R4000 Pinouts

G

This Appendix shows the pinouts for the three microprocessor configurations: R4000PC, R4000SC, and R4000MC.

NOTE: This entire Appendix, Appendix G, is new for the second edition.

G.1 Pinout of R4000PC

Figure G-1 shows the physical pinout of the R4000PC. Table G-1 lists the signal-to-pin correspondence.

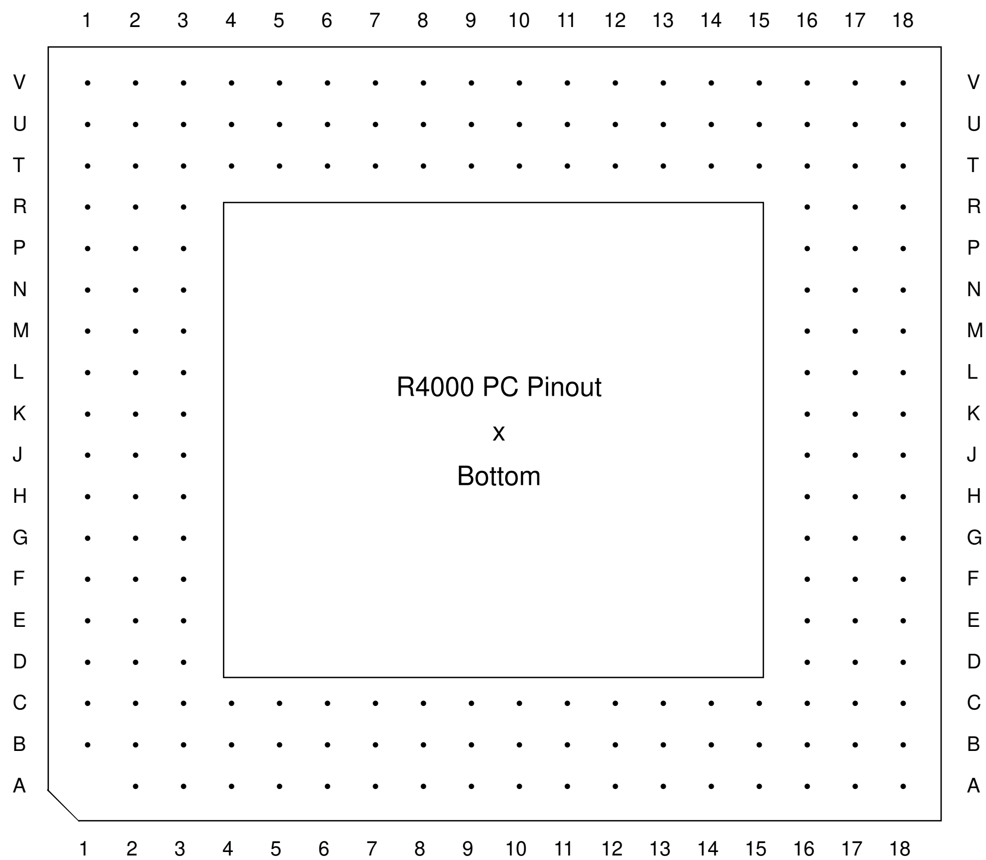

Figure G-1 R4000PC Physical Pinout

Table G-1 Signal-to-Pin Correspondences for the R4000PC

R4000 Function	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**
ColdReset*	T14	ExtRqst*	U2	Fault*	B16
NC	U10	Vcc	T9	IOIn	T13
IOOut	U12	Int*0	N2	Int*1	L3
Int*2	K3	Int*3	J3	Int*4	H3
Int*5	F2	JTCK	H17	JTDI	G16
JTDO	F16	JTMS	E16	MasterClock	J17
MasterOut	P17	ModeClock	B4	ModeIn	U4
NMI*	U7	PLLCap0	****†	PLLCap1	****†
RClock0	T17	RClock1	R16	RdRdy*	T5
Release*	V5	Reset*	U16	SyncIn	J16
SyncOut	P16	SysAD0	J2	SysAD1	G2
SysAD2	E1	SysAD3	E3	SysAD4	C2
SysAD5	C4	SysAD6	B5	SysAD7	B6
SysAD8	B9	SysAD9	B11	SysAD10	C12
SysAD11	B14	SysAD12	B15	SysAD13	C16
SysAD14	D17	SysAD15	E18	SysAD16	K2
SysAD17	M2	SysAD18	P1	SysAD19	P3
SysAD20	T2	SysAD21	T4	SysAD22	U5
SysAD23	U6	SysAD24	U9	SysAD25	U11
SysAD26	T12	SysAD27	U14	SysAD28	U15
SysAD29	T16	SysAD30	R17	SysAD31	M16
SysAD32	H2	SysAD33	G3	SysAD34	F3
SysAD35	D2	SysAD36	C3	SysAD37	B3
SysAD38	C6	SysAD39	C7	SysAD40	C10
SysAD41	C11	SysAD42	B13	SysAD43	A15
