

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
1	1	I/O	—	C6	C5
1	2	I/O	—	B5	D5
—	3	VCCINT	VCCINT	VCCINT	VCCINT
—	4	GNDINT	GND	GND	GND
1	5	I/O	—	A5	E4
1	6	I/O	—	B4	E5
1	7	I/O	—	A4	E6
—	8	VCCIO	VCCIO1	VCCIO1	VCCIO1
—	9	VCCIO	VCCIO8	VCCIO8	VCCIO8
8	10	I/O	—	—	F5
8	11	I/O	F6	E5	F6
8	12	I/O	—	—	G5
8	13	I/O	F5	E3	G6
—	14	VCCINT	VCCINT	VCCINT	VCCINT
—	15	GNDINT	GND	GND	GND
8	16	I/O	—	—	G7
8	17	I/O	—	—	H4
8	18	I/O	F4	F5	H5
8	19	I/O	—	—	H6
8	20	I/O	C1	F4	H7
—	21	GNDIO	GND	GND	GND
8	22	I/O	—	—	J4
8	23	I/O	—	—	J5
8	24	I/O	D1	E4	J6
8	25	I/O	—	—	J7
8	26	I/O	E2	F3	J8
—	27	VCCINT	VCCINT	VCCINT	VCCINT
—	28	GNDINT	GND	GND	GND
8	29	I/O	—	—	K4
8	30	I/O	—	—	K5
8	31	I/O	G6	D5	K6
8	32	I/O	—	—	K7
8	33	I/O	G5	G5	K8
—	34	VCCIO	VCCIO8	VCCIO8	VCCIO8
8	35	I/O	—	—	L5
8	36	I/O	—	—	L6
8	37	I/O	G4	G3	L7
8	38	I/O	—	—	L8
8	39	I/O	G3	G8	M5
—	40	VCCINT	VCCINT	VCCINT	VCCINT
—	41	GNDINT	GND	GND	GND
8	42	I/O	—	—	M6
8	43	I/O	—	—	M7
8	44	I/O	F2	G4	M8
8	45	I/O	—	—	M9
8	46	I/O	E1	C4	M10
—	47	GNDIO	GND	GND	GND

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
8	48	I/O	—	—	M11
8	49	I/O	—	—	N4
8	50	I/O	G2	G6	N5
8	51	I/O	—	—	N6
8	52	I/O	H6	H5	N7
—	53	VCCINT	VCCINT	VCCINT	VCCINT
—	54	GNDINT	GND	GND	GND
8	55	I/O	H4	G7	N8
8	56	I/O	H3	H7	N9
8	57	I/O	F1	H4	N10
8	58	I/O	H2	H6	N11
8	59	I/O	G1	K7	P4
—	60	VCCIO	VCCIO8	VCCIO8	VCCIO8
8	61	I/O	J6	J5	P5
8	62	I/O	J5	H9	P6
8	63	I/O	J4	J8	P7
8	64	I/O	J3	H3	P8
8	65	I/O	J2	K3	P10
—	66	VCCINT	VCCINT	VCCINT	VCCINT
—	67	GNDINT	GND	GND	GND
8	68	I/O	J1	J4	P11
8	69	I/O	K6	K5	R4
8	70	I/O	K5	J6	R5
8	71	I/O	K4	L6	R6
8	72	I/O	K3	J7	R7
—	73	GNDIO	GND	GND	GND
8	74	I/O	K2	J3	R8
8	75	I/O	K1	K8	R10
8	76	I/O, DATA6 (1)	L6	L8	A4
8	77	I/O	L5	K6	R9
8	78	I/O	L4	K4	R11
—	79	VCCINT	VCCINT	VCCINT	VCCINT
—	80	GNDINT	GND	GND	GND
8	81	I/O	L2	N5	T4
8	82	I/O	L1	M8	T5
8	83	I/O, DATA7 (1)	M6	M10	B4
8	84	I/O	M5	M6	T6
8	85	I/O	M4	L7	T7
—	86	VCCIO	VCCIO8	VCCIO8	VCCIO8
8	87	I/O	M3	L9	T8
8	88	I/O	M2	M7	T10
8	89	I/O, nWS (1)	M1	P9	C4
8	90	I/O	N6	L5	T11
8	91	I/O	N5	P8	U4
—	92	VCCINT	VCCINT	VCCINT	VCCINT
—	93	GNDINT	GND	GND	GND
8	94	I/O	N3	L4	U5

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
8	95	I/O	N2	L3	U6
8	96	I/O, nRS (1)	N1	N10	D4
8	97	I/O	P6	R4	U7
8	98	I/O	P5	M5	U8
–	99	GNDIO	GND	GND	GND
8	100	I/O	P4	M3	U9
8	101	I/O	P3	P4	U10
8	102	I/O, nCS (1)	P2	M9	D3
8	103	I/O	P1	R3	U11
8	104	I/O	R6	P5	V4
–	105	VCCINT	VCCINT	VCCINT	VCCINT
–	106	GNDINT	GND	GND	GND
–	107	VCC_CLKLK4 (2)	R4	P10	P9
–	108	GND_CLKLK4 (2)	R3	R10	T9
–	109	GND_CLKLK4 (2)	R3	R10	T9
8	110	I/O, CS (1)	R2	T6	E3
8	111	I/O	R1	M4	V5
8	112	I/O, DEV_CLRn (3)	T6	R9	H3
–	113	VCCIO	VCCIO8	VCCIO8	VCCIO8
8	114	I/O, CLKLK_FB2n (4)	T5	T8	J3
8	115	CLKLK_FB2p	T4	U8	K3
8	116	I/O, CLK4n (4)	T3	R7	N3
8	117	CLK4p	T2	R6	P3
8	118	I/O, CLK2n (4)	T1	N9	R3
–	119	VCCINT	VCCINT	VCCINT	VCCINT
–	120	GNDINT	GND	GND	GND
–	121	DATA0 (5), (6)	U4	N6	V3
–	122	DCLK (5)	U3	N7	W3
8	123	CLK2p	U2	N8	Y3
–	124	nCE (5)	U1	P6	AC3
–	125	TDI (5)	W1	P7	AD3
–	126	GND_CLKLK2 (2)	W2	P11	V9
–	127	GND_CLKLK2 (2)	W2	P11	V9
–	128	GNDINT	GND	GND	GND
–	129	VCCINT	VCCINT	VCCINT	VCCINT
–	130	VCC_CLKLK2 (2)	W4	N11	Y9
7	131	I/O, DEV_OE (3)	Y5	R8	AE3
–	132	VCC CKOUT2 (7)	Y1	V7	AA9
–	133	GND CKOUT2 (7)	Y2	V6	W9
–	134	CLKLK_OUT2p (8)	Y3	T7	AH3
7	135	I/O, CLKLK_OUT2n (4)	Y4	U7	AJ3
–	136	GNDIO	GND	GND	GND
7	137	I/O, LVDSTXINCLK1p	W5	D1	AM5
7	138	I/O, LVDSTXINCLK1n (4)	Y6	D2	AL5
7	139	I/O, LOCK2 (9)	AB6	U6	AK4

