Virtex-II Pro™ Platform FPGAs: Pinout Information

Advance Product Specification

This document provides Virtex-II Pro Device/Package Combinations and Maximum I/Os and Virtex-II Pro Pin Definitions, followed by pinout tables for these packages:

- FG256 Fine-Pitch BGA Package
- FG456 Fine-Pitch BGA Package
- FG676 Fine-Pitch BGA Package

- FF672 Flip-Chip Fine-Pitch BGA Package
- FF896 Flip-Chip Fine-Pitch BGA Package
- FF1152 Flip-Chip Fine-Pitch BGA Package
- FF1148 Flip-Chip Fine-Pitch BGA Package
- FF1517 Flip-Chip Fine-Pitch BGA Package
- FF1704 Flip-Chip Fine-Pitch BGA Package
- FF1696 Flip-Chip Fine-Pitch BGA Package

Virtex-II Pro Device/Package Combinations and Maximum I/Os

Wire-bond and flip-chip packages are available. Table 1 and Table 2 show the maximum number of user I/Os possible in wire-bond and flip-chip packages, respectively.

- FG denotes wire-bond fine-pitch BGA (1.00 mm pitch).
- FF denotes flip-chip fine-pitch BGA (1.00 mm pitch)

Table 1: **Wire-Bond Packages Information**

Package	FG256	FG456	FG676
Pitch (mm)	1.00	1.00	1.00
Size (mm)	17 x 17	23 x 23	26 x 26
Maximum I/Os	140	248	412

Table 2: **Flip-Chip Packages Information**

Package	FF672	FF896	FF1152	FF1148	FF1517	FF1704	FF1696
Pitch (mm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Size (mm)	27 x 27	31 x 31	35 x 35	35 x 35	40 x 40	42.5 x 42.5	42.5 x 42.5
Maximum I/Os	396	556	644	812	964	1040	1200

Table 3 shows the number of available I/Os, the number of RocketIO™ multi-gigabit transceiver (MGT) pins, and the number of differential I/O pairs for each Virtex-II Pro device/package combination. The number of I/Os per package includes all user I/Os *except* the fifteen control pins (CCLK, DONE, M0, M1, M2, PROG_B, PWRDWN_B, TCK, TDI, TDO, TMS, HSWAP_EN, DXN, DXP, AND RSVD) and the nine (per transceiver) RocketIO MGT pins (TXP, TXN, RXP, RXN, AVCCAUXTX, AVCCAUXRX, VTTX, VTRX, and GNDA). The number of transceivers in the device is the number of RocketIO MGT pins in Table 3 divided by nine.

Table 3: **Virtex-II Pro Available I/Os and RocketIO MGT Pins per Device/Package Combination**

Virtex-II Pro Device	User I/Os & RocketIO MGT Pins	Virtex-II Pro Package									
		FG256	FG456	FG676	FF672	FF896	FF1152	FF1148	FF1517	FF1704	FF1696
XC2VP2	Available User I/Os	140	156	-	204	-	-	-	-	-	-
	RocketIO MGT Pins	36	36	-	36	-	-	-	-	-	-
	Differential I/O Pairs	68	76	-	100	-	-	-	-	-	-

Table 3: **Virtex-II Pro Available I/Os and RocketIO MGT Pins per Device/Package Combination** *(Continued)*

Virtex-II Pro Device	User I/Os & RocketIO MGT Pins	Virtex-II Pro Package									
		FG256	FG456	FG676	FF672	FF896	FF1152	FF1148	FF1517	FF1704	FF1696
XC2VP4	Available User I/Os	140	248	-	348	-	-	-	-	-	-
	RocketIO MGT Pins	36	36	-	36	-	-	-	-	-	-
	Differential I/O Pairs	68	122	-	172	-	-	-	-	-	-
XC2VP7	Available User I/Os	-	248	-	396	396	-	-	-	-	-
	RocketIO MGT Pins	-	72	-	72	72	-	-	-	-	-
	Differential I/O Pairs	-	122	-	196	196	-	-	-	-	-
XC2VP20	Available User I/Os	-	-	404	-	556	564	-	-	-	-
	RocketIO MGT Pins	-	-	72	-	72	72	-	-	-	-
	Differential I/O Pairs	-	-	196	-	272	276	-	-	-	-
XC2VP30	Available User I/Os	-	-	416	-	556	644	-	-	-	-
	RocketIO MGT Pins	-	-	72	-	72	72	-	-	-	-
	Differential I/O Pairs	-	-	202	-	272	340	-	-	-	-
XC2VP40	Available User I/Os	-	-	416	-	-	692	804	-	-	-
	RocketIO MGT Pins	-	-	72	-	-	108	0	-	-	-
	Differential I/O Pairs	-	-	202	-	-	340	396	-	-	-
XC2VP50	Available User I/Os	-	-		-	-	692	812	852	-	-
	RocketIO MGT Pins	-	-		-	-	144	0	144	-	-
	Differential I/O Pairs	-	-		-	-	340	400	420	-	-
XC2VP70	Available User I/Os	-	-		-	-	-	-	964	996	-
	RocketIO MGT Pins	-	-		-	-	-	-	144	180	-
	Differential I/O Pairs	-	-		-	-	-	-	476	492	-

Table 3: **Virtex-II Pro Available I/Os and RocketIO MGT Pins per Device/Package Combination** *(Continued)*

Virtex-II Pro Device	User I/Os & RocketIO MGT Pins	Virtex-II Pro Package									
		FG256	FG456	FG676	FF672	FF896	FF1152	FF1148	FF1517	FF1704	FF1696
XC2VP100	Available User I/Os	-	-		-	-	-	-	-	1040	1164
	RocketIO MGT Pins	-	-		-	-	-	-	-	180	0
	Differential I/O Pairs	-	-		-	-	-	-	-	512	572
XC2VP125	Available User I/Os	-	-		-	-	-	-	-	1040	1200
	RocketIO MGT Pins	-	-		-	-	-	-	-	180	0
	Differential I/O Pairs	-	-		-	-	-	-	-	512	590

Virtex-II Pro Pin Definitions

This section describes the pinouts for Virtex-II Pro devices in the following packages:

- FG256, FG456, and FG676: wire-bond fine-pitch BGA of 1.00 mm pitch
- FF672, FF896, FF1148, FF1152, FF1517, FF1696, and FF1704: flip-chip fine-pitch BGA of 1.00 mm pitch

All of the devices supported in a particular package are pinout-compatible and are listed in the same table (one table per package). Pins that are not available for smaller devices are listed in right-hand columns.

Each device is split into eight I/O banks to allow for flexibility in the choice of I/O standards. Global pins, including JTAG, configuration, and power/ground pins, are listed at the end of each table. Table 4 provides definitions for all pin types.

All Virtex-II Pro pinout tables are available on the distribution CD-ROM, or on the web (at **http://www.xilinx.com**).

Pin Definitions

Table 4 provides a description of each pin type listed in Virtex-II Pro pinout tables.

Table 4: **Virtex-II Pro Pin Definitions**

Pin Name	Direction	Description
User I/O Pins		
IO_LXXY_#	Input/Output	All user I/O pins are capable of differential signalling and can implement LVDS, ULVDS, BLVDS, LVPECL, or LDT pairs. Each user I/O is labeled "**IO_LXXY_#**", where: **IO** indicates a user I/O pin. **LXXY** indicates a differential pair, with **XX** a unique pair in the bank and **Y = P/N** for the positive and negative sides of the differential pair. **#** indicates the bank number (0 through 7)
Dual-Function Pins		
IO_LXXY_#/ZZZ		The dual-function pins are labelled "**IO_LXXY_#/ZZZ**", where **ZZZ** can be one of the following pins: Per Bank - **VRP, VRN,** or **VREF** Globally - **GCLKX(S/P), BUSY/DOUT, INIT_B, DIN/D0 – D7, RDWR_B,** or **CS_B**

Table 4: **Virtex-II Pro Pin Definitions** *(Continued)*

Pin Name	Direction	Description
With /ZZZ:		
DIN / D0, D1, D2, D3, D4, D5, D6, D7	Input/Output	In SelectMAP mode, D0 through D7 are configuration data pins. These pins become user I/Os after configuration, unless the SelectMAP port is retained. In bit-serial modes, DIN (D0) is the single-data input. This pin becomes a user I/O after configuration.
CS_B	Input	In SelectMAP mode, this is the active-low Chip Select signal. The pin becomes a user I/O after configuration, unless the SelectMAP port is retained.
RDWR_B	Input	In SelectMAP mode, this is the active-low Write Enable signal. The pin becomes a user I/O after configuration, unless the SelectMAP port is retained.
BUSY/DOUT	Output	In SelectMAP mode, BUSY controls the rate at which configuration data is loaded. The pin becomes a user I/O after configuration, unless the SelectMAP port is retained. In bit-serial modes, DOUT provides preamble and configuration data to downstream devices in a daisy-chain. The pin becomes a user I/O after configuration.
INIT_B	Bidirectional (open-drain)	When Low, this pin indicates that the configuration memory is being cleared. When held Low, the start of configuration is delayed. During configuration, a Low on this output indicates that a configuration data error has occurred. The pin becomes a user I/O after configuration.
GCLKx (S/P)	Input/Output	These are clock input pins that connect to Global Clock Buffers. These pins become regular user I/Os when not needed for clocks.
VRP	Input	This pin is for the DCI voltage reference resistor of P transistor (per bank).
VRN	Input	This pin is for the DCI voltage reference resistor of N transistor (per bank).
ALT_VRP	Input	This is the alternative pin for the DCI voltage reference resistor of P transistor.
ALT_VRN	Input	This is the alternative pin for the DCI voltage reference resistor of N transistor.
V_{REF}	Input	These are input threshold voltage pins. They become user I/Os when an external threshold voltage is not needed (per bank).
Dedicated Pins[1]		
CCLK	Input/Output	Configuration clock. Output in Master mode or Input in Slave mode.
PROG_B	Input	Active Low asynchronous reset to configuration logic. This pin has a permanent weak pull-up resistor.
DONE	Input/Output	DONE is a bidirectional signal with an optional internal pull-up resistor. As an output, this pin indicates completion of the configuration process. As an input, a Low level on DONE can be configured to delay the start-up sequence.
M2, M1, M0	Input	Configuration mode selection.
HSWAP_EN	Input	Enable I/O pullups during configuration.
TCK	Input	Boundary Scan Clock.
TDI	Input	Boundary Scan Data Input.
TDO	Output	Boundary Scan Data Output.
TMS	Input	Boundary Scan Mode Select.

Table 4: **Virtex-II Pro Pin Definitions** *(Continued)*

Pin Name	Direction	Description
PWRDWN_B	Input *(unsupported)*	Active Low power-down pin (unsupported). *Driving this pin Low can adversely affect device operation and configuration.* PWRDWN_B is internally pulled High, which is its default state. It does not require an external pull-up.
Other Pins		
DXN, DXP	N/A	Temperature-sensing diode pins (Anode: DXP, Cathode: DXN).
V_{BATT}	Input	Decryptor key memory backup supply. (Do not connect if battery is not used.)
RSVD	N/A	Reserved pin - do not connect.
V_{CCO}	Input	Power-supply pins for the output drivers (per bank).
V_{CCAUX}	Input	Power-supply pins for auxiliary circuits.
V_{CCINT}	Input	Power-supply pins for the internal core logic.
GND	Input	Ground.
AVCCAUXRX#	Input	Analog power supply for receive circuitry of the RocketIO multi-gigabit transceiver (2.5V).
AVCCAUXTX#	Input	Analog power supply for transmit circuitry of the RocketIO multi-gigabit transceiver (2.5V).
VTRXPAD#	Input	Receive termination supply for the RocketIO multi-gigabit transceiver (1.8V - 2.8V).
VTTXPAD#	Input	Transmit termination supply for the RocketIO multi-gigabit transceiver (1.8V - 2.8V).
GNDA# [2]	Input	Ground for the analog circuitry of the RocketIO multi-gigabit transceiver.
RXPPAD#	Input	Positive differential receive port of the RocketIO multi-gigabit transceiver.
RXNPAD#	Input	Negative differential receive port of the RocketIO multi-gigabit transceiver.
TXPPAD#	Output	Positive differential transmit port of the RocketIO multi-gigabit transceiver.
TXNPAD#	Output	Negative differential transmit port of the RocketIO multi-gigabit transceiver.

Notes:

1. All dedicated pins (JTAG and configuration) are powered by V_{CCAUX} (independent of the bank V_{CCO} voltage).
2. Two pads on the die are tied to the same package pin (GNDA) in order to lower the resistance on these connections. Thus, duplicate entries exist for GNDA pins in the package files on which the tables in this document are based.

FG256 Fine-Pitch BGA Package

As shown in Table 5, XC2VP2 and XC2VP4 Virtex-II Pro devices are available in the FG256 fine-pitch BGA package. The pins in each of these devices are identical. Following this table are the FG256 Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
0	IO_L01N_0/VRP_0	C2
0	IO_L01P_0/VRN_0	C3
0	IO_L02N_0	B3
0	IO_L02P_0	C4
0	IO_L03N_0	A2

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
0	IO_L03P_0/VREF_0	A3
0	IO_L06N_0	D5
0	IO_L06P_0	C5
0	IO_L07P_0	D6
0	IO_L09N_0	E6
0	IO_L09P_0/VREF_0	E7
0	IO_L69N_0	D7
0	IO_L69P_0/VREF_0	C7
0	IO_L74N_0/GCLK7P	D8
0	IO_L74P_0/GCLK6S	C8
0	IO_L75N_0/GCLK5P	B8
0	IO_L75P_0/GCLK4S	A8
1	IO_L75N_1/GCLK3P	A9
1	IO_L75P_1/GCLK2S	B9
1	IO_L74N_1/GCLK1P	C9
1	IO_L74P_1/GCLK0S	D9
1	IO_L69N_1/VREF_1	C10
1	IO_L69P_1	D10
1	IO_L09N_1/VREF_1	E10
1	IO_L09P_1	E11
1	IO_L07N_1	D11
1	IO_L06N_1	C12
1	IO_L06P_1	D12
1	IO_L03N_1/VREF_1	A14
1	IO_L03P_1	A15
1	IO_L02N_1	C13
1	IO_L02P_1	B14
1	IO_L01N_1/VRP_1	C14
1	IO_L01P_1/VRN_1	C15
2	IO_L01N_2/VRP_2	E14
2	IO_L01P_2/VRN_2	E15
2	IO_L02N_2	E13
2	IO_L02P_2	F12

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
2	IO_L03N_2	F13
2	IO_L03P_2	F14
2	IO_L04N_2/VREF_2	F15
2	IO_L04P_2	F16
2	IO_L06N_2	G13
2	IO_L06P_2	G14
2	IO_L85N_2	G15
2	IO_L85P_2	G16
2	IO_L86N_2	G12
2	IO_L86P_2	H13
2	IO_L88N_2/VREF_2	H14
2	IO_L88P_2	H15
2	IO_L90N_2	H16
2	IO_L90P_2	J16
3	IO_L90N_3	J15
3	IO_L90P_3	J14
3	IO_L89N_3	J13
3	IO_L89P_3	K12
3	IO_L87N_3/VREF_3	K16
3	IO_L87P_3	K15
3	IO_L85N_3	K14
3	IO_L85P_3	K13
3	IO_L06N_3	L16
3	IO_L06P_3	L15
3	IO_L05N_3	L14
3	IO_L05P_3	L13
3	IO_L03N_3/VREF_3	L12
3	IO_L03P_3	M13
3	IO_L02N_3	M16
3	IO_L02P_3	N16
3	IO_L01N_3/VRP_3	M15
3	IO_L01P_3/VRN_3	M14
4	IO_L01N_4/DOUT	P15

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Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
4	IO_L01P_4/INIT_B	P14
4	IO_L02N_4/D0	R14
4	IO_L02P_4/D1	P13
4	IO_L03N_4/D2	T15
4	IO_L03P_4/D3	T14
4	IO_L06N_4/VRP_4	N12
4	IO_L06P_4/VRN_4	P12
4	IO_L07P_4/VREF_4	N11
4	IO_L09N_4	M11
4	IO_L09P_4/VREF_4	M10
4	IO_L69N_4	N10
4	IO_L69P_4/VREF_4	P10
4	IO_L74N_4/GCLK3S	N9
4	IO_L74P_4/GCLK2P	P9
4	IO_L75N_4/GCLK1S	R9
4	IO_L75P_4/GCLK0P	T9
5	IO_L75N_5/GCLK7S	T8
5	IO_L75P_5/GCLK6P	R8
5	IO_L74N_5/GCLK5S	P8
5	IO_L74P_5/GCLK4P	N8
5	IO_L69N_5/VREF_5	P7
5	IO_L69P_5	N7
5	IO_L09N_5/VREF_5	M7
5	IO_L09P_5	M6
5	IO_L07N_5/VREF_5	N6
5	IO_L06N_5/VRP_5	P5
5	IO_L06P_5/VRN_5	N5
5	IO_L03N_5/D4	T3
5	IO_L03P_5/D5	T2
5	IO_L02N_5/D6	P4
5	IO_L02P_5/D7	R3
5	IO_L01N_5/RDWR_B	P3
5	IO_L01P_5/CS_B	P2

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
6	IO_L01P_6/VRN_6	M3
6	IO_L01N_6/VRP_6	M2
6	IO_L02P_6	N1
6	IO_L02N_6	M1
6	IO_L03P_6	M4
6	IO_L03N_6/VREF_6	L5
6	IO_L05P_6	L4
6	IO_L05N_6	L3
6	IO_L06P_6	L2
6	IO_L06N_6	L1
6	IO_L85P_6	K4
6	IO_L85N_6	K3
6	IO_L87P_6	K2
6	IO_L87N_6/VREF_6	K1
6	IO_L89P_6	K5
6	IO_L89N_6	J4
6	IO_L90P_6	J3
6	IO_L90N_6	J2
7	IO_L90P_7	J1
7	IO_L90N_7	H1
7	IO_L88P_7	H2
7	IO_L88N_7/VREF_7	H3
7	IO_L86P_7	H4
7	IO_L86N_7	G5
7	IO_L85P_7	G1
7	IO_L85N_7	G2
7	IO_L06P_7	G3
7	IO_L06N_7	G4
7	IO_L04P_7	F1
7	IO_L04N_7/VREF_7	F2
7	IO_L03P_7	F3
7	IO_L03N_7	F4
7	IO_L02P_7	F5
7	IO_L02N_7	E4

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
7	IO_L01P_7/VRN_7	E2
7	IO_L01N_7/VRP_7	E3
0	VCCO_0	F8
0	VCCO_0	F7
0	VCCO_0	E8
1	VCCO_1	F9
1	VCCO_1	F10
1	VCCO_1	E9
2	VCCO_2	H12
2	VCCO_2	H11
2	VCCO_2	G11
3	VCCO_3	K11
3	VCCO_3	J12
3	VCCO_3	J11
4	VCCO_4	M9
4	VCCO_4	L9
4	VCCO_4	L10
5	VCCO_5	M8
5	VCCO_5	L8
5	VCCO_5	L7
6	VCCO_6	K6
6	VCCO_6	J6
6	VCCO_6	J5
7	VCCO_7	H6
7	VCCO_7	H5
7	VCCO_7	G6
N/A	CCLK	N15
N/A	PROG_B	D1
N/A	DONE	P16
N/A	M0	N3
N/A	M1	N2
N/A	M2	P1
N/A	TCK	D16

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
N/A	TDI	E1
N/A	TDO	E16
N/A	TMS	C16
N/A	PWRDWN_B	N14
N/A	HSWAP_EN	C1
N/A	RSVD	D14
N/A	VBATT	D15
N/A	DXP	D2
N/A	DXN	D3
N/A	AVCCAUXTX6	B5
N/A	VTTXPAD6	B4
N/A	TXNPAD6	A4
N/A	TXPPAD6	A5
N/A	GNDA6	C6
N/A	RXPPAD6	A6
N/A	RXNPAD6	A7
N/A	VTRXPAD6	B6
N/A	AVCCAUXRX6	B7
N/A	AVCCAUXTX7	B11
N/A	VTTXPAD7	B10
N/A	TXNPAD7	A10
N/A	TXPPAD7	A11
N/A	GNDA7	C11
N/A	RXPPAD7	A12
N/A	RXNPAD7	A13
N/A	VTRXPAD7	B12
N/A	AVCCAUXRX7	B13
N/A	AVCCAUXRX18	R13
N/A	VTRXPAD18	R12
N/A	RXNPAD18	T13
N/A	RXPPAD18	T12
N/A	GNDA18	P11
N/A	TXPPAD18	T11
N/A	TXNPAD18	T10
N/A	VTTXPAD18	R10

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
N/A	AVCCAUXTX18	R11
N/A	AVCCAUXRX19	R7
N/A	VTRXPAD19	R6
N/A	RXNPAD19	T7
N/A	RXPPAD19	T6
N/A	GNDA19	P6
N/A	TXPPAD19	T5
N/A	TXNPAD19	T4
N/A	VTTXPAD19	R4
N/A	AVCCAUXTX19	R5
N/A	VCCINT	N4
N/A	VCCINT	N13
N/A	VCCINT	M5
N/A	VCCINT	M12
N/A	VCCINT	E5
N/A	VCCINT	E12
N/A	VCCINT	D4
N/A	VCCINT	D13
N/A	VCCAUX	R16
N/A	VCCAUX	R1
N/A	VCCAUX	B16
N/A	VCCAUX	B1
N/A	GND	T16
N/A	GND	T1
N/A	GND	R2
N/A	GND	R15
N/A	GND	L6
N/A	GND	L11
N/A	GND	K9
N/A	GND	K8
N/A	GND	K7
N/A	GND	K10
N/A	GND	J9
N/A	GND	J8

Table 5: **FG256 — XC2VP2 and XC2VP4**

Bank	Pin Description	Pin Number
N/A	GND	J7
N/A	GND	J10
N/A	GND	H9
N/A	GND	H8
N/A	GND	H7
N/A	GND	H10
N/A	GND	G9
N/A	GND	G8
N/A	GND	G7
N/A	GND	G10
N/A	GND	F6
N/A	GND	F11
N/A	GND	B2
N/A	GND	B15
N/A	GND	A16
N/A	GND	A1

FG256 Fine-Pitch BGA Package Specifications (1.00mm pitch)
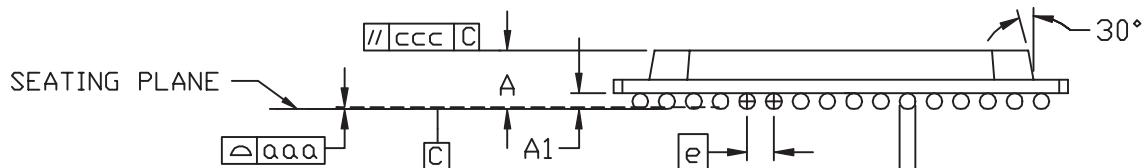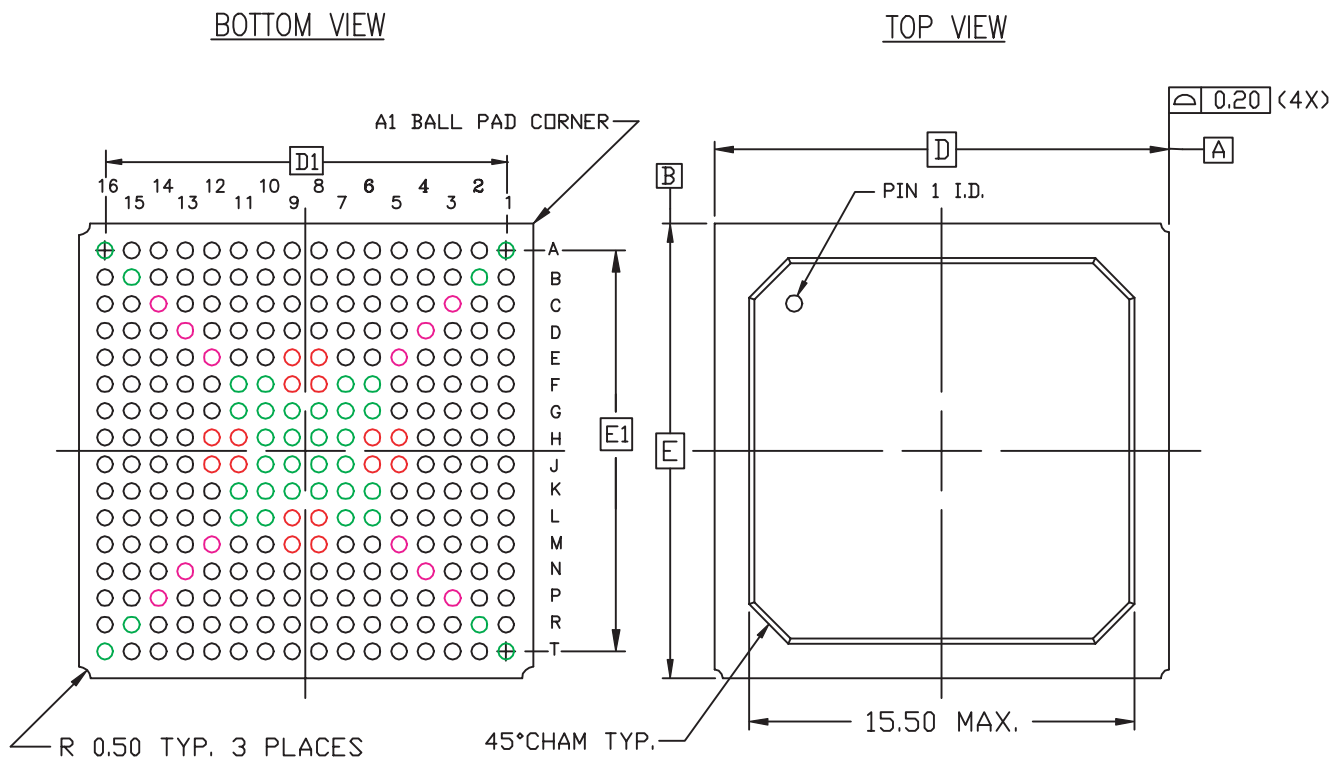
S Y M B O L	MILLIMETERS		
	MIN.	NOM.	MAX.
A	~	1.73	2.00
A₁	0.40	0.50	0.60
D/E	17.00 BSC		
D₁/E₁	15.00 REF		
e	1.00 BSC		
Øb	0.50	0.60	0.70
aaa	~	~	0.20
ccc	~	~	0.35
ddd	~	~	0.30
eee	~	~	0.10
M	16		

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M-1994

2. SYMBOL 'M' IS THE BALL MATRIX SIZE.

3. CONFORMS TO JEDEC MO-151 AAF-1.

Figure 1: **FG256 Fine-Pitch BGA Package Specifications**

FG456 Fine-Pitch BGA Package

As shown in Table 6, XC2VP2, XC2VP4, and XC2VP7 Virtex-II Pro devices are available in the FG456 fine-pitch BGA package. The pins in these devices are same, except for the differences shown in the "No Connects" column. Following this table are the FG456 Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
0	IO_L01N_0/VRP_0	D5			
0	IO_L01P_0/VRN_0	D6			
0	IO_L02N_0	E6			
0	IO_L02P_0	E7			
0	IO_L03N_0	D7			
0	IO_L03P_0/VREF_0	C7			
0	IO_L05_0/No_Pair	E8			
0	IO_L06N_0	D8			
0	IO_L06P_0	C8			
0	IO_L07N_0	F9			
0	IO_L07P_0	E9			
0	IO_L09N_0	D9			
0	IO_L09P_0/VREF_0	D10			
0	IO_L67N_0	F10			
0	IO_L67P_0	E10			
0	IO_L69N_0	C10			
0	IO_L69P_0/VREF_0	B11			
0	IO_L74N_0/GCLK7P	F11			
0	IO_L74P_0/GCLK6S	E11			
0	IO_L75N_0/GCLK5P	D11			
0	IO_L75P_0/GCLK4S	C11			
1	IO_L75N_1/GCLK3P	C12			
1	IO_L75P_1/GCLK2S	D12			
1	IO_L74N_1/GCLK1P	E12			
1	IO_L74P_1/GCLK0S	F12			
1	IO_L69N_1/VREF_1	B12			
1	IO_L69P_1	C13			
1	IO_L67N_1	E13			
1	IO_L67P_1	F13			
1	IO_L09N_1/VREF_1	D13			
1	IO_L09P_1	D14			
1	IO_L07N_1	E14			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
1	IO_L07P_1	F14			
1	IO_L06N_1	C15			
1	IO_L06P_1	D15			
1	IO_L05_1/No_Pair	E15			
1	IO_L03N_1/VREF_1	C16			
1	IO_L03P_1	D16			
1	IO_L02N_1	E16			
1	IO_L02P_1	E17			
1	IO_L01N_1/VRP_1	D17			
1	IO_L01P_1/VRN_1	D18			
2	IO_L01N_2/VRP_2	C21			
2	IO_L01P_2/VRN_2	C22			
2	IO_L02N_2	D21			
2	IO_L02P_2	D22			
2	IO_L03N_2	E19			
2	IO_L03P_2	E20			
2	IO_L04N_2/VREF_2	E21			
2	IO_L04P_2	E22			
2	IO_L06N_2	F19			
2	IO_L06P_2	F20			
2	IO_L43N_2	F21	NC		
2	IO_L43P_2	F22	NC		
2	IO_L46N_2/VREF_2	F18	NC		
2	IO_L46P_2	G18	NC		
2	IO_L48N_2	G19	NC		
2	IO_L48P_2	G20	NC		
2	IO_L49N_2	G21	NC		
2	IO_L49P_2	G22	NC		
2	IO_L50N_2	H19	NC		
2	IO_L50P_2	H20	NC		
2	IO_L52N_2/VREF_2	H21	NC		
2	IO_L52P_2	H22	NC		
2	IO_L54N_2	H18	NC		
2	IO_L54P_2	J17	NC		
2	IO_L55N_2	J19	NC		
2	IO_L55P_2	J20	NC		

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
2	IO_L56N_2	J21	NC		
2	IO_L56P_2	J22	NC		
2	IO_L58N_2/VREF_2	J18	NC		
2	IO_L58P_2	K18	NC		
2	IO_L60N_2	K19	NC		
2	IO_L60P_2	K20	NC		
2	IO_L85N_2	K21			
2	IO_L85P_2	K22			
2	IO_L86N_2	K17			
2	IO_L86P_2	L17			
2	IO_L88N_2/VREF_2	L18			
2	IO_L88P_2	L19			
2	IO_L90N_2	L20			
2	IO_L90P_2	L21			
3	IO_L90N_3	M21			
3	IO_L90P_3	M20			
3	IO_L89N_3	M19			
3	IO_L89P_3	M18			
3	IO_L87N_3/VREF_3	M17			
3	IO_L87P_3	N17			
3	IO_L85N_3	N22			
3	IO_L85P_3	N21			
3	IO_L60N_3	N20	NC		
3	IO_L60P_3	N19	NC		
3	IO_L59N_3	N18	NC		
3	IO_L59P_3	P18	NC		
3	IO_L57N_3/VREF_3	P22	NC		
3	IO_L57P_3	P21	NC		
3	IO_L55N_3	P20	NC		
3	IO_L55P_3	P19	NC		
3	IO_L54N_3	P17	NC		
3	IO_L54P_3	R18	NC		
3	IO_L53N_3	R22	NC		
3	IO_L53P_3	R21	NC		
3	IO_L51N_3/VREF_3	R20	NC		
3	IO_L51P_3	R19	NC		

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
3	IO_L49N_3	T22	NC		
3	IO_L49P_3	T21	NC		
3	IO_L48N_3	T20	NC		
3	IO_L48P_3	T19	NC		
3	IO_L47N_3	T18	NC		
3	IO_L47P_3	U18	NC		
3	IO_L45N_3/VREF_3	U22	NC		
3	IO_L45P_3	U21	NC		
3	IO_L43N_3	U20	NC		
3	IO_L43P_3	U19	NC		
3	IO_L06N_3	V22			
3	IO_L06P_3	V21			
3	IO_L05N_3	V20			
3	IO_L05P_3	V19			
3	IO_L03N_3/VREF_3	W22			
3	IO_L03P_3	W21			
3	IO_L02N_3	Y22			
3	IO_L02P_3	Y21			
3	IO_L01N_3/VRP_3	AA22			
3	IO_L01P_3/VRN_3	AB21			
4	IO_L01N_4/DOUT	W18			
4	IO_L01P_4/INIT_B	W17			
4	IO_L02N_4/D0	V17			
4	IO_L02P_4/D1	V16			
4	IO_L03N_4/D2	W16			
4	IO_L03P_4/D3	Y16			
4	IO_L05_4/No_Pair	V15			
4	IO_L06N_4/VRP_4	W15			
4	IO_L06P_4/VRN_4	Y15			
4	IO_L07N_4	U14			
4	IO_L07P_4/VREF_4	V14			
4	IO_L09N_4	W14			
4	IO_L09P_4/VREF_4	W13			
4	IO_L67N_4	U13			
4	IO_L67P_4	V13			
4	IO_L69N_4	Y13			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
4	IO_L69P_4/VREF_4	AA12			
4	IO_L74N_4/GCLK3S	U12			
4	IO_L74P_4/GCLK2P	V12			
4	IO_L75N_4/GCLK1S	W12			
4	IO_L75P_4/GCLK0P	Y12			
5	IO_L75N_5/GCLK7S	Y11			
5	IO_L75P_5/GCLK6P	W11			
5	IO_L74N_5/GCLK5S	V11			
5	IO_L74P_5/GCLK4P	U11			
5	IO_L69N_5/VREF_5	AA11			
5	IO_L69P_5	Y10			
5	IO_L67N_5	V10			
5	IO_L67P_5	U10			
5	IO_L09N_5/VREF_5	W10			
5	IO_L09P_5	W9			
5	IO_L07N_5/VREF_5	V9			
5	IO_L07P_5	U9			
5	IO_L06N_5/VRP_5	Y8			
5	IO_L06P_5/VRN_5	W8			
5	IO_L05_5/No_Pair	V8			
5	IO_L03N_5/D4	Y7			
5	IO_L03P_5/D5	W7			
5	IO_L02N_5/D6	V7			
5	IO_L02P_5/D7	V6			
5	IO_L01N_5/RDWR_B	W6			
5	IO_L01P_5/CS_B	W5			
6	IO_L01P_6/VRN_6	AB2			
6	IO_L01N_6/VRP_6	AA1			
6	IO_L02P_6	Y2			
6	IO_L02N_6	Y1			
6	IO_L03P_6	W2			
6	IO_L03N_6/VREF_6	W1			
6	IO_L05P_6	V4			
6	IO_L05N_6	V3			
6	IO_L06P_6	V2			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
6	IO_L06N_6	V1			
6	IO_L43P_6	U4	NC		
6	IO_L43N_6	U3	NC		
6	IO_L45P_6	U2	NC		
6	IO_L45N_6/VREF_6	U1	NC		
6	IO_L47P_6	U5	NC		
6	IO_L47N_6	T5	NC		
6	IO_L48P_6	T4	NC		
6	IO_L48N_6	T3	NC		
6	IO_L49P_6	T2	NC		
6	IO_L49N_6	T1	NC		
6	IO_L51P_6	R4	NC		
6	IO_L51N_6/VREF_6	R3	NC		
6	IO_L53P_6	R2	NC		
6	IO_L53N_6	R1	NC		
6	IO_L54P_6	R5	NC		
6	IO_L54N_6	P6	NC		
6	IO_L55P_6	P4	NC		
6	IO_L55N_6	P3	NC		
6	IO_L57P_6	P2	NC		
6	IO_L57N_6/VREF_6	P1	NC		
6	IO_L59P_6	P5	NC		
6	IO_L59N_6	N5	NC		
6	IO_L60P_6	N4	NC		
6	IO_L60N_6	N3	NC		
6	IO_L85P_6	N2			
6	IO_L85N_6	N1			
6	IO_L87P_6	N6			
6	IO_L87N_6/VREF_6	M6			
6	IO_L89P_6	M5			
6	IO_L89N_6	M4			
6	IO_L90P_6	M3			
6	IO_L90N_6	M2			
7	IO_L90P_7	L2			
7	IO_L90N_7	L3			
7	IO_L88P_7	L4			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
7	IO_L88N_7/VREF_7	L5			
7	IO_L86P_7	L6			
7	IO_L86N_7	K6			
7	IO_L85P_7	K1			
7	IO_L85N_7	K2			
7	IO_L60P_7	K3	NC		
7	IO_L60N_7	K4	NC		
7	IO_L58P_7	K5	NC		
7	IO_L58N_7/VREF_7	J5	NC		
7	IO_L56P_7	J1	NC		
7	IO_L56N_7	J2	NC		
7	IO_L55P_7	J3	NC		
7	IO_L55N_7	J4	NC		
7	IO_L54P_7	J6	NC		
7	IO_L54N_7	H5	NC		
7	IO_L52P_7	H1	NC		
7	IO_L52N_7/VREF_7	H2	NC		
7	IO_L50P_7	H3	NC		
7	IO_L50N_7	H4	NC		
7	IO_L49P_7	G1	NC		
7	IO_L49N_7	G2	NC		
7	IO_L48P_7	G3	NC		
7	IO_L48N_7	G4	NC		
7	IO_L46P_7	G5	NC		
7	IO_L46N_7/VREF_7	F5	NC		
7	IO_L43P_7	F1	NC		
7	IO_L43N_7	F2	NC		
7	IO_L06P_7	F3			
7	IO_L06N_7	F4			
7	IO_L04P_7	E1			
7	IO_L04N_7/VREF_7	E2			
7	IO_L03P_7	E3			
7	IO_L03N_7	E4			
7	IO_L02P_7	D1			
7	IO_L02N_7	D2			
7	IO_L01P_7/VRN_7	C1			
7	IO_L01N_7/VRP_7	C2			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
0	VCCO_0	G9			
0	VCCO_0	G11			
0	VCCO_0	G10			
0	VCCO_0	F8			
0	VCCO_0	F7			
1	VCCO_1	G14			
1	VCCO_1	G13			
1	VCCO_1	G12			
1	VCCO_1	F16			
1	VCCO_1	F15			
2	VCCO_2	L16			
2	VCCO_2	K16			
2	VCCO_2	J16			
2	VCCO_2	H17			
2	VCCO_2	G17			
3	VCCO_3	T17			
3	VCCO_3	R17			
3	VCCO_3	P16			
3	VCCO_3	N16			
3	VCCO_3	M16			
4	VCCO_4	U16			
4	VCCO_4	U15			
4	VCCO_4	T14			
4	VCCO_4	T13			
4	VCCO_4	T12			
5	VCCO_5	U8			
5	VCCO_5	U7			
5	VCCO_5	T9			
5	VCCO_5	T11			
5	VCCO_5	T10			
6	VCCO_6	T6			
6	VCCO_6	R6			
6	VCCO_6	P7			
6	VCCO_6	N7			
6	VCCO_6	M7			
7	VCCO_7	L7			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
7	VCCO_7	K7			
7	VCCO_7	J7			
7	VCCO_7	H6			
7	VCCO_7	G6			
N/A	CCLK	W20			
N/A	PROG_B	B1			
N/A	DONE	Y18			
N/A	M0	Y4			
N/A	M1	W3			
N/A	M2	Y5			
N/A	TCK	B22			
N/A	TDI	D3			
N/A	TDO	D20			
N/A	TMS	A21			
N/A	PWRDWN_B	Y19			
N/A	HSWAP_EN	A2			
N/A	RSVD	C18			
N/A	VBATT	C19			
N/A	DXP	C4			
N/A	DXN	C5			
N/A	AVCCAUXTX4	B4	NC	NC	
N/A	VTTXPAD4	B3	NC	NC	
N/A	TXNPAD4	A3	NC	NC	
N/A	TXPPAD4	A4	NC	NC	
N/A	GNDA4	C6	NC	NC	
N/A	RXPPAD4	A5	NC	NC	
N/A	RXNPAD4	A6	NC	NC	
N/A	VTRXPAD4	B5	NC	NC	
N/A	AVCCAUXRX4	B6	NC	NC	
N/A	AVCCAUXTX6	B8			
N/A	VTTXPAD6	B7			
N/A	TXNPAD6	A7			
N/A	TXPPAD6	A8			
N/A	GNDA6	C9			
N/A	RXPPAD6	A9			
N/A	RXNPAD6	A10			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	VTRXPAD6	B9			
N/A	AVCCAUXRX6	B10			
N/A	AVCCAUXTX7	B14			
N/A	VTTXPAD7	B13			
N/A	TXNPAD7	A13			
N/A	TXPPAD7	A14			
N/A	GNDA7	C14			
N/A	RXPPAD7	A15			
N/A	RXNPAD7	A16			
N/A	VTRXPAD7	B15			
N/A	AVCCAUXRX7	B16			
N/A	AVCCAUXTX9	B18	NC	NC	
N/A	VTTXPAD9	B17	NC	NC	
N/A	TXNPAD9	A17	NC	NC	
N/A	TXPPAD9	A18	NC	NC	
N/A	GNDA9	C17	NC	NC	
N/A	RXPPAD9	A19	NC	NC	
N/A	RXNPAD9	A20	NC	NC	
N/A	VTRXPAD9	B19	NC	NC	
N/A	AVCCAUXRX9	B20	NC	NC	
N/A	AVCCAUXRX16	AA20	NC	NC	
N/A	VTRXPAD16	AA19	NC	NC	
N/A	RXNPAD16	AB20	NC	NC	
N/A	RXPPAD16	AB19	NC	NC	
N/A	GNDA16	Y17	NC	NC	
N/A	TXPPAD16	AB18	NC	NC	
N/A	TXNPAD16	AB17	NC	NC	
N/A	VTTXPAD16	AA17	NC	NC	
N/A	AVCCAUXTX16	AA18	NC	NC	
N/A	AVCCAUXRX18	AA16			
N/A	VTRXPAD18	AA15			
N/A	RXNPAD18	AB16			
N/A	RXPPAD18	AB15			
N/A	GNDA18	Y14			
N/A	TXPPAD18	AB14			
N/A	TXNPAD18	AB13			
N/A	VTTXPAD18	AA13			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	AVCCAUXTX18	AA14			
N/A	AVCCAUXRX19	AA10			
N/A	VTRXPAD19	AA9			
N/A	RXNPAD19	AB10			
N/A	RXPPAD19	AB9			
N/A	GNDA19	Y9			
N/A	TXPPAD19	AB8			
N/A	TXNPAD19	AB7			
N/A	VTTXPAD19	AA7			
N/A	AVCCAUXTX19	AA8			
N/A	AVCCAUXRX21	AA6	NC	NC	
N/A	VTRXPAD21	AA5	NC	NC	
N/A	RXNPAD21	AB6	NC	NC	
N/A	RXPPAD21	AB5	NC	NC	
N/A	GNDA21	Y6	NC	NC	
N/A	TXPPAD21	AB4	NC	NC	
N/A	TXNPAD21	AB3	NC	NC	
N/A	VTTXPAD21	AA3	NC	NC	
N/A	AVCCAUXTX21	AA4	NC	NC	
N/A	VCCINT	U6			
N/A	VCCINT	U17			
N/A	VCCINT	T8			
N/A	VCCINT	T7			
N/A	VCCINT	T16			
N/A	VCCINT	T15			
N/A	VCCINT	R7			
N/A	VCCINT	R16			
N/A	VCCINT	H7			
N/A	VCCINT	H16			
N/A	VCCINT	G8			
N/A	VCCINT	G7			
N/A	VCCINT	G16			
N/A	VCCINT	G15			
N/A	VCCINT	F6			
N/A	VCCINT	F17			
N/A	VCCAUX	M22			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	VCCAUX	L1			
N/A	VCCAUX	B21			
N/A	VCCAUX	B2			
N/A	VCCAUX	AB11			
N/A	VCCAUX	AA21			
N/A	VCCAUX	AA2			
N/A	VCCAUX	A12			
N/A	GND	Y3			
N/A	GND	Y20			
N/A	GND	W4			
N/A	GND	W19			
N/A	GND	V5			
N/A	GND	V18			
N/A	GND	P9			
N/A	GND	P14			
N/A	GND	P13			
N/A	GND	P12			
N/A	GND	P11			
N/A	GND	P10			
N/A	GND	N9			
N/A	GND	N14			
N/A	GND	N13			
N/A	GND	N12			
N/A	GND	N11			
N/A	GND	N10			
N/A	GND	M9			
N/A	GND	M14			
N/A	GND	M13			
N/A	GND	M12			
N/A	GND	M11			
N/A	GND	M10			
N/A	GND	M1			
N/A	GND	L9			
N/A	GND	L22			
N/A	GND	L14			
N/A	GND	L13			
N/A	GND	L12			

Table 6: **FG456 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	GND	L11			
N/A	GND	L10			
N/A	GND	K9			
N/A	GND	K14			
N/A	GND	K13			
N/A	GND	K12			
N/A	GND	K11			
N/A	GND	K10			
N/A	GND	J9			
N/A	GND	J14			
N/A	GND	J13			
N/A	GND	J12			
N/A	GND	J11			
N/A	GND	J10			
N/A	GND	E5			
N/A	GND	E18			
N/A	GND	D4			
N/A	GND	D19			
N/A	GND	C3			
N/A	GND	C20			
N/A	GND	AB22			
N/A	GND	AB12			
N/A	GND	AB1			
N/A	GND	A22			
N/A	GND	A11			
N/A	GND	A1			

FG456 Fine-Pitch BGA Package Specifications (1.00mm pitch)

BOTTOM VIEW

TOP VIEW

A1 BALL PAD CORNER

R 0.50 TYP. 3 PLACES

45°CHAM TYP.

20.50 MAX.

PIN 1 I.D.

