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# ***CG1657 Daisy Chain Package***

***UG0666 User Guide***



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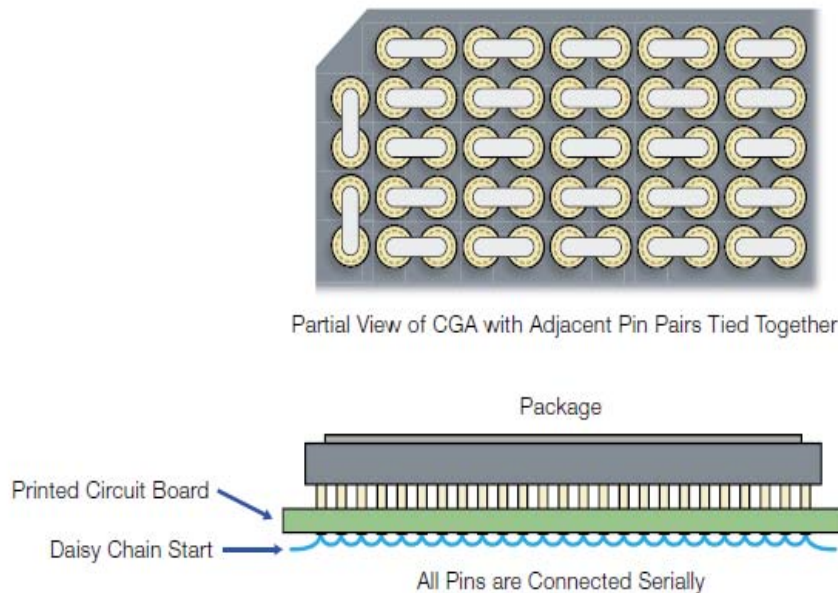
## CG1657 Daisy Chain Package

### Description

Microsemi's Ceramic Column Grid Array (CCGA) daisy chain packages can facilitate the qualification of CCGA Field Programmable Gate Array (FPGA) board assembly practices without using flight-quality parts. These daisy chain packages have adjacent pairs of pins tied together. The daisy chain packages are then assembled onto a qualification PC board that is laid out with adjacent pairs of solder pads tied together but offset by one pin as compared to the daisy chain package, so that a single signal can be fed into one pin of the package and routed throughout the entire package. The routing is set in a serial daisy chain fashion such that almost all of the package pins are used.

Daisy chain packages can be used for performing continuity and impedance tests to validate board assembly techniques with surface-mount grid array packages. Microsemi's daisy chain packages feature metal routing tracks between adjacent pairs of package pins, internal to the package.

The CG1657 Daisy Chain Package is a 1657-pin mechanical package of the CCGA type supporting the RTG4™ FPGA family.



**Figure 1 • Sample CG1657 Daisy Chain Package Connection**

## Pin Description

Refer to the "Appendix A: CG1657 Package Mechanical Drawings" section on page 5 for CG1657 mechanical drawing complete with a package grid outline. For a complete list of pin connections corresponding to "Appendix A: CG1657 Package Mechanical Drawings" section on page 5, consult "Appendix B: Pin Connections" section on page 6.

**Note:** NC is the abbreviation for **No Connection**.

## Device Specification Notes

The devices with a date code matching or older than 1444 are 0.1 mm taller than the rest of the devices, which dimension can be found in "Appendix A: CG1657 Package Mechanical Drawings" section on page 5.

## Ordering Code

The Product Number is CG1657 DAISY CHAIN. The Ceramic Land Grid Array daisy chain packages are also available under Product Number LG1657 DAISY CHAIN.

