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# ***CG1657 Daisy Chain Package***

***UG0666 User Guide***



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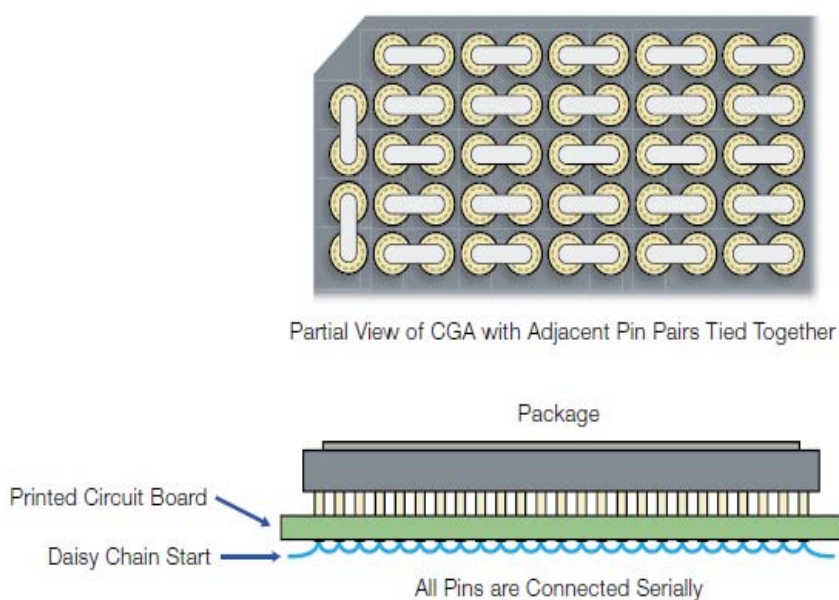
## CG1657 Daisy Chain Package