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
7	140	I/O, LVDSTXOUTCLK1n (4)	AA2	E1	AM4
7	141	I/O, LVDSTXOUTCLK1p	AA3	E2	AL4
–	142	GNDINT	GND	GND	GND
–	143	VCCINT	VCCINT	VCCINT	VCCINT
7	144	I/O, LVDSTX01p	AA5	F1	D1
7	145	I/O, LVDSTX01n (4)	AA6	F2	D2
7	146	I/O	AA1	R5	V6
7	147	I/O, LVDSTX02n (4)	AB2	G1	E1
7	148	I/O, LVDSTX02p	AB3	G2	E2
–	149	VCCIO	VCCIO7	VCCIO7	VCCIO7
7	150	I/O, LVDSTX03p	AB4	H1	H1
7	151	I/O, LVDSTX03n (4)	AB5	H2	H2
7	152	I/O	AB1	T5	V7
7	153	I/O, LVDSTX04n (4)	AC1	J1	J1
7	154	I/O, LVDSTX04p	AC2	J2	J2
–	155	GNDINT	GND	GND	GND
–	156	VCCINT	VCCINT	VCCINT	VCCINT
7	157	I/O, LVDSTX05p	AC4	K1	K1
7	158	I/O, LVDSTX05n (4)	AC5	K2	K2
7	159	I/O, LOCK4 (9)	AC6	W7	AK5
7	160	I/O, LVDSTX06n (4)	AD1	L1	N1
7	161	I/O, LVDSTX06p	AD2	L2	N2
–	162	GNDIO	GND	GND	GND
7	163	I/O, LVDSTX07p	AD3	M1	P1
7	164	I/O, LVDSTX07n (4)	AD4	M2	P2
7	165	I/O	AD5	T3	V8
7	166	I/O, LVDSTX08n (4)	AD6	R1	R1
7	167	I/O, LVDSTX08p	AE1	R2	R2
–	168	GNDINT	GND	GND	GND
–	169	VCCINT	VCCINT	VCCINT	VCCINT
7	170	I/O, LVDSTX09p	AE3	T1	V1
7	171	I/O, LVDSTX09n (4)	AE4	T2	V2
7	172	I/O	AE5	U5	V10
7	173	I/O, LVDSTX10n (4)	AE6	U1	W1
7	174	I/O, LVDSTX10p	AF1	U2	W2
–	175	VCCIO	VCCIO7	VCCIO7	VCCIO7
7	176	I/O, LVDSTX11p	AF2	V1	Y1
7	177	I/O, LVDSTX11n (4)	AF3	V2	Y2
7	178	I/O	AF4	T4	V11
7	179	I/O, LVDSTX12n (4)	AF5	W1	AC1
7	180	I/O, LVDSTX12p	AF6	W2	AC2
–	181	GNDINT	GND	GND	GND
–	182	VCCINT	VCCINT	VCCINT	VCCINT
7	183	I/O, LVDSTX13p	AH1	Y1	AD1
7	184	I/O, LVDSTX13n (4)	AG2	Y2	AD2

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
7	185	I/O	AG3	U4	W4
7	186	I/O, LVDSTX14n (4)	AG4	AA1	AE1
7	187	I/O, LVDSTX14p	AG5	AA2	AE2
–	188	GNDIO	GND	GND	GND
7	189	I/O, LVDSTX15p	AG6	AB1	AH1
7	190	I/O, LVDSTX15n (4)	AJ1	AB2	AH2
7	191	I/O	AH2	W4	W5
7	192	I/O, LVDSTX16n (4)	AK1	AC1	AJ1
7	193	I/O, LVDSTX16p	AH3	AC2	AJ2
–	194	GNDINT	GND	GND	GND
–	195	VCCINT	VCCINT	VCCINT	VCCINT
7	196	I/O	AH5	U3	W6
7	197	I/O	–	–	W7
7	198	I/O	AH6	V3	W8
7	199	I/O	–	–	W10
7	200	I/O	–	–	W11
–	201	VCCIO	VCCIO7	VCCIO7	VCCIO7
7	202	I/O	AJ2	W5	Y4
7	203	I/O	–	–	Y5
7	204	I/O	AL1	W6	Y6
7	205	I/O	–	–	Y7
7	206	I/O	–	–	Y8
–	207	GNDINT	GND	GND	GND
–	208	VCCINT	VCCINT	VCCINT	VCCINT
7	209	I/O	AK2	V5	Y10
7	210	I/O	–	–	Y11
7	211	I/O	AJ3	V4	AA5
7	212	I/O	–	–	AA6
7	213	I/O	–	–	AA7
–	214	GNDIO	GND	GND	GND
7	215	I/O	AJ4	W3	AA8
7	216	I/O	–	–	AA10
7	217	I/O	AJ5	Y5	AA11
7	218	I/O	–	–	AB5
7	219	I/O	–	–	AB6
–	220	GNDINT	GND	GND	GND
–	221	VCCINT	VCCINT	VCCINT	VCCINT
7	222	I/O	AJ6	AB5	AB7
7	223	I/O	–	–	AC4
7	224	I/O	AM1	AA5	AC5
7	225	I/O	–	–	AC6
7	226	I/O	–	–	AC7
–	227	VCCIO	VCCIO7	VCCIO7	VCCIO7
7	228	I/O	AK3	Y6	AD4
7	229	I/O	–	–	AD5
7	230	I/O	AK4	AA6	AD6
7	231	I/O	–	–	AD7