SEATING PLANE

SOLDER BALLS

30°

S Y M B O L	MILLIMETERS		
	MIN.	NOM.	MAX.
A		2.20	2.60
A_1	0.40	0.50	0.60
D/E	23.00 BSC		
D_1/E_1	21.00 REF		
e	1.00 BSC		
ϕb	0.50	0.60	0.70
aaa			0.20
ccc			0.35
ddd			0.30
eee			0.10
M	22		

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M-1994

2. SYMBOL 'M' IS THE BALL MATRIX SIZE.

3. CONFORMS TO JEDEC MO-151 AAJ-1 (DEPOPULATED)
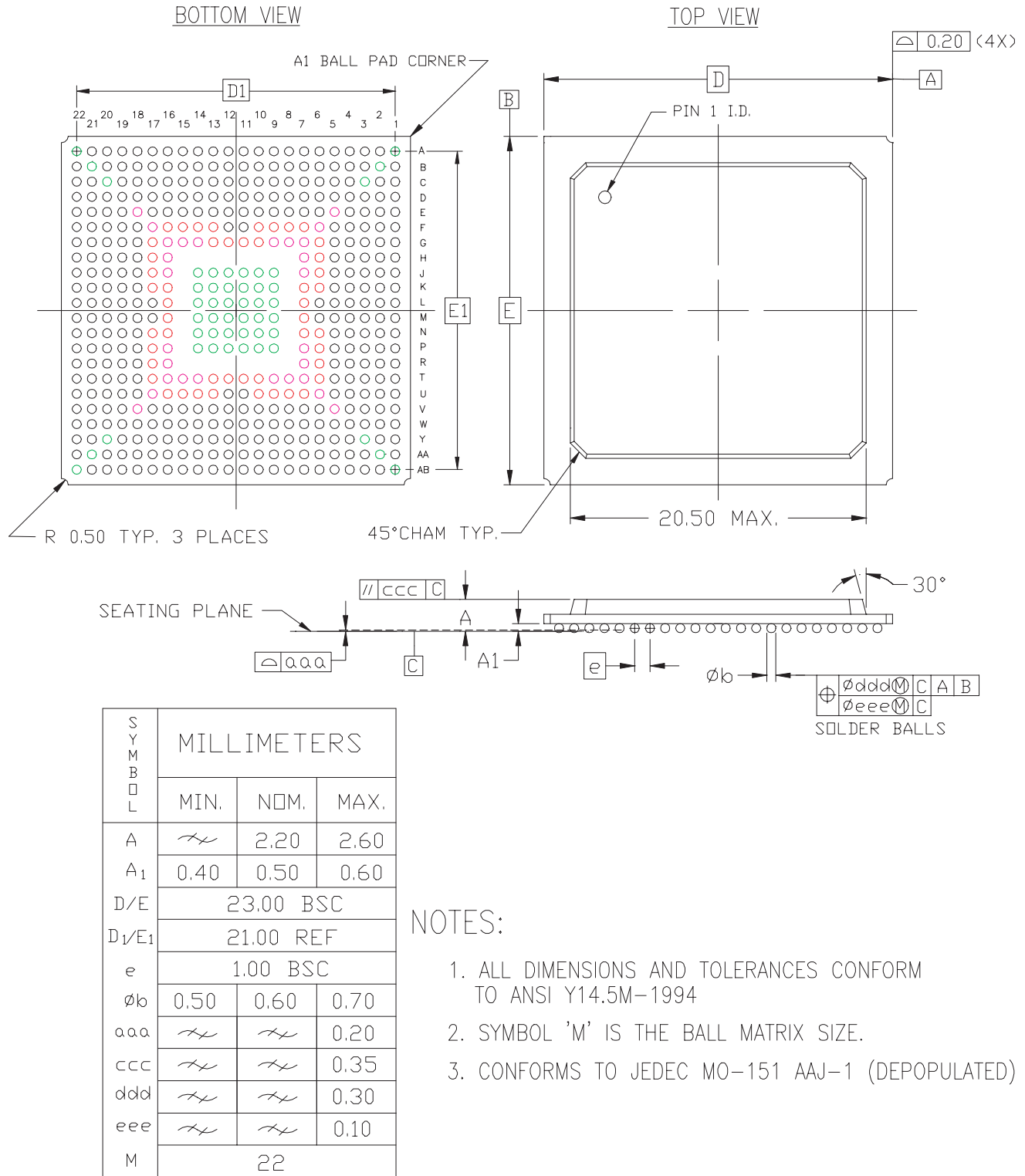
Figure 2: **FG456 Fine-Pitch BGA Package Specifications**

FG676 Fine-Pitch BGA Package

As shown in Table 7, XC2VP20, XC2VP30, and XC2VP40 Virtex-II Pro devices are available in the FG676 fine-pitch BGA package. The pins in these devices are the same, except for the differences shown in the "No Connects" column. Following this table are the FG676 Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

			No Connects		
Bank	**Pin Description**	**Pin Number**	**XC2VP20**	**XC2VP30**	**XC2VP40**
0	IO_L01N_0/VRP_0	E5			
0	IO_L01P_0/VRN_0	D5			
0	IO_L02N_0	E6			
0	IO_L02P_0	D6			
0	IO_L03N_0	G7			
0	IO_L03P_0/VREF_0	F7			
0	IO_L05_0/No_Pair	E7			
0	IO_L06N_0	D7			
0	IO_L06P_0	C7			
0	IO_L07N_0	H8			
0	IO_L07P_0	G8			
0	IO_L09N_0	F8			
0	IO_L09P_0/VREF_0	E8			
0	IO_L37N_0	B8			
0	IO_L37P_0	A8			
0	IO_L39N_0	H9			
0	IO_L39P_0	G9			
0	IO_L43N_0	F9			
0	IO_L43P_0	E9			
0	IO_L45N_0	D9			
0	IO_L45P_0/VREF_0	C9			
0	IO_L46N_0	H10			
0	IO_L46P_0	H11			
0	IO_L48N_0	E10			
0	IO_L48P_0	E11			
0	IO_L49N_0	D10			
0	IO_L49P_0	C10			
0	IO_L50_0/No_Pair	G11			
0	IO_L53_0/No_Pair	F11			
0	IO_L54N_0	J12			
0	IO_L54P_0	H12			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
0	IO_L55N_0	G12			
0	IO_L55P_0	F12			
0	IO_L57N_0	E12			
0	IO_L57P_0/VREF_0	F13			
0	IO_L67N_0	D12			
0	IO_L67P_0	C12			
0	IO_L69N_0	J13			
0	IO_L69P_0/VREF_0	H13			
0	IO_L74N_0/GCLK7P	E13			
0	IO_L74P_0/GCLK6S	D13			
0	IO_L75N_0/GCLK5P	C13			
0	IO_L75P_0/GCLK4S	B13			
1	IO_L75N_1/GCLK3P	B14			
1	IO_L75P_1/GCLK2S	C14			
1	IO_L74N_1/GCLK1P	D14			
1	IO_L74P_1/GCLK0S	E14			
1	IO_L69N_1/VREF_1	H14			
1	IO_L69P_1	J14			
1	IO_L67N_1	C15			
1	IO_L67P_1	D15			
1	IO_L57N_1/VREF_1	F14			
1	IO_L57P_1	E15			
1	IO_L55N_1	F15			
1	IO_L55P_1	G15			
1	IO_L54N_1	H15			
1	IO_L54P_1	J15			
1	IO_L53_1/No_Pair	F16			
1	IO_L50_1/No_Pair	G16			
1	IO_L49N_1	C17			
1	IO_L49P_1	D17			
1	IO_L48N_1	E16			
1	IO_L48P_1	E17			
1	IO_L46N_1	H16			
1	IO_L46P_1	H17			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
1	IO_L45N_1/VREF_1	C18			
1	IO_L45P_1	D18			
1	IO_L43N_1	E18			
1	IO_L43P_1	F18			
1	IO_L39N_1	G18			
1	IO_L39P_1	H18			
1	IO_L37N_1	A19			
1	IO_L37P_1	B19			
1	IO_L09N_1/VREF_1	E19			
1	IO_L09P_1	F19			
1	IO_L07N_1	G19			
1	IO_L07P_1	H19			
1	IO_L06N_1	C20			
1	IO_L06P_1	D20			
1	IO_L05_1/No_Pair	E20			
1	IO_L03N_1/VREF_1	F20			
1	IO_L03P_1	G20			
1	IO_L02N_1	D21			
1	IO_L02P_1	E21			
1	IO_L01N_1/VRP_1	D22			
1	IO_L01P_1/VRN_1	E22			
2	IO_L01N_2/VRP_2	C25			
2	IO_L01P_2/VRN_2	C26			
2	IO_L02N_2	D25			
2	IO_L02P_2	D26			
2	IO_L03N_2	E23			
2	IO_L03P_2	F22			
2	IO_L04N_2/VREF_2	E25			
2	IO_L04P_2	E26			
2	IO_L06N_2	F21			
2	IO_L06P_2	G21			
2	IO_L24N_2	F23	NC		
2	IO_L24P_2	F24	NC		
2	IO_L31N_2	F25			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
2	IO_L31P_2	F26			
2	IO_L32N_2	G22			
2	IO_L32P_2	H22			
2	IO_L34N_2/VREF_2	G23			
2	IO_L34P_2	G24			
2	IO_L36N_2	G25			
2	IO_L36P_2	G26			
2	IO_L37N_2	H20			
2	IO_L37P_2	H21			
2	IO_L38N_2	H25			
2	IO_L38P_2	H26			
2	IO_L40N_2/VREF_2	J19			
2	IO_L40P_2	J20			
2	IO_L42N_2	J21			
2	IO_L42P_2	J22			
2	IO_L43N_2	J23			
2	IO_L43P_2	J24			
2	IO_L44N_2	J25			
2	IO_L44P_2	J26			
2	IO_L46N_2/VREF_2	K19			
2	IO_L46P_2	L19			
2	IO_L48N_2	K22			
2	IO_L48P_2	K23			
2	IO_L49N_2	K24			
2	IO_L49P_2	L24			
2	IO_L50N_2	K25			
2	IO_L50P_2	K26			
2	IO_L52N_2/VREF_2	L20			
2	IO_L52P_2	M20			
2	IO_L54N_2	L21			
2	IO_L54P_2	L22			
2	IO_L55N_2	L25			
2	IO_L55P_2	L26			
2	IO_L56N_2	M18			
2	IO_L56P_2	M19			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
2	IO_L58N_2/VREF_2	M21			
2	IO_L58P_2	N21			
2	IO_L60N_2	M22			
2	IO_L60P_2	M23			
2	IO_L85N_2	M25			
2	IO_L85P_2	M26			
2	IO_L86N_2	N18			
2	IO_L86P_2	N19			
2	IO_L88N_2/VREF_2	N22			
2	IO_L88P_2	N23			
2	IO_L90N_2	N24			
2	IO_L90P_2	N25			
3	IO_L90N_3	P25			
3	IO_L90P_3	P24			
3	IO_L89N_3	P23			
3	IO_L89P_3	P22			
3	IO_L87N_3/VREF_3	P19			
3	IO_L87P_3	P18			
3	IO_L85N_3	R26			
3	IO_L85P_3	R25			
3	IO_L60N_3	R23			
3	IO_L60P_3	R22			
3	IO_L59N_3	P21			
3	IO_L59P_3	R21			
3	IO_L57N_3/VREF_3	R19			
3	IO_L57P_3	R18			
3	IO_L55N_3	T26			
3	IO_L55P_3	T25			
3	IO_L54N_3	T22			
3	IO_L54P_3	T21			
3	IO_L53N_3	R20			
3	IO_L53P_3	T20			
3	IO_L51N_3/VREF_3	U26			
3	IO_L51P_3	U25			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
3	IO_L49N_3	T24			
3	IO_L49P_3	U24			
3	IO_L48N_3	U23			
3	IO_L48P_3	U22			
3	IO_L47N_3	T19			
3	IO_L47P_3	U19			
3	IO_L45N_3/VREF_3	V26			
3	IO_L45P_3	V25			
3	IO_L43N_3	V24			
3	IO_L43P_3	V23			
3	IO_L42N_3	V22			
3	IO_L42P_3	V21			
3	IO_L41N_3	V20			
3	IO_L41P_3	V19			
3	IO_L39N_3/VREF_3	W26			
3	IO_L39P_3	W25			
3	IO_L37N_3	W21			
3	IO_L37P_3	W20			
3	IO_L36N_3	Y26			
3	IO_L36P_3	Y25			
3	IO_L35N_3	Y24			
3	IO_L35P_3	Y23			
3	IO_L33N_3/VREF_3	W22			
3	IO_L33P_3	Y22			
3	IO_L31N_3	AA26			
3	IO_L31P_3	AA25			
3	IO_L24N_3	AA24	NC		
3	IO_L24P_3	AA23	NC		
3	IO_L23N_3	Y21	NC		
3	IO_L23P_3	AA21	NC		
3	IO_L06N_3	AB26			
3	IO_L06P_3	AB25			
3	IO_L05N_3	AA22			
3	IO_L05P_3	AB23			
3	IO_L03N_3/VREF_3	AC26			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
3	IO_L03P_3	AC25			
3	IO_L02N_3	AC24			
3	IO_L02P_3	AD25			
3	IO_L01N_3/VRP_3	AD26			
3	IO_L01P_3/VRN_3	AE26			
4	IO_L01N_4/DOUT	AB22			
4	IO_L01P_4/INIT_B	AC22			
4	IO_L02N_4/D0	AB21			
4	IO_L02P_4/D1	AC21			
4	IO_L03N_4/D2	Y20			
4	IO_L03P_4/D3	AA20			
4	IO_L05_4/No_Pair	AB20			
4	IO_L06N_4/VRP_4	AC20			
4	IO_L06P_4/VRN_4	AD20			
4	IO_L07N_4	W19			
4	IO_L07P_4/VREF_4	Y19			
4	IO_L09N_4	AA19			
4	IO_L09P_4/VREF_4	AB19			
4	IO_L37N_4	AE19			
4	IO_L37P_4	AF19			
4	IO_L39N_4	W18			
4	IO_L39P_4	Y18			
4	IO_L43N_4	AA18			
4	IO_L43P_4	AB18			
4	IO_L45N_4	AC18			
4	IO_L45P_4/VREF_4	AD18			
4	IO_L46N_4	W17			
4	IO_L46P_4	W16			
4	IO_L48N_4	AB17			
4	IO_L48P_4	AB16			
4	IO_L49N_4	AC17			
4	IO_L49P_4	AD17			
4	IO_L50_4/No_Pair	Y16			
4	IO_L53_4/No_Pair	AA16			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
4	IO_L54N_4	V15			
4	IO_L54P_4	W15			
4	IO_L55N_4	Y15			
4	IO_L55P_4	AA15			
4	IO_L57N_4	AB15			
4	IO_L57P_4/VREF_4	AA14			
4	IO_L67N_4	AC15			
4	IO_L67P_4	AD15			
4	IO_L69N_4	V14			
4	IO_L69P_4/VREF_4	W14			
4	IO_L74N_4/GCLK3S	AB14			
4	IO_L74P_4/GCLK2P	AC14			
4	IO_L75N_4/GCLK1S	AD14			
4	IO_L75P_4/GCLK0P	AE14			
5	IO_L75N_5/GCLK7S	AE13			
5	IO_L75P_5/GCLK6P	AD13			
5	IO_L74N_5/GCLK5S	AC13			
5	IO_L74P_5/GCLK4P	AB13			
5	IO_L69N_5/VREF_5	W13			
5	IO_L69P_5	V13			
5	IO_L67N_5	AD12			
5	IO_L67P_5	AC12			
5	IO_L57N_5/VREF_5	AA13			
5	IO_L57P_5	AB12			
5	IO_L55N_5	AA12			
5	IO_L55P_5	Y12			
5	IO_L54N_5	W12			
5	IO_L54P_5	V12			
5	IO_L53_5/No_Pair	AA11			
5	IO_L50_5/No_Pair	Y11			
5	IO_L49N_5	AD10			
5	IO_L49P_5	AC10			
5	IO_L48N_5	AB11			
5	IO_L48P_5	AB10			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
5	IO_L46N_5	W11			
5	IO_L46P_5	W10			
5	IO_L45N_5/VREF_5	AD9			
5	IO_L45P_5	AC9			
5	IO_L43N_5	AB9			
5	IO_L43P_5	AA9			
5	IO_L39N_5	Y9			
5	IO_L39P_5	W9			
5	IO_L37N_5	AF8			
5	IO_L37P_5	AE8			
5	IO_L09N_5/VREF_5	AB8			
5	IO_L09P_5	AA8			
5	IO_L07N_5/VREF_5	Y8			
5	IO_L07P_5	W8			
5	IO_L06N_5/VRP_5	AD7			
5	IO_L06P_5/VRN_5	AC7			
5	IO_L05_5/No_Pair	AB7			
5	IO_L03N_5/D4	AA7			
5	IO_L03P_5/D5	Y7			
5	IO_L02N_5/D6	AC6			
5	IO_L02P_5/D7	AB6			
5	IO_L01N_5/RDWR_B	AC5			
5	IO_L01P_5/CS_B	AB5			
6	IO_L01P_6/VRN_6	AE1			
6	IO_L01N_6/VRP_6	AD1			
6	IO_L02P_6	AD2			
6	IO_L02N_6	AC3			
6	IO_L03P_6	AC2			
6	IO_L03N_6/VREF_6	AC1			
6	IO_L05P_6	AB4			
6	IO_L05N_6	AA5			
6	IO_L06P_6	AB2			
6	IO_L06N_6	AB1			
6	IO_L23P_6	AA6	NC		

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
6	IO_L23N_6	Y6	NC		
6	IO_L24P_6	AA4	NC		
6	IO_L24N_6	AA3	NC		
6	IO_L31P_6	AA2			
6	IO_L31N_6	AA1			
6	IO_L33P_6	Y5			
6	IO_L33N_6/VREF_6	W5			
6	IO_L35P_6	Y4			
6	IO_L35N_6	Y3			
6	IO_L36P_6	Y2			
6	IO_L36N_6	Y1			
6	IO_L37P_6	W7			
6	IO_L37N_6	W6			
6	IO_L39P_6	W2			
6	IO_L39N_6/VREF_6	W1			
6	IO_L41P_6	V8			
6	IO_L41N_6	V7			
6	IO_L42P_6	V6			
6	IO_L42N_6	V5			
6	IO_L43P_6	V4			
6	IO_L43N_6	V3			
6	IO_L45P_6	V2			
6	IO_L45N_6/VREF_6	V1			
6	IO_L47P_6	U8			
6	IO_L47N_6	T8			
6	IO_L48P_6	U5			
6	IO_L48N_6	U4			
6	IO_L49P_6	U3			
6	IO_L49N_6	T3			
6	IO_L51P_6	U2			
6	IO_L51N_6/VREF_6	U1			
6	IO_L53P_6	T7			
6	IO_L53N_6	R7			
6	IO_L54P_6	T6			
6	IO_L54N_6	T5			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
6	IO_L55P_6	T2			
6	IO_L55N_6	T1			
6	IO_L57P_6	R9			
6	IO_L57N_6/VREF_6	R8			
6	IO_L59P_6	R6			
6	IO_L59N_6	P6			
6	IO_L60P_6	R5			
6	IO_L60N_6	R4			
6	IO_L85P_6	R2			
6	IO_L85N_6	R1			
6	IO_L87P_6	P9			
6	IO_L87N_6/VREF_6	P8			
6	IO_L89P_6	P5			
6	IO_L89N_6	P4			
6	IO_L90P_6	P3			
6	IO_L90N_6	P2			
7	IO_L90P_7	N2			
7	IO_L90N_7	N3			
7	IO_L88P_7	N4			
7	IO_L88N_7/VREF_7	N5			
7	IO_L86P_7	N8			
7	IO_L86N_7	N9			
7	IO_L85P_7	M1			
7	IO_L85N_7	M2			
7	IO_L60P_7	M4			
7	IO_L60N_7	M5			
7	IO_L58P_7	N6			
7	IO_L58N_7/VREF_7	M6			
7	IO_L56P_7	M8			
7	IO_L56N_7	M9			
7	IO_L55P_7	L1			
7	IO_L55N_7	L2			
7	IO_L54P_7	L5			
7	IO_L54N_7	L6			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
7	IO_L52P_7	M7			
7	IO_L52N_7/VREF_7	L7			
7	IO_L50P_7	K1			
7	IO_L50N_7	K2			
7	IO_L49P_7	L3			
7	IO_L49N_7	K3			
7	IO_L48P_7	K4			
7	IO_L48N_7	K5			
7	IO_L46P_7	L8			
7	IO_L46N_7/VREF_7	K8			
7	IO_L44P_7	J1			
7	IO_L44N_7	J2			
7	IO_L43P_7	J3			
7	IO_L43N_7	J4			
7	IO_L42P_7	J5			
7	IO_L42N_7	J6			
7	IO_L40P_7	J7			
7	IO_L40N_7/VREF_7	J8			
7	IO_L38P_7	H1			
7	IO_L38N_7	H2			
7	IO_L37P_7	H6			
7	IO_L37N_7	H7			
7	IO_L36P_7	G1			
7	IO_L36N_7	G2			
7	IO_L34P_7	G3			
7	IO_L34N_7/VREF_7	G4			
7	IO_L32P_7	H5			
7	IO_L32N_7	G5			
7	IO_L31P_7	F1			
7	IO_L31N_7	F2			
7	IO_L24P_7	F3	NC		
7	IO_L24N_7	F4	NC		
7	IO_L06P_7	G6			
7	IO_L06N_7	F6			
7	IO_L04P_7	E1			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
7	IO_L04N_7/VREF_7	E2			
7	IO_L03P_7	F5			
7	IO_L03N_7	E4			
7	IO_L02P_7	D1			
7	IO_L02N_7	D2			
7	IO_L01P_7/VRN_7	C1			
7	IO_L01N_7/VRP_7	C2			
0	VCCO_0	C5			
0	VCCO_0	C8			
0	VCCO_0	D11			
0	VCCO_0	J10			
0	VCCO_0	J11			
0	VCCO_0	K12			
0	VCCO_0	K13			
1	VCCO_1	C19			
1	VCCO_1	C22			
1	VCCO_1	D16			
1	VCCO_1	J16			
1	VCCO_1	J17			
1	VCCO_1	K14			
1	VCCO_1	K15			
2	VCCO_2	E24			
2	VCCO_2	H24			
2	VCCO_2	K18			
2	VCCO_2	L18			
2	VCCO_2	L23			
2	VCCO_2	M17			
2	VCCO_2	N17			
3	VCCO_3	P17			
3	VCCO_3	R17			
3	VCCO_3	T18			
3	VCCO_3	T23			
3	VCCO_3	U18			
3	VCCO_3	W24			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
3	VCCO_3	AB24			
4	VCCO_4	U14			
4	VCCO_4	U15			
4	VCCO_4	V16			
4	VCCO_4	V17			
4	VCCO_4	AC16			
4	VCCO_4	AD19			
4	VCCO_4	AD22			
5	VCCO_5	U12			
5	VCCO_5	U13			
5	VCCO_5	V10			
5	VCCO_5	V11			
5	VCCO_5	AC11			
5	VCCO_5	AD5			
5	VCCO_5	AD8			
6	VCCO_6	P10			
6	VCCO_6	R10			
6	VCCO_6	T4			
6	VCCO_6	T9			
6	VCCO_6	U9			
6	VCCO_6	W3			
6	VCCO_6	AB3			
7	VCCO_7	E3			
7	VCCO_7	H3			
7	VCCO_7	K9			
7	VCCO_7	L4			
7	VCCO_7	L9			
7	VCCO_7	M10			
7	VCCO_7	N10			
N/A	PROG_B	B1			
N/A	HSWAP_EN	B3			
N/A	DXP	A3			
N/A	DXN	C4			
N/A	AVCCAUXTX4	B5			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
N/A	VTTXPAD4	B4			
N/A	TXNPAD4	A4			
N/A	TXPPAD4	A5			
N/A	GNDA4	C6			
N/A	RXPPAD4	A6			
N/A	RXNPAD4	A7			
N/A	VTRXPAD4	B6			
N/A	AVCCAUXRX4	B7			
N/A	AVCCAUXTX6	B10			
N/A	VTTXPAD6	B9			
N/A	TXNPAD6	A9			
N/A	TXPPAD6	A10			
N/A	GNDA6	C11			
N/A	RXPPAD6	A11			
N/A	RXNPAD6	A12			
N/A	VTRXPAD6	B11			
N/A	AVCCAUXRX6	B12			
N/A	AVCCAUXTX7	B16			
N/A	VTTXPAD7	B15			
N/A	TXNPAD7	A15			
N/A	TXPPAD7	A16			
N/A	GNDA7	C16			
N/A	RXPPAD7	A17			
N/A	RXNPAD7	A18			
N/A	VTRXPAD7	B17			
N/A	AVCCAUXRX7	B18			
N/A	AVCCAUXTX9	B21			
N/A	VTTXPAD9	B20			
N/A	TXNPAD9	A20			
N/A	TXPPAD9	A21			
N/A	GNDA9	C21			
N/A	RXPPAD9	A22			
N/A	RXNPAD9	A23			
N/A	VTRXPAD9	B22			
N/A	AVCCAUXRX9	B23			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
N/A	RSVD	C23			
N/A	VBATT	A24			
N/A	TMS	B24			
N/A	TCK	B26			
N/A	TDO	D24			
N/A	CCLK	AE24			
N/A	PWRDWN_B	AF24			
N/A	DONE	AD23			
N/A	AVCCAUXRX16	AE23			
N/A	VTRXPAD16	AE22			
N/A	RXNPAD16	AF23			
N/A	RXPPAD16	AF22			
N/A	GNDA16	AD21			
N/A	TXPPAD16	AF21			
N/A	TXNPAD16	AF20			
N/A	VTTXPAD16	AE20			
N/A	AVCCAUXTX16	AE21			
N/A	AVCCAUXRX18	AE18			
N/A	VTRXPAD18	AE17			
N/A	RXNPAD18	AF18			
N/A	RXPPAD18	AF17			
N/A	GNDA18	AD16			
N/A	TXPPAD18	AF16			
N/A	TXNPAD18	AF15			
N/A	VTTXPAD18	AE15			
N/A	AVCCAUXTX18	AE16			
N/A	AVCCAUXRX19	AE12			
N/A	VTRXPAD19	AE11			
N/A	RXNPAD19	AF12			
N/A	RXPPAD19	AF11			
N/A	GNDA19	AD11			
N/A	TXPPAD19	AF10			
N/A	TXNPAD19	AF9			
N/A	VTTXPAD19	AE9			
N/A	AVCCAUXTX19	AE10			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
N/A	AVCCAUXRX21	AE7			
N/A	VTRXPAD21	AE6			
N/A	RXNPAD21	AF7			
N/A	RXPPAD21	AF6			
N/A	GNDA21	AD6			
N/A	TXPPAD21	AF5			
N/A	TXNPAD21	AF4			
N/A	VTTXPAD21	AE4			
N/A	AVCCAUXTX21	AE5			
N/A	M2	AD4			
N/A	M0	AF3			
N/A	M1	AE3			
N/A	TDI	D3			
N/A	VCCINT	G10			
N/A	VCCINT	G13			
N/A	VCCINT	G14			
N/A	VCCINT	G17			
N/A	VCCINT	J9			
N/A	VCCINT	J18			
N/A	VCCINT	K7			
N/A	VCCINT	K10			
N/A	VCCINT	K11			
N/A	VCCINT	K16			
N/A	VCCINT	K17			
N/A	VCCINT	K20			
N/A	VCCINT	L10			
N/A	VCCINT	L17			
N/A	VCCINT	N7			
N/A	VCCINT	N20			
N/A	VCCINT	P7			
N/A	VCCINT	P20			
N/A	VCCINT	T10			
N/A	VCCINT	T17			
N/A	VCCINT	U7			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	XC2VP30	XC2VP40
N/A	VCCINT	U10			
N/A	VCCINT	U11			
N/A	VCCINT	U16			
N/A	VCCINT	U17			
N/A	VCCINT	U20			
N/A	VCCINT	V9			
N/A	VCCINT	V18			
N/A	VCCINT	Y10			
N/A	VCCINT	Y13			
N/A	VCCINT	Y14			
N/A	VCCINT	Y17			
N/A	VCCAUX	A2			
N/A	VCCAUX	A13			
N/A	VCCAUX	A14			
N/A	VCCAUX	A25			
N/A	VCCAUX	N1			
N/A	VCCAUX	N26			
N/A	VCCAUX	P1			
N/A	VCCAUX	P26			
N/A	VCCAUX	AF2			
N/A	VCCAUX	AF13			
N/A	VCCAUX	AF14			
N/A	VCCAUX	AF25			
N/A	GND	A1			
N/A	GND	A26			
N/A	GND	B2			
N/A	GND	B25			
N/A	GND	C3			
N/A	GND	C24			
N/A	GND	D4			
N/A	GND	D8			
N/A	GND	D19			
N/A	GND	D23			
N/A	GND	F10			
N/A	GND	F17			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
N/A	GND	H4			
N/A	GND	H23			
N/A	GND	K6			
N/A	GND	K21			
N/A	GND	L11			
N/A	GND	L12			
N/A	GND	L13			
N/A	GND	L14			
N/A	GND	L15			
N/A	GND	L16			
N/A	GND	M3			
N/A	GND	M11			
N/A	GND	M12			
N/A	GND	M13			
N/A	GND	M14			
N/A	GND	M15			
N/A	GND	M16			
N/A	GND	M24			
N/A	GND	N11			
N/A	GND	N12			
N/A	GND	N13			
N/A	GND	N14			
N/A	GND	N15			
N/A	GND	N16			
N/A	GND	P11			
N/A	GND	P12			
N/A	GND	P13			
N/A	GND	P14			
N/A	GND	P15			
N/A	GND	P16			
N/A	GND	R3			
N/A	GND	R11			
N/A	GND	R12			
N/A	GND	R13			
N/A	GND	R14			

Table 7: **FG676 — XC2VP20, XC2VP30, and XC2VP40**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP20	**XC2VP30**	**XC2VP40**
N/A	GND	R15			
N/A	GND	R16			
N/A	GND	R24			
N/A	GND	T11			
N/A	GND	T12			
N/A	GND	T13			
N/A	GND	T14			
N/A	GND	T15			
N/A	GND	T16			
N/A	GND	U6			
N/A	GND	U21			
N/A	GND	W4			
N/A	GND	W23			
N/A	GND	AA10			
N/A	GND	AA17			
N/A	GND	AC4			
N/A	GND	AC8			
N/A	GND	AC19			
N/A	GND	AC23			
N/A	GND	AD3			
N/A	GND	AD24			
N/A	GND	AE2			
N/A	GND	AE25			
N/A	GND	AF1			
N/A	GND	AF26			

FG676 Fine-Pitch BGA Package Specifications (1.00mm pitch)
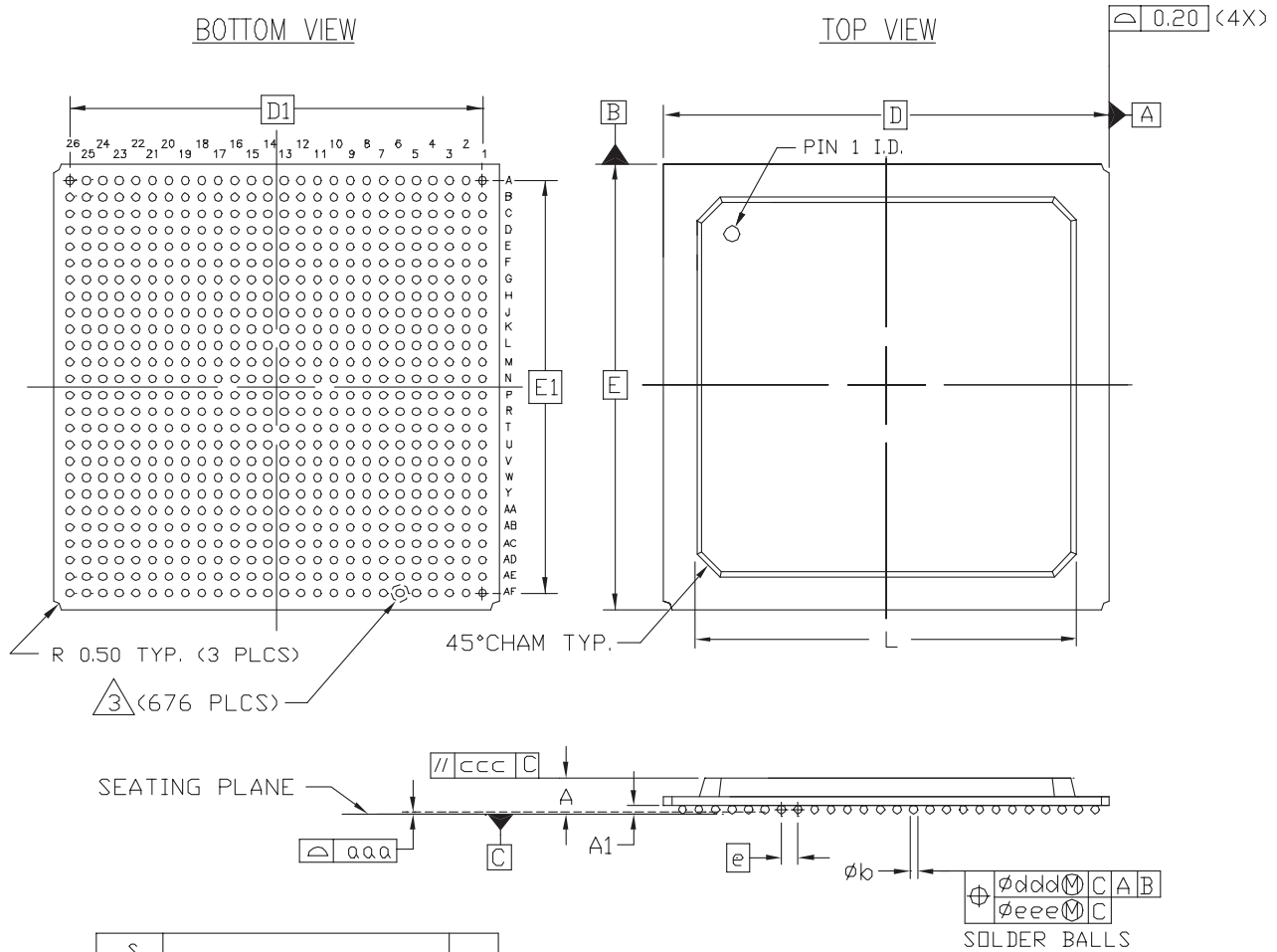
S Y M B O L	MILLIMETERS			N O T E
	MIN.	NOM.	MAX.	
A	~	2.25	2.60	
A$_1$	0.40	0.50	0.60	
D/E	27.00 BSC			
D$_1$/E$_1$	25.00 REF			
e	1.00 BSC			
Øb	0.50	0.60	0.70	
aaa	~	~	0.20	
ccc	~	~	0.35	
ddd	~	~	0.30	
eee	~	~	0.10	
L	~	~	25.70	
M	26			2
REF.	JEDEC MS-034-AAL-1			

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M–1994

2. SYMBOL 'M' IS THE BALL MATRIX SIZE.

3. LAND PAD OPENING – SOLDER MASK DEFINED Ø0.485mm (0.019")

Figure 3: **FG676 Fine-Pitch BGA Package Specifications**

FF672 Flip-Chip Fine-Pitch BGA Package

As shown in Table 8, XC2VP2, XC2VP4, and XC2VP7 Virtex-II Pro devices are available in the FF672 flip-chip fine-pitch BGA package. Pins in each of these devices are the same, except for differences shown in the "No Connects" column. Following this table are the FF672 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
0	IO_L01N_0/VRP_0	B24			
0	IO_L01P_0/VRN_0	A24			
0	IO_L02N_0	D21			
0	IO_L02P_0	C21			
0	IO_L03N_0	E20			
0	IO_L03P_0/VREF_0	D20			
0	IO_L05_0/No_Pair	F19			
0	IO_L06N_0	E19			
0	IO_L06P_0	E18			
0	IO_L07N_0	D19			
0	IO_L07P_0	C19			
0	IO_L08N_0	B19			
0	IO_L08P_0	A19			
0	IO_L09N_0	G18			
0	IO_L09P_0/VREF_0	F18			
0	IO_L37N_0	D18	NC	NC	
0	IO_L37P_0	C18	NC	NC	
0	IO_L38N_0	G17	NC	NC	
0	IO_L38P_0	H16	NC	NC	
0	IO_L39N_0	F17	NC	NC	
0	IO_L39P_0	F16	NC	NC	
0	IO_L43N_0	E17	NC	NC	
0	IO_L43P_0	D17	NC	NC	
0	IO_L44N_0	G16	NC	NC	
0	IO_L44P_0	G15	NC	NC	
0	IO_L45N_0	E16	NC	NC	
0	IO_L45P_0/VREF_0	D16	NC	NC	
0	IO_L67N_0	F15			
0	IO_L67P_0	E15			
0	IO_L68N_0	D15			
0	IO_L68P_0	C15			
0	IO_L69N_0	H15			
0	IO_L69P_0/VREF_0	H14			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
0	IO_L73N_0	G14			
0	IO_L73P_0	F14			
0	IO_L74N_0/GCLK7P	E14			
0	IO_L74P_0/GCLK6S	D14			
0	IO_L75N_0/GCLK5P	C14			
0	IO_L75P_0/GCLK4S	B14			
1	IO_L75N_1/GCLK3P	B13			
1	IO_L75P_1/GCLK2S	C13			
1	IO_L74N_1/GCLK1P	D13			
1	IO_L74P_1/GCLK0S	E13			
1	IO_L73N_1	F13			
1	IO_L73P_1	G13			
1	IO_L69N_1/VREF_1	H13			
1	IO_L69P_1	H12			
1	IO_L68N_1	C12			
1	IO_L68P_1	D12			
1	IO_L67N_1	E12			
1	IO_L67P_1	F12			
1	IO_L45N_1/VREF_1	D11	NC	NC	
1	IO_L45P_1	E11	NC	NC	
1	IO_L44N_1	G12	NC	NC	
1	IO_L44P_1	G11	NC	NC	
1	IO_L43N_1	D10	NC	NC	
1	IO_L43P_1	E10	NC	NC	
1	IO_L39N_1	F11	NC	NC	
1	IO_L39P_1	F10	NC	NC	
1	IO_L38N_1	H11	NC	NC	
1	IO_L38P_1	G10	NC	NC	
1	IO_L37N_1	C9	NC	NC	
1	IO_L37P_1	D9	NC	NC	
1	IO_L09N_1/VREF_1	F9			
1	IO_L09P_1	G9			
1	IO_L08N_1	A8			
1	IO_L08P_1	B8			
1	IO_L07N_1	C8			
1	IO_L07P_1	D8			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects XC2VP2	XC2VP4	XC2VP7
1	IO_L06N_1	E9			
1	IO_L06P_1	E8			
1	IO_L05_1/No_Pair	F8			
1	IO_L03N_1/VREF_1	D7			
1	IO_L03P_1	E7			
1	IO_L02N_1	C6			
1	IO_L02P_1	D6			
1	IO_L01N_1/VRP_1	A3			
1	IO_L01P_1/VRN_1	B3			
2	IO_L01N_2/VRP_2	C4			
2	IO_L01P_2/VRN_2	D3			
2	IO_L02N_2	A2			
2	IO_L02P_2	B1			
2	IO_L03N_2	C2			
2	IO_L03P_2	C1			
2	IO_L04N_2/VREF_2	D2			
2	IO_L04P_2	D1			
2	IO_L05N_2	E4			
2	IO_L05P_2	E3			
2	IO_L06N_2	E2			
2	IO_L06P_2	E1			
2	IO_L40N_2/VREF_2	F5	NC	NC	NC
2	IO_L40P_2	F4	NC	NC	NC
2	IO_L42N_2	F3	NC	NC	NC
2	IO_L42P_2	F2	NC	NC	NC
2	IO_L43N_2	G6	NC		
2	IO_L43P_2	G5	NC		
2	IO_L44N_2	G4	NC		
2	IO_L44P_2	G3	NC		
2	IO_L45N_2	F1	NC		
2	IO_L45P_2	G1	NC		
2	IO_L46N_2/VREF_2	H6	NC		
2	IO_L46P_2	H5	NC		
2	IO_L47N_2	H4	NC		
2	IO_L47P_2	H3	NC		
2	IO_L48N_2	H2	NC		

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
2	IO_L48P_2	H1	NC		
2	IO_L49N_2	J7	NC		
2	IO_L49P_2	J6	NC		
2	IO_L50N_2	J5	NC		
2	IO_L50P_2	J4	NC		
2	IO_L51N_2	J3	NC		
2	IO_L51P_2	J2	NC		
2	IO_L52N_2/VREF_2	K6	NC		
2	IO_L52P_2	K5	NC		
2	IO_L53N_2	K4	NC		
2	IO_L53P_2	K3	NC		
2	IO_L54N_2	J1	NC		
2	IO_L54P_2	K1	NC		
2	IO_L55N_2	K7	NC		
2	IO_L55P_2	L8	NC		
2	IO_L56N_2	L7	NC		
2	IO_L56P_2	M7	NC		
2	IO_L57N_2	L6	NC		
2	IO_L57P_2	L5	NC		
2	IO_L58N_2/VREF_2	L4	NC		
2	IO_L58P_2	L3	NC		
2	IO_L59N_2	L2	NC		
2	IO_L59P_2	L1	NC		
2	IO_L60N_2	M8	NC		
2	IO_L60P_2	N8	NC		
2	IO_L85N_2	M6			
2	IO_L85P_2	M5			
2	IO_L86N_2	M4			
2	IO_L86P_2	M3			
2	IO_L87N_2	M2			
2	IO_L87P_2	M1			
2	IO_L88N_2/VREF_2	N7			
2	IO_L88P_2	N6			
2	IO_L89N_2	N5			
2	IO_L89P_2	N4			
2	IO_L90N_2	N3			
2	IO_L90P_2	N2			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
3	IO_L90N_3	P2			
3	IO_L90P_3	P3			
3	IO_L89N_3	P4			
3	IO_L89P_3	P5			
3	IO_L88N_3	P6			
3	IO_L88P_3	P7			
3	IO_L87N_3/VREF_3	R1			
3	IO_L87P_3	R2			
3	IO_L86N_3	R3			
3	IO_L86P_3	R4			
3	IO_L85N_3	R5			
3	IO_L85P_3	R6			
3	IO_L60N_3	P8	NC		
3	IO_L60P_3	R8	NC		
3	IO_L59N_3	T1	NC		
3	IO_L59P_3	T2	NC		
3	IO_L58N_3	T3	NC		
3	IO_L58P_3	T4	NC		
3	IO_L57N_3/VREF_3	T5	NC		
3	IO_L57P_3	T6	NC		
3	IO_L56N_3	R7	NC		
3	IO_L56P_3	T7	NC		
3	IO_L55N_3	T8	NC		
3	IO_L55P_3	U7	NC		
3	IO_L54N_3	U1	NC		
3	IO_L54P_3	V1	NC		
3	IO_L53N_3	U3	NC		
3	IO_L53P_3	U4	NC		
3	IO_L52N_3	U5	NC		
3	IO_L52P_3	U6	NC		
3	IO_L51N_3/VREF_3	V2	NC		
3	IO_L51P_3	V3	NC		
3	IO_L50N_3	V4	NC		
3	IO_L50P_3	V5	NC		
3	IO_L49N_3	V6	NC		
3	IO_L49P_3	V7	NC		

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
3	IO_L48N_3	W1	NC		
3	IO_L48P_3	W2	NC		
3	IO_L47N_3	W3	NC		
3	IO_L47P_3	W4	NC		
3	IO_L46N_3	W5	NC		
3	IO_L46P_3	W6	NC		
3	IO_L45N_3/VREF_3	Y1	NC		
3	IO_L45P_3	AA1	NC		
3	IO_L44N_3	Y3	NC		
3	IO_L44P_3	Y4	NC		
3	IO_L43N_3	Y5	NC		
3	IO_L43P_3	Y6	NC		
3	IO_L42N_3	AA2	NC	NC	NC
3	IO_L42P_3	AA3	NC	NC	NC
3	IO_L41N_3	AA4	NC	NC	NC
3	IO_L41P_3	AA5	NC	NC	NC
3	IO_L39N_3/VREF_3	AB1	NC	NC	NC
3	IO_L39P_3	AB2	NC	NC	NC
3	IO_L06N_3	AB3			
3	IO_L06P_3	AB4			
3	IO_L05N_3	AC1			
3	IO_L05P_3	AC2			
3	IO_L04N_3	AD1			
3	IO_L04P_3	AD2			
3	IO_L03N_3/VREF_3	AE1			
3	IO_L03P_3	AF2			
3	IO_L02N_3	AC3			
3	IO_L02P_3	AD4			
3	IO_L01N_3/VRP_3	AE3			
3	IO_L01P_3/VRN_3	AF3			
4	IO_L01N_4/DOUT	AC6			
4	IO_L01P_4/INIT_B	AD6			
4	IO_L02N_4/D0	AB7			
4	IO_L02P_4/D1	AC7			
4	IO_L03N_4/D2	AA7			
4	IO_L03P_4/D3	AA8			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
4	IO_L05_4/No_Pair	Y8			
4	IO_L06N_4/VRP_4	AB8			
4	IO_L06P_4/VRN_4	AB9			
4	IO_L07N_4	AC8			
4	IO_L07P_4/VREF_4	AD8			
4	IO_L08N_4	AE8			
4	IO_L08P_4	AF8			
4	IO_L09N_4	Y9			
4	IO_L09P_4/VREF_4	AA9			
4	IO_L37N_4	AC9	NC	NC	
4	IO_L37P_4	AD9	NC	NC	
4	IO_L38N_4	Y10	NC	NC	
4	IO_L38P_4	W11	NC	NC	
4	IO_L39N_4	AA10	NC	NC	
4	IO_L39P_4	AA11	NC	NC	
4	IO_L43N_4	AB10	NC	NC	
4	IO_L43P_4	AC10	NC	NC	
4	IO_L44N_4	Y11	NC	NC	
4	IO_L44P_4	Y12	NC	NC	
4	IO_L45N_4	AB11	NC	NC	
4	IO_L45P_4/VREF_4	AC11	NC	NC	
4	IO_L67N_4	AA12			
4	IO_L67P_4	AB12			
4	IO_L68N_4	AC12			
4	IO_L68P_4	AD12			
4	IO_L69N_4	W12			
4	IO_L69P_4/VREF_4	W13			
4	IO_L73N_4	Y13			
4	IO_L73P_4	AA13			
4	IO_L74N_4/GCLK3S	AB13			
4	IO_L74P_4/GCLK2P	AC13			
4	IO_L75N_4/GCLK1S	AD13			
4	IO_L75P_4/GCLK0P	AE13			
5	IO_L75N_5/GCLK7S	AE14			
5	IO_L75P_5/GCLK6P	AD14			
5	IO_L74N_5/GCLK5S	AC14			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
5	IO_L74P_5/GCLK4P	AB14			
5	IO_L73N_5	AA14			
5	IO_L73P_5	Y14			
5	IO_L69N_5/VREF_5	W14			
5	IO_L69P_5	W15			
5	IO_L68N_5	AD15			
5	IO_L68P_5	AC15			
5	IO_L67N_5	AB15			
5	IO_L67P_5	AA15			
5	IO_L45N_5/VREF_5	AC16	NC	NC	
5	IO_L45P_5	AB16	NC	NC	
5	IO_L44N_5	Y15	NC	NC	
5	IO_L44P_5	Y16	NC	NC	
5	IO_L43N_5	AC17	NC	NC	
5	IO_L43P_5	AB17	NC	NC	
5	IO_L39N_5	AA16	NC	NC	
5	IO_L39P_5	AA17	NC	NC	
5	IO_L38N_5	W16	NC	NC	
5	IO_L38P_5	Y17	NC	NC	
5	IO_L37N_5	AD18	NC	NC	
5	IO_L37P_5	AC18	NC	NC	
5	IO_L09N_5/VREF_5	AA18			
5	IO_L09P_5	Y18			
5	IO_L08N_5	AF19			
5	IO_L08P_5	AE19			
5	IO_L07N_5/VREF_5	AD19			
5	IO_L07P_5	AC19			
5	IO_L06N_5/VRP_5	AB18			
5	IO_L06P_5/VRN_5	AB19			
5	IO_L05_5/No_Pair	Y19			
5	IO_L03N_5/D4	AA19			
5	IO_L03P_5/D5	AA20			
5	IO_L02N_5/D6	AC20			
5	IO_L02P_5/D7	AB20			
5	IO_L01N_5/RDWR_B	AD21			
5	IO_L01P_5/CS_B	AC21			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
6	IO_L01P_6/VRN_6	AF24			
6	IO_L01N_6/VRP_6	AE24			
6	IO_L02P_6	AD23			
6	IO_L02N_6	AC24			
6	IO_L03P_6	AE26			
6	IO_L03N_6/VREF_6	AF25			
6	IO_L04P_6	AD25			
6	IO_L04N_6	AD26			
6	IO_L05P_6	AC25			
6	IO_L05N_6	AC26			
6	IO_L06P_6	AB23			
6	IO_L06N_6	AB24			
6	IO_L39P_6	AB25	NC	NC	NC
6	IO_L39N_6/VREF_6	AB26	NC	NC	NC
6	IO_L41P_6	AA22	NC	NC	NC
6	IO_L41N_6	AA23	NC	NC	NC
6	IO_L42P_6	AA24	NC	NC	NC
6	IO_L42N_6	AA25	NC	NC	NC
6	IO_L43P_6	Y21	NC		
6	IO_L43N_6	Y22	NC		
6	IO_L44P_6	Y23	NC		
6	IO_L44N_6	Y24	NC		
6	IO_L45P_6	AA26	NC		
6	IO_L45N_6/VREF_6	Y26	NC		
6	IO_L46P_6	W21	NC		
6	IO_L46N_6	W22	NC		
6	IO_L47P_6	W23	NC		
6	IO_L47N_6	W24	NC		
6	IO_L48P_6	W25	NC		
6	IO_L48N_6	W26	NC		
6	IO_L49P_6	V20	NC		
6	IO_L49N_6	V21	NC		
6	IO_L50P_6	V22	NC		
6	IO_L50N_6	V23	NC		
6	IO_L51P_6	V24	NC		
6	IO_L51N_6/VREF_6	V25	NC		
6	IO_L52P_6	U21	NC		

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
6	IO_L52N_6	U22	NC		
6	IO_L53P_6	U23	NC		
6	IO_L53N_6	U24	NC		
6	IO_L54P_6	V26	NC		
6	IO_L54N_6	U26	NC		
6	IO_L55P_6	U20	NC		
6	IO_L55N_6	T19	NC		
6	IO_L56P_6	T20	NC		
6	IO_L56N_6	R20	NC		
6	IO_L57P_6	T21	NC		
6	IO_L57N_6/VREF_6	T22	NC		
6	IO_L58P_6	T23	NC		
6	IO_L58N_6	T24	NC		
6	IO_L59P_6	T25	NC		
6	IO_L59N_6	T26	NC		
6	IO_L60P_6	R19	NC		
6	IO_L60N_6	P19	NC		
6	IO_L85P_6	R21			
6	IO_L85N_6	R22			
6	IO_L86P_6	R23			
6	IO_L86N_6	R24			
6	IO_L87P_6	R25			
6	IO_L87N_6/VREF_6	R26			
6	IO_L88P_6	P20			
6	IO_L88N_6	P21			
6	IO_L89P_6	P22			
6	IO_L89N_6	P23			
6	IO_L90P_6	P24			
6	IO_L90N_6	P25			
7	IO_L90P_7	N25			
7	IO_L90N_7	N24			
7	IO_L89P_7	N23			
7	IO_L89N_7	N22			
7	IO_L88P_7	N21			
7	IO_L88N_7/VREF_7	N20			
7	IO_L87P_7	M26			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
7	IO_L87N_7	M25			
7	IO_L86P_7	M24			
7	IO_L86N_7	M23			
7	IO_L85P_7	M22			
7	IO_L85N_7	M21			
7	IO_L60P_7	N19	NC		
7	IO_L60N_7	M19	NC		
7	IO_L59P_7	L26	NC		
7	IO_L59N_7	L25	NC		
7	IO_L58P_7	L24	NC		
7	IO_L58N_7/VREF_7	L23	NC		
7	IO_L57P_7	L22	NC		
7	IO_L57N_7	L21	NC		
7	IO_L56P_7	M20	NC		
7	IO_L56N_7	L20	NC		
7	IO_L55P_7	L19	NC		
7	IO_L55N_7	K20	NC		
7	IO_L54P_7	K26	NC		
7	IO_L54N_7	J26	NC		
7	IO_L53P_7	K24	NC		
7	IO_L53N_7	K23	NC		
7	IO_L52P_7	K22	NC		
7	IO_L52N_7/VREF_7	K21	NC		
7	IO_L51P_7	J25	NC		
7	IO_L51N_7	J24	NC		
7	IO_L50P_7	J23	NC		
7	IO_L50N_7	J22	NC		
7	IO_L49P_7	J21	NC		
7	IO_L49N_7	J20	NC		
7	IO_L48P_7	H26	NC		
7	IO_L48N_7	H25	NC		
7	IO_L47P_7	H24	NC		
7	IO_L47N_7	H23	NC		
7	IO_L46P_7	H22	NC		
7	IO_L46N_7/VREF_7	H21	NC		
7	IO_L45P_7	G26	NC		
7	IO_L45N_7	F26	NC		

