

# Migrating Designs in ProASIC3 Devices from Higher-Density to Mid-Density Devices

## Introduction

The purpose of this document is to assist in migrating designs in ProASIC<sup>®</sup>3 A3P1000, A3P600, and A3P400 devices from higher-density to mid-density devices. There are three possible migration paths:

- A3P1000 to A3P600
- A3P1000 to A3P400
- A3P600 to A3P400

Since one of the key factors is pin compatibility, this document addresses pin compatibility for all available packages common to the A3P1000, A3P600, and A3P400 devices.

## Design Migration

ProASIC3 family devices are architecturally compatible with each other. However, designers must pay attention to a few key areas when migrating a design. The specific issues discussed throughout this application note are as follows:

- "Design and Device Evaluation"
- "Device and Package Compatibility" on page 2
- "Migration and Implementation Methodologies" on page 3
- "I/O Banks and Standards" on page 4
- "Power Supply and Board-Level Considerations" on page 4
- "Pin Migration and Compatibility" on page 5

## Design and Device Evaluation

When migrating a design, the primary task should be to compare the available resources between the two devices. The designer should evaluate effective gate count, RAM size, I/O banks, and number of I/Os (Table 1). In addition, necessary design timing analysis and simulations should be validated when porting designs to new ProASIC3 derivatives.

**Table 1 • Device Information**

	<b>A3P1000</b>	<b>A3P600</b>	<b>A3P400</b>
<b>System Gates</b>	1 M	600 k	400 k
<b>Tiles (D-flip-flop)</b>	24,576	13,824	9,126
<b>RAM (kbits)</b>	144	108	54
<b>RAM Blocks (4,608 bits)</b>	32	24	12
<b>I/O Banks (+ JTAG)</b>	4	4	4
<b>Maximum User I/Os per Package</b>			
PQ208	154/35	154/35	151/34
FG144	97/25	97/25	97/25
FG256	177/44	177/43	178/38
FG484	300/74	235/60	194/38

*Note:* Maximum user I/O is listed as single-ended/double-ended.

## Device and Package Compatibility

ProASIC3 devices and packaging were designed to allow considerable footprint compatibility for smoother migration.

### Common and Convertible I/Os between A3P400, A3P600, and A3P1000 Devices

Table 2 shows the number of I/Os that are common between any two of these devices, as well as the number of I/Os that will require conversion per the suggested design migration rules given in the "Migration and Implementation Methodologies" section on page 3.

**Table 2 • Common and Convertible I/Os**

Package	A3P1000 A3P600		A3P1000 A3P400		A3P600 A3P400	
	Common I/Os	Convertible I/Os	Common I/Os	Convertible I/Os	Common I/Os	Convertible I/Os
<b>PQ208</b>	154	0	154	5	151	5
<b>FG144</b>	97	0	97	0	98	0
<b>FG256</b>	178	31	177	59	177	33
<b>FG484</b>	236	96	192	75	236	166

## Migration and Implementation Methodologies

Table 3 lists some possible migration combinations and the recommended implementation rules for compatible design conversions from higher-density to lower-density devices. The "Pin Migration and Compatibility" section on page 5 contains tables that list the required rules for different pin combinations. If "Rule x" is mentioned for a pin combination, that combination requires the implementation methodology given in Table 3. Note that many combinations of high-density/low-density pins do not require these rules; the pins have complete type compatibility. These pins are marked in the pin tables with "None."

**Table 3 • Migration Rules from Higher-Density to Mid-Density Devices**

Migration Rule	Issue		Implementation Methodology
	Higher Density	Lower Density	
1	I/O or global I/O	NC	Leave this pin floating OR program I/Os as unused (software cannot program NC to usable I/O).
2	Single-ended I/O	Global I/O	Instantiate the I/O buffer as a global single-ended I/O.
3	Global I/O	Single-ended I/O	Use the physical design constraint (PDC) to promote the single-ended I/O to a global pin. There is an additional delay that affects the setup time on the board. Or, do not use this pin as a global input on the higher-density device.
4	VCC or VCCIB(x) <sup>1,3</sup>	NC	Leave pin connected to board VCC or VCCIBx plane.
5	VCCIB(x) <sup>1</sup>	VCCIB(y) <sup>2</sup>	Make sure the two bank voltage levels are the same. Tie the pin to the board's corresponding VCCIBx/VMVx plane.
6	VMV(x) <sup>1</sup>	VMV(y) <sup>2</sup>	Make sure the two bank voltage levels are the same. Tie pin to the board's corresponding VCCIBx/VMVx plane.
7	VMV(x) <sup>2</sup>	I/O or global I/O	Leave the pin tied to the board VCCIBx/VMVx plane. Instantiate the I/Os as tristate buffers with OE = 0 and no weak pull-ups/-downs.
8	GNDQ	Global I/O	Leave both pins tied to board GNDQ plane. Instantiate the I/O as tristate buffer with OE = 0 and no weak pull-ups/-downs.
9	GNDQ	NC	GNDQ and NC need to be connected to GND.

**Notes:**

1. (x) = 1, 2, 3, or 4
2. (y) = 1, 2, 3, or 4
3. Refer to the "I/O Structures in IGLOO and ProASIC3 Devices" chapter of the *IGLOO FPGA Fabric User's Guide* or *ProASIC3 FPGA Fabric User's Guide* for I/O naming conventions.

## I/O Banks and Standards

ProASIC3 I/Os are partitioned into multiple I/O voltage banks. The number of banks is device-dependent. There are four I/O banks in A3P1000, A3P600, and A3P400 devices.

Package VCCIBx pins are routed through the corresponding banks of the devices.

The banks have dedicated supplies; therefore, only I/Os with compatible voltage standards can be assigned to the same I/O voltage bank.

## Power Supply and Board-Level Considerations

I/O power supply requirements are one of the key aspects to consider for design migration. Since the migration is within the ProASIC3 family, there is no issue with respect to the core voltage, VCC. Pins that must be appropriately connected are VCCIBx (bank supply voltage to I/O output buffer and I/O logic), VMVx (quiet I/O supply voltage), GNDQ (quiet GND), and GND. An important function of GNDQ and VMVx is to decouple simultaneous switching noise for outputs (SSOs) to enhance signal integrity and improve noise immunity.

The following are the *key rules* of migration for the above-mentioned pins:

- VMVx and VCCIBx must be at the same voltage level for a given bank.
- VCCIBx pins and VMVx pins in unused banks must be connected to GND.
- Unused I/Os are automatically disabled by software.

A specific power-supply sequence at power-up is not required.

Any incorrect connection during the migration may affect overall dynamic or inrush power consumption and might even result in device malfunction.

Additionally, the I/O naming convention in ProASIC3 devices has significant embedded information (i.e., pin location, bank number, signal type, polarity, and clock conditioning). For a detailed explanation, refer to the "User I/O Naming Convention" section in the "I/O Structures in IGLOO and ProASIC3 Devices" chapter of the *IGLOO FPGA Fabric User's Guide* or *ProASIC3 FPGA Fabric User's Guide*. This datasheet also contains additional information on power issues.

