembly Site Origin (22L)	ASO: NFM	ECAT:G3

Sample product shipping label (not actual product label)



ASSEMBLY SITE CODES: AWH= I, NS2= B, HNT= H, NFM= E

Product Affected:

ATL431AIDBZR	LM4040D20QDBZT	TL4050B25IDBZT	TL431LACDBZR-ND
ATL431AQDBZR	LM4040D25IDBZR	TL4050B25QDBZR	TL431QDBZR
ATL431BIDBZR	LM4040D25IDBZT	TL4050B41IDBZR	TL431QDBZT
ATL431BQDBZR	LM4040D25QDBZR	TL4050B41IDBZT	TL432ACDBZR
ATL432AIDBZR	LM4040D25QDBZT	TL4050B41QDBZR	TL432ACDBZT
ATL432AQDBZR	LM4040D30IDBZR	TL4050B41QDBZT	TL432AIDBZR
ATL432BIDBZR	LM4040D30IDBZT	TL4050B50IDBZR	TL432AIDBZT
ATL432BIDBZR-S	LM4040D30QDBZR	TL4050B50IDBZT	TL432AQDBZR
ATL432BQDBZR	LM4040D41IDBZR	TL4050B50QDBZR	TL432AQDBZT
LM4040A10IDBZR	LM4040D41IDBZT	TL4050B82IDBZT	TL432BCDBZR
LM4040A10IDBZT	LM4040D50IDBZR	TL4050B82QDBZT	TL432BCDBZT
LM4040A20IDBZR	LM4040D50IDBZT	TL4050C10IDBZR	TL432BIDBZR
LM4040A20IDBZT	LM4040D50QDBZR	TL4050C10IDBZT	TL432BIDBZT
LM4040A25IDBZR	LM4040D50QDBZT	TL4050C10QDBZR	TL432BQDBZR
LM4040A25IDBZT	LM4040D82IDBZR	TL4050C20QDBZT	TL432CDBZR
LM4040A30IDBZR	LM4040D82IDBZT	TL4050C25IDBZR	TL432IDBZR
LM4040A30IDBZT	LM4041A12IDBZR	TL4050C25IDBZT	TL432IDBZT
LM4040A41IDBZR	LM4041A12IDBZT	TL4050C25QDBZR	TL432QDBZR
LM4040A41IDBZT	LM4041B12IDBZR	TL4050C41IDBZR	TLV431ACDBZR
LM4040A50IDBZR	LM4041B12IDBZT	TL4050C41IDBZT	TLV431AIDBZR
LM4040A50IDBZT	LM4041BIDBZR	TL4050C41QDBZR	TLV431BCDBZR
LM4040A82IDBZR	LM4041BIDBZT	TL4050C50IDBZR	TLV431BCDBZT
LM4040A82IDBZT	LM4041C12IDBZR	TL4050C50IDBZT	TLV431BIDBZR
LM4040B10IDBZR	LM4041C12IDBZT	TL4050C50QDBZR	TLV431BIDBZT
LM4040B10IDBZT	LM4041C12QDBZR	TL4050C82IDBZT	TLV431BQDBZR