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	XC2VP4	XC2VP7
7	IO_L44P_7	G24	NC		
7	IO_L44N_7	G23	NC		
7	IO_L43P_7	G22	NC		
7	IO_L43N_7	G21	NC		
7	IO_L42P_7	F25	NC	NC	NC
7	IO_L42N_7	F24	NC	NC	NC
7	IO_L40P_7	F23	NC	NC	NC
7	IO_L40N_7/VREF_7	F22	NC	NC	NC
7	IO_L06P_7	E26			
7	IO_L06N_7	E25			
7	IO_L05P_7	E24			
7	IO_L05N_7	E23			
7	IO_L04P_7	D26			
7	IO_L04N_7/VREF_7	D25			
7	IO_L03P_7	C26			
7	IO_L03N_7	C25			
7	IO_L02P_7	B26			
7	IO_L02N_7	A25			
7	IO_L01P_7/VRN_7	D24			
7	IO_L01N_7/VRP_7	C23			
0	VCCO_0	C17			
0	VCCO_0	C20			
0	VCCO_0	H17			
0	VCCO_0	H18			
0	VCCO_0	J14			
0	VCCO_0	J15			
0	VCCO_0	J16			
1	VCCO_1	C7			
1	VCCO_1	H9			
1	VCCO_1	C10			
1	VCCO_1	H10			
1	VCCO_1	J11			
1	VCCO_1	J12			
1	VCCO_1	J13			
2	VCCO_2	G2			
2	VCCO_2	J8			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects XC2VP2	XC2VP4	XC2VP7
2	VCCO_2	K2			
2	VCCO_2	K8			
2	VCCO_2	L9			
2	VCCO_2	M9			
2	VCCO_2	N9			
3	VCCO_3	P9			
3	VCCO_3	R9			
3	VCCO_3	T9			
3	VCCO_3	U2			
3	VCCO_3	U8			
3	VCCO_3	V8			
3	VCCO_3	Y2			
4	VCCO_4	W9			
4	VCCO_4	AD7			
4	VCCO_4	V11			
4	VCCO_4	V12			
4	VCCO_4	V13			
4	VCCO_4	W10			
4	VCCO_4	AD10			
5	VCCO_5	V14			
5	VCCO_5	V15			
5	VCCO_5	V16			
5	VCCO_5	W17			
5	VCCO_5	W18			
5	VCCO_5	AD17			
5	VCCO_5	AD20			
6	VCCO_6	P18			
6	VCCO_6	R18			
6	VCCO_6	T18			
6	VCCO_6	U19			
6	VCCO_6	U25			
6	VCCO_6	V19			
6	VCCO_6	Y25			
7	VCCO_7	G25			
7	VCCO_7	J19			
7	VCCO_7	K19			
7	VCCO_7	K25			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
7	VCCO_7	L18			
7	VCCO_7	M18			
7	VCCO_7	N18			
N/A	CCLK	W7			
N/A	PROG_B	D22			
N/A	DONE	AB6			
N/A	M0	AC22			
N/A	M1	W20			
N/A	M2	AB21			
N/A	TCK	G8			
N/A	TDI	H20			
N/A	TDO	H7			
N/A	TMS	F7			
N/A	PWRDWN_B	AC5			
N/A	HSWAP_EN	E21			
N/A	RSVD	D5			
N/A	VBATT	E6			
N/A	DXP	F20			
N/A	DXN	G19			
N/A	AVCCAUXTX7	B11			
N/A	VTTXPAD7	B12			
N/A	TXNPAD7	A12			
N/A	TXPPAD7	A11			
N/A	GNDA7	C11			
N/A	RXPPAD7	A10			
N/A	RXNPAD7	A9			
N/A	VTRXPAD7	B10			
N/A	AVCCAUXRX7	B9			
N/A	AVCCAUXTX9	B6	NC	NC	
N/A	VTTXPAD9	B7	NC	NC	
N/A	TXNPAD9	A7	NC	NC	
N/A	TXPPAD9	A6	NC	NC	
N/A	GNDA9	C5	NC	NC	
N/A	RXPPAD9	A5	NC	NC	
N/A	RXNPAD9	A4	NC	NC	
N/A	VTRXPAD9	B5	NC	NC	

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	AVCCAUXRX9	B4	NC	NC	
N/A	AVCCAUXRX16	AE4	NC	NC	
N/A	VTRXPAD16	AE5	NC	NC	
N/A	RXNPAD16	AF4	NC	NC	
N/A	RXPPAD16	AF5	NC	NC	
N/A	GNDA16	AD5	NC	NC	
N/A	TXPPAD16	AF6	NC	NC	
N/A	TXNPAD16	AF7	NC	NC	
N/A	VTTXPAD16	AE7	NC	NC	
N/A	AVCCAUXTX16	AE6	NC	NC	
N/A	AVCCAUXRX18	AE9			
N/A	VTRXPAD18	AE10			
N/A	RXNPAD18	AF9			
N/A	RXPPAD18	AF10			
N/A	GNDA18	AD11			
N/A	TXPPAD18	AF11			
N/A	TXNPAD18	AF12			
N/A	VTTXPAD18	AE12			
N/A	AVCCAUXTX18	AE11			
N/A	AVCCAUXTX4	B22	NC	NC	
N/A	VTTXPAD4	B23	NC	NC	
N/A	TXNPAD4	A23	NC	NC	
N/A	TXPPAD4	A22	NC	NC	
N/A	GNDA4	C22	NC	NC	
N/A	RXPPAD4	A21	NC	NC	
N/A	RXNPAD4	A20	NC	NC	
N/A	VTRXPAD4	B21	NC	NC	
N/A	AVCCAUXRX4	B20	NC	NC	
N/A	AVCCAUXTX6	B17			
N/A	VTTXPAD6	B18			
N/A	TXNPAD6	A18			
N/A	TXPPAD6	A17			
N/A	GNDA6	C16			
N/A	RXPPAD6	A16			
N/A	RXNPAD6	A15			
N/A	VTRXPAD6	B16			
N/A	AVCCAUXRX6	B15			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	AVCCAUXRX19	AE15			
N/A	VTRXPAD19	AE16			
N/A	RXNPAD19	AF15			
N/A	RXPPAD19	AF16			
N/A	GNDA19	AD16			
N/A	TXPPAD19	AF17			
N/A	TXNPAD19	AF18			
N/A	VTTXPAD19	AE18			
N/A	AVCCAUXTX19	AE17			
N/A	AVCCAUXRX21	AE20	NC	NC	
N/A	VTRXPAD21	AE21	NC	NC	
N/A	RXNPAD21	AF20	NC	NC	
N/A	RXPPAD21	AF21	NC	NC	
N/A	GNDA21	AD22	NC	NC	
N/A	TXPPAD21	AF22	NC	NC	
N/A	TXNPAD21	AF23	NC	NC	
N/A	VTTXPAD21	AE23	NC	NC	
N/A	AVCCAUXTX21	AE22	NC	NC	
N/A	VCCINT	H8			
N/A	VCCINT	J9			
N/A	VCCINT	K9			
N/A	VCCINT	U9			
N/A	VCCINT	V9			
N/A	VCCINT	W8			
N/A	VCCINT	H19			
N/A	VCCINT	J10			
N/A	VCCINT	J17			
N/A	VCCINT	J18			
N/A	VCCINT	K11			
N/A	VCCINT	K16			
N/A	VCCINT	K18			
N/A	VCCINT	L10			
N/A	VCCINT	L17			
N/A	VCCINT	T10			
N/A	VCCINT	T17			
N/A	VCCINT	U11			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	VCCINT	U16			
N/A	VCCINT	U18			
N/A	VCCINT	V10			
N/A	VCCINT	V17			
N/A	VCCINT	V18			
N/A	VCCINT	W19			
N/A	VCCAUX	B2			
N/A	VCCAUX	N1			
N/A	VCCAUX	P1			
N/A	VCCAUX	A13			
N/A	VCCAUX	A14			
N/A	VCCAUX	AE2			
N/A	VCCAUX	B25			
N/A	VCCAUX	N26			
N/A	VCCAUX	P26			
N/A	VCCAUX	AE25			
N/A	VCCAUX	AF13			
N/A	VCCAUX	AF14			
N/A	GND	C3			
N/A	GND	D4			
N/A	GND	E5			
N/A	GND	F6			
N/A	GND	G7			
N/A	GND	Y7			
N/A	GND	AA6			
N/A	GND	AB5			
N/A	GND	AC4			
N/A	GND	AD3			
N/A	GND	C24			
N/A	GND	D23			
N/A	GND	E22			
N/A	GND	F21			
N/A	GND	G20			
N/A	GND	K10			
N/A	GND	K12			
N/A	GND	K13			
N/A	GND	K14			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	GND	K15			
N/A	GND	K17			
N/A	GND	L11			
N/A	GND	L12			
N/A	GND	L13			
N/A	GND	L14			
N/A	GND	L15			
N/A	GND	L16			
N/A	GND	M10			
N/A	GND	M11			
N/A	GND	M12			
N/A	GND	M13			
N/A	GND	M14			
N/A	GND	M15			
N/A	GND	M16			
N/A	GND	M17			
N/A	GND	N10			
N/A	GND	N11			
N/A	GND	N12			
N/A	GND	N13			
N/A	GND	N14			
N/A	GND	N15			
N/A	GND	N16			
N/A	GND	N17			
N/A	GND	P10			
N/A	GND	P11			
N/A	GND	P12			
N/A	GND	P13			
N/A	GND	P14			
N/A	GND	P15			
N/A	GND	P16			
N/A	GND	P17			
N/A	GND	R10			
N/A	GND	R11			
N/A	GND	R12			
N/A	GND	R13			
N/A	GND	R14			

Table 8: **FF672 — XC2VP2, XC2VP4, and XC2VP7**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP2	**XC2VP4**	**XC2VP7**
N/A	GND	R15			
N/A	GND	R16			
N/A	GND	R17			
N/A	GND	T11			
N/A	GND	T12			
N/A	GND	T13			
N/A	GND	T14			
N/A	GND	T15			
N/A	GND	T16			
N/A	GND	U10			
N/A	GND	U12			
N/A	GND	U13			
N/A	GND	U14			
N/A	GND	U15			
N/A	GND	U17			
N/A	GND	Y20			
N/A	GND	AA21			
N/A	GND	AB22			
N/A	GND	AC23			
N/A	GND	AD24			

FF672 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)

SYMBOL	MILLIMETERS			NOTE
	MIN.	NOM.	MAX.	
A	~	2.45	2.65	
A₁	0.40	0.50	0.60	
A₂	~	~	2.15	
D/E	27.00 BASIC			
D₁/E₁	25.00 REF			
e	1.00 BASIC			
Øb	0.50	0.60	0.70	
aaa	~	~	0.20	
ccc	~	~	0.35	
ddd	~	~	0.30	
eee	~	~	0.10	
M	26			2

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M–1994

2. SYMBOL 'M' IS THE BALL MATRIX SIZE.

3. CONFORMS TO JEDEC MS–034–AAL–1 (DEPOPULATED)
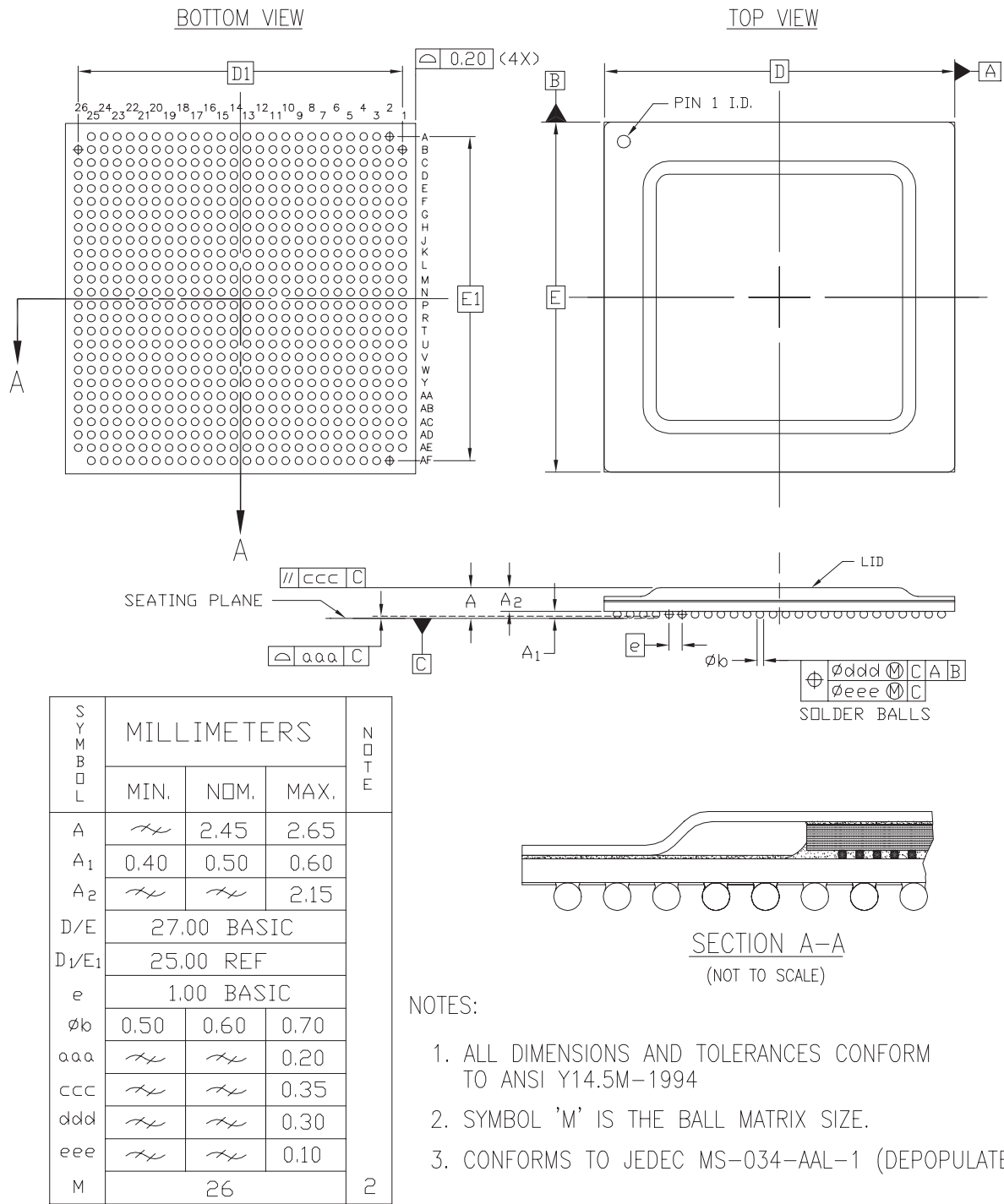
Figure 4: **FF672 Flip-Chip Fine-Pitch BGA Package Specifications**

FF896 Flip-Chip Fine-Pitch BGA Package

As shown in Table 9, XC2VP7, XC2VP20, and XC2VP30 Virtex-II Pro devices are available in the FF896 flip-chip fine-pitch BGA package. Pins in each of these devices are the same, except for differences shown in the "No Connects" column. Following this table are the FF896 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
0	IO_L01N_0/VRP_0	E25			
0	IO_L01P_0/VRN_0	E24			
0	IO_L02N_0	F24			
0	IO_L02P_0	F23			
0	IO_L03N_0	E23			
0	IO_L03P_0/VREF_0	E22			
0	IO_L05_0/No_Pair	G23			
0	IO_L06N_0	H22			
0	IO_L06P_0	G22			
0	IO_L07N_0	F22			
0	IO_L07P_0	F21			
0	IO_L08N_0	D24			
0	IO_L08P_0	C24			
0	IO_L09N_0	H21			
0	IO_L09P_0/VREF_0	G21			
0	IO_L37N_0	E21			
0	IO_L37P_0	D21			
0	IO_L38N_0	D23			
0	IO_L38P_0	C23			
0	IO_L39N_0	H20			
0	IO_L39P_0	G20			
0	IO_L43N_0	E20			
0	IO_L43P_0	D20			
0	IO_L44N_0	B23			
0	IO_L44P_0	A23			
0	IO_L45N_0	H19			
0	IO_L45P_0/VREF_0	G19			
0	IO_L46N_0	E19	NC		
0	IO_L46P_0	E18	NC		
0	IO_L47N_0	C22	NC		
0	IO_L47P_0	B22	NC		
0	IO_L48N_0	F20	NC		
0	IO_L48P_0	F19	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
0	IO_L49N_0	G17	NC		
0	IO_L49P_0	F17	NC		
0	IO_L50_0/No_Pair	B21	NC		
0	IO_L53_0/No_Pair	A21	NC		
0	IO_L54N_0	H18	NC		
0	IO_L54P_0	G18	NC		
0	IO_L56N_0	C21	NC		
0	IO_L56P_0	C20	NC		
0	IO_L57N_0	J17	NC		
0	IO_L57P_0/VREF_0	H17	NC		
0	IO_L67N_0	E17			
0	IO_L67P_0	D17			
0	IO_L68N_0	D18			
0	IO_L68P_0	C18			
0	IO_L69N_0	J16			
0	IO_L69P_0/VREF_0	H16			
0	IO_L73N_0	E16			
0	IO_L73P_0	D16			
0	IO_L74N_0/GCLK7P	C16			
0	IO_L74P_0/GCLK6S	B16			
0	IO_L75N_0/GCLK5P	G16			
0	IO_L75P_0/GCLK4S	F16			
1	IO_L75N_1/GCLK3P	F15			
1	IO_L75P_1/GCLK2S	G15			
1	IO_L74N_1/GCLK1P	B15			
1	IO_L74P_1/GCLK0S	C15			
1	IO_L73N_1	D15			
1	IO_L73P_1	E15			
1	IO_L69N_1/VREF_1	H15			
1	IO_L69P_1	J15			
1	IO_L68N_1	C13			
1	IO_L68P_1	D13			
1	IO_L67N_1	D14			
1	IO_L67P_1	E14			
1	IO_L57N_1/VREF_1	H14	NC		
1	IO_L57P_1	J14	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
1	IO_L56N_1	C11	NC		
1	IO_L56P_1	C10	NC		
1	IO_L54N_1	G13	NC		
1	IO_L54P_1	H13	NC		
1	IO_L53_1/No_Pair	A10	NC		
1	IO_L50_1/No_Pair	B10	NC		
1	IO_L49N_1	F14	NC		
1	IO_L49P_1	G14	NC		
1	IO_L48N_1	F12	NC		
1	IO_L48P_1	F11	NC		
1	IO_L47N_1	B9	NC		
1	IO_L47P_1	C9	NC		
1	IO_L46N_1	E13	NC		
1	IO_L46P_1	E12	NC		
1	IO_L45N_1/VREF_1	G12			
1	IO_L45P_1	H12			
1	IO_L44N_1	A8			
1	IO_L44P_1	B8			
1	IO_L43N_1	D11			
1	IO_L43P_1	E11			
1	IO_L39N_1	G11			
1	IO_L39P_1	H11			
1	IO_L38N_1	C8			
1	IO_L38P_1	D8			
1	IO_L37N_1	D10			
1	IO_L37P_1	E10			
1	IO_L09N_1/VREF_1	G10			
1	IO_L09P_1	H10			
1	IO_L08N_1	C7			
1	IO_L08P_1	D7			
1	IO_L07N_1	F10			
1	IO_L07P_1	F9			
1	IO_L06N_1	G9			
1	IO_L06P_1	H9			
1	IO_L05_1/No_Pair	G8			
1	IO_L03N_1/VREF_1	E9			
1	IO_L03P_1	E8			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
1	IO_L02N_1	F8			
1	IO_L02P_1	F7			
1	IO_L01N_1/VRP_1	E7			
1	IO_L01P_1/VRN_1	E6			
2	IO_L01N_2/VRP_2	A3			
2	IO_L01P_2/VRN_2	B3			
2	IO_L02N_2	G6			
2	IO_L02P_2	G5			
2	IO_L03N_2	C5			
2	IO_L03P_2	D5			
2	IO_L04N_2/VREF_2	C2			
2	IO_L04P_2	C1			
2	IO_L05N_2	J8			
2	IO_L05P_2	J7			
2	IO_L06N_2	C4			
2	IO_L06P_2	D3			
2	IO_L31N_2	D2	NC		
2	IO_L31P_2	D1	NC		
2	IO_L32N_2	H6	NC		
2	IO_L32P_2	H5	NC		
2	IO_L33N_2	E4	NC		
2	IO_L33P_2	E3	NC		
2	IO_L34N_2/VREF_2	E2	NC		
2	IO_L34P_2	E1	NC		
2	IO_L35N_2	K8	NC		
2	IO_L35P_2	K7	NC		
2	IO_L36N_2	F4	NC		
2	IO_L36P_2	F3	NC		
2	IO_L37N_2	F2	NC		
2	IO_L37P_2	F1	NC		
2	IO_L38N_2	J6	NC		
2	IO_L38P_2	J5	NC		
2	IO_L39N_2	G4	NC		
2	IO_L39P_2	G3	NC		
2	IO_L40N_2/VREF_2	G2	NC		
2	IO_L40P_2	G1	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
2	IO_L41N_2	L8	NC		
2	IO_L41P_2	L7	NC		
2	IO_L42N_2	H4	NC		
2	IO_L42P_2	H3	NC		
2	IO_L43N_2	H2			
2	IO_L43P_2	J2			
2	IO_L44N_2	M8			
2	IO_L44P_2	M7			
2	IO_L45N_2	K6			
2	IO_L45P_2	K5			
2	IO_L46N_2/VREF_2	J1			
2	IO_L46P_2	K1			
2	IO_L47N_2	M6			
2	IO_L47P_2	M5			
2	IO_L48N_2	J4			
2	IO_L48P_2	J3			
2	IO_L49N_2	K2			
2	IO_L49P_2	L2			
2	IO_L50N_2	N8			
2	IO_L50P_2	N7			
2	IO_L51N_2	K4			
2	IO_L51P_2	K3			
2	IO_L52N_2/VREF_2	L1			
2	IO_L52P_2	M1			
2	IO_L53N_2	N6			
2	IO_L53P_2	N5			
2	IO_L54N_2	L5			
2	IO_L54P_2	L4			
2	IO_L55N_2	M2			
2	IO_L55P_2	N2			
2	IO_L56N_2	P9			
2	IO_L56P_2	R9			
2	IO_L57N_2	M4			
2	IO_L57P_2	M3			
2	IO_L58N_2/VREF_2	N1			
2	IO_L58P_2	P1			
2	IO_L59N_2	P8			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
2	IO_L59P_2	P7			
2	IO_L60N_2	N4			
2	IO_L60P_2	N3			
2	IO_L85N_2	P3			
2	IO_L85P_2	P2			
2	IO_L86N_2	R8			
2	IO_L86P_2	R7			
2	IO_L87N_2	P5			
2	IO_L87P_2	P4			
2	IO_L88N_2/VREF_2	R2			
2	IO_L88P_2	T2			
2	IO_L89N_2	R6			
2	IO_L89P_2	R5			
2	IO_L90N_2	R4			
2	IO_L90P_2	R3			
3	IO_L90N_3	U1			
3	IO_L90P_3	V1			
3	IO_L89N_3	T5			
3	IO_L89P_3	T6			
3	IO_L88N_3	T3			
3	IO_L88P_3	T4			
3	IO_L87N_3/VREF_3	U2			
3	IO_L87P_3	U3			
3	IO_L86N_3	T7			
3	IO_L86P_3	T8			
3	IO_L85N_3	U4			
3	IO_L85P_3	U5			
3	IO_L60N_3	V2			
3	IO_L60P_3	W2			
3	IO_L59N_3	T9			
3	IO_L59P_3	U9			
3	IO_L58N_3	V3			
3	IO_L58P_3	V4			
3	IO_L57N_3/VREF_3	W1			
3	IO_L57P_3	Y1			
3	IO_L56N_3	U7			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
3	IO_L56P_3	U8			
3	IO_L55N_3	V5			
3	IO_L55P_3	V6			
3	IO_L54N_3	Y2			
3	IO_L54P_3	AA2			
3	IO_L53N_3	V7			
3	IO_L53P_3	V8			
3	IO_L52N_3	W3			
3	IO_L52P_3	W4			
3	IO_L51N_3/VREF_3	AA1			
3	IO_L51P_3	AB1			
3	IO_L50N_3	W5			
3	IO_L50P_3	W6			
3	IO_L49N_3	Y4			
3	IO_L49P_3	Y5			
3	IO_L48N_3	AA3			
3	IO_L48P_3	AA4			
3	IO_L47N_3	W7			
3	IO_L47P_3	W8			
3	IO_L46N_3	AB3			
3	IO_L46P_3	AB4			
3	IO_L45N_3/VREF_3	AB2			
3	IO_L45P_3	AC2			
3	IO_L44N_3	AA5			
3	IO_L44P_3	AA6			
3	IO_L43N_3	AC3			
3	IO_L43P_3	AC4			
3	IO_L42N_3	AD1	NC		
3	IO_L42P_3	AD2	NC		
3	IO_L41N_3	Y7	NC		
3	IO_L41P_3	Y8	NC		
3	IO_L40N_3	AB5	NC		
3	IO_L40P_3	AB6	NC		
3	IO_L39N_3/VREF_3	AE1	NC		
3	IO_L39P_3	AE2	NC		
3	IO_L38N_3	AA7	NC		
3	IO_L38P_3	AA8	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
3	IO_L37N_3	AD3	NC		
3	IO_L37P_3	AD4	NC		
3	IO_L36N_3	AF1	NC		
3	IO_L36P_3	AF2	NC		
3	IO_L35N_3	AC5	NC		
3	IO_L35P_3	AC6	NC		
3	IO_L34N_3	AF3	NC		
3	IO_L34P_3	AF4	NC		
3	IO_L33N_3/VREF_3	AE3	NC		
3	IO_L33P_3	AE4	NC		
3	IO_L32N_3	AB7	NC		
3	IO_L32P_3	AB8	NC		
3	IO_L31N_3	AE5	NC		
3	IO_L31P_3	AF6	NC		
3	IO_L06N_3	AG1			
3	IO_L06P_3	AG2			
3	IO_L05N_3	AD5			
3	IO_L05P_3	AD6			
3	IO_L04N_3	AG3			
3	IO_L04P_3	AH4			
3	IO_L03N_3/VREF_3	AH1			
3	IO_L03P_3	AH2			
3	IO_L02N_3	AG5			
3	IO_L02P_3	AH5			
3	IO_L01N_3/VRP_3	AJ3			
3	IO_L01P_3/VRN_3	AK3			
4	IO_L01N_4/DOUT	AG6			
4	IO_L01P_4/INIT_B	AF7			
4	IO_L02N_4/D0	AC9			
4	IO_L02P_4/D1	AD9			
4	IO_L03N_4/D2	AG7			
4	IO_L03P_4/D3	AH7			
4	IO_L05_4/No_Pair	AD8			
4	IO_L06N_4/VRP_4	AG8			
4	IO_L06P_4/VRN_4	AH8			
4	IO_L07N_4	AC10			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
4	IO_L07P_4/VREF_4	AD10			
4	IO_L08N_4	AE7			
4	IO_L08P_4	AE8			
4	IO_L09N_4	AJ8			
4	IO_L09P_4/VREF_4	AK8			
4	IO_L37N_4	AC11			
4	IO_L37P_4	AD11			
4	IO_L38N_4	AF8			
4	IO_L38P_4	AF9			
4	IO_L39N_4	AF10			
4	IO_L39P_4	AG10			
4	IO_L43N_4	AC12			
4	IO_L43P_4	AD12			
4	IO_L44N_4	AE9			
4	IO_L44P_4	AE10			
4	IO_L45N_4	AH9			
4	IO_L45P_4/VREF_4	AJ9			
4	IO_L46N_4	AC13	NC		
4	IO_L46P_4	AD13	NC		
4	IO_L47N_4	AE11	NC		
4	IO_L47P_4	AE12	NC		
4	IO_L48N_4	AH10	NC		
4	IO_L48P_4	AH11	NC		
4	IO_L49N_4	AB14	NC		
4	IO_L49P_4	AC14	NC		
4	IO_L50_4/No_Pair	AF11	NC		
4	IO_L53_4/No_Pair	AG11	NC		
4	IO_L54N_4	AJ10	NC		
4	IO_L54P_4	AK10	NC		
4	IO_L56N_4	AF12	NC		
4	IO_L56P_4	AF13	NC		
4	IO_L57N_4	AG13	NC		
4	IO_L57P_4/VREF_4	AH13	NC		
4	IO_L67N_4	AB15			
4	IO_L67P_4	AC15			
4	IO_L68N_4	AD14			
4	IO_L68P_4	AE14			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
4	IO_L69N_4	AF14			
4	IO_L69P_4/VREF_4	AG14			
4	IO_L73N_4	AD15			
4	IO_L73P_4	AE15			
4	IO_L74N_4/GCLK3S	AF15			
4	IO_L74P_4/GCLK2P	AG15			
4	IO_L75N_4/GCLK1S	AH15			
4	IO_L75P_4/GCLK0P	AJ15			
5	IO_L75N_5/GCLK7S	AJ16			
5	IO_L75P_5/GCLK6P	AH16			
5	IO_L74N_5/GCLK5S	AG16			
5	IO_L74P_5/GCLK4P	AF16			
5	IO_L73N_5	AE16			
5	IO_L73P_5	AD16			
5	IO_L69N_5/VREF_5	AG17			
5	IO_L69P_5	AF17			
5	IO_L68N_5	AE17			
5	IO_L68P_5	AD17			
5	IO_L67N_5	AC16			
5	IO_L67P_5	AB16			
5	IO_L57N_5/VREF_5	AH18	NC		
5	IO_L57P_5	AG18	NC		
5	IO_L56N_5	AF18	NC		
5	IO_L56P_5	AF19	NC		
5	IO_L54N_5	AK21	NC		
5	IO_L54P_5	AJ21	NC		
5	IO_L53_5/No_Pair	AG20	NC		
5	IO_L50_5/No_Pair	AF20	NC		
5	IO_L49N_5	AC17	NC		
5	IO_L49P_5	AB17	NC		
5	IO_L48N_5	AH20	NC		
5	IO_L48P_5	AH21	NC		
5	IO_L47N_5	AE19	NC		
5	IO_L47P_5	AE20	NC		
5	IO_L46N_5	AD18	NC		
5	IO_L46P_5	AC18	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
5	IO_L45N_5/VREF_5	AJ22			
5	IO_L45P_5	AH22			
5	IO_L44N_5	AE21			
5	IO_L44P_5	AE22			
5	IO_L43N_5	AD19			
5	IO_L43P_5	AC19			
5	IO_L39N_5	AG21			
5	IO_L39P_5	AF21			
5	IO_L38N_5	AF22			
5	IO_L38P_5	AF23			
5	IO_L37N_5	AD20			
5	IO_L37P_5	AC20			
5	IO_L09N_5/VREF_5	AK23			
5	IO_L09P_5	AJ23			
5	IO_L08N_5	AE23			
5	IO_L08P_5	AE24			
5	IO_L07N_5/VREF_5	AD21			
5	IO_L07P_5	AC21			
5	IO_L06N_5/VRP_5	AH23			
5	IO_L06P_5/VRN_5	AG23			
5	IO_L05_5/No_Pair	AD23			
5	IO_L03N_5/D4	AH24			
5	IO_L03P_5/D5	AG24			
5	IO_L02N_5/D6	AD22			
5	IO_L02P_5/D7	AC22			
5	IO_L01N_5/RDWR_B	AF24			
5	IO_L01P_5/CS_B	AG25			
6	IO_L01P_6/VRN_6	AK28			
6	IO_L01N_6/VRP_6	AJ28			
6	IO_L02P_6	AH26			
6	IO_L02N_6	AG26			
6	IO_L03P_6	AH29			
6	IO_L03N_6/VREF_6	AH30			
6	IO_L04P_6	AH27			
6	IO_L04N_6	AG28			
6	IO_L05P_6	AD25			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
6	IO_L05N_6	AD26			
6	IO_L06P_6	AG29			
6	IO_L06N_6	AG30			
6	IO_L31P_6	AF25	NC		
6	IO_L31N_6	AE26	NC		
6	IO_L32P_6	AB23	NC		
6	IO_L32N_6	AB24	NC		
6	IO_L33P_6	AE27	NC		
6	IO_L33N_6/VREF_6	AE28	NC		
6	IO_L34P_6	AF27	NC		
6	IO_L34N_6	AF28	NC		
6	IO_L35P_6	AC25	NC		
6	IO_L35N_6	AC26	NC		
6	IO_L36P_6	AF29	NC		
6	IO_L36N_6	AF30	NC		
6	IO_L37P_6	AD27	NC		
6	IO_L37N_6	AD28	NC		
6	IO_L38P_6	AA23	NC		
6	IO_L38N_6	AA24	NC		
6	IO_L39P_6	AE29	NC		
6	IO_L39N_6/VREF_6	AE30	NC		
6	IO_L40P_6	AB25	NC		
6	IO_L40N_6	AB26	NC		
6	IO_L41P_6	Y23	NC		
6	IO_L41N_6	Y24	NC		
6	IO_L42P_6	AD29	NC		
6	IO_L42N_6	AD30	NC		
6	IO_L43P_6	AC27			
6	IO_L43N_6	AC28			
6	IO_L44P_6	AA25			
6	IO_L44N_6	AA26			
6	IO_L45P_6	AC29			
6	IO_L45N_6/VREF_6	AB29			
6	IO_L46P_6	AB27			
6	IO_L46N_6	AB28			
6	IO_L47P_6	W23			
6	IO_L47N_6	W24			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
6	IO_L48P_6	AA27			
6	IO_L48N_6	AA28			
6	IO_L49P_6	Y26			
6	IO_L49N_6	Y27			
6	IO_L50P_6	W25			
6	IO_L50N_6	W26			
6	IO_L51P_6	AB30			
6	IO_L51N_6/VREF_6	AA30			
6	IO_L52P_6	W27			
6	IO_L52N_6	W28			
6	IO_L53P_6	V23			
6	IO_L53N_6	V24			
6	IO_L54P_6	AA29			
6	IO_L54N_6	Y29			
6	IO_L55P_6	V25			
6	IO_L55N_6	V26			
6	IO_L56P_6	U23			
6	IO_L56N_6	U24			
6	IO_L57P_6	Y30			
6	IO_L57N_6/VREF_6	W30			
6	IO_L58P_6	V27			
6	IO_L58N_6	V28			
6	IO_L59P_6	U22			
6	IO_L59N_6	T22			
6	IO_L60P_6	W29			
6	IO_L60N_6	V29			
6	IO_L85P_6	U26			
6	IO_L85N_6	U27			
6	IO_L86P_6	T23			
6	IO_L86N_6	T24			
6	IO_L87P_6	U28			
6	IO_L87N_6/VREF_6	U29			
6	IO_L88P_6	T27			
6	IO_L88N_6	T28			
6	IO_L89P_6	T25			
6	IO_L89N_6	T26			
6	IO_L90P_6	V30			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
6	IO_L90N_6	U30			
7	IO_L90P_7	R28			
7	IO_L90N_7	R27			
7	IO_L89P_7	R26			
7	IO_L89N_7	R25			
7	IO_L88P_7	T29			
7	IO_L88N_7/VREF_7	R29			
7	IO_L87P_7	P27			
7	IO_L87N_7	P26			
7	IO_L86P_7	R24			
7	IO_L86N_7	R23			
7	IO_L85P_7	P29			
7	IO_L85N_7	P28			
7	IO_L60P_7	N28			
7	IO_L60N_7	N27			
7	IO_L59P_7	P24			
7	IO_L59N_7	P23			
7	IO_L58P_7	P30			
7	IO_L58N_7/VREF_7	N30			
7	IO_L57P_7	M28			
7	IO_L57N_7	M27			
7	IO_L56P_7	R22			
7	IO_L56N_7	P22			
7	IO_L55P_7	N29			
7	IO_L55N_7	M29			
7	IO_L54P_7	L27			
7	IO_L54N_7	L26			
7	IO_L53P_7	N26			
7	IO_L53N_7	N25			
7	IO_L52P_7	M30			
7	IO_L52N_7/VREF_7	L30			
7	IO_L51P_7	K28			
7	IO_L51N_7	K27			
7	IO_L50P_7	N24			
7	IO_L50N_7	N23			
7	IO_L49P_7	L29			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
7	IO_L49N_7	K29			
7	IO_L48P_7	J28			
7	IO_L48N_7	J27			
7	IO_L47P_7	M26			
7	IO_L47N_7	M25			
7	IO_L46P_7	K30			
7	IO_L46N_7/VREF_7	J30			
7	IO_L45P_7	K26			
7	IO_L45N_7	K25			
7	IO_L44P_7	M24			
7	IO_L44N_7	M23			
7	IO_L43P_7	J29			
7	IO_L43N_7	H29			
7	IO_L42P_7	H28	NC		
7	IO_L42N_7	H27	NC		
7	IO_L41P_7	L24	NC		
7	IO_L41N_7	L23	NC		
7	IO_L40P_7	G30	NC		
7	IO_L40N_7/VREF_7	G29	NC		
7	IO_L39P_7	G28	NC		
7	IO_L39N_7	G27	NC		
7	IO_L38P_7	J26	NC		
7	IO_L38N_7	J25	NC		
7	IO_L37P_7	F30	NC		
7	IO_L37N_7	F29	NC		
7	IO_L36P_7	F28	NC		
7	IO_L36N_7	F27	NC		
7	IO_L35P_7	K24	NC		
7	IO_L35N_7	K23	NC		
7	IO_L34P_7	E30	NC		
7	IO_L34N_7/VREF_7	E29	NC		
7	IO_L33P_7	E28	NC		
7	IO_L33N_7	E27	NC		
7	IO_L32P_7	H26	NC		
7	IO_L32N_7	H25	NC		
7	IO_L31P_7	D30	NC		
7	IO_L31N_7	D29	NC		

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
7	IO_L06P_7	D28			
7	IO_L06N_7	C27			
7	IO_L05P_7	J24			
7	IO_L05N_7	J23			
7	IO_L04P_7	C30			
7	IO_L04N_7/VREF_7	C29			
7	IO_L03P_7	D26			
7	IO_L03N_7	C26			
7	IO_L02P_7	G26			
7	IO_L02N_7	G25			
7	IO_L01P_7/VRN_7	B28			
7	IO_L01N_7/VRP_7	A28			
0	VCCO_0	K21			
0	VCCO_0	K20			
0	VCCO_0	K19			
0	VCCO_0	K18			
0	VCCO_0	K17			
0	VCCO_0	K16			
0	VCCO_0	J21			
0	VCCO_0	J20			
0	VCCO_0	J19			
0	VCCO_0	J18			
1	VCCO_1	K15			
1	VCCO_1	K14			
1	VCCO_1	K13			
1	VCCO_1	K12			
1	VCCO_1	K11			
1	VCCO_1	K10			
1	VCCO_1	J13			
1	VCCO_1	J12			
1	VCCO_1	J11			
1	VCCO_1	J10			
2	VCCO_2	R10			
2	VCCO_2	P10			
2	VCCO_2	N10			
2	VCCO_2	N9			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
2	VCCO_2	M10			
2	VCCO_2	M9			
2	VCCO_2	L10			
2	VCCO_2	L9			
2	VCCO_2	K9			
2	VCCO_2	J9			
3	VCCO_3	AB9			
3	VCCO_3	AA9			
3	VCCO_3	Y10			
3	VCCO_3	Y9			
3	VCCO_3	W10			
3	VCCO_3	W9			
3	VCCO_3	V10			
3	VCCO_3	V9			
3	VCCO_3	U10			
3	VCCO_3	T10			
4	VCCO_4	AB13			
4	VCCO_4	AB12			
4	VCCO_4	AB11			
4	VCCO_4	AB10			
4	VCCO_4	AA15			
4	VCCO_4	AA14			
4	VCCO_4	AA13			
4	VCCO_4	AA12			
4	VCCO_4	AA11			
4	VCCO_4	AA10			
5	VCCO_5	AB21			
5	VCCO_5	AB20			
5	VCCO_5	AB19			
5	VCCO_5	AB18			
5	VCCO_5	AA21			
5	VCCO_5	AA20			
5	VCCO_5	AA19			
5	VCCO_5	AA18			
5	VCCO_5	AA17			
5	VCCO_5	AA16			
6	VCCO_6	AB22			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
6	VCCO_6	AA22			
6	VCCO_6	Y22			
6	VCCO_6	Y21			
6	VCCO_6	W22			
6	VCCO_6	W21			
6	VCCO_6	V22			
6	VCCO_6	V21			
6	VCCO_6	U21			
6	VCCO_6	T21			
7	VCCO_7	R21			
7	VCCO_7	P21			
7	VCCO_7	N22			
7	VCCO_7	N21			
7	VCCO_7	M22			
7	VCCO_7	M21			
7	VCCO_7	L22			
7	VCCO_7	L21			
7	VCCO_7	K22			
7	VCCO_7	J22			
N/A	CCLK	AC7			
N/A	PROG_B	G24			
N/A	DONE	AC8			
N/A	M0	AD24			
N/A	M1	AC24			
N/A	M2	AC23			
N/A	TCK	G7			
N/A	TDI	F26			
N/A	TDO	F5			
N/A	TMS	H8			
N/A	PWRDWN_B	AD7			
N/A	HSWAP_EN	H23			
N/A	RSVD	D6			
N/A	VBATT	H7			
N/A	DXP	H24			
N/A	DXN	D25			
N/A	AVCCAUXTX4	B26			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
N/A	VTTXPAD4	B27			
N/A	TXNPAD4	A27			
N/A	TXPPAD4	A26			
N/A	GNDA4	C25			
N/A	RXPPAD4	A25			
N/A	RXNPAD4	A24			
N/A	VTRXPAD4	B25			
N/A	AVCCAUXRX4	B24			
N/A	AVCCAUXTX6	B19			
N/A	VTTXPAD6	B20			
N/A	TXNPAD6	A20			
N/A	TXPPAD6	A19			
N/A	GNDA6	C19			
N/A	RXPPAD6	A18			
N/A	RXNPAD6	A17			
N/A	VTRXPAD6	B18			
N/A	AVCCAUXRX6	B17			
N/A	AVCCAUXTX7	B13			
N/A	VTTXPAD7	B14			
N/A	TXNPAD7	A14			
N/A	TXPPAD7	A13			
N/A	GNDA7	C12			
N/A	RXPPAD7	A12			
N/A	RXNPAD7	A11			
N/A	VTRXPAD7	B12			
N/A	AVCCAUXRX7	B11			
N/A	AVCCAUXTX9	B6			
N/A	VTTXPAD9	B7			
N/A	TXNPAD9	A7			
N/A	TXPPAD9	A6			
N/A	GNDA9	C6			
N/A	RXPPAD9	A5			
N/A	RXNPAD9	A4			
N/A	VTRXPAD9	B5			
N/A	AVCCAUXRX9	B4			
N/A	AVCCAUXRX16	AJ4			
N/A	VTRXPAD16	AJ5			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
N/A	RXNPAD16	AK4			
N/A	RXPPAD16	AK5			
N/A	GNDA16	AH6			
N/A	TXPPAD16	AK6			
N/A	TXNPAD16	AK7			
N/A	VTTXPAD16	AJ7			
N/A	AVCCAUXTX16	AJ6			
N/A	AVCCAUXRX18	AJ11			
N/A	VTRXPAD18	AJ12			
N/A	RXNPAD18	AK11			
N/A	RXPPAD18	AK12			
N/A	GNDA18	AH12			
N/A	TXPPAD18	AK13			
N/A	TXNPAD18	AK14			
N/A	VTTXPAD18	AJ14			
N/A	AVCCAUXTX18	AJ13			
N/A	AVCCAUXRX19	AJ17			
N/A	VTRXPAD19	AJ18			
N/A	RXNPAD19	AK17			
N/A	RXPPAD19	AK18			
N/A	GNDA19	AH19			
N/A	TXPPAD19	AK19			
N/A	TXNPAD19	AK20			
N/A	VTTXPAD19	AJ20			
N/A	AVCCAUXTX19	AJ19			
N/A	AVCCAUXRX21	AJ24			
N/A	VTRXPAD21	AJ25			
N/A	RXNPAD21	AK24			
N/A	RXPPAD21	AK25			
N/A	GNDA21	AH25			
N/A	TXPPAD21	AK26			
N/A	TXNPAD21	AK27			
N/A	VTTXPAD21	AJ27			
N/A	AVCCAUXTX21	AJ26			
N/A	VCCAUX	AK29			
N/A	VCCAUX	AK16			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
N/A	VCCAUX	AK15			
N/A	VCCAUX	AK2			
N/A	VCCAUX	AJ30			
N/A	VCCAUX	AJ1			
N/A	VCCAUX	T30			
N/A	VCCAUX	T1			
N/A	VCCAUX	R30			
N/A	VCCAUX	R1			
N/A	VCCAUX	B30			
N/A	VCCAUX	B1			
N/A	VCCAUX	A29			
N/A	VCCAUX	A16			
N/A	VCCAUX	A15			
N/A	VCCAUX	A2			
N/A	VCCINT	Y19			
N/A	VCCINT	Y18			
N/A	VCCINT	Y17			
N/A	VCCINT	Y16			
N/A	VCCINT	Y15			
N/A	VCCINT	Y14			
N/A	VCCINT	Y13			
N/A	VCCINT	Y12			
N/A	VCCINT	W20			
N/A	VCCINT	W11			
N/A	VCCINT	V20			
N/A	VCCINT	V11			
N/A	VCCINT	U20			
N/A	VCCINT	U11			
N/A	VCCINT	T20			
N/A	VCCINT	T11			
N/A	VCCINT	R20			
N/A	VCCINT	R11			
N/A	VCCINT	P20			
N/A	VCCINT	P11			
N/A	VCCINT	N20			
N/A	VCCINT	N11			
N/A	VCCINT	M20			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
N/A	VCCINT	M11			
N/A	VCCINT	L19			
N/A	VCCINT	L18			
N/A	VCCINT	L17			
N/A	VCCINT	L16			
N/A	VCCINT	L15			
N/A	VCCINT	L14			
N/A	VCCINT	L13			
N/A	VCCINT	L12			
N/A	GND	AK22			
N/A	GND	AK9			
N/A	GND	AJ29			
N/A	GND	AJ2			
N/A	GND	AH28			
N/A	GND	AH17			
N/A	GND	AH14			
N/A	GND	AH3			
N/A	GND	AG27			
N/A	GND	AG22			
N/A	GND	AG19			
N/A	GND	AG12			
N/A	GND	AG9			
N/A	GND	AG4			
N/A	GND	AF26			
N/A	GND	AF5			
N/A	GND	AE25			
N/A	GND	AE18			
N/A	GND	AE13			
N/A	GND	AE6			
N/A	GND	AC30			
N/A	GND	AC1			
N/A	GND	Y28			
N/A	GND	Y25			
N/A	GND	Y20			
N/A	GND	Y11			
N/A	GND	Y6			
N/A	GND	Y3			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
N/A	GND	W19			
N/A	GND	W18			
N/A	GND	W17			
N/A	GND	W16			
N/A	GND	W15			
N/A	GND	W14			
N/A	GND	W13			
N/A	GND	W12			
N/A	GND	V19			
N/A	GND	V18			
N/A	GND	V17			
N/A	GND	V16			
N/A	GND	V15			
N/A	GND	V14			
N/A	GND	V13			
N/A	GND	V12			
N/A	GND	U25			
N/A	GND	U19			
N/A	GND	U18			
N/A	GND	U17			
N/A	GND	U16			
N/A	GND	U15			
N/A	GND	U14			
N/A	GND	U13			
N/A	GND	U12			
N/A	GND	U6			
N/A	GND	T19			
N/A	GND	T18			
N/A	GND	T17			
N/A	GND	T16			
N/A	GND	T15			
N/A	GND	T14			
N/A	GND	T13			
N/A	GND	T12			
N/A	GND	R19			
N/A	GND	R18			
N/A	GND	R17			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	**XC2VP20**	**XC2VP30**
N/A	GND	R16			
N/A	GND	R15			
N/A	GND	R14			
N/A	GND	R13			
N/A	GND	R12			
N/A	GND	P25			
N/A	GND	P19			
N/A	GND	P18			
N/A	GND	P17			
N/A	GND	P16			
N/A	GND	P15			
N/A	GND	P14			
N/A	GND	P13			
N/A	GND	P12			
N/A	GND	P6			
N/A	GND	N19			
N/A	GND	N18			
N/A	GND	N17			
N/A	GND	N16			
N/A	GND	N15			
N/A	GND	N14			
N/A	GND	N13			
N/A	GND	N12			
N/A	GND	M19			
N/A	GND	M18			
N/A	GND	M17			
N/A	GND	M16			
N/A	GND	M15			
N/A	GND	M14			
N/A	GND	M13			
N/A	GND	M12			
N/A	GND	L28			
N/A	GND	L25			
N/A	GND	L20			
N/A	GND	L11			
N/A	GND	L6			
N/A	GND	L3			

Table 9: **FF896 — XC2VP7, XC2VP20, and XC2VP30**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP7	XC2VP20	XC2VP30
N/A	GND	H30			
N/A	GND	H1			
N/A	GND	F25			
N/A	GND	F18			
N/A	GND	F13			
N/A	GND	F6			
N/A	GND	E26			
N/A	GND	E5			
N/A	GND	D27			
N/A	GND	D22			
N/A	GND	D19			
N/A	GND	D12			
N/A	GND	D9			
N/A	GND	D4			
N/A	GND	C28			
N/A	GND	C17			
N/A	GND	C14			
N/A	GND	C3			
N/A	GND	B29			
N/A	GND	B2			
N/A	GND	A22			
N/A	GND	A9			