## Pin Migration and Compatibility

### PQ208 Package

Table 4 • Pin Compatibility and Migration Table for the PQ208 Package

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
1	GND	GND	GND	None	None	None
2	GAA2/IO225PDB3	GAA2/IO170PDB3	GAA2/IO155UDB3	None	None	None
3	IO225NDB3	IO170NDB3	IO155VDB3	None	None	None
4	GAB2/IO224PDB3	GAB2/IO169PDB3	GAB2/IO154UDB3	None	None	None
5	IO224NDB3	IO169NDB3	IO154VDB3	None	None	None
6	GAC2/IO223PDB3	GAC2/IO168PDB3	GAC2/IO153UDB3	None	None	None
7	IO223NDB3	IO168NDB3	IO153VDB3	None	None	None
8	IO222PDB3	IO167PDB3	IO152UDB3	None	None	None
9	IO222NDB3	IO167NDB3	IO152VDB3	None	None	None
10	IO220PDB3	IO166PDB3	IO151UDB3	None	None	None
11	IO220NDB3	IO166NDB3	IO151VDB3	None	None	None
12	IO218PDB3	IO165PDB3	IO150PDB3	None	None	None
13	IO218NDB3	IO165NDB3	IO150NDB3	None	None	None
14	IO216PDB3	IO164PDB3	IO149PDB3	None	None	None
15	IO216NDB3	IO164NDB3	IO149NDB3	None	None	None
16	VCC	VCC	VCC	None	None	None
17	GND	GND	GND	None	None	None
18	VCCIB3	VCCIB3	VCCIB3	None	None	None
19	IO212PDB3	IO163PDB3	IO148PDB3	None	None	None
20	IO212NDB3	IO163NDB3	IO148NDB3	None	None	None
21	GFC1/IO209PDB3	GFC1/IO161PDB3	GFC1/IO147PDB3	None	None	None
22	GFC0/IO209NDB3	GFC0/IO161NDB3	GFC0/IO147NDB3	None	None	None
23	GFB1/IO208PDB3	GFB1/IO160PDB3	GFB1/IO146PDB3	None	None	None
24	GFB0/IO208NDB3	GFB0/IO160NDB3	GFB0/IO146NDB3	None	None	None
25	VCOMPLF	VCOMPLF	VCOMPLF	None	None	None
26	GFA0/IO207NPB3	GFA0/IO159NPB3	GFA0/IO145NPB3	None	None	None
27	VCCPLF	VCCPLF	VCCPLF	None	None	None
28	GFA1/IO207PPB3	GFA1/IO159PPB3	GFA1/IO145PPB3	None	None	None
29	GND	GND	GND	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
30	GFA2/IO206PDB3	GFA2/IO158PDB3	GFA2/IO144PDB3	None	None	None
31	IO206NDB3	IO158NDB3	IO144NDB3	None	None	None
32	GFB2/IO205PDB3	GFB2/IO157PDB3	GFB2/IO143PDB3	None	None	None
33	IO205NDB3	IO157NDB3	IO143NDB3	None	None	None
34	GFC2/IO204PDB3	GFC2/IO156PDB3	GFC2/IO142PDB3	None	None	None
35	IO204NDB3	IO156NDB3	IO142NDB3	None	None	None
36	VCC	VCC	NC	None	<b>Rule 4</b>	<b>Rule 4</b>
37	IO199PDB3	IO147PDB3	IO141PSB3	None	None	None
38	IO199NDB3	IO147NDB3	IO140PDB3	None	None	None
39	IO197PSB3	IO146PSB3	IO140NDB3	None	None	None
40	VCCIB3	VCCIB3	VCCIB3	None	None	None
41	GND	GND	GND	None	None	None
42	IO191PDB3	IO145PDB3	IO138PDB3	None	None	None
43	IO191NDB3	IO145NDB3	IO138NDB3	None	None	None
44	GEC1/IO190PDB3	GEC1/IO144PDB3	GEC1/IO137PDB3	None	None	None
45	GEC0/IO190NDB3	GEC0/IO144NDB3	GEC0/IO137NDB3	None	None	None
46	GEB1/IO189PDB3	GEB1/IO143PDB3	GEB1/IO136PDB3	None	None	None
47	GEB0/IO189NDB3	GEB0/IO143NDB3	GEB0/IO136NDB3	None	None	None
48	GEA1/IO188PDB3	GEA1/IO142PDB3	GEA1/IO135PDB3	None	None	None
49	GEA0/IO188NDB3	GEA0/IO142NDB3	GEA0/IO135NDB3	None	None	None
50	VMV3	VMV3	VMV3	None	None	None
51	GNDQ	GNDQ	GNDQ	None	None	None
52	GND	GND	GND	None	None	None
53	VMV2	VMV2	VMV2	None	None	None
54	GEA2/IO187RSB2	GEA2/IO141RSB2	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
55	GEB2/IO186RSB2	GEB2/IO140RSB2	GEB2/IO134RSB2	None	None	None
56	GEC2/IO185RSB2	GEC2/IO139RSB2	GEB2/IO133RSB2	None	None	None
57	IO184RSB2	IO138RSB2	GEC2/IO132RSB2	None	<b>Rule 2</b>	<b>Rule 2</b>
58	IO183RSB2	IO137RSB2	IO131RSB2	None	None	None
59	IO182RSB2	IO136RSB2	IO130RSB2	None	None	None
60	IO181RSB2	IO135RSB2	IO129RSB2	None	None	None
61	IO180RSB2	IO134RSB2	IO128RSB2	None	None	None
62	VCCIB2	VCCIB2	VCCIB2	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
63	IO178RSB2	IO133RSB2	IO125RSB2	None	None	None
64	IO176RSB2	IO131RSB2	IO123RSB2	None	None	None
65	GND	GND	GND	None	None	None
66	IO174RSB2	IO129RSB2	IO121RSB2	None	None	None
67	IO172RSB2	IO127RSB2	IO119RSB2	None	None	None
68	IO170RSB2	IO125RSB2	IO117RSB2	None	None	None
69	IO168RSB2	IO123RSB2	IO115RSB2	None	None	None
70	IO166RSB2	IO121RSB2	IO113RSB2	None	None	None
71	VCC	VCC	VCC	None	None	None
72	VCCIB2	VCCIB2	VCCIB2	None	None	None
73	IO162RSB2	IO118RSB2	IO112RSB2	None	None	None
74	IO160RSB2	IO117RSB2	IO111RSB2	None	None	None
75	IO158RSB2	IO116RSB2	IO110RSB2	None	None	None
76	IO156RSB2	IO115RSB2	IO109RSB2	None	None	None
77	IO154RSB2	IO114RSB2	IO108RSB2	None	None	None
78	IO152RSB2	IO113RSB2	IO107RSB2	None	None	None
79	IO150RSB2	IO112RSB2	IO106RSB2	None	None	None
80	IO148RSB2	IO110RSB2	IO104RSB2	None	None	None
81	GND	GND	GND	None	None	None
82	IO143RSB2	IO109RSB2	IO102RSB2	None	None	None
83	IO141RSB2	IO108RSB2	IO101RSB2	None	None	None
84	IO139RSB2	IO107RSB2	IO100RSB2	None	None	None
85	IO137RSB2	IO106RSB2	IO99RSB2	None	None	None
86	IO135RSB2	IO105RSB2	IO98RSB2	None	None	None
87	IO133RSB2	IO104RSB2	IO97RSB2	None	None	None
88	VCC	VCC	VCC	None	None	None
89	VCCIB2	VCCIB2	VCCIB2	None	None	None
90	IO128RSB2	IO102RSB2	IO94RSB2	None	None	None
91	IO126RSB2	IO100RSB2	IO92RSB2	None	None	None
92	IO124RSB2	IO98RSB2	IO90RSB2	None	None	None
93	IO122RSB2	IO96RSB2	IO88RSB2	None	None	None
94	IO120RSB2	IO94RSB2	IO86RSB2	None	None	None
95	IO118RSB2	IO90RSB2	IO84RSB2	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
96	GDC2/IO116RSB2	GDC2/IO89RSB2	GDC2/IO82RSB2	None	None	None
97	GND	GND	GND	None	None	None
98	GDB2/IO115RSB2	GDB2/IO88RSB2	GDB2/IO81RSB2	None	None	None
99	GDA2/IO114RSB2	GDA2/IO87RSB2	GDA2/IO80RSB2	None	None	None
100	GNDQ	GNDQ	GNDQ	None	None	None
101	TCK	TCK	TCK	None	None	None
102	TDI	TDI	TDI	None	None	None
103	TMS	TMS	TMS	None	None	None
104	VMV2	VMV2	VMV2	None	None	None
105	GND	GND	GND	None	None	None
106	VPUMP	VPUMP	VPUMP	None	None	None
107	GNDQ	GNDQ	NC	None	<b>Rule 8</b>	<b>Rule 8</b>
108	TDO	TDO	TDO	None	None	None
109	TRST	TRST	TRST	None	None	None
110	VJTAG	VJTAG	VJTAG	None	None	None
111	GDA0/IO113NDB1	GDA0/IO86NDB1	GDA0/IO79VDB1	None	None	None
112	GDA1/IO113PDB1	GDA1/IO86PDB1	GDA1/IO79UDB1	None	None	None
113	GDB0/IO112NDB1	GDB0/IO85NDB1	GDB0/IO78VDB1	None	None	None
114	GDB1/IO112PDB1	GDB1/IO85PDB1	GDB1/IO78UDB1	None	None	None
115	GDC0/IO111NDB1	GDC0/IO84NDB1	GDC0/IO77VDB1	None	None	None
116	GDC1/IO111PDB1	GDC1/IO84PDB1	GDC1/IO77UDB1	None	None	None
117	IO109NDB1	IO82NDB1	IO76VDB1	None	None	None
118	IO109PDB1	IO82PDB1	IO76UDB1	None	None	None
119	IO106NDB1	IO80NDB1	IO75NDB1	None	None	None
120	IO106PDB1	IO80PDB1	IO75PDB1	None	None	None
121	IO104PSB1	IO79PSB1	IO74RSB1	None	None	None
122	GND	GND	GND	None	None	None
123	VCCIB1	VCCIB1	VCCIB1	None	None	None
124	IO99NDB1	IO75NDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
125	IO99PDB1	IO75PDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
126	NC	NC	V <sub>CC</sub>	None	<b>Rule 4</b>	<b>Rule 4</b>
127	IO96NDB1	IO73NDB1	IO72NDB1	None	None	None
128	GCC2/IO96PDB1	GCC2/IO73PDB1	GCC2/IO72PDB1	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
129	GCB2/IO95PSB1	GCB2/IO72PSB1	GCB2/IO71PSB1	None	None	None
130	GND	GND	GND	None	None	None
131	GCA2/IO94PSB1	GCA2/IO71PSB1	GCA2/IO70PSB1	None	None	None
132	GCA1/IO93PDB1	GCA1/IO70PDB1	GCA1/IO69PDB1	None	None	None
133	GCA0/IO93NDB1	GCA0/IO70NDB1	GCA0/IO69NDB1	None	None	None
134	GCB0/IO92NDB1	GCB0/IO69NDB1	GCB0/IO68NDB1	None	None	None
135	GCB1/IO92PDB1	GCB1/IO69PDB1	GCB1/IO68PDB1	None	None	None
136	GCC0/IO91NDB1	GCC0/IO68NDB1	GCC0/IO67NDB1	None	None	None
137	GCC1/IO91PDB1	GCC1/IO68PDB1	GCC1/IO67PDB1	None	None	None
138	IO88NDB1	IO66NDB1	IO66NDB1	None	None	None
139	IO88PDB1	IO66PDB1	IO66PDB1	None	None	None
140	VCCIB1	VCCIB1	VCCIB1	None	None	None
141	GND	GND	GND	None	None	None
142	VCC	VCC	VCC	None	None	None
143	IO86PSB1	IO65PSB1	IO65RSB1	None	None	None
144	IO84NDB1	IO64NDB1	IO64NDB1	None	None	None
145	IO84PDB1	IO64PDB1	IO64PDB1	None	None	None
146	IO82NDB1	IO63NDB1	IO63NDB1	None	None	None
147	IO82PDB1	IO63PDB1	IO63PDB1	None	None	None
148	IO80NDB1	IO62NDB1	IO62NDB1	None	None	None
149	GBC2/IO80PDB1	GBC2/IO62PDB1	GBC2/IO62PDB1	None	None	None
150	IO79NDB1	IO61NDB1	IO61NDB1	None	None	None
151	GBB2/IO79PDB1	GBB2/IO61PDB1	GBB2/IO61PDB1	None	None	None
152	IO78NDB1	IO60NDB1	IO60NDB1	None	None	None
153	GBA2/IO78PDB1	GBA2/IO60PDB1	GBA2/IO60PDB1	None	None	None
154	VMV1	VMV1	VMV1	None	None	None
155	GNDQ	GNDQ	GNDQ	None	None	None
156	GND	GND	GND	None	None	None
157	VMV0	VMV0	VMV0	None	None	None
158	GBA1/IO77RSB0	GBA1/IO59RSB0	GBA1/IO59RSB0	None	None	None
159	GBA0/IO76RSB0	GBA0/IO58RSB0	GBA0/IO58RSB0	None	None	None
160	GBB1/IO75RSB0	GBB1/IO57RSB0	GBB1/IO57RSB0	None	None	None
161	GBB0/IO74RSB0	GBB0/IO56RSB0	GBB0/IO56RSB0	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
162	GND	GND	GND	None	None	None
163	GBC1/IO73RSB0	GBC1/IO55RSB0	GBC1/IO55RSB0	None	None	None
164	GBC0/IO72RSB0	GBC0/IO54RSB0	GBC0/IO54RSB0	None	None	None
165	IO70RSB0	IO52RSB0	IO52RSB0	None	None	None
166	IO67RSB0	IO50RSB0	IO49RSB0	None	None	None
167	IO63RSB0	IO48RSB0	IO46RSB0	None	None	None
168	IO60RSB0	IO46RSB0	IO43RSB0	None	None	None
169	IO57RSB0	IO44RSB0	IO40RSB0	None	None	None
170	VCCIB0	VCCIB0	VCCIB0	None	None	None
171	VCC	VCC	VCC	None	None	None
172	IO54RSB0	IO36RSB0	IO36RSB0	None	None	None
173	IO51RSB0	IO35RSB0	IO35RSB0	None	None	None
174	IO48RSB0	IO34RSB0	IO34RSB0	None	None	None
175	IO45RSB0	IO33RSB0	IO33RSB0	None	None	None
176	IO42RSB0	IO32RSB0	IO32RSB0	None	None	None
177	IO40RSB0	IO31RSB0	IO31RSB0	None	None	None
178	GND	GND	GND	None	None	None
179	IO38RSB0	IO29RSB0	IO29RSB0	None	None	None
180	IO35RSB0	IO28RSB0	IO28RSB0	None	None	None
181	IO33RSB0	IO27RSB0	IO27RSB0	None	None	None
182	IO31RSB0	IO26RSB0	IO26RSB0	None	None	None
183	IO29RSB0	IO25RSB0	IO25RSB0	None	None	None
184	IO27RSB0	IO24RSB0	IO24RSB0	None	None	None
185	IO25RSB0	IO23RSB0	IO23RSB0	None	None	None
186	VCCIB0	VCCIB0	VCCIB0	None	None	None
187	VCC	VCC	VCC	None	None	None
188	IO22RSB0	IO20RSB0	IO21RSB0	None	None	None
189	IO20RSB0	IO19RSB0	IO20RSB0	None	None	None
190	IO18RSB0	IO18RSB0	IO19RSB0	None	None	None
191	IO16RSB0	IO17RSB0	IO18RSB0	None	None	None
192	IO15RSB0	IO16RSB0	IO17RSB0	None	None	None
193	IO14RSB0	IO14RSB0	IO16RSB0	None	None	None
194	IO13RSB0	IO12RSB0	IO15RSB0	None	None	None