LM4040B20IDBZR	LM4041C12QDBZT	TL4050C82QDBZT	TLV431BQDBZT	
LM4040B20IDBZT	LM4041CIDBZR	TL4051A12IDBZR	TLV431CDBZR	
LM4040B25IDBZR	LM4041CIDBZT	TL4051A12IDBZT	TLV431IDBZR	
LM4040B25IDBZT	LM4041CQDBZR	TL4051A12QDBZR	TLVH431ACDBZR	
LM4040B30IDBZR	LM4041CQDBZT	TL4051A12QDBZT	TLVH431ACDBZT	
LM4040B30IDBZT	LM4041D12IDBZR	TL4051AIDBZR	TLVH431AIDBZR	
LM4040B41IDBZR	LM4041D12IDBZT	TL4051AIDBZT	TLVH431AIDBZT	
LM4040B41IDBZT	LM4041D12QDBZR	TL4051AQDBZR	TLVH431AQDBZR	
LM4040B50IDBZR	LM4041DIDBZR	TL4051B12IDBZR	TLVH431AQDBZT	
LM4040B50IDBZT	LM4041DIDBZT	TL4051B12IDBZT	TLVH431BCDBZR	
LM4040B82IDBZR	LM4041DQDBZR	TL4051B12QDBZR	TLVH431BCDBZT	
LM4040C10IDBZR	LM4041DQDBZT	TL4051BIDBZR	TLVH431BIDBZR	
LM4040C10IDBZT	SNV431BQDBZR	TL4051BIDBZT	TLVH431BIDBZT	
LM4040C20IDBZR	TL4050A10IDBZR	TL4051BQDBZR	TLVH431BQDBZR	
LM4040C20IDBZT	TL4050A10IDBZT	TL4051C12IDBZR	TLVH431BQDBZT	
LM4040C20QDBZR	TL4050A10QDBZR	TL4051C12IDBZT	TLVH431CDBZR	
LM4040C20QDBZT	TL4050A20QDBZT	TL4051C12QDBZR	TLVH431CDBZT	
LM4040C25IDBZR	TL4050A25IDBZR	TL4051C12QDBZT	TLVH431IDBZR	
LM4040C25IDBZT	TL4050A25IDBZT	TL4051CIDBZR	TLVH431IDBZT	
LM4040C25QDBZR	TL4050A25QDBZR	TL4051CIDBZT	TLVH431QDBZR	
LM4040C25QDBZT	TL4050A25QDBZT	TL4051CQDBZR	TLVH431QDBZT	
LM4040C30IDBZR	TL4050A41IDBZR	TL431ACDBZR	TLVH432ACDBZR	
LM4040C30IDBZT	TL4050A41IDBZT	TL431ACDBZT	TLVH432ACDBZT	
LM4040C30QDBZR	TL4050A41QDBZR	TL431AIDBZR	TLVH432AIDBZR	
LM4040C30QDBZT	TL4050A41QDBZT	TL431AIDBZT	TLVH432AQDBZR	
LM4040C41IDBZR	TL4050A50IDBZR	TL431AQDBZR	TLVH432AQDBZT	
LM4040C41IDBZT	TL4050A50IDBZT	TL431AQDBZT	TLVH432BCDBZR	
LM4040C50IDBZR	TL4050A50QDBZR	TL431BCDBZR	TLVH432BIDBZR	
LM4040C50IDBZT	TL4050A50QDBZT	TL431BCDBZT	TLVH432BQDBZR	
LM4040C50QDBZR	TL4050A82IDBZT	TL431BIDBZR	TLVH432BQDBZT	
LM4040C50QDBZT	TL4050A82QDBZT	TL431BIDBZT	TLVH432CDBZR	
LM4040C82IDBZR	TL4050B10IDBZR	TL431BQDBZR	TLVH432CDBZT	
LM4040D10IDBZR	TL4050B10IDBZT	TL431BQDBZT	TLVH432IDBZR	
LM4040D10IDBZT	TL4050B10QDBZR	TL431CDBZR	TLVH432QDBZR	
LM4040D20IDBZR	TL4050B10QDBZT	TL431CDBZT	TLVH432QDBZT	
LM4040D20IDBZT	TL4050B20QDBZT	TL431IDBZR		
LM4040D20QDBZR	TL4050B25IDBZR	TL431IDBZT		

Qualification Report

NFME SOT: 3DBZ Assy Site Qual --- Cu wire with Au Flash, 150mm wafer, SuHDLF

Approve Date 08-Feb-2017

Product Attributes

Attributes	Qual Device: LM4040C50IDBZR	Qual Device: LM4040D30IDBZR	Qual Device: TLV431AIDBZR
Assembly Site	NFME	NFME	NFME
Package Family	SOT	SOT	SOT
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	SFAB	SFAB	SFAB
Wafer Process	JI2	JI2	OI