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
7	232	I/O	—	—	AE4
—	233	GNDINT	GND	GND	GND
—	234	VCCINT	VCCINT	VCCINT	VCCINT
7	235	I/O	AK5	AA7	AE5
7	236	I/O	—	—	AE6
7	237	I/O	AK6	AB6	AE7
7	238	I/O	—	—	AF5
—	239	GNDIO	GND	GND	GND
6	240	I/O	—	AB4	AF6
6	241	I/O	—	AA4	AG5
6	242	I/O	—	AC5	AG6
—	243	GNDINT	GND	GND	GND
—	244	VCCINT	VCCINT	VCCINT	VCCINT
6	245	I/O	—	Y4	AH4
6	246	I/O	—	AE4	AH5
—	247	VCCIO	VCCIO6	VCCIO6	VCCIO6
6	248	I/O	AL7	AB3	AJ4
6	249	I/O	AM6	AF4	AJ5
6	250	I/O	AP3	Y3	AH6
6	251	I/O	AN5	AD4	AF7
6	252	I/O	AR2	AA3	AG7
6	253	I/O	AP4	AE5	AH7
6	254	I/O	AL8	AD5	AE8
6	255	I/O	AM7	AD6	AF8
6	256	I/O	AN6	AB7	AG8
6	257	I/O	AR3	Y7	AH8
—	258	GNDIO	GND	GND	GND
6	259	I/O	AP5	AC6	AJ8
6	260	I/O	AL9	AB8	AK8
6	261	I/O	AR4	AF5	AL8
6	262	I/O	AM8	V8	AM8
6	263	I/O	AN7	AC7	AE9
6	264	I/O	AP6	AD7	AF9
6	265	I/O	AR5	T9	AG9
6	266	I/O	AM9	AE7	AH9
6	267	I/O	AL10	AA9	AJ9
6	268	I/O	AN8	AF7	AK9
—	269	VCCIO	VCCIO6	VCCIO6	VCCIO6
6	270	I/O	AP7	AA8	AL9
6	271	I/O	AR6	AC8	AM9
6	272	I/O	AM10	Y8	AE10
6	273	I/O	AN9	AD8	AF10
6	274	I/O	AL11	Y9	AG10
6	275	I/O	AP8	W9	AH10
6	276	I/O	AR7	AB9	AJ10
6	277	I/O	AM11	W10	AK10
6	278	I/O	AN10	AC9	AL10

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
6	279	I/O	AP9	Y10	AE11
—	280	GNDIO	GND	GND	GND
—	281	VCCINT	VCCINT	VCCINT	VCCINT
—	282	VCCINT	VCCINT	VCCINT	VCCINT
—	283	GNDINT	GND	GND	GND
—	284	GNDINT	GND	GND	GND
6	285	I/O	AR8	AD9	AF11
6	286	I/O	AN11	AA10	AG11
6	287	I/O	AP10	AB11	AH11
6	288	I/O	AR9	V11	AE12
6	289	I/O	AL13	AB10	AF12
6	290	I/O	AM13	AC10	AG12
6	291	I/O	AN12	AA11	AH12
6	292	I/O	AP11	AE9	AE13
6	293	I/O	AL14	Y11	AF13
6	294	I/O	AR10	AF9	AG13
—	295	VCCIO	VCCIO6	VCCIO6	VCCIO6
6	296	I/O	AN13	W11	AH13
6	297	I/O	AP12	AF11	AJ13
6	298	I/O	AM14	V12	AK13
6	299	I/O	AR11	AE10	AL13
6	300	I/O	AL15	W12	AF14
6	301	I/O	AN14	Y12	AG14
6	302	I/O	AP13	T13	AH14
6	303	I/O	AR12	W14	AJ14
6	304	I/O	AR13	AB12	AK14
6	305	I/O	AM15	AF10	AL14
—	306	GNDIO	GND	GND	GND
6	307	I/O	AN15	U13	AF15
6	308	I/O	AL16	W13	AG15
6	309	I/O	AP14	AE11	AH15
6	310	I/O	AR14	V13	AJ15
6	311	I/O	AP15	AD11	AK15
6	312	I/O	AR15	AD12	AL15
6	313	I/O, LVDSDESKEW	AM16	U12	AM10
6	314	I/O	AN16	AE12	AF16
6	315	I/O	AP16	AF12	AG16
6	316	I/O	AR16	AE13	AH16
—	317	VCCIO	VCCIO6	VCCIO6	VCCIO6
—	318	CONF_DONE (5)	AM17	AA12	AM13
—	319	nSTATUS (5)	AN17	AA13	AM14
5	320	FAST4	AP17	Y13	AM15
—	321	VCCIO	VCCIO5	VCCIO5	VCCIO5
—	322	VCCINT	VCCINT	VCCINT	VCCINT
—	323	VCCINT	VCCINT	VCCINT	VCCINT
—	324	GNDINT	GND	GND	GND
—	325	GNDINT	GND	GND	GND

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
5	326	FAST3	AP19	Y14	AM18
—	327	TCK (5)	AN19	AA14	AM19
—	328	TMS (5)	AM19	AA15	AM20
5	329	I/O	AR20	AE14	AJ16
5	330	I/O	AP20	AD14	AK16
5	331	I/O	AN20	AE15	AK17
5	332	I/O	AM20	AD15	AJ17
5	333	I/O	AR21	AD16	AH17
5	334	I/O	AP21	AC13	AG17
5	335	I/O	AR22	AD17	AF17
5	336	I/O	AP22	AC12	AL18
5	337	I/O	AL20	AC14	AK18
5	338	I/O	AN21	AD10	AJ18
—	339	GNDIO	GND	GND	GND
5	340	I/O	AM21	AB13	AH18
5	341	I/O	AR23	V14	AG18
5	342	I/O	AR24	AB14	AF18
5	343	I/O	AP23	Y15	AL19
5	344	I/O	AN22	AC11	AK19
5	345	I/O	AL21	AD18	AJ19
5	346	I/O	AR25	U14	AH19
5	347	I/O	AM22	AC15	AG19
5	348	I/O	AP24	V15	AF19
5	349	I/O	AN23	AB15	AL20
—	350	VCCIO	VCCIO5	VCCIO5	VCCIO5
5	351	I/O	AR26	W15	AK20
5	352	I/O	AL22	AB16	AJ20
5	353	I/O	AP25	T14	AH20
5	354	I/O	AN24	AD19	AG20
5	355	I/O	AM23	AA16	AF20
5	356	I/O	AL23	Y16	AE20
5	357	I/O	AR27	AC16	AH21
5	358	I/O	AP26	W16	AG21
5	359	I/O	AN25	AC17	AF21
5	360	I/O	AR28	U15	AE21
—	361	VCCINT	VCCINT	VCCINT	VCCINT
—	362	VCCINT	VCCINT	VCCINT	VCCINT
—	363	GNDINT	GND	GND	GND
—	364	GNDINT	GND	GND	GND
—	365	GNDIO	GND	GND	GND
5	366	I/O	AP27	AB17	AH22
5	367	I/O	AN26	V16	AG22
5	368	I/O	AM25	AE16	AF22
5	369	I/O	AR29	AA17	AE22
5	370	I/O	AP28	AD20	AM23
5	371	I/O	AL25	AB18	AL23
5	372	I/O	AN27	Y17	AK23