SysAD44	C15	SysAD45	B17	SysAD46	E17
SysAD47	F17	SysAD48	L2	SysAD49	M3
SysAD50	N3	SysAD51	R2	SysAD52	T3
SysAD53	U3	SysAD54	T6	SysAD55	T7
SysAD56	T10	SysAD57	T11	SysAD58	U13
SysAD59	V15	SysAD60	T15	SysAD61	U17
SysAD62	N16	SysAD63	N17	SysADC0	C8

†. This node has capacitors for the PLL premounted to the package.

Table G-1 (cont.) Signal-to-Pin Correspondences for the R4000PC

R4000 Function	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**
SysADC1	G17	SysADC2	T8	SysADC3	L16
SysADC4	B8	SysADC5	H16	SysADC6	U8
SysADC7	L17	SysCmd0	E2	SysCmd1	D3
SysCmd2	B2	SysCmd3	A5	SysCmd4	B7
SysCmd5	C9	SysCmd6	B10	SysCmd7	B12
SysCmd8	C13	SysCmdP	C14	TClock0	C17
TClock1	D16	VCCOk	M17	ValidIn*	P2
ValidOut*	R3	WrRdy*	C5	VccP	K17
VssP	K16	Vcc	A2	Vcc	A4
Vcc	A7	Vcc	A9	Vcc	A11
Vcc	A13	Vcc	A16	Vcc	B18
Vcc	C1	Vcc	D18	Vcc	F1
Vcc	G18	Vcc	H1	Vcc	J18
Vcc	K1	Vcc	L18	Vcc	M1
Vcc	N18	Vcc	R1	Vcc	T18
Vcc	U1	Vcc	V3	Vcc	V6
Vcc	V8	Vcc	V10	Vcc	V12
Vcc	V14	Vcc	V17	Vss	A3
Vss	A6	Vss	A8	Vss	A10
Vss	A12	Vss	A14	Vss	A17
Vss	A18	Vss	B1	Vss	C18
Vss	D1	Vss	F18	Vss	G1
Vss	H18	Vss	J1	Vss	K18
Vss	L1	Vss	M18	Vss	N1
Vss	P18	Vss	R18	Vss	T1
Vss	U18	Vss	V1	Vss	V2
Vss	V4	Vss	V7	Vss	V9
Vss	V11	Vss	V13	Vss	V16
Vss	V18				

G.2 Pinout of R4000MC/SC Package Pinout

Figure G-2 shows the physical pinout of the R4000MC and SC. Table G-2 lists the signal-to-pin correspondence.

