Product/Process Change Notice - PCN 14_0005 Rev. A

Analog Devices, Inc. Three Technology Way Norwood, Massachusetts 02062-9106

This notice is to inform you of a change that will be made to certain ADI products (see Material Report). Any issues with this PCN or requirements to qualify the change (additional data or samples) must be sent to ADI within 30 days of publication date. ADI contact information is listed below.

Note: Revised fields are indicated by a red field name. See Appendix B for revision history.

PCN Title: Assembly Transfer to Amkor Philippines and Test Transfer to STATS ChipPAC China of Select LFCSP Products

Publication Date: 10-Jul-2014

Effectivity Date: 10-Jul-2014 *(the earliest date that a customer could expect to receive changed material)*

Revision Description:

Updated to include Test Correlation Reports

Description Of Change

ADI is transferring to qualified subcontractor Amkor Philippines for assembly and to subcontractor STATS ChipPAC China for test of select LFCSP products.

The mold compound is changing from Sumitomo G770 to Sumitomo G700. The die attach epoxy, the package outline dimensions and the wire diameter of each product will be maintained. See BOM attachment for details.

Reason For Change

ADI is transferring due to the closure of STATS ChipPAC Malaysia at the end of 2014.

ADI's assembly subcontractors manufacture products using Analog Devices specified manufacturing flows, materials, process controls and monitors, ensuring the same level of quality and reliability on products they receive from the new site.

Impact of the change (positive or negative) on fit, form, function & reliability

The Transfer will have no impact on the form, fit, function and reliability of the devices.

Product Identification *(this section will describe how to identify the changed material)*

The parts that will be assembled after the transfer will be identified by assembly lot and the country of origin.

Summary of Supporting Information

Qualification has been performed per ADI0012, Procedure for Qualification of New or Revised Processes.
Test correlation and validation has been performed per ADI's standard site to site product transfer correlation procedure. See attached qualification reports.

Supporting Documents

Attachment 1: Type: Qualification Results Summary

ADI_PCN_14_0005_Rev_A_Qualification Results Summary.pdf

Attachment 2: **Type**: Test Correlation Report

ADI_PCN_14_0005_Rev_A_Test Correlation Report AD5669R.pdf

Attachment 3: **Type**: Test Correlation Report

ADI_PCN_14_0005_Rev_A_Test Correlation Report AD5668.pdf

Attachment 4: **Type**: Test Correlation Report

ADI_PCN_14_0005_Rev_A_Test Correlation Report AD5629R.pdf

Attachment 5: **Type**: Test Correlation Report

ADI_PCN_14_0005_Rev_A_Test Correlation Report AD5628.pdf

Attachment 6: **Type**: Detailed Change Description

ADI_PCN_14_0005_Rev_A_BOM.xlsx

For questions on this PCN, send email to the regional contacts below or contact your local ADI sales representative					
Americas:	PCN_Americas@analog.com	**Europe:**	PCN_Europe@analog.com	**Japan:**	PCN_Japan@analog.com
				Rest of Asia:	PCN_ROA@analog.com

Appendix A - Affected ADI Models				
Existing Parts - Product Family / Model Number (22)				
AD5544 / AD5544ACPZ-1-RL7	AD5544 / AD5544BCPZ-RL7	AD5628 / AD5628ACPZ-1-RL7	AD5628 / AD5628ACPZ-2-RL7	AD5628 / AD5628BCPZ-2-RL7
AD5628 / AD5628BCPZ-2-U1	AD5629R / AD5629RACPZ-2-RL7	AD5629R / AD5629RACPZ-3-RL7	AD5629R / AD5629RBCPZ-1-RL7	AD5629R / AD5629RBCPZ-2-RL7
AD5668 / AD5668ACPZ-2-RL7	AD5668 / AD5668ACPZ-3-RL7	AD5668 / AD5668BCPZ-1-RL7	AD5668 / AD5668BCPZ-1500RL7	AD5668 / AD5668BCPZ-2-RL7
AD5668 / AD5668BCPZ-2500RL7	AD5669R / AD5669RACPZ-2-RL7	AD5669R / AD5669RACPZ-3-RL7	AD5669R / AD5669RBCPZ-1-RL7	AD5669R / AD5669RBCPZ-1500R7
AD5669R / AD5669RBCPZ-2-RL7	AD5669R / AD5669RBCPZ-2500R7			

Appendix B - Revision History			
Rev	**Publish Date**	**Effectivity Date**	**Rev Description**
Rev. -	27-Jan-2014	27-Apr-2014	Initial Release
Rev. A	10-Jul-2014	10-Jul-2014	Updated to include Test Correlation Reports