## Appendix A: CG1657 Package Mechanical Drawings

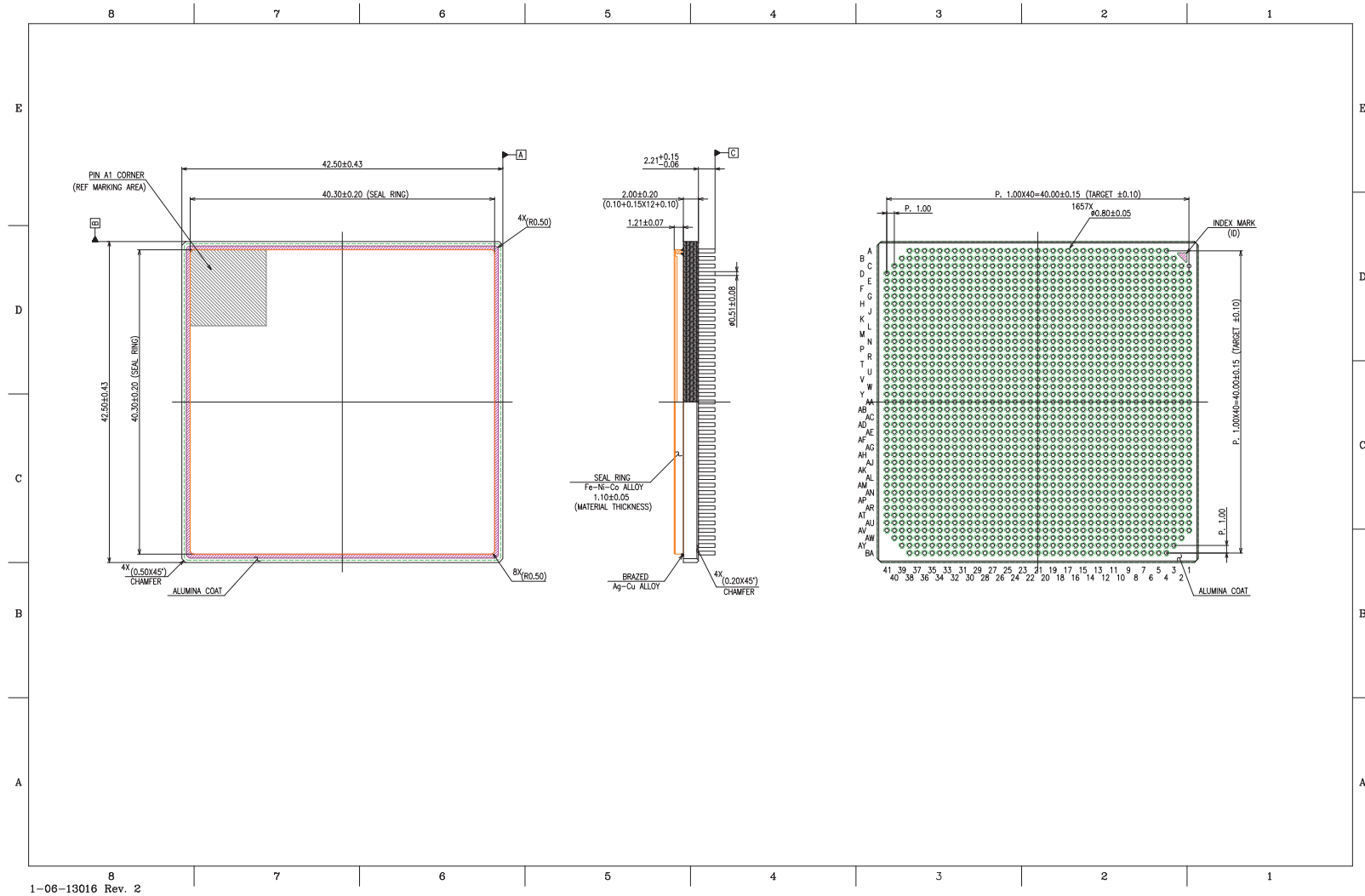


Figure 2 • CG1657 Package Mechanical Drawings

## Appendix B: Pin Connections

Note: Download the excel version of the Pin Connections at [CG1657 Daisy Chain Package Pin Connections](#).