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260CG: LM4040C50IDBZR, TLV431AIDBZR
- Qual Device LM4040D30IDBZR is qualified at LEVEL1-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM4040C50IDBZR	Qual Device: LM4040D30IDBZR	Qual Device: TLV431AIDBZR
AC	Autoclave 121C	96 Hours	1/77/0	1/77/0	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0
FLAM	Flammability (IEC 695-2-2)	--	1/5/0	1/5/0	1/5/0
FLAM	Flammability (UL 94V-0)	--	1/5/0	1/5/0	1/5/0
FLAM	Flammability (UL-1694)	--	1/5/0	1/5/0	1/5/0
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	1/77/0	1/77/0
HTOL	Life Test, 150C	300 Hours	1/77/0	1/77/0	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	1/77/0	1/77/0	1/77/0
LI	Lead Fatigue	Leads	1/22/0	1/22/0	1/22/0
LI	Lead Pull to Destruction	Leads	1/22/0	1/22/0	1/22/0
PD	Physical Dimensions	--	1/5/0	1/5/0	1/5/0
SD	Solderability	Pb-Free	1/22/0	1/22/0	1/22/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	1/77/0	1/77/0
WBP	Bond Strength	Wires	1/76/0	1/76/0	1/76/0
WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	1/76/0

- 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/1k 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/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -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

Qualification Report

Stand-alone delta Qual plan to add ATL431BQDBZR to the 3DBZ Qual List for NFME

Approve Date 03-Mar-2017

Product Attributes

Attributes	Qual Device: ATL431BQDBZR	QBS Product Reference: ATL431BQDBZR	QBS Package Reference: LM4040C50IDBZR	QBS Package Reference: LM4040D30IDBZR	QBS Package Reference: TLV431AIDBZR
Assembly Site	NFME	ASEWH	NFME	NFME	NFME
Package Family	SOT	SOT	SOT	SOT	SOT
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	SFAB	SFAB	SFAB	SFAB	SFAB
Wafer Process	JI2	JI2	JI2	JI2	OI

- QBS: Qual By Similarity
- Qual Device ATL431BQDBZR is qualified at LEVEL1-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: ATL431BQDBZR	QBS Product Reference: ATL431BQDBZR	QBS Package Reference: LM4040C50IDBZR	QBS Package Reference: LM4040D30IDBZR	QBS Package Reference: TLV431AIDBZR
AC	Autoclave 121C	96 Hours	1/77/0	-	1/77/0	1/77/0	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0
FLAM	Flammability (IEC 695-2-2)	--	-	-	1/5/0	1/5/0	1/5/0
FLAM	Flammability (UL 94V-0)	--	-	-	1/5/0	1/5/0	1/5/0
FLAM	Flammability (UL-1694)	--	-	-	1/5/0	1/5/0	1/5/0
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	-	1/77/0	1/77/0	1/77/0
HBM	ESD - HBM	2000 V	-	1/3/0	-	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	1/77/0	1/77/0	1/77/0	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	1/77/0	1/77/0	1/77/0
LI	Lead Fatigue	Leads	-	-	1/22/0	1/22/0	1/22/0
LI	Lead Pull to Destruction	Leads	-	-	1/22/0	1/22/0	1/22/0
LU	Latch-up	(per JESD78)	-	1/6/0	-	-	-
PD	Physical Dimensions	--	-	-	1/5/0	1/5/0	1/5/0
SD	Solderability	Pb-Free	-	-	1/22/0	1/22/0	1/22/0
TC	**T/C -65C/150C	500 Cycles	1/77/0	-	1/77/0	1/77/0	1/77/0
WBP	Bond Strength	Wires	1/5/0	-	1/76/0	1/76/0	1/76/0
WBS	Ball Bond Shear	Wires	1/5/0	-	1/76/0	1/76/0	1/76/0

- 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/1k 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/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47 : -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 regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com