



GS1674

Reliability Qualification Report

Revision History

Version	ECR	Date	Modifications / Changes
0	154197	May 2010	New document

Contents

1	Device Specifics	3
1.1	Manufacturing Summary	3
1.2	Product Information	3
1.3	Process Qualification	3
1.4	Product Qualification Approach	3
2	Reliability Qualification Stresses	4
2.1	Environmental Tests	4
2.2	Electrostatic Discharge and Latch Up Tests	5
3	Conclusion	6

1 Device Specifics

1.1 Manufacturing Summary

Table 1.: Manufacturing Summary

Gennum Device Code	GS1674
Silicon Fab Technology	Jazz SiGe120 SBC18HAZ
Package Assembly	Unisem
Package Type	16 QFN, 4x4 mm, 0.65 mm pitch

1.2 Product Information

The GS1674 is a high-speed BiCMOS integrated circuit designed to equalize and restore signals received over 75Ω coaxial cable. The device is optimized for performance at 270Mb/s and 1.485Gb/s, and features DC restoration to compensate for the DC content of SMPTE pathological test patterns.

The device is available in a 16-pin, 4mm x 4mm QFN package. The GS1674 is Pb-free, and the encapsulation compound does not contain halogenated flame retardant. This component and all homogeneous subcomponents are RoHS compliant.

The devices shall be fully functional and shall meet all operational specifications over the ambient temperature range -20°C to +85°C.

1.3 Process Qualification

The die is manufactured by Jazz using the SiGe120 SBC18HAZ process. The Jazz process qualification report has been accepted and is stored in GenDoc ID#34874. The product is packaged at Unisem in a 16 pin QFN package. The Unisem package process qualification report is stored in GenDoc ID#49722.

1.4 Product Qualification Approach

Temperature and humidity bias for the GS1674 was bridged to the GS2985 qualification. The GS2985 contains a die from the same fab process as the GS1674 in a larger QFN package.

Details of the tests performed and bridged qualification tests are presented on the next page.

2 Reliability Qualification Stresses

2.1 Environmental Tests

Table 2.: Environmental Tests

Stress	Conditions	Duration	Qualification Vehicle	Sample Size	Failures
High Temperature Operating Life	JESD22-A108 $T_j \geq 125^\circ\text{C}$, $V_{cc} \geq V_{ccmax}$	2000 hours	GS1674	90	0
Temperature Cycling	JESD22-A104 MSL Preconditioning, -55°C to +125°C (Condition B)	1000 cycles	GS1674	80	0
Temperature and Humidity Bias	JESD22-A101 MSL Preconditioning, 85°C/85% RH, Unbiased	1000 hours	GS2985	25	0
Unbiased Temperature and Humidity	JESD22-A101 MSL Preconditioning, 85°C/85% RH	1000 hours	GS1674	25	0
High Temperature Storage	JESD22-A103 150 °C	1000 hours	GS1674	80	0
Moisture Sensitivity Level	J-STD-020 MSL3, Tmax=260°C		GS1674	185	0

2.2 Electrostatic Discharge and Latch Up Tests

Table 3.: Electrostatic Discharge and Latch Up Tests

Stress	Conditions	Qualification Vehicle	Stress Level	Sample Size	Failures
Human Body Model ESD	JEDEC22-A114	GS1674	5 kV	3	0
Machine Model ESD	JESD22-A115	GS1674	250 V	3	0
Charged Device Model ESD	JESD22-C101	GS1674	2 kV	3	0
	JESD78	GS1674	25°C	6	0
Latch Up	V _{cc} =3.5 V, 5.25 V; +/- 100 mA		85°C	6	0
	Level II, Class A				

3 Conclusion

Reliability qualification of the GS1674 is complete. The product is considered fit for sale and customer use.

DOCUMENT IDENTIFICATION

RELIABILITY REPORT

The product is in production. Gennum reserves the right to make changes to the product at any time without notice to improve reliability, function or design, in order to provide the best product possible.