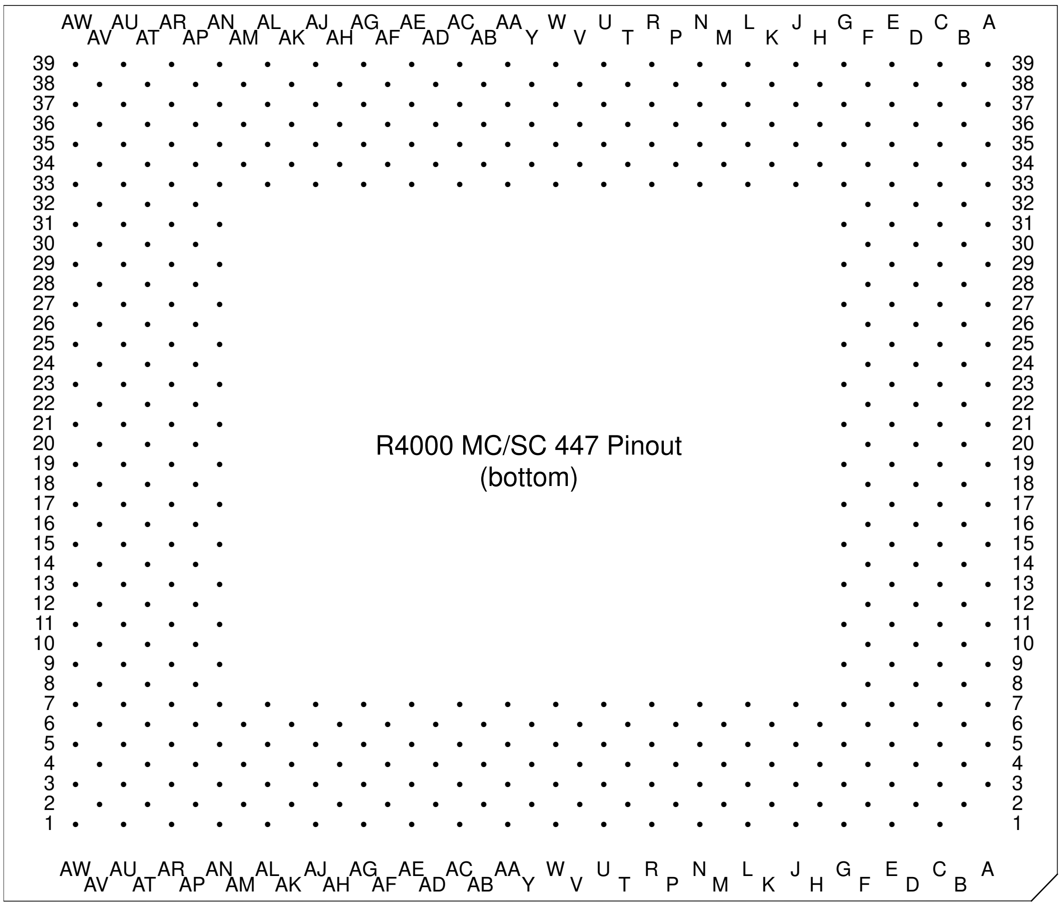

Figure G-2 R4000MC/SC Physical Pinout

Table G-2 Signal-to-Pin Correspondences for the R4000MC/SC

R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin
ColdReset*	AW37	ExtRqst*	AV2	Fault*	C39
NC	AV24	Vcc	AV20	IOIn	AV32
IOOut	AV28	Int*0	AL1	IvdAck*†	AA35
IvdErr*†	AA39	JTCK	U39	JTDI	N39
JTDO	J39	JTMS	G37	MasterClock	AA37
MasterOut	AJ39	ModeClock	B8	ModeIn	AV8
NMI*	AV16	PLLCap0	****‡	PLLCap1	****‡
RClock0	AM34	RClock1	AL33	RdRdy*	AW7
Release*	AV12	Reset*	AU39	SC64Addr	Y2
SCAPar0	U5	SCAPar1	U1	SCAPar2	P4
SCAdd1	AL5	SCAdd2	AG1	SCAdd3	AE7
SCAdd4	AC1	SCAdd5	AC5	SCAdd6	AC3
SCAdd7	AA1	SCAdd8	AB4	SCAdd9	AA5
SCAddr10	AA7	SCAddr11	AA3	SCAddr12	W3
SCAddr13	Y6	SCAddr14	W5	SCAddr15	W7
SCAddr16	W1	SCAddr17	U3	SCAddr0W	AN7
SCAddr0X	AN5	SCAddr0Y	AM6	SCAddr0Z	AL7
SCDCS*	M6	SCDChk0	G19	SCDChk1	T34
SCDChk2	AP20	SCDChk3	AD34	SCDChk4	C19
SCDChk5	R37	SCDChk6	AU19	SCDChk7	AE37
SCDChk8	C17	SCDChk9	N37	SCDChk10	AU17
SCDChk11	AG37	SCDChk12	E19	SCDChk13	R35
SCDChk14	AR19	SCDChk15	AE35	SCData0	R3
SCData1	R7	SCData2	L5	SCData3	F8
SCData4	C9	SCData5	F12	SCData6	G15
SCData7	E17	SCData8	G21	SCData9	C25
SCData10	G25	SCData11	E29	SCData12	G31
SCData13	C35	SCData14	K36	SCData15	N35
SCData16	AE3	SCData17	AG5	SCData18	AK4
SCData19	AN9	SCData20	AU9	SCData21	AN13
SCData22	AT14	SCData23	AR17	SCData24	AT22

†. Used only in the MC part. Must be tied to Vcc for the SC part.
‡. This node has capacitors for the PLL premounted to the package.