**Table 4 • Pin Compatibility and Migration Table for the PQ208 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
195	GND	GND	GND	None	None	None
196	IO12RSB0	IO10RSB0	IO13RSB0	None	None	None
197	IO11RSB0	IO09RSB0	IO11RSB0	None	None	None
198	IO10RSB0	IO08RSB0	IO09RSB0	None	None	None
199	IO09RSB0	IO07RSB0	IO07RSB0	None	None	None
200	VCCIB0	VCCIB0	VCCIB0	None	None	None
201	GAC1/IO05RSB0	GAC1/IO05RSB0	GAC1/IO05RSB0	None	None	None
202	GAC0/IO04RSB0	GAC0/IO04RSB0	GAC0/IO04RSB0	None	None	None
203	GAB1/IO03RSB0	GAB1/IO03RSB0	GAB1/IO03RSB0	None	None	None
204	GAB0/IO02RSB0	GAB0/IO02RSB0	GAB0/IO02RSB0	None	None	None
205	GAA1/IO01RSB0	GAA1/IO01RSB0	GAA1/IO01RSB0	None	None	None
206	GAA0/IO00RSB0	GAA0/IO00RSB0	GAA0/IO00RSB0	None	None	None
207	GNDQ	GNDQ	GNDQ	None	None	None
208	VMV0	VMV0	VMV0	None	None	None

## FG144 Package

**Table 5 • Pin Compatibility and Migration Table for the FG144 Package**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
A1	GNDQ	GNDQ	GNDQ	None	None	None
A2	VMV0	VMV0	VMV0	None	None	None
A3	GAB0/IO02RSB0	GAB0/IO02RSB0	GAB0/IO02RSB0	None	None	None
A4	GAB1/IO03RSB0	GAB1/IO03RSB0	GAB1/IO03RSB0	None	None	None
A5	IO10RSB0	IO10RSB0	IO16RSB0	None	None	None
A6	GND	GND	GND	None	None	None
A7	IO44RSB0	IO44RSB0	IO30RSB0	None	None	None
A8	VCC	VCC	VCC	None	None	None
A9	IO69RSB0	IO69RSB0	IO34RSB0	None	None	None
A10	GBA0/IO76RSB0	GBA0/IO76RSB0	GBA0/IO58RSB0	None	None	None
A11	GBA1/IO77RSB0	GBA1/IO77RSB0	GBA1/IO59RSB0	None	None	None
A12	GNDQ	GNDQ	GNDQ	None	None	None
B1	GAB2/IO224PDB3	GAB2/IO224PDB3	GAB2/IO154UDB3	None	None	None
B2	GND	GND	GND	None	None	None
B3	GAA0/IO00RSB0	GAA0/IO00RSB0	GAA0/IO00RSB0	None	None	None
B4	GAA1/IO01RSB0	GAA1/IO01RSB0	GAA1/IO01RSB0	None	None	None
B5	IO13RSB0	IO13RSB0	IO14RSB0	None	None	None
B6	IO26RSB0	IO26RSB0	IO19RSB0	None	None	None
B7	IO35RSB0	IO35RSB0	IO23RSB0	None	None	None
B8	IO60RSB0	IO60RSB0	IO31RSB0	None	None	None
B9	GBB0/IO74RSB0	GBB0/IO74RSB0	GBB0/IO56RSB0	None	None	None
B10	GBB1/IO75RSB0	GBB1/IO75RSB0	GBB1/IO57RSB0	None	None	None
B11	GND	GND	GND	None	None	None
B12	VMV1	VMV1	VMV1	None	None	None
C1	IO224NDB3	IO224NDB3	IO154VDB3	None	None	None
C2	GFA2/IO206PPB3	GFA2/IO206PPB3	GFA2/IO144PPB3	None	None	None
C3	GAC2/IO223PDB3	GAC2/IO223PDB3	GAC2/IO153UDB3	None	None	None
C4	VCC	VCC	VCC	None	None	None
C5	IO16RSB0	IO16RSB0	IO12RSB0	None	None	None
C6	IO29RSB0	IO29RSB0	IO17RSB0	None	None	None
C7	IO32RSB0	IO32RSB0	IO25RSB0	None	None	None

**Table 5 • Pin Compatibility and Migration Table for the FG144 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
C8	IO63RSB0	IO63RSB0	IO32RSB0	None	None	None
C9	IO66RSB0	IO66RSB0	IO53RSB0	None	None	None
C10	GBA2/IO78PDB1	GBA2/IO78PDB1	GBA2/IO60PDB1	None	None	None
C11	IO78NDB1	IO78NDB1	IO60NDB1	None	None	None
C12	GBC2/IO80PPB1	GBC2/IO80PPB1	GBC2/IO62PPB1	None	None	None
D1	IO213PDB3	IO213PDB3	IO149NDB3	None	None	None
D2	IO213NDB3	IO213NDB3	IO149PDB3	None	None	None
D3	IO223NDB3	IO223NDB3	IO153VDB3	None	None	None
D4	GAA2/IO225PPB3	GAA2/IO225PPB3	GAA2/IO155UPB3	None	None	None
D5	GAC0/IO04RSB0	GAC0/IO04RSB0	GAC0/IO04RSB0	None	None	None
D6	GAC1/IO05RSB0	GAC1/IO05RSB0	GAC1/IO05RSB0	None	None	None
D7	GBC0/IO72RSB0	GBC0/IO72RSB0	GBC0/IO54RSB0	None	None	None
D8	GBC1/IO73RSB0	GBC1/IO73RSB0	GBC1/IO55RSB0	None	None	None
D9	GBB2/IO79PDB1	GBB2/IO79PDB1	GBB2/IO61PDB1	None	None	None
D10	IO79NDB1	IO79NDB1	IO61NDB1	None	None	None
D11	IO80NPB1	IO80NPB1	IO62NPB1	None	None	None
D12	GCB1/IO92PPB1	GCB1/IO92PPB1	GCB1/IO68PPB1	None	None	None
E1	VCC	VCC	VCC	None	None	None
E2	GFC0/IO209NDB3	GFC0/IO209NDB3	GFC0/IO147NDB3	None	None	None
E3	GFC1/IO209PDB3	GFC1/IO209PDB3	GFC1/IO147PDB3	None	None	None
E4	VCCIB3	VCCIB3	VCCIB3	None	None	None
E5	IO225NPB3	IO225NPB3	IO155VPB3	None	None	None
E6	VCCIB0	VCCIB0	VCCIB0	None	None	None
E7	VCCIB0	VCCIB0	VCCIB0	None	None	None
E8	GCC1/IO91PDB1	GCC1/IO91PDB1	GCC1/IO67PDB1	None	None	None
E9	VCCIB1	VCCIB1	VCCIB1	None	None	None
E10	VCC	VCC	VCC	None	None	None
E11	GCA0/IO93NDB1	GCA0/IO93NDB1	GCA0/IO69NDB1	None	None	None
E12	IO94NDB1	IO94NDB1	IO70NDB1	None	None	None
F1	GFB0/IO208NPB3	GFB0/IO208NPB3	GFB0/IO146NPB3	None	None	None
F2	VCOMPLF	VCOMPLF	VCOMPLF	None	None	None
F3	GFB1/IO208PPB3	GFB1/IO208PPB3	GFB1/IO146PPB3	None	None	None
F4	IO206NPB3	IO206NPB3	IO144NPB3	None	None	None

**Table 5 • Pin Compatibility and Migration Table for the FG144 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
F5	GND	GND	GND	None	None	None
F6	GND	GND	GND	None	None	None
F7	GND	GND	GND	None	None	None
F8	GCC0/IO91NDB1	GCC0/IO91NDB1	GCC0/IO67NDB1	None	None	None
F9	GCB0/IO92NPB1	GCB0/IO92NPB1	GCB0/IO68NPB1	None	None	None
F10	GND	GND	GND	None	None	None
F11	GCA1/IO93PDB1	GCA1/IO93PDB1	GCA1/IO69PDB1	None	None	None
F12	GCA2/IO94PDB1	GCA2/IO94PDB1	GCA2/IO70PDB1	None	None	None
G1	GFA1/IO207PPB3	GFA1/IO207PPB3	GFA1/IO145PPB3	None	None	None
G2	GND	GND	GND	None	None	None
G3	VCCPLF	VCCPLF	VCCPLF	None	None	None
G4	GFA0/IO207NPB3	GFA0/IO207NPB3	GFA0/IO145NPB3	None	None	None
G5	GND	GND	GND	None	None	None
G6	GND	GND	GND	None	None	None
G7	GND	GND	GND	None	None	None
G8	GDC1/IO111PPB1	GDC1/IO111PPB1	GDC1/IO77UPB1	None	None	None
G9	IO96NDB1	IO96NDB1	IO72NDB1	None	None	None
G10	GCC2/IO96PDB1	GCC2/IO96PDB1	GCC2/IO72PDB1	None	None	None
G11	IO95NDB1	IO95NDB1	IO71NDB1	None	None	None
G12	GCB2/IO95PDB1	GCB2/IO95PDB1	GCB2/IO71PDB1	None	None	None
H1	VCC	VCC	VCC	None	None	None
H2	GFB2/IO205PDB3	GFB2/IO205PDB3	GFB2/IO143PDB3	None	None	None
H3	GFC2/IO204PSB3	GFC2/IO204PSB3	GFC2/IO142PSB3	None	None	None
H4	GEC1/IO190PDB3	GEC1/IO190PDB3	GEC1/IO137PDB3	None	None	None
H5	VCC	VCC	VCC	None	None	None
H6	IO105PDB1	IO105PDB1	IO75PDB1	None	None	None
H7	IO105NDB1	IO105NDB1	IO75NDB1	None	None	None
H8	GDB2/IO115RSB2	GDB2/IO115RSB2	GDB2/IO81RSB2	None	None	None
H9	GDC0/IO111NPB1	GDC0/IO111NPB1	GDC0/IO77VPB1	None	None	None
H10	VCCIB1	VCCIB1	VCCIB1	None	None	None
H11	IO101PSB1	IO101PSB1	IO73PSB1	None	None	None
H12	VCC	VCC	VCC	None	None	None
J1	GEB1/IO189PDB3	GEB1/IO189PDB3	GEB1/IO136PDB3	None	None	None

**Table 5 • Pin Compatibility and Migration Table for the FG144 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
J2	IO205NDB3	IO205NDB3	IO143NDB3	None	None	None
J3	VCCIB3	VCCIB3	VCCIB3	None	None	None
J4	GEC0/IO190NDB3	GEC0/IO190NDB3	GEC0/IO137NDB3	None	None	None
J5	IO160RSB2	IO160RSB2	IO125RSB2	None	None	None
J6	IO157RSB2	IO157RSB2	IO116RSB2	None	None	None
J7	VCC	VCC	VCC	None	None	None
J8	TCK	TCK	TCK	None	None	None
J9	GDA2/IO114RSB2	GDA2/IO114RSB2	GDA2/IO80RSB2	None	None	None
J10	TDO	TDO	TDO	None	None	None
J11	GDA1/IO113PDB1	GDA1/IO113PDB1	GDA1/IO79UDB1	None	None	None
J12	GDB1/IO112PDB1	GDB1/IO112PDB1	GDB1/IO78UDB1	None	None	None
K1	GEB0/IO189NDB3	GEB0/IO189NDB3	GEB0/IO136NDB3	None	None	None
K2	GEA1/IO188PDB3	GEA1/IO188PDB3	GEA1/IO135PDB3	None	None	None
K3	GEA0/IO188NDB3	GEA0/IO188NDB3	GEA0/IO135NDB3	None	None	None
K4	GEA2/IO187RSB2	GEA2/IO187RSB2	GEA2/IO134RSB2	None	None	None
K5	IO169RSB2	IO169RSB2	IO127RSB2	None	None	None
K6	IO152RSB2	IO152RSB2	IO121RSB2	None	None	None
K7	GND	GND	GND	None	None	None
K8	IO117RSB2	IO117RSB2	IO104RSB2	None	None	None
K9	GDC2/IO116RSB2	GDC2/IO116RSB2	GDC2/IO82RSB2	None	None	None
K10	GND	GND	GND	None	None	None
K11	GDA0/IO113NDB1	GDA0/IO113NDB1	GDA0/IO79VDB1	None	None	None
K12	GDB0/IO112NDB1	GDB0/IO112NDB1	GDB0/IO78VDB1	None	None	None
L1	GND	GND	GND	None	None	None
L2	VMV3	VMV3	VMV3	None	None	None
L3	GEB2/IO186RSB2	GEB2/IO186RSB2	GEB2/IO133RSB2	None	None	None
L4	IO172RSB2	IO172RSB2	IO128RSB2	None	None	None
L5	VCCIB2	VCCIB2	VCCIB2	None	None	None
L6	IO153RSB2	IO153RSB2	IO119RSB2	None	None	None
L7	IO144RSB2	IO144RSB2	IO114RSB2	None	None	None
L8	IO140RSB2	IO140RSB2	IO110RSB2	None	None	None
L9	TMS	TMS	TMS	None	None	None
L10	VJTAG	VJTAG	VJTAG	None	None	None