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
5	373	I/O	AM26	AF16	AJ23
5	374	I/O	AR30	AA18	AH23
5	375	I/O	AP29	AC18	AG23
—	376	VCCIO	VCCIO5	VCCIO5	VCCIO5
5	377	I/O	AN28	W17	AF23
5	378	I/O	AL26	AE17	AE23
5	379	I/O	AM27	Y18	AM24
5	380	I/O	AR31	AF17	AL24
5	381	I/O	AP30	W18	AK24
5	382	I/O	AN29	AA19	AJ24
5	383	I/O	AM28	AD21	AH24
5	384	I/O	AR32	Y19	AG24
5	385	I/O	AL27	AD22	AF24
5	386	I/O	AP31	W20	AE24
—	387	GNDIO	GND	GND	GND
5	388	I/O	AR33	AC19	AM25
5	389	I/O	AN30	Y20	AL25
5	390	I/O	AM29	AB20	AK25
5	391	I/O	AL28	AB19	AJ25
5	392	I/O	AP32	AC20	AH25
5	393	I/O	AR34	AD23	AG25
5	394	I/O	AN31	AA20	AF25
5	395	I/O	AP33	AB24	AE25
5	396	I/O	AM30	AC22	AH26
5	397	I/O	AL29	AC21	AG26
—	398	VCCIO	VCCIO5	VCCIO5	VCCIO5
5	399	I/O	—	Y23	AF26
5	400	I/O	—	Y24	AH27
—	401	VCCINT	VCCINT	VCCINT	VCCINT
—	402	GNDINT	GND	GND	GND
5	403	I/O	—	AA23	AK28
5	404	I/O	—	AA24	AK29
5	405	I/O	—	AB23	AJ28
—	406	GNDIO	GND	GND	GND
4	407	I/O	—	—	AJ29
4	408	I/O	AL33	AA21	AJ30
4	409	I/O	—	—	AH28
4	410	I/O	AK30	Y22	AH29
—	411	VCCINT	VCCINT	VCCINT	VCCINT
—	412	GNDINT	GND	GND	GND
4	413	I/O	—	—	AH30
4	414	I/O	—	—	AG27
4	415	I/O	AK31	AB21	AG28
4	416	I/O	—	—	AF27
4	417	I/O	AK32	U19	AF28
—	418	VCCIO	VCCIO4	VCCIO4	VCCIO4
4	419	I/O	—	—	AE26

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
4	420	I/O	—	—	AE27
4	421	I/O	AL34	AB22	AE28
4	422	I/O	—	—	AE29
4	423	I/O	AM35	V19	AE30
—	424	VCCINT	VCCINT	VCCINT	VCCINT
—	425	GNDINT	GND	GND	GND
4	426	I/O	—	—	AD26
4	427	I/O	—	—	AD27
4	428	I/O	AJ30	T18	AD28
4	429	I/O	—	—	AD29
4	430	I/O	AJ31	W21	AD30
—	431	GNDIO	GND	GND	GND
4	432	I/O	—	—	AC26
4	433	I/O	—	—	AC27
4	434	I/O	AJ32	V20	AC28
4	435	I/O	—	—	AC29
4	436	I/O	AJ33	V21	AB26
—	437	VCCINT	VCCINT	VCCINT	VCCINT
—	438	GNDINT	GND	GND	GND
4	439	I/O	—	—	AB27
4	440	I/O	—	—	AB28
4	441	I/O	AK34	Y21	AA22
4	442	I/O	—	—	AA23
4	443	I/O	AL35	W22	AA24
—	444	VCCIO	VCCIO4	VCCIO4	VCCIO4
4	445	I/O	—	—	AA25
4	446	I/O	—	—	AA26
4	447	I/O	AJ34	AA22	AA27
4	448	I/O	—	—	AA28
4	449	I/O	AH30	U20	Y22
—	450	VCCINT	VCCINT	VCCINT	VCCINT
—	451	GNDINT	GND	GND	GND
4	452	I/O	AH32	R17	Y23
4	453	I/O	AH33	W23	Y24
4	454	I/O	AK35	T19	Y25
4	455	I/O	AH34	U21	Y26
4	456	I/O	AJ35	P17	Y27
—	457	GNDIO	GND	GND	GND
4	458	I/O	AG30	R18	Y28
4	459	I/O	AG31	W24	Y29
4	460	I/O	AG32	T20	W22
4	461	I/O	AG33	V24	W23
4	462	I/O	AG34	N16	W25
—	463	VCCINT	VCCINT	VCCINT	VCCINT
—	464	GNDINT	GND	GND	GND
4	465	I/O	AG35	V22	W26
4	466	I/O	AF30	R19	W27

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
4	467	I/O	AF31	V23	W28
4	468	I/O	AF32	P18	W29
4	469	I/O	AF33	N17	V22
—	470	VCCIO	VCCIO4	VCCIO4	VCCIO4
4	471	I/O	AF34	T21	V23
4	472	I/O	AF35	R21	V25
4	473	I/O	AE30	U22	V26
4	474	I/O	AE31	R20	V27
4	475	I/O	AE32	P22	V28
—	476	VCCINT	VCCINT	VCCINT	VCCINT
—	477	GNDINT	GND	GND	GND
4	478	I/O	AE34	N18	V29
4	479	I/O	AE35	U23	U22
4	480	I/O	AD30	N19	U23
4	481	I/O	AD31	N22	U24
4	482	I/O	AD32	L20	U25
—	483	GNDIO	GND	GND	GND
4	484	I/O	AD33	M17	U26
4	485	I/O	AD34	T22	U27
4	486	I/O	AD35	M18	U28
4	487	I/O	AC30	T23	U29
4	488	I/O	AC31	R23	T22
—	489	VCCINT	VCCINT	VCCINT	VCCINT
—	490	GNDINT	GND	GND	GND
4	491	I/O	AC33	U24	T23
4	492	I/O	AC34	R24	T25
4	493	I/O	AC35	T24	T26
4	494	I/O	AB30	M21	T27
4	495	I/O	AB31	M24	T28
—	496	VCCIO	VCCIO4	VCCIO4	VCCIO4
4	497	I/O	AB32	M22	T29
4	498	I/O	AB33	R22	R22
4	499	I/O	AB34	M23	R23
4	500	I/O	AB35	L22	R24
4	501	I/O, LOCK1 (9)	AA30	L21	AC30
—	502	VCCINT	VCCINT	VCCINT	VCCINT
—	503	GNDINT	GND	GND	GND
4	504	I/O	AA32	L23	R25
4	505	I/O	AA33	L24	R26
4	506	I/O	AA34	N23	R27
—	507	VCC_CLKL1 (2)	AA35	AF18	W24
—	508	GND_CLKL1 (2)	Y30	AE18	V24
—	509	GND_CLKL1 (2)	Y30	AE18	V24
—	510	GNDIO	GND	GND	GND
4	511	I/O, CLKLK_FB1n (4)	Y31	AF20	AM28
4	512	CLKLK_FB1p	Y32	AE20	AL28
4	513	I/O, CLK3n (4)	Y33	M20	Y30