Qualification Data for LFCSP Devices at Amkor Philippines

QUALIFICATION RESULTS 20-LFCSP			
TEST	**SPECIFICATION**	**SAMPLE SIZE (LOT/QTY)**	**RESULTS**
High Temperature Storage (HTS)	JESD22-A103 150°C, 1000 hours	**1 x 77**	**Pass**
Temperature Cycle*	JES22-A104, -65°C to +150°C, 2 cycle per hour, 500 cycles	**3 x 77**	**Pass**
Biased HAST *	JESD22-A110, 130°C, 85% RH, 96hrs	**3 x 77**	**Pass**
Autoclave *	JESD22-A102, 121°C, 100% RH, 96hrs	**3 x 77**	**Pass**
Solder Heat Resistance (SHR)*	JEDEC/IPC J-STD-020	**3 x 11**	**Pass**
Electrostatic Discharge (ESD) Field Induced Charged Device Model (FICDM)	JESD22-C101, >500V	**1 x 3**	**Pass**

QUALIFICATION RESULTS 48-LFCSP			
TEST	**SPECIFICATION**	**SAMPLE SIZE (LOT/QTY)**	**RESULTS**
High Temperature Storage (HTS)	JESD22-A103 150°C, 1000 hours	**1 x 45**	**Pass**
Temperature Cycle*	JES22-A104, -65°C to +150°C, 2 cycle per hour, 500 cycles	**3 x 45**	**Pass**
Biased HAST *	JESD22-A110, 130°C, 85% RH, 96hrs	**3 x 45**	**Pass**
Autoclave *	JESD22-A102, 121°C, 100% RH, 96hrs	**3 x 45**	**Pass**
Solder Heat Resistance (SHR)*	JEDEC/IPC J-STD-020	**3 x 11**	**Pass**
Electrostatic Discharge (ESD) Field Induced Charged Device Model (FICDM)	JESD22-C101, >500V	**1 x 3**	**Pass**

*Preconditioned Per JEDEC/IPC J-STD-020

TEST PRODUCT QUALIFICATION REPORT

TITLE:
Test Transfer of AD5628 (LFCSP) from STATS ChipPAC Malaysia (SCM) to STATS ChipPAC China (SCC)

PCN NUMBER:
14_0005

REVISION:
A

DATE:
04 June 2014

PROJECT BACKGROUND

Test transfers are carried out to qualify STATS ChipPAC China (SCC) as an additional test site for ADI devices to support production, and where STATS ChipPAC Malaysia (SCM) factory will shut down in 2014.

SUMMARY

AD5628 LFCSP will be transferred from SCM to SCC.

There is no change to the form, fit, function, quality or reliability between platforms.

This report documents the successful completion of the product test transfer requirements of AD5628 LFCSP from SCM to SCC.

Test product qualification was performed according to Analog Devices Specification (ADI0012 / TST000137 / TST00095)

TEST AND PRODUCT INFORMATION

Device:	AD5628
Package:	LFCSP-4x4x0.75
Leads:	16
Tester Platform:	MFLXMS
Handler:	Delta Edge

Description and Test Results

Table 1 provides a description of the qualification tests conducted and corresponding test results for AD5628LFCSP. All the units have undergone electrical tests on both the sending and receiving sites on the same test platform. Any device that did not meet the electrical qualification requirements without further analysis and data to prove passing, the qualification would be considered failed.

Table 1. Test Product Transfer Qual Criteria

Generic	Package	Lot number	Lot Size	Sending Site	Receiving Site	Mean Shift =< 0.5sigma	Sigma Ratio =< 1.3
AD5628	4x4x0.75 LFCSP	2712737.1	100	SCM	SCC	Passed	Passed

The AD5628 was qualified by running a qualification lot with 100 units both in SCM and SCC. Data between sites were analyzed as summarized in Table 1.

A passing result was recorded when the yield from receiving site met or exceeded yield from sending site as summarized in Table 2. Succeeding lots with increased quantity will be closely monitored once the device has started production run at SCC.

Table 2. Test Product Transfer Qualification Lot Run

GENERIC	Package	Lot number	Lot Size	Test Site	Results
AD5628	4x4x0.75 LFCSP	2712737.1	100	SCC	Passed

No valid rejects were encountered during the said evaluation in both sending and receiving sites.

Rejects Verifications

5 valid rejects tested in SCM and SCC having the same result.
Table 3. Setup verification using Reject units

Unit #	SCM	SCC
1	Failed	Failed
2	Failed	Failed
3	Failed	Failed
4	Failed	Failed
5	Failed	Failed

Conclusion:

AD5628 LFCSP handler correlation data on both sites are correlated. Data are already approved by PE and CY, it is acceptable. AD5628 LFCSP device is now ready for transfer to SCC.