FF896 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)
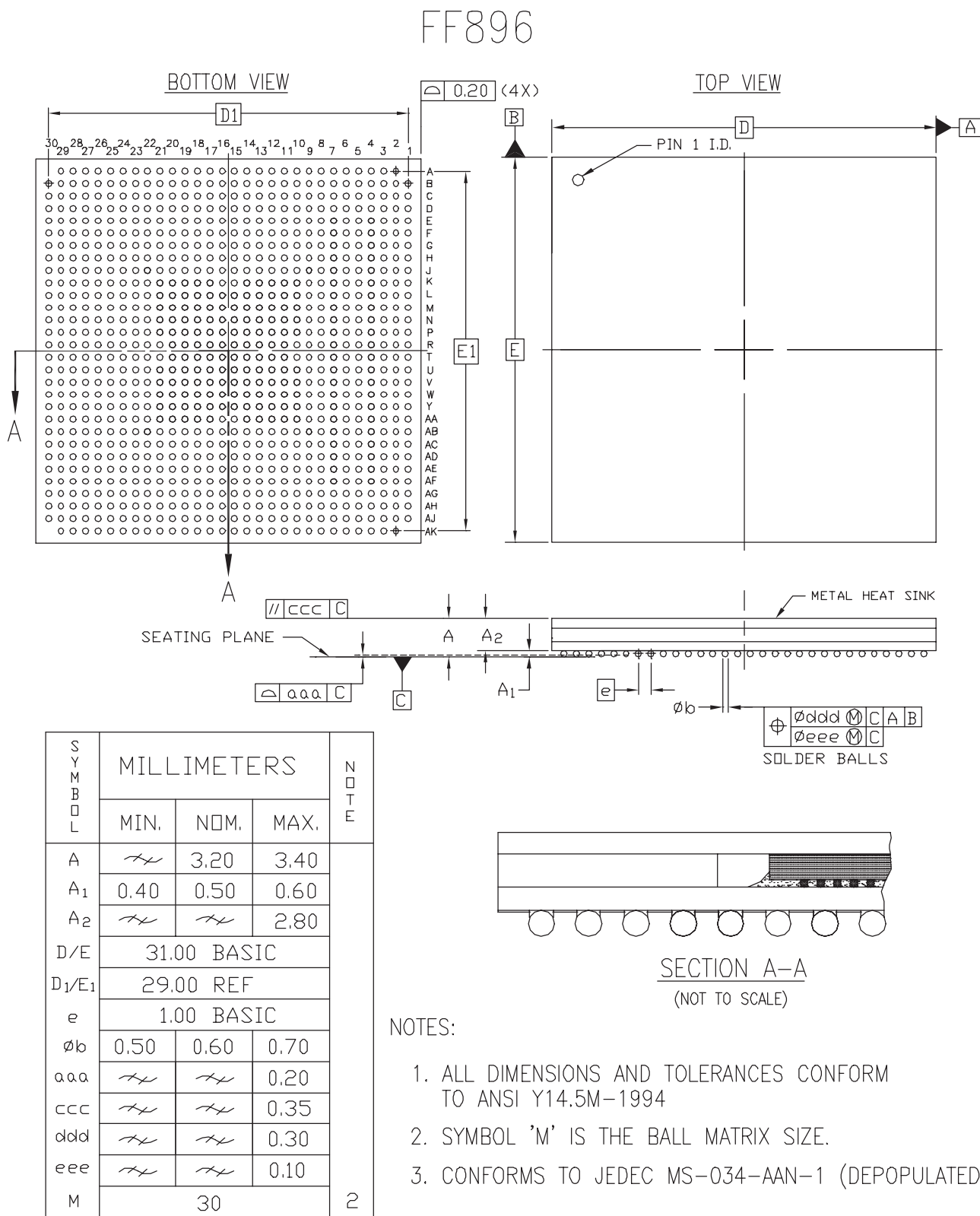
Figure 5: **FF896 Flip-Chip Fine-Pitch BGA Package Specifications**

SYMBOL	MILLIMETERS			NOTE
	MIN.	NOM.	MAX.	
A	~	3.20	3.40	
A_1	0.40	0.50	0.60	
A_2	~	~	2.80	
D/E	31.00 BASIC			
D_1/E_1	29.00 REF			
e	1.00 BASIC			
Øb	0.50	0.60	0.70	
aaa	~	~	0.20	
ccc	~	~	0.35	
ddd	~	~	0.30	
eee	~	~	0.10	
M	30			2

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M–1994

2. SYMBOL 'M' IS THE BALL MATRIX SIZE.

3. CONFORMS TO JEDEC MS–034–AAN–1 (DEPOPULATED)

FF1152 Flip-Chip Fine-Pitch BGA Package

As shown in Table 10, XC2VP20, XC2VP30, XC2VP40, and XC2VP50 Virtex-II Pro devices are available in the FF1152 flip-chip fine-pitch BGA package. Pins in each of these devices are the same, except for the differences shown in the No Connect column. Following this table are the FF1152 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
0	IO_L01N_0/VRP_0	E29				
0	IO_L01P_0/VRN_0	E28				
0	IO_L02N_0	H26				
0	IO_L02P_0	G26				
0	IO_L03N_0	H25				
0	IO_L03P_0/VREF_0	G25				
0	IO_L05_0/No_Pair	J25				
0	IO_L06N_0	K24				
0	IO_L06P_0	J24				
0	IO_L07N_0	F26				
0	IO_L07P_0	E26				
0	IO_L08N_0	D30				
0	IO_L08P_0	D29				
0	IO_L09N_0	K23				
0	IO_L09P_0/VREF_0	J23				
0	IO_L19N_0	F24	NC	NC		
0	IO_L19P_0	E24	NC	NC		
0	IO_L20N_0	D28	NC	NC		
0	IO_L20P_0	C28	NC	NC		
0	IO_L21N_0	H24	NC	NC		
0	IO_L21P_0	G24	NC	NC		
0	IO_L25N_0	G23	NC	NC		
0	IO_L25P_0	F23	NC	NC		
0	IO_L26N_0	E27	NC	NC		
0	IO_L26P_0	D27	NC	NC		
0	IO_L27N_0	K22	NC	NC		
0	IO_L27P_0/VREF_0	J22	NC	NC		
0	IO_L37N_0	H22				
0	IO_L37P_0	G22				
0	IO_L38N_0	D26				
0	IO_L38P_0	C26				
0	IO_L39N_0	K21				
0	IO_L39P_0	J21				
0	IO_L43N_0	F22				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
0	IO_L43P_0	E22				
0	IO_L44N_0	E25				
0	IO_L44P_0	D25				
0	IO_L45N_0	H21				
0	IO_L45P_0/VREF_0	G21				
0	IO_L46N_0	D22				
0	IO_L46P_0	D23				
0	IO_L47N_0	D24				
0	IO_L47P_0	C24				
0	IO_L48N_0	K20				
0	IO_L48P_0	J20				
0	IO_L49N_0	F21				
0	IO_L49P_0	E21				
0	IO_L50_0/No_Pair	C21				
0	IO_L53_0/No_Pair	C22				
0	IO_L54N_0	L19				
0	IO_L54P_0	K19				
0	IO_L55N_0	G20				
0	IO_L55P_0	F20				
0	IO_L56N_0	D21				
0	IO_L56P_0	D20				
0	IO_L57N_0	J19				
0	IO_L57P_0/VREF_0	H19				
0	IO_L67N_0	G19				
0	IO_L67P_0	F19				
0	IO_L68N_0	E19				
0	IO_L68P_0	D19				
0	IO_L69N_0	L18				
0	IO_L69P_0/VREF_0	K18				
0	IO_L73N_0	G18				
0	IO_L73P_0	F18				
0	IO_L74N_0/GCLK7P	E18				
0	IO_L74P_0/GCLK6S	D18				
0	IO_L75N_0/GCLK5P	J18				
0	IO_L75P_0/GCLK4S	H18				
1	IO_L75N_1/GCLK3P	H17				
1	IO_L75P_1/GCLK2S	J17				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
1	IO_L74N_1/GCLK1P	D17				
1	IO_L74P_1/GCLK0S	E17				
1	IO_L73N_1	F17				
1	IO_L73P_1	G17				
1	IO_L69N_1/VREF_1	K17				
1	IO_L69P_1	L17				
1	IO_L68N_1	D16				
1	IO_L68P_1	E16				
1	IO_L67N_1	F16				
1	IO_L67P_1	G16				
1	IO_L57N_1/VREF_1	H16				
1	IO_L57P_1	J16				
1	IO_L56N_1	D15				
1	IO_L56P_1	D14				
1	IO_L55N_1	F15				
1	IO_L55P_1	G15				
1	IO_L54N_1	K16				
1	IO_L54P_1	L16				
1	IO_L53_1/No_Pair	C13				
1	IO_L50_1/No_Pair	C14				
1	IO_L49N_1	E14				
1	IO_L49P_1	F14				
1	IO_L48N_1	J15				
1	IO_L48P_1	K15				
1	IO_L47N_1	C11				
1	IO_L47P_1	D11				
1	IO_L46N_1	D12				
1	IO_L46P_1	D13				
1	IO_L45N_1/VREF_1	G14				
1	IO_L45P_1	H14				
1	IO_L44N_1	D10				
1	IO_L44P_1	E10				
1	IO_L43N_1	E13				
1	IO_L43P_1	F13				
1	IO_L39N_1	J14				
1	IO_L39P_1	K14				
1	IO_L38N_1	C9				
1	IO_L38P_1	D9				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
1	IO_L37N_1	G13				
1	IO_L37P_1	H13				
1	IO_L27N_1/VREF_1	J13	NC	NC		
1	IO_L27P_1	K13	NC	NC		
1	IO_L26N_1	D8	NC	NC		
1	IO_L26P_1	E8	NC	NC		
1	IO_L25N_1	F12	NC	NC		
1	IO_L25P_1	G12	NC	NC		
1	IO_L21N_1	G11	NC	NC		
1	IO_L21P_1	H11	NC	NC		
1	IO_L20N_1	C7	NC	NC		
1	IO_L20P_1	D7	NC	NC		
1	IO_L19N_1	E11	NC	NC		
1	IO_L19P_1	F11	NC	NC		
1	IO_L09N_1/VREF_1	J12				
1	IO_L09P_1	K12				
1	IO_L08N_1	D6				
1	IO_L08P_1	D5				
1	IO_L07N_1	E9				
1	IO_L07P_1	F9				
1	IO_L06N_1	J11				
1	IO_L06P_1	K11				
1	IO_L05_1/No_Pair	J10				
1	IO_L03N_1/VREF_1	G10				
1	IO_L03P_1	H10				
1	IO_L02N_1	G9				
1	IO_L02P_1	H9				
1	IO_L01N_1/VRP_1	E7				
1	IO_L01P_1/VRN_1	E6				
2	IO_L01N_2/VRP_2	D2				
2	IO_L01P_2/VRN_2	D1				
2	IO_L02N_2	F8				
2	IO_L02P_2	F7				
2	IO_L03N_2	E4				
2	IO_L03P_2	E3				
2	IO_L04N_2/VREF_2	E2				
2	IO_L04P_2	E1				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
2	IO_L05N_2	J8				
2	IO_L05P_2	J7				
2	IO_L06N_2	F5				
2	IO_L06P_2	F4				
2	IO_L15N_2	G4	NC			
2	IO_L15P_2	G3	NC			
2	IO_L16N_2/VREF_2	G6	NC			
2	IO_L16P_2	G5	NC			
2	IO_L17N_2	F2	NC			
2	IO_L17P_2	F1	NC			
2	IO_L18N_2	L10	NC			
2	IO_L18P_2	L9	NC			
2	IO_L19N_2	H6	NC			
2	IO_L19P_2	H5	NC			
2	IO_L20N_2	G2	NC			
2	IO_L20P_2	G1	NC			
2	IO_L21N_2	J6	NC			
2	IO_L21P_2	J5	NC			
2	IO_L22N_2/VREF_2	J4	NC			
2	IO_L22P_2	J3	NC			
2	IO_L23N_2	K8	NC			
2	IO_L23P_2	K7	NC			
2	IO_L24N_2	H4	NC			
2	IO_L24P_2	H3	NC			
2	IO_L31N_2	H2				
2	IO_L31P_2	H1				
2	IO_L32N_2	M10				
2	IO_L32P_2	M9				
2	IO_L33N_2	K5				
2	IO_L33P_2	K4				
2	IO_L34N_2/VREF_2	J2				
2	IO_L34P_2	K2				
2	IO_L35N_2	L8				
2	IO_L35P_2	L7				
2	IO_L36N_2	L6				
2	IO_L36P_2	L5				
2	IO_L37N_2	K1				
2	IO_L37P_2	L1				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
2	IO_L38N_2	N10				
2	IO_L38P_2	N9				
2	IO_L39N_2	M7				
2	IO_L39P_2	M6				
2	IO_L40N_2/VREF_2	L2				
2	IO_L40P_2	M2				
2	IO_L41N_2	N8				
2	IO_L41P_2	N7				
2	IO_L42N_2	L4				
2	IO_L42P_2	L3				
2	IO_L43N_2	M4				
2	IO_L43P_2	M3				
2	IO_L44N_2	P10				
2	IO_L44P_2	P9				
2	IO_L45N_2	N6				
2	IO_L45P_2	N5				
2	IO_L46N_2/VREF_2	M1				
2	IO_L46P_2	N1				
2	IO_L47N_2	P8				
2	IO_L47P_2	P7				
2	IO_L48N_2	N4				
2	IO_L48P_2	N3				
2	IO_L49N_2	N2				
2	IO_L49P_2	P2				
2	IO_L50N_2	R10				
2	IO_L50P_2	R9				
2	IO_L51N_2	P6				
2	IO_L51P_2	P5				
2	IO_L52N_2/VREF_2	P4				
2	IO_L52P_2	P3				
2	IO_L53N_2	T11				
2	IO_L53P_2	U11				
2	IO_L54N_2	R7				
2	IO_L54P_2	R6				
2	IO_L55N_2	P1				
2	IO_L55P_2	R1				
2	IO_L56N_2	T10				
2	IO_L56P_2	T9				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
2	IO_L57N_2	R4				
2	IO_L57P_2	R3				
2	IO_L58N_2/VREF_2	R2				
2	IO_L58P_2	T2				
2	IO_L59N_2	T8				
2	IO_L59P_2	T7				
2	IO_L60N_2	T6				
2	IO_L60P_2	T5				
2	IO_L85N_2	T4				
2	IO_L85P_2	T3				
2	IO_L86N_2	U10				
2	IO_L86P_2	U9				
2	IO_L87N_2	U6				
2	IO_L87P_2	U5				
2	IO_L88N_2/VREF_2	U2				
2	IO_L88P_2	V2				
2	IO_L89N_2	U8				
2	IO_L89P_2	U7				
2	IO_L90N_2	U4				
2	IO_L90P_2	U3				
3	IO_L90N_3	V3				
3	IO_L90P_3	V4				
3	IO_L89N_3	V7				
3	IO_L89P_3	V8				
3	IO_L88N_3	V5				
3	IO_L88P_3	V6				
3	IO_L87N_3/VREF_3	W2				
3	IO_L87P_3	Y2				
3	IO_L86N_3	V9				
3	IO_L86P_3	V10				
3	IO_L85N_3	W3				
3	IO_L85P_3	W4				
3	IO_L60N_3	Y1				
3	IO_L60P_3	AA1				
3	IO_L59N_3	V11				
3	IO_L59P_3	W11				
3	IO_L58N_3	W5				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
3	IO_L58P_3	W6				
3	IO_L57N_3/VREF_3	Y3				
3	IO_L57P_3	Y4				
3	IO_L56N_3	W7				
3	IO_L56P_3	W8				
3	IO_L55N_3	Y6				
3	IO_L55P_3	Y7				
3	IO_L54N_3	AA2				
3	IO_L54P_3	AB2				
3	IO_L53N_3	W9				
3	IO_L53P_3	W10				
3	IO_L52N_3	AA3				
3	IO_L52P_3	AA4				
3	IO_L51N_3/VREF_3	AB1				
3	IO_L51P_3	AC1				
3	IO_L50N_3	Y9				
3	IO_L50P_3	Y10				
3	IO_L49N_3	AA5				
3	IO_L49P_3	AA6				
3	IO_L48N_3	AB3				
3	IO_L48P_3	AB4				
3	IO_L47N_3	AA7				
3	IO_L47P_3	AA8				
3	IO_L46N_3	AB5				
3	IO_L46P_3	AB6				
3	IO_L45N_3/VREF_3	AC2				
3	IO_L45P_3	AD2				
3	IO_L44N_3	AA9				
3	IO_L44P_3	AA10				
3	IO_L43N_3	AC3				
3	IO_L43P_3	AC4				
3	IO_L42N_3	AD1				
3	IO_L42P_3	AE1				
3	IO_L41N_3	AB7				
3	IO_L41P_3	AB8				
3	IO_L40N_3	AC6				
3	IO_L40P_3	AC7				
3	IO_L39N_3/VREF_3	AD3				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
3	IO_L39P_3	AD4				
3	IO_L38N_3	AB9				
3	IO_L38P_3	AB10				
3	IO_L37N_3	AD5				
3	IO_L37P_3	AD6				
3	IO_L36N_3	AE2				
3	IO_L36P_3	AF2				
3	IO_L35N_3	AD7				
3	IO_L35P_3	AD8				
3	IO_L34N_3	AE4				
3	IO_L34P_3	AE5				
3	IO_L33N_3/VREF_3	AG1				
3	IO_L33P_3	AG2				
3	IO_L32N_3	AC9				
3	IO_L32P_3	AC10				
3	IO_L31N_3	AF3				
3	IO_L31P_3	AF4				
3	IO_L24N_3	AH1	NC			
3	IO_L24P_3	AH2	NC			
3	IO_L23N_3	AE7	NC			
3	IO_L23P_3	AE8	NC			
3	IO_L22N_3	AF5	NC			
3	IO_L22P_3	AF6	NC			
3	IO_L21N_3/VREF_3	AG3	NC			
3	IO_L21P_3	AG4	NC			
3	IO_L20N_3	AD9	NC			
3	IO_L20P_3	AD10	NC			
3	IO_L19N_3	AH3	NC			
3	IO_L19P_3	AH4	NC			
3	IO_L18N_3	AJ1	NC			
3	IO_L18P_3	AJ2	NC			
3	IO_L17N_3	AF7	NC			
3	IO_L17P_3	AF8	NC			
3	IO_L16N_3	AK1	NC			
3	IO_L16P_3	AK2	NC			
3	IO_L15N_3/VREF_3	AG5	NC			
3	IO_L15P_3	AG6	NC			
3	IO_L06N_3	AL1				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
3	IO_L06P_3	AL2				
3	IO_L05N_3	AG7				
3	IO_L05P_3	AH8				
3	IO_L04N_3	AH5				
3	IO_L04P_3	AH6				
3	IO_L03N_3/VREF_3	AK3				
3	IO_L03P_3	AK4				
3	IO_L02N_3	AJ7				
3	IO_L02P_3	AJ8				
3	IO_L01N_3/VRP_3	AJ4				
3	IO_L01P_3/VRN_3	AJ5				
4	IO_L01N_4/DOUT	AL5				
4	IO_L01P_4/INIT_B	AL6				
4	IO_L02N_4/D0	AG9				
4	IO_L02P_4/D1	AH9				
4	IO_L03N_4/D2	AK6				
4	IO_L03P_4/D3	AK7				
4	IO_L05_4/No_Pair	AF10				
4	IO_L06N_4/VRP_4	AL7				
4	IO_L06P_4/VRN_4	AM7				
4	IO_L07N_4	AE11				
4	IO_L07P_4/VREF_4	AF11				
4	IO_L08N_4	AG10				
4	IO_L08P_4	AH10				
4	IO_L09N_4	AK8				
4	IO_L09P_4/VREF_4	AL8				
4	IO_L19N_4	AE12	NC	NC		
4	IO_L19P_4	AF12	NC	NC		
4	IO_L20N_4	AJ9	NC	NC		
4	IO_L20P_4	AK9	NC	NC		
4	IO_L21N_4	AL9	NC	NC		
4	IO_L21P_4	AM9	NC	NC		
4	IO_L25N_4	AG11	NC	NC		
4	IO_L25P_4	AH11	NC	NC		
4	IO_L26N_4	AH12	NC	NC		
4	IO_L26P_4	AJ12	NC	NC		
4	IO_L27N_4	AK10	NC	NC		

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
4	IO_L27P_4/VREF_4	AL10	NC	NC		
4	IO_L37N_4	AE13				
4	IO_L37P_4	AF13				
4	IO_L38N_4	AG13				
4	IO_L38P_4	AH13				
4	IO_L39N_4	AJ11				
4	IO_L39P_4	AK11				
4	IO_L43N_4	AE14				
4	IO_L43P_4	AF14				
4	IO_L44N_4	AJ13				
4	IO_L44P_4	AK13				
4	IO_L45N_4	AL11				
4	IO_L45P_4/VREF_4	AM11				
4	IO_L46N_4	AE15				
4	IO_L46P_4	AF15				
4	IO_L47N_4	AG14				
4	IO_L47P_4	AH14				
4	IO_L48N_4	AL13				
4	IO_L48P_4	AL12				
4	IO_L49N_4	AD16				
4	IO_L49P_4	AE16				
4	IO_L50_4/No_Pair	AJ14				
4	IO_L53_4/No_Pair	AK14				
4	IO_L54N_4	AM14				
4	IO_L54P_4	AM13				
4	IO_L55N_4	AF16				
4	IO_L55P_4	AG16				
4	IO_L56N_4	AH15				
4	IO_L56P_4	AJ15				
4	IO_L57N_4	AL14				
4	IO_L57P_4/VREF_4	AL15				
4	IO_L67N_4	AD17				
4	IO_L67P_4	AE17				
4	IO_L68N_4	AH16				
4	IO_L68P_4	AJ16				
4	IO_L69N_4	AK16				
4	IO_L69P_4/VREF_4	AL16				
4	IO_L73N_4	AF17				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
4	IO_L73P_4	AG17				
4	IO_L74N_4/GCLK3S	AH17				
4	IO_L74P_4/GCLK2P	AJ17				
4	IO_L75N_4/GCLK1S	AK17				
4	IO_L75P_4/GCLK0P	AL17				
5	IO_L75N_5/GCLK7S	AL18				
5	IO_L75P_5/GCLK6P	AK18				
5	IO_L74N_5/GCLK5S	AJ18				
5	IO_L74P_5/GCLK4P	AH18				
5	IO_L73N_5	AG18				
5	IO_L73P_5	AF18				
5	IO_L69N_5/VREF_5	AL19				
5	IO_L69P_5	AK19				
5	IO_L68N_5	AJ19				
5	IO_L68P_5	AH19				
5	IO_L67N_5	AE18				
5	IO_L67P_5	AD18				
5	IO_L57N_5/VREF_5	AL20				
5	IO_L57P_5	AL21				
5	IO_L56N_5	AJ20				
5	IO_L56P_5	AH20				
5	IO_L55N_5	AG19				
5	IO_L55P_5	AF19				
5	IO_L54N_5	AM22				
5	IO_L54P_5	AM21				
5	IO_L53_5/No_Pair	AK21				
5	IO_L50_5/No_Pair	AJ21				
5	IO_L49N_5	AE19				
5	IO_L49P_5	AD19				
5	IO_L48N_5	AL23				
5	IO_L48P_5	AL22				
5	IO_L47N_5	AH21				
5	IO_L47P_5	AG21				
5	IO_L46N_5	AF20				
5	IO_L46P_5	AE20				
5	IO_L45N_5/VREF_5	AM24				
5	IO_L45P_5	AL24				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
5	IO_L44N_5	AK22				
5	IO_L44P_5	AJ22				
5	IO_L43N_5	AF21				
5	IO_L43P_5	AE21				
5	IO_L39N_5	AK24				
5	IO_L39P_5	AJ24				
5	IO_L38N_5	AH22				
5	IO_L38P_5	AG22				
5	IO_L37N_5	AF22				
5	IO_L37P_5	AE22				
5	IO_L27N_5/VREF_5	AL25	NC	NC		
5	IO_L27P_5	AK25	NC	NC		
5	IO_L26N_5	AJ23	NC	NC		
5	IO_L26P_5	AH23	NC	NC		
5	IO_L25N_5	AH24	NC	NC		
5	IO_L25P_5	AG24	NC	NC		
5	IO_L21N_5	AM26	NC	NC		
5	IO_L21P_5	AL26	NC	NC		
5	IO_L20N_5	AK26	NC	NC		
5	IO_L20P_5	AJ26	NC	NC		
5	IO_L19N_5	AF23	NC	NC		
5	IO_L19P_5	AE23	NC	NC		
5	IO_L09N_5/VREF_5	AL27				
5	IO_L09P_5	AK27				
5	IO_L08N_5	AH25				
5	IO_L08P_5	AG25				
5	IO_L07N_5/VREF_5	AF24				
5	IO_L07P_5	AE24				
5	IO_L06N_5/VRP_5	AM28				
5	IO_L06P_5/VRN_5	AL28				
5	IO_L05_5/No_Pair	AF25				
5	IO_L03N_5/D4	AK28				
5	IO_L03P_5/D5	AK29				
5	IO_L02N_5/D6	AH26				
5	IO_L02P_5/D7	AG26				
5	IO_L01N_5/RDWR_B	AL29				
5	IO_L01P_5/CS_B	AL30				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
6	IO_L01P_6/VRN_6	AJ30				
6	IO_L01N_6/VRP_6	AJ31				
6	IO_L02P_6	AJ27				
6	IO_L02N_6	AJ28				
6	IO_L03P_6	AK31				
6	IO_L03N_6/VREF_6	AK32				
6	IO_L04P_6	AH29				
6	IO_L04N_6	AH30				
6	IO_L05P_6	AH27				
6	IO_L05N_6	AG28				
6	IO_L06P_6	AL33				
6	IO_L06N_6	AL34				
6	IO_L15P_6	AG29	NC			
6	IO_L15N_6/VREF_6	AG30	NC			
6	IO_L16P_6	AK33	NC			
6	IO_L16N_6	AK34	NC			
6	IO_L17P_6	AF27	NC			
6	IO_L17N_6	AF28	NC			
6	IO_L18P_6	AJ33	NC			
6	IO_L18N_6	AJ34	NC			
6	IO_L19P_6	AH31	NC			
6	IO_L19N_6	AH32	NC			
6	IO_L20P_6	AD25	NC			
6	IO_L20N_6	AD26	NC			
6	IO_L21P_6	AG31	NC			
6	IO_L21N_6/VREF_6	AG32	NC			
6	IO_L22P_6	AF29	NC			
6	IO_L22N_6	AF30	NC			
6	IO_L23P_6	AE27	NC			
6	IO_L23N_6	AE28	NC			
6	IO_L24P_6	AH33	NC			
6	IO_L24N_6	AH34	NC			
6	IO_L31P_6	AF31				
6	IO_L31N_6	AF32				
6	IO_L32P_6	AC25				
6	IO_L32N_6	AC26				
6	IO_L33P_6	AG33				
6	IO_L33N_6/VREF_6	AG34				

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Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
6	IO_L34P_6	AE30				
6	IO_L34N_6	AE31				
6	IO_L35P_6	AD27				
6	IO_L35N_6	AD28				
6	IO_L36P_6	AF33				
6	IO_L36N_6	AE33				
6	IO_L37P_6	AD29				
6	IO_L37N_6	AD30				
6	IO_L38P_6	AB25				
6	IO_L38N_6	AB26				
6	IO_L39P_6	AD31				
6	IO_L39N_6/VREF_6	AD32				
6	IO_L40P_6	AC28				
6	IO_L40N_6	AC29				
6	IO_L41P_6	AB27				
6	IO_L41N_6	AB28				
6	IO_L42P_6	AE34				
6	IO_L42N_6	AD34				
6	IO_L43P_6	AC31				
6	IO_L43N_6	AC32				
6	IO_L44P_6	AA25				
6	IO_L44N_6	AA26				
6	IO_L45P_6	AD33				
6	IO_L45N_6/VREF_6	AC33				
6	IO_L46P_6	AB29				
6	IO_L46N_6	AB30				
6	IO_L47P_6	AA27				
6	IO_L47N_6	AA28				
6	IO_L48P_6	AB31				
6	IO_L48N_6	AB32				
6	IO_L49P_6	AA29				
6	IO_L49N_6	AA30				
6	IO_L50P_6	Y25				
6	IO_L50N_6	Y26				
6	IO_L51P_6	AC34				
6	IO_L51N_6/VREF_6	AB34				
6	IO_L52P_6	AA31				
6	IO_L52N_6	AA32				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
6	IO_L53P_6	W25				
6	IO_L53N_6	W26				
6	IO_L54P_6	AB33				
6	IO_L54N_6	AA33				
6	IO_L55P_6	Y28				
6	IO_L55N_6	Y29				
6	IO_L56P_6	W27				
6	IO_L56N_6	W28				
6	IO_L57P_6	Y31				
6	IO_L57N_6/VREF_6	Y32				
6	IO_L58P_6	W29				
6	IO_L58N_6	W30				
6	IO_L59P_6	W24				
6	IO_L59N_6	V24				
6	IO_L60P_6	AA34				
6	IO_L60N_6	Y34				
6	IO_L85P_6	W31				
6	IO_L85N_6	W32				
6	IO_L86P_6	V25				
6	IO_L86N_6	V26				
6	IO_L87P_6	Y33				
6	IO_L87N_6/VREF_6	W33				
6	IO_L88P_6	V29				
6	IO_L88N_6	V30				
6	IO_L89P_6	V27				
6	IO_L89N_6	V28				
6	IO_L90P_6	V31				
6	IO_L90N_6	V32				
7	IO_L90P_7	U32				
7	IO_L90N_7	U31				
7	IO_L89P_7	U28				
7	IO_L89N_7	U27				
7	IO_L88P_7	V33				
7	IO_L88N_7/VREF_7	U33				
7	IO_L87P_7	U30				
7	IO_L87N_7	U29				
7	IO_L86P_7	U26				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
7	IO_L86N_7	U25				
7	IO_L85P_7	T32				
7	IO_L85N_7	T31				
7	IO_L60P_7	T30				
7	IO_L60N_7	T29				
7	IO_L59P_7	T28				
7	IO_L59N_7	T27				
7	IO_L58P_7	T33				
7	IO_L58N_7/VREF_7	R33				
7	IO_L57P_7	R32				
7	IO_L57N_7	R31				
7	IO_L56P_7	T26				
7	IO_L56N_7	T25				
7	IO_L55P_7	R34				
7	IO_L55N_7	P34				
7	IO_L54P_7	R29				
7	IO_L54N_7	R28				
7	IO_L53P_7	U24				
7	IO_L53N_7	T24				
7	IO_L52P_7	P32				
7	IO_L52N_7/VREF_7	P31				
7	IO_L51P_7	P30				
7	IO_L51N_7	P29				
7	IO_L50P_7	R26				
7	IO_L50N_7	R25				
7	IO_L49P_7	P33				
7	IO_L49N_7	N33				
7	IO_L48P_7	N32				
7	IO_L48N_7	N31				
7	IO_L47P_7	P28				
7	IO_L47N_7	P27				
7	IO_L46P_7	N34				
7	IO_L46N_7/VREF_7	M34				
7	IO_L45P_7	N30				
7	IO_L45N_7	N29				
7	IO_L44P_7	P26				
7	IO_L44N_7	P25				
7	IO_L43P_7	M32				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
7	IO_L43N_7	M31				
7	IO_L42P_7	L32				
7	IO_L42N_7	L31				
7	IO_L41P_7	N28				
7	IO_L41N_7	N27				
7	IO_L40P_7	M33				
7	IO_L40N_7/VREF_7	L33				
7	IO_L39P_7	M29				
7	IO_L39N_7	M28				
7	IO_L38P_7	N26				
7	IO_L38N_7	N25				
7	IO_L37P_7	L34				
7	IO_L37N_7	K34				
7	IO_L36P_7	L30				
7	IO_L36N_7	L29				
7	IO_L35P_7	L28				
7	IO_L35N_7	L27				
7	IO_L34P_7	K33				
7	IO_L34N_7/VREF_7	J33				
7	IO_L33P_7	K31				
7	IO_L33N_7	K30				
7	IO_L32P_7	M26				
7	IO_L32N_7	M25				
7	IO_L31P_7	H34				
7	IO_L31N_7	H33				
7	IO_L24P_7	H32	NC			
7	IO_L24N_7	H31	NC			
7	IO_L23P_7	K28	NC			
7	IO_L23N_7	K27	NC			
7	IO_L22P_7	J32	NC			
7	IO_L22N_7/VREF_7	J31	NC			
7	IO_L21P_7	J30	NC			
7	IO_L21N_7	J29	NC			
7	IO_L20P_7	G34	NC			
7	IO_L20N_7	G33	NC			
7	IO_L19P_7	H30	NC			
7	IO_L19N_7	H29	NC			
7	IO_L18P_7	L26	NC			

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
7	IO_L18N_7	L25	NC			
7	IO_L17P_7	F34	NC			
7	IO_L17N_7	F33	NC			
7	IO_L16P_7	G30	NC			
7	IO_L16N_7/VREF_7	G29	NC			
7	IO_L15P_7	G32	NC			
7	IO_L15N_7	G31	NC			
7	IO_L06P_7	F31				
7	IO_L06N_7	F30				
7	IO_L05P_7	J28				
7	IO_L05N_7	J27				
7	IO_L04P_7	E34				
7	IO_L04N_7/VREF_7	E33				
7	IO_L03P_7	E32				
7	IO_L03N_7	E31				
7	IO_L02P_7	F28				
7	IO_L02N_7	F27				
7	IO_L01P_7/VRN_7	D34				
7	IO_L01N_7/VRP_7	D33				
0	VCCO_0	C29				
0	VCCO_0	E20				
0	VCCO_0	F25				
0	VCCO_0	L20				
0	VCCO_0	L21				
0	VCCO_0	L22				
0	VCCO_0	L23				
0	VCCO_0	M18				
0	VCCO_0	M19				
0	VCCO_0	M20				
0	VCCO_0	M21				
0	VCCO_0	M22				
1	VCCO_1	C6				
1	VCCO_1	E15				
1	VCCO_1	F10				
1	VCCO_1	L12				
1	VCCO_1	L13				
1	VCCO_1	L14				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
1	VCCO_1	L15				
1	VCCO_1	M13				
1	VCCO_1	M14				
1	VCCO_1	M15				
1	VCCO_1	M16				
1	VCCO_1	M17				
2	VCCO_2	F3				
2	VCCO_2	K6				
2	VCCO_2	M11				
2	VCCO_2	N11				
2	VCCO_2	N12				
2	VCCO_2	P11				
2	VCCO_2	P12				
2	VCCO_2	R5				
2	VCCO_2	R11				
2	VCCO_2	R12				
2	VCCO_2	T12				
2	VCCO_2	U12				
3	VCCO_3	V12				
3	VCCO_3	W12				
3	VCCO_3	Y5				
3	VCCO_3	Y11				
3	VCCO_3	Y12				
3	VCCO_3	AA11				
3	VCCO_3	AA12				
3	VCCO_3	AB11				
3	VCCO_3	AB12				
3	VCCO_3	AC11				
3	VCCO_3	AE6				
3	VCCO_3	AJ3				
4	VCCO_4	AC13				
4	VCCO_4	AC14				
4	VCCO_4	AC15				
4	VCCO_4	AC16				
4	VCCO_4	AC17				
4	VCCO_4	AD12				
4	VCCO_4	AD13				
4	VCCO_4	AD14				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
4	VCCO_4	AD15				
4	VCCO_4	AJ10				
4	VCCO_4	AK15				
4	VCCO_4	AM6				
5	VCCO_5	AC18				
5	VCCO_5	AC19				
5	VCCO_5	AC20				
5	VCCO_5	AC21				
5	VCCO_5	AC22				
5	VCCO_5	AD20				
5	VCCO_5	AD21				
5	VCCO_5	AD22				
5	VCCO_5	AD23				
5	VCCO_5	AJ25				
5	VCCO_5	AK20				
5	VCCO_5	AM29				
6	VCCO_6	V23				
6	VCCO_6	W23				
6	VCCO_6	Y23				
6	VCCO_6	Y24				
6	VCCO_6	Y30				
6	VCCO_6	AA23				
6	VCCO_6	AA24				
6	VCCO_6	AB23				
6	VCCO_6	AB24				
6	VCCO_6	AC24				
6	VCCO_6	AE29				
6	VCCO_6	AJ32				
7	VCCO_7	F32				
7	VCCO_7	K29				
7	VCCO_7	M24				
7	VCCO_7	N23				
7	VCCO_7	N24				
7	VCCO_7	P23				
7	VCCO_7	P24				
7	VCCO_7	R23				
7	VCCO_7	R24				
7	VCCO_7	R30				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
7	VCCO_7	T23				
7	VCCO_7	U23				
N/A	CCLK	AE9				
N/A	PROG_B	J26				
N/A	DONE	AE10				
N/A	M0	AF26				
N/A	M1	AE26				
N/A	M2	AE25				
N/A	TCK	J9				
N/A	TDI	H28				
N/A	TDO	H7				
N/A	TMS	K10				
N/A	PWRDWN_B	AF9				
N/A	HSWAP_EN	K25				
N/A	RSVD	G8				
N/A	VBATT	K9				
N/A	DXP	K26				
N/A	DXN	G27				
N/A	AVCCAUXTX2	B32	NC	NC		
N/A	VTTXPAD2	B33	NC	NC		
N/A	TXNPAD2	A33	NC	NC		
N/A	TXPPAD2	A32	NC	NC		
N/A	GNDA2	C30	NC	NC		
N/A	RXPPAD2	A31	NC	NC		
N/A	RXNPAD2	A30	NC	NC		
N/A	VTRXPAD2	B31	NC	NC		
N/A	AVCCAUXRX2	B30	NC	NC		
N/A	AVCCAUXTX4	B28				
N/A	VTTXPAD4	B29				
N/A	TXNPAD4	A29				
N/A	TXPPAD4	A28				
N/A	GNDA4	C27				
N/A	RXPPAD4	A27				
N/A	RXNPAD4	A26				
N/A	VTRXPAD4	B27				
N/A	AVCCAUXRX4	B26				
N/A	AVCCAUXTX5	B24	NC	NC	NC	

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
N/A	VTTXPAD5	B25	NC	NC	NC	
N/A	TXNPAD5	A25	NC	NC	NC	
N/A	TXPPAD5	A24	NC	NC	NC	
N/A	GNDA5	C23	NC	NC	NC	
N/A	RXPPAD5	A23	NC	NC	NC	
N/A	RXNPAD5	A22	NC	NC	NC	
N/A	VTRXPAD5	B23	NC	NC	NC	
N/A	AVCCAUXRX5	B22	NC	NC	NC	
N/A	AVCCAUXTX6	B20				
N/A	VTTXPAD6	B21				
N/A	TXNPAD6	A21				
N/A	TXPPAD6	A20				
N/A	GNDA6	C20				
N/A	RXPPAD6	A19				
N/A	RXNPAD6	A18				
N/A	VTRXPAD6	B19				
N/A	AVCCAUXRX6	B18				
N/A	AVCCAUXTX7	B16				
N/A	VTTXPAD7	B17				
N/A	TXNPAD7	A17				
N/A	TXPPAD7	A16				
N/A	GNDA7	C15				
N/A	RXPPAD7	A15				
N/A	RXNPAD7	A14				
N/A	VTRXPAD7	B15				
N/A	AVCCAUXRX7	B14				
N/A	AVCCAUXTX8	B12	NC	NC	NC	
N/A	VTTXPAD8	B13	NC	NC	NC	
N/A	TXNPAD8	A13	NC	NC	NC	
N/A	TXPPAD8	A12	NC	NC	NC	
N/A	GNDA8	C12	NC	NC	NC	
N/A	RXPPAD8	A11	NC	NC	NC	
N/A	RXNPAD8	A10	NC	NC	NC	
N/A	VTRXPAD8	B11	NC	NC	NC	
N/A	AVCCAUXRX8	B10	NC	NC	NC	
N/A	AVCCAUXTX9	B8				
N/A	VTTXPAD9	B9				
N/A	TXNPAD9	A9				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
N/A	TXPPAD9	A8				
N/A	GNDA9	C8				
N/A	RXPPAD9	A7				
N/A	RXNPAD9	A6				
N/A	VTRXPAD9	B7				
N/A	AVCCAUXRX9	B6				
N/A	AVCCAUXTX11	B4	NC	NC		
N/A	VTTXPAD11	B5	NC	NC		
N/A	TXNPAD11	A5	NC	NC		
N/A	TXPPAD11	A4	NC	NC		
N/A	GNDA11	C5	NC	NC		
N/A	RXPPAD11	A3	NC	NC		
N/A	RXNPAD11	A2	NC	NC		
N/A	VTRXPAD11	B3	NC	NC		
N/A	AVCCAUXRX11	B2	NC	NC		
N/A	AVCCAUXRX14	AN2	NC	NC		
N/A	VTRXPAD14	AN3	NC	NC		
N/A	RXNPAD14	AP2	NC	NC		
N/A	RXPPAD14	AP3	NC	NC		
N/A	GNDA14	AM5	NC	NC		
N/A	TXPPAD14	AP4	NC	NC		
N/A	TXNPAD14	AP5	NC	NC		
N/A	VTTXPAD14	AN5	NC	NC		
N/A	AVCCAUXTX14	AN4	NC	NC		
N/A	AVCCAUXRX16	AN6				
N/A	VTRXPAD16	AN7				
N/A	RXNPAD16	AP6				
N/A	RXPPAD16	AP7				
N/A	GNDA16	AM8				
N/A	TXPPAD16	AP8				
N/A	TXNPAD16	AP9				
N/A	VTTXPAD16	AN9				
N/A	AVCCAUXTX16	AN8				
N/A	AVCCAUXRX17	AN10	NC	NC	NC	
N/A	VTRXPAD17	AN11	NC	NC	NC	
N/A	RXNPAD17	AP10	NC	NC	NC	
N/A	RXPPAD17	AP11	NC	NC	NC	
N/A	GNDA17	AM12	NC	NC	NC	

Table 10: FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
N/A	TXPPAD17	AP12	NC	NC	NC	
N/A	TXNPAD17	AP13	NC	NC	NC	
N/A	VTTXPAD17	AN13	NC	NC	NC	
N/A	AVCCAUXTX17	AN12	NC	NC	NC	
N/A	AVCCAUXRX18	AN14				
N/A	VTRXPAD18	AN15				
N/A	RXNPAD18	AP14				
N/A	RXPPAD18	AP15				
N/A	GNDA18	AM15				
N/A	TXPPAD18	AP16				
N/A	TXNPAD18	AP17				
N/A	VTTXPAD18	AN17				
N/A	AVCCAUXTX18	AN16				
N/A	AVCCAUXRX19	AN18				
N/A	VTRXPAD19	AN19				
N/A	RXNPAD19	AP18				
N/A	RXPPAD19	AP19				
N/A	GNDA19	AM20				
N/A	TXPPAD19	AP20				
N/A	TXNPAD19	AP21				
N/A	VTTXPAD19	AN21				
N/A	AVCCAUXTX19	AN20				
N/A	AVCCAUXRX20	AN22	NC	NC	NC	
N/A	VTRXPAD20	AN23	NC	NC	NC	
N/A	RXNPAD20	AP22	NC	NC	NC	
N/A	RXPPAD20	AP23	NC	NC	NC	
N/A	GNDA20	AM23	NC	NC	NC	
N/A	TXPPAD20	AP24	NC	NC	NC	
N/A	TXNPAD20	AP25	NC	NC	NC	
N/A	VTTXPAD20	AN25	NC	NC	NC	
N/A	AVCCAUXTX20	AN24	NC	NC	NC	
N/A	AVCCAUXRX21	AN26				
N/A	VTRXPAD21	AN27				
N/A	RXNPAD21	AP26				
N/A	RXPPAD21	AP27				
N/A	GNDA21	AM27				
N/A	TXPPAD21	AP28				
N/A	TXNPAD21	AP29				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
N/A	VTTXPAD21	AN29				
N/A	AVCCAUXTX21	AN28				
N/A	AVCCAUXRX23	AN30	NC	NC		
N/A	VTRXPAD23	AN31	NC	NC		
N/A	RXNPAD23	AP30	NC	NC		
N/A	RXPPAD23	AP31	NC	NC		
N/A	GNDA23	AM30	NC	NC		
N/A	TXPPAD23	AP32	NC	NC		
N/A	TXNPAD23	AP33	NC	NC		
N/A	VTTXPAD23	AN33	NC	NC		
N/A	AVCCAUXTX23	AN32	NC	NC		
N/A	VCCINT	L11				
N/A	VCCINT	L24				
N/A	VCCINT	M12				
N/A	VCCINT	M23				
N/A	VCCINT	N13				
N/A	VCCINT	N14				
N/A	VCCINT	N15				
N/A	VCCINT	N16				
N/A	VCCINT	N17				
N/A	VCCINT	N18				
N/A	VCCINT	N19				
N/A	VCCINT	N20				
N/A	VCCINT	N21				
N/A	VCCINT	N22				
N/A	VCCINT	P13				
N/A	VCCINT	P22				
N/A	VCCINT	R13				
N/A	VCCINT	R22				
N/A	VCCINT	T13				
N/A	VCCINT	T22				
N/A	VCCINT	U13				
N/A	VCCINT	U22				
N/A	VCCINT	V13				
N/A	VCCINT	V22				
N/A	VCCINT	W13				
N/A	VCCINT	W22				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
N/A	VCCINT	Y13				
N/A	VCCINT	Y22				
N/A	VCCINT	AA13				
N/A	VCCINT	AA22				
N/A	VCCINT	AB13				
N/A	VCCINT	AB14				
N/A	VCCINT	AB15				
N/A	VCCINT	AB16				
N/A	VCCINT	AB17				
N/A	VCCINT	AB18				
N/A	VCCINT	AB19				
N/A	VCCINT	AB20				
N/A	VCCINT	AB21				
N/A	VCCINT	AB22				
N/A	VCCINT	AC12				
N/A	VCCINT	AC23				
N/A	VCCINT	AD11				
N/A	VCCINT	AD24				
N/A	VCCAUX	C3				
N/A	VCCAUX	C4				
N/A	VCCAUX	C17				
N/A	VCCAUX	C18				
N/A	VCCAUX	C31				
N/A	VCCAUX	C32				
N/A	VCCAUX	D3				
N/A	VCCAUX	D32				
N/A	VCCAUX	U1				
N/A	VCCAUX	V1				
N/A	VCCAUX	U34				
N/A	VCCAUX	V34				
N/A	VCCAUX	AL3				
N/A	VCCAUX	AL32				
N/A	VCCAUX	AM3				
N/A	VCCAUX	AM4				
N/A	VCCAUX	AM17				
N/A	VCCAUX	AM18				
N/A	VCCAUX	AM31				
N/A	VCCAUX	AM32				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
N/A	GND	AF34				
N/A	GND	B34				
N/A	GND	C1				
N/A	GND	C2				
N/A	GND	C10				
N/A	GND	C16				
N/A	GND	C19				
N/A	GND	C25				
N/A	GND	C33				
N/A	GND	C34				
N/A	GND	D4				
N/A	GND	D31				
N/A	GND	E5				
N/A	GND	E12				
N/A	GND	E23				
N/A	GND	E30				
N/A	GND	F6				
N/A	GND	F29				
N/A	GND	G7				
N/A	GND	G28				
N/A	GND	B1				
N/A	GND	H8				
N/A	GND	H12				
N/A	GND	H15				
N/A	GND	H20				
N/A	GND	J1				
N/A	GND	H27				
N/A	GND	AF1				
N/A	GND	K3				
N/A	GND	K32				
N/A	GND	M5				
N/A	GND	M8				
N/A	GND	M27				
N/A	GND	M30				
N/A	GND	P14				
N/A	GND	P15				
N/A	GND	P16				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
N/A	GND	P17				
N/A	GND	P18				
N/A	GND	P19				
N/A	GND	P20				
N/A	GND	P21				
N/A	GND	R8				
N/A	GND	R14				
N/A	GND	R15				
N/A	GND	R16				
N/A	GND	R17				
N/A	GND	R18				
N/A	GND	R19				
N/A	GND	R20				
N/A	GND	R21				
N/A	GND	R27				
N/A	GND	T1				
N/A	GND	T14				
N/A	GND	T15				
N/A	GND	T16				
N/A	GND	T17				
N/A	GND	T18				
N/A	GND	T19				
N/A	GND	T20				
N/A	GND	T21				
N/A	GND	T34				
N/A	GND	U14				
N/A	GND	U15				
N/A	GND	U16				
N/A	GND	U17				
N/A	GND	U18				
N/A	GND	U19				
N/A	GND	U20				
N/A	GND	U21				
N/A	GND	V14				
N/A	GND	V15				
N/A	GND	V16				
N/A	GND	V17				
N/A	GND	V18				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	XC2VP30	XC2VP40	XC2VP50
N/A	GND	V19				
N/A	GND	V20				
N/A	GND	V21				
N/A	GND	W1				
N/A	GND	W14				
N/A	GND	W15				
N/A	GND	W16				
N/A	GND	W17				
N/A	GND	W18				
N/A	GND	W19				
N/A	GND	W20				
N/A	GND	W21				
N/A	GND	W34				
N/A	GND	Y8				
N/A	GND	Y14				
N/A	GND	Y15				
N/A	GND	Y16				
N/A	GND	Y17				
N/A	GND	Y18				
N/A	GND	Y19				
N/A	GND	Y20				
N/A	GND	Y21				
N/A	GND	Y27				
N/A	GND	AA14				
N/A	GND	AA15				
N/A	GND	AA16				
N/A	GND	AA17				
N/A	GND	AA18				
N/A	GND	AA19				
N/A	GND	AA20				
N/A	GND	AA21				
N/A	GND	AC5				
N/A	GND	AC8				
N/A	GND	AC27				
N/A	GND	AC30				
N/A	GND	AE3				
N/A	GND	AE32				
N/A	GND	H23				