### 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

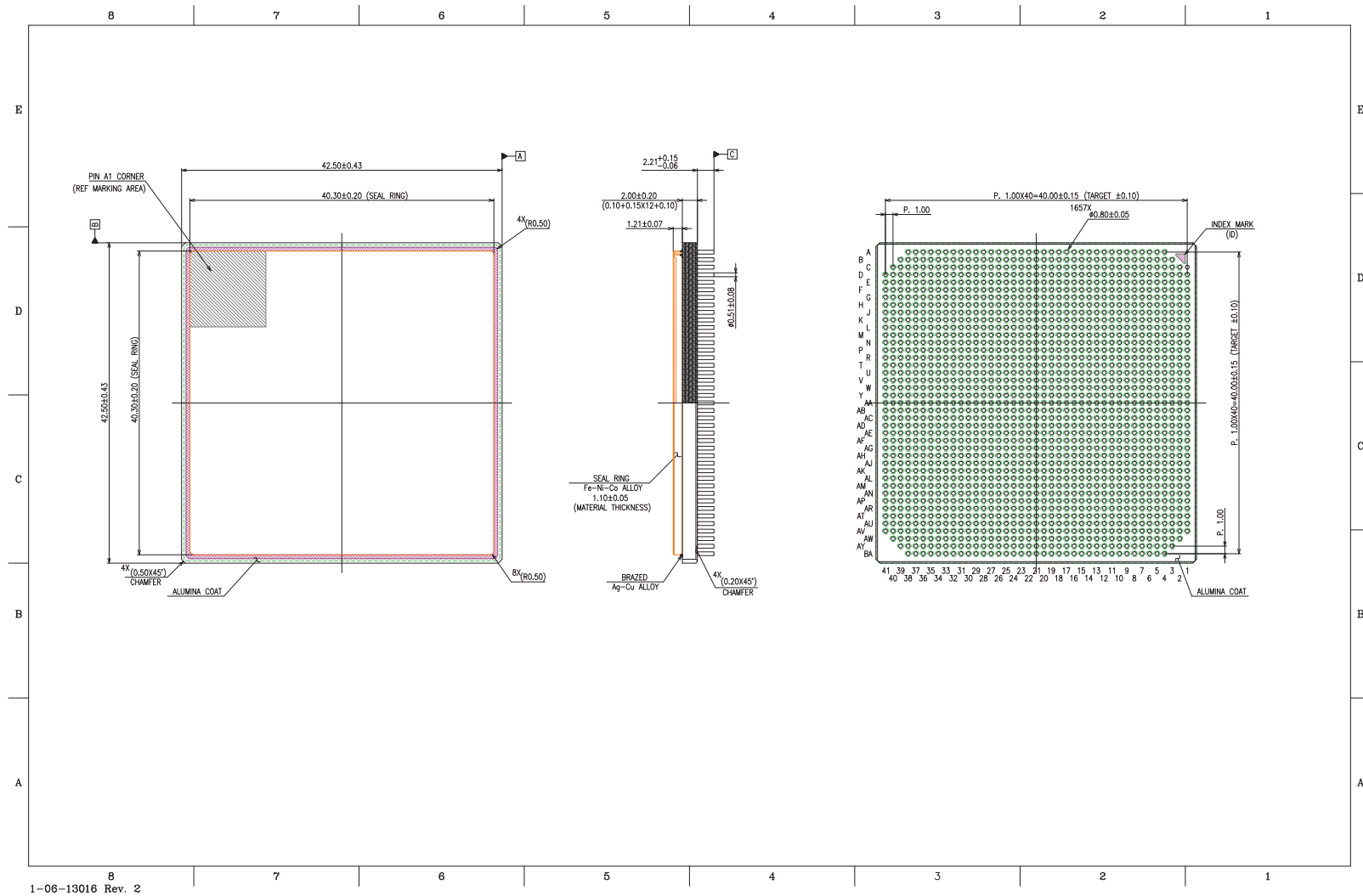


Figure 2 • CG1657 Package Mechanical Drawings

## 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 |
| L1  | M1  |
| L4  | M4  |
| L6  | M6  |
| L8  | M8  |
| L10 | M10 |
| L11 | L12 |
| L13 | L14 |
| L15 | L16 |
| L17 | L18 |
| L19 | L20 |
| L21 | L22 |
| L23 | L24 |
| L25 | L26 |
| L27 | L28 |
| L29 | L30 |
| L31 | M31 |
| L33 | M33 |
| L35 | M35 |
| L37 | M37 |
| L39 | M39 |
| L40 | M40 |
| M2  | N2  |
| 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 |
| N19 | N20 |
| N21 | N22 |
| N23 | N24 |
| N25 | N26 |
| N27 | N28 |
| N29 | P29 |
| N31 | P31 |
| 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  |
| R8  | T8  |
| R10 | T10 |
| R12 | T12 |
| 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  |
| T9  | U9  |
| T11 | U11 |
| T13 | U13 |
| T15 | U15 |
| T16 | T17 |
| T18 | T19 |
| T20 | T21 |
| T22 | T23 |
| T24 | T25 |
| T26 | U26 |
| T28 | U28 |
| T30 | U30 |
| T32 | U32 |
| T34 | U34 |
| T36 | U36 |
| T38 | U38 |
| T41 | U41 |
| U1  | V1  |

|     |     |
|-----|-----|
| U4  | V4  |
| U6  | V6  |
| U8  | V8  |
| U10 | V10 |
| U12 | V12 |
| U14 | V14 |
| U16 | V16 |
| U17 | U18 |
| U19 | U20 |
| U21 | U22 |
| U23 | U24 |
| U25 | V25 |
| U27 | V27 |
| U29 | V29 |
| U31 | V31 |
| U33 | V33 |
| U35 | V35 |
| U37 | V37 |
| U39 | V39 |
| U40 | V40 |
| V2  | W2  |
| V3  | W3  |
| V5  | W5  |
| V7  | W7  |
| V9  | W9  |
| V11 | W11 |
| V13 | W13 |
| V15 | W15 |
| V17 | W17 |
| V18 | V19 |
| V20 | V21 |
| V22 | V23 |
| V24 | W24 |
| V26 | W26 |
| V28 | W28 |
| V30 | W30 |
| V32 | W32 |
| V34 | W34 |
| V36 | W36 |
| V38 | W38 |
| V41 | W41 |
| W1  | Y1  |
| W4  | Y4  |