Approvals

TRB#9670
Test Product Engineer
Chute Yield Engineer

Supporting Documents

Technical Review Board: TRB#9670

Additional Information
Homepage: http://www.analog.com/en/index.html
Datasheet: http://www.analog.com/en/analog-to-digital-converters/video-decoders/AD5628/products/product.html
Customer Service:http://www.analog.com/en/content/technical_support_page/fca.html

TEST PRODUCT QUALIFICATION REPORT

TITLE:
Test Transfer of AD5629R (LFCSP) from STATS ChipPAC Malaysia (SCM) to STATS ChipPAC China (SCC)

PCN NUMBER:
14_0005

REVISION:
A

DATE:
04 June 2014

PROJECT BACKGROUND

Test transfers are carried out to qualify STATS ChipPAC China (SCC) as an additional test site for ADI devices to support production, and where STATS ChipPAC Malaysia (SCM) factory will shut down in 2014.

SUMMARY

AD5629R LFCSP will be transferred from SCM to SCC.

There is no change to the form, fit, function, quality or reliability between platforms.

This report documents the successful completion of the product test transfer requirements of AD5629R LFCSP from SCM to SCC.

Test product qualification was performed according to Analog Devices Specification (ADI0012 / TST000137 / TST00095)

TEST AND PRODUCT INFORMATION

Device:	AD5629R
Package:	LFCSP-4x4x0.75
Leads:	16
Tester Platform:	MFLEXMS
Handler:	Delta Edge

Description and Test Results

Table 1 provides a description of the qualification tests conducted and corresponding test results for AD5629R LFCSP. All the units have undergone electrical tests on both the sending and receiving sites on the same test platform. Any device that did not meet the electrical qualification requirements without further analysis and data to prove passing, the qualification would be considered failed.

Table 1. Test Product Transfer Qual Criteria

Generic	Package	Lot number	Lot Size	Sending Site	Receiving Site	Mean Shift =< 0.5sigma	Sigma Ratio =< 1.3
AD5629R	4x4x0.75 LFCSP	2772704.1	100	SCM	SCC	Passed	Passed

The AD5629R was qualified by running a qualification lot with 100 units both in SCM and SCC. Data between sites were analyzed as summarized in Table 1.

A passing result was recorded when the yield from receiving site met or exceeded yield from sending site as summarized in Table 2. Succeeding lots with increased quantity will be closely monitored once the device has started production run at SCC.

Table 2. Test Product Transfer Qualification Lot Run

GENERIC	Package	Lot number	Lot Size	Test Site	Results
AD5629R	4x4x0.75 LFCSP	2633592.1	100	SCC	Passed

No valid rejects were encountered during the said evaluation in both sending and receiving sites.

Rejects Verifications

5 valid rejects tested in SCM and SCC having the same result.
Table 3. Setup verification using Reject units

Unit #	SCM	SCC
1	Failed	Failed
2	Failed	Failed
3	Failed	Failed
4	Failed	Failed
5	Failed	Failed

Conclusion
AD5629R LFCSP handler correlation data on both sites are correlated. Data are already approved by PE and CY, it is acceptable. AD5629R LFCSP device is now ready for transfer to SCC.

Approvals

TRB#9670
Test Product Engineer
Chute Yield Engineer

Supporting Documents

Technical Review Board: TRB#9670

Additional Information
Homepage: http://www.analog.com/en/index.html
Datasheet: http://www.analog.com/en/analog-to-digital-converters/video-decoders/AD5629R/products/product.html
Customer Service:http://www.analog.com/en/content/technical_support_page/fca.html

TEST PRODUCT QUALIFICATION REPORT

TITLE:
Test Transfer of AD5668 (LFCSP) from STATS ChipPAC Malaysia (SCM) to STATS ChipPAC China (SCC)

PCN NUMBER:
14_0005

REVISION:
A

DATE:
04 June 2014

PROJECT BACKGROUND

Test transfers are carried out to qualify STATS ChipPAC China (SCC) as an additional test site for ADI devices to support production, and where STATS ChipPAC Malaysia (SCM) factory will shut down in 2014.

SUMMARY

AD5668 LFCSP will be transferred from SCM to SCC.

There is no change to the form, fit, function, quality or reliability between platforms.

This report documents the successful completion of the product test transfer requirements of AD5668 LFCSP from SCM to SCC.

Test product qualification was performed according to Analog Devices Specification (ADI0012 / TST000137 / TST00095)

TEST AND PRODUCT INFORMATION

Device:	AD5668
Package:	LFCSP-4x4x0.75
Leads:	16
Tester Platform:	MFLXMS
Handler:	Delta Edge

Description and Test Results

Table 1 provides a description of the qualification tests conducted and corresponding test results for AD5668LFCSP. All the units have undergone electrical tests on both the sending and receiving sites on the same test platform. Any device that did not meet the electrical qualification requirements without further analysis and data to prove passing, the qualification would be considered failed.