**Table 5 • Pin Compatibility and Migration Table for the FG144 Package (continued)**

<b>Pin Number</b>	<b>A3P1000 Function</b>	<b>A3P600 Function</b>	<b>A3P400 Function</b>	<b>Migration Rule between A3P1000 and A3P600</b>	<b>Migration Rule between A3P1000 and A3P400</b>	<b>Migration Rule between A3P600 and A3P400</b>
L11	VMV2	VMV2	VMV2	None	None	None
L12	TRST	TRST	TRST	None	None	None
M1	GNDQ	GNDQ	GNDQ	None	None	None
M2	GEC2/IO185RSB2	GEC2/IO185RSB2	GEC2/IO132RSB2	None	None	None
M3	IO173RSB2	IO173RSB2	IO129RSB2	None	None	None
M4	IO168RSB2	IO168RSB2	IO126RSB2	None	None	None
M5	IO161RSB2	IO161RSB2	IO124RSB2	None	None	None
M6	IO156RSB2	IO156RSB2	IO122RSB2	None	None	None
M7	IO145RSB2	IO145RSB2	IO117RSB2	None	None	None
M8	IO141RSB2	IO141RSB2	IO115RSB2	None	None	None
M9	TDI	TDI	TDI	None	None	None
M10	VCCIB2	VCCIB2	VCCIB2	None	None	None
M11	VPUMP	VPUMP	VPUMP	None	None	None
M12	GNDQ	GNDQ	GNDQ	None	None	None

## FG256 Package

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
A1	GND	GND	GND	None	None	None
A2	GAA0/IO00RSB0	GAA0/IO00RSB0	GAA0/IO00RSB0	None	None	None
A3	GAA1/IO01RSB0	GAA1/IO01RSB0	GAA1/IO01RSB0	None	None	None
A4	GAB0/IO02RSB0	GAB0/IO02RSB0	GAB0/IO02RSB0	None	None	None
A5	IO16RSB0	IO11RSB0	IO16RSB0	None	None	None
A6	IO22RSB0	IO16RSB0	IO17RSB0	None	None	None
A7	IO28RSB0	IO18RSB0	IO22RSB0	None	None	None
A8	IO35RSB0	IO28RSB0	IO28RSB0	None	None	None
A9	IO45RSB0	IO34RSB0	IO34RSB0	None	None	None
A10	IO50RSB0	IO37RSB0	IO37RSB0	None	None	None
A11	IO55RSB0	IO41RSB0	IO41RSB0	None	None	None
A12	IO61RSB0	IO43RSB0	IO43RSB0	None	None	None
A13	GBB1/IO75RSB0	GBB1/IO57RSB0	GBB1/IO57RSB0	None	None	None
A14	GBA0/IO76RSB0	GBA0/IO58RSB0	GBA0/IO58RSB0	None	None	None
A15	GBA1/IO77RSB0	GBA1/IO59RSB0	GBA1/IO59RSB0	None	None	None
A16	GND	GND	GND	None	None	None
B1	GAB2/IO224PDB3	GAB2/IO173PDB3	GAB2/IO154UDB3	None	None	None
B2	GAA2/IO225PDB3	GAA2/IO174PDB3	GAA2/IO155UDB3	None	None	None
B3	GNDQ	GNDQ	IO12RSB0	None	<b>Rule 8</b>	<b>Rule 8</b>
B4	GAB1/IO03RSB0	GAB1/IO03RSB0	GAB1/IO03RSB0	None	None	None
B5	IO17RSB0	IO13RSB0	IO13RSB0	None	None	None
B6	IO21RSB0	IO14RSB0	IO14RSB0	None	None	None
B7	IO27RSB0	IO21RSB0	IO21RSB0	None	None	None
B8	IO34RSB0	IO27RSB0	IO27RSB0	None	None	None
B9	IO44RSB0	IO32RSB0	IO32RSB0	None	None	None
B10	IO51RSB0	IO38RSB0	IO38RSB0	None	None	None
B11	IO57RSB0	IO42RSB0	IO42RSB0	None	None	None
B12	GBC1/IO73RSB0	GBC1/IO55RSB0	GBC1/IO55RSB0	None	None	None
B13	GBB0/IO74RSB0	GBB0/IO56RSB0	GBB0/IO56RSB0	None	None	None
B14	IO71RSB0	IO52RSB0	IO44RSB0	None	None	None
B15	GBA2/IO78PDB1	GBA2/IO60PDB1	GBA2/IO60PDB1	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
B16	IO81PDB1	IO60NDB1	IO60NDB1	None	None	None
C1	IO224NDB3	IO173NDB3	IO154VDB3	None	None	None
C2	IO225NDB3	IO174NDB3	IO155VDB3	None	None	None
C3	VMV3	VMV3	IO11RSB0	None	<b>Rule 7</b>	<b>Rule 7</b>
C4	IO11RSB0	IO07RSB0	IO07RSB0	None	None	None
C5	GAC0/IO04RSB0	GAC0/IO04RSB0	GAC0/IO04RSB0	None	None	None
C6	GAC1/IO05RSB0	GAC1/IO05RSB0	GAC1/IO05RSB0	None	None	None
C7	IO25RSB0	IO20RSB0	IO20RSB0	None	None	None
C8	IO36RSB0	IO24RSB0	IO24RSB0	None	None	None
C9	IO42RSB0	IO33RSB0	IO33RSB0	None	None	None
C10	IO49RSB0	IO39RSB0	IO39RSB0	None	None	None
C11	IO56RSB0	IO44RSB0	IO45RSB0	None	None	None
C12	GBC0/IO72RSB0	GBC0/IO54RSB0	GBC0/IO54RSB0	None	None	None
C13	IO62RSB0	IO51RSB0	IO48RSB0	None	None	None
C14	VMV0	VMV0	VMV0	None	None	None
C15	IO78NDB1	IO61NPB1	IO61NPB1	None	None	None
C16	IO81NDB1	IO63PDB1	IO63PDB1	None	None	None
D1	IO222NDB3	IO171NDB3	IO151VDB3	None	None	None
D2	IO222PDB3	IO171PDB3	IO151UDB3	None	None	None
D3	GAC2/IO223PDB3	GAC2/IO172PDB3	GAC2/IO153UDB3	None	None	None
D4	IO223NDB3	IO06RSB0	IO06RSB0	None	None	None
D5	GNDQ	GNDQ	GNDQ	None	None	None
D6	IO23RSB0	IO10RSB0	IO10RSB0	None	None	None
D7	IO29RSB0	IO19RSB0	IO19RSB0	None	None	None
D8	IO33RSB0	IO26RSB0	IO26RSB0	None	None	None
D9	IO46RSB0	IO30RSB0	IO30RSB0	None	None	None
D10	IO52RSB0	IO40RSB0	IO40RSB0	None	None	None
D11	IO60RSB0	IO45RSB0	IO46RSB0	None	None	None
D12	GNDQ	GNDQ	GNDQ	None	None	None
D13	IO80NDB1	IO50RSB0	IO47RSB0	None	None	None
D14	GBB2/IO79PDB1	GBB2/IO61PPB1	GBB2/IO61PPB1	None	None	None
D15	IO79NDB1	IO53RSB0	IO53RSB0	None	None	None
D16	IO82NSB1	IO63NDB1	IO63NDB1	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
E1	IO217PDB3	IO166PDB3	IO150PDB3	None	None	None
E2	IO218PDB3	IO167NPB3	IO08RSB0	None	None	None
E3	IO221NDB3	IO172NDB3	IO153VDB3	None	None	None
E4	IO221PDB3	IO169NDB3	IO152VDB3	None	None	None
E5	VMV0	VMV0	VMV0	None	None	None
E6	VCCIB0	VCCIB0	VCCIB0	None	None	None
E7	VCCIB0	VCCIB0	VCCIB0	None	None	None
E8	IO38RSB0	IO25RSB0	IO25RSB0	None	None	None
E9	IO47RSB0	IO31RSB0	IO31RSB0	None	None	None
E10	VCCIB0	VCCIB0	VCCIB0	None	None	None
E11	VCCIB0	VCCIB0	VCCIB0	None	None	None
E12	VMV1	VMV1	VMV1	None	None	None
E13	GBC2/IO80PDB1	GBC2/IO62PDB1	GBC2/IO62PDB1	None	None	None
E14	IO83PPB1	IO67PPB1	IO65RSB1	None	None	None
E15	IO86PPB1	IO64PPB1	IO52RSB0	None	None	None
E16	IO87PDB1	IO66PDB1	IO66PDB1	None	None	None
F1	IO217NDB3	IO166NDB3	IO150NDB3	None	None	None
F2	IO218NDB3	IO168NPB3	IO149NPB3	None	None	None
F3	IO216PDB3	IO167PPB3	IO09RSB0	None	None	None
F4	IO216NDB3	IO169PDB3	IO152UDB3	None	None	None
F5	VCCIB3	VCCIB3	VCCIB3	None	None	None
F6	GND	GND	GND	None	None	None
F7	VCC	VCC	VCC	None	None	None
F8	VCC	VCC	VCC	None	None	None
F9	VCC	VCC	VCC	None	None	None
F10	VCC	VCC	VCC	None	None	None
F11	GND	GND	GND	None	None	None
F12	VCCIB1	VCCIB1	VCCIB1	None	None	None
F13	IO83NPB1	IO62NDB1	IO62NDB1	None	None	None
F14	IO86NPB1	IO64NPB1	IO49RSB0	None	None	None
F15	IO90PPB1	IO65PPB1	IO64PPB1	None	None	None
F16	IO87NDB1	IO66NDB1	IO66NDB1	None	None	None
G1	IO210PSB3	IO165NDB3	IO148NDB3	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
G2	IO213NDB3	IO165PDB3	IO148PDB3	None	None	None
G3	IO213PDB3	IO168PPB3	IO149PPB3	None	None	None
G4	GFC1/IO209PPB3	GFC1/IO164PPB3	GFC1/IO147PPB3	None	None	None
G5	VCCIB3	VCCIB3	VCCIB3	None	None	None
G6	VCC	VCC	VCC	None	None	None
G7	GND	GND	GND	None	None	None
G8	GND	GND	GND	None	None	None
G9	GND	GND	GND	None	None	None
G10	GND	GND	GND	None	None	None
G11	VCC	VCC	VCC	None	None	None
G12	VCCIB1	VCCIB1	VCCIB1	None	None	None
G13	GCC1/IO91PPB1	GCC1/IO69PPB1	GCC1/IO67PPB1	None	None	None
G14	IO90NPB1	IO65NPB1	IO64NPB1	None	None	None
G15	IO88PDB1	IO75PDB1	IO73PDB1	None	None	None
G16	IO88NDB1	IO75NDB1	IO73NDB1	None	None	None
H1	GFB0/IO208NPB3	GFB0/IO163NPB3	GFB0/IO146NPB3	None	None	None
H2	GFA0/IO207NDB3	GFA0/IO162NDB3	GFA0/IO145NDB3	None	None	None
H3	GFB1/IO208PPB3	GFB1/IO163PPB3	GFB1/IO146PPB3	None	None	None
H4	VCOMPLF	VCOMPLF	VCOMPLF	None	None	None
H5	GFC0/IO209NPB3	GFC0/IO164NPB3	GFC0/IO147NPB3	None	None	None
H6	VCC	VCC	VCC	None	None	None
H7	GND	GND	GND	None	None	None
H8	GND	GND	GND	None	None	None
H9	GND	GND	GND	None	None	None
H10	GND	GND	GND	None	None	None
H11	VCC	VCC	VCC	None	None	None
H12	GCC0/IO91NPB1	GCC0/IO69NPB1	GCC0/IO67NPB1	None	None	None
H13	GCB1/IO92PPB1	GCB1/IO70PPB1	GCB1/IO68PPB1	None	None	None
H14	GCA0/IO93NPB1	GCA0/IO71NPB1	GCA0/IO69NPB1	None	None	None
H15	IO96NPB1	IO67NPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
H16	GCB0/IO92NPB1	GCB0/IO70NPB1	GCB0/IO68NPB1	None	None	None
J1	GFA2/IO206PSB3	GFA2/IO161PPB3	GFA2/IO144PPB3	None	None	None
J2	GFA1/IO207PDB3	GFA1/IO162PDB3	GFA1/IO145PDB3	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
J3	VCCPLF	VCCPLF	VCCPLF	None	None	None
J4	IO205NDB3	IO160NDB3	IO143NDB3	None	None	None
J5	GFB2/IO205PDB3	GFB2/IO160PDB3	GFB2/IO143PDB3	None	None	None
J6	VCC	VCC	VCC	None	None	None
J7	GND	GND	GND	None	None	None
J8	GND	GND	GND	None	None	None
J9	GND	GND	GND	None	None	None
J10	GND	GND	GND	None	None	None
J11	VCC	VCC	VCC	None	None	None
J12	GCB2/IO95PPB1	GCB2/IO73PPB1	GCB2/IO71PPB1	None	None	None
J13	GCA1/IO93PPB1	GCA1/IO71PPB1	GCA1/IO69PPB1	None	None	None
J14	GCC2/IO96PPB1	GCC2/IO74PPB1	GCC2/IO72PPB1	None	None	None
J15	IO100PPB1	IO80PPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
J16	GCA2/IO94PSB1	GCA2/IO72PDB1	GCA2/IO70PDB1	None	None	None
K1	GFC2/IO204PDB3	GFC2/IO159PDB3	GFC2/IO142PDB3	None	None	None
K2	IO204NDB3	IO161NPB3	IO144NPB3	None	None	None
K3	IO203NDB3	IO156PPB3	IO141PPB3	None	None	None
K4	IO203PDB3	IO129RSB2	IO120RSB2	None	None	None
K5	VCCIB3	VCCIB3	VCCIB3	None	None	None
K6	VCC	VCC	VCC	None	None	None
K7	GND	GND	GND	None	None	None
K8	GND	GND	GND	None	None	None
K9	GND	GND	GND	None	None	None
K10	GND	GND	GND	None	None	None
K11	VCC	VCC	VCC	None	None	None
K12	VCCIB1	VCCIB1	VCCIB1	None	None	None
K13	IO95NPB1	IO73NPB1	IO71NPB1	None	None	None
K14	IO100NPB1	IO80NPB1	IO74RSB1	None	None	None
K15	IO102NDB1	IO74NPB1	IO72NPB1	None	None	None
K16	IO102PDB1	IO72NDB1	IO70NDB1	None	None	None
L1	IO202NDB3	IO159NDB3	IO142NDB3	None	None	None
L2	IO202PDB3	IO156NPB3	IO141NPB3	None	None	None
L3	IO196PPB3	IO151PPB3	IO125RSB2	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
L4	IO193PPB3	IO158PSB3	IO139RSB3	None	None	None
L5	VCCIB3	VCCIB3	VCCIB3	None	None	None
L6	GND	GND	GND	None	None	None
L7	VCC	VCC	VCC	None	None	None
L8	VCC	VCC	VCC	None	None	None
L9	VCC	VCC	VCC	None	None	None
L10	VCC	VCC	VCC	None	None	None
L11	GND	GND	GND	None	None	None
L12	VCCIB1	VCCIB1	VCCIB1	None	None	None
L13	GDB0/IO112NPB1	GDB0/IO87NPB1	GDB0/IO78VPB1	None	None	None
L14	IO106NDB1	IO85NDB1	IO76VDB1	None	None	None
L15	IO106PDB1	IO85PDB1	IO76UDB1	None	None	None
L16	IO107PDB1	IO84PDB1	IO75PDB1	None	None	None
M1	IO197NSB3	IO150PDB3	IO140PDB3	None	None	None
M2	IO196NPB3	IO151NPB3	IO130RSB2	None	None	None
M3	IO193NPB3	IO147NPB3	IO138NPB3	None	None	None
M4	GEC0/IO190NPB3	GEC0/IO146NPB3	GEC0/IO137NPB3	None	None	None
M5	VMV3	VMV3	VMV3	None	None	None
M6	VCCIB2	VCCIB2	VCCIB2	None	None	None
M7	VCCIB2	VCCIB2	VCCIB2	None	None	None
M8	IO147RSB2	IO117RSB2	IO108RSB2	None	None	None
M9	IO136RSB2	IO110RSB2	IO101RSB2	None	None	None
M10	VCCIB2	VCCIB2	VCCIB2	None	None	None
M11	VCCIB2	VCCIB2	VCCIB2	None	None	None
M12	VMV2	VMV2	VMV2	None	None	None
M13	IO110NDB1	IO94RSB2	IO83RSB2	None	None	None
M14	GDB1/IO112PPB1	GDB1/IO87PPB1	GDB1/IO78UPB1	None	None	None
M15	GDC1/IO111PDB1	GDC1/IO86PDB1	GDC1/IO77UDB1	None	None	None
M16	IO107NDB1	IO84NDB1	IO75NDB1	None	None	None
N1	IO194PSB3	IO150NDB3	IO140NDB3	None	None	None
N2	IO192PPB3	IO147PPB3	IO138PPB3	None	None	None
N3	GEC1/IO190PPB3	GEC1/IO146PPB3	GEC1/IO137PPB3	None	None	None
N4	IO192NPB3	IO140RSB2	IO131RSB2	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
N5	GNDQ	GNDQ	GNDQ	None	None	None
N6	GEA2/IO187RSB2	GEA2/IO143RSB2	GEA2/IO134RSB2	None	None	None
N7	IO161RSB2	IO126RSB2	IO117RSB2	None	None	None
N8	IO155RSB2	IO120RSB2	IO111RSB2	None	None	None
N9	IO141RSB2	IO108RSB2	IO99RSB2	None	None	None
N10	IO129RSB2	IO103RSB2	IO94RSB2	None	None	None
N11	IO124RSB2	IO99RSB2	IO87RSB2	None	None	None
N12	GNDQ	GNDQ	GNDQ	None	None	None
N13	IO110PDB1	IO92RSB2	IO93RSB2	None	None	None
N14	VJTAG	VJTAG	VJTAG	None	None	None
N15	GDC0/IO111NDB1	GDC0/IO86NDB1	GDC0/IO77VDB1	None	None	None
N16	GDA1/IO113PDB1	GDA1/IO88PDB1	GDA1/IO79UDB1	None	None	None
P1	GEB1/IO189PDB3	GEB1/IO145PDB3	GEB1/IO136PDB3	None	None	None
P2	GEB0/IO189NDB3	GEB0/IO145NDB3	GEB0/IO136NDB3	None	None	None
P3	VMV2	VMV2	VMV2	None	None	None
P4	IO179RSB2	IO138RSB2	IO129RSB2	None	None	None
P5	IO171RSB2	IO136RSB2	IO128RSB2	None	None	None
P6	IO165RSB2	IO131RSB2	IO122RSB2	None	None	None
P7	IO159RSB2	IO124RSB2	IO115RSB2	None	None	None
P8	IO151RSB2	IO119RSB2	IO110RSB2	None	None	None
P9	IO137RSB2	IO107RSB2	IO98RSB2	None	None	None
P10	IO134RSB2	IO104RSB2	IO95RSB2	None	None	None
P11	IO128RSB2	IO97RSB2	IO88RSB2	None	None	None
P12	VMV1	VMV1	IO84RSB2	None	<b>Rule 7</b>	<b>Rule 7</b>
P13	TCK	TCK	TCK	None	None	None
P14	VPUMP	VPUMP	VPUMP	None	None	None
P15	TRST	TRST	TRST	None	None	None
P16	GDA0/IO113NDB1	GDA0/IO88NDB1	GDA0/IO79VDB1	None	None	None
R1	GEA1/IO188PDB3	GEA1/IO144PDB3	GEA1/IO135PDB3	None	None	None
R2	GEA0/IO188NDB3	GEA0/IO144NDB3	GEA0/IO135NDB3	None	None	None
R3	IO184RSB2	IO139RSB2	IO127RSB2	None	None	None
R4	GEC2/IO185RSB2	GEC2/IO141RSB2	GEC2/IO132RSB2	None	None	None
R5	IO168RSB2	IO132RSB2	IO123RSB2	None	None	None