Pin	To
A4	D1
A5	A6
A7	A8
A9	A10
A11	A12
A13	A14
A15	A16
A17	A18
A19	A20
A21	A22
A23	A24
A25	A26
A27	A28
A29	A30
A31	A32
A33	A34
A35	A36
A37	A38
B3	C2
B4	B5
B6	B7
B8	B9
B10	B11
B12	B13
B14	B15
B16	B17
B18	B19
B20	B21
B22	B23
B24	B25
B26	B27
B28	B29
B30	B31
B32	B33
B34	B35
B36	B37
B38	B39
C3	C4

C5	C6
C7	C8
C9	C10
C11	C12
C13	C14
C15	C16
C17	C18
C19	C20
C21	C22
C23	C24
C25	C26
C27	C28
C29	C30
C31	C32
C33	C34
C35	C36
C37	C38
C39	D39
C40	D40
D2	E2
D3	E3
D4	D5
D6	D7
D8	D9
D10	D11
D12	D13
D14	D15
D16	D17
D18	D19
D20	D21
D22	D23
D24	D25
D26	D27
D28	D29
D30	D31
D32	D33
D34	D35
D36	D37
D38	E38

D41	E41
E1	F1
E4	F4
E5	E6
E7	E8
E9	E10
E11	E12
E13	E14
E15	E16
E17	E18
E19	E20
E21	E22
E23	E24
E25	E26
E27	E28
E29	E30
E31	E32
E33	E34
E35	E36
E37	F37
E39	F39
E40	F40
F2	G2
F3	G3
F5	G5
F6	F7
F8	F9
F10	F11
F12	F13
F14	F15
F16	F17
F18	F19
F20	F21
F22	F23
F24	F25
F26	F27
F28	F29
F30	F31
F32	F33

F34	F35
F36	G36
F38	G38
F41	G41
G1	H1
G4	H4
G6	H6
G7	G8
G9	G10
G11	G12
G13	G14
G15	G16
G17	G18
G19	G20
G21	G22
G23	G24
G25	G26
G27	G28
G29	G30
G31	G32
G33	G34
G35	H35
G37	H37
G39	H39
G40	H40
H2	J2
H3	J3
H5	J5
H7	J7
H8	H9
H10	H11
H12	H13
H14	H15
H16	H17
H18	H19
H20	H21
H22	H23
H24	H25
H26	H27
H28	H29
H30	H31
H32	H33
H34	J34

H36	J36
H38	J38
H41	J41
J1	K1
J4	K4
J6	K6
J8	K8
J9	J10
J11	J12
J13	J14
J15	J16
J17	J18
J19	J20
J21	J22
J23	J24
J25	J26
J27	J28
J29	J30
J31	J32
J33	K33
J35	K35
J37	K37
J39	K39
J40	K40
K2	L2
K3	L3
K5	L5
K7	L7
K9	L9
K10	K11
K12	K13
K14	K15
K16	K17
K18	K19
K20	K21
K22	K23
K24	K25
K26	K27
K28	K29
K30	K31
K32	L32
K34	L34
K36	L36

K38	L38
K41	L41
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L4	M4
L6	M6
L8	M8
L10	M10
L11	L12
L13	L14
L15	L16
L17	L18
L19	L20
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L33	M33
L35	M35
L37	M37
L39	M39
L40	M40
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M3	N3
M5	N5
M7	N7
M9	N9
M11	N11
M12	M13
M14	M15
M16	M17
M18	M19
M20	M21
M22	M23
M24	M25
M26	M27
M28	M29
M30	N30
M32	N32
M34	N34
M36	N36
M38	N38

M41	N41
N1	P1
N4	P4
N6	P6
N8	P8
N10	P10
N12	P12
N13	N14
N15	N16
N17	N18
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N27	N28
N29	P29
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N33	P33
N35	P35
N37	P37
N39	P39
N40	P40
P2	R2
P3	R3
P5	R5
P7	R7
P9	R9
P11	R11
P13	R13
P14	P15
P16	P17
P18	P19
P20	P21
P22	P23
P24	P25
P26	P27
P28	R28
P30	R30
P32	R32
P34	R34
P36	R36
P38	R38
P41	R41