Table 1. Test Product Transfer Qual Criteria

Generic	Package	Lot number	Lot Size	Sending Site	Receiving Site	Mean Shift =< 0.5sigma	Sigma Ratio =< 1.3
AD5668	4x4x0.75 LFCSP	2657432.1	100	SCM	SCC	Passed	Passed

The AD5668 was qualified by running a qualification lot with 100 units both in SCM and SCC. Data between sites were analyzed as summarized in Table 1.

A passing result was recorded when the yield from receiving site met or exceeded yield from sending site as summarized in Table 2. Succeeding lots with increased quantity will be closely monitored once the device has started production run at SCC.

Table 2. Test Product Transfer Qualification Lot Run

GENERIC	Package	Lot number	Lot Size	Test Site	Results
AD5668	4x4x0.75 LFCSP	2657432.1	100	SCC	Passed

No valid rejects were encountered during the said evaluation in both sending and receiving sites.

Rejects Verifications

5 valid rejects tested in SCM and SCC having the same result.
Table 3. Setup verification using Reject units

Unit #	SCM	SCC
1	Failed	Failed
2	Failed	Failed
3	Failed	Failed
4	Failed	Failed
5	Failed	Failed

Conclusion:

AD5668 LFCSP handler correlation data on both sites are correlated. Data are already approved by PE and CY, it is acceptable. AD5668 LFCSP device is now ready for transfer to SCC.

Approvals

TRB#9972
Test Product Engineer
Chute Yield Engineer

Supporting Documents

Technical Review Board: TRB#9972

Additional Information
Homepage: http://www.analog.com/en/index.html
Datasheet: http://www.analog.com/en/analog-to-digital-converters/video-decoders/AD5668/products/product.html
Customer Service:http://www.analog.com/en/content/technical_support_page/fca.html

TEST PRODUCT QUALIFICATION REPORT

TITLE:
Test Transfer of AD5669R (LFCSP) from STATS ChipPAC Malaysia (SCM) to STATS ChipPAC China (SCC)

PCN NUMBER:
14_0005

REVISION:
A

DATE:
04 June 2014

PROJECT BACKGROUND

Test transfers are carried out to qualify STATS ChipPAC China (SCC) as an additional test site for ADI devices to support production, and where STATS ChipPAC Malaysia (SCM) factory will shut down in 2014.

SUMMARY

AD5669R LFCSP will be transferred from SCM to SCC.

There is no change to the form, fit, function, quality or reliability between platforms.

This report documents the successful completion of the product test transfer requirements of AD5669R LFCSP from SCM to SCC.

Test product qualification was performed according to Analog Devices Specification (ADI0012 / TST000137 / TST00095)

TEST AND PRODUCT INFORMATION

Device:	AD5669R
Package:	LFCSP-4x4x0.75
Leads:	16
Tester Platform:	MFLXMS
Handler:	Delta Edge

Description and Test Results

Table 1 provides a description of the qualification tests conducted and corresponding test results for AD5669RLFCSP. All the units have undergone electrical tests on both the sending and receiving sites on the same test platform. Any device that did not meet the electrical qualification requirements without further analysis and data to prove passing, the qualification would be considered failed.

Table 1. Test Product Transfer Qual Criteria

Generic	Package	Lot number	Lot Size	Sending Site	Receiving Site	Mean Shift =< 0.5sigma	Sigma Ratio =< 1.3
AD5669R	4x4x0.75 LFCSP	2754766.1	100	SCM	SCC	Passed	Passed

The AD5669R was qualified by running a qualification lot with 100 units both in SCM and SCC. Data between sites were analyzed as summarized in Table 1.

A passing result was recorded when the yield from receiving site met or exceeded yield from sending site as summarized in Table 2. Succeeding lots with increased quantity will be closely monitored once the device has started production run at SCC.

Table 2. Test Product Transfer Qualification Lot Run

GENERIC	Package	Lot number	Lot Size	Test Site	Results
AD5669R	4x4x0.75 LFCSP	2754766.1	100	SCC	Passed

No valid rejects were encountered during the said evaluation in both sending and receiving sites.

Rejects Verifications

5 valid rejects tested in SCM and SCC having the same result.
Table 3. Setup verification using Reject units

Unit #	SCM	SCC
1	Failed	Failed
2	Failed	Failed
3	Failed	Failed
4	Failed	Failed
5	Failed	Failed

Conclusion:

AD5669R LFCSP handler correlation data on both sites are correlated. Data are already approved by PE and CY, it is acceptable. AD5669R LFCSP device is now ready for transfer to SCC.

Approvals

TRB#9670
Test Product Engineer
Chute Yield Engineer

Supporting Documents

Technical Review Board: TRB#9670

Additional Information
Homepage: http://www.analog.com/en/index.html
Datasheet: http://www.analog.com/en/analog-to-digital-converters/video-decoders/ad5669r/products/product.html
Customer Service:http://www.analog.com/en/content/technical_support_page/fca.html