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
4	514	CLK3p	Y34	M19	W30
4	515	I/O, CLK1n (4)	Y35	P19	V30
–	516	VCCINT	VCCINT	VCCINT	VCCINT
–	517	GNDINT	GND	GND	GND
–	518	nCONFIG (5)	W32	P21	R30
–	519	CLKLK_ENA (5), (10)	W33	P16	P30
4	520	CLK1p	W34	P20	N30
–	521	MSEL1 (5)	W35	N20	K30
–	522	MSEL0 (5)	U35	N21	J30
–	523	GNDINT	GND	GND	GND
–	524	VCCINT	VCCINT	VCCINT	VCCINT
–	525	VCC_CKOUT1 (7)	U33	AF22	N24
–	526	GND_CKOUT1 (7)	U32	AE22	T24
–	527	CLKLK_OUT1p (8)	U31	AE23	AM29
3	528	I/O, CLKLK_OUT1n (4)	T35	AF23	AL29
–	529	VCC_CLKL3 (2)	T34	AC26	M24
–	530	VCCIO	VCCIO3	VCCIO3	VCCIO3
–	531	GND_CLKL3 (2)	V35	N25	P23
–	532	GND_CLKL3 (2)	T33	AC25	P24
3	533	I/O, LVDSRXINCLK1p	T32	AB25	B29
3	534	I/O, LVDSRXINCLK1n	T31	AB26	A29
3	535	I/O	T30	J23	R28
3	536	I/O	R35	L19	R29
–	537	GNDINT	GND	GND	GND
–	538	VCCINT	VCCINT	VCCINT	VCCINT
3	539	I/O, LVDSRX01p	R33	AA25	AJ32
3	540	I/O, LVDSRX01n (4)	R32	AA26	AJ31
3	541	I/O, LOCK3 (9)	R31	L18	H30
3	542	I/O, LVDSRX02n (4)	R30	Y25	AH32
3	543	I/O, LVDSRX02p	P35	Y26	AH31
–	544	GNDIO	GND	GND	GND
3	545	I/O, LVDSRX03p	P34	W25	AE32
3	546	I/O, LVDSRX03n (4)	P33	W26	AE31
3	547	I/O	P32	J24	P22
3	548	I/O, LVDSRX04n (4)	P31	V25	AD32
3	549	I/O, LVDSRX04p	P30	V26	AD31
–	550	GNDINT	GND	GND	GND
–	551	VCCINT	VCCINT	VCCINT	VCCINT
3	552	I/O, LVDSRX05p	N34	U25	AC32
3	553	I/O, LVDSRX05n (4)	N33	U26	AC31
3	554	I/O	N32	K21	P25
3	555	I/O, LVDSRX06n (4)	N31	T25	Y32
3	556	I/O, LVDSRX06p	N30	T26	Y31
–	557	VCCIO	VCCIO3	VCCIO3	VCCIO3
3	558	I/O, LVDSRX07p	M35	R25	W32
3	559	I/O, LVDSRX07n (4)	M34	R26	W31
3	560	I/O	M33	K23	P26

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
3	561	I/O, LVDSRX08n (4)	M32	M25	V32
3	562	I/O, LVDSRX08p	M31	M26	V31
–	563	GNDINT	GND	GND	GND
–	564	VCCINT	VCCINT	VCCINT	VCCINT
3	565	I/O, LVDSRX09p	L35	L25	R32
3	566	I/O, LVDSRX09n (4)	L34	L26	R31
3	567	I/O	L33	K20	P27
3	568	I/O, LVDSRX10n (4)	L32	K25	P32
3	569	I/O, LVDSRX10p	L31	K26	P31
–	570	GNDIO	GND	GND	GND
3	571	I/O, LVDSRX11p	L30	J25	N32
3	572	I/O, LVDSRX11n (4)	K35	J26	N31
3	573	I/O	K34	K22	P28
3	574	I/O, LVDSRX12n (4)	K33	H25	K32
3	575	I/O, LVDSRX12p	K32	H26	K31
–	576	GNDINT	GND	GND	GND
–	577	VCCINT	VCCINT	VCCINT	VCCINT
3	578	I/O, LVDSRX13p	K30	G25	J32
3	579	I/O, LVDSRX13n (4)	J35	G26	J31
3	580	I/O	H35	K24	P29
3	581	I/O, LVDSRX14n (4)	J34	F25	H32
3	582	I/O, LVDSRX14p	J33	F26	H31
–	583	VCCIO	VCCIO3	VCCIO3	VCCIO3
3	584	I/O, LVDSRX15p	J32	E25	E32
3	585	I/O, LVDSRX15n (4)	J31	E26	E31
3	586	I/O	J30	H24	N22
3	587	I/O, LVDSRX16n (4)	G35	D25	D32
3	588	I/O, LVDSRX16p	H34	D26	D31
–	589	GNDINT	GND	GND	GND
–	590	VCCINT	VCCINT	VCCINT	VCCINT
3	591	I/O	H33	K19	N23
3	592	I/O	–	–	N25
3	593	I/O	H32	J20	N26
3	594	I/O	–	–	N27
3	595	I/O	–	–	N28
–	596	GNDIO	GND	GND	GND
3	597	I/O	H31	G22	N29
3	598	I/O	–	–	M22
3	599	I/O	H30	H20	M23
3	600	I/O	–	–	M25
3	601	I/O	–	–	M26
–	602	GNDINT	GND	GND	GND
–	603	VCCINT	VCCINT	VCCINT	VCCINT
3	604	I/O	G34	H22	M27
3	605	I/O	–	–	M28
3	606	I/O	E35	J22	L26
3	607	I/O	–	–	L27