R1	T1
R4	T4
R6	T6
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R10	T10
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R14	T14
R15	R16
R17	R18
R19	R20
R21	R22
R23	R24
R25	R26
R27	T27
R29	T29
R31	T31
R33	T33
R35	T35
R37	T37
R39	T39
R40	T40
T2	U2
T3	U3
T5	U5
T7	U7
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U39	V39
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V41	W41
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W4	Y4



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AH13	AJ13
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AH17	AH18
AH19	AH20
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AH27	AH28
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AJ18	AJ19

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AR37	AT37

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AR40	AT40
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AU8	AU9
AU10	AU11
AU12	AU13
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AU16	AU17
AU18	AU19
AU20	AU21
AU22	AU23
AU24	AU25
AU26	AU27
AU28	AU29
AU30	AU31
AU32	AU33
AU34	AU35
AU36	AU37
AU39	AV39
AU40	AV40
AV2	AW2

AV3	AW3
AV5	AV6
AV7	AV8
AV9	AV10
AV11	AV12
AV13	AV14
AV15	AV16
AV17	AV18
AV19	AV20
AV21	AV22
AV23	AV24
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AV33	AV34
AV35	AV36
AV37	AV38
AV41	BA38
AW4	AW5
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AW16	AW17
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AW32	AW33
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AW38	AW39
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AY11	AY12

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AY15	AY16
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AY29	AY30
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BA32	BA33
BA34	BA35
BA36	BA37

## List of Changes

The following table shows the important changes made in this document for each revision.

<b>Date</b>	<b>Changes</b>	<b>Page</b>
Revision 1 (November 2015)	Initial release.	NA

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## Product Support

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Microsemi SoC Products Group backs its products with various support services, including Customer Service, Customer Technical Support Center, a website, electronic mail, and worldwide sales offices. This appendix contains information about contacting Microsemi SoC Products Group and using these support services.

### Customer Service

Contact Customer Service for non-technical product support, such as product pricing, product upgrades, update information, order status, and authorization.

From North America, call 800.262.1060

From the rest of the world, call 650.318.4460

Fax, from anywhere in the world, 408.643.6913

### Customer Technical Support Center

Microsemi SoC Products Group staffs its Customer Technical Support Center with highly skilled engineers who can help answer your hardware, software, and design questions about Microsemi SoC Products. The Customer Technical Support Center spends a great deal of time creating application notes, answers to common design cycle questions, documentation of known issues, and various FAQs. So, before you contact us, please visit our online resources. It is very likely we have already answered your questions.

### Technical Support

For Microsemi SoC Products Support, visit

<http://www.microsemi.com/products/fpga-soc/design-support/fpga-soc-support>.

### Website

You can browse a variety of technical and non-technical information on the Microsemi SoC Products Group [home page](http://www.microsemi.com/products/fpga-soc/fpga-and-soc), at <http://www.microsemi.com/products/fpga-soc/fpga-and-soc>.

### Contacting the Customer Technical Support Center

Highly skilled engineers staff the Technical Support Center. The Technical Support Center can be contacted by email or through the Microsemi SoC Products Group website.

#### Email

You can communicate your technical questions to our email address and receive answers back by email, fax, or phone. Also, if you have design problems, you can email your design files to receive assistance. We constantly monitor the email account throughout the day. When sending your request to us, please be sure to include your full name, company name, and your contact information for efficient processing of your request.

The technical support email address is [soc\\_tech@microsemi.com](mailto:soc_tech@microsemi.com).

## My Cases

Microsemi SoC Products Group customers may submit and track technical cases online by going to [My Cases](#).

## Outside the U.S.

Customers needing assistance outside the US time zones can either contact technical support via email ([soc\\_tech@microsemi.com](mailto:soc_tech@microsemi.com)) or contact a local sales office. Visit [About Us](#) for [sales office listings](#) and [corporate contacts](#).

## ITAR Technical Support

For technical support on RH and RT FPGAs that are regulated by International Traffic in Arms Regulations (ITAR), contact us via [soc\\_tech@microsemi.com](mailto:soc_tech@microsemi.com). Alternatively, within My Cases, select **Yes** in the ITAR drop-down list. For a complete list of ITAR-regulated Microsemi FPGAs, visit the ITAR web page.



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