CAUTION

ELECTROSTATIC SENSITIVE DEVICES
DO NOT OPEN PACKAGES OR HANDLE EXCEPT
AT A STATIC-FREE WORKSTATION



GENNUM CORPORATION HEADQUARTERS

4281 Harvester Road, Burlington, Ontario L7L 5M4 Canada

Phone: +1 (905) 632-2996 Fax: +1 (905) 632-2055
E-mail: corporate@gennum.com www.gennum.com

OTTAWA

232 Herzberg Road, Suite 101
Kanata, Ontario K2K 2A1
Canada
Phone: +1 (613) 270-0458
Fax: +1 (613) 270-0429

CALGARY

Suite 210, 3553 31st St. N.W.
Calgary, Alberta T2L 2K7
Canada
Phone: +1 (905) 632-2996
Fax: +1 (905) 632-2055

UNITED KINGDOM

North Building, Walden Court
Parsonage Lane,
Bishop's Stortford Hertfordshire, CM23 5DB
United Kingdom
Phone: +44 1279 714170
Fax: +44 1279 714171

INDIA

#208(A), Nirmala Plaza,
Airport Road, Forest Park Square
Bhubaneswar 751009
India
Phone: +91 (674) 65304815
Fax: +91 (674) 259-5733

SNOWBUSH IP - A DIVISION OF GENNUM

439 University Ave. Suite 1700
Toronto, Ontario M5G 1Y8
Canada
Phone: +1 (416) 925-5643
Fax: +1 (416) 925-0581
E-mail: sales@snowbush.com
Web Site: <http://www.snowbush.com>

MEXICO

288-A Paseo de Maravillas
Jesus Ma., Aguascalientes
Mexico 20900
Phone: +1 (416) 848-0328

JAPAN KK

Shinjuku Green Tower Building 27F
6-14-1, Nishi Shinjuku
Shinjuku-ku, Tokyo, 160-0023
Japan
Phone: +81 (03) 3349-5501
Fax: +81 (03) 3349-5505
E-mail: gennum-japan@gennum.com
Web Site: <http://www.gennum.co.jp>

TAIWAN

6F-4, No.51, Sec.2, Keelung Rd.
Sinyi District, Taipei City 11502
Taiwan R.O.C.
Phone: (886) 2-8732-8879
Fax: (886) 2-8732-8870
E-mail: gennum-taiwan@gennum.com

GERMANY

Hainbuchenstraße 2
80935 Muenchen (Munich), Germany
Phone: +49 89 35831696
Fax: +49 89 35804653
E-mail: gennum-germany@gennum.com

NORTH AMERICA WESTERN REGION

Bayshore Plaza
2107 N 1st Street, Suite #300
San Jose, CA 95131
United States
Phone: +1 (408) 392-9430
Fax: +1 (408) 392-9427
E-mail: naw_sales@gennum.com

NORTH AMERICA EASTERN REGION

4281 Harvester Road
Burlington, Ontario L7L 5M4
Canada
Phone: +1 (905) 632-2996
Fax: +1 (905) 632-2055
E-mail: nae_sales@gennum.com

KOREA

8F Jinnex Lakeview Bldg.
65-2, Bangidong, Songpogu
Seoul, Korea 138-828
Phone: +82-2-414-2991
Fax: +82-2-414-2998
E-mail: gennum-korea@gennum.com

Gennum Corporation assumes no liability for any errors or omissions in this document, or for the use of the circuits or devices described herein. The sale of the circuit or device described herein does not imply any patent license, and Gennum makes no representation that the circuit or device is free from patent infringement.

All other trademarks mentioned are the properties of their respective owners.

GENNUM and the Gennum logo are registered trademarks of Gennum Corporation.

© Copyright 2009 Gennum Corporation. All rights reserved. Printed in Canada.

www.gennum.com