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
3	608	I/O	—	—	L28
—	609	VCCIO	VCCIO3	VCCIO3	VCCIO3
3	610	I/O	F34	G24	K26
3	611	I/O	—	—	K27
3	612	I/O	G33	H21	K28
3	613	I/O	—	—	K29
3	614	I/O	—	—	J26
—	615	GNDINT	GND	GND	GND
—	616	VCCINT	VCCINT	VCCINT	VCCINT
3	617	I/O	G32	G21	J27
3	618	I/O	—	—	J28
3	619	I/O	G31	J21	J29
3	620	I/O	—	—	H26
3	621	I/O	—	—	H27
—	622	GNDIO	GND	GND	GND
3	623	I/O	D35	F22	H28
3	624	I/O	—	—	H29
3	625	I/O	E34	G20	G27
3	626	I/O	—	—	G28
3	627	I/O	—	—	F28
—	628	GNDINT	GND	GND	GND
—	629	VCCINT	VCCINT	VCCINT	VCCINT
3	630	I/O	F33	F21	E28
3	631	I/O	—	—	E29
3	632	I/O	F32	E22	E30
3	633	I/O	—	—	D28
—	634	VCCIO	VCCIO3	VCCIO3	VCCIO3
—	635	VCCIO	VCCIO2	VCCIO2	VCCIO2
2	636	I/O	—	E23	D29
2	637	I/O	—	D22	D30
2	638	I/O	—	F24	C28
—	639	GNDINT	GND	GND	GND
—	640	VCCINT	VCCINT	VCCINT	VCCINT
2	641	I/O	—	E24	C29
2	642	I/O	—	H23	B28
—	643	GNDIO	GND	GND	GND
2	644	I/O	E29	C23	A28
2	645	I/O	D30	G23	F27
2	646	I/O	B33	C22	E27
2	647	I/O	C31	F23	G26
2	648	I/O	A34	B23	F26
2	649	I/O	B32	A23	E26
2	650	I/O	E28	E21	H25
2	651	I/O	D29	B22	G25
2	652	I/O	C30	F20	F25
2	653	I/O	A33	D21	E25
—	654	VCCIO	VCCIO2	VCCIO2	VCCIO2

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
2	655	I/O	B31	C21	D25
2	656	I/O	E27	E20	C25
2	657	I/O	A32	J19	B25
2	658	I/O	D28	A22	A25
2	659	I/O	C29	G19	H24
2	660	I/O	B30	F19	G24
2	661	I/O	A31	E19	F24
2	662	I/O	D27	K18	E24
2	663	I/O	E26	D20	D24
2	664	I/O	C28	H18	C24
–	665	GNDIO	GND	GND	GND
2	666	I/O	B29	C20	B24
2	667	I/O	A30	G18	H23
2	668	I/O	D26	D19	G23
2	669	I/O	C27	E18	F23
2	670	I/O	E25	B20	E23
2	671	I/O	B28	A20	D23
2	672	I/O	A29	F18	C23
2	673	I/O	D25	C19	B23
2	674	I/O	C26	E17	H22
2	675	I/O	B27	D18	G22
–	676	VCCIO	VCCIO2	VCCIO2	VCCIO2
–	677	GNDINT	GND	GND	GND
–	678	GNDINT	GND	GND	GND
–	679	VCCINT	VCCINT	VCCINT	VCCINT
–	680	VCCINT	VCCINT	VCCINT	VCCINT
–	681	GNDINT	–	–	–
2	682	I/O	A28	F17	F22
2	683	I/O	C25	C18	E22
2	684	I/O	B26	G17	H21
2	685	I/O	A27	B18	G21
2	686	I/O	E23	H17	F21
2	687	I/O	D23	F16	E21
2	688	I/O	C24	D17	H20
2	689	I/O	B25	J17	G20
2	690	I/O	E22	E16	F20
2	691	I/O	A26	G16	E20
–	692	GNDIO	GND	GND	GND
2	693	I/O	C23	A18	D20
2	694	I/O	B24	H16	C20
2	695	I/O	D22	C17	B20
2	696	I/O	A25	E15	G19
2	697	I/O	E21	D16	F19
2	698	I/O	C22	B17	E19
2	699	I/O	B23	F15	D19
2	700	I/O	A24	A17	C19
2	701	I/O	A23	E14	B19

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
2	702	I/O	D21	H15	G18
–	703	VCCIO	VCCIO2	VCCIO2	VCCIO2
2	704	I/O	C21	E13	F18
2	705	I/O	E20	L14	E18
2	706	I/O	B22	G15	D18
2	707	I/O	A22	K15	C18
2	708	I/O	B21	J16	B18
2	709	I/O	A21	C16	G17
2	710	I/O	D20	B16	F17
2	711	I/O	C20	C15	E17
2	712	I/O	B20	B15	D17
2	713	I/O	A20	A15	C17
–	714	TRST (5)	D19	F14	A24
–	715	NCEO (5)	C19	G14	A23
1	716	FAST1	B19	H14	A20
–	717	GNDINT	GND	GND	GND
–	718	GNDINT	GND	GND	GND
–	719	VCCINT	VCCINT	VCCINT	VCCINT
–	720	VCCINT	VCCINT	VCCINT	VCCINT
–	721	GNDIO	GND	GND	GND
1	722	FAST2	B17	F13	A19
–	723	TDO (5)	C17	G13	A18
–	724	GNDINT	GND	GND	–
1	725	I/O	A16	C14	C16
1	726	I/O	B16	B14	D16
1	727	I/O, INITDONE (3)	C16	J15	A15
1	728	I/O	D16	C12	E16
1	729	I/O	A15	B13	F16
1	730	I/O	B15	C11	G16
1	731	I/O, RDYnBSY (1)	A14	J14	A14
1	732	I/O	B14	D15	B15
1	733	I/O	E16	D14	C15
1	734	I/O, CLKUSR (1)	C15	K14	A13
–	735	VCCIO	VCCIO1	VCCIO1	VCCIO1
1	736	I/O	D15	A12	D15
1	737	I/O	A13	D13	E15
1	738	I/O	A12	B11	F15
1	739	I/O	B13	B12	G15
1	740	I/O	C14	H13	B14
1	741	I/O	E15	F12	C14
1	742	I/O	A11	A11	D14
1	743	I/O	D14	E12	E14
1	744	I/O	B12	A10	F14
1	745	I/O, DATA1 (1)	C13	K13	A10
–	746	GNDIO	GND	GND	GND
1	747	I/O	A10	D12	G14
1	748	I/O	E14	D11	B13