**Table 6 • Pin Compatibility and Migration Table for the FG256 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
R6	IO163RSB2	IO127RSB2	IO118RSB2	None	None	None
R7	IO157RSB2	IO121RSB2	IO112RSB2	None	None	None
R8	IO149RSB2	IO114RSB2	IO106RSB2	None	None	None
R9	IO143RSB2	IO109RSB2	IO100RSB2	None	None	None
R10	IO138RSB2	IO105RSB2	IO96RSB2	None	None	None
R11	IO131RSB2	IO98RSB2	IO89RSB2	None	None	None
R12	IO125RSB2	IO96RSB2	IO85RSB2	None	None	None
R13	GDB2/IO115RSB2	GDB2/IO90RSB2	GDB2/IO81RSB2	None	None	None
R14	TDI	TDI	TDI	None	None	None
R15	GNDQ	GNDQ	NC	None	<b>Rule 8</b>	<b>Rule 8</b>
R16	TDO	TDO	TDO	None	None	None
T1	GND	GND	GND	None	None	None
T2	IO183RSB2	IO137RSB2	IO126RSB2	None	None	None
T3	GEB2/IO186RSB2	GEB2/IO142RSB2	GEB2/IO133RSB2	None	None	None
T4	IO172RSB2	IO134RSB2	IO124RSB2	None	None	None
T5	IO170RSB2	IO125RSB2	IO116RSB2	None	None	None
T6	IO164RSB2	IO123RSB2	IO113RSB2	None	None	None
T7	IO158RSB2	IO118RSB2	IO107RSB2	None	None	None
T8	IO153RSB2	IO115RSB2	IO105RSB2	None	None	None
T9	IO142RSB2	IO111RSB2	IO102RSB2	None	None	None
T10	IO135RSB2	IO106RSB2	IO97RSB2	None	None	None
T11	IO130RSB2	IO102RSB2	IO92RSB2	None	None	None
T12	GDC2/IO116RSB2	GDC2/IO91RSB2	GDC2/IO82RSB2	None	None	None
T13	IO120RSB2	IO93RSB2	IO86RSB2	None	None	None
T14	GDA2/IO114RSB2	GDA2/IO89RSB2	GDA2/IO80RSB2	None	None	None
T15	TMS	TMS	TMS	None	None	None
T16	GND	GND	GND	None	None	None