|     |      |
|-----|------|
| W6  | Y6   |
| W8  | Y8   |
| W10 | Y10  |
| W12 | Y12  |
| W14 | Y14  |
| W16 | Y16  |
| W18 | Y18  |
| W19 | W20  |
| W21 | NC   |
| W22 | NC   |
| W23 | Y23  |
| W25 | Y25  |
| W27 | Y27  |
| W29 | Y29  |
| W31 | Y31  |
| W33 | Y33  |
| W35 | Y35  |
| W37 | Y37  |
| W39 | Y39  |
| W40 | Y40  |
| Y2  | AA2  |
| Y3  | AA3  |
| Y5  | AA5  |
| Y7  | AA7  |
| Y9  | AA9  |
| Y11 | AA11 |
| Y13 | AA13 |
| Y15 | AA15 |
| Y17 | AA17 |
| Y19 | AA19 |
| Y20 | NC   |
| Y21 | NC   |
| Y22 | NC   |
| Y24 | AA24 |
| Y26 | AA26 |
| Y28 | AA28 |
| Y30 | AA30 |
| Y32 | AA32 |
| Y34 | AA34 |
| Y36 | AA36 |
| Y38 | AA38 |
| Y41 | AA41 |
| AA1 | AB1  |

|      |      |
|------|------|
| AA4  | AB4  |
| AA6  | AB6  |
| AA8  | AB8  |
| AA10 | AB10 |
| AA12 | AB12 |
| AA14 | AB14 |
| AA16 | AB16 |
| AA18 | AB18 |
| AA20 | NC   |
| AA21 | NC   |
| AA22 | NC   |
| AA23 | AB23 |
| AA25 | AB25 |
| AA27 | AB27 |
| AA29 | AB29 |
| AA31 | AB31 |
| AA33 | AB33 |
| AA35 | AB35 |
| AA37 | AB37 |
| AA39 | AB39 |
| AA40 | AB40 |
| AB2  | AC2  |
| AB3  | AC3  |
| AB5  | AC5  |
| AB7  | AC7  |
| AB9  | AC9  |
| AB11 | AC11 |
| AB13 | AC13 |
| AB15 | AC15 |
| AB17 | AC17 |
| AB19 | AC19 |
| AB20 | NC   |
| AB21 | NC   |
| AB22 | NC   |
| AB24 | AC24 |
| AB26 | AC26 |
| AB28 | AC28 |
| AB30 | AC30 |
| AB32 | AC32 |
| AB34 | AC34 |
| AB36 | AC36 |
| AB38 | AC38 |
| AB41 | AC41 |

|      |      |
|------|------|
| AC1  | AD1  |
| AC4  | AD4  |
| AC6  | AD6  |
| AC8  | AD8  |
| AC10 | AD10 |
| AC12 | AD12 |
| AC14 | AD14 |
| AC16 | AD16 |
| AC18 | AD18 |
| AC20 | AC21 |
| AC22 | AC23 |
| AC25 | AD25 |
| AC27 | AD27 |
| AC29 | AD29 |
| AC31 | AD31 |
| AC33 | AD33 |
| AC35 | AD35 |
| AC37 | AD37 |
| AC39 | AD39 |
| AC40 | AD40 |
| AD2  | AE2  |
| AD3  | AE3  |
| AD5  | AE5  |
| AD7  | AE7  |
| AD9  | AE9  |
| AD11 | AE11 |
| AD13 | AE13 |
| AD15 | AE15 |
| AD17 | AE17 |
| AD19 | AD20 |
| AD21 | AD22 |
| AD23 | AD24 |
| AD26 | AE26 |
| AD28 | AE28 |
| AD30 | AE30 |
| AD32 | AE32 |
| AD34 | AE34 |
| AD36 | AE36 |
| AD38 | AE38 |
| AD41 | AE41 |
| AE1  | AF1  |
| AE4  | AF4  |
| AE6  | AF6  |

|      |      |
|------|------|
| AE8  | AF8  |
| AE10 | AF10 |
| AE12 | AF12 |
| AE14 | AF14 |
| AE16 | AF16 |
| AE18 | AE19 |
| AE20 | AE21 |
| AE22 | AE23 |
| AE24 | AE25 |
| AE27 | AF27 |
| AE29 | AF29 |
| AE31 | AF31 |
| AE33 | AF33 |
| AE35 | AF35 |
| AE37 | AF37 |
| AE39 | AF39 |
| AE40 | AF40 |
| AF2  | AG2  |
| AF3  | AG3  |
| AF5  | AG5  |
| AF7  | AG7  |
| AF9  | AG9  |
| AF11 | AG11 |
| AF13 | AG13 |
| AF15 | AG15 |
| AF17 | AF18 |
| AF19 | AF20 |
| AF21 | AF22 |
| AF23 | AF24 |
| AF25 | AF26 |
| AF28 | AG28 |
| AF30 | AG30 |
| AF32 | AG32 |
| AF34 | AG34 |
| AF36 | AG36 |
| AF38 | AG38 |
| AF41 | AG41 |
| AG1  | AH1  |
| AG4  | AH4  |
| AG6  | AH6  |
| AG8  | AH8  |
| AG10 | AH10 |
| AG12 | AH12 |