I/O & VREF Bank	Pad Number Orientation	Pin/Pad Function	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
1	749	I/O	B11	E11	C13
1	750	I/O	C12	B10	D13
1	751	I/O	D13	C10	E13
1	752	I/O	E13	J13	F13
1	753	I/O	A9	D10	G13
1	754	I/O	B10	H12	E12
1	755	I/O	C11	E10	F12
1	756	I/O, DATA2 (1)	A8	J12	A9
–	757	GNDINT	GND	GND	GND
–	758	GNDINT	GND	GND	GND
–	759	VCCINT	VCCINT	VCCINT	VCCINT
–	760	VCCINT	VCCINT	VCCINT	VCCINT
–	761	VCCIO	VCCIO1	VCCIO1	VCCIO1
1	762	I/O	B9	F11	G12
1	763	I/O	C10	B9	E11
1	764	I/O	D11	G12	F11
1	765	I/O	A7	C9	G11
1	766	I/O	B8	G11	B10
1	767	I/O	E11	E9	C10
1	768	I/O	C9	F9	D10
1	769	I/O	D10	D9	E10
1	770	I/O	A6	K12	F10
1	771	I/O, DATA3 (1)	B7	F10	A8
–	772	GNDIO	GND	GND	GND
1	773	I/O	C8	A9	G10
1	774	I/O	E10	H11	H10
1	775	I/O	D9	D8	B9
1	776	I/O	A5	E8	C9
1	777	I/O	B6	C8	D9
1	778	I/O	C7	F8	E9
1	779	I/O	D8	E7	F9
1	780	I/O	A4	G10	G9
1	781	I/O	E9	C7	H9
1	782	I/O, DATA4 (1)	B5	G9	B5
–	783	VCCIO	VCCIO1	VCCIO1	VCCIO1
1	784	I/O	A3	H10	B8
1	785	I/O	C6	B7	C8
1	786	I/O	D7	J11	D8
1	787	I/O	E8	D7	E8
1	788	I/O	B4	D6	F8
1	789	I/O	A2	A7	G8
1	790	I/O	C5	F7	H8
1	791	I/O	B3	E6	E7
1	792	I/O	D6	C5	F7
1	793	I/O, DATA5 (1)	E7	F6	A5
–	794	GNDIO	GND	GND	GND
–	795	–	–	–	–

Pin Name	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
MSEL0 (5)	U35	N21	J30
MSEL1 (5)	W35	N20	K30
nSTATUS (5)	AN17	AA13	AM14
nCONFIG (5)	W32	P21	R30
DCLK (5)	U3	N7	W3
CONF_DONE (5)	AM17	AA12	AM13
INIT_DONE (3)	C16	J15	A15
nCE (5)	U1	P6	AC3
nCEO (5)	C19	G14	A23
nWS (1)	M1	P9	C4
nRS (1)	N1	N10	D4
nCS (1)	P2	M9	D3
CS (1)	R2	T6	E3
RDYnBSY (1)	A14	J14	A14
CLKUSR (1)	C15	K14	A13
DATA7 (1)	M6	M10	B4
DATA6 (1)	L6	L8	A4
DATA5 (1)	E7	F6	A5
DATA4 (1)	B5	G9	B5
DATA3 (1)	B7	F10	A8
DATA2 (1)	A8	J12	A9
DATA1 (1)	C13	K13	A10
DATA0 (5), (6)	U4	N6	V3
TDI (5)	W1	P7	AD3
TDO (5)	C17	G13	A18
TCK (5)	AN19	AA14	AM19
TMS (5)	AM19	AA15	AM20
TRST (5)	D19	F14	A24
Dedicated Fast I/Os	AP19, AP17, B17, B19	Y14, Y13, F13, H14	AM18, AM15, A19, A20
CLK1p	W34	P20	N30
CLK2p	U2	N8	Y3
CLK3p	Y34	M19	W30
CLK4p	T2	R6	P3
LOCK1 (9)	AA30	L21	AC30
LOCK2 (9)	AB6	U6	AK4
LOCK3 (9)	R31	L18	H30
LOCK4 (9)	AC6	W7	AK5
CLKLK_ENA (5), (10)	W33	P16	P30
CLKLK_OUT1p (8)	U31	AE23	AM29
CLKLK_OUT2p (8)	Y3	T7	AH3
CLKLK_FB1p	Y32	AE20	AL28
CLKLK_FB2p	T4	U8	K3
DEV_CLRn (3)	T6	R9	H3
DEV_OE (3)	Y5	R8	AE3