## FG484 Package

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
A1	GND	GND	GND	None	None	None
A2	GND	GND	GND	None	None	None
A3	V <sub>CC</sub> I <sub>B0</sub>	V <sub>CC</sub> I <sub>B0</sub>	V <sub>CC</sub> I <sub>B0</sub>	None	None	None
A4	IO07RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A5	IO09RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A6	IO13RSB0	IO09RSB0	IO15RSB0	None	None	None
A7	IO18RSB0	IO15RSB0	IO18RSB0	None	None	None
A8	IO20RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A9	IO26RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A10	IO32RSB0	IO22RSB0	IO23RSB0	None	None	None
A11	IO40RSB0	IO23RSB0	IO29RSB0	None	None	None
A12	IO41RSB0	IO29RSB0	IO35RSB0	None	None	None
A13	IO53RSB0	IO35RSB0	IO36RSB0	None	None	None
A14	IO59RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A15	IO64RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A16	IO65RSB0	IO46RSB0	IO50RSB0	None	None	None
A17	IO67RSB0	IO48RSB0	IO51RSB0	None	None	None
A18	IO69RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
A19	NC	NC	NC	None	None	None
A20	V <sub>CC</sub> I <sub>B0</sub>	V <sub>CC</sub> I <sub>B0</sub>	V <sub>CC</sub> I <sub>B0</sub>	None	None	None
A21	GND	GND	GND	None	None	None
A22	GND	GND	GND	None	None	None
AA1	GND	GND	GND	None	None	None
AA2	V <sub>CC</sub> I <sub>B3</sub>	V <sub>CC</sub> I <sub>B3</sub>	V <sub>CC</sub> I <sub>B3</sub>	None	None	None
AA3	NC	NC	NC	None	None	None
AA4	IO181RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
AA5	IO178RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
AA6	IO175RSB2	IO135RSB2	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
AA7	IO169RSB2	IO133RSB2	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
AA8	IO166RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
AA9	IO160RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
AA10	IO152RSB2	NC	NC	Rule 1	Rule 1	None
AA11	IO146RSB2	NC	NC	Rule 1	Rule 1	None
AA12	IO139RSB2	NC	NC	Rule 1	Rule 1	None
AA13	IO133RSB2	NC	NC	Rule 1	Rule 1	None
AA14	NC	NC	NC	None	None	None
AA15	NC	NC	NC	None	None	None
AA16	IO122RSB2	IO101RSB2	NC	None	Rule 1	Rule 1
AA17	IO119RSB2	NC	NC	Rule 1	Rule 1	None
AA18	IO117RSB2	NC	NC	Rule 1	Rule 1	None
AA19	NC	NC	NC	None	None	None
AA20	NC	NC	NC	None	None	None
AA21	VCCIB1	VCCIB1	VCCIB1	None	None	None
AA22	GND	GND	GND	None	None	None
AB1	GND	GND	GND	None	None	None
AB2	GND	GND	GND	None	None	None
AB3	VCCIB2	VCCIB2	VCCIB2	None	None	None
AB4	IO180RSB2	NC	NC	Rule 1	Rule 1	None
AB5	IO176RSB2	NC	NC	Rule 1	Rule 1	None
AB6	IO173RSB2	IO130RSB2	IO121RSB2	None	None	None
AB7	IO167RSB2	IO128RSB2	IO119RSB2	None	None	None
AB8	IO162RSB2	IO122RSB2	IO114RSB2	None	None	None
AB9	IO156RSB2	IO116RSB2	IO109RSB2	None	None	None
AB10	IO150RSB2	NC	NC	Rule 1	Rule 1	None
AB11	IO145RSB2	NC	NC	Rule 1	Rule 1	None
AB12	IO144RSB2	IO113RSB2	IO104RSB2	None	None	None
AB13	IO132RSB2	IO112RSB2	IO103RSB2	None	None	None
AB14	IO127RSB2	NC	NC	Rule 1	Rule 1	None
AB15	IO126RSB2	NC	NC	Rule 1	Rule 1	None
AB16	IO123RSB2	IO100RSB2	IO91RSB2	None	None	None
AB17	IO121RSB2	IO95RSB2	IO90RSB2	None	None	None
AB18	IO118RSB2	NC	NC	Rule 1	Rule 1	None
AB19	NC	NC	NC	None	None	None
AB20	VCCIB2	VCCIB2	VCCIB2	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
AB21	GND	GND	GND	None	None	None
AB22	GND	GND	GND	None	None	None
B1	GND	GND	GND	None	None	None
B2	VCCIB3	VCCIB3	VCCIB3	None	None	None
B3	NC	NC	NC	None	None	None
B4	IO06RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B5	IO08RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B6	IO12RSB0	IO08RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B7	IO15RSB0	IO12RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B8	IO19RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B9	IO24RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B10	IO31RSB0	IO17RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B11	IO39RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B12	IO48RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B13	IO54RSB0	IO36RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B14	IO58RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B15	IO63RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B16	IO66RSB0	IO47RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B17	IO68RSB0	IO49RSB0	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
B18	IO70RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
B19	NC	NC	NC	None	None	None
B20	NC	NC	NC	None	None	None
B21	VCCIB1	VCCIB1	VCCIB1	None	None	None
B22	GND	GND	GND	None	None	None
C1	VCCIB3	VCCIB3	VCCIB3	None	None	None
C2	IO220PDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
C3	NC	NC	NC	None	None	None
C4	NC	NC	NC	None	None	None
C5	GND	GND	GND	None	None	None
C6	IO10RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
C7	IO14RSB0	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
C8	VCC	VCC	VCC	None	None	None
C9	VCC	VCC	VCC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
C10	IO30RSB0	NC	NC	Rule 1	Rule 1	None
C11	IO37RSB0	NC	NC	Rule 1	Rule 1	None
C12	IO43RSB0	NC	NC	Rule 1	Rule 1	None
C13	NC	NC	NC	None	None	None
C14	VCC	VCC	VCC	None	None	None
C15	VCC	VCC	VCC	None	None	None
C16	NC	NC	NC	None	None	None
C17	NC	NC	NC	None	None	None
C18	GND	GND	GND	None	None	None
C19	NC	NC	NC	None	None	None
C20	NC	NC	NC	None	None	None
C21	NC	NC	NC	None	None	None
C22	VCCIB1	VCCIB1	VCCIB1	None	None	None
D1	IO219PDB3	NC	NC	Rule 1	Rule 1	None
D2	IO220NDB3	NC	NC	Rule 1	Rule 1	None
D3	NC	NC	NC	None	None	None
D4	GND	GND	GND	None	None	None
D5	GAA0/IO00RSB0	GAA0/IO00RSB0	GAA0/IO00RSB0	None	None	None
D6	GAA1/IO01RSB0	GAA1/IO01RSB0	GAA1/IO01RSB0	None	None	None
D7	GAB0/IO02RSB0	GAB0/IO02RSB0	GAB0/IO02RSB0	None	None	None
D8	IO16RSB0	IO11RSB0	IO16RSB0	None	None	None
D9	IO22RSB0	IO16RSB0	IO17RSB0	None	None	None
D10	IO28RSB0	IO18RSB0	IO22RSB0	None	None	None
D11	IO35RSB0	IO28RSB0	IO28RSB0	None	None	None
D12	IO45RSB0	IO34RSB0	IO34RSB0	None	None	None
D13	IO50RSB0	IO37RSB0	IO37RSB0	None	None	None
D14	IO55RSB0	IO41RSB0	IO41RSB0	None	None	None
D15	IO61RSB0	IO43RSB0	IO43RSB0	None	None	None
D16	GBB1/IO75RSB0	GBB1/IO57RSB0	GBB1/IO57RSB0	None	None	None
D17	GBA0/IO76RSB0	GBA0/IO58RSB0	GBA0/IO58RSB0	None	None	None
D18	GBA1/IO77RSB0	GBA1/IO59RSB0	GBA1/IO59RSB0	None	None	None
D19	GND	GND	GND	None	None	None
D20	NC	NC	NC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
D21	NC	NC	NC	None	None	None
D22	NC	NC	NC	None	None	None
E1	IO219NDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
E2	NC	NC	NC	None	None	None
E3	GND	GND	GND	None	None	None
E4	GAB2/IO224PDB3	GAB2/IO173PDB3	GAB2/IO154UDB3	None	None	None
E5	GAA2/IO225PDB3	GAA2/IO174PDB3	GAA2/IO155UDB3	None	None	None
E6	GNDQ	GNDQ	IO12RSB0	None	<b>Rule 8</b>	<b>Rule 8</b>
E7	GAB1/IO03RSB0	GAB1/IO03RSB0	GAB1/IO03RSB0	None	None	None
E8	IO17RSB0	IO13RSB0	IO13RSB0	None	None	None
E9	IO21RSB0	IO14RSB0	IO14RSB0	None	None	None
E10	IO27RSB0	IO21RSB0	IO21RSB0	None	None	None
E11	IO34RSB0	IO27RSB0	IO27RSB0	None	None	None
E12	IO44RSB0	IO32RSB0	IO32RSB0	None	None	None
E13	IO51RSB0	IO38RSB0	IO38RSB0	None	None	None
E14	IO57RSB0	IO42RSB0	IO42RSB0	None	None	None
E15	GBC1/IO73RSB0	GBC1/IO55RSB0	GBC1/IO55RSB0	None	None	None
E16	GBB0/IO74RSB0	GBB0/IO56RSB0	GBB0/IO56RSB0	None	None	None
E17	IO71RSB0	IO52RSB0	IO44RSB0	None	None	None
E18	GBA2/IO78PDB1	GBA2/IO60PDB1	GBA2/IO60PDB1	None	None	None
E19	IO81PDB1	IO60NDB1	IO60NDB1	None	None	None
E20	GND	GND	GND	None	None	None
E21	NC	NC	NC	None	None	None
E22	IO84PDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
F1	NC	NC	NC	None	None	None
F2	IO215PDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
F3	IO215NDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
F4	IO224NDB3	IO173NDB3	IO154VDB3	None	None	None
F5	IO225NDB3	IO174NDB3	IO155VDB3	None	None	None
F6	VMV3	VMV3	IO11RSB0	None	<b>Rule 7</b>	<b>Rule 7</b>
F7	IO11RSB0	IO07RSB0	IO07RSB0	None	None	None
F8	GAC0/IO04RSB0	GAC0/IO04RSB0	GAC0/IO04RSB0	None	None	None
F9	GAC1/IO05RSB0	GAC1/IO05RSB0	GAC1/IO05RSB0	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
F10	IO25RSB0	IO20RSB0	IO20RSB0	None	None	None
F11	IO36RSB0	IO24RSB0	IO24RSB0	None	None	None
F12	IO42RSB0	IO33RSB0	IO33RSB0	None	None	None
F13	IO49RSB0	IO39RSB0	IO39RSB0	None	None	None
F14	IO56RSB0	IO44RSB0	IO45RSB0	None	None	None
F15	GBC0/IO72RSB0	GBC0/IO54RSB0	GBC0/IO54RSB0	None	None	None
F16	IO62RSB0	IO51RSB0	IO48RSB0	None	None	None
F17	VMV0	VMV0	VMV0	None	None	None
F18	IO78NDB1	IO61NPB1	IO61NPB1	None	None	None
F19	IO81NDB1	IO63PDB1	IO63PDB1	None	None	None
F20	IO82PPB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
F21	NC	NC	NC	None	None	None
F22	IO84NDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
G1	IO214NDB3	IO170NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
G2	IO214PDB3	IO170PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
G3	NC	NC	NC	None	None	None
G4	IO222NDB3	IO171NDB3	IO151VDB3	None	None	None
G5	IO222PDB3	IO171PDB3	IO151UDB3	None	None	None
G6	GAC2/IO223PDB3	GAC2/IO172PDB3	GAC2/IO153UDB3	None	None	None
G7	IO223NDB3	IO06RSB0	IO06RSB0	None	None	None
G8	GNDQ	GNDQ	GNDQ	None	None	None
G9	IO23RSB0	IO10RSB0	IO10RSB0	None	None	None
G10	IO29RSB0	IO19RSB0	IO19RSB0	None	None	None
G11	IO33RSB0	IO26RSB0	IO26RSB0	None	None	None
G12	IO46RSB0	IO30RSB0	IO30RSB0	None	None	None
G13	IO52RSB0	IO40RSB0	IO40RSB0	None	None	None
G14	IO60RSB0	IO45RSB0	IO46RSB0	None	None	None
G15	GNDQ	GNDQ	GNDQ	None	None	None
G16	IO80NDB1	IO50RSB0	IO47RSB0	None	None	None
G17	GBB2/IO79PDB1	GBB2/IO61PPB1	GBB2/IO61PPB1	None	None	None
G18	IO79NDB1	IO53RSB0	IO53RSB0	None	None	None
G19	IO82NPB1	IO63NDB1	IO63NDB1	None	None	None
G20	IO85PDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
G21	IO85NDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
G22	NC	NC	NC	None	None	None
H1	NC	NC	NC	None	None	None
H2	NC	NC	NC	None	None	None
H3	VCC	VCC	VCC	None	None	None
H4	IO217PDB3	IO166PDB3	IO150PDB3	None	None	None
H5	IO218PDB3	IO167NPB3	IO08RSB0	None	None	None
H6	IO221NDB3	IO172NDB3	IO153VDB3	None	None	None
H7	IO221PDB3	IO169NDB3	IO152VDB3	None	None	None
H8	VMV0	VMV0	VMV0	None	None	None
H9	VCCIB0	VCCIB0	VCCIB0	None	None	None
H10	VCCIB0	VCCIB0	VCCIB0	None	None	None
H11	IO38RSB0	IO25RSB0	IO25RSB0	None	None	None
H12	IO47RSB0	IO31RSB0	IO31RSB0	None	None	None
H13	VCCIB0	VCCIB0	VCCIB0	None	None	None
H14	VCCIB0	VCCIB0	VCCIB0	None	None	None
H15	VMV1	VMV1	VMV1	None	None	None
H16	GBC2/IO80PDB1	GBC2/IO62PDB1	GBC2/IO62PDB1	None	None	None
H17	IO83PPB1	IO67PPB1	IO65RSB1	None	None	None
H18	IO86PPB1	IO64PPB1	IO52RSB0	None	None	None
H19	IO87PDB1	IO66PDB1	IO66PDB1	None	None	None
H20	VCC	VCC	VCC	None	None	None
H21	NC	NC	NC	None	None	None
H22	NC	NC	NC	None	None	None
J1	IO212NDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
J2	IO212PDB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
J3	NC	NC	NC	None	None	None
J4	IO217NDB3	IO166NDB3	IO150NDB3	None	None	None
J5	IO218NDB3	IO168NPB3	IO149NPB3	None	None	None
J6	IO216PDB3	IO167PPB3	IO09RSB0	None	None	None
J7	IO216NDB3	IO169PDB3	IO152UDB3	None	None	None
J8	VCCIB3	VCCIB3	VCCIB3	None	None	None
J9	GND	GND	GND	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
J10	VCC	VCC	VCC	None	None	None
J11	VCC	VCC	VCC	None	None	None