Table 10: **FF1152 — XC2VP20, XC2VP30, XC2VP40, and XC2VP50**

Bank	Pin Description	Pin Number	No Connects			
			XC2VP20	**XC2VP30**	**XC2VP40**	**XC2VP50**
N/A	GND	AG8				
N/A	GND	AG12				
N/A	GND	AG15				
N/A	GND	AG20				
N/A	GND	AG23				
N/A	GND	AG27				
N/A	GND	J34				
N/A	GND	AH7				
N/A	GND	AH28				
N/A	GND	AJ6				
N/A	GND	AJ29				
N/A	GND	AK5				
N/A	GND	AK12				
N/A	GND	AK23				
N/A	GND	AK30				
N/A	GND	AL4				
N/A	GND	AL31				
N/A	GND	AM1				
N/A	GND	AM2				
N/A	GND	AM10				
N/A	GND	AM16				
N/A	GND	AM19				
N/A	GND	AM25				
N/A	GND	AM33				
N/A	GND	AM34				
N/A	GND	AN1				
N/A	GND	AN34				

FF1152 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)

S Y M B O L	MILLIMETERS			N O T E
	MIN.	NOM.	MAX.	
A	~	3.20	3.40	
A₁	0.40	0.50	0.60	
A₂	~	~	2.80	
D/E	35.00 BASIC			
D₁/E₁	33.00 REF			
e	1.00 BASIC			
Øb	0.50	0.60	0.70	
aaa	~	~	0.20	
ccc	~	~	0.35	
ddd	~	~	0.30	
eee	~	~	0.10	
M	34			2

NOTES:
1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ANSI Y14.5M−1994
2. SYMBOL 'M' IS THE BALL MATRIX SIZE.
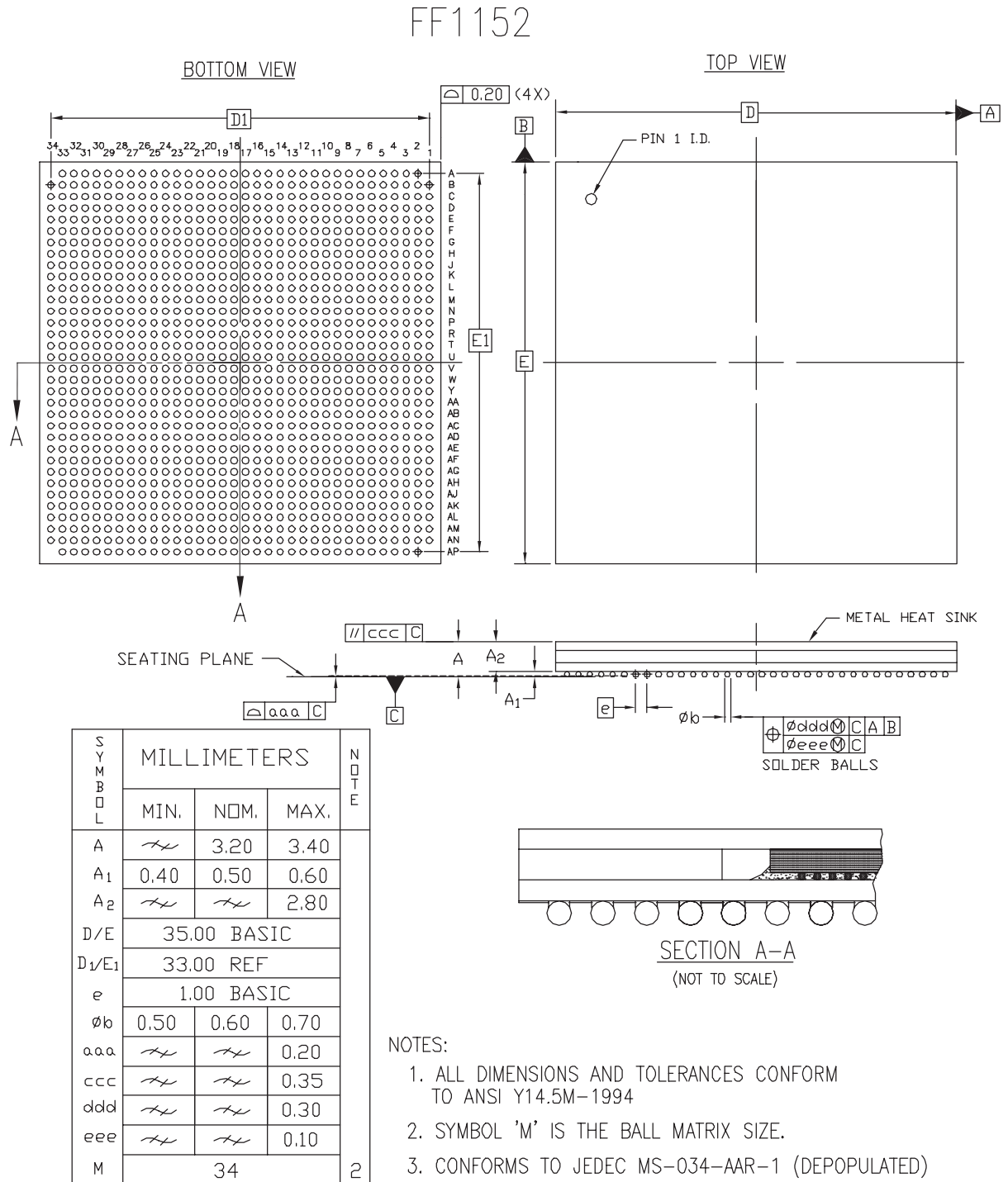3. CONFORMS TO JEDEC MS−034−AAR−1 (DEPOPULATED)

Figure 6: **FF1152 Flip-Chip Fine-Pitch BGA Package Specifications**

FF1148 Flip-Chip Fine-Pitch BGA Package

As shown in Table 11, XC2VP40 and XC2VP50 Virtex-II Pro devices are available in the FF1148 flip-chip fine-pitch BGA package. Pins in each of these devices are the same, except for the differences shown in the No Connect column. Following this table are the FF1148 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
0	IO_L01N_0/VRP_0	E25		
0	IO_L01P_0/VRN_0	F25		
0	IO_L02N_0	J24		
0	IO_L02P_0	K24		
0	IO_L03N_0	C25		
0	IO_L03P_0/VREF_0	D25		
0	IO_L05_0/No_Pair	G25		
0	IO_L06N_0	A25		
0	IO_L06P_0	B25		
0	IO_L07N_0	G24		
0	IO_L07P_0	G23		
0	IO_L08N_0	H23		
0	IO_L08P_0	H22		
0	IO_L09N_0	E24		
0	IO_L09P_0/VREF_0	F24		
0	IO_L19N_0	C24		
0	IO_L19P_0	C23		
0	IO_L20N_0	J23		
0	IO_L20P_0	K23		
0	IO_L21N_0	A24		
0	IO_L21P_0	B24		
0	IO_L25N_0	E23		
0	IO_L25P_0	F23		
0	IO_L26N_0	K22		
0	IO_L26P_0	L22		
0	IO_L27N_0	D23		
0	IO_L27P_0/VREF_0	D22		
0	IO_L37N_0	A23		
0	IO_L37P_0	B23		
0	IO_L38N_0	J21		
0	IO_L38P_0	J20		
0	IO_L39N_0	F22		
0	IO_L39P_0	G22		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
0	IO_L43N_0	B22		
0	IO_L43P_0	C22		
0	IO_L44N_0	K21		
0	IO_L44P_0	L21		
0	IO_L45N_0	G21		
0	IO_L45P_0/VREF_0	H21		
0	IO_L46N_0	E21		
0	IO_L46P_0	F21		
0	IO_L47N_0	K20		
0	IO_L47P_0	L20		
0	IO_L48N_0	C21		
0	IO_L48P_0	D21		
0	IO_L49N_0	A21		
0	IO_L49P_0	B21		
0	IO_L50_0/No_Pair	G20		
0	IO_L53_0/No_Pair	H19		
0	IO_L54N_0	E20		
0	IO_L54P_0	F20		
0	IO_L55N_0	C20		
0	IO_L55P_0	D19		
0	IO_L56N_0	K19		
0	IO_L56P_0	L19		
0	IO_L57N_0	A20		
0	IO_L57P_0/VREF_0	B20		
0	IO_L66N_0	F19	NC	
0	IO_L66P_0/VREF_0	G19	NC	
0	IO_L67N_0	B19		
0	IO_L67P_0	C19		
0	IO_L68N_0	H18		
0	IO_L68P_0	J18		
0	IO_L69N_0	F18		
0	IO_L69P_0/VREF_0	G18		
0	IO_L73N_0	D18		
0	IO_L73P_0	E18		
0	IO_L74N_0/GCLK7P	K18		
0	IO_L74P_0/GCLK6S	L18		
0	IO_L75N_0/GCLK5P	B18		
0	IO_L75P_0/GCLK4S	C18		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
1	IO_L75N_1/GCLK3P	C17		
1	IO_L75P_1/GCLK2S	B17		
1	IO_L74N_1/GCLK1P	L17		
1	IO_L74P_1/GCLK0S	K17		
1	IO_L73N_1	E17		
1	IO_L73P_1	D17		
1	IO_L69N_1/VREF_1	G17		
1	IO_L69P_1	F17		
1	IO_L68N_1	J17		
1	IO_L68P_1	H17		
1	IO_L67N_1	C16		
1	IO_L67P_1	B16		
1	IO_L66N_1/VREF_1	G16	NC	
1	IO_L66P_1	F16	NC	
1	IO_L57N_1/VREF_1	B15		
1	IO_L57P_1	A15		
1	IO_L56N_1	L16		
1	IO_L56P_1	K16		
1	IO_L55N_1	D16		
1	IO_L55P_1	C15		
1	IO_L54N_1	F15		
1	IO_L54P_1	E15		
1	IO_L53_1/No_Pair	H16		
1	IO_L50_1/No_Pair	G15		
1	IO_L49N_1	B14		
1	IO_L49P_1	A14		
1	IO_L48N_1	D14		
1	IO_L48P_1	C14		
1	IO_L47N_1	L15		
1	IO_L47P_1	K15		
1	IO_L46N_1	F14		
1	IO_L46P_1	E14		
1	IO_L45N_1/VREF_1	H14		
1	IO_L45P_1	G14		
1	IO_L44N_1	L14		
1	IO_L44P_1	K14		
1	IO_L43N_1	C13		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
1	IO_L43P_1	B13		
1	IO_L39N_1	G13		
1	IO_L39P_1	F13		
1	IO_L38N_1	J15		
1	IO_L38P_1	J14		
1	IO_L37N_1	B12		
1	IO_L37P_1	A12		
1	IO_L27N_1/VREF_1	D13		
1	IO_L27P_1	D12		
1	IO_L26N_1	L13		
1	IO_L26P_1	K13		
1	IO_L25N_1	F12		
1	IO_L25P_1	E12		
1	IO_L21N_1	B11		
1	IO_L21P_1	A11		
1	IO_L20N_1	K12		
1	IO_L20P_1	J12		
1	IO_L19N_1	C12		
1	IO_L19P_1	C11		
1	IO_L09N_1/VREF_1	F11		
1	IO_L09P_1	E11		
1	IO_L08N_1	H13		
1	IO_L08P_1	H12		
1	IO_L07N_1	G12		
1	IO_L07P_1	G11		
1	IO_L06N_1	B10		
1	IO_L06P_1	A10		
1	IO_L05_1/No_Pair	G10		
1	IO_L03N_1/VREF_1	D10		
1	IO_L03P_1	C10		
1	IO_L02N_1	K11		
1	IO_L02P_1	J11		
1	IO_L01N_1/VRP_1	F10		
1	IO_L01P_1/VRN_1	E10		
2	IO_L01N_2/VRP_2	B8		
2	IO_L01P_2/VRN_2	B9		
2	IO_L02N_2	C9		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
2	IO_L02P_2	D9		
2	IO_L03N_2	B7		
2	IO_L03P_2	A7		
2	IO_L04N_2/VREF_2	B6		
2	IO_L04P_2	A6		
2	IO_L05N_2	E8		
2	IO_L05P_2	D8		
2	IO_L06N_2	B4		
2	IO_L06P_2	A4		
2	IO_L07N_2	B3		
2	IO_L07P_2	A3		
2	IO_L08N_2	H7		
2	IO_L08P_2	H8		
2	IO_L09N_2	C6		
2	IO_L09P_2	C7		
2	IO_L10N_2/VREF_2	C5		
2	IO_L10P_2	B5		
2	IO_L11N_2	K8		
2	IO_L11P_2	J8		
2	IO_L12N_2	C1		
2	IO_L12P_2	C2		
2	IO_L13N_2	E7		
2	IO_L13P_2	D7		
2	IO_L14N_2	J6		
2	IO_L14P_2	J7		
2	IO_L15N_2	D5		
2	IO_L15P_2	D6		
2	IO_L16N_2/VREF_2	E4		
2	IO_L16P_2	D4		
2	IO_L17N_2	L9		
2	IO_L17P_2	K9		
2	IO_L18N_2	E3		
2	IO_L18P_2	D3		
2	IO_L19N_2	D1		
2	IO_L19P_2	D2		
2	IO_L20N_2	K7		
2	IO_L20P_2	L7		
2	IO_L21N_2	F6		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
2	IO_L21P_2	E6		
2	IO_L22N_2/VREF_2	F7		
2	IO_L22P_2	F8		
2	IO_L23N_2	M10		
2	IO_L23P_2	L10		
2	IO_L24N_2	G5		
2	IO_L24P_2	F5		
2	IO_L25N_2	F3		
2	IO_L25P_2	F4		
2	IO_L26N_2	M8		
2	IO_L26P_2	M9		
2	IO_L27N_2	F1		
2	IO_L27P_2	F2		
2	IO_L28N_2/VREF_2	G6		
2	IO_L28P_2	G7		
2	IO_L29N_2	M7		
2	IO_L29P_2	N8		
2	IO_L30N_2	G3		
2	IO_L30P_2	H4		
2	IO_L31N_2	G1		
2	IO_L31P_2	G2		
2	IO_L32N_2	N10		
2	IO_L32P_2	N11		
2	IO_L33N_2	H5		
2	IO_L33P_2	H6		
2	IO_L34N_2/VREF_2	H2		
2	IO_L34P_2	H3		
2	IO_L35N_2	N6		
2	IO_L35P_2	N7		
2	IO_L36N_2	K4		
2	IO_L36P_2	J4		
2	IO_L37N_2	J2		
2	IO_L37P_2	J3		
2	IO_L38N_2	P10		
2	IO_L38P_2	P11		
2	IO_L39N_2	K5		
2	IO_L39P_2	K6		
2	IO_L40N_2/VREF_2	L3		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
2	IO_L40P_2	K3		
2	IO_L41N_2	R9		
2	IO_L41P_2	P9		
2	IO_L42N_2	K1		
2	IO_L42P_2	K2		
2	IO_L43N_2	L5		
2	IO_L43P_2	L6		
2	IO_L44N_2	P7		
2	IO_L44P_2	P8		
2	IO_L45N_2	L1		
2	IO_L45P_2	L2		
2	IO_L46N_2/VREF_2	M5		
2	IO_L46P_2	M6		
2	IO_L47N_2	R10		
2	IO_L47P_2	R11		
2	IO_L48N_2	M3		
2	IO_L48P_2	M4		
2	IO_L49N_2	M1		
2	IO_L49P_2	M2		
2	IO_L50N_2	R7		
2	IO_L50P_2	T8		
2	IO_L51N_2	P4		
2	IO_L51P_2	N4		
2	IO_L52N_2/VREF_2	N2		
2	IO_L52P_2	N3		
2	IO_L53N_2	T10		
2	IO_L53P_2	T11		
2	IO_L54N_2	P5		
2	IO_L54P_2	P6		
2	IO_L55N_2	R3		
2	IO_L55P_2	P3		
2	IO_L56N_2	T6		
2	IO_L56P_2	T7		
2	IO_L57N_2	P1		
2	IO_L57P_2	P2		
2	IO_L58N_2/VREF_2	R5		
2	IO_L58P_2	R6		
2	IO_L59N_2	U10		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
2	IO_L59P_2	U11		
2	IO_L60N_2	R1		
2	IO_L60P_2	R2		
2	IO_L85N_2	T3		
2	IO_L85P_2	T4		
2	IO_L86N_2	U8		
2	IO_L86P_2	U9		
2	IO_L87N_2	U2		
2	IO_L87P_2	T2		
2	IO_L88N_2/VREF_2	U4		
2	IO_L88P_2	U5		
2	IO_L89N_2	U6		
2	IO_L89P_2	U7		
2	IO_L90N_2	V3		
2	IO_L90P_2	U3		
3	IO_L90N_3	V6		
3	IO_L90P_3	V7		
3	IO_L89N_3	V10		
3	IO_L89P_3	V11		
3	IO_L88N_3	V4		
3	IO_L88P_3	V5		
3	IO_L87N_3/VREF_3	V2		
3	IO_L87P_3	W2		
3	IO_L86N_3	V8		
3	IO_L86P_3	V9		
3	IO_L85N_3	W6		
3	IO_L85P_3	W7		
3	IO_L60N_3	W3		
3	IO_L60P_3	W4		
3	IO_L59N_3	W10		
3	IO_L59P_3	W11		
3	IO_L58N_3	Y5		
3	IO_L58P_3	Y6		
3	IO_L57N_3/VREF_3	Y3		
3	IO_L57P_3	AA3		
3	IO_L56N_3	W8		
3	IO_L56P_3	Y7		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
3	IO_L55N_3	Y1		
3	IO_L55P_3	Y2		
3	IO_L54N_3	AA5		
3	IO_L54P_3	AA6		
3	IO_L53N_3	Y10		
3	IO_L53P_3	Y11		
3	IO_L52N_3	AA4		
3	IO_L52P_3	AB4		
3	IO_L51N_3/VREF_3	AA1		
3	IO_L51P_3	AA2		
3	IO_L50N_3	Y9		
3	IO_L50P_3	AA9		
3	IO_L49N_3	AB6		
3	IO_L49P_3	AB7		
3	IO_L48N_3	AB2		
3	IO_L48P_3	AB3		
3	IO_L47N_3	AA10		
3	IO_L47P_3	AA11		
3	IO_L46N_3	AC5		
3	IO_L46P_3	AC6		
3	IO_L45N_3/VREF_3	AC3		
3	IO_L45P_3	AC4		
3	IO_L44N_3	AA7		
3	IO_L44P_3	AA8		
3	IO_L43N_3	AC1		
3	IO_L43P_3	AC2		
3	IO_L42N_3	AD5		
3	IO_L42P_3	AD6		
3	IO_L41N_3	AB10		
3	IO_L41P_3	AB11		
3	IO_L40N_3	AD3		
3	IO_L40P_3	AE3		
3	IO_L39N_3/VREF_3	AD1		
3	IO_L39P_3	AD2		
3	IO_L38N_3	AB8		
3	IO_L38P_3	AC7		
3	IO_L37N_3	AE5		
3	IO_L37P_3	AE6		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
3	IO_L36N_3	AE4		
3	IO_L36P_3	AF4		
3	IO_L35N_3	AC10		
3	IO_L35P_3	AD10		
3	IO_L34N_3	AE1		
3	IO_L34P_3	AE2		
3	IO_L33N_3/VREF_3	AF6		
3	IO_L33P_3	AF7		
3	IO_L32N_3	AC8		
3	IO_L32P_3	AC9		
3	IO_L31N_3	AF2		
3	IO_L31P_3	AF3		
3	IO_L30N_3	AG5		
3	IO_L30P_3	AG6		
3	IO_L29N_3	AD9		
3	IO_L29P_3	AE9		
3	IO_L28N_3	AG4		
3	IO_L28P_3	AH3		
3	IO_L27N_3/VREF_3	AG2		
3	IO_L27P_3	AG3		
3	IO_L26N_3	AD7		
3	IO_L26P_3	AE7		
3	IO_L25N_3	AH6		
3	IO_L25P_3	AH7		
3	IO_L24N_3	AH5		
3	IO_L24P_3	AJ5		
3	IO_L23N_3	AE8		
3	IO_L23P_3	AF8		
3	IO_L22N_3	AH1		
3	IO_L22P_3	AH2		
3	IO_L21N_3/VREF_3	AJ6		
3	IO_L21P_3	AK6		
3	IO_L20N_3	AG7		
3	IO_L20P_3	AG8		
3	IO_L19N_3	AJ3		
3	IO_L19P_3	AJ4		
3	IO_L18N_3	AJ1		
3	IO_L18P_3	AJ2		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
3	IO_L17N_3	AH9		
3	IO_L17P_3	AJ9		
3	IO_L16N_3	AK7		
3	IO_L16P_3	AL7		
3	IO_L15N_3/VREF_3	AK4		
3	IO_L15P_3	AL4		
3	IO_L14N_3	AJ7		
3	IO_L14P_3	AJ8		
3	IO_L13N_3	AK3		
3	IO_L13P_3	AL3		
3	IO_L12N_3	AL5		
3	IO_L12P_3	AL6		
3	IO_L11N_3	AK8		
3	IO_L11P_3	AL8		
3	IO_L10N_3	AL1		
3	IO_L10P_3	AL2		
3	IO_L09N_3/VREF_3	AM6		
3	IO_L09P_3	AM7		
3	IO_L08N_3	AL9		
3	IO_L08P_3	AM9		
3	IO_L07N_3	AM5		
3	IO_L07P_3	AN5		
3	IO_L06N_3	AM1		
3	IO_L06P_3	AM2		
3	IO_L05N_3	AN8		
3	IO_L05P_3	AN9		
3	IO_L04N_3	AN6		
3	IO_L04P_3	AP6		
3	IO_L03N_3/VREF_3	AN4		
3	IO_L03P_3	AP4		
3	IO_L02N_3	AN7		
3	IO_L02P_3	AP7		
3	IO_L01N_3/VRP_3	AN3		
3	IO_L01P_3/VRN_3	AP3		
4	IO_L01N_4/DOUT	AK10		
4	IO_L01P_4/INIT_B	AJ10		
4	IO_L02N_4/D0	AF11		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
4	IO_L02P_4/D1	AE11		
4	IO_L03N_4/D2	AM10		
4	IO_L03P_4/D3	AL10		
4	IO_L05_4/No_Pair	AH10		
4	IO_L06N_4/VRP_4	AP10		
4	IO_L06P_4/VRN_4	AN10		
4	IO_L07N_4	AH11		
4	IO_L07P_4/VREF_4	AH12		
4	IO_L08N_4	AG12		
4	IO_L08P_4	AG13		
4	IO_L09N_4	AK11		
4	IO_L09P_4/VREF_4	AJ11		
4	IO_L19N_4	AM11		
4	IO_L19P_4	AM12		
4	IO_L20N_4	AF12		
4	IO_L20P_4	AE12		
4	IO_L21N_4	AP11		
4	IO_L21P_4	AN11		
4	IO_L25N_4	AK12		
4	IO_L25P_4	AJ12		
4	IO_L26N_4	AE13		
4	IO_L26P_4	AD13		
4	IO_L27N_4	AL12		
4	IO_L27P_4/VREF_4	AL13		
4	IO_L37N_4	AP12		
4	IO_L37P_4	AN12		
4	IO_L38N_4	AF14		
4	IO_L38P_4	AF15		
4	IO_L39N_4	AJ13		
4	IO_L39P_4	AH13		
4	IO_L43N_4	AN13		
4	IO_L43P_4	AM13		
4	IO_L44N_4	AE14		
4	IO_L44P_4	AD14		
4	IO_L45N_4	AH14		
4	IO_L45P_4/VREF_4	AG14		
4	IO_L46N_4	AK14		
4	IO_L46P_4	AJ14		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
4	IO_L47N_4	AE15		
4	IO_L47P_4	AD15		
4	IO_L48N_4	AM14		
4	IO_L48P_4	AL14		
4	IO_L49N_4	AP14		
4	IO_L49P_4	AN14		
4	IO_L50_4/No_Pair	AH15		
4	IO_L53_4/No_Pair	AG16		
4	IO_L54N_4	AK15		
4	IO_L54P_4	AJ15		
4	IO_L55N_4	AM15		
4	IO_L55P_4	AL16		
4	IO_L56N_4	AE16		
4	IO_L56P_4	AD16		
4	IO_L57N_4	AP15		
4	IO_L57P_4/VREF_4	AN15		
4	IO_L66N_4	AJ16	NC	
4	IO_L66P_4/VREF_4	AH16	NC	
4	IO_L67N_4	AN16		
4	IO_L67P_4	AM16		
4	IO_L68N_4	AG17		
4	IO_L68P_4	AF17		
4	IO_L69N_4	AJ17		
4	IO_L69P_4/VREF_4	AH17		
4	IO_L73N_4	AL17		
4	IO_L73P_4	AK17		
4	IO_L74N_4/GCLK3S	AE17		
4	IO_L74P_4/GCLK2P	AD17		
4	IO_L75N_4/GCLK1S	AN17		
4	IO_L75P_4/GCLK0P	AM17		
5	IO_L75N_5/GCLK7S	AM18		
5	IO_L75P_5/GCLK6P	AN18		
5	IO_L74N_5/GCLK5S	AD18		
5	IO_L74P_5/GCLK4P	AE18		
5	IO_L73N_5	AK18		
5	IO_L73P_5	AL18		
5	IO_L69N_5/VREF_5	AH18		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
5	IO_L69P_5	AJ18		
5	IO_L68N_5	AF18		
5	IO_L68P_5	AG18		
5	IO_L67N_5	AM19		
5	IO_L67P_5	AN19		
5	IO_L66N_5/VREF_5	AH19	NC	
5	IO_L66P_5	AJ19	NC	
5	IO_L57N_5/VREF_5	AN20		
5	IO_L57P_5	AP20		
5	IO_L56N_5	AD19		
5	IO_L56P_5	AE19		
5	IO_L55N_5	AL19		
5	IO_L55P_5	AM20		
5	IO_L54N_5	AJ20		
5	IO_L54P_5	AK20		
5	IO_L53_5/No_Pair	AG19		
5	IO_L50_5/No_Pair	AH20		
5	IO_L49N_5	AN21		
5	IO_L49P_5	AP21		
5	IO_L48N_5	AL21		
5	IO_L48P_5	AM21		
5	IO_L47N_5	AD20		
5	IO_L47P_5	AE20		
5	IO_L46N_5	AJ21		
5	IO_L46P_5	AK21		
5	IO_L45N_5/VREF_5	AG21		
5	IO_L45P_5	AH21		
5	IO_L44N_5	AD21		
5	IO_L44P_5	AE21		
5	IO_L43N_5	AM22		
5	IO_L43P_5	AN22		
5	IO_L39N_5	AH22		
5	IO_L39P_5	AJ22		
5	IO_L38N_5	AF20		
5	IO_L38P_5	AF21		
5	IO_L37N_5	AN23		
5	IO_L37P_5	AP23		
5	IO_L27N_5/VREF_5	AL22		

Table 11: FF1148 — XC2VP40 and XC2VP50

Bank	Pin Description	Pin Number	No Connects XC2VP40	No Connects XC2VP50
5	IO_L27P_5	AL23		
5	IO_L26N_5	AD22		
5	IO_L26P_5	AE22		
5	IO_L25N_5	AJ23		
5	IO_L25P_5	AK23		
5	IO_L21N_5	AN24		
5	IO_L21P_5	AP24		
5	IO_L20N_5	AE23		
5	IO_L20P_5	AF23		
5	IO_L19N_5	AM23		
5	IO_L19P_5	AM24		
5	IO_L09N_5/VREF_5	AJ24		
5	IO_L09P_5	AK24		
5	IO_L08N_5	AG22		
5	IO_L08P_5	AG23		
5	IO_L07N_5/VREF_5	AH23		
5	IO_L07P_5	AH24		
5	IO_L06N_5/VRP_5	AN25		
5	IO_L06P_5/VRN_5	AP25		
5	IO_L05_5/No_Pair	AH25		
5	IO_L03N_5/D4	AL25		
5	IO_L03P_5/D5	AM25		
5	IO_L02N_5/D6	AE24		
5	IO_L02P_5/D7	AF24		
5	IO_L01N_5/RDWR_B	AJ25		
5	IO_L01P_5/CS_B	AK25		
6	IO_L01P_6/VRN_6	AP32		
6	IO_L01N_6/VRP_6	AN32		
6	IO_L02P_6	AP28		
6	IO_L02N_6	AN28		
6	IO_L03P_6	AP31		
6	IO_L03N_6/VREF_6	AN31		
6	IO_L04P_6	AP29		
6	IO_L04N_6	AN29		
6	IO_L05P_6	AN26		
6	IO_L05N_6	AN27		
6	IO_L06P_6	AM33		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
6	IO_L06N_6	AM34		
6	IO_L07P_6	AN30		
6	IO_L07N_6	AM30		
6	IO_L08P_6	AM26		
6	IO_L08N_6	AL26		
6	IO_L09P_6	AM28		
6	IO_L09N_6/VREF_6	AM29		
6	IO_L10P_6	AL33		
6	IO_L10N_6	AL34		
6	IO_L11P_6	AL27		
6	IO_L11N_6	AK27		
6	IO_L12P_6	AL29		
6	IO_L12N_6	AL30		
6	IO_L13P_6	AL32		
6	IO_L13N_6	AK32		
6	IO_L14P_6	AJ27		
6	IO_L14N_6	AJ28		
6	IO_L15P_6	AL31		
6	IO_L15N_6/VREF_6	AK31		
6	IO_L16P_6	AL28		
6	IO_L16N_6	AK28		
6	IO_L17P_6	AJ26		
6	IO_L17N_6	AH26		
6	IO_L18P_6	AJ33		
6	IO_L18N_6	AJ34		
6	IO_L19P_6	AJ31		
6	IO_L19N_6	AJ32		
6	IO_L20P_6	AG27		
6	IO_L20N_6	AG28		
6	IO_L21P_6	AK29		
6	IO_L21N_6/VREF_6	AJ29		
6	IO_L22P_6	AH33		
6	IO_L22N_6	AH34		
6	IO_L23P_6	AF27		
6	IO_L23N_6	AE27		
6	IO_L24P_6	AJ30		
6	IO_L24N_6	AH30		
6	IO_L25P_6	AH28		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
6	IO_L25N_6	AH29		
6	IO_L26P_6	AE28		
6	IO_L26N_6	AD28		
6	IO_L27P_6	AG32		
6	IO_L27N_6/VREF_6	AG33		
6	IO_L28P_6	AH32		
6	IO_L28N_6	AG31		
6	IO_L29P_6	AE26		
6	IO_L29N_6	AD26		
6	IO_L30P_6	AG29		
6	IO_L30N_6	AG30		
6	IO_L31P_6	AF32		
6	IO_L31N_6	AF33		
6	IO_L32P_6	AC26		
6	IO_L32N_6	AC27		
6	IO_L33P_6	AF28		
6	IO_L33N_6/VREF_6	AF29		
6	IO_L34P_6	AE33		
6	IO_L34N_6	AE34		
6	IO_L35P_6	AD25		
6	IO_L35N_6	AC25		
6	IO_L36P_6	AF31		
6	IO_L36N_6	AE31		
6	IO_L37P_6	AE29		
6	IO_L37N_6	AE30		
6	IO_L38P_6	AC28		
6	IO_L38N_6	AB27		
6	IO_L39P_6	AD33		
6	IO_L39N_6/VREF_6	AD34		
6	IO_L40P_6	AE32		
6	IO_L40N_6	AD32		
6	IO_L41P_6	AB24		
6	IO_L41N_6	AB25		
6	IO_L42P_6	AD29		
6	IO_L42N_6	AD30		
6	IO_L43P_6	AC33		
6	IO_L43N_6	AC34		
6	IO_L44P_6	AA27		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
6	IO_L44N_6	AA28		
6	IO_L45P_6	AC31		
6	IO_L45N_6/VREF_6	AC32		
6	IO_L46P_6	AC29		
6	IO_L46N_6	AC30		
6	IO_L47P_6	AA24		
6	IO_L47N_6	AA25		
6	IO_L48P_6	AB32		
6	IO_L48N_6	AB33		
6	IO_L49P_6	AB28		
6	IO_L49N_6	AB29		
6	IO_L50P_6	AA26		
6	IO_L50N_6	Y26		
6	IO_L51P_6	AA33		
6	IO_L51N_6/VREF_6	AA34		
6	IO_L52P_6	AB31		
6	IO_L52N_6	AA31		
6	IO_L53P_6	Y24		
6	IO_L53N_6	Y25		
6	IO_L54P_6	AA29		
6	IO_L54N_6	AA30		
6	IO_L55P_6	Y33		
6	IO_L55N_6	Y34		
6	IO_L56P_6	Y28		
6	IO_L56N_6	W27		
6	IO_L57P_6	AA32		
6	IO_L57N_6/VREF_6	Y32		
6	IO_L58P_6	Y29		
6	IO_L58N_6	Y30		
6	IO_L59P_6	W24		
6	IO_L59N_6	W25		
6	IO_L60P_6	W31		
6	IO_L60N_6	W32		
6	IO_L85P_6	W28		
6	IO_L85N_6	W29		
6	IO_L86P_6	V26		
6	IO_L86N_6	V27		
6	IO_L87P_6	W33		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
6	IO_L87N_6/VREF_6	V33		
6	IO_L88P_6	V30		
6	IO_L88N_6	V31		
6	IO_L89P_6	V24		
6	IO_L89N_6	V25		
6	IO_L90P_6	V28		
6	IO_L90N_6	V29		
7	IO_L90P_7	U32		
7	IO_L90N_7	V32		
7	IO_L89P_7	U28		
7	IO_L89N_7	U29		
7	IO_L88P_7	U30		
7	IO_L88N_7/VREF_7	U31		
7	IO_L87P_7	T33		
7	IO_L87N_7	U33		
7	IO_L86P_7	U26		
7	IO_L86N_7	U27		
7	IO_L85P_7	T31		
7	IO_L85N_7	T32		
7	IO_L60P_7	R33		
7	IO_L60N_7	R34		
7	IO_L59P_7	U24		
7	IO_L59N_7	U25		
7	IO_L58P_7	R29		
7	IO_L58N_7/VREF_7	R30		
7	IO_L57P_7	P33		
7	IO_L57N_7	P34		
7	IO_L56P_7	T28		
7	IO_L56N_7	T29		
7	IO_L55P_7	P32		
7	IO_L55N_7	R32		
7	IO_L54P_7	P29		
7	IO_L54N_7	P30		
7	IO_L53P_7	T24		
7	IO_L53N_7	T25		
7	IO_L52P_7	N32		
7	IO_L52N_7/VREF_7	N33		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
7	IO_L51P_7	N31		
7	IO_L51N_7	P31		
7	IO_L50P_7	T27		
7	IO_L50N_7	R28		
7	IO_L49P_7	M33		
7	IO_L49N_7	M34		
7	IO_L48P_7	M31		
7	IO_L48N_7	M32		
7	IO_L47P_7	R24		
7	IO_L47N_7	R25		
7	IO_L46P_7	M29		
7	IO_L46N_7/VREF_7	M30		
7	IO_L45P_7	L33		
7	IO_L45N_7	L34		
7	IO_L44P_7	P27		
7	IO_L44N_7	P28		
7	IO_L43P_7	L29		
7	IO_L43N_7	L30		
7	IO_L42P_7	K33		
7	IO_L42N_7	K34		
7	IO_L41P_7	P26		
7	IO_L41N_7	R26		
7	IO_L40P_7	K32		
7	IO_L40N_7/VREF_7	L32		
7	IO_L39P_7	K29		
7	IO_L39N_7	K30		
7	IO_L38P_7	P24		
7	IO_L38N_7	P25		
7	IO_L37P_7	J32		
7	IO_L37N_7	J33		
7	IO_L36P_7	J31		
7	IO_L36N_7	K31		
7	IO_L35P_7	N28		
7	IO_L35N_7	N29		
7	IO_L34P_7	H32		
7	IO_L34N_7/VREF_7	H33		
7	IO_L33P_7	H29		
7	IO_L33N_7	H30		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
7	IO_L32P_7	N24		
7	IO_L32N_7	N25		
7	IO_L31P_7	G33		
7	IO_L31N_7	G34		
7	IO_L30P_7	H31		
7	IO_L30N_7	G32		
7	IO_L29P_7	N27		
7	IO_L29N_7	M28		
7	IO_L28P_7	G28		
7	IO_L28N_7/VREF_7	G29		
7	IO_L27P_7	F33		
7	IO_L27N_7	F34		
7	IO_L26P_7	M26		
7	IO_L26N_7	M27		
7	IO_L25P_7	F31		
7	IO_L25N_7	F32		
7	IO_L24P_7	F30		
7	IO_L24N_7	G30		
7	IO_L23P_7	L25		
7	IO_L23N_7	M25		
7	IO_L22P_7	F27		
7	IO_L22N_7/VREF_7	F28		
7	IO_L21P_7	E29		
7	IO_L21N_7	F29		
7	IO_L20P_7	L28		
7	IO_L20N_7	K28		
7	IO_L19P_7	D33		
7	IO_L19N_7	D34		
7	IO_L18P_7	D32		
7	IO_L18N_7	E32		
7	IO_L17P_7	K26		
7	IO_L17N_7	L26		
7	IO_L16P_7	D31		
7	IO_L16N_7/VREF_7	E31		
7	IO_L15P_7	D29		
7	IO_L15N_7	D30		
7	IO_L14P_7	J28		
7	IO_L14N_7	J29		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
7	IO_L13P_7	D28		
7	IO_L13N_7	E28		
7	IO_L12P_7	C33		
7	IO_L12N_7	C34		
7	IO_L11P_7	J27		
7	IO_L11N_7	K27		
7	IO_L10P_7	B30		
7	IO_L10N_7/VREF_7	C30		
7	IO_L09P_7	C28		
7	IO_L09N_7	C29		
7	IO_L08P_7	H27		
7	IO_L08N_7	H28		
7	IO_L07P_7	A32		
7	IO_L07N_7	B32		
7	IO_L06P_7	A31		
7	IO_L06N_7	B31		
7	IO_L05P_7	D27		
7	IO_L05N_7	E27		
7	IO_L04P_7	A29		
7	IO_L04N_7/VREF_7	B29		
7	IO_L03P_7	A28		
7	IO_L03N_7	B28		
7	IO_L02P_7	D26		
7	IO_L02N_7	C26		
7	IO_L01P_7/VRN_7	B26		
7	IO_L01N_7/VRP_7	B27		
7	VCCO_7	E33		
7	VCCO_7	R31		
7	VCCO_7	L31		
7	VCCO_7	G31		
7	VCCO_7	C31		
7	VCCO_7	R27		
7	VCCO_7	L27		
7	VCCO_7	G27		
7	VCCO_7	C27		
7	VCCO_7	J26		
7	VCCO_7	M24		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
7	VCCO_7	U23		
7	VCCO_7	T23		
7	VCCO_7	R23		
7	VCCO_7	P23		
7	VCCO_7	N23		
6	VCCO_6	AK33		
6	VCCO_6	AM31		
6	VCCO_6	AH31		
6	VCCO_6	AD31		
6	VCCO_6	Y31		
6	VCCO_6	AM27		
6	VCCO_6	AH27		
6	VCCO_6	AD27		
6	VCCO_6	Y27		
6	VCCO_6	AF26		
6	VCCO_6	AC24		
6	VCCO_6	AB23		
6	VCCO_6	AA23		
6	VCCO_6	Y23		
6	VCCO_6	W23		
6	VCCO_6	V23		
5	VCCO_5	AL24		
5	VCCO_5	AG24		
5	VCCO_5	AD23		
5	VCCO_5	AC22		
5	VCCO_5	AC21		
5	VCCO_5	AL20		
5	VCCO_5	AG20		
5	VCCO_5	AC20		
5	VCCO_5	AC19		
5	VCCO_5	AC18		
4	VCCO_4	AC17		
4	VCCO_4	AC16		
4	VCCO_4	AL15		
4	VCCO_4	AG15		
4	VCCO_4	AC15		
4	VCCO_4	AC14		
4	VCCO_4	AC13		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
4	VCCO_4	AD12		
4	VCCO_4	AL11		
4	VCCO_4	AG11		
3	VCCO_3	AB12		
3	VCCO_3	AA12		
3	VCCO_3	Y12		
3	VCCO_3	W12		
3	VCCO_3	V12		
3	VCCO_3	AC11		
3	VCCO_3	AF9		
3	VCCO_3	AM8		
3	VCCO_3	AH8		
3	VCCO_3	AD8		
3	VCCO_3	Y8		
3	VCCO_3	AM4		
3	VCCO_3	AH4		
3	VCCO_3	AD4		
3	VCCO_3	Y4		
3	VCCO_3	AK2		
2	VCCO_2	U12		
2	VCCO_2	T12		
2	VCCO_2	R12		
2	VCCO_2	P12		
2	VCCO_2	N12		
2	VCCO_2	M11		
2	VCCO_2	J9		
2	VCCO_2	R8		
2	VCCO_2	L8		
2	VCCO_2	G8		
2	VCCO_2	C8		
2	VCCO_2	R4		
2	VCCO_2	L4		
2	VCCO_2	G4		
2	VCCO_2	C4		
2	VCCO_2	E2		
1	VCCO_1	M17		
1	VCCO_1	M16		
1	VCCO_1	M15		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
1	VCCO_1	H15		
1	VCCO_1	D15		
1	VCCO_1	M14		
1	VCCO_1	M13		
1	VCCO_1	L12		
1	VCCO_1	H11		
1	VCCO_1	D11		
0	VCCO_0	H24		
0	VCCO_0	D24		
0	VCCO_0	L23		
0	VCCO_0	M22		
0	VCCO_0	M21		
0	VCCO_0	M20		
0	VCCO_0	H20		
0	VCCO_0	D20		
0	VCCO_0	M19		
0	VCCO_0	M18		
N/A	CCLK	AG9		
N/A	PROG_B	G26		
N/A	DONE	AF10		
N/A	M0	AG25		
N/A	M1	AG26		
N/A	M2	AF25		
N/A	TCK	G9		
N/A	TDI	F26		
N/A	TDO	F9		
N/A	TMS	H10		
N/A	PWRDWN_B	AG10		
N/A	HSWAP_EN	H25		
N/A	RSVD	H9		
N/A	VBATT	J10		
N/A	DXP	J25		
N/A	DXN	H26		
N/A	VCCINT	AD24		
N/A	VCCINT	L24		
N/A	VCCINT	AC23		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	XC2VP50
N/A	VCCINT	M23		
N/A	VCCINT	AB22		
N/A	VCCINT	AA22		
N/A	VCCINT	Y22		
N/A	VCCINT	W22		
N/A	VCCINT	V22		
N/A	VCCINT	U22		
N/A	VCCINT	T22		
N/A	VCCINT	R22		
N/A	VCCINT	P22		
N/A	VCCINT	N22		
N/A	VCCINT	AB21		
N/A	VCCINT	N21		
N/A	VCCINT	AB20		
N/A	VCCINT	N20		
N/A	VCCINT	AB19		
N/A	VCCINT	N19		
N/A	VCCINT	AB18		
N/A	VCCINT	N18		
N/A	VCCINT	AB17		
N/A	VCCINT	N17		
N/A	VCCINT	AB16		
N/A	VCCINT	N16		
N/A	VCCINT	AB15		
N/A	VCCINT	N15		
N/A	VCCINT	AB14		
N/A	VCCINT	N14		
N/A	VCCINT	AB13		
N/A	VCCINT	AA13		
N/A	VCCINT	Y13		
N/A	VCCINT	W13		
N/A	VCCINT	V13		
N/A	VCCINT	U13		
N/A	VCCINT	T13		
N/A	VCCINT	R13		
N/A	VCCINT	P13		
N/A	VCCINT	N13		
N/A	VCCINT	AC12		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
N/A	VCCINT	M12		
N/A	VCCINT	AD11		
N/A	VCCINT	L11		
N/A	VCCAUX	AN34		
N/A	VCCAUX	AG34		
N/A	VCCAUX	U34		
N/A	VCCAUX	H34		
N/A	VCCAUX	B34		
N/A	VCCAUX	AP33		
N/A	VCCAUX	A33		
N/A	VCCAUX	AP27		
N/A	VCCAUX	A27		
N/A	VCCAUX	AP17		
N/A	VCCAUX	A17		
N/A	VCCAUX	AP8		
N/A	VCCAUX	A8		
N/A	VCCAUX	AP2		
N/A	VCCAUX	A2		
N/A	VCCAUX	AN1		
N/A	VCCAUX	AG1		
N/A	VCCAUX	U1		
N/A	VCCAUX	H1		
N/A	VCCAUX	B1		
N/A	GND	AK34		
N/A	GND	AF34		
N/A	GND	AB34		
N/A	GND	W34		
N/A	GND	V34		
N/A	GND	T34		
N/A	GND	N34		
N/A	GND	J34		
N/A	GND	E34		
N/A	GND	AN33		
N/A	GND	B33		
N/A	GND	AM32		
N/A	GND	C32		
N/A	GND	AP30		
N/A	GND	AK30		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	No Connects XC2VP50
N/A	GND	AF30		
N/A	GND	AB30		
N/A	GND	W30		
N/A	GND	T30		
N/A	GND	N30		
N/A	GND	J30		
N/A	GND	E30		
N/A	GND	A30		
N/A	GND	AP26		
N/A	GND	AK26		
N/A	GND	AB26		
N/A	GND	W26		
N/A	GND	T26		
N/A	GND	N26		
N/A	GND	E26		
N/A	GND	A26		
N/A	GND	AE25		
N/A	GND	K25		
N/A	GND	AP22		
N/A	GND	AK22		
N/A	GND	AF22		
N/A	GND	J22		
N/A	GND	E22		
N/A	GND	A22		
N/A	GND	Y21		
N/A	GND	W21		
N/A	GND	V21		
N/A	GND	U21		
N/A	GND	T21		
N/A	GND	R21		
N/A	GND	AA20		
N/A	GND	Y20		
N/A	GND	W20		
N/A	GND	V20		
N/A	GND	U20		
N/A	GND	T20		
N/A	GND	R20		
N/A	GND	P20		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
N/A	GND	AP19		
N/A	GND	AK19		
N/A	GND	AF19		
N/A	GND	AA19		
N/A	GND	Y19		
N/A	GND	W19		
N/A	GND	V19		
N/A	GND	U19		
N/A	GND	T19		
N/A	GND	R19		
N/A	GND	P19		
N/A	GND	J19		
N/A	GND	E19		
N/A	GND	A19		
N/A	GND	AP18		
N/A	GND	AA18		
N/A	GND	Y18		
N/A	GND	W18		
N/A	GND	V18		
N/A	GND	U18		
N/A	GND	T18		
N/A	GND	R18		
N/A	GND	P18		
N/A	GND	A18		
N/A	GND	AA17		
N/A	GND	Y17		
N/A	GND	W17		
N/A	GND	V17		
N/A	GND	U17		
N/A	GND	T17		
N/A	GND	R17		
N/A	GND	P17		
N/A	GND	AP16		
N/A	GND	AK16		
N/A	GND	AF16		
N/A	GND	AA16		
N/A	GND	Y16		
N/A	GND	W16		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects XC2VP40	XC2VP50
N/A	GND	V16		
N/A	GND	U16		
N/A	GND	T16		
N/A	GND	R16		
N/A	GND	P16		
N/A	GND	J16		
N/A	GND	E16		
N/A	GND	A16		
N/A	GND	AA15		
N/A	GND	Y15		
N/A	GND	W15		
N/A	GND	V15		
N/A	GND	U15		
N/A	GND	T15		
N/A	GND	R15		
N/A	GND	P15		
N/A	GND	Y14		
N/A	GND	W14		
N/A	GND	V14		
N/A	GND	U14		
N/A	GND	T14		
N/A	GND	R14		
N/A	GND	AP13		
N/A	GND	AK13		
N/A	GND	AF13		
N/A	GND	J13		
N/A	GND	E13		
N/A	GND	A13		
N/A	GND	AE10		
N/A	GND	K10		
N/A	GND	AP9		
N/A	GND	AK9		
N/A	GND	AB9		
N/A	GND	W9		
N/A	GND	T9		
N/A	GND	N9		
N/A	GND	E9		
N/A	GND	A9		

Table 11: **FF1148 — XC2VP40 and XC2VP50**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP40	**XC2VP50**
N/A	GND	AP5		
N/A	GND	AK5		
N/A	GND	AF5		
N/A	GND	AB5		
N/A	GND	W5		
N/A	GND	T5		
N/A	GND	N5		
N/A	GND	J5		
N/A	GND	E5		
N/A	GND	A5		
N/A	GND	AM3		
N/A	GND	C3		
N/A	GND	AN2		
N/A	GND	B2		
N/A	GND	AK1		
N/A	GND	AF1		
N/A	GND	AB1		
N/A	GND	W1		
N/A	GND	V1		
N/A	GND	T1		
N/A	GND	N1		
N/A	GND	J1		
N/A	GND	E1		