Pin Name	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
VCCINT	A17, A19, AA31, AA4, AC3, AC32, AE2, AE33, AG1, AH31, AH35, AH4, AK33, AL12, AL2, AL24, AM12, AM24, AR17, AR19, D12, D24, E12, E24, F3, F35, G30, H1, H5, K31, L3, M30, N35, N4, R34, R5, U34, U5, W3, W31	A3, A24, B3, B8, B19, B24, C1, C2, C25, C26, D3, D24, K11, L10, L15, M13, M16, N2, N12, P15, P24, P25, R11, R14, T12, T17, U9, U16, AC3, AC24, AD1, AD2, AD25, AD26, AE3, AE8, AE19, AE24, AF3, AF24	A2, B1, F1, F2, L1, L2, U1, U2, U3, AB1, AB2, AG1, AG2, AL1, AM2, AL6, AM6, AL11, AM11, AL17, AM17, AL22, AM22, AL27, AM27, AM31, AL32, AG31, AG32, AB31, AB32, T30, T31, T32, L31, L32, F31, F32, B32, A31, A27, B27, A22, B22, A16, B16, A11, B11, A6, B6
VCCIO1	C4, D5, E17	A6, J10, L12	A12, B12, A7, B7, A3
VCCIO2	E19, D31, C32	A13, K16, M14, A16	A30, A26, B26, A21, B21
VCCIO3	F30, F31, U30	A21, L17, N15	M31, M32, G31, G32, C32
VCCIO4	W30, AL31, AL32	N24, R16, U18	AK32, AF31, AF32, AA31, AA32
VCCIO5	AN32, AN33, AL19	T15, V17, AF21	AL21, AM21, AL26, AM26, AM30
VCCIO6	AL17, AM5, AN4	R13, U11, V10, AF13	AM3, AL7, AM7, AL12, AM12
VCCIO7	AL3, AL4, W6	P12, T10, AF6	AA1, AA2, AF1, AF2, AK1
VCCIO8	U6, E3, E4	K9, M11, N3	C1, G1, G2, M1, M2
VCC_CK1K1 (2)	AA35	AF18	W24
VCC_CK1K2 (2)	W4	N11	Y9
VCC_CK1K3 (2)	T34	AC26	M24
VCC_CK1K4 (2)	R4	P10	P9
VCC_CKOUT1 (7)	U33	AF22	N24
VCC_CKOUT2 (7)	Y1	V7	AA9
GND	A1, A18, A35, AK18, AL18, AL30, AL5, AL6, AM18, AM2, AM3, AM31, AM32, AM33, AM34, AM4, AN1, AN18, AN2, AN3, AN34, AN35, AP1, AP18, AP2, AP34, AP35, AR1, AR18, AR35, B1, B18, B2, B34, B35, C18, C2, C3, C33, C34, C35, D18, D2, D3, D17, D32, D33, D34, D4, E18, E30, E31, E32, E33, E5, E6, F18, V1, V2, V3, V30, V31, V32, V33, V34, V4, V5, V6	A2, A8, A14, A19, A25, B1, B2, B6, B21, B25, B26, C3, C13, C24, D4, D23, H8, H19, J9, J18, K10, K17, L11, L13, L16, M12, M15, N1, N4, N13, N14, N26, P1, P2, P3, P13, P14, P23, P26, R12, R15, T11, T16, U10, U17, V9, V18, W8, W19, AC4, AC23, AD3, AD13, AD24, AE1, AE2, AE6, AE21, AE25, AE26, AF2, AF8, AF14, AF19, AF25, AF15	B2, B3, C2, C3, F3, F4, G3, G4, L3, L4, M3, M4, T1, T2, T3, AA3, AA4, AB3, AB4, AF3, AF4, AG3, AG4, AK2, AK3, AL2, AL3, AJ6, AJ7, AK6, AK7, AJ11, AJ12, AK11, AK12, AL16, AM16, AJ21, AJ22, AK21, AK22, AJ26, AJ27, AK26, AK27, AK30, AK31, AL30, AL31, AG29, AG30, AF29, AF30, AB29, AB30, AA29, AA30, U30, U31, U32, M29, M30, L29, L30, G29, G30, F29, F30, C30, C31, B30, B31, C26, C27, D26, D27, C21, C22, D21, D22, A17, B17, C11, C12, D11, D12, C6, C7, D6, D7
GND_CK1K1 (2)	Y30	AE18	V24
GND_CK1K2 (2)	W2	P11	V9
GND_CK1K3 (2)	T33, V35	AC25, N25	P24, P23
GND_CK1K4 (2)	R3	R10	T9
GND_CKOUT1 (7)	U32	AE22	T24
GND_CKOUT2 (7)	Y2	V6	W9

Pin Name	652-Pin BGA	672-Pin FineLine BGA	1,020-Pin FineLine BGA
No Connect (N.C.)			AA12, AA13, AA14, AA15, AA16, AA17, AA18, AA19, AA20, AA21, AB10, AB11, AB12, AB13, AB14, AB15, AB16, AB17, AB18, AB19, AB20, AB21, AB22, AB23, AB24, AB25, AB8, AB9, AC10, AC11, AC12, AC13, AC14, AC15, AC16, AC17, AC18, AC19, AC20, AC21, AC22, AC23, AC24, AC25, AC8, AC9, AD10, AD11, AD12, AD13, AD14, AD15, AD16, AD17, AD18, AD19, AD20, AD21, AD22, AD23, AD24, AD25, AD8, AD9, AE14, AE15, AE16, AE17, AE18, AE19, H11, H12, H13, H14, H15, H16, H17, H18, H19, J10, J11, J12, J13, J14, J15, J16, J17, J18, J19, J20, J21, J22, J23, J24, J25, J9, K10, K11, K12, K13, K14, K15, K16, K17, K18, K19, K20, K21, K22, K23, K24, K25, K9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L9, M12, M13, M14, M15, M16, M17, M18, M19, M20, M21, N12, N13, N14, N15, N16, N17, N18, N19, N20, N21, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, U12, U13, U14, U15, U16, U17, U18, U19, U20, U21, V12, V13, V14, V15, V16, V17, V18, V19, V20, V21, W12, W13, W14, W15, W16, W17, W18, W19, W20, W21, Y12, Y13, Y14, Y15, Y16, Y17, Y18, Y19, Y20, Y21
Total User I/O Pins (11)	488	508	588

Notes:

- (1) This pin can be used as a user I/O pin after configuration.
- (2) This pin is the power or ground for the ClockLock and ClockBoost circuitry. To ensure noise resistance, the power and ground supply to the ClockLock and ClockBoost circuitry should be isolated from the power and ground to the rest of the device. VCC_CKCLK has the same voltage specifications as the VCCINT and should be connected to a 1.8-V power supply. If the ClockLock or ClockBoost circuitry is not used, this power or ground pin should be connected to VCCINT or GNDINT, respectively.
- (3) This pin can be used as a user I/O pin if it is not used for its device-wide or configuration function.
- (4) This pin is the complementary signal for the LVDS pair on dedicated inputs and outputs that can be configured for the LVDS standard. If not used for the LVDS pair, these pins are regular I/O pins. Pins with the "n" suffix carry the negative signal for the LVDS channel. Pins with a "p" suffix carry the positive signal for the LVDS channel.
- (5) This pin is a dedicated pin; it is not available as a user I/O pin.
- (6) This pin is tri-stated in user mode.
- (7) This pin is the power or ground for the external output of a PLL. These pins should be set to the VCCIO level/standard desired for the external clock output. To ensure noise resistance, the power and ground supply to the PLL external output should be isolated from the power and ground to the rest of the VCCIO and GNDIO pins. If the PLL or external output is not used, this power or ground pin should be connected to VCCIO or GNDIO, respectively.
- (8) The CLKCLK_OUT pin is powered by the VCC_CKOUT and GND_CKOUT pins.
- (9) This pin shows the status of the ClockLock and ClockBoost circuitry. When the ClockLock and ClockBoost circuitry is locked to the incoming clock and generates an internal clock, LOCK is driven high. LOCK remains high if a periodic clock stops clocking. The LOCK function is optional; if the LOCK output is not used, this pin is a user I/O pin.
- (10) This pin is the active high enable pin for all of the PLL circuits in the device. When de-asserted, all PLLs are reset to their default, unlocked state and will stop clocking. Once re-asserted, the PLLs will lock again and start clocking. If this pin function is not needed, the pin should be connected to VCCINT.
- (11) The user I/O pin count includes dedicated inputs and dedicated clock inputs. It does not include the dedicated clock feedback and output pins.

Copyright © 1995, 1996, 1997, 1998, 1999, 2000, 2001, Altera Corporation, 101 Innovation Drive, San Jose, CA 95134, USA, all rights reserved. By accessing this information, you agree to be bound by the terms of Altera's Legal Notice.