J12	VCC	VCC	VCC	None	None	None
J13	VCC	VCC	VCC	None	None	None
J14	GND	GND	GND	None	None	None
J15	VCCIB1	VCCIB1	VCCIB1	None	None	None
J16	IO83NPB1	IO62NDB1	IO62NDB1	None	None	None
J17	IO86NPB1	IO64NPB1	IO49RSB0	None	None	None
J18	IO90PPB1	IO65PPB1	IO64PPB1	None	None	None
J19	IO87NDB1	IO66NDB1	IO66NDB1	None	None	None
J20	NC	NC	NC	None	None	None
J21	IO89PDB1	IO68PDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
J22	IO89NDB1	IO68NDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
K1	IO211PDB3	IO157PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
K2	IO211NDB3	IO157NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
K3	NC	NC	NC	None	None	None
K4	IO210PPB3	IO165NDB3	IO148NDB3	None	None	None
K5	IO213NDB3	IO165PDB3	IO148PDB3	None	None	None
K6	IO213PDB3	IO168PPB3	IO149PPB3	None	None	None
K7	GFC1/IO209PPB3	GFC1/IO164PPB3	GFC1/IO147PPB3	None	None	None
K8	VCCIB3	VCCIB3	VCCIB3	None	None	None
K9	V <sub>CC</sub>	V <sub>CC</sub>	V <sub>CC</sub>	None	None	None
K10	GND	GND	GND	None	None	None
K11	GND	GND	GND	None	None	None
K12	GND	GND	GND	None	None	None
K13	GND	GND	GND	None	None	None
K14	VCC	VCC	VCC	None	None	None
K15	VCCIB1	VCCIB1	VCCIB1	None	None	None
K16	GCC1/IO91PPB1	GCC1/IO69PPB1	GCC1/IO67PPB1	None	None	None
K17	IO90NPB1	IO65NPB1	IO64NPB1	None	None	None
K18	IO88PDB1	IO75PDB1	IO73PDB1	None	None	None
K19	IO88NDB1	IO75NDB1	IO73NDB1	None	None	None
K20	IO94NPB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
K21	IO98NDB1	IO76NDB1	NC	None	Rule 1	Rule 1
K22	IO98PDB1	IO76PDB1	NC	None	Rule 1	Rule 1
L1	NC	NC	NC	None	None	None
L2	IO200PDB3	IO155PDB3	NC	None	Rule 1	Rule 1
L3	IO210NPB3	NC	NC	Rule 1	Rule 1	None
L4	GFB0/IO208NPB3	GFB0/IO163NPB3	GFB0/IO146NPB3	None	None	None
L5	GFA0/IO207NDB3	GFA0/IO162NDB3	GFA0/IO145NDB3	None	None	None
L6	GFB1/IO208PPB3	GFB1/IO163PPB3	GFB1/IO146PPB3	None	None	None
L7	VCOMPLF	VCOMPLF	VCOMPLF	None	None	None
L8	GFC0/IO209NPB3	GFC0/IO164NPB3	GFC0/IO147NPB3	None	None	None
L9	VCC	VCC	VCC	None	None	None
L10	GND	GND	GND	None	None	None
L11	GND	GND	GND	None	None	None
L12	GND	GND	GND	None	None	None
L13	GND	GND	GND	None	None	None
L14	V <sub>CC</sub>	V <sub>CC</sub>	V <sub>CC</sub>	None	None	None
L15	GCC0/IO91NPB1	GCC0/IO69NPB1	GCC0/IO67NPB1	None	None	None
L16	GCB1/IO92PPB1	GCB1/IO70PPB1	GCB1/IO68PPB1	None	None	None
L17	GCA0/IO93NPB1	GCA0/IO71NPB1	GCA0/IO69NPB1	None	None	None
L18	IO96NPB1	IO67NPB1	NC	None	Rule 1	Rule 1
L19	GCB0/IO92NPB1	GCB0/IO70NPB1	GCB0/IO68NPB1	None	None	None
L20	IO97PDB1	IO77PDB1	NC	None	Rule 1	Rule 1
L21	IO97NDB1	IO77NDB1	NC	None	Rule 1	Rule 1
L22	IO99NPB1	IO78NPB1	NC	None	Rule 1	Rule 1
M1	NC	NC	NC	None	None	None
M2	IO200NDB3	IO155NDB3	NC	None	Rule 1	Rule 1
M3	IO206NDB3	IO158NPB3	NC	None	Rule 1	Rule 1
M4	GFA2/IO206PDB3	GFA2/IO161PPB3	GFA2/IO144PPB3	None	None	None
M5	GFA1/IO207PDB3	GFA1/IO162PDB3	GFA1/IO145PDB3	None	None	None
M6	VCCPLF	VCCPLF	VCCPLF	None	None	None
M7	IO205NDB3	IO160NDB3	IO143NDB3	None	None	None
M8	GFB2/IO205PDB3	GFB2/IO160PDB3	GFB2/IO143PDB3	None	None	None
M9	VCC	VCC	VCC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
M10	GND	GND	GND	None	None	None
M11	GND	GND	GND	None	None	None
M12	GND	GND	GND	None	None	None
M13	GND	GND	GND	None	None	None
M14	V <sub>CC</sub>	V <sub>CC</sub>	V <sub>CC</sub>	None	None	None
M15	GCB2/IO95PPB1	GCB2/IO73PPB1	GCB2/IO71PPB1	None	None	None
M16	GCA1/IO93PPB1	GCA1/IO71PPB1	GCA1/IO69PPB1	None	None	None
M17	GCC2/IO96PPB1	GCC2/IO74PPB1	GCC2/IO72PPB1	None	None	None
M18	IO100PPB1	IO80PPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
M19	GCA2/IO94PPB1	GCA2/IO72PDB1	GCA2/IO70PDB1	None	None	None
M20	IO101PPB1	IO79PPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
M21	IO99PPB1	IO78PPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
M22	NC	NC	NC	None	None	None
N1	IO201NDB3	IO154NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
N2	IO201PDB3	IO154PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
N3	NC	NC	NC	None	None	None
N4	GFC2/IO204PDB3	GFC2/IO159PDB3	GFC2/IO142PDB3	None	None	None
N5	IO204NDB3	IO161NPB3	IO144NPB3	None	None	None
N6	IO203NDB3	IO156PPB3	IO141PPB3	None	None	None
N7	IO203PDB3	IO129RSB2	IO120RSB2	None	None	None
N8	VCCIB3	VCCIB3	VCCIB3	None	None	None
N9	V <sub>CC</sub>	V <sub>CC</sub>	V <sub>CC</sub>	None	None	None
N10	GND	GND	GND	None	None	None
N11	GND	GND	GND	None	None	None
N12	GND	GND	GND	None	None	None
N13	GND	GND	GND	None	None	None
N14	VCC	VCC	VCC	None	None	None
N15	VCCIB1	VCCIB1	VCCIB1	None	None	None
N16	IO95NPB1	IO73NPB1	IO71NPB1	None	None	None
N17	IO100NPB1	IO80NPB1	IO74RSB1	None	None	None
N18	IO102NDB1	IO74NPB1	IO72NPB1	None	None	None
N19	IO102PDB1	IO72NDB1	IO70NDB1	None	None	None
N20	NC	NC	NC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
N21	IO101NPB1	IO79NPB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
N22	IO103PDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
P1	NC	NC	NC	None	None	None
P2	IO199PDB3	IO153PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
P3	IO199NDB3	IO153NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
P4	IO202NDB3	IO159NDB3	IO142NDB3	None	None	None
P5	IO202PDB3	IO156NPB3	IO141NPB3	None	None	None
P6	IO196PPB3	IO151PPB3	IO125RSB2	None	None	None
P7	IO193PPB3	IO158PPB3	IO139RSB3	None	None	None
P8	VCCIB3	VCCIB3	VCCIB3	None	None	None
P9	GND	GND	GND	None	None	None
P10	VCC	VCC	VCC	None	None	None
P11	VCC	VCC	VCC	None	None	None
P12	VCC	V <sub>CC</sub>	VCC	None	None	None
P13	VCC	VCC	VCC	None	None	None
P14	GND	GND	GND	None	None	None
P15	VCCIB1	VCCIB1	VCCIB1	None	None	None
P16	GDB0/IO112NPB1	GDB0/IO87NPB1	GDB0/IO78VPB1	None	None	None
P17	IO106NDB1	IO85NDB1	IO76VDB1	None	None	None
P18	IO106PDB1	IO85PDB1	IO76UDB1	None	None	None
P19	IO107PDB1	IO84PDB1	IO75PDB1	None	None	None
P20	NC	NC	NC	None	None	None
P21	IO104PDB1	IO81PDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
P22	IO103NDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
R1	NC	NC	NC	None	None	None
R2	IO197PPB3	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
R3	VCC	VCC	VCC	None	None	None
R4	IO197NPB3	IO150PDB3	IO140PDB3	None	None	None
R5	IO196NPB3	IO151NPB3	IO130RSB2	None	None	None
R6	IO193NPB3	IO147NPB3	IO138NPB3	None	None	None
R7	GEC0/IO190NPB3	GEC0/IO146NPB3	GEC0/IO137NPB3	None	None	None
R8	VMV3	VMV3	VMV3	None	None	None
R9	VCCIB2	VCCIB2	VCCIB2	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
R10	VCCIB2	VCCIB2	VCCIB2	None	None	None
R11	IO147RSB2	IO117RSB2	IO108RSB2	None	None	None
R12	IO136RSB2	IO110RSB2	IO101RSB2	None	None	None
R13	VCCIB2	VCCIB2	VCCIB2	None	None	None
R14	VCCIB2	VCCIB2	VCCIB2	None	None	None
R15	VMV2	VMV2	VMV2	None	None	None
R16	IO110NDB1	IO94RSB2	IO83RSB2	None	None	None
R17	GDB1/IO112PPB1	GDB1/IO87PPB1	GDB1/IO78UPB1	None	None	None
R18	GDC1/IO111PDB1	GDC1/IO86PDB1	GDC1/IO77UDB1	None	None	None
R19	IO107NDB1	IO84NDB1	IO75NDB1	None	None	None
R20	VCC	VCC	VCC	None	None	None
R21	IO104NDB1	IO81NDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
R22	IO105PDB1	IO82PDB1	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
T1	IO198PDB3	IO152PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
T2	IO198NDB3	IO152NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
T3	NC	NC	NC	None	None	None
T4	IO194PPB3	IO150NDB3	IO140NDB3	None	None	None
T5	IO192PPB3	IO147PPB3	IO138PPB3	None	None	None
T6	GEC1/IO190PPB3	GEC1/IO146PPB3	GEC1/IO137PPB3	None	None	None
T7	IO192NPB3	IO140RSB2	IO131RSB2	None	None	None
T8	GNDQ	GNDQ	GNDQ	None	None	None
T9	GEA2/IO187RSB2	GEA2/IO143RSB2	GEA2/IO134RSB2	None	None	None
T10	IO161RSB2	IO126RSB2	IO117RSB2	None	None	None
T11	IO155RSB2	IO120RSB2	IO111RSB2	None	None	None
T12	IO141RSB2	IO108RSB2	IO99RSB2	None	None	None
T13	IO129RSB2	IO103RSB2	IO94RSB2	None	None	None
T14	IO124RSB2	IO99RSB2	IO87RSB2	None	None	None
T15	GNDQ	GNDQ	GNDQ	None	None	None
T16	IO110PDB1	IO92RSB2	IO93RSB2	None	None	None
T17	VJTAG	VJTAG	VJTAG	None	None	None
T18	GDC0/IO111NDB1	GDC0/IO86NDB1	GDC0/IO77VDB1	None	None	None
T19	GDA1/IO113PDB1	GDA1/IO88PDB1	GDA1/IO79UDB1	None	None	None
T20	NC	NC	NC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
T21	IO108PDB1	IO83PDB1	NC	None	Rule 1	Rule 1
T22	IO105NDB1	IO82NDB1	NC	None	Rule 1	Rule 1
U1	IO195PDB3	IO149PDB3	NC	None	Rule 1	Rule 1
U2	IO195NDB3	IO149NDB3	NC	None	Rule 1	Rule 1
U3	IO194NPB3	NC	NC	Rule 1	Rule 1	None
U4	GEB1/IO189PDB3	GEB1/IO145PDB3	GEB1/IO136PDB3	None	None	None
U5	GEB0/IO189NDB3	GEB0/IO145NDB3	GEB0/IO136NDB3	None	None	None
U6	VMV2	VMV2	VMV2	None	None	None
U7	IO179RSB2	IO138RSB2	IO129RSB2	None	None	None
U8	IO171RSB2	IO136RSB2	IO128RSB2	None	None	None
U9	IO165RSB2	IO131RSB2	IO122RSB2	None	None	None
U10	IO159RSB2	IO124RSB2	IO115RSB2	None	None	None
U11	IO151RSB2	IO119RSB2	IO110RSB2	None	None	None
U12	IO137RSB2	IO107RSB2	IO98RSB2	None	None	None
U13	IO134RSB2	IO104RSB2	IO95RSB2	None	None	None
U14	IO128RSB2	IO97RSB2	IO88RSB2	None	None	None
U15	VMV1	VMV1	IO84RSB2	None	Rule 7	Rule 7
U16	TCK	TCK	TCK	None	None	None
U17	VPUMP	VPUMP	VPUMP	None	None	None
U18	TRST	TRST	TRST	None	None	None
U19	GDA0/IO113NDB1	GDA0/IO88NDB1	GDA0/IO79VDB1	None	None	None
U20	NC	NC	NC	None	None	None
U21	IO108NDB1	IO83NDB1	NC	None	Rule 1	Rule 1
U22	IO109PDB1	NC	NC	Rule 1	Rule 1	None
V1	NC	NC	NC	None	None	None
V2	NC	NC	NC	None	None	None
V3	GND	GND	GND	None	None	None
V4	GEA1/IO188PDB3	GEA1/IO144PDB3	GEA1/IO135PDB3	None	None	None
V5	GEA0/IO188NDB3	GEA0/IO144NDB3	GEA0/IO135NDB3	None	None	None
V6	IO184RSB2	IO139RSB2	IO127RSB2	None	None	None
V7	GEC2/IO185RSB2	GEC2/IO141RSB2	GEC2/IO132RSB2	None	None	None
V8	IO168RSB2	IO132RSB2	IO123RSB2	None	None	None
V9	IO163RSB2	IO127RSB2	IO118RSB2	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
V10	IO157RSB2	IO121RSB2	IO112RSB2	None	None	None
V11	IO149RSB2	IO114RSB2	IO106RSB2	None	None	None
V12	IO143RSB2	IO109RSB2	IO100RSB2	None	None	None
V13	IO138RSB2	IO105RSB2	IO96RSB2	None	None	None
V14	IO131RSB2	IO98RSB2	IO89RSB2	None	None	None
V15	IO125RSB2	IO96RSB2	IO85RSB2	None	None	None
V16	GDB2/IO115RSB2	GDB2/IO90RSB2	GDB2/IO81RSB2	None	None	None
V17	TDI	TDI	TDI	None	None	None
V18	GNDQ	GNDQ	NC	None	<b>Rule 8</b>	<b>Rule 8</b>
V19	TDO	TDO	TDO	None	None	None
V20	GND	GND	GND	None	None	None
V21	NC	NC	NC	None	None	None
V22	IO109NDB1	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
W1	NC	NC	NC	None	None	None
W2	IO191PDB3	IO148PDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
W3	NC	NC	NC	None	None	None
W4	GND	GND	GND	None	None	None
W5	IO183RSB2	IO137RSB2	IO126RSB2	None	None	None
W6	GEB2/IO186RSB2	GEB2/IO142RSB2	GEB2/IO133RSB2	None	None	None
W7	IO172RSB2	IO134RSB2	IO124RSB2	None	None	None
W8	IO170RSB2	IO125RSB2	IO116RSB2	None	None	None
W9	IO164RSB2	IO123RSB2	IO113RSB2	None	None	None
W10	IO158RSB2	IO118RSB2	IO107RSB2	None	None	None
W11	IO153RSB2	IO115RSB2	IO105RSB2	None	None	None
W12	IO142RSB2	IO111RSB2	IO102RSB2	None	None	None
W13	IO135RSB2	IO106RSB2	IO97RSB2	None	None	None
W14	IO130RSB2	IO102RSB2	IO92RSB2	None	None	None
W15	GDC2/IO116RSB2	GDC2/IO91RSB2	GDC2/IO82RSB2	None	None	None
W16	IO120RSB2	IO93RSB2	IO86RSB2	None	None	None
W17	GDA2/IO114RSB2	GDA2/IO89RSB2	GDA2/IO80RSB2	None	None	None
W18	TMS	TMS	TMS	None	None	None
W19	GND	GND	GND	None	None	None
W20	NC	NC	NC	None	None	None