|      |      |
|------|------|
| AG14 | AH14 |
| AG16 | AG17 |
| AG18 | AG19 |
| AG20 | AG21 |
| AG22 | AG23 |
| AG24 | AG25 |
| AG26 | AG27 |
| AG29 | AH29 |
| AG31 | AH31 |
| AG33 | AH33 |
| AG35 | AH35 |
| AG37 | AH37 |
| AG39 | AH39 |
| AG40 | AH40 |
| AH2  | AJ2  |
| AH3  | AJ3  |
| AH5  | AJ5  |
| AH7  | AJ7  |
| AH9  | AJ9  |
| AH11 | AJ11 |
| AH13 | AJ13 |
| AH15 | AH16 |
| AH17 | AH18 |
| AH19 | AH20 |
| AH21 | AH22 |
| AH23 | AH24 |
| AH25 | AH26 |
| AH27 | AH28 |
| AH30 | AJ30 |
| AH32 | AJ32 |
| AH34 | AJ34 |
| AH36 | AJ36 |
| AH38 | AJ38 |
| AH41 | AJ41 |
| AJ1  | AK1  |
| AJ4  | AK4  |
| AJ6  | AK6  |
| AJ8  | AK8  |
| AJ10 | AK10 |
| AJ12 | AK12 |
| AJ14 | AJ15 |
| AJ16 | AJ17 |
| AJ18 | AJ19 |

|      |      |
|------|------|
| AJ20 | AJ21 |
| AJ22 | AJ23 |
| AJ24 | AJ25 |
| AJ26 | AJ27 |
| AJ28 | AJ29 |
| AJ31 | AK31 |
| AJ33 | AK33 |
| AJ35 | AK35 |
| AJ37 | AK37 |
| AJ39 | AK39 |
| AJ40 | AK40 |
| AK2  | AL2  |
| AK3  | AL3  |
| AK5  | AL5  |
| AK7  | AL7  |
| AK9  | AL9  |
| AK11 | AL11 |
| AK13 | AK14 |
| AK15 | AK16 |
| AK17 | AK18 |
| AK19 | AK20 |
| AK21 | AK22 |
| AK23 | AK24 |
| AK25 | AK26 |
| AK27 | AK28 |
| AK29 | AK30 |
| AK32 | AL32 |
| AK34 | AL34 |
| AK36 | AL36 |
| AK38 | AL38 |
| AK41 | AL41 |
| AL1  | AM1  |
| AL4  | AM4  |
| AL6  | AM6  |
| AL8  | AM8  |
| AL10 | AM10 |
| AL12 | AL13 |
| AL14 | AL15 |
| AL16 | AL17 |
| AL18 | AL19 |
| AL20 | AL21 |
| AL22 | AL23 |
| AL24 | AL25 |

|      |      |
|------|------|
| AL26 | AL27 |
| AL28 | AL29 |
| AL30 | AL31 |
| AL33 | AM33 |
| AL35 | AM35 |
| AL37 | AM37 |
| AL39 | AM39 |
| AL40 | AM40 |
| AM2  | AN2  |
| AM3  | AN3  |
| AM5  | AN5  |
| AM7  | AN7  |
| AM9  | AN9  |
| AM11 | AM12 |
| AM13 | AM14 |
| AM15 | AM16 |
| AM17 | AM18 |
| AM19 | AM20 |
| AM21 | AM22 |
| AM23 | AM24 |
| AM25 | AM26 |
| AM27 | AM28 |
| AM29 | AM30 |
| AM31 | AM32 |
| AM34 | AN34 |
| AM36 | AN36 |
| AM38 | AN38 |
| AM41 | AN41 |
| AN1  | AP1  |
| AN4  | AP4  |
| AN6  | AP6  |
| AN8  | AP8  |
| AN10 | AN11 |
| AN12 | AN13 |
| AN14 | AN15 |
| AN16 | AN17 |
| AN18 | AN19 |
| AN20 | AN21 |
| AN22 | AN23 |
| AN24 | AN25 |
| AN26 | AN27 |
| AN28 | AN29 |
| AN30 | AN31 |