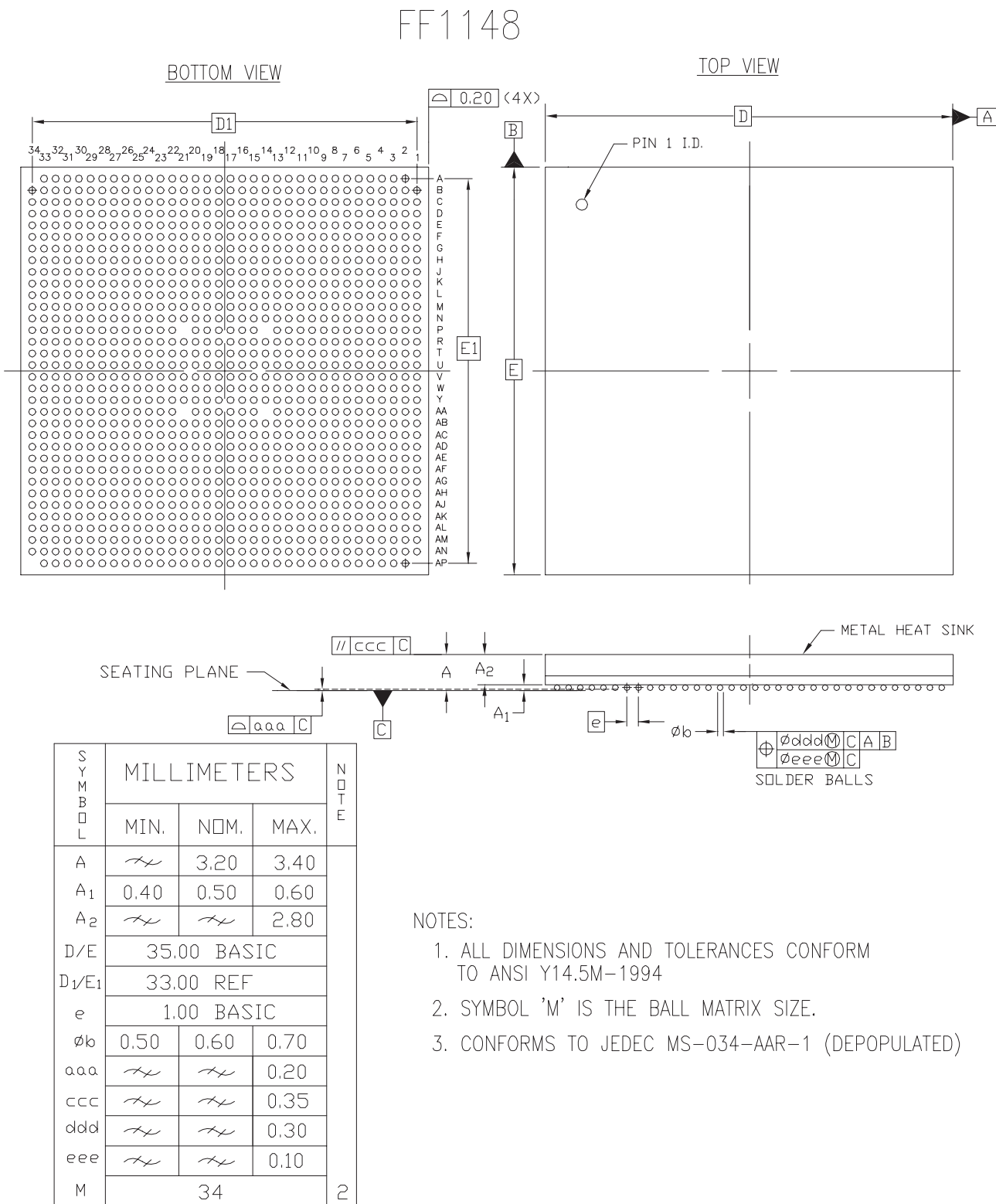## FF1148 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)

Figure 7: **FF1148 Flip-Chip Fine-Pitch BGA Package Specifications**

FF1517 Flip-Chip Fine-Pitch BGA Package

As shown in Table 12, XC2VP50 and XC2VP70 Virtex-II Pro devices are available in the FF1517 flip-chip fine-pitch BGA package. Following this table are the FF1517 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
0	IO_L01N_0/VRP_0	D31		
0	IO_L01P_0/VRN_0	E31		
0	IO_L02N_0	K30		
0	IO_L02P_0	J30		
0	IO_L03N_0	G30		
0	IO_L03P_0/VREF_0	H30		
0	IO_L05_0/No_Pair	K28		
0	IO_L06N_0	E30		
0	IO_L06P_0	F30		
0	IO_L07N_0	C30		
0	IO_L07P_0	D30		
0	IO_L08N_0	J29		
0	IO_L08P_0	K29		
0	IO_L09N_0	G29		
0	IO_L09P_0/VREF_0	H29		
0	IO_L19N_0	E29		
0	IO_L19P_0	F29		
0	IO_L20N_0	L28		
0	IO_L20P_0	L27		
0	IO_L21N_0	C29		
0	IO_L21P_0	D29		
0	IO_L25N_0	H28		
0	IO_L25P_0	J28		
0	IO_L26N_0	M27		
0	IO_L26P_0	M26		
0	IO_L27N_0	D28		
0	IO_L27P_0/VREF_0	E28		
0	IO_L28N_0	H27	NC	
0	IO_L28P_0	J27	NC	
0	IO_L29N_0	J26	NC	
0	IO_L29P_0	K26	NC	
0	IO_L30N_0	F28	NC	
0	IO_L30P_0	G27	NC	
0	IO_L34N_0	D27	NC	

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
0	IO_L34P_0	E27	NC	
0	IO_L35N_0	L26	NC	
0	IO_L35P_0	L25	NC	
0	IO_L36N_0	G26	NC	
0	IO_L36P_0/VREF_0	H26	NC	
0	IO_L37N_0	E26		
0	IO_L37P_0	F26		
0	IO_L38N_0	K25		
0	IO_L38P_0	K24		
0	IO_L39N_0	C26		
0	IO_L39P_0	D26		
0	IO_L43N_0	H25		
0	IO_L43P_0	J25		
0	IO_L44N_0	M25		
0	IO_L44P_0	M24		
0	IO_L45N_0	F25		
0	IO_L45P_0/VREF_0	G25		
0	IO_L46N_0	C25		
0	IO_L46P_0	D25		
0	IO_L47N_0	L23		
0	IO_L47P_0	M22		
0	IO_L48N_0	H24		
0	IO_L48P_0	J24		
0	IO_L49N_0	E25		
0	IO_L49P_0	E24		
0	IO_L50_0/No_Pair	N23		
0	IO_L53_0/No_Pair	M23		
0	IO_L54N_0	H23		
0	IO_L54P_0	J23		
0	IO_L55N_0	F24		
0	IO_L55P_0	G23		
0	IO_L56N_0	K22		
0	IO_L56P_0	L22		
0	IO_L57N_0	C23		
0	IO_L57P_0/VREF_0	D23		
0	IO_L58N_0	H22		
0	IO_L58P_0	J22		
0	IO_L59N_0	N22		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
0	IO_L59P_0	N21		
0	IO_L60N_0	E23		
0	IO_L60P_0	F22		
0	IO_L64N_0	D22		
0	IO_L64P_0	E22		
0	IO_L65N_0	H21		
0	IO_L65P_0	H20		
0	IO_L66N_0	G22		
0	IO_L66P_0/VREF_0	G21		
0	IO_L67N_0	D21		
0	IO_L67P_0	E21		
0	IO_L68N_0	J21		
0	IO_L68P_0	K21		
0	IO_L69N_0	C22		
0	IO_L69P_0/VREF_0	C21		
0	IO_L73N_0	F21		
0	IO_L73P_0	F20		
0	IO_L74N_0/GCLK7P	L21		
0	IO_L74P_0/GCLK6S	M21		
0	IO_L75N_0/GCLK5P	D20		
0	IO_L75P_0/GCLK4S	E20		
1	IO_L75N_1/GCLK3P	K20		
1	IO_L75P_1/GCLK2S	J20		
1	IO_L74N_1/GCLK1P	N20		
1	IO_L74P_1/GCLK0S	M20		
1	IO_L73N_1	E19		
1	IO_L73P_1	D19		
1	IO_L69N_1/VREF_1	G19		
1	IO_L69P_1	F19		
1	IO_L68N_1	L19		
1	IO_L68P_1	K19		
1	IO_L67N_1	J19		
1	IO_L67P_1	H19		
1	IO_L66N_1/VREF_1	C19		
1	IO_L66P_1	C18		
1	IO_L65N_1	N19		
1	IO_L65P_1	M19		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
1	IO_L64N_1	E18		
1	IO_L64P_1	D18		
1	IO_L60N_1	G18		
1	IO_L60P_1	F18		
1	IO_L59N_1	L18		
1	IO_L59P_1	K18		
1	IO_L58N_1	J18		
1	IO_L58P_1	H18		
1	IO_L57N_1/VREF_1	D17		
1	IO_L57P_1	C17		
1	IO_L56N_1	N18		
1	IO_L56P_1	M18		
1	IO_L55N_1	E17		
1	IO_L55P_1	E16		
1	IO_L54N_1	G17		
1	IO_L54P_1	F16		
1	IO_L53_1/No_Pair	J17		
1	IO_L50_1/No_Pair	H17		
1	IO_L49N_1	J16		
1	IO_L49P_1	H16		
1	IO_L48N_1	D15		
1	IO_L48P_1	C15		
1	IO_L47N_1	L17		
1	IO_L47P_1	K16		
1	IO_L46N_1	F15		
1	IO_L46P_1	E15		
1	IO_L45N_1/VREF_1	H15		
1	IO_L45P_1	G15		
1	IO_L44N_1	N17		
1	IO_L44P_1	M17		
1	IO_L43N_1	D14		
1	IO_L43P_1	C14		
1	IO_L39N_1	F14		
1	IO_L39P_1	E14		
1	IO_L38N_1	M16		
1	IO_L38P_1	M15		
1	IO_L37N_1	H14		
1	IO_L37P_1	G14		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
1	IO_L36N_1/VREF_1	E13	NC	
1	IO_L36P_1	D13	NC	
1	IO_L35N_1	K15	NC	
1	IO_L35P_1	J15	NC	
1	IO_L34N_1	G13	NC	
1	IO_L34P_1	F12	NC	
1	IO_L30N_1	J13	NC	
1	IO_L30P_1	H13	NC	
1	IO_L29N_1	L15	NC	
1	IO_L29P_1	L14	NC	
1	IO_L28N_1	E12	NC	
1	IO_L28P_1	D12	NC	
1	IO_L27N_1/VREF_1	J12		
1	IO_L27P_1	H12		
1	IO_L26N_1	K14		
1	IO_L26P_1	J14		
1	IO_L25N_1	D11		
1	IO_L25P_1	C11		
1	IO_L21N_1	F11		
1	IO_L21P_1	E11		
1	IO_L20N_1	M14		
1	IO_L20P_1	M13		
1	IO_L19N_1	H11		
1	IO_L19P_1	G11		
1	IO_L09N_1/VREF_1	J11		
1	IO_L09P_1	J10		
1	IO_L08N_1	L13		
1	IO_L08P_1	L12		
1	IO_L07N_1	D10		
1	IO_L07P_1	C10		
1	IO_L06N_1	F10		
1	IO_L06P_1	E10		
1	IO_L05_1/No_Pair	K10		
1	IO_L03N_1/VREF_1	H10		
1	IO_L03P_1	G10		
1	IO_L02N_1	K12		
1	IO_L02P_1	K11		
1	IO_L01N_1/VRP_1	E9		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
1	IO_L01P_1/VRN_1	D9		
2	IO_L01N_2/VRP_2	C7		
2	IO_L01P_2/VRN_2	D7		
2	IO_L02N_2	G9		
2	IO_L02P_2	H9		
2	IO_L03N_2	C5		
2	IO_L03P_2	D5		
2	IO_L04N_2/VREF_2	D6		
2	IO_L04P_2	E6		
2	IO_L05N_2	H8		
2	IO_L05P_2	J9		
2	IO_L06N_2	E7		
2	IO_L06P_2	F7		
2	IO_L73N_2	D1	NC	
2	IO_L73P_2	D2	NC	
2	IO_L75N_2	E2	NC	
2	IO_L75P_2	E3	NC	
2	IO_L76N_2/VREF_2	F5	NC	
2	IO_L76P_2	G5	NC	
2	IO_L78N_2	F3	NC	
2	IO_L78P_2	F4	NC	
2	IO_L79N_2	F1	NC	
2	IO_L79P_2	F2	NC	
2	IO_L81N_2	G6	NC	
2	IO_L81P_2	G7	NC	
2	IO_L82N_2/VREF_2	G3	NC	
2	IO_L82P_2	G4	NC	
2	IO_L84N_2	G1	NC	
2	IO_L84P_2	G2	NC	
2	IO_L07N_2	H6		
2	IO_L07P_2	H7		
2	IO_L08N_2	K8		
2	IO_L08P_2	K9		
2	IO_L09N_2	H2		
2	IO_L09P_2	H3		
2	IO_L10N_2/VREF_2	J6		
2	IO_L10P_2	J7		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
2	IO_L11N_2	L9		
2	IO_L11P_2	M10		
2	IO_L12N_2	H4		
2	IO_L12P_2	J5		
2	IO_L13N_2	J1		
2	IO_L13P_2	J2		
2	IO_L14N_2	M8		
2	IO_L14P_2	N9		
2	IO_L15N_2	K6		
2	IO_L15P_2	K7		
2	IO_L16N_2/VREF_2	K4		
2	IO_L16P_2	K5		
2	IO_L17N_2	P10		
2	IO_L17P_2	N10		
2	IO_L18N_2	K3		
2	IO_L18P_2	J3		
2	IO_L19N_2	K1		
2	IO_L19P_2	K2		
2	IO_L20N_2	M11		
2	IO_L20P_2	N11		
2	IO_L21N_2	L7		
2	IO_L21P_2	L8		
2	IO_L22N_2/VREF_2	L5		
2	IO_L22P_2	L6		
2	IO_L23N_2	P8		
2	IO_L23P_2	P9		
2	IO_L24N_2	L3		
2	IO_L24P_2	L4		
2	IO_L25N_2	L1		
2	IO_L25P_2	L2		
2	IO_L26N_2	P11		
2	IO_L26P_2	P12		
2	IO_L27N_2	M6		
2	IO_L27P_2	M7		
2	IO_L28N_2/VREF_2	M2		
2	IO_L28P_2	M3		
2	IO_L29N_2	R9		
2	IO_L29P_2	R10		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
2	IO_L30N_2	N6		
2	IO_L30P_2	N7		
2	IO_L31N_2	M4		
2	IO_L31P_2	N5		
2	IO_L32N_2	R11		
2	IO_L32P_2	R12		
2	IO_L33N_2	N1		
2	IO_L33P_2	N2		
2	IO_L34N_2/VREF_2	P6		
2	IO_L34P_2	P7		
2	IO_L35N_2	R13		
2	IO_L35P_2	T13		
2	IO_L36N_2	P4		
2	IO_L36P_2	P5		
2	IO_L37N_2	P3		
2	IO_L37P_2	N3		
2	IO_L38N_2	T10		
2	IO_L38P_2	T11		
2	IO_L39N_2	P1		
2	IO_L39P_2	P2		
2	IO_L40N_2/VREF_2	R7		
2	IO_L40P_2	R8		
2	IO_L41N_2	T12		
2	IO_L41P_2	U12		
2	IO_L42N_2	R5		
2	IO_L42P_2	R6		
2	IO_L43N_2	R3		
2	IO_L43P_2	R4		
2	IO_L44N_2	U8		
2	IO_L44P_2	T8		
2	IO_L45N_2	R1		
2	IO_L45P_2	R2		
2	IO_L46N_2/VREF_2	T6		
2	IO_L46P_2	T7		
2	IO_L47N_2	U9		
2	IO_L47P_2	U10		
2	IO_L48N_2	T2		
2	IO_L48P_2	T3		

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Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
2	IO_L49N_2	U5		
2	IO_L49P_2	U6		
2	IO_L50N_2	U13		
2	IO_L50P_2	V13		
2	IO_L51N_2	U4		
2	IO_L51P_2	T4		
2	IO_L52N_2/VREF_2	U1		
2	IO_L52P_2	U2		
2	IO_L53N_2	V9		
2	IO_L53P_2	V10		
2	IO_L54N_2	V7		
2	IO_L54P_2	V8		
2	IO_L55N_2	V5		
2	IO_L55P_2	V6		
2	IO_L56N_2	V11		
2	IO_L56P_2	V12		
2	IO_L57N_2	V3		
2	IO_L57P_2	V4		
2	IO_L58N_2/VREF_2	V1		
2	IO_L58P_2	V2		
2	IO_L59N_2	W10		
2	IO_L59P_2	W11		
2	IO_L60N_2	W7		
2	IO_L60P_2	W8		
2	IO_L85N_2	W5		
2	IO_L85P_2	W6		
2	IO_L86N_2	W12		
2	IO_L86P_2	W13		
2	IO_L87N_2	W3		
2	IO_L87P_2	W4		
2	IO_L88N_2/VREF_2	Y7		
2	IO_L88P_2	Y8		
2	IO_L89N_2	W9		
2	IO_L89P_2	Y9		
2	IO_L90N_2	Y3		
2	IO_L90P_2	Y4		
3	IO_L90N_3	AA7		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
3	IO_L90P_3	AA8		
3	IO_L89N_3	Y11		
3	IO_L89P_3	Y12		
3	IO_L88N_3	AA5		
3	IO_L88P_3	AA6		
3	IO_L87N_3/VREF_3	AA3		
3	IO_L87P_3	AA4		
3	IO_L86N_3	Y13		
3	IO_L86P_3	AA13		
3	IO_L85N_3	AB7		
3	IO_L85P_3	AB8		
3	IO_L60N_3	AB5		
3	IO_L60P_3	AB6		
3	IO_L59N_3	AA9		
3	IO_L59P_3	AA10		
3	IO_L58N_3	AB3		
3	IO_L58P_3	AB4		
3	IO_L57N_3/VREF_3	AB1		
3	IO_L57P_3	AB2		
3	IO_L56N_3	AA11		
3	IO_L56P_3	AA12		
3	IO_L55N_3	AC5		
3	IO_L55P_3	AC6		
3	IO_L54N_3	AC1		
3	IO_L54P_3	AC2		
3	IO_L53N_3	AB9		
3	IO_L53P_3	AB10		
3	IO_L52N_3	AC8		
3	IO_L52P_3	AD8		
3	IO_L51N_3/VREF_3	AC4		
3	IO_L51P_3	AD4		
3	IO_L50N_3	AB11		
3	IO_L50P_3	AB12		
3	IO_L49N_3	AD6		
3	IO_L49P_3	AD7		
3	IO_L48N_3	AD2		
3	IO_L48P_3	AD3		
3	IO_L47N_3	AC9		

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Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
3	IO_L47P_3	AC10		
3	IO_L46N_3	AE7		
3	IO_L46P_3	AE8		
3	IO_L45N_3/VREF_3	AE5		
3	IO_L45P_3	AE6		
3	IO_L44N_3	AB13		
3	IO_L44P_3	AC13		
3	IO_L43N_3	AE3		
3	IO_L43P_3	AE4		
3	IO_L42N_3	AE1		
3	IO_L42P_3	AE2		
3	IO_L41N_3	AD10		
3	IO_L41P_3	AD11		
3	IO_L40N_3	AF6		
3	IO_L40P_3	AF7		
3	IO_L39N_3/VREF_3	AF4		
3	IO_L39P_3	AF5		
3	IO_L38N_3	AC12		
3	IO_L38P_3	AD12		
3	IO_L37N_3	AF1		
3	IO_L37P_3	AF2		
3	IO_L36N_3	AG6		
3	IO_L36P_3	AG7		
3	IO_L35N_3	AE9		
3	IO_L35P_3	AE10		
3	IO_L34N_3	AF3		
3	IO_L34P_3	AG3		
3	IO_L33N_3/VREF_3	AG1		
3	IO_L33P_3	AG2		
3	IO_L32N_3	AE11		
3	IO_L32P_3	AE12		
3	IO_L31N_3	AH6		
3	IO_L31P_3	AH7		
3	IO_L30N_3	AG5		
3	IO_L30P_3	AH4		
3	IO_L29N_3	AD13		
3	IO_L29P_3	AE13		
3	IO_L28N_3	AH2		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
3	IO_L28P_3	AH3		
3	IO_L27N_3/VREF_3	AJ7		
3	IO_L27P_3	AJ8		
3	IO_L26N_3	AF8		
3	IO_L26P_3	AF9		
3	IO_L25N_3	AJ5		
3	IO_L25P_3	AJ6		
3	IO_L24N_3	AJ3		
3	IO_L24P_3	AJ4		
3	IO_L23N_3	AF10		
3	IO_L23P_3	AG10		
3	IO_L22N_3	AJ1		
3	IO_L22P_3	AJ2		
3	IO_L21N_3/VREF_3	AK6		
3	IO_L21P_3	AK7		
3	IO_L20N_3	AF11		
3	IO_L20P_3	AF12		
3	IO_L19N_3	AK4		
3	IO_L19P_3	AK5		
3	IO_L18N_3	AK1		
3	IO_L18P_3	AK2		
3	IO_L17N_3	AG9		
3	IO_L17P_3	AH8		
3	IO_L16N_3	AL6		
3	IO_L16P_3	AL7		
3	IO_L15N_3/VREF_3	AK3		
3	IO_L15P_3	AL3		
3	IO_L14N_3	AG11		
3	IO_L14P_3	AH11		
3	IO_L13N_3	AL1		
3	IO_L13P_3	AL2		
3	IO_L12N_3	AM6		
3	IO_L12P_3	AM7		
3	IO_L11N_3	AH10		
3	IO_L11P_3	AJ9		
3	IO_L10N_3	AL5		
3	IO_L10P_3	AM4		
3	IO_L09N_3/VREF_3	AM2		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
3	IO_L09P_3	AM3		
3	IO_L08N_3	AK8		
3	IO_L08P_3	AK9		
3	IO_L07N_3	AN6		
3	IO_L07P_3	AN7		
3	IO_L84N_3	AN3	NC	
3	IO_L84P_3	AN4	NC	
3	IO_L82N_3	AN1	NC	
3	IO_L82P_3	AN2	NC	
3	IO_L81N_3/VREF_3	AN5	NC	
3	IO_L81P_3	AP5	NC	
3	IO_L79N_3	AP3	NC	
3	IO_L79P_3	AP4	NC	
3	IO_L78N_3	AP1	NC	
3	IO_L78P_3	AP2	NC	
3	IO_L76N_3	AR2	NC	
3	IO_L76P_3	AR3	NC	
3	IO_L75N_3/VREF_3	AT1	NC	
3	IO_L75P_3	AT2	NC	
3	IO_L73N_3	AT5	NC	
3	IO_L73P_3	AU5	NC	
3	IO_L06N_3	AR6		
3	IO_L06P_3	AT6		
3	IO_L05N_3	AL9		
3	IO_L05P_3	AM8		
3	IO_L04N_3	AP7		
3	IO_L04P_3	AR7		
3	IO_L03N_3/VREF_3	AM9		
3	IO_L03P_3	AN9		
3	IO_L02N_3	AR8		
3	IO_L02P_3	AT8		
3	IO_L01N_3/VRP_3	AT7		
3	IO_L01P_3/VRN_3	AU7		
4	IO_L01N_4/DOUT	AT9		
4	IO_L01P_4/INIT_B	AR9		
4	IO_L02N_4/D0	AK11		
4	IO_L02P_4/D1	AK12		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
4	IO_L03N_4/D2	AN10		
4	IO_L03P_4/D3	AM10		
4	IO_L05_4/No_Pair	AK10		
4	IO_L06N_4/VRP_4	AR10		
4	IO_L06P_4/VRN_4	AP10		
4	IO_L07N_4	AU10		
4	IO_L07P_4/VREF_4	AT10		
4	IO_L08N_4	AJ12		
4	IO_L08P_4	AJ13		
4	IO_L09N_4	AL10		
4	IO_L09P_4/VREF_4	AL11		
4	IO_L19N_4	AN11		
4	IO_L19P_4	AM11		
4	IO_L20N_4	AH13		
4	IO_L20P_4	AH14		
4	IO_L21N_4	AR11		
4	IO_L21P_4	AP11		
4	IO_L25N_4	AU11		
4	IO_L25P_4	AT11		
4	IO_L26N_4	AL14		
4	IO_L26P_4	AK14		
4	IO_L27N_4	AM12		
4	IO_L27P_4/VREF_4	AL12		
4	IO_L28N_4	AT12	NC	
4	IO_L28P_4	AR12	NC	
4	IO_L29N_4	AJ14	NC	
4	IO_L29P_4	AJ15	NC	
4	IO_L30N_4	AM13	NC	
4	IO_L30P_4	AL13	NC	
4	IO_L34N_4	AP12	NC	
4	IO_L34P_4	AN13	NC	
4	IO_L35N_4	AL15	NC	
4	IO_L35P_4	AK15	NC	
4	IO_L36N_4	AT13	NC	
4	IO_L36P_4/VREF_4	AR13	NC	
4	IO_L37N_4	AN14		
4	IO_L37P_4	AM14		
4	IO_L38N_4	AH15		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
4	IO_L38P_4	AH16		
4	IO_L39N_4	AR14		
4	IO_L39P_4	AP14		
4	IO_L43N_4	AU14		
4	IO_L43P_4	AT14		
4	IO_L44N_4	AH17		
4	IO_L44P_4	AG17		
4	IO_L45N_4	AN15		
4	IO_L45P_4/VREF_4	AM15		
4	IO_L46N_4	AR15		
4	IO_L46P_4	AP15		
4	IO_L47N_4	AK16		
4	IO_L47P_4	AJ17		
4	IO_L48N_4	AU15		
4	IO_L48P_4	AT15		
4	IO_L49N_4	AM16		
4	IO_L49P_4	AL16		
4	IO_L50_4/No_Pair	AM17		
4	IO_L53_4/No_Pair	AL17		
4	IO_L54N_4	AP16		
4	IO_L54P_4	AN17		
4	IO_L55N_4	AR16		
4	IO_L55P_4	AR17		
4	IO_L56N_4	AH18		
4	IO_L56P_4	AG18		
4	IO_L57N_4	AU17		
4	IO_L57P_4/VREF_4	AT17		
4	IO_L58N_4	AM18		
4	IO_L58P_4	AL18		
4	IO_L59N_4	AK18		
4	IO_L59P_4	AJ18		
4	IO_L60N_4	AP18		
4	IO_L60P_4	AN18		
4	IO_L64N_4	AT18		
4	IO_L64P_4	AR18		
4	IO_L65N_4	AH19		
4	IO_L65P_4	AG19		
4	IO_L66N_4	AU18		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
4	IO_L66P_4/VREF_4	AU19		
4	IO_L67N_4	AM19		
4	IO_L67P_4	AL19		
4	IO_L68N_4	AK19		
4	IO_L68P_4	AJ19		
4	IO_L69N_4	AP19		
4	IO_L69P_4/VREF_4	AN19		
4	IO_L73N_4	AT19		
4	IO_L73P_4	AR19		
4	IO_L74N_4/GCLK3S	AH20		
4	IO_L74P_4/GCLK2P	AG20		
4	IO_L75N_4/GCLK1S	AL20		
4	IO_L75P_4/GCLK0P	AK20		
5	IO_L75N_5/GCLK7S	AR20		
5	IO_L75P_5/GCLK6P	AT20		
5	IO_L74N_5/GCLK5S	AH21		
5	IO_L74P_5/GCLK4P	AJ21		
5	IO_L73N_5	AP20		
5	IO_L73P_5	AP21		
5	IO_L69N_5/VREF_5	AU21		
5	IO_L69P_5	AU22		
5	IO_L68N_5	AK21		
5	IO_L68P_5	AL21		
5	IO_L67N_5	AR21		
5	IO_L67P_5	AT21		
5	IO_L66N_5/VREF_5	AN21		
5	IO_L66P_5	AN22		
5	IO_L65N_5	AM20		
5	IO_L65P_5	AM21		
5	IO_L64N_5	AR22		
5	IO_L64P_5	AT22		
5	IO_L60N_5	AP22		
5	IO_L60P_5	AR23		
5	IO_L59N_5	AG21		
5	IO_L59P_5	AG22		
5	IO_L58N_5	AL22		
5	IO_L58P_5	AM22		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
5	IO_L57N_5/VREF_5	AT23		
5	IO_L57P_5	AU23		
5	IO_L56N_5	AJ22		
5	IO_L56P_5	AK22		
5	IO_L55N_5	AN23		
5	IO_L55P_5	AP24		
5	IO_L54N_5	AL23		
5	IO_L54P_5	AM23		
5	IO_L53_5/No_Pair	AH23		
5	IO_L50_5/No_Pair	AG23		
5	IO_L49N_5	AR24		
5	IO_L49P_5	AR25		
5	IO_L48N_5	AL24		
5	IO_L48P_5	AM24		
5	IO_L47N_5	AH22		
5	IO_L47P_5	AJ23		
5	IO_L46N_5	AT25		
5	IO_L46P_5	AU25		
5	IO_L45N_5/VREF_5	AN25		
5	IO_L45P_5	AP25		
5	IO_L44N_5	AH24		
5	IO_L44P_5	AH25		
5	IO_L43N_5	AL25		
5	IO_L43P_5	AM25		
5	IO_L39N_5	AT26		
5	IO_L39P_5	AU26		
5	IO_L38N_5	AK24		
5	IO_L38P_5	AK25		
5	IO_L37N_5	AP26		
5	IO_L37P_5	AR26		
5	IO_L36N_5/VREF_5	AM26	NC	
5	IO_L36P_5	AN26	NC	
5	IO_L35N_5	AJ25	NC	
5	IO_L35P_5	AJ26	NC	
5	IO_L34N_5	AR27	NC	
5	IO_L34P_5	AT27	NC	
5	IO_L30N_5	AN27	NC	
5	IO_L30P_5	AP28	NC	

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
5	IO_L29N_5	AK26	NC	
5	IO_L29P_5	AL26	NC	
5	IO_L28N_5	AL27	NC	
5	IO_L28P_5	AM27	NC	
5	IO_L27N_5/VREF_5	AR28		
5	IO_L27P_5	AT28		
5	IO_L26N_5	AH26		
5	IO_L26P_5	AH27		
5	IO_L25N_5	AL28		
5	IO_L25P_5	AM28		
5	IO_L21N_5	AT29		
5	IO_L21P_5	AU29		
5	IO_L20N_5	AJ27		
5	IO_L20P_5	AJ28		
5	IO_L19N_5	AP29		
5	IO_L19P_5	AR29		
5	IO_L09N_5/VREF_5	AM29		
5	IO_L09P_5	AN29		
5	IO_L08N_5	AK29		
5	IO_L08P_5	AL29		
5	IO_L07N_5/VREF_5	AT30		
5	IO_L07P_5	AU30		
5	IO_L06N_5/VRP_5	AP30		
5	IO_L06P_5/VRN_5	AR30		
5	IO_L05_5/No_Pair	AK28		
5	IO_L03N_5/D4	AM30		
5	IO_L03P_5/D5	AN30		
5	IO_L02N_5/D6	AL30		
5	IO_L02P_5/D7	AK30		
5	IO_L01N_5/RDWR_B	AR31		
5	IO_L01P_5/CS_B	AT31		
6	IO_L01P_6/VRN_6	AU33		
6	IO_L01N_6/VRP_6	AT33		
6	IO_L02P_6	AT32		
6	IO_L02N_6	AR32		
6	IO_L03P_6	AN31		
6	IO_L03N_6/VREF_6	AM31		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
6	IO_L04P_6	AR33		
6	IO_L04N_6	AP33		
6	IO_L05P_6	AM32		
6	IO_L05N_6	AL31		
6	IO_L06P_6	AT34		
6	IO_L06N_6	AR34		
6	IO_L73P_6	AU35	NC	
6	IO_L73N_6	AT35	NC	
6	IO_L75P_6	AT38	NC	
6	IO_L75N_6/VREF_6	AT39	NC	
6	IO_L76P_6	AR37	NC	
6	IO_L76N_6	AR38	NC	
6	IO_L78P_6	AP38	NC	
6	IO_L78N_6	AP39	NC	
6	IO_L79P_6	AP36	NC	
6	IO_L79N_6	AP37	NC	
6	IO_L81P_6	AP35	NC	
6	IO_L81N_6/VREF_6	AN35	NC	
6	IO_L82P_6	AN38	NC	
6	IO_L82N_6	AN39	NC	
6	IO_L84P_6	AN36	NC	
6	IO_L84N_6	AN37	NC	
6	IO_L07P_6	AN33		
6	IO_L07N_6	AN34		
6	IO_L08P_6	AK31		
6	IO_L08N_6	AK32		
6	IO_L09P_6	AM37		
6	IO_L09N_6/VREF_6	AM38		
6	IO_L10P_6	AM36		
6	IO_L10N_6	AL35		
6	IO_L11P_6	AJ31		
6	IO_L11N_6	AH30		
6	IO_L12P_6	AM33		
6	IO_L12N_6	AM34		
6	IO_L13P_6	AL38		
6	IO_L13N_6	AL39		
6	IO_L14P_6	AH29		
6	IO_L14N_6	AG29		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
6	IO_L15P_6	AL37		
6	IO_L15N_6/VREF_6	AK37		
6	IO_L16P_6	AL33		
6	IO_L16N_6	AL34		
6	IO_L17P_6	AH32		
6	IO_L17N_6	AG31		
6	IO_L18P_6	AK38		
6	IO_L18N_6	AK39		
6	IO_L19P_6	AK35		
6	IO_L19N_6	AK36		
6	IO_L20P_6	AF28		
6	IO_L20N_6	AF29		
6	IO_L21P_6	AK33		
6	IO_L21N_6/VREF_6	AK34		
6	IO_L22P_6	AJ38		
6	IO_L22N_6	AJ39		
6	IO_L23P_6	AG30		
6	IO_L23N_6	AF30		
6	IO_L24P_6	AJ36		
6	IO_L24N_6	AJ37		
6	IO_L25P_6	AJ34		
6	IO_L25N_6	AJ35		
6	IO_L26P_6	AF31		
6	IO_L26N_6	AF32		
6	IO_L27P_6	AJ32		
6	IO_L27N_6/VREF_6	AJ33		
6	IO_L28P_6	AH37		
6	IO_L28N_6	AH38		
6	IO_L29P_6	AE27		
6	IO_L29N_6	AD27		
6	IO_L30P_6	AH36		
6	IO_L30N_6	AG35		
6	IO_L31P_6	AH33		
6	IO_L31N_6	AH34		
6	IO_L32P_6	AE28		
6	IO_L32N_6	AE29		
6	IO_L33P_6	AG38		
6	IO_L33N_6/VREF_6	AG39		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
6	IO_L34P_6	AG37		
6	IO_L34N_6	AF37		
6	IO_L35P_6	AE30		
6	IO_L35N_6	AE31		
6	IO_L36P_6	AG33		
6	IO_L36N_6	AG34		
6	IO_L37P_6	AF38		
6	IO_L37N_6	AF39		
6	IO_L38P_6	AD28		
6	IO_L38N_6	AC28		
6	IO_L39P_6	AF35		
6	IO_L39N_6/VREF_6	AF36		
6	IO_L40P_6	AF33		
6	IO_L40N_6	AF34		
6	IO_L41P_6	AD29		
6	IO_L41N_6	AD30		
6	IO_L42P_6	AE38		
6	IO_L42N_6	AE39		
6	IO_L43P_6	AE36		
6	IO_L43N_6	AE37		
6	IO_L44P_6	AC27		
6	IO_L44N_6	AB27		
6	IO_L45P_6	AE34		
6	IO_L45N_6/VREF_6	AE35		
6	IO_L46P_6	AE32		
6	IO_L46N_6	AE33		
6	IO_L47P_6	AC30		
6	IO_L47N_6	AC31		
6	IO_L48P_6	AD37		
6	IO_L48N_6	AD38		
6	IO_L49P_6	AD33		
6	IO_L49N_6	AD34		
6	IO_L50P_6	AB28		
6	IO_L50N_6	AB29		
6	IO_L51P_6	AD36		
6	IO_L51N_6/VREF_6	AC36		
6	IO_L52P_6	AD32		
6	IO_L52N_6	AC32		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
6	IO_L53P_6	AB30		
6	IO_L53N_6	AB31		
6	IO_L54P_6	AC38		
6	IO_L54N_6	AC39		
6	IO_L55P_6	AC34		
6	IO_L55N_6	AC35		
6	IO_L56P_6	AA28		
6	IO_L56N_6	AA29		
6	IO_L57P_6	AB38		
6	IO_L57N_6/VREF_6	AB39		
6	IO_L58P_6	AB36		
6	IO_L58N_6	AB37		
6	IO_L59P_6	AA30		
6	IO_L59N_6	AA31		
6	IO_L60P_6	AB34		
6	IO_L60N_6	AB35		
6	IO_L85P_6	AB32		
6	IO_L85N_6	AB33		
6	IO_L86P_6	AA27		
6	IO_L86N_6	Y27		
6	IO_L87P_6	AA36		
6	IO_L87N_6/VREF_6	AA37		
6	IO_L88P_6	AA34		
6	IO_L88N_6	AA35		
6	IO_L89P_6	Y28		
6	IO_L89N_6	Y29		
6	IO_L90P_6	AA32		
6	IO_L90N_6	AA33		
7	IO_L90P_7	Y36		
7	IO_L90N_7	Y37		
7	IO_L89P_7	Y31		
7	IO_L89N_7	W31		
7	IO_L88P_7	Y32		
7	IO_L88N_7/VREF_7	Y33		
7	IO_L87P_7	W36		
7	IO_L87N_7	W37		
7	IO_L86P_7	W27		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
7	IO_L86N_7	W28		
7	IO_L85P_7	W34		
7	IO_L85N_7	W35		
7	IO_L60P_7	W32		
7	IO_L60N_7	W33		
7	IO_L59P_7	W29		
7	IO_L59N_7	W30		
7	IO_L58P_7	V38		
7	IO_L58N_7/VREF_7	V39		
7	IO_L57P_7	V36		
7	IO_L57N_7	V37		
7	IO_L56P_7	V28		
7	IO_L56N_7	V29		
7	IO_L55P_7	V34		
7	IO_L55N_7	V35		
7	IO_L54P_7	V32		
7	IO_L54N_7	V33		
7	IO_L53P_7	V30		
7	IO_L53N_7	V31		
7	IO_L52P_7	U38		
7	IO_L52N_7/VREF_7	U39		
7	IO_L51P_7	T36		
7	IO_L51N_7	U36		
7	IO_L50P_7	V27		
7	IO_L50N_7	U27		
7	IO_L49P_7	U34		
7	IO_L49N_7	U35		
7	IO_L48P_7	T37		
7	IO_L48N_7	T38		
7	IO_L47P_7	U30		
7	IO_L47N_7	U31		
7	IO_L46P_7	T33		
7	IO_L46N_7/VREF_7	T34		
7	IO_L45P_7	R38		
7	IO_L45N_7	R39		
7	IO_L44P_7	T32		
7	IO_L44N_7	U32		
7	IO_L43P_7	R36		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
7	IO_L43N_7	R37		
7	IO_L42P_7	R34		
7	IO_L42N_7	R35		
7	IO_L41P_7	U28		
7	IO_L41N_7	T28		
7	IO_L40P_7	R32		
7	IO_L40N_7/VREF_7	R33		
7	IO_L39P_7	P38		
7	IO_L39N_7	P39		
7	IO_L38P_7	T29		
7	IO_L38N_7	T30		
7	IO_L37P_7	N37		
7	IO_L37N_7	P37		
7	IO_L36P_7	P35		
7	IO_L36N_7	P36		
7	IO_L35P_7	T27		
7	IO_L35N_7	R27		
7	IO_L34P_7	P33		
7	IO_L34N_7/VREF_7	P34		
7	IO_L33P_7	N38		
7	IO_L33N_7	N39		
7	IO_L32P_7	R28		
7	IO_L32N_7	R29		
7	IO_L31P_7	N35		
7	IO_L31N_7	M36		
7	IO_L30P_7	N33		
7	IO_L30N_7	N34		
7	IO_L29P_7	R30		
7	IO_L29N_7	R31		
7	IO_L28P_7	M37		
7	IO_L28N_7/VREF_7	M38		
7	IO_L27P_7	M33		
7	IO_L27N_7	M34		
7	IO_L26P_7	P28		
7	IO_L26N_7	P29		
7	IO_L25P_7	L38		
7	IO_L25N_7	L39		
7	IO_L24P_7	L36		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
7	IO_L24N_7	L37		
7	IO_L23P_7	P31		
7	IO_L23N_7	P32		
7	IO_L22P_7	L34		
7	IO_L22N_7/VREF_7	L35		
7	IO_L21P_7	L32		
7	IO_L21N_7	L33		
7	IO_L20P_7	N29		
7	IO_L20N_7	M29		
7	IO_L19P_7	K38		
7	IO_L19N_7	K39		
7	IO_L18P_7	J37		
7	IO_L18N_7	K37		
7	IO_L17P_7	N30		
7	IO_L17N_7	P30		
7	IO_L16P_7	K35		
7	IO_L16N_7/VREF_7	K36		
7	IO_L15P_7	K34		
7	IO_L15N_7	K33		
7	IO_L14P_7	N31		
7	IO_L14N_7	M32		
7	IO_L13P_7	J38		
7	IO_L13N_7	J39		
7	IO_L12P_7	J35		
7	IO_L12N_7	H36		
7	IO_L11P_7	M30		
7	IO_L11N_7	L31		
7	IO_L10P_7	J33		
7	IO_L10N_7/VREF_7	J34		
7	IO_L09P_7	H37		
7	IO_L09N_7	H38		
7	IO_L08P_7	K31		
7	IO_L08N_7	K32		
7	IO_L07P_7	H33		
7	IO_L07N_7	H34		
7	IO_L84P_7	G38	NC	
7	IO_L84N_7	G39	NC	
7	IO_L82P_7	G36	NC	

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
7	IO_L82N_7/VREF_7	G37	NC	
7	IO_L81P_7	G33	NC	
7	IO_L81N_7	G34	NC	
7	IO_L79P_7	F38	NC	
7	IO_L79N_7	F39	NC	
7	IO_L78P_7	F36	NC	
7	IO_L78N_7	F37	NC	
7	IO_L76P_7	G35	NC	
7	IO_L76N_7/VREF_7	F35	NC	
7	IO_L75P_7	E37	NC	
7	IO_L75N_7	E38	NC	
7	IO_L73P_7	D38	NC	
7	IO_L73N_7	D39	NC	
7	IO_L06P_7	F33		
7	IO_L06N_7	E33		
7	IO_L05P_7	J31		
7	IO_L05N_7	H32		
7	IO_L04P_7	E34		
7	IO_L04N_7/VREF_7	D34		
7	IO_L03P_7	D35		
7	IO_L03N_7	C35		
7	IO_L02P_7	H31		
7	IO_L02N_7	G31		
7	IO_L01P_7/VRN_7	D33		
7	IO_L01N_7/VRP_7	C33		
7	VCCO_7	E39		
7	VCCO_7	U37		
7	VCCO_7	N36		
7	VCCO_7	J36		
7	VCCO_7	E36		
7	VCCO_7	Y35		
7	VCCO_7	U33		
7	VCCO_7	N32		
7	VCCO_7	J32		
7	VCCO_7	F32		
7	VCCO_7	U29		
7	VCCO_7	N28		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
7	VCCO_7	P27		
7	VCCO_7	W26		
7	VCCO_7	V26		
7	VCCO_7	U26		
7	VCCO_7	T26		
7	VCCO_7	R26		
6	VCCO_6	AR39		
6	VCCO_6	AC37		
6	VCCO_6	AR36		
6	VCCO_6	AL36		
6	VCCO_6	AG36		
6	VCCO_6	AC33		
6	VCCO_6	AP32		
6	VCCO_6	AL32		
6	VCCO_6	AG32		
6	VCCO_6	AC29		
6	VCCO_6	AG28		
6	VCCO_6	AF27		
6	VCCO_6	AE26		
6	VCCO_6	AD26		
6	VCCO_6	AC26		
6	VCCO_6	AB26		
6	VCCO_6	AA26		
6	VCCO_6	Y26		
5	VCCO_5	AP27		
5	VCCO_5	AK27		
5	VCCO_5	AG26		
5	VCCO_5	AG25		
5	VCCO_5	AF25		
5	VCCO_5	AG24		
5	VCCO_5	AF24		
5	VCCO_5	AP23		
5	VCCO_5	AK23		
5	VCCO_5	AF23		
5	VCCO_5	AF22		
5	VCCO_5	AF21		
4	VCCO_4	AF19		
4	VCCO_4	AF18		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
4	VCCO_4	AP17		
4	VCCO_4	AK17		
4	VCCO_4	AF17		
4	VCCO_4	AG16		
4	VCCO_4	AF16		
4	VCCO_4	AG15		
4	VCCO_4	AF15		
4	VCCO_4	AG14		
4	VCCO_4	AP13		
4	VCCO_4	AK13		
3	VCCO_3	AE14		
3	VCCO_3	AD14		
3	VCCO_3	AC14		
3	VCCO_3	AB14		
3	VCCO_3	AA14		
3	VCCO_3	Y14		
3	VCCO_3	AF13		
3	VCCO_3	AG12		
3	VCCO_3	AC11		
3	VCCO_3	AP8		
3	VCCO_3	AL8		
3	VCCO_3	AG8		
3	VCCO_3	AC7		
3	VCCO_3	AR4		
3	VCCO_3	AL4		
3	VCCO_3	AG4		
3	VCCO_3	AC3		
3	VCCO_3	AR1		
2	VCCO_2	W14		
2	VCCO_2	V14		
2	VCCO_2	U14		
2	VCCO_2	T14		
2	VCCO_2	R14		
2	VCCO_2	P13		
2	VCCO_2	N12		
2	VCCO_2	U11		
2	VCCO_2	N8		
2	VCCO_2	J8		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
2	VCCO_2	F8		
2	VCCO_2	U7		
2	VCCO_2	Y5		
2	VCCO_2	N4		
2	VCCO_2	J4		
2	VCCO_2	E4		
2	VCCO_2	U3		
2	VCCO_2	E1		
1	VCCO_1	N14		
1	VCCO_1	K13		
1	VCCO_1	F13		
1	VCCO_1	P19		
1	VCCO_1	P18		
1	VCCO_1	P17		
1	VCCO_1	K17		
1	VCCO_1	F17		
1	VCCO_1	P16		
1	VCCO_1	N16		
1	VCCO_1	P15		
1	VCCO_1	N15		
0	VCCO_0	K27		
0	VCCO_0	F27		
0	VCCO_0	N26		
0	VCCO_0	P25		
0	VCCO_0	N25		
0	VCCO_0	P24		
0	VCCO_0	N24		
0	VCCO_0	P23		
0	VCCO_0	K23		
0	VCCO_0	F23		
0	VCCO_0	P22		
0	VCCO_0	P21		
N/A	CCLK	AJ10		
N/A	PROG_B	D32		
N/A	DONE	AJ11		
N/A	M0	AP31		
N/A	M1	AJ30		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	M2	AJ29		
N/A	TCK	E8		
N/A	TDI	L30		
N/A	TDO	L10		
N/A	TMS	F9		
N/A	PWRDWN_B	AP9		
N/A	HSWAP_EN	E32		
N/A	RSVD	D8		
N/A	VBATT	L11		
N/A	DXP	L29		
N/A	DXN	F31		
N/A	AVCCAUXTX2	B35		
N/A	VTTXPAD2	B36		
N/A	TXNPAD2	A36		
N/A	TXPPAD2	A35		
N/A	GNDA2	C34		
N/A	RXPPAD2	A34		
N/A	RXNPAD2	A33		
N/A	VTRXPAD2	B34		
N/A	AVCCAUXRX2	B33		
N/A	AVCCAUXTX4	B31		
N/A	VTTXPAD4	B32		
N/A	TXNPAD4	A32		
N/A	TXPPAD4	A31		
N/A	GNDA4	C31		
N/A	RXPPAD4	A30		
N/A	RXNPAD4	A29		
N/A	VTRXPAD4	B30		
N/A	AVCCAUXRX4	B29		
N/A	AVCCAUXTX5	B27		
N/A	VTTXPAD5	B28		
N/A	TXNPAD5	A28		
N/A	TXPPAD5	A27		
N/A	GNDA5	C27		
N/A	RXPPAD5	A26		
N/A	RXNPAD5	A25		
N/A	VTRXPAD5	B26		
N/A	AVCCAUXRX5	B25		

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Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
N/A	AVCCAUXTX6	B23		
N/A	VTTXPAD6	B24		
N/A	TXNPAD6	A24		
N/A	TXPPAD6	A23		
N/A	GNDA6	C24		
N/A	RXPPAD6	A22		
N/A	RXNPAD6	A21		
N/A	VTRXPAD6	B22		
N/A	AVCCAUXRX6	B21		
N/A	AVCCAUXTX7	B18		
N/A	VTTXPAD7	B19		
N/A	TXNPAD7	A19		
N/A	TXPPAD7	A18		
N/A	GNDA7	C16		
N/A	RXPPAD7	A17		
N/A	RXNPAD7	A16		
N/A	VTRXPAD7	B17		
N/A	AVCCAUXRX7	B16		
N/A	AVCCAUXTX8	B14		
N/A	VTTXPAD8	B15		
N/A	TXNPAD8	A15		
N/A	TXPPAD8	A14		
N/A	GNDA8	C13		
N/A	RXPPAD8	A13		
N/A	RXNPAD8	A12		
N/A	VTRXPAD8	B13		
N/A	AVCCAUXRX8	B12		
N/A	AVCCAUXTX9	B10		
N/A	VTTXPAD9	B11		
N/A	TXNPAD9	A11		
N/A	TXPPAD9	A10		
N/A	GNDA9	C9		
N/A	RXPPAD9	A9		
N/A	RXNPAD9	A8		
N/A	VTRXPAD9	B9		
N/A	AVCCAUXRX9	B8		
N/A	AVCCAUXTX11	B6		
N/A	VTTXPAD11	B7		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	TXNPAD11	A7		
N/A	TXPPAD11	A6		
N/A	GNDA11	C6		
N/A	RXPPAD11	A5		
N/A	RXNPAD11	A4		
N/A	VTRXPAD11	B5		
N/A	AVCCAUXRX11	B4		
N/A	AVCCAUXRX14	AV4		
N/A	VTRXPAD14	AV5		
N/A	RXNPAD14	AW4		
N/A	RXPPAD14	AW5		
N/A	GNDA14	AU6		
N/A	TXPPAD14	AW6		
N/A	TXNPAD14	AW7		
N/A	VTTXPAD14	AV7		
N/A	AVCCAUXTX14	AV6		
N/A	AVCCAUXRX16	AV8		
N/A	VTRXPAD16	AV9		
N/A	RXNPAD16	AW8		
N/A	RXPPAD16	AW9		
N/A	GNDA16	AU9		
N/A	TXPPAD16	AW10		
N/A	TXNPAD16	AW11		
N/A	VTTXPAD16	AV11		
N/A	AVCCAUXTX16	AV10		
N/A	AVCCAUXRX17	AV12		
N/A	VTRXPAD17	AV13		
N/A	RXNPAD17	AW12		
N/A	RXPPAD17	AW13		
N/A	GNDA17	AU13		
N/A	TXPPAD17	AW14		
N/A	TXNPAD17	AW15		
N/A	VTTXPAD17	AV15		
N/A	AVCCAUXTX17	AV14		
N/A	AVCCAUXRX18	AV16		
N/A	VTRXPAD18	AV17		
N/A	RXNPAD18	AW16		
N/A	RXPPAD18	AW17		