**Table 7 • Pin Compatibility and Migration Table for the FG484 Package (continued)**

Pin Number	A3P1000 Function	A3P600 Function	A3P400 Function	Migration Rule between A3P1000 and A3P600	Migration Rule between A3P1000 and A3P400	Migration Rule between A3P600 and A3P400
W21	NC	NC	NC	None	None	None
W22	NC	NC	NC	None	None	None
Y1	VCCIB3	VCCIB3	VCCIB3	None	None	None
Y2	IO191NDB3	IO148NDB3	NC	None	<b>Rule 1</b>	<b>Rule 1</b>
Y3	NC	NC	NC	None	None	None
Y4	IO182RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y5	GND	GND	GND	None	None	None
Y6	IO177RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y7	IO174RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y8	VCC	VCC	VCC	None	None	None
Y9	VCC	VCC	VCC	None	None	None
Y10	IO154RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y11	IO148RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y12	IO140RSB2	NC	NC	<b>Rule 1</b>	<b>Rule 1</b>	None
Y13	NC	NC	NC	None	None	None
Y14	VCC	VCC	VCC	None	None	None
Y15	VCC	VCC	VCC	None	None	None
Y16	NC	NC	NC	None	None	None
Y17	NC	NC	NC	None	None	None
Y18	GND	GND	GND	None	None	None
Y19	NC	NC	NC	None	None	None
Y20	NC	NC	NC	None	None	None
Y21	NC	NC	NC	None	None	None
Y22	VCCIB1	VCCIB1	VCCIB1	None	None	None

## Conclusion

This application note describes design migration among ProASIC3 family devices with an emphasis on package pin compatibility. The ProASIC3 family of devices shares numerous common architectural features. During a system migration, care should be taken regarding the architectural features of each core. Additionally, a key requirement is running functional simulation before and after the migration, using Microsemi tools. Microsemi will be updating this document with additional packages in the future.

## List of Changes

The following table lists critical changes that were made in each revision of the chapter.

Date	Changes	Page
v1.1 (March 2008)	The part number for this document was changed from 51700094-016-0 to 51700094-017-1.	N/A
v1.0 (January 2008)	In <a href="#">Table 4 • Pin Compatibility and Migration Table for the PQ208 Package</a> , pin 107 was updated to include Rule 8.	5
51900143-1/10.07	The title of the document and the <a href="#">"Introduction" section</a> were updated to clarify the topics covered in the application note.	1
	The <a href="#">"Design Migration" section</a> was updated to match and cross-reference the sections of the document in sequence.	1
	The title of <a href="#">Table 1 • Device Information</a> was updated.	1
	Table 3 • <a href="#">Migration Rules from Higher-Density to Mid-Density Devices</a> and Table 4 were combined and a table note was added to refer to the datasheet for I/O naming conventions.	3
	In the <a href="#">"Power Supply and Board-Level Considerations" section</a> , the following bullet was removed:  "Since each bank independently supports 1.5 V to 3.3 V, I/Os must be connected to the V <sub>CCj</sub> Bx of their own banks."	4
	The <a href="#">"Related Documents" section</a> was added.	40



**Microsemi Corporate Headquarters**  
One Enterprise, Aliso Viejo CA 92656 USA  
Within the USA: +1 (949) 380-6100  
Sales: +1 (949) 380-6136  
Fax: +1 (949) 215-4996

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