Table G-2 (cont.) Signal-to-Pin Correspondences for the R4000MC/SC

R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin
SCData25	AU25	SCData26	AN27	SCData27	AR29
SCData28	AN31	SCData29	AR35	SCData30	AK36
SCData31	AG35	SCData32	T6	SCData33	L3
SCData34	L7	SCData35	E7	SCData36	G11
SCData37	E13	SCData38	E15	SCData39	G17
SCData40	C23	SCData41	F24	SCData42	E27
SCData43	D30	SCData44	C33	SCData45	E35
SCData46	L35	SCData47	R33	SCData48	AF4
SCData49	AJ3	SCData50	AJ7	SCData51	AP8
SCData52	AT10	SCData53	AR13	SCData54	AR15
SCData55	AT18	SCData56	AU23	SCData57	AT26
SCData58	AR27	SCData59	AN29	SCData60	AP32
SCData61	AN35	SCData62	AJ35	SCData63	AE33
SCData64	V4	SCData65	R5	SCData66	N5
SCData67	E5	SCData68	G9	SCData69	E11
SCData70	G13	SCData71	D14	SCData72	C21
SCData73	D22	SCData74	E25	SCData75	G27
SCData76	C31	SCData77	F32	SCData78	J35
SCData79	M34	SCData80	AC7	SCData81	AE5
SCData82	AG7	SCData83	AR5	SCData84	AR9
SCData85	AR11	SCData86	AN15	SCData87	AP16
SCData88	AU21	SCData89	AN23	SCData90	AR25
SCData91	AP28	SCData92	AU31	SCData93	AR33
SCData94	AL35	SCData95	AH34	SCData96	U7
SCData97	N3	SCData98	N7	SCData99	C5
SCData100	E9	SCData101	C11	SCData102	C13
SCData103	F16	SCData104	E21	SCData105	G23
SCData106	C27	SCData107	F28	SCData108	E31
SCData109	G33	SCData110	J37	SCData111	N33
SCData112	AD6	SCData113	AG3	SCData114	AJ5
SCData115	AU5	SCData116	AN11	SCData117	AU11
SCData118	AU13	SCData119	AN17	SCData120	AR21

Table G-2 (cont.) Signal-to-Pin Correspondences for the R4000MC/SC

R4000 Function	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**
SCData121	AP24	SCData122	AU27	SCData123	AT30
SCData124	AU33	SCData125	AN33	SCData126	AL37
SCData127	AG33	SCOE*	N1	SCTCS*	J1
SCTChk0	AN21	SCTChk1	AN19	SCTChk2	AU15
SCTChk3	AP12	SCTChk4	AU7	SCTChk5	AR7
SCTChk6	AH6	SCTag0	K4	SCTag1	G7
SCTag2	C7	SCTag3	D10	SCTag4	C15
SCTag5	D18	SCTag6	F20	SCTag7	E23
SCTag8	D26	SCTag9	C29	SCTag10	G29
SCTag11	E33	SCTag12	G35	SCTag13	L33
SCTag14	L37	SCTag150	P36	SCTag16	AF36
SCTag17	AJ37	SCTag18	AJ33	SCTag19	AN37
SCTag20	AU35	SCTag21	AR31	SCTag22	AU29
SCTag23	AN25	SCTag24	AR23	SCWrW*	J5
SCWrX*	J7	SCWrY*	H6	SCWrZ*	G5
Status0	U33	Status1	U35	Status2	V36
Status3	W35	Status4	W37	Status5	AC37
Status6	AC35	Status7	AC33	SyncIn	W39
SyncOut	AN39	SysAD0	T2	SysAD1	M2
SysAD2	J3	SysAD3	G3	SysAD4	C1
SysAD5	A3	SysAD6	A9	SysAD7	A13
SysAD8	A21	SysAD9	A25	SysAD10	A29
SysAD11	A33	SysAD12	B38	SysAD13	E37
SysAD14	G39	SysAD15	L39	SysAD16	AD2
SysAD17	AH2	SysAD18	AL3	SysAD19	AN3
SysAD20	AU1	SysAD21	AW3	SysAD22	AW9
SysAD23	AW13	SysAD24	AW21	SysAD25	AW25
SysAD26	AW29	SysAD27	AW33	SysAD28	AV38
SysAD29	AR37	SysAD30	AM38	SysAD31	AH38
SysAD32	R1	SysAD33	L1	SysAD34	H2
SysAD35	E1	SysAD36	C3	SysAD37	A5
SysAD38	A11	SysAD39	A15	SysAD40	A23