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Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	GNDA18	AU16		
N/A	TXPPAD18	AW18		
N/A	TXNPAD18	AW19		
N/A	VTTXPAD18	AV19		
N/A	AVCCAUXTX18	AV18		
N/A	AVCCAUXRX19	AV21		
N/A	VTRXPAD19	AV22		
N/A	RXNPAD19	AW21		
N/A	RXPPAD19	AW22		
N/A	GNDA19	AU24		
N/A	TXPPAD19	AW23		
N/A	TXNPAD19	AW24		
N/A	VTTXPAD19	AV24		
N/A	AVCCAUXTX19	AV23		
N/A	AVCCAUXRX20	AV25		
N/A	VTRXPAD20	AV26		
N/A	RXNPAD20	AW25		
N/A	RXPPAD20	AW26		
N/A	GNDA20	AU27		
N/A	TXPPAD20	AW27		
N/A	TXNPAD20	AW28		
N/A	VTTXPAD20	AV28		
N/A	AVCCAUXTX20	AV27		
N/A	AVCCAUXRX21	AV29		
N/A	VTRXPAD21	AV30		
N/A	RXNPAD21	AW29		
N/A	RXPPAD21	AW30		
N/A	GNDA21	AU31		
N/A	TXPPAD21	AW31		
N/A	TXNPAD21	AW32		
N/A	VTTXPAD21	AV32		
N/A	AVCCAUXTX21	AV31		
N/A	AVCCAUXRX23	AV33		
N/A	VTRXPAD23	AV34		
N/A	RXNPAD23	AW33		
N/A	RXPPAD23	AW34		
N/A	GNDA23	AU34		
N/A	TXPPAD23	AW35		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	No Connects XC2VP70
N/A	TXNPAD23	AW36		
N/A	VTTXPAD23	AV36		
N/A	AVCCAUXTX23	AV35		
N/A	VCCINT	AH28		
N/A	VCCINT	M28		
N/A	VCCINT	AG27		
N/A	VCCINT	N27		
N/A	VCCINT	AF26		
N/A	VCCINT	P26		
N/A	VCCINT	AE25		
N/A	VCCINT	AD25		
N/A	VCCINT	AC25		
N/A	VCCINT	AB25		
N/A	VCCINT	AA25		
N/A	VCCINT	Y25		
N/A	VCCINT	W25		
N/A	VCCINT	V25		
N/A	VCCINT	U25		
N/A	VCCINT	T25		
N/A	VCCINT	R25		
N/A	VCCINT	AE24		
N/A	VCCINT	AD24		
N/A	VCCINT	T24		
N/A	VCCINT	R24		
N/A	VCCINT	AE23		
N/A	VCCINT	R23		
N/A	VCCINT	AE22		
N/A	VCCINT	R22		
N/A	VCCINT	AE21		
N/A	VCCINT	R21		
N/A	VCCINT	AE20		
N/A	VCCINT	R20		
N/A	VCCINT	AE19		
N/A	VCCINT	R19		
N/A	VCCINT	AE18		
N/A	VCCINT	R18		
N/A	VCCINT	AE17		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	VCCINT	R17		
N/A	VCCINT	AE16		
N/A	VCCINT	AD16		
N/A	VCCINT	T16		
N/A	VCCINT	R16		
N/A	VCCINT	AE15		
N/A	VCCINT	AD15		
N/A	VCCINT	AC15		
N/A	VCCINT	AB15		
N/A	VCCINT	AA15		
N/A	VCCINT	Y15		
N/A	VCCINT	W15		
N/A	VCCINT	V15		
N/A	VCCINT	U15		
N/A	VCCINT	T15		
N/A	VCCINT	R15		
N/A	VCCINT	AF14		
N/A	VCCINT	P14		
N/A	VCCINT	AG13		
N/A	VCCINT	N13		
N/A	VCCINT	AH12		
N/A	VCCINT	M12		
N/A	VCCAUX	AV39		
N/A	VCCAUX	AA39		
N/A	VCCAUX	Y39		
N/A	VCCAUX	W39		
N/A	VCCAUX	B39		
N/A	VCCAUX	AW38		
N/A	VCCAUX	Y38		
N/A	VCCAUX	A38		
N/A	VCCAUX	AR35		
N/A	VCCAUX	E35		
N/A	VCCAUX	AP34		
N/A	VCCAUX	F34		
N/A	VCCAUX	AW20		
N/A	VCCAUX	AV20		
N/A	VCCAUX	B20		
N/A	VCCAUX	A20		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	VCCAUX	AP6		
N/A	VCCAUX	F6		
N/A	VCCAUX	AR5		
N/A	VCCAUX	E5		
N/A	VCCAUX	AW2		
N/A	VCCAUX	Y2		
N/A	VCCAUX	A2		
N/A	VCCAUX	AV1		
N/A	VCCAUX	AA1		
N/A	VCCAUX	Y1		
N/A	VCCAUX	W1		
N/A	VCCAUX	B1		
N/A	GND	A3		
N/A	GND	AV2		
N/A	GND	AU2		
N/A	GND	AA2		
N/A	GND	W2		
N/A	GND	C2		
N/A	GND	B2		
N/A	GND	AU1		
N/A	GND	AM1		
N/A	GND	AH1		
N/A	GND	AD1		
N/A	GND	T1		
N/A	GND	M1		
N/A	GND	H1		
N/A	GND	C1		
N/A	GND	AD5		
N/A	GND	T5		
N/A	GND	M5		
N/A	GND	H5		
N/A	GND	AU4		
N/A	GND	AT4		
N/A	GND	D4		
N/A	GND	C4		
N/A	GND	AW3		
N/A	GND	AV3		

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Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
N/A	GND	AU3		
N/A	GND	AT3		
N/A	GND	D3		
N/A	GND	C3		
N/A	GND	B3		
N/A	GND	AN12		
N/A	GND	G12		
N/A	GND	C12		
N/A	GND	Y10		
N/A	GND	AH9		
N/A	GND	AD9		
N/A	GND	T9		
N/A	GND	M9		
N/A	GND	AU8		
N/A	GND	AN8		
N/A	GND	G8		
N/A	GND	C8		
N/A	GND	Y6		
N/A	GND	AM5		
N/A	GND	AH5		
N/A	GND	T17		
N/A	GND	AT16		
N/A	GND	AN16		
N/A	GND	AJ16		
N/A	GND	AC16		
N/A	GND	AB16		
N/A	GND	AA16		
N/A	GND	Y16		
N/A	GND	W16		
N/A	GND	V16		
N/A	GND	U16		
N/A	GND	L16		
N/A	GND	G16		
N/A	GND	D16		
N/A	GND	AU12		
N/A	GND	AB18		
N/A	GND	AA18		
N/A	GND	Y18		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects XC2VP50	XC2VP70
N/A	GND	W18		
N/A	GND	V18		
N/A	GND	U18		
N/A	GND	T18		
N/A	GND	AD17		
N/A	GND	AC17		
N/A	GND	AB17		
N/A	GND	AA17		
N/A	GND	Y17		
N/A	GND	W17		
N/A	GND	V17		
N/A	GND	U17		
N/A	GND	P20		
N/A	GND	L20		
N/A	GND	G20		
N/A	GND	C20		
N/A	GND	AD19		
N/A	GND	AC19		
N/A	GND	AB19		
N/A	GND	AA19		
N/A	GND	Y19		
N/A	GND	W19		
N/A	GND	V19		
N/A	GND	U19		
N/A	GND	T19		
N/A	GND	AD18		
N/A	GND	AC18		
N/A	GND	U21		
N/A	GND	T21		
N/A	GND	AU20		
N/A	GND	AN20		
N/A	GND	AJ20		
N/A	GND	AF20		
N/A	GND	AD20		
N/A	GND	AC20		
N/A	GND	AB20		
N/A	GND	AA20		
N/A	GND	Y20		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
N/A	GND	W20		
N/A	GND	V20		
N/A	GND	U20		
N/A	GND	T20		
N/A	GND	AC22		
N/A	GND	AB22		
N/A	GND	AA22		
N/A	GND	Y22		
N/A	GND	W22		
N/A	GND	V22		
N/A	GND	U22		
N/A	GND	T22		
N/A	GND	AD21		
N/A	GND	AC21		
N/A	GND	AB21		
N/A	GND	AA21		
N/A	GND	Y21		
N/A	GND	W21		
N/A	GND	V21		
N/A	GND	B38		
N/A	GND	AW37		
N/A	GND	AV37		
N/A	GND	AU37		
N/A	GND	AT37		
N/A	GND	D37		
N/A	GND	C37		
N/A	GND	B37		
N/A	GND	A37		
N/A	GND	AU36		
N/A	GND	AT36		
N/A	GND	D36		
N/A	GND	C36		
N/A	GND	AM35		
N/A	GND	AH35		
N/A	GND	AD35		
N/A	GND	T35		
N/A	GND	M35		
N/A	GND	H35		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	XC2VP70
N/A	GND	Y34		
N/A	GND	AU32		
N/A	GND	AN32		
N/A	GND	G32		
N/A	GND	C32		
N/A	GND	AH31		
N/A	GND	AD31		
N/A	GND	T31		
N/A	GND	M31		
N/A	GND	Y30		
N/A	GND	AU28		
N/A	GND	AN28		
N/A	GND	G28		
N/A	GND	C28		
N/A	GND	AT24		
N/A	GND	AN24		
N/A	GND	AJ24		
N/A	GND	AC24		
N/A	GND	AB24		
N/A	GND	AA24		
N/A	GND	Y24		
N/A	GND	W24		
N/A	GND	V24		
N/A	GND	U24		
N/A	GND	L24		
N/A	GND	G24		
N/A	GND	D24		
N/A	GND	AD23		
N/A	GND	AC23		
N/A	GND	AB23		
N/A	GND	AA23		
N/A	GND	Y23		
N/A	GND	W23		
N/A	GND	V23		
N/A	GND	U23		
N/A	GND	T23		
N/A	GND	AD22		
N/A	GND	AU39		

Table 12: **FF1517 — XC2VP50 and XC2VP70**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP50	**XC2VP70**
N/A	GND	AM39		
N/A	GND	AH39		
N/A	GND	AD39		
N/A	GND	T39		
N/A	GND	M39		
N/A	GND	H39		
N/A	GND	C39		
N/A	GND	AV38		
N/A	GND	AU38		
N/A	GND	AA38		
N/A	GND	W38		
N/A	GND	C38		

FF1517 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)
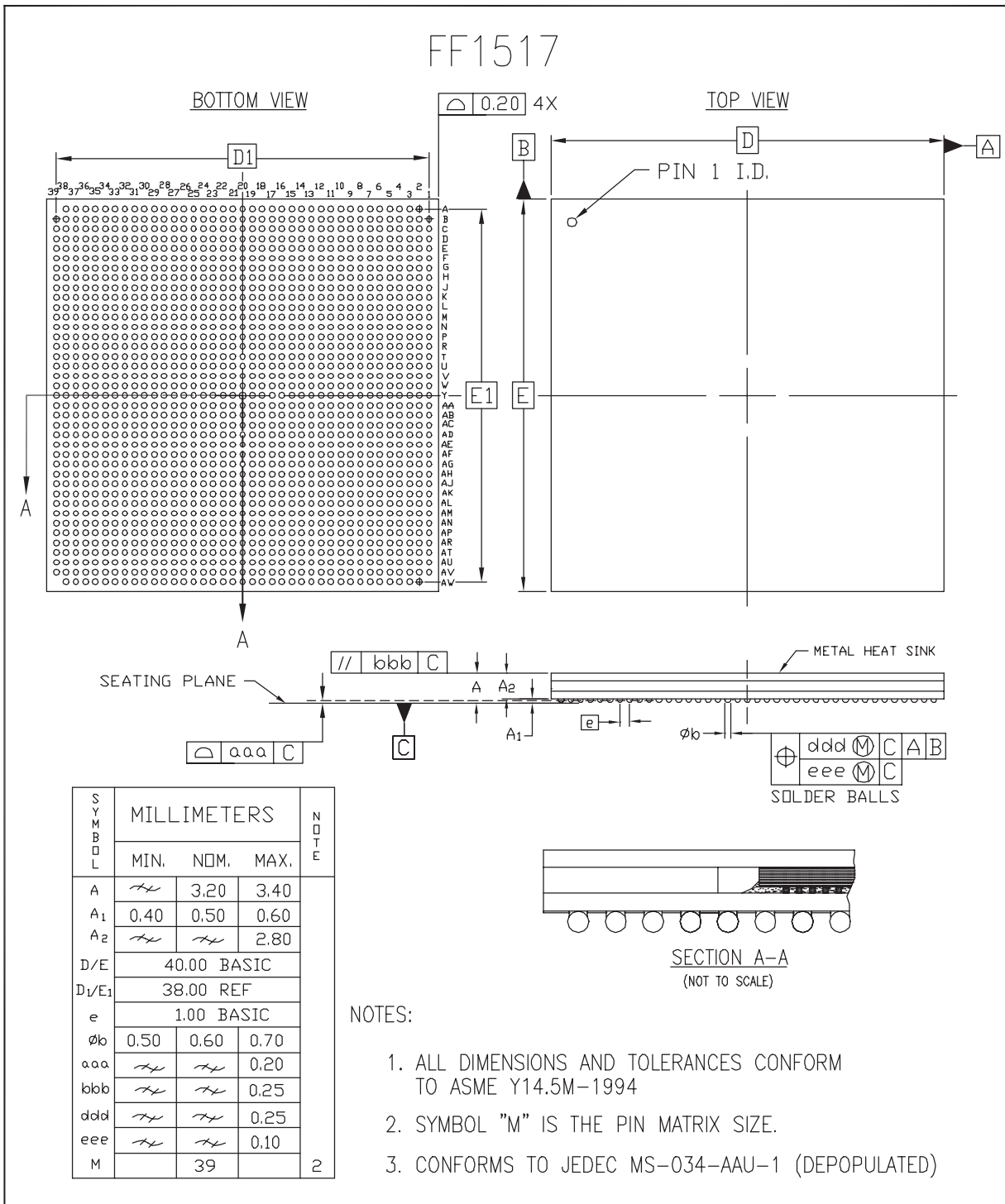

Figure 8: **FF1517 Flip-Chip Fine-Pitch BGA Package Specifications**

FF1704 Flip-Chip Fine-Pitch BGA Package

As shown in Table 13, XC2VP70, XC2VP100, and XC2VP125 Virtex-II Pro devices are available in the FF1704 flip-chip fine-pitch BGA package. Following this table are the FF1704 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
0	IO_L01N_0/VRP_0	G34			
0	IO_L01P_0/VRN_0	H34			
0	IO_L02N_0	F34			
0	IO_L02P_0	E34			
0	IO_L03N_0	C34			
0	IO_L03P_0/VREF_0	D34			
0	IO_L05_0/No_Pair	K32			
0	IO_L06N_0	H33			
0	IO_L06P_0	J33			
0	IO_L07N_0	F33			
0	IO_L07P_0	G33			
0	IO_L08N_0	E33			
0	IO_L08P_0	D33			
0	IO_L09N_0	H32			
0	IO_L09P_0/VREF_0	J32			
0	IO_L19N_0	E32			
0	IO_L19P_0	F32			
0	IO_L20N_0	C33			
0	IO_L20P_0	C32			
0	IO_L21N_0	K31			
0	IO_L21P_0	L31			
0	IO_L25N_0	H31			
0	IO_L25P_0	J31			
0	IO_L26N_0	G31			
0	IO_L26P_0	F31			
0	IO_L27N_0	D31			
0	IO_L27P_0/VREF_0	E31			
0	IO_L28N_0	L30			
0	IO_L28P_0	M30			
0	IO_L29N_0	J30			
0	IO_L29P_0	K30			
0	IO_L30N_0	G30			
0	IO_L30P_0	H30			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
0	IO_L34N_0	E30			
0	IO_L34P_0	F30			
0	IO_L35N_0	D30			
0	IO_L35P_0	C30			
0	IO_L36N_0	M28			
0	IO_L36P_0/VREF_0	M29			
0	IO_L78N_0	K29	NC		
0	IO_L78P_0	L29	NC		
0	IO_L83_0/No_Pair	H29	NC		
0	IO_L84N_0	F29	NC		
0	IO_L84P_0	G29	NC		
0	IO_L85N_0	D29	NC		
0	IO_L85P_0	E29	NC		
0	IO_L86N_0	L28	NC		
0	IO_L86P_0	K28	NC		
0	IO_L87N_0	H28	NC		
0	IO_L87P_0/VREF_0	J28	NC		
0	IO_L37N_0	E28			
0	IO_L37P_0	F28			
0	IO_L38N_0	C29			
0	IO_L38P_0	C28			
0	IO_L39N_0	L27			
0	IO_L39P_0	M27			
0	IO_L43N_0	J27			
0	IO_L43P_0	K27			
0	IO_L44N_0	H27			
0	IO_L44P_0	G27			
0	IO_L45N_0	E27			
0	IO_L45P_0/VREF_0	F27			
0	IO_L46N_0	M25			
0	IO_L46P_0	M26			
0	IO_L47N_0	L26			
0	IO_L47P_0	K26			
0	IO_L48N_0	H26			
0	IO_L48P_0	J26			
0	IO_L49N_0	F26			
0	IO_L49P_0	G26			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP70	XC2VP100	XC2VP125
0	IO_L50_0/No_Pair	D27			
0	IO_L53_0/No_Pair	D26			
0	IO_L54N_0	K25			
0	IO_L54P_0	L25			
0	IO_L55N_0	G25			
0	IO_L55P_0	H25			
0	IO_L56N_0	E26			
0	IO_L56P_0	E25			
0	IO_L57N_0	C25			
0	IO_L57P_0/VREF_0	C26			
0	IO_L58N_0	L24			
0	IO_L58P_0	M24			
0	IO_L59N_0	J24			
0	IO_L59P_0	K24			
0	IO_L60N_0	G24			
0	IO_L60P_0	H24			
0	IO_L64N_0	E24			
0	IO_L64P_0	F24			
0	IO_L65N_0	D24			
0	IO_L65P_0	C24			
0	IO_L66N_0	M22			
0	IO_L66P_0/VREF_0	M23			
0	IO_L67N_0	K23			
0	IO_L67P_0	L23			
0	IO_L68N_0	J23			
0	IO_L68P_0	H23			
0	IO_L69N_0	E23			
0	IO_L69P_0/VREF_0	F23			
0	IO_L73N_0	C23			
0	IO_L73P_0	D23			
0	IO_L74N_0/GCLK7P	K22			
0	IO_L74P_0/GCLK6S	J22			
0	IO_L75N_0/GCLK5P	F22			
0	IO_L75P_0/GCLK4S	G22			
1	IO_L75N_1/GCLK3P	G21			
1	IO_L75P_1/GCLK2S	F21			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
1	IO_L74N_1/GCLK1P	J21			
1	IO_L74P_1/GCLK0S	K21			
1	IO_L73N_1	D20			
1	IO_L73P_1	C20			
1	IO_L69N_1/VREF_1	F20			
1	IO_L69P_1	E20			
1	IO_L68N_1	H20			
1	IO_L68P_1	J20			
1	IO_L67N_1	L20			
1	IO_L67P_1	K20			
1	IO_L66N_1/VREF_1	M20			
1	IO_L66P_1	M21			
1	IO_L65N_1	C19			
1	IO_L65P_1	D19			
1	IO_L64N_1	F19			
1	IO_L64P_1	E19			
1	IO_L60N_1	H19			
1	IO_L60P_1	G19			
1	IO_L59N_1	K19			
1	IO_L59P_1	J19			
1	IO_L58N_1	M19			
1	IO_L58P_1	L19			
1	IO_L57N_1/VREF_1	C17			
1	IO_L57P_1	C18			
1	IO_L56N_1	E18			
1	IO_L56P_1	E17			
1	IO_L55N_1	H18			
1	IO_L55P_1	G18			
1	IO_L54N_1	L18			
1	IO_L54P_1	K18			
1	IO_L53_1/No_Pair	D17			
1	IO_L50_1/No_Pair	D16			
1	IO_L49N_1	G17			
1	IO_L49P_1	F17			
1	IO_L48N_1	J17			
1	IO_L48P_1	H17			
1	IO_L47N_1	K17			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
1	IO_L47P_1	L17			
1	IO_L46N_1	M17			
1	IO_L46P_1	M18			
1	IO_L45N_1/VREF_1	F16			
1	IO_L45P_1	E16			
1	IO_L44N_1	G16			
1	IO_L44P_1	H16			
1	IO_L43N_1	K16			
1	IO_L43P_1	J16			
1	IO_L39N_1	M16			
1	IO_L39P_1	L16			
1	IO_L38N_1	C15			
1	IO_L38P_1	C14			
1	IO_L37N_1	F15			
1	IO_L37P_1	E15			
1	IO_L87N_1/VREF_1	J15	NC		
1	IO_L87P_1	H15	NC		
1	IO_L86N_1	K15	NC		
1	IO_L86P_1	L15	NC		
1	IO_L85N_1	E14	NC		
1	IO_L85P_1	D14	NC		
1	IO_L84N_1	G14	NC		
1	IO_L84P_1	F14	NC		
1	IO_L83_1/No_Pair	H14	NC		
1	IO_L78N_1	L14	NC		
1	IO_L78P_1	K14	NC		
1	IO_L36N_1/VREF_1	M14			
1	IO_L36P_1	M15			
1	IO_L35N_1	C13			
1	IO_L35P_1	D13			
1	IO_L34N_1	F13			
1	IO_L34P_1	E13			
1	IO_L30N_1	H13			
1	IO_L30P_1	G13			
1	IO_L29N_1	K13			
1	IO_L29P_1	J13			
1	IO_L28N_1	M13			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
1	IO_L28P_1	L13			
1	IO_L27N_1/VREF_1	E12			
1	IO_L27P_1	D12			
1	IO_L26N_1	F12			
1	IO_L26P_1	G12			
1	IO_L25N_1	J12			
1	IO_L25P_1	H12			
1	IO_L21N_1	L12			
1	IO_L21P_1	K12			
1	IO_L20N_1	C11			
1	IO_L20P_1	C10			
1	IO_L19N_1	F11			
1	IO_L19P_1	E11			
1	IO_L09N_1/VREF_1	J11			
1	IO_L09P_1	H11			
1	IO_L08N_1	D10			
1	IO_L08P_1	E10			
1	IO_L07N_1	G10			
1	IO_L07P_1	F10			
1	IO_L06N_1	J10			
1	IO_L06P_1	H10			
1	IO_L05_1/No_Pair	K11			
1	IO_L03N_1/VREF_1	D9			
1	IO_L03P_1	C9			
1	IO_L02N_1	E9			
1	IO_L02P_1	F9			
1	IO_L01N_1/VRP_1	H9			
1	IO_L01P_1/VRN_1	G9			
2	IO_L01N_2/VRP_2	C5			
2	IO_L01P_2/VRN_2	C6			
2	IO_L02N_2	E7			
2	IO_L02P_2	D7			
2	IO_L03N_2	E6			
2	IO_L03P_2	D6			
2	IO_L04N_2/VREF_2	G6			
2	IO_L04P_2	F7			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
2	IO_L05N_2	D3			
2	IO_L05P_2	E3			
2	IO_L06N_2	D1			
2	IO_L06P_2	D2			
2	IO_L73N_2	E1			
2	IO_L73P_2	E2			
2	IO_L74N_2	F4			
2	IO_L74P_2	F3			
2	IO_L75N_2	F1			
2	IO_L75P_2	F2			
2	IO_L76N_2/VREF_2	G3			
2	IO_L76P_2	G4			
2	IO_L77N_2	G2			
2	IO_L77P_2	G1			
2	IO_L78N_2	G5			
2	IO_L78P_2	H6			
2	IO_L79N_2	H4			
2	IO_L79P_2	H5			
2	IO_L80N_2	H3			
2	IO_L80P_2	H2			
2	IO_L81N_2	H7			
2	IO_L81P_2	J8			
2	IO_L82N_2/VREF_2	J6			
2	IO_L82P_2	J7			
2	IO_L83N_2	J5			
2	IO_L83P_2	J4			
2	IO_L84N_2	J1			
2	IO_L84P_2	J2			
2	IO_L07N_2	K9			
2	IO_L07P_2	L10			
2	IO_L08N_2	K6			
2	IO_L08P_2	K5			
2	IO_L09N_2	K8			
2	IO_L09P_2	K7			
2	IO_L10N_2/VREF_2	K2			
2	IO_L10P_2	K1			
2	IO_L11N_2	L8			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
2	IO_L11P_2	L9			
2	IO_L12N_2	L6			
2	IO_L12P_2	L7			
2	IO_L13N_2	K3			
2	IO_L13P_2	L3			
2	IO_L14N_2	L5			
2	IO_L14P_2	L4			
2	IO_L15N_2	L1			
2	IO_L15P_2	L2			
2	IO_L16N_2/VREF_2	M7			
2	IO_L16P_2	M8			
2	IO_L17N_2	M11			
2	IO_L17P_2	M12			
2	IO_L18N_2	M9			
2	IO_L18P_2	M10			
2	IO_L19N_2	M2			
2	IO_L19P_2	M3			
2	IO_L20N_2	M4			
2	IO_L20P_2	M5			
2	IO_L21N_2	N7			
2	IO_L21P_2	N8			
2	IO_L22N_2/VREF_2	N5			
2	IO_L22P_2	N6			
2	IO_L23N_2	N9			
2	IO_L23P_2	N10			
2	IO_L24N_2	N3			
2	IO_L24P_2	N4			
2	IO_L25N_2	N1			
2	IO_L25P_2	N2			
2	IO_L26N_2	N11			
2	IO_L26P_2	N12			
2	IO_L27N_2	P9			
2	IO_L27P_2	P10			
2	IO_L28N_2/VREF_2	P7			
2	IO_L28P_2	P8			
2	IO_L29N_2	P11			
2	IO_L29P_2	P12			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
2	IO_L30N_2	P5			
2	IO_L30P_2	P6			
2	IO_L31N_2	P1			
2	IO_L31P_2	P2			
2	IO_L32N_2	R9			
2	IO_L32P_2	R10			
2	IO_L33N_2	R5			
2	IO_L33P_2	R6			
2	IO_L34N_2/VREF_2	P3			
2	IO_L34P_2	R3			
2	IO_L35N_2	R1			
2	IO_L35P_2	R2			
2	IO_L36N_2	R11			
2	IO_L36P_2	R12			
2	IO_L37N_2	T6			
2	IO_L37P_2	T7			
2	IO_L38N_2	T8			
2	IO_L38P_2	R8			
2	IO_L39N_2	T4			
2	IO_L39P_2	T5			
2	IO_L40N_2/VREF_2	T2			
2	IO_L40P_2	T3			
2	IO_L41N_2	T10			
2	IO_L41P_2	T11			
2	IO_L42N_2	U7			
2	IO_L42P_2	U8			
2	IO_L43N_2	U5			
2	IO_L43P_2	U6			
2	IO_L44N_2	U9			
2	IO_L44P_2	U10			
2	IO_L45N_2	U3			
2	IO_L45P_2	U4			
2	IO_L46N_2/VREF_2	U1			
2	IO_L46P_2	U2			
2	IO_L47N_2	T12			
2	IO_L47P_2	U12			
2	IO_L48N_2	V10			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
2	IO_L48P_2	V11			
2	IO_L49N_2	V7			
2	IO_L49P_2	V8			
2	IO_L50N_2	U11			
2	IO_L50P_2	V12			
2	IO_L51N_2	V4			
2	IO_L51P_2	V5			
2	IO_L52N_2/VREF_2	V1			
2	IO_L52P_2	V2			
2	IO_L53N_2	W9			
2	IO_L53P_2	W10			
2	IO_L54N_2	W7			
2	IO_L54P_2	W8			
2	IO_L55N_2	W5			
2	IO_L55P_2	W6			
2	IO_L56N_2	W11			
2	IO_L56P_2	W12			
2	IO_L57N_2	W3			
2	IO_L57P_2	W4			
2	IO_L58N_2/VREF_2	W1			
2	IO_L58P_2	W2			
2	IO_L59N_2	Y9			
2	IO_L59P_2	Y10			
2	IO_L60N_2	Y6			
2	IO_L60P_2	Y7			
2	IO_L85N_2	Y3			
2	IO_L85P_2	Y4			
2	IO_L86N_2	Y11			
2	IO_L86P_2	Y12			
2	IO_L87N_2	AA9			
2	IO_L87P_2	AA10			
2	IO_L88N_2/VREF_2	AA6			
2	IO_L88P_2	AA7			
2	IO_L89N_2	AA12			
2	IO_L89P_2	AB12			
2	IO_L90N_2	AA3			
2	IO_L90P_2	AA4			

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Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
3	IO_L90N_3	AB3			
3	IO_L90P_3	AB4			
3	IO_L89N_3	AB6			
3	IO_L89P_3	AB7			
3	IO_L88N_3	AB9			
3	IO_L88P_3	AB10			
3	IO_L87N_3/VREF_3	AC3			
3	IO_L87P_3	AC4			
3	IO_L86N_3	AC11			
3	IO_L86P_3	AC12			
3	IO_L85N_3	AC6			
3	IO_L85P_3	AC7			
3	IO_L60N_3	AC9			
3	IO_L60P_3	AC10			
3	IO_L59N_3	AD9			
3	IO_L59P_3	AD10			
3	IO_L58N_3	AD1			
3	IO_L58P_3	AD2			
3	IO_L57N_3/VREF_3	AD3			
3	IO_L57P_3	AD4			
3	IO_L56N_3	AD11			
3	IO_L56P_3	AD12			
3	IO_L55N_3	AD5			
3	IO_L55P_3	AD6			
3	IO_L54N_3	AD7			
3	IO_L54P_3	AD8			
3	IO_L53N_3	AE10			
3	IO_L53P_3	AE11			
3	IO_L52N_3	AE1			
3	IO_L52P_3	AE2			
3	IO_L51N_3/VREF_3	AE4			
3	IO_L51P_3	AE5			
3	IO_L50N_3	AF11			
3	IO_L50P_3	AE12			
3	IO_L49N_3	AE7			
3	IO_L49P_3	AE8			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
3	IO_L48N_3	AF1			
3	IO_L48P_3	AF2			
3	IO_L47N_3	AG12			
3	IO_L47P_3	AF12			
3	IO_L46N_3	AF3			
3	IO_L46P_3	AF4			
3	IO_L45N_3/VREF_3	AF5			
3	IO_L45P_3	AF6			
3	IO_L44N_3	AF7			
3	IO_L44P_3	AF8			
3	IO_L43N_3	AF9			
3	IO_L43P_3	AF10			
3	IO_L42N_3	AG2			
3	IO_L42P_3	AG3			
3	IO_L41N_3	AG10			
3	IO_L41P_3	AG11			
3	IO_L40N_3	AG4			
3	IO_L40P_3	AG5			
3	IO_L39N_3/VREF_3	AG6			
3	IO_L39P_3	AG7			
3	IO_L38N_3	AG8			
3	IO_L38P_3	AH8			
3	IO_L37N_3	AH1			
3	IO_L37P_3	AH2			
3	IO_L36N_3	AH3			
3	IO_L36P_3	AJ3			
3	IO_L35N_3	AH11			
3	IO_L35P_3	AH12			
3	IO_L34N_3	AH5			
3	IO_L34P_3	AH6			
3	IO_L33N_3/VREF_3	AH9			
3	IO_L33P_3	AH10			
3	IO_L32N_3	AJ11			
3	IO_L32P_3	AJ12			
3	IO_L31N_3	AJ1			
3	IO_L31P_3	AJ2			
3	IO_L30N_3	AJ5			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
3	IO_L30P_3	AJ6			
3	IO_L29N_3	AJ9			
3	IO_L29P_3	AJ10			
3	IO_L28N_3	AJ7			
3	IO_L28P_3	AJ8			
3	IO_L27N_3/VREF_3	AK1			
3	IO_L27P_3	AK2			
3	IO_L26N_3	AK11			
3	IO_L26P_3	AK12			
3	IO_L25N_3	AK3			
3	IO_L25P_3	AK4			
3	IO_L24N_3	AK5			
3	IO_L24P_3	AK6			
3	IO_L23N_3	AK9			
3	IO_L23P_3	AK10			
3	IO_L22N_3	AK7			
3	IO_L22P_3	AK8			
3	IO_L21N_3/VREF_3	AL2			
3	IO_L21P_3	AL3			
3	IO_L20N_3	AL11			
3	IO_L20P_3	AL12			
3	IO_L19N_3	AL4			
3	IO_L19P_3	AL5			
3	IO_L18N_3	AL7			
3	IO_L18P_3	AL8			
3	IO_L17N_3	AL9			
3	IO_L17P_3	AL10			
3	IO_L16N_3	AM1			
3	IO_L16P_3	AM2			
3	IO_L15N_3/VREF_3	AM3			
3	IO_L15P_3	AN3			
3	IO_L14N_3	AM8			
3	IO_L14P_3	AM9			
3	IO_L13N_3	AM4			
3	IO_L13P_3	AM5			
3	IO_L12N_3	AM6			
3	IO_L12P_3	AM7			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
3	IO_L11N_3	AN9			
3	IO_L11P_3	AM10			
3	IO_L10N_3	AN1			
3	IO_L10P_3	AN2			
3	IO_L09N_3/VREF_3	AN5			
3	IO_L09P_3	AN6			
3	IO_L08N_3	AN7			
3	IO_L08P_3	AN8			
3	IO_L07N_3	AP1			
3	IO_L07P_3	AP2			
3	IO_L84N_3	AP4			
3	IO_L84P_3	AP5			
3	IO_L83N_3	AR7			
3	IO_L83P_3	AP8			
3	IO_L82N_3	AP6			
3	IO_L82P_3	AP7			
3	IO_L81N_3/VREF_3	AR2			
3	IO_L81P_3	AR3			
3	IO_L80N_3	AT5			
3	IO_L80P_3	AR6			
3	IO_L79N_3	AR4			
3	IO_L79P_3	AR5			
3	IO_L78N_3	AT1			
3	IO_L78P_3	AT2			
3	IO_L77N_3	AT3			
3	IO_L77P_3	AT4			
3	IO_L76N_3	AU1			
3	IO_L76P_3	AU2			
3	IO_L75N_3/VREF_3	AU3			
3	IO_L75P_3	AU4			
3	IO_L74N_3	AV3			
3	IO_L74P_3	AW3			
3	IO_L73N_3	AV1			
3	IO_L73P_3	AV2			
3	IO_L06N_3	AW1			
3	IO_L06P_3	AW2			
3	IO_L05N_3	AT8			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
3	IO_L05P_3	AU8			
3	IO_L04N_3	AT6			
3	IO_L04P_3	AU7			
3	IO_L03N_3/VREF_3	AY5			
3	IO_L03P_3	AY6			
3	IO_L02N_3	AV7			
3	IO_L02P_3	AW7			
3	IO_L01N_3/VRP_3	AV6			
3	IO_L01P_3/VRN_3	AW6			
4	IO_L01N_4/DOUT	AT9			
4	IO_L01P_4/INIT_B	AR9			
4	IO_L02N_4/D0	AU9			
4	IO_L02P_4/D1	AV9			
4	IO_L03N_4/D2	AY9			
4	IO_L03P_4/D3	AW9			
4	IO_L05_4/No_Pair	AN11			
4	IO_L06N_4/VRP_4	AR10			
4	IO_L06P_4/VRN_4	AP10			
4	IO_L07N_4	AU10			
4	IO_L07P_4/VREF_4	AT10			
4	IO_L08N_4	AV10			
4	IO_L08P_4	AW10			
4	IO_L09N_4	AR11			
4	IO_L09P_4/VREF_4	AP11			
4	IO_L19N_4	AV11			
4	IO_L19P_4	AU11			
4	IO_L20N_4	AY10			
4	IO_L20P_4	AY11			
4	IO_L21N_4	AN12			
4	IO_L21P_4	AM12			
4	IO_L25N_4	AR12			
4	IO_L25P_4	AP12			
4	IO_L26N_4	AT12			
4	IO_L26P_4	AU12			
4	IO_L27N_4	AW12			
4	IO_L27P_4/VREF_4	AV12			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
4	IO_L28N_4	AM13			
4	IO_L28P_4	AL13			
4	IO_L29N_4	AP13			
4	IO_L29P_4	AN13			
4	IO_L30N_4	AT13			
4	IO_L30P_4	AR13			
4	IO_L34N_4	AV13			
4	IO_L34P_4	AU13			
4	IO_L35N_4	AW13			
4	IO_L35P_4	AY13			
4	IO_L36N_4	AL15			
4	IO_L36P_4/VREF_4	AL14			
4	IO_L78N_4	AN14	NC		
4	IO_L78P_4	AM14	NC		
4	IO_L83_4/No_Pair	AR14	NC		
4	IO_L84N_4	AU14	NC		
4	IO_L84P_4	AT14	NC		
4	IO_L85N_4	AW14	NC		
4	IO_L85P_4	AV14	NC		
4	IO_L86N_4	AM15	NC		
4	IO_L86P_4	AN15	NC		
4	IO_L87N_4	AR15	NC		
4	IO_L87P_4/VREF_4	AP15	NC		
4	IO_L37N_4	AV15			
4	IO_L37P_4	AU15			
4	IO_L38N_4	AY14			
4	IO_L38P_4	AY15			
4	IO_L39N_4	AM16			
4	IO_L39P_4	AL16			
4	IO_L43N_4	AP16			
4	IO_L43P_4	AN16			
4	IO_L44N_4	AR16			
4	IO_L44P_4	AT16			
4	IO_L45N_4	AV16			
4	IO_L45P_4/VREF_4	AU16			
4	IO_L46N_4	AL18			
4	IO_L46P_4	AL17			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
4	IO_L47N_4	AM17			
4	IO_L47P_4	AN17			
4	IO_L48N_4	AR17			
4	IO_L48P_4	AP17			
4	IO_L49N_4	AU17			
4	IO_L49P_4	AT17			
4	IO_L50_4/No_Pair	AW16			
4	IO_L53_4/No_Pair	AW17			
4	IO_L54N_4	AN18			
4	IO_L54P_4	AM18			
4	IO_L55N_4	AT18			
4	IO_L55P_4	AR18			
4	IO_L56N_4	AV17			
4	IO_L56P_4	AV18			
4	IO_L57N_4	AY18			
4	IO_L57P_4/VREF_4	AY17			
4	IO_L58N_4	AM19			
4	IO_L58P_4	AL19			
4	IO_L59N_4	AP19			
4	IO_L59P_4	AN19			
4	IO_L60N_4	AT19			
4	IO_L60P_4	AR19			
4	IO_L64N_4	AV19			
4	IO_L64P_4	AU19			
4	IO_L65N_4	AW19			
4	IO_L65P_4	AY19			
4	IO_L66N_4	AL21			
4	IO_L66P_4/VREF_4	AL20			
4	IO_L67N_4	AN20			
4	IO_L67P_4	AM20			
4	IO_L68N_4	AP20			
4	IO_L68P_4	AR20			
4	IO_L69N_4	AV20			
4	IO_L69P_4/VREF_4	AU20			
4	IO_L73N_4	AY20			
4	IO_L73P_4	AW20			
4	IO_L74N_4/GCLK3S	AN21			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
4	IO_L74P_4/GCLK2P	AP21			
4	IO_L75N_4/GCLK1S	AU21			
4	IO_L75P_4/GCLK0P	AT21			
5	IO_L75N_5/GCLK7S	AT22			
5	IO_L75P_5/GCLK6P	AU22			
5	IO_L74N_5/GCLK5S	AP22			
5	IO_L74P_5/GCLK4P	AN22			
5	IO_L73N_5	AW23			
5	IO_L73P_5	AY23			
5	IO_L69N_5/VREF_5	AU23			
5	IO_L69P_5	AV23			
5	IO_L68N_5	AR23			
5	IO_L68P_5	AP23			
5	IO_L67N_5	AM23			
5	IO_L67P_5	AN23			
5	IO_L66N_5/VREF_5	AL23			
5	IO_L66P_5	AL22			
5	IO_L65N_5	AY24			
5	IO_L65P_5	AW24			
5	IO_L64N_5	AU24			
5	IO_L64P_5	AV24			
5	IO_L60N_5	AR24			
5	IO_L60P_5	AT24			
5	IO_L59N_5	AN24			
5	IO_L59P_5	AP24			
5	IO_L58N_5	AL24			
5	IO_L58P_5	AM24			
5	IO_L57N_5/VREF_5	AY26			
5	IO_L57P_5	AY25			
5	IO_L56N_5	AV25			
5	IO_L56P_5	AV26			
5	IO_L55N_5	AR25			
5	IO_L55P_5	AT25			
5	IO_L54N_5	AM25			
5	IO_L54P_5	AN25			
5	IO_L53_5/No_Pair	AW26			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
5	IO_L50_5/No_Pair	AW27			
5	IO_L49N_5	AT26			
5	IO_L49P_5	AU26			
5	IO_L48N_5	AP26			
5	IO_L48P_5	AR26			
5	IO_L47N_5	AN26			
5	IO_L47P_5	AM26			
5	IO_L46N_5	AL26			
5	IO_L46P_5	AL25			
5	IO_L45N_5/VREF_5	AU27			
5	IO_L45P_5	AV27			
5	IO_L44N_5	AT27			
5	IO_L44P_5	AR27			
5	IO_L43N_5	AN27			
5	IO_L43P_5	AP27			
5	IO_L39N_5	AL27			
5	IO_L39P_5	AM27			
5	IO_L38N_5	AY28			
5	IO_L38P_5	AY29			
5	IO_L37N_5	AU28			
5	IO_L37P_5	AV28			
5	IO_L87N_5/VREF_5	AP28	NC		
5	IO_L87P_5	AR28	NC		
5	IO_L86N_5	AN28	NC		
5	IO_L86P_5	AM28	NC		
5	IO_L85N_5	AV29	NC		
5	IO_L85P_5	AW29	NC		
5	IO_L84N_5	AT29	NC		
5	IO_L84P_5	AU29	NC		
5	IO_L83_5/No_Pair	AR29	NC		
5	IO_L78N_5	AM29	NC		
5	IO_L78P_5	AN29	NC		
5	IO_L36N_5/VREF_5	AL29			
5	IO_L36P_5	AL28			
5	IO_L35N_5	AY30			
5	IO_L35P_5	AW30			
5	IO_L34N_5	AU30			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP70	XC2VP100	XC2VP125
5	IO_L34P_5	AV30			
5	IO_L30N_5	AR30			
5	IO_L30P_5	AT30			
5	IO_L29N_5	AN30			
5	IO_L29P_5	AP30			
5	IO_L28N_5	AL30			
5	IO_L28P_5	AM30			
5	IO_L27N_5/VREF_5	AV31			
5	IO_L27P_5	AW31			
5	IO_L26N_5	AU31			
5	IO_L26P_5	AT31			
5	IO_L25N_5	AP31			
5	IO_L25P_5	AR31			
5	IO_L21N_5	AM31			
5	IO_L21P_5	AN31			
5	IO_L20N_5	AY32			
5	IO_L20P_5	AY33			
5	IO_L19N_5	AU32			
5	IO_L19P_5	AV32			
5	IO_L09N_5/VREF_5	AP32			
5	IO_L09P_5	AR32			
5	IO_L08N_5	AW33			
5	IO_L08P_5	AV33			
5	IO_L07N_5/VREF_5	AT33			
5	IO_L07P_5	AU33			
5	IO_L06N_5/VRP_5	AP33			
5	IO_L06P_5/VRN_5	AR33			
5	IO_L05_5/No_Pair	AN32			
5	IO_L03N_5/D4	AW34			
5	IO_L03P_5/D5	AY34			
5	IO_L02N_5/D6	AV34			
5	IO_L02P_5/D7	AU34			
5	IO_L01N_5/RDWR_B	AR34			
5	IO_L01P_5/CS_B	AT34			
6	IO_L01P_6/VRN_6	AW37			
6	IO_L01N_6/VRP_6	AV37			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
6	IO_L02P_6	AW36			
6	IO_L02N_6	AV36			
6	IO_L03P_6	AY37			
6	IO_L03N_6/VREF_6	AY38			
6	IO_L04P_6	AU36			
6	IO_L04N_6	AT37			
6	IO_L05P_6	AU35			
6	IO_L05N_6	AT35			
6	IO_L06P_6	AW41			
6	IO_L06N_6	AW42			
6	IO_L73P_6	AV41			
6	IO_L73N_6	AV42			
6	IO_L74P_6	AW40			
6	IO_L74N_6	AV40			
6	IO_L75P_6	AU39			
6	IO_L75N_6/VREF_6	AU40			
6	IO_L76P_6	AU41			
6	IO_L76N_6	AU42			
6	IO_L77P_6	AT39			
6	IO_L77N_6	AT40			
6	IO_L78P_6	AT41			
6	IO_L78N_6	AT42			
6	IO_L79P_6	AR38			
6	IO_L79N_6	AR39			
6	IO_L80P_6	AR37			
6	IO_L80N_6	AT38			
6	IO_L81P_6	AR40			
6	IO_L81N_6/VREF_6	AR41			
6	IO_L82P_6	AP36			
6	IO_L82N_6	AP37			
6	IO_L83P_6	AP35			
6	IO_L83N_6	AR36			
6	IO_L84P_6	AP38			
6	IO_L84N_6	AP39			
6	IO_L07P_6	AP41			
6	IO_L07N_6	AP42			
6	IO_L08P_6	AN35			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
6	IO_L08N_6	AN36			
6	IO_L09P_6	AN37			
6	IO_L09N_6/VREF_6	AN38			
6	IO_L10P_6	AN41			
6	IO_L10N_6	AN42			
6	IO_L11P_6	AM33			
6	IO_L11N_6	AN34			
6	IO_L12P_6	AM36			
6	IO_L12N_6	AM37			
6	IO_L13P_6	AM38			
6	IO_L13N_6	AM39			
6	IO_L14P_6	AM34			
6	IO_L14N_6	AM35			
6	IO_L15P_6	AN40			
6	IO_L15N_6/VREF_6	AM40			
6	IO_L16P_6	AM41			
6	IO_L16N_6	AM42			
6	IO_L17P_6	AL33			
6	IO_L17N_6	AL34			
6	IO_L18P_6	AL35			
6	IO_L18N_6	AL36			
6	IO_L19P_6	AL38			
6	IO_L19N_6	AL39			
6	IO_L20P_6	AL31			
6	IO_L20N_6	AL32			
6	IO_L21P_6	AL40			
6	IO_L21N_6/VREF_6	AL41			
6	IO_L22P_6	AK35			
6	IO_L22N_6	AK36			
6	IO_L23P_6	AK33			
6	IO_L23N_6	AK34			
6	IO_L24P_6	AK37			
6	IO_L24N_6	AK38			
6	IO_L25P_6	AK39			
6	IO_L25N_6	AK40			
6	IO_L26P_6	AK31			
6	IO_L26N_6	AK32			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

