12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20140115002
Qualification of Cu as Alternative Wire Base Metal for Selected Device(s)
Change Notification / Sample Request

Dear Customer:

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
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

PCN# 20140115002
Attachment: 1

Products Affected:

According to our records, there are the affected device(s) that you have purchased within the past twenty-four (24) months. Technical details of this Product Change follow on the next page(s).

PCN Number:	20140115002	PCN Date:	01/22/2014
Title:	Qualification of Cu as Alternative Wire Base Metal for Selected Device(s)		
Customer Contact:	PCN Manager	Phone: +1(214)480-6037	Dept: Quality Services
Proposed 1st Ship Date:	04/22/2014	Estimated Sample Availability:	Date provided at sample request

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

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of Cu as an additional bond wire option for devices listed in "Product affected" section below. Material differences are shown in the following table:

Group 1 Device: Devices will remain in current assembly facility

	From	To
Wire type	Au	Cu
Mold Compound	R-13	R-17
Leadframe Finish	NiPdAu	Matte Sn

Upon expiration of this PCN, TI will combine lead free solutions in a single ***standard part number***, for example; ***SN001066DBVR*** – can ship with both Matte Sn and NiPdAu.

Group 2 Device: MLA as additional Assembly and Test Site

	CAR	MLA
Wire type	Au	Cu
Mold Compound	438578	4206193

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

Reason for Change:

Continuity of supply.

1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
2) Maximize flexibility within our Assembly/Test production sites.
3) Cu is easier to obtain and stock

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

None.

Changes to product identification resulting from this PCN:

Group 1 Device: Devices will remain in current assembly facility

ECAT: G4 = NiPdAu
ECAT: G3 = Matte Sn

Assembly Site

NFME	Assembly Site Origin (22L)	ASO:NFME	ECAT:G4
NFME	Assembly Site Origin (22L)	ASO: NFME	ECAT:G3

Sample product shipping label to show code location only (not actual product label)

Group 2 Device: CAR to MLA

Assembly Site		
CARSEM Malaysia	Assembly Site Origin (22L)	ASO: CAR
TI Malaysia	Assembly Site Origin (22L)	ASO: MLA

ASSEMBLY SITE CODES: CAR = V , MLA = K

Sample product shipping label (not actual product label)

Product Affected: Group 1 Device			
SN001066DBVR	SN74AHCT1G04DBVT	SN74AUP1G17DBVT	SN74LVC1G332DBVR
SN003166DBVR	SN74AHCT1G08DBVR	SN74AUP1G97DBVR	SN74LVC1G79DBVR
SN74AHC1G02DBVR	SN74AHCT1G08DBVT	SN74CB3T1G125DBVR	SN74LVC1G79DBVT
SN74AHC1G02DBVT	SN74AHCT1G125DBVR	SN74LVC1G00DBVR	SN74LVC1G80DBVR
SN74AHC1G04DBVR	SN74AHCT1G125DBVT	SN74LVC1G00DBVT	SN74LVC1G80DBVT
SN74AHC1G04DBVT	SN74AHCT1G126DBVR	SN74LVC1G02DBVR	SN74LVC1G86DBVR
SN74AHC1G08DBVR	SN74AHCT1G126DBVT	SN74LVC1G02DBVT	SN74LVC1G86DBVT
SN74AHC1G08DBVT	SN74AHCT1G32DBVR	SN74LVC1G06DBVR	SN74LVC1GU04DBVR
SN74AHC1G09DBVR	SN74AHCT1G32DBVT	SN74LVC1G06DBVT	SN74LVC1GU04DBVT
SN74AHC1G125DBVR	SN74AHCT1G86DBVR	SN74LVC1G07DBVR	SN74LVC2G04DBVR
SN74AHC1G125DBVT	SN74AHCT1G86DBVT	SN74LVC1G07DBVT	SN74LVC2G04DBVT
SN74AHC1G126DBVR	SN74AUC1G00DBVR	SN74LVC1G11DBVR	SN74LVC2G07DBVR
SN74AHC1G126DBVT	SN74AUC1G07DBVR	SN74LVC1G126DBVR	SN74LVC2G14DBVR
SN74AHC1G32DBVR	SN74AUC1G07DBVT	SN74LVC1G126DBVT	SN74LVC2G14DBVT
SN74AHC1G32DBVT	SN74AUC1G14DBVR	SN74LVC1G14DBVR	SN74LVC2G17DBVR
SN74AHC1G86DBVR	SN74AUC1G17DBVR	SN74LVC1G14DBVT	SN74LVC2G17DBVT
SN74AHC1G86DBVT	SN74AUC1G32DBVR	SN74LVC1G17DBVR	SN74LVC2G34DBVR
SN74AHC1GU04DBVR	SN74AUC1G66DBVR	SN74LVC1G17DBVT	SN74LVC2G34DBVT
SN74AHC1GU04DBVT	SN74AUC2G07DBVR	SN74LVC1G240DBVR	TS5A1066DBVR
SN74AHCT1G00DBVR	SN74AUP1G04DBVR	SN74LVC1G240DBVT	TS5A3166DBVR
SN74AHCT1G00DBVT	SN74AUP1G04DBVT	SN74LVC1G27DBVR	TS5A3167DBVR
SN74AHCT1G02DBVR	SN74AUP1G07DBVR	SN74LVC1G3157DBVR	TS5A63157DBVR
SN74AHCT1G02DBVT	SN74AUP1G08DBVR	SN74LVC1G32DBVR	
SN74AHCT1G04DBVR	SN74AUP1G17DBVR	SN74LVC1G32DBVT	