Table G-2 (cont.) Signal-to-Pin Correspondences for the R4000MC/SC

R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin	R4000 Function	PC Pkg Pin
SysAD41	A27	SysAD42	A31	SysAD43	A35
SysAD44	C37	SysAD45	B39	SysAD46	H38
SysAD47	M38	SysAD48	AE1	SysAD49	AJ1
SysAD50	AM2	SysAD51	AR1	SysAD52	AU3
SysAD53	AW5	SysAD54	AW11	SysAD55	AW15
SysAD56	AW23	SysAD57	AW27	SysAD58	AW31
SysAD59	AW35	SysAD60	AU37	SysAD61	AR39
SysAD62	AL39	SysAD63	AG39	SysADC0	A17
SysADC1	R39	SysADC2	AW17	SysADC3	AD38
SysADC4	A19	SysADC5	T38	SysADC6	AW19
SysADC7	AC39	SysCmd0	G1	SysCmd1	E3
SysCmd2	B2	SysCmd3	B12	SysCmd4	B20
SysCmd5	B24	SysCmd6	B28	SysCmd7	B32
SysCmd8	A37	SysCmdP	H34	TClock0	H34
TClock1	J33	VCCOk	AE39	ValidIn*	AN1
ValidOut*	AR3	WrRdy*	A7	VccSense	W33
VssSense	U37	VccP	AA33	VssP	Y34
Vcc	A39	Vcc	B6	Vcc	B10
Vcc	B18	Vcc	B26	Vcc	B34
Vcc	D4	Vcc	D8	Vcc	D16
Vcc	D24	Vcc	D32	Vcc	D36
Vcc	F2	Vcc	F14	Vcc	F22
Vcc	F30	Vcc	F38	Vcc	H4
Vcc	H36	Vcc	K6	Vcc	K38
Vcc	Y38	Vcc	AB2	Vcc	AB34
Vcc	AD4	Vcc	AD36	Vcc	AF6
Vcc	AF38	Vcc	AK2	Vcc	AK34
Vcc	AM4	Vcc	AM36	Vcc	AP2
Vcc	AP10	Vcc	AP18	Vcc	AP26
Vcc	AP38	Vcc	AT4	Vcc	AT8
Vcc	AT16	Vcc	AT24	Vcc	AT32
Vcc	AT36	Vcc	AV6	Vcc	AV14

Table G-2 (cont.) Signal-to-Pin Correspondences for the R4000MC/SC

R4000 Function	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**	**R4000 Function**	**PC Pkg Pin**
Vcc	AV22	Vcc	AV30	Vcc	AV34
Vcc	AW1	Vcc	AW39	Vss	B4
Vss	B14	Vss	B22	Vss	B30
Vss	B36	Vss	D2	Vss	D6
Vss	D12	Vss	D20	Vss	D28
Vss	D34	Vss	D38	Vss	F4
Vss	F6	Vss	F10	Vss	F18
Vss	F26	Vss	F34	Vss	F36
Vss	K2	Vss	K34	Vss	M4
Vss	M36	Vss	P6	Vss	P38
Vss	V2	Vss	Y4	Vss	Y36
Vss	AB6	Vss	AB36	Vss	AB38
Vss	AF2	Vss	AF34	Vss	AH4
Vss	AH36	Vss	AK6	Vss	AK38
Vss	AP4	Vss	AP6	Vss	AP14
Vss	AP22	Vss	AP30	Vss	AP34
Vss	AP36	Vss	AT2	Vss	AT6
Vss	AT12	Vss	AT20	Vss	AT28
Vss	AT34	Vss	AT38	Vss	AV4
Vss	AV10	Vss	AV18	Vss	AV26
Vss	AV36				