

PCN Number:	20210622001.1	PCN Date:	June 23, 2021
Title:	ADS131M04 Die Revision Change and Datasheet Update		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Sept 23, 2021	Estimated Sample Availability:	Date provided at sample request.
Change Type:			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change
		<input type="checkbox"/>	Assembly Materials
		<input type="checkbox"/>	Mechanical Specification
		<input type="checkbox"/>	Test Process
		<input type="checkbox"/>	Wafer Bump Process
		<input type="checkbox"/>	Wafer Fab Process

PCN Details

Description of Change:

Group 1 Devices: Design Revision and datasheet change

This notification is to inform of a design change to the ADS131M04IPW devices. The design change was performed to add support for oversampling rate of 64 and change revision ID from 0x03 to 0x05.

The Die Revision and the datasheet number will be changing:

Current		New	
Die Revision	Datasheet Number	Die Revision	Datasheet Number
D	SBAS890C	F	SBAS890D

Group 2 Devices: Datasheet change only

The product datasheet(s) is updated as seen in the change revision history below:



ADS131M04
SBAS890D – MARCH 2019 – REVISED MAY 2021

ADS131M04 4-Channel, Simultaneously-Sampling, 24-Bit, Delta-Sigma ADC

4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision C (January 2021) to Revision D (May 2021)	Page
• Changed maximum data rate from 32 kSPS to 64 kSPS in <i>Features</i> section.....	1
• Corrected analog input pin numbering in <i>Pin Functions</i> table	4
• Added footnote for <i>Absolute Maximum Ratings</i> table	5
• Updated maximum data rate for all power modes.....	7
• Changed noise during startup to 1.5mVrms.....	7
• Updated typical characteristics plots <i>DC CMRR vs AVDD</i> , <i>DC CMRR vs Temperature</i> , <i>Dynamic Range vs Gain</i> and <i>Input Bias Current vs Gain</i>	11
• Added OSR of 64 to <i>Noise Measurements</i> section	16
• Added OSR of 64 to <i>Digital Filter</i> section.....	20
• Added OSR of 64 to <i>SINC³ and SINC³ + SINC¹ Filter</i> section.....	22
• Updated description of the test signal derived from the internal reference	24
• Added OSR of 64 to <i>Channel Phase Calibration</i> section.....	25
• Added OSR of 64 to <i>Data Ready</i> section.....	35

- Added TBM (Turbo-mode) bit in CLOCK register in *Register Map*45
- Changed *Register Map* table.....45
- Changed root cause description in *Troubleshooting* section82

This product change notification is considered the final datasheet notification. The product datasheet revision D will be available after expiration of this PCN. Although the datasheet is not yet published on the TI website for review, the document is available. If customers require a preview datasheet prior to PCN expiration or have additional questions regarding the design or datasheet change, please contact r-oberhuber@ti.com.

Reason for Change:

Product improvement and better functionality

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

None

Changes to product identification resulting from this PCN:

Die Rev designator will change as shown in the table and sample label below:

Current	New
Die Rev [2P]	Die Rev [2P]
D	F

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2Q:
 MSL 2 / 260C / 1 YEAR SEAL DT
 MSL 1 / 235C / UNLIM 03/29/04
 OPT:
 ITEM: 39
 LBL: 5A (L)T0:1750

(Pb) G4
 (1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CS0: SHE (21L) CCO: USA
 (22L) AS0: MLA (23L) ACO: MYS

Product Affected: Group 1 Devices (Design and Datasheet changes)

ADS131M04IPWR	ADS131M04IPWT
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Product Affected: Group 2 Devices (Datasheet changes only)

ADS131M04IRUKR	ADS131M04IRUKT
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**Qualification Report
Approve Date 11-May-2021**

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>ADS131M02</u> <u>IPW</u>	Qual Device: <u>ADS131M03</u> <u>IPW</u>	Qual Device: <u>ADS131M04</u> <u>IPW</u>	QBS Process Reference: <u>TAS2552</u> <u>YFF</u>	QBS Process Reference: <u>TAS2553</u> <u>YFF</u>	QBS Package Reference: <u>ADS131M04</u> <u>IPW</u>	QBS Package Reference: <u>SN74AC240OP</u> <u>WRSV</u>
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	3/231/0	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	3/3000/0	-	-
HBM	ESD - HBM	1500 V	-	-	-	-	3/9/0	-	-
HBM	ESD - HBM	2000 V	-	-	1/3/0	-	-	-	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	-	3/9/0	1/3/0	-
CDM	ESD - CDM	500 V	-	-	1/3/0	-	-	-	-
LU	Latch-up	Per JESD78	-	-	1/6/0	-	3/18/0	1/6/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/Pass	1/Pass	1/Pass	-	3/Pass	1/Pass	3/Pass
AC	Autoclave 121C	96 Hours	-	-	-	-	-	1/77/0	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/228/0	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	3/231/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	1/77/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	3/228/0	-	-	-
LI	Lead Fatigue	Wires	-	-	-	-	-	-	2/44/0
LI	Lead Pull to Destruction	Wires	-	-	-	-	-	-	2/44/0
LU	Latch-up	Per JESD78	-	-	1/6/0	-	3/18/0	1/6/0	-
SD	Surface Mount Solderability	Pb	-	-	-	-	-	-	2/30/0
SD	Surface Mount Solderability	Pb Free	-	-	-	-	-	-	2/30/0

Type	Test Name / Condition	Duration	Qual Device: <u>ADS131M02</u> <u>IPW</u>	Qual Device: <u>ADS131M03</u> <u>IPW</u>	Qual Device: <u>ADS131M04</u> <u>IPW</u>	QBS Process Reference: <u>TAS2552</u> <u>YFF</u>	QBS Process Reference: <u>TAS2553</u> <u>YFF</u>	QBS Package Reference: <u>ADS131M04</u> <u>IPW</u>	QBS Package Reference: <u>SN74AC240QP</u> <u>WRSV</u>
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass	1/Pass	1/Pass	-	-	-	-

- QBS: Qual By Similarity
- Qual Device ADS131M04IPW is qualified at LEVEL2-260C
- Qual Device ADS131M02IPW is qualified at LEVEL2-260C
- Qual Device ADS131M03IPW is qualified at LEVEL2-260C

- 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

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