Product Affected: Group 2 Device			
UCC3895PW	UCC3895PWG4	UCC3895PWTR	UCC3895PWTRG4

Qualification Data : Group 1

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : TL432ACDBVR (MSL 1-260C)

Package Construction Details

Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**				
Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	170C (600 hrs)	77/0	77/0	77/0
**Autoclave	121C (192 hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0
**Life Test	150C (300 hrs)	77/0	77/0	77/0
Solderability	Steam age, 8 hours; PB-Free solder	22/0	22/0	22/0
X-ray	(top side only)	5/0	5/0	5/0
Flammability	(IEC 695-2-2)	5/0	5/0	-
Flammability	(UL-1694)	5/0	5/0	-
Flammability	UL 94V-0)	5/0	5/0	-
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 2 : TS321IDBVR (MSL 1-260C)			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**				
Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
**Unbiased HAST	130C/85%RH/33.3 psia (192 hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	170C (600 hrs)	77/0	77/0	77/0
**Autoclave	121C (192 hrs)	77/0	77/0	77/0
**Life Test	150C (300 hrs)	77/0	-	-
Solderability	Steam age, 8 hours; PB-Free solder	22/0	-	-
X-ray	(top side only)	5/0	5/0	5/0
Flammability	(IEC 695-2-2)	5/0	-	-
Flammability	(UL-1694)	5/0	-	-
Flammability	UL 94V-0)	5/0	-	-
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 3 : INA193AIDBVR (MSL 2-260C)			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail	
		Lot# 1	Lot# 2
Electrical Characterization	-	10/0	-
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0
**High Temp. Storage Bake	150C (500 hrs)	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.			

Qual Vehicle 4 : TMP121AIDBVR (MSL 2-260C)			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	6-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail	
		Lot# 1	Lot# 2
Electrical Characterization	-	10/0	-
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0
**High Temp. Storage Bake	150C (500 hrs)	77/0	77/0
X-ray	(top side only)	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.			

Qual Vehicle 5 : TPD4E001DBVR (MSL 1-260C)			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	6-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**Unbiased HAST	130C/85%RH/33.3 psia (192 hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	150C (1000 hrs)	77/0	77/0	-
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qualification Data : Group 2

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : BQ29330DBT (MSL 2-260C)			
Package Construction Details			
Assembly Site:	MLA	Mold Compound:	4206193
# Pins-Designator, Family:	30-DBT, TSSOP	Mount Compound:	4042500
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0
**Autoclave	121C (96 hrs)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Notes **- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 2 : ADS1230IPW (MSL 2-260C)			
Package Construction Details			
Assembly Site:	MLA	Mold Compound:	4206193
# Pins-Designator, Family:	16-PW, TSSOP	Mount Compound:	4042500
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0
**Autoclave	121C (384 hrs)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 3 : CDCVF2505PW (MSL 1-260C)			
Package Construction Details			
Assembly Site:	MLA	Mold Compound:	4206193
# Pins-Designator, Family:	8-PW, TSSOP	Mount Compound:	4042500
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0
**Autoclave	121C (96 hrs)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

Qual Vehicle 4 : SN75LVDS84ADGG (MSL 2-260C)			
Package Construction Details			
Assembly Site:	MLA	Mold Compound:	4206193
# Pins-Designator, Family:	48-DGG, TSSOP	Mount Compound:	4042500
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**Unbiased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 5 : THS7303PW (MSL 2-260C)			
Package Construction Details			
Assembly Site:	MLA	Mold Compound:	4206193
# Pins-Designator, Family:	20-PW, TSSOP	Mount Compound:	4042500
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
**High Temp. Storage Bake	170C (1000 hrs)	77/0	77/0	77/0
**Autoclave	121C (384 hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 2-260C.				

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