|      |      |
|------|------|
| AN32 | AN33 |
| AN35 | AP35 |
| AN37 | AP37 |
| AN39 | AP39 |
| AN40 | AP40 |
| AP2  | AR2  |
| AP3  | AR3  |
| AP5  | AR5  |
| AP7  | AR7  |
| AP9  | AP10 |
| AP11 | AP12 |
| AP13 | AP14 |
| AP15 | AP16 |
| AP17 | AP18 |
| AP19 | AP20 |
| AP21 | AP22 |
| AP23 | AP24 |
| AP25 | AP26 |
| AP27 | AP28 |
| AP29 | AP30 |
| AP31 | AP32 |
| AP33 | AP34 |
| AP36 | AR36 |
| AP38 | AR38 |
| AP41 | AR41 |
| AR1  | AT1  |
| AR4  | AT4  |
| AR6  | AT6  |
| AR8  | AR9  |
| AR10 | AR11 |
| AR12 | AR13 |
| AR14 | AR15 |
| AR16 | AR17 |
| AR18 | AR19 |
| AR20 | AR21 |
| AR22 | AR23 |
| AR24 | AR25 |
| AR26 | AR27 |
| AR28 | AR29 |
| AR30 | AR31 |
| AR32 | AR33 |
| AR34 | AR35 |
| AR37 | AT37 |

|      |      |
|------|------|
| AR39 | AT39 |
| AR40 | AT40 |
| AT2  | AU2  |
| AT3  | AU3  |
| AT5  | AU5  |
| AT7  | AT8  |
| AT9  | AT10 |
| AT11 | AT12 |
| AT13 | AT14 |
| AT15 | AT16 |
| AT17 | AT18 |
| AT19 | AT20 |
| AT21 | AT22 |
| AT23 | AT24 |
| AT25 | AT26 |
| AT27 | AT28 |
| AT29 | AT30 |
| AT31 | AT32 |
| AT33 | AT34 |
| AT35 | AT36 |
| AT38 | AU38 |
| AT41 | AU41 |
| AU1  | AV1  |
| AU4  | AV4  |
| AU6  | AU7  |
| AU8  | AU9  |
| AU10 | AU11 |
| AU12 | AU13 |
| AU14 | AU15 |
| 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 |
| AV25 | AV26 |
| AV27 | AV28 |
| AV29 | AV30 |
| AV31 | AV32 |
| AV33 | AV34 |
| AV35 | AV36 |
| AV37 | AV38 |
| AV41 | BA38 |
| AW4  | AW5  |
| AW6  | AW7  |
| AW8  | AW9  |
| AW10 | AW11 |
| AW12 | AW13 |
| AW14 | AW15 |
| AW16 | AW17 |
| AW18 | AW19 |
| AW20 | AW21 |
| AW22 | AW23 |
| AW24 | AW25 |
| AW26 | AW27 |
| AW28 | AW29 |
| AW30 | AW31 |
| AW32 | AW33 |
| AW34 | AW35 |
| AW36 | AW37 |
| AW38 | AW39 |
| AW40 | AY39 |
| AY3  | AY4  |
| AY5  | AY6  |
| AY7  | AY8  |
| AY9  | AY10 |
| AY11 | AY12 |

|      |      |
|------|------|
| AY13 | AY14 |
| AY15 | AY16 |
| AY17 | AY18 |
| AY19 | AY20 |
| AY21 | AY22 |
| AY23 | AY24 |
| AY25 | AY26 |
| AY27 | AY28 |
| AY29 | AY30 |
| AY31 | AY32 |
| AY33 | AY34 |
| AY35 | AY36 |
| AY37 | AY38 |
| BA4  | BA5  |
| BA6  | BA7  |
| BA8  | BA9  |
| BA10 | BA11 |
| BA12 | BA13 |
| BA14 | BA15 |
| BA16 | BA17 |
| BA18 | BA19 |
| BA20 | BA21 |
| BA22 | BA23 |
| BA24 | BA25 |
| BA26 | BA27 |
| BA28 | BA29 |
| BA30 | BA31 |
| BA32 | BA33 |
| BA34 | BA35 |
| BA36 | BA37 |

## List of Changes

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

| Date                          | Changes          | Page |
|-------------------------------|------------------|------|
| Revision 1<br>(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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