			No Connects		
Bank	**Pin Description**	**Pin Number**	**XC2VP70**	**XC2VP100**	**XC2VP125**
6	IO_L27P_6	AK41			
6	IO_L27N_6/VREF_6	AK42			
6	IO_L28P_6	AJ35			
6	IO_L28N_6	AJ36			
6	IO_L29P_6	AJ33			
6	IO_L29N_6	AJ34			
6	IO_L30P_6	AJ37			
6	IO_L30N_6	AJ38			
6	IO_L31P_6	AJ41			
6	IO_L31N_6	AJ42			
6	IO_L32P_6	AJ31			
6	IO_L32N_6	AJ32			
6	IO_L33P_6	AH33			
6	IO_L33N_6/VREF_6	AH34			
6	IO_L34P_6	AH37			
6	IO_L34N_6	AH38			
6	IO_L35P_6	AH31			
6	IO_L35N_6	AH32			
6	IO_L36P_6	AJ40			
6	IO_L36N_6	AH40			
6	IO_L37P_6	AH41			
6	IO_L37N_6	AH42			
6	IO_L38P_6	AH35			
6	IO_L38N_6	AG35			
6	IO_L39P_6	AG36			
6	IO_L39N_6/VREF_6	AG37			
6	IO_L40P_6	AG38			
6	IO_L40N_6	AG39			
6	IO_L41P_6	AG32			
6	IO_L41N_6	AG33			
6	IO_L42P_6	AG40			
6	IO_L42N_6	AG41			
6	IO_L43P_6	AF33			
6	IO_L43N_6	AF34			
6	IO_L44P_6	AF35			
6	IO_L44N_6	AF36			
6	IO_L45P_6	AF37			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
6	IO_L45N_6/VREF_6	AF38			
6	IO_L46P_6	AF39			
6	IO_L46N_6	AF40			
6	IO_L47P_6	AF31			
6	IO_L47N_6	AG31			
6	IO_L48P_6	AF41			
6	IO_L48N_6	AF42			
6	IO_L49P_6	AE35			
6	IO_L49N_6	AE36			
6	IO_L50P_6	AE31			
6	IO_L50N_6	AF32			
6	IO_L51P_6	AE38			
6	IO_L51N_6/VREF_6	AE39			
6	IO_L52P_6	AE41			
6	IO_L52N_6	AE42			
6	IO_L53P_6	AE32			
6	IO_L53N_6	AE33			
6	IO_L54P_6	AD35			
6	IO_L54N_6	AD36			
6	IO_L55P_6	AD37			
6	IO_L55N_6	AD38			
6	IO_L56P_6	AD31			
6	IO_L56N_6	AD32			
6	IO_L57P_6	AD39			
6	IO_L57N_6/VREF_6	AD40			
6	IO_L58P_6	AD41			
6	IO_L58N_6	AD42			
6	IO_L59P_6	AD33			
6	IO_L59N_6	AD34			
6	IO_L60P_6	AC33			
6	IO_L60N_6	AC34			
6	IO_L85P_6	AC36			
6	IO_L85N_6	AC37			
6	IO_L86P_6	AC31			
6	IO_L86N_6	AC32			
6	IO_L87P_6	AC39			
6	IO_L87N_6/VREF_6	AC40			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
6	IO_L88P_6	AB33			
6	IO_L88N_6	AB34			
6	IO_L89P_6	AB36			
6	IO_L89N_6	AB37			
6	IO_L90P_6	AB39			
6	IO_L90N_6	AB40			
7	IO_L90P_7	AA39			
7	IO_L90N_7	AA40			
7	IO_L89P_7	AB31			
7	IO_L89N_7	AA31			
7	IO_L88P_7	AA36			
7	IO_L88N_7/VREF_7	AA37			
7	IO_L87P_7	AA33			
7	IO_L87N_7	AA34			
7	IO_L86P_7	Y31			
7	IO_L86N_7	Y32			
7	IO_L85P_7	Y39			
7	IO_L85N_7	Y40			
7	IO_L60P_7	Y36			
7	IO_L60N_7	Y37			
7	IO_L59P_7	Y33			
7	IO_L59N_7	Y34			
7	IO_L58P_7	W41			
7	IO_L58N_7/VREF_7	W42			
7	IO_L57P_7	W39			
7	IO_L57N_7	W40			
7	IO_L56P_7	W31			
7	IO_L56N_7	W32			
7	IO_L55P_7	W37			
7	IO_L55N_7	W38			
7	IO_L54P_7	W35			
7	IO_L54N_7	W36			
7	IO_L53P_7	W33			
7	IO_L53N_7	W34			
7	IO_L52P_7	V41			
7	IO_L52N_7/VREF_7	V42			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
7	IO_L51P_7	V38			
7	IO_L51N_7	V39			
7	IO_L50P_7	V31			
7	IO_L50N_7	U32			
7	IO_L49P_7	V35			
7	IO_L49N_7	V36			
7	IO_L48P_7	V32			
7	IO_L48N_7	V33			
7	IO_L47P_7	U31			
7	IO_L47N_7	T31			
7	IO_L46P_7	U41			
7	IO_L46N_7/VREF_7	U42			
7	IO_L45P_7	U39			
7	IO_L45N_7	U40			
7	IO_L44P_7	U33			
7	IO_L44N_7	U34			
7	IO_L43P_7	U37			
7	IO_L43N_7	U38			
7	IO_L42P_7	U35			
7	IO_L42N_7	U36			
7	IO_L41P_7	T32			
7	IO_L41N_7	T33			
7	IO_L40P_7	T40			
7	IO_L40N_7/VREF_7	T41			
7	IO_L39P_7	T38			
7	IO_L39N_7	T39			
7	IO_L38P_7	R35			
7	IO_L38N_7	T35			
7	IO_L37P_7	T36			
7	IO_L37N_7	T37			
7	IO_L36P_7	R31			
7	IO_L36N_7	R32			
7	IO_L35P_7	R41			
7	IO_L35N_7	R42			
7	IO_L34P_7	R40			
7	IO_L34N_7/VREF_7	P40			
7	IO_L33P_7	R37			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
7	IO_L33N_7	R38			
7	IO_L32P_7	R33			
7	IO_L32N_7	R34			
7	IO_L31P_7	P41			
7	IO_L31N_7	P42			
7	IO_L30P_7	P37			
7	IO_L30N_7	P38			
7	IO_L29P_7	P31			
7	IO_L29N_7	P32			
7	IO_L28P_7	P35			
7	IO_L28N_7/VREF_7	P36			
7	IO_L27P_7	P33			
7	IO_L27N_7	P34			
7	IO_L26P_7	N31			
7	IO_L26N_7	N32			
7	IO_L25P_7	N41			
7	IO_L25N_7	N42			
7	IO_L24P_7	N39			
7	IO_L24N_7	N40			
7	IO_L23P_7	N33			
7	IO_L23N_7	N34			
7	IO_L22P_7	N37			
7	IO_L22N_7/VREF_7	N38			
7	IO_L21P_7	N35			
7	IO_L21N_7	N36			
7	IO_L20P_7	M38			
7	IO_L20N_7	M39			
7	IO_L19P_7	M40			
7	IO_L19N_7	M41			
7	IO_L18P_7	M33			
7	IO_L18N_7	M34			
7	IO_L17P_7	M31			
7	IO_L17N_7	M32			
7	IO_L16P_7	M35			
7	IO_L16N_7/VREF_7	M36			
7	IO_L15P_7	L41			
7	IO_L15N_7	L42			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
7	IO_L14P_7	L39			
7	IO_L14N_7	L38			
7	IO_L13P_7	L40			
7	IO_L13N_7	K40			
7	IO_L12P_7	L36			
7	IO_L12N_7	L37			
7	IO_L11P_7	L34			
7	IO_L11N_7	L35			
7	IO_L10P_7	K42			
7	IO_L10N_7/VREF_7	K41			
7	IO_L09P_7	K36			
7	IO_L09N_7	K35			
7	IO_L08P_7	K38			
7	IO_L08N_7	K37			
7	IO_L07P_7	L33			
7	IO_L07N_7	K34			
7	IO_L84P_7	J41			
7	IO_L84N_7	J42			
7	IO_L83P_7	J39			
7	IO_L83N_7	J38			
7	IO_L82P_7	J36			
7	IO_L82N_7/VREF_7	J37			
7	IO_L81P_7	J35			
7	IO_L81N_7	H36			
7	IO_L80P_7	H41			
7	IO_L80N_7	H40			
7	IO_L79P_7	H38			
7	IO_L79N_7	H39			
7	IO_L78P_7	H37			
7	IO_L78N_7	G38			
7	IO_L77P_7	G42			
7	IO_L77N_7	G41			
7	IO_L76P_7	G39			
7	IO_L76N_7/VREF_7	G40			
7	IO_L75P_7	F41			
7	IO_L75N_7	F42			
7	IO_L74P_7	F40			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
7	IO_L74N_7	F39			
7	IO_L73P_7	E41			
7	IO_L73N_7	E42			
7	IO_L06P_7	D41			
7	IO_L06N_7	D42			
7	IO_L05P_7	E40			
7	IO_L05N_7	D40			
7	IO_L04P_7	F36			
7	IO_L04N_7/VREF_7	G37			
7	IO_L03P_7	D37			
7	IO_L03N_7	E37			
7	IO_L02P_7	D36			
7	IO_L02N_7	E36			
7	IO_L01P_7/VRN_7	C37			
7	IO_L01N_7/VRP_7	C38			
0	VCCO_0	D25			
0	VCCO_0	G23			
0	VCCO_0	G28			
0	VCCO_0	G32			
0	VCCO_0	J25			
0	VCCO_0	J29			
0	VCCO_0	P22			
0	VCCO_0	P23			
0	VCCO_0	P24			
0	VCCO_0	P25			
0	VCCO_0	P26			
0	VCCO_0	R22			
0	VCCO_0	R23			
0	VCCO_0	R24			
0	VCCO_0	R25			
1	VCCO_1	R21			
1	VCCO_1	R20			
1	VCCO_1	R19			
1	VCCO_1	R18			
1	VCCO_1	P21			
1	VCCO_1	P20			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
1	VCCO_1	P19			
1	VCCO_1	P18			
1	VCCO_1	P17			
1	VCCO_1	J18			
1	VCCO_1	J14			
1	VCCO_1	G20			
1	VCCO_1	G15			
1	VCCO_1	G11			
1	VCCO_1	D18			
2	VCCO_2	AA15			
2	VCCO_2	AA14			
2	VCCO_2	Y15			
2	VCCO_2	Y14			
2	VCCO_2	Y8			
2	VCCO_2	Y5			
2	VCCO_2	W15			
2	VCCO_2	W14			
2	VCCO_2	V15			
2	VCCO_2	V14			
2	VCCO_2	V3			
2	VCCO_2	U15			
2	VCCO_2	U14			
2	VCCO_2	T15			
2	VCCO_2	T14			
2	VCCO_2	R14			
2	VCCO_2	T9			
2	VCCO_2	P4			
2	VCCO_2	M6			
2	VCCO_2	J3			
2	VCCO_2	F5			
3	VCCO_3	AU5			
3	VCCO_3	AP3			
3	VCCO_3	AL6			
3	VCCO_3	AJ4			
3	VCCO_3	AH14			
3	VCCO_3	AG15			
3	VCCO_3	AG14			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
3	VCCO_3	AG9			
3	VCCO_3	AF15			
3	VCCO_3	AF14			
3	VCCO_3	AE15			
3	VCCO_3	AE14			
3	VCCO_3	AE3			
3	VCCO_3	AD15			
3	VCCO_3	AD14			
3	VCCO_3	AC15			
3	VCCO_3	AC14			
3	VCCO_3	AC8			
3	VCCO_3	AC5			
3	VCCO_3	AB15			
3	VCCO_3	AB14			
4	VCCO_4	AW18			
4	VCCO_4	AT20			
4	VCCO_4	AT15			
4	VCCO_4	AT11			
4	VCCO_4	AP18			
4	VCCO_4	AP14			
4	VCCO_4	AJ21			
4	VCCO_4	AJ20			
4	VCCO_4	AJ19			
4	VCCO_4	AJ18			
4	VCCO_4	AJ17			
4	VCCO_4	AH21			
4	VCCO_4	AH20			
4	VCCO_4	AH19			
4	VCCO_4	AH18			
5	VCCO_5	AW25			
5	VCCO_5	AT32			
5	VCCO_5	AT28			
5	VCCO_5	AT23			
5	VCCO_5	AP29			
5	VCCO_5	AP25			
5	VCCO_5	AJ26			
5	VCCO_5	AJ25			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP70	No Connects XC2VP100	No Connects XC2VP125
5	VCCO_5	AJ24			
5	VCCO_5	AJ23			
5	VCCO_5	AJ22			
5	VCCO_5	AH25			
5	VCCO_5	AH24			
5	VCCO_5	AH23			
5	VCCO_5	AH22			
6	VCCO_6	AU38			
6	VCCO_6	AP40			
6	VCCO_6	AL37			
6	VCCO_6	AJ39			
6	VCCO_6	AH29			
6	VCCO_6	AG34			
6	VCCO_6	AG29			
6	VCCO_6	AG28			
6	VCCO_6	AF29			
6	VCCO_6	AF28			
6	VCCO_6	AE40			
6	VCCO_6	AE29			
6	VCCO_6	AE28			
6	VCCO_6	AD29			
6	VCCO_6	AD28			
6	VCCO_6	AC38			
6	VCCO_6	AC35			
6	VCCO_6	AC29			
6	VCCO_6	AC28			
6	VCCO_6	AB29			
6	VCCO_6	AB28			
7	VCCO_7	AA29			
7	VCCO_7	AA28			
7	VCCO_7	Y38			
7	VCCO_7	Y35			
7	VCCO_7	Y29			
7	VCCO_7	Y28			
7	VCCO_7	W29			
7	VCCO_7	W28			
7	VCCO_7	V40			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
7	VCCO_7	V29			
7	VCCO_7	V28			
7	VCCO_7	U29			
7	VCCO_7	U28			
7	VCCO_7	T34			
7	VCCO_7	T29			
7	VCCO_7	T28			
7	VCCO_7	R29			
7	VCCO_7	P39			
7	VCCO_7	M37			
7	VCCO_7	J40			
7	VCCO_7	F38			
N/A	CCLK	AY7			
N/A	PROG_B	G35			
N/A	DONE	AW8			
N/A	M0	AV35			
N/A	M1	AY36			
N/A	M2	AW35			
N/A	TCK	G8			
N/A	TDI	C36			
N/A	TDO	C7			
N/A	TMS	F8			
N/A	PWRDWN_B	AV8			
N/A	HSWAP_EN	F35			
N/A	RSVD	D8			
N/A	VBATT	E8			
N/A	DXP	E35			
N/A	DXN	D35			
N/A	AVCCAUXTX2	B40			
N/A	VTTXPAD2	B41			
N/A	TXNPAD2	A41			
N/A	TXPPAD2	A40			
N/A	GNDA2	C39			
N/A	RXPPAD2	A39			
N/A	RXNPAD2	A38			
N/A	VTRXPAD2	B39			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	XC2VP100	XC2VP125
N/A	AVCCAUXRX2	B38			
N/A	AVCCAUXTX3	B36			
N/A	VTTXPAD3	B37			
N/A	TXNPAD3	A37			
N/A	TXPPAD3	A36			
N/A	GNDA3	C35			
N/A	RXPPAD3	A35			
N/A	RXNPAD3	A34			
N/A	VTRXPAD3	B35			
N/A	AVCCAUXRX3	B34			
N/A	AVCCAUXTX4	B32			
N/A	VTTXPAD4	B33			
N/A	TXNPAD4	A33			
N/A	TXPPAD4	A32			
N/A	GNDA4	C31			
N/A	RXPPAD4	A31			
N/A	RXNPAD4	A30			
N/A	VTRXPAD4	B31			
N/A	AVCCAUXRX4	B30			
N/A	AVCCAUXTX5	B28			
N/A	VTTXPAD5	B29			
N/A	TXNPAD5	A29			
N/A	TXPPAD5	A28			
N/A	GNDA5	C27			
N/A	RXPPAD5	A27			
N/A	RXNPAD5	A26			
N/A	VTRXPAD5	B27			
N/A	AVCCAUXRX5	B26			
N/A	AVCCAUXTX6	B24			
N/A	VTTXPAD6	B25			
N/A	TXNPAD6	A25			
N/A	TXPPAD6	A24			
N/A	GNDA6	C22			
N/A	RXPPAD6	A23			
N/A	RXNPAD6	A22			
N/A	VTRXPAD6	B23			
N/A	AVCCAUXRX6	B22			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	AVCCAUXTX7	B20			
N/A	VTTXPAD7	B21			
N/A	TXNPAD7	A21			
N/A	TXPPAD7	A20			
N/A	GNDA7	C21			
N/A	RXPPAD7	A19			
N/A	RXNPAD7	A18			
N/A	VTRXPAD7	B19			
N/A	AVCCAUXRX7	B18			
N/A	AVCCAUXTX8	B16			
N/A	VTTXPAD8	B17			
N/A	TXNPAD8	A17			
N/A	TXPPAD8	A16			
N/A	GNDA8	C16			
N/A	RXPPAD8	A15			
N/A	RXNPAD8	A14			
N/A	VTRXPAD8	B15			
N/A	AVCCAUXRX8	B14			
N/A	AVCCAUXTX9	B12			
N/A	VTTXPAD9	B13			
N/A	TXNPAD9	A13			
N/A	TXPPAD9	A12			
N/A	GNDA9	C12			
N/A	RXPPAD9	A11			
N/A	RXNPAD9	A10			
N/A	VTRXPAD9	B11			
N/A	AVCCAUXRX9	B10			
N/A	AVCCAUXTX10	B8			
N/A	VTTXPAD10	B9			
N/A	TXNPAD10	A9			
N/A	TXPPAD10	A8			
N/A	GNDA10	C8			
N/A	RXPPAD10	A7			
N/A	RXNPAD10	A6			
N/A	VTRXPAD10	B7			
N/A	AVCCAUXRX10	B6			
N/A	AVCCAUXTX11	B4			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	VTTXPAD11	B5			
N/A	TXNPAD11	A5			
N/A	TXPPAD11	A4			
N/A	GNDA11	C4			
N/A	RXPPAD11	A3			
N/A	RXNPAD11	A2			
N/A	VTRXPAD11	B3			
N/A	AVCCAUXRX11	B2			
N/A	AVCCAUXRX14	BA2			
N/A	VTRXPAD14	BA3			
N/A	RXNPAD14	BB2			
N/A	RXPPAD14	BB3			
N/A	GNDA14	AY4			
N/A	TXPPAD14	BB4			
N/A	TXNPAD14	BB5			
N/A	VTTXPAD14	BA5			
N/A	AVCCAUXTX14	BA4			
N/A	AVCCAUXRX15	BA6			
N/A	VTRXPAD15	BA7			
N/A	RXNPAD15	BB6			
N/A	RXPPAD15	BB7			
N/A	GNDA15	AY8			
N/A	TXPPAD15	BB8			
N/A	TXNPAD15	BB9			
N/A	VTTXPAD15	BA9			
N/A	AVCCAUXTX15	BA8			
N/A	AVCCAUXRX16	BA10			
N/A	VTRXPAD16	BA11			
N/A	RXNPAD16	BB10			
N/A	RXPPAD16	BB11			
N/A	GNDA16	AY12			
N/A	TXPPAD16	BB12			
N/A	TXNPAD16	BB13			
N/A	VTTXPAD16	BA13			
N/A	AVCCAUXTX16	BA12			
N/A	AVCCAUXRX17	BA14			
N/A	VTRXPAD17	BA15			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

			No Connects		
Bank	Pin Description	Pin Number	XC2VP70	XC2VP100	XC2VP125
N/A	RXNPAD17	BB14			
N/A	RXPPAD17	BB15			
N/A	GNDA17	AY16			
N/A	TXPPAD17	BB16			
N/A	TXNPAD17	BB17			
N/A	VTTXPAD17	BA17			
N/A	AVCCAUXTX17	BA16			
N/A	AVCCAUXRX18	BA18			
N/A	VTRXPAD18	BA19			
N/A	RXNPAD18	BB18			
N/A	RXPPAD18	BB19			
N/A	GNDA18	AY21			
N/A	TXPPAD18	BB20			
N/A	TXNPAD18	BB21			
N/A	VTTXPAD18	BA21			
N/A	AVCCAUXTX18	BA20			
N/A	AVCCAUXRX19	BA22			
N/A	VTRXPAD19	BA23			
N/A	RXNPAD19	BB22			
N/A	RXPPAD19	BB23			
N/A	GNDA19	AY22			
N/A	TXPPAD19	BB24			
N/A	TXNPAD19	BB25			
N/A	VTTXPAD19	BA25			
N/A	AVCCAUXTX19	BA24			
N/A	AVCCAUXRX20	BA26			
N/A	VTRXPAD20	BA27			
N/A	RXNPAD20	BB26			
N/A	RXPPAD20	BB27			
N/A	GNDA20	AY27			
N/A	TXPPAD20	BB28			
N/A	TXNPAD20	BB29			
N/A	VTTXPAD20	BA29			
N/A	AVCCAUXTX20	BA28			
N/A	AVCCAUXRX21	BA30			
N/A	VTRXPAD21	BA31			
N/A	RXNPAD21	BB30			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	RXPPAD21	BB31			
N/A	GNDA21	AY31			
N/A	TXPPAD21	BB32			
N/A	TXNPAD21	BB33			
N/A	VTTXPAD21	BA33			
N/A	AVCCAUXTX21	BA32			
N/A	AVCCAUXRX22	BA34			
N/A	VTRXPAD22	BA35			
N/A	RXNPAD22	BB34			
N/A	RXPPAD22	BB35			
N/A	GNDA22	AY35			
N/A	TXPPAD22	BB36			
N/A	TXNPAD22	BB37			
N/A	VTTXPAD22	BA37			
N/A	AVCCAUXTX22	BA36			
N/A	AVCCAUXRX23	BA38			
N/A	VTRXPAD23	BA39			
N/A	RXNPAD23	BB38			
N/A	RXPPAD23	BB39			
N/A	GNDA23	AY39			
N/A	TXPPAD23	BB40			
N/A	TXNPAD23	BB41			
N/A	VTTXPAD23	BA41			
N/A	AVCCAUXTX23	BA40			
N/A	VCCINT	AB27			
N/A	VCCINT	AB16			
N/A	VCCINT	AC27			
N/A	VCCINT	AC16			
N/A	VCCINT	AD27			
N/A	VCCINT	AD16			
N/A	VCCINT	AE27			
N/A	VCCINT	AE16			
N/A	VCCINT	AF27			
N/A	VCCINT	AF26			
N/A	VCCINT	AF17			
N/A	VCCINT	AF16			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	VCCINT	AG27			
N/A	VCCINT	AG26			
N/A	VCCINT	AG25			
N/A	VCCINT	AG24			
N/A	VCCINT	AG23			
N/A	VCCINT	AG22			
N/A	VCCINT	AG21			
N/A	VCCINT	AG20			
N/A	VCCINT	AG19			
N/A	VCCINT	AG18			
N/A	VCCINT	AG17			
N/A	VCCINT	AG16			
N/A	VCCINT	AH28			
N/A	VCCINT	AH27			
N/A	VCCINT	AH26			
N/A	VCCINT	AH17			
N/A	VCCINT	AH16			
N/A	VCCINT	AH15			
N/A	VCCINT	AJ29			
N/A	VCCINT	AJ28			
N/A	VCCINT	AJ27			
N/A	VCCINT	AJ16			
N/A	VCCINT	AJ15			
N/A	VCCINT	AJ14			
N/A	VCCINT	AK30			
N/A	VCCINT	AK13			
N/A	VCCINT	AA27			
N/A	VCCINT	AA16			
N/A	VCCINT	Y27			
N/A	VCCINT	Y16			
N/A	VCCINT	W27			
N/A	VCCINT	W16			
N/A	VCCINT	V27			
N/A	VCCINT	V16			
N/A	VCCINT	U27			
N/A	VCCINT	U26			
N/A	VCCINT	U17			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	VCCINT	U16			
N/A	VCCINT	T27			
N/A	VCCINT	T26			
N/A	VCCINT	T25			
N/A	VCCINT	T24			
N/A	VCCINT	T23			
N/A	VCCINT	T22			
N/A	VCCINT	T21			
N/A	VCCINT	T20			
N/A	VCCINT	T19			
N/A	VCCINT	T18			
N/A	VCCINT	T17			
N/A	VCCINT	T16			
N/A	VCCINT	R28			
N/A	VCCINT	R27			
N/A	VCCINT	R26			
N/A	VCCINT	R17			
N/A	VCCINT	R16			
N/A	VCCINT	R15			
N/A	VCCINT	P29			
N/A	VCCINT	P28			
N/A	VCCINT	P27			
N/A	VCCINT	P16			
N/A	VCCINT	P15			
N/A	VCCINT	P14			
N/A	VCCINT	N30			
N/A	VCCINT	N13			
N/A	VCCAUX	AB42			
N/A	VCCAUX	AB41			
N/A	VCCAUX	AB2			
N/A	VCCAUX	AB1			
N/A	VCCAUX	AC42			
N/A	VCCAUX	AC1			
N/A	VCCAUX	AM32			
N/A	VCCAUX	AM11			
N/A	VCCAUX	AN33			
N/A	VCCAUX	AN10			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	VCCAUX	AV39			
N/A	VCCAUX	AV4			
N/A	VCCAUX	AW38			
N/A	VCCAUX	AW22			
N/A	VCCAUX	AW21			
N/A	VCCAUX	AW5			
N/A	VCCAUX	AA42			
N/A	VCCAUX	AA41			
N/A	VCCAUX	AA2			
N/A	VCCAUX	AA1			
N/A	VCCAUX	Y42			
N/A	VCCAUX	Y1			
N/A	VCCAUX	L32			
N/A	VCCAUX	L11			
N/A	VCCAUX	K33			
N/A	VCCAUX	K10			
N/A	VCCAUX	E39			
N/A	VCCAUX	E4			
N/A	VCCAUX	D38			
N/A	VCCAUX	D22			
N/A	VCCAUX	D21			
N/A	VCCAUX	D5			
N/A	GND	AB38			
N/A	GND	AB35			
N/A	GND	AB32			
N/A	GND	AB26			
N/A	GND	AB25			
N/A	GND	AB24			
N/A	GND	AB23			
N/A	GND	AB22			
N/A	GND	AB21			
N/A	GND	AB20			
N/A	GND	AB19			
N/A	GND	AB18			
N/A	GND	AB17			
N/A	GND	AB11			
N/A	GND	AB8			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	AB5			
N/A	GND	AC41			
N/A	GND	AC26			
N/A	GND	AC25			
N/A	GND	AC24			
N/A	GND	AC23			
N/A	GND	AC22			
N/A	GND	AC21			
N/A	GND	AC20			
N/A	GND	AC19			
N/A	GND	AC18			
N/A	GND	AC17			
N/A	GND	AC2			
N/A	GND	AD26			
N/A	GND	AD25			
N/A	GND	AD24			
N/A	GND	AD23			
N/A	GND	AD22			
N/A	GND	AD21			
N/A	GND	AD20			
N/A	GND	AD19			
N/A	GND	AD18			
N/A	GND	AD17			
N/A	GND	AE37			
N/A	GND	AE34			
N/A	GND	AE26			
N/A	GND	AE25			
N/A	GND	AE24			
N/A	GND	AE23			
N/A	GND	AE22			
N/A	GND	AE21			
N/A	GND	AE20			
N/A	GND	AE19			
N/A	GND	AE18			
N/A	GND	AE17			
N/A	GND	AE9			
N/A	GND	AE6			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	AF25			
N/A	GND	AF24			
N/A	GND	AF23			
N/A	GND	AF22			
N/A	GND	AF21			
N/A	GND	AF20			
N/A	GND	AF19			
N/A	GND	AF18			
N/A	GND	AG42			
N/A	GND	AG1			
N/A	GND	AH39			
N/A	GND	AH36			
N/A	GND	AH7			
N/A	GND	AH4			
N/A	GND	AL42			
N/A	GND	AL1			
N/A	GND	AM22			
N/A	GND	AM21			
N/A	GND	AN39			
N/A	GND	AN4			
N/A	GND	AP34			
N/A	GND	AP9			
N/A	GND	AR42			
N/A	GND	AR35			
N/A	GND	AR22			
N/A	GND	AR21			
N/A	GND	AR8			
N/A	GND	AR1			
N/A	GND	AT36			
N/A	GND	AT7			
N/A	GND	AU37			
N/A	GND	AU25			
N/A	GND	AU18			
N/A	GND	AU6			
N/A	GND	AV38			
N/A	GND	AV22			
N/A	GND	AV21			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	AV5			
N/A	GND	AW39			
N/A	GND	AW32			
N/A	GND	AW28			
N/A	GND	AW15			
N/A	GND	AW11			
N/A	GND	AW4			
N/A	GND	AY42			
N/A	GND	AY41			
N/A	GND	AY40			
N/A	GND	AY3			
N/A	GND	AY2			
N/A	GND	AY1			
N/A	GND	BA42			
N/A	GND	BA1			
N/A	GND	AA38			
N/A	GND	AA35			
N/A	GND	AA32			
N/A	GND	AA26			
N/A	GND	AA25			
N/A	GND	AA24			
N/A	GND	AA23			
N/A	GND	AA22			
N/A	GND	AA21			
N/A	GND	AA20			
N/A	GND	AA19			
N/A	GND	AA18			
N/A	GND	AA17			
N/A	GND	AA11			
N/A	GND	AA8			
N/A	GND	AA5			
N/A	GND	Y41			
N/A	GND	Y26			
N/A	GND	Y25			
N/A	GND	Y24			
N/A	GND	Y23			
N/A	GND	Y22			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	Y21			
N/A	GND	Y20			
N/A	GND	Y19			
N/A	GND	Y18			
N/A	GND	Y17			
N/A	GND	Y2			
N/A	GND	W26			
N/A	GND	W25			
N/A	GND	W24			
N/A	GND	W23			
N/A	GND	W22			
N/A	GND	W21			
N/A	GND	W20			
N/A	GND	W19			
N/A	GND	W18			
N/A	GND	W17			
N/A	GND	V37			
N/A	GND	V34			
N/A	GND	V26			
N/A	GND	V25			
N/A	GND	V24			
N/A	GND	V23			
N/A	GND	V22			
N/A	GND	V21			
N/A	GND	V20			
N/A	GND	V19			
N/A	GND	V18			
N/A	GND	V17			
N/A	GND	V9			
N/A	GND	V6			
N/A	GND	U25			
N/A	GND	U24			
N/A	GND	U23			
N/A	GND	U22			
N/A	GND	U21			
N/A	GND	U20			
N/A	GND	U19			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	U18			
N/A	GND	T42			
N/A	GND	T1			
N/A	GND	R39			
N/A	GND	R36			
N/A	GND	R7			
N/A	GND	R4			
N/A	GND	M42			
N/A	GND	M1			
N/A	GND	L22			
N/A	GND	L21			
N/A	GND	K39			
N/A	GND	K4			
N/A	GND	J34			
N/A	GND	J9			
N/A	GND	H42			
N/A	GND	H35			
N/A	GND	H22			
N/A	GND	H21			
N/A	GND	H8			
N/A	GND	H1			
N/A	GND	G36			
N/A	GND	G7			
N/A	GND	F37			
N/A	GND	F25			
N/A	GND	F18			
N/A	GND	F6			
N/A	GND	E38			
N/A	GND	E22			
N/A	GND	E21			
N/A	GND	E5			
N/A	GND	D39			
N/A	GND	D32			
N/A	GND	D28			
N/A	GND	D15			
N/A	GND	D11			
N/A	GND	D4			

Table 13: **FF1704 — XC2VP70, XC2VP100, and XC2VP125**

Bank	Pin Description	Pin Number	No Connects		
			XC2VP70	**XC2VP100**	**XC2VP125**
N/A	GND	C42			
N/A	GND	C41			
N/A	GND	C40			
N/A	GND	C3			
N/A	GND	C2			
N/A	GND	C1			
N/A	GND	B42			
N/A	GND	B1			
N/A	GND	N14			
N/A	GND	N29			
N/A	GND	AK14			
N/A	GND	AK29			
N/A	GND	P13			
N/A	GND	P30			
N/A	GND	AJ13			
N/A	GND	AJ30			

FF1704 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)
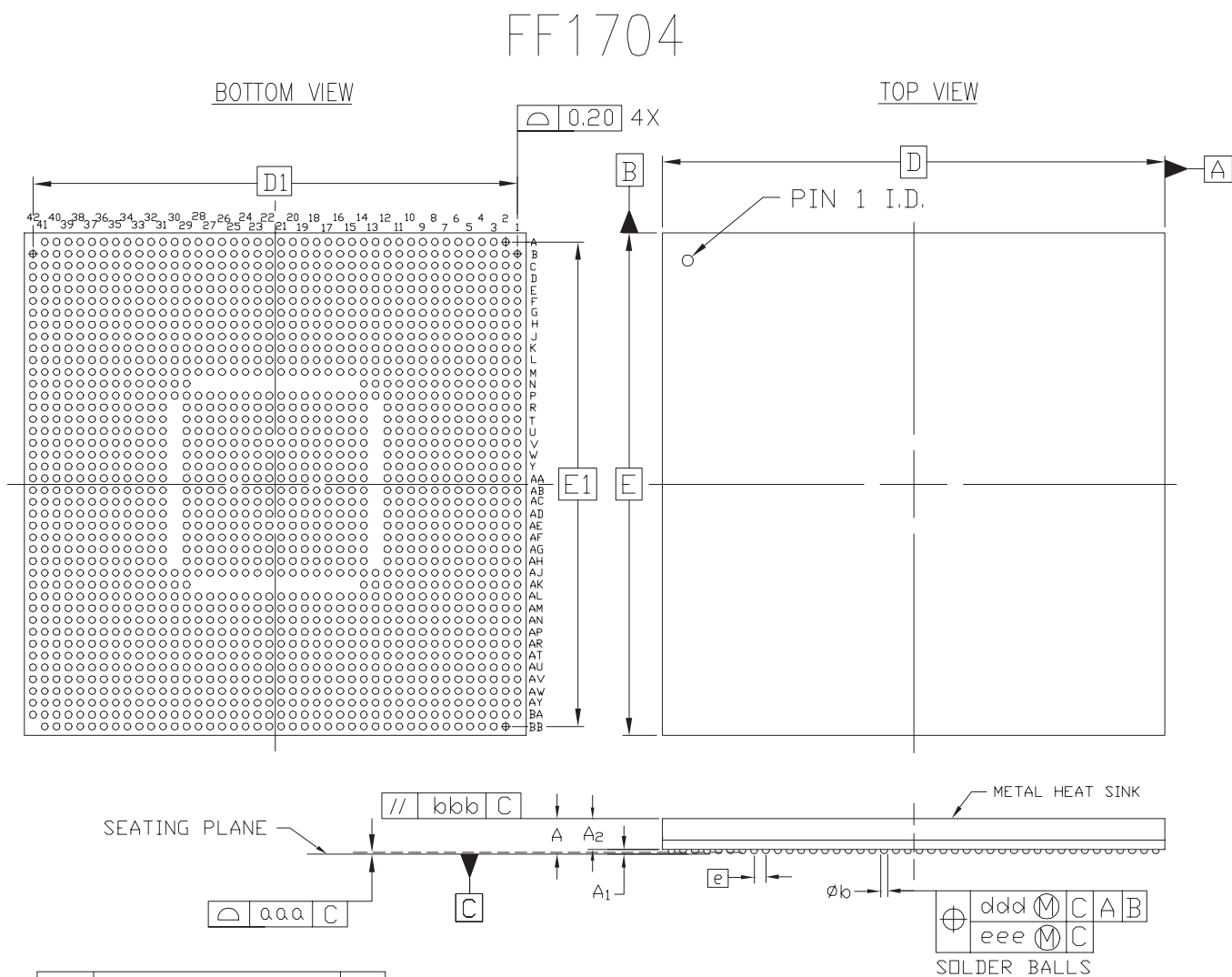
SYMBOL	MILLIMETERS			NOTE
	MIN.	NOM.	MAX.	
A	~	3.20	3.45	
A_1	0.40	0.50	0.60	
A_2	~	~	2.85	
D/E	42.50 BASIC			
D_1/E_1	41.00 REF			
e	1.00 BASIC			
Øb	0.50	0.60	0.70	
aaa	~	~	0.20	
bbb	~	~	0.25	
ddd	~	~	0.25	
eee	~	~	0.10	
M		42		2

NOTES:

1. ALL DIMENSIONS AND TOLERANCES CONFORM TO ASME Y14.5M–1994

2. SYMBOL "M" IS THE PIN MATRIX SIZE.

3. CONFORMS TO JEDEC MS–034–AAV–1 (DEPOPULATED)

Figure 9: **FF1704 Flip-Chip Fine-Pitch BGA Package Specifications**

FF1696 Flip-Chip Fine-Pitch BGA Package

As shown in Table 14, XC2VP100 and XC2VP125 Virtex-II Pro devices are available in the FF1696 flip-chip fine-pitch BGA package. Following this table are the FF1696 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch).

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	XC2VP125
0	IO_L01N_0/VRP_0	E33		
0	IO_L01P_0/VRN_0	F33		
0	IO_L02N_0	K32		
0	IO_L02P_0	L32		
0	IO_L03N_0	C32		
0	IO_L03P_0/VREF_0	C33		
0	IO_L05_0/No_Pair	G33		
0	IO_L06N_0	A33		
0	IO_L06P_0	B33		
0	IO_L07N_0	F32		
0	IO_L07P_0	G32		
0	IO_L08N_0	H32		
0	IO_L08P_0	J32		
0	IO_L09N_0	D32		
0	IO_L09P_0/VREF_0	E32		
0	IO_L19N_0	A32		
0	IO_L19P_0	B32		
0	IO_L20N_0	K31		
0	IO_L20P_0	L31		
0	IO_L21N_0	H30		
0	IO_L21P_0	G31		
0	IO_L25N_0	E31		
0	IO_L25P_0	F31		
0	IO_L26N_0	H31		
0	IO_L26P_0	J31		
0	IO_L27N_0	D30		
0	IO_L27P_0/VREF_0	D31		
0	IO_L28N_0	B31		
0	IO_L28P_0	C31		
0	IO_L29N_0	K30		
0	IO_L29P_0	L30		
0	IO_L30N_0	F30		
0	IO_L30P_0	G30		
0	IO_L34N_0	B30		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	No Connects XC2VP125
0	IO_L34P_0	C30		
0	IO_L35N_0	L29		
0	IO_L35P_0	M29		
0	IO_L36N_0	H28		
0	IO_L36P_0/VREF_0	G29		
0	IO_L76N_0	E29		
0	IO_L76P_0	F29		
0	IO_L77N_0	J29		
0	IO_L77P_0	K29		
0	IO_L78N_0	D28		
0	IO_L78P_0	C29		
0	IO_L79N_0	A29		
0	IO_L79P_0	B29		
0	IO_L80_0/No_Pair	L28		
0	IO_L83_0/No_Pair	M28		
0	IO_L84N_0	G27		
0	IO_L84P_0	G28		
0	IO_L85N_0	E28		
0	IO_L85P_0	F28		
0	IO_L86N_0	J28		
0	IO_L86P_0	K28		
0	IO_L87N_0	C27		
0	IO_L87P_0/VREF_0	C28		
0	IO_L37N_0	A28		
0	IO_L37P_0	B28		
0	IO_L38N_0	L27		
0	IO_L38P_0	M27		
0	IO_L39N_0	H26		
0	IO_L39P_0	H27		
0	IO_L43N_0	E27		
0	IO_L43P_0	F27		
0	IO_L44N_0	J27		
0	IO_L44P_0	K27		
0	IO_L45N_0	D26		
0	IO_L45P_0/VREF_0	D27		
0	IO_L10N_0	A27	NC	
0	IO_L10P_0	B27	NC	

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
0	IO_L11N_0	M25	NC	
0	IO_L11P_0	M26	NC	
0	IO_L12N_0	F26	NC	
0	IO_L12P_0	G26	NC	
0	IO_L18N_0	B26	NC	
0	IO_L18P_0/VREF_0	C26	NC	
0	IO_L46N_0	G24		
0	IO_L46P_0	G25		
0	IO_L47N_0	K26		
0	IO_L47P_0	L26		
0	IO_L48N_0	E25		
0	IO_L48P_0	F25		
0	IO_L49N_0	C24		
0	IO_L49P_0	C25		
0	IO_L50_0/No_Pair	L24		
0	IO_L53_0/No_Pair	L25		
0	IO_L54N_0	A25		
0	IO_L54P_0	B25		
0	IO_L55N_0	H23		
0	IO_L55P_0	H24		
0	IO_L56N_0	J25		
0	IO_L56P_0	K25		
0	IO_L57N_0	E24		
0	IO_L57P_0/VREF_0	F24		
0	IO_L58N_0	D23		
0	IO_L58P_0	D24		
0	IO_L59N_0	J24		
0	IO_L59P_0	K24		
0	IO_L60N_0	A24		
0	IO_L60P_0	B24		
0	IO_L64N_0	F23		
0	IO_L64P_0	G23		
0	IO_L65N_0	M22		
0	IO_L65P_0	M23		
0	IO_L66N_0	B23		
0	IO_L66P_0/VREF_0	C23		
0	IO_L67N_0	H22		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	No Connects XC2VP125
0	IO_L67P_0	J22		
0	IO_L68N_0	K23		
0	IO_L68P_0	L23		
0	IO_L69N_0	F22		
0	IO_L69P_0/VREF_0	G22		
0	IO_L73N_0	D22		
0	IO_L73P_0	E22		
0	IO_L74N_0/GCLK7P	K22		
0	IO_L74P_0/GCLK6S	L22		
0	IO_L75N_0/GCLK5P	B22		
0	IO_L75P_0/GCLK4S	C22		
1	IO_L75N_1/GCLK3P	C21		
1	IO_L75P_1/GCLK2S	B21		
1	IO_L74N_1/GCLK1P	L21		
1	IO_L74P_1/GCLK0S	K21		
1	IO_L73N_1	E21		
1	IO_L73P_1	D21		
1	IO_L69N_1/VREF_1	G21		
1	IO_L69P_1	F21		
1	IO_L68N_1	L20		
1	IO_L68P_1	K20		
1	IO_L67N_1	J21		
1	IO_L67P_1	H21		
1	IO_L66N_1/VREF_1	C20		
1	IO_L66P_1	B20		
1	IO_L65N_1	M20		
1	IO_L65P_1	M21		
1	IO_L64N_1	G20		
1	IO_L64P_1	F20		
1	IO_L60N_1	B19		
1	IO_L60P_1	A19		
1	IO_L59N_1	K19		
1	IO_L59P_1	J19		
1	IO_L58N_1	D19		
1	IO_L58P_1	D20		
1	IO_L57N_1/VREF_1	F19		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	No Connects XC2VP125
1	IO_L57P_1	E19		
1	IO_L56N_1	K18		
1	IO_L56P_1	J18		
1	IO_L55N_1	H19		
1	IO_L55P_1	H20		
1	IO_L54N_1	B18		
1	IO_L54P_1	A18		
1	IO_L53_1/No_Pair	L18		
1	IO_L50_1/No_Pair	L19		
1	IO_L49N_1	C18		
1	IO_L49P_1	C19		
1	IO_L48N_1	F18		
1	IO_L48P_1	E18		
1	IO_L47N_1	L17		
1	IO_L47P_1	K17		
1	IO_L46N_1	G18		
1	IO_L46P_1	G19		
1	IO_L18N_1/VREF_1	C17	NC	
1	IO_L18P_1	B17	NC	
1	IO_L12N_1	G17	NC	
1	IO_L12P_1	F17	NC	
1	IO_L11N_1	M17	NC	
1	IO_L11P_1	M18	NC	
1	IO_L10N_1	B16	NC	
1	IO_L10P_1	A16	NC	
1	IO_L45N_1/VREF_1	D16		
1	IO_L45P_1	D17		
1	IO_L44N_1	K16		
1	IO_L44P_1	J16		
1	IO_L43N_1	F16		
1	IO_L43P_1	E16		
1	IO_L39N_1	H16		
1	IO_L39P_1	H17		
1	IO_L38N_1	M16		
1	IO_L38P_1	L16		
1	IO_L37N_1	B15		
1	IO_L37P_1	A15		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
1	IO_L87N_1/VREF_1	C15		
1	IO_L87P_1	C16		
1	IO_L86N_1	K15		
1	IO_L86P_1	J15		
1	IO_L85N_1	F15		
1	IO_L85P_1	E15		
1	IO_L84N_1	G15		
1	IO_L84P_1	G16		
1	IO_L83_1/No_Pair	M15		
1	IO_L80_1/No_Pair	L15		
1	IO_L79N_1	B14		
1	IO_L79P_1	A14		
1	IO_L78N_1	C14		
1	IO_L78P_1	D15		
1	IO_L77N_1	K14		
1	IO_L77P_1	J14		
1	IO_L76N_1	F14		
1	IO_L76P_1	E14		
1	IO_L36N_1/VREF_1	G14		
1	IO_L36P_1	H15		
1	IO_L35N_1	M14		
1	IO_L35P_1	L14		
1	IO_L34N_1	C13		
1	IO_L34P_1	B13		
1	IO_L30N_1	G13		
1	IO_L30P_1	F13		
1	IO_L29N_1	L13		
1	IO_L29P_1	K13		
1	IO_L28N_1	C12		
1	IO_L28P_1	B12		
1	IO_L27N_1/VREF_1	D12		
1	IO_L27P_1	D13		
1	IO_L26N_1	J12		
1	IO_L26P_1	H12		
1	IO_L25N_1	F12		
1	IO_L25P_1	E12		
1	IO_L21N_1	G12		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	XC2VP125
1	IO_L21P_1	H13		
1	IO_L20N_1	L12		
1	IO_L20P_1	K12		
1	IO_L19N_1	B11		
1	IO_L19P_1	A11		
1	IO_L09N_1/VREF_1	E11		
1	IO_L09P_1	D11		
1	IO_L08N_1	J11		
1	IO_L08P_1	H11		
1	IO_L07N_1	G11		
1	IO_L07P_1	F11		
1	IO_L06N_1	B10		
1	IO_L06P_1	A10		
1	IO_L05_1/No_Pair	G10		
1	IO_L03N_1/VREF_1	C10		
1	IO_L03P_1	C11		
1	IO_L02N_1	L11		
1	IO_L02P_1	K11		
1	IO_L01N_1/VRP_1	F10		
1	IO_L01P_1/VRN_1	E10		
2	IO_L01N_2/VRP_2	B8		
2	IO_L01P_2/VRN_2	A8		
2	IO_L02N_2	C9		
2	IO_L02P_2	B9		
2	IO_L03N_2	B7		
2	IO_L03P_2	A7		
2	IO_L04N_2/VREF_2	B6		
2	IO_L04P_2	A6		
2	IO_L05N_2	D8		
2	IO_L05P_2	D9		
2	IO_L06N_2	B4		
2	IO_L06P_2	A4		
2	IO_L73N_2	C7		
2	IO_L73P_2	C8		
2	IO_L74N_2	G9		
2	IO_L74P_2	F9		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
2	IO_L75N_2	C5		
2	IO_L75P_2	B5		
2	IO_L76N_2/VREF_2	D7		
2	IO_L76P_2	C6		
2	IO_L77N_2	H8		
2	IO_L77P_2	H9		
2	IO_L78N_2	C3		
2	IO_L78P_2	C4		
2	IO_L79N_2	D1		
2	IO_L79P_2	D2		
2	IO_L80N_2	J8		
2	IO_L80P_2	K9		
2	IO_L81N_2	E6		
2	IO_L81P_2	D5		
2	IO_L82N_2/VREF_2	E4		
2	IO_L82P_2	D4		
2	IO_L83N_2	L8		
2	IO_L83P_2	L9		
2	IO_L84N_2	E3		
2	IO_L84P_2	D3		
2	IO_L61N_2	F8		
2	IO_L61P_2	E8		
2	IO_L62N_2	M8		
2	IO_L62P_2	M9		
2	IO_L63N_2	F7		
2	IO_L63P_2	E7		
2	IO_L64N_2/VREF_2	F3		
2	IO_L64P_2	E2		
2	IO_L65N_2	N12		
2	IO_L65P_2	P12		
2	IO_L66N_2	F1		
2	IO_L66P_2	F2		
2	IO_L67N_2	G7		
2	IO_L67P_2	G8		
2	IO_L68N_2	N10		
2	IO_L68P_2	N11		
2	IO_L69N_2	G6		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
2	IO_L69P_2	F6		
2	IO_L70N_2/VREF_2	G5		
2	IO_L70P_2	F5		
2	IO_L71N_2	P10		
2	IO_L71P_2	P11		
2	IO_L72N_2	G3		
2	IO_L72P_2	G4		
2	IO_L07N_2	G1		
2	IO_L07P_2	G2		
2	IO_L08N_2	N8		
2	IO_L08P_2	P9		
2	IO_L09N_2	H6		
2	IO_L09P_2	H7		
2	IO_L10N_2/VREF_2	H4		
2	IO_L10P_2	H5		
2	IO_L11N_2	R12		
2	IO_L11P_2	T12		
2	IO_L12N_2	H2		
2	IO_L12P_2	H3		
2	IO_L13N_2	J6		
2	IO_L13P_2	J7		
2	IO_L14N_2	R10		
2	IO_L14P_2	R11		
2	IO_L15N_2	J3		
2	IO_L15P_2	J4		
2	IO_L16N_2/VREF_2	J2		
2	IO_L16P_2	H1		
2	IO_L17N_2	R8		
2	IO_L17P_2	R9		
2	IO_L18N_2	K5		
2	IO_L18P_2	K6		
2	IO_L19N_2	K1		
2	IO_L19P_2	K2		
2	IO_L20N_2	T10		
2	IO_L20P_2	T11		
2	IO_L21N_2	L7		
2	IO_L21P_2	K7		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
2	IO_L22N_2/VREF_2	L4		
2	IO_L22P_2	L5		
2	IO_L23N_2	T8		
2	IO_L23P_2	T9		
2	IO_L24N_2	L3		
2	IO_L24P_2	K3		
2	IO_L25N_2	L1		
2	IO_L25P_2	L2		
2	IO_L26N_2	U12		
2	IO_L26P_2	V12		
2	IO_L27N_2	M7		
2	IO_L27P_2	L6		
2	IO_L28N_2/VREF_2	M5		
2	IO_L28P_2	M6		
2	IO_L29N_2	U10		
2	IO_L29P_2	U11		
2	IO_L30N_2	M3		
2	IO_L30P_2	M4		
2	IO_L31N_2	N6		
2	IO_L31P_2	N7		
2	IO_L32N_2	U7		
2	IO_L32P_2	U8		
2	IO_L33N_2	N3		
2	IO_L33P_2	N4		
2	IO_L34N_2/VREF_2	N2		
2	IO_L34P_2	M2		
2	IO_L35N_2	V10		
2	IO_L35P_2	V11		
2	IO_L36N_2	P6		
2	IO_L36P_2	P7		
2	IO_L37N_2	P1		
2	IO_L37P_2	P2		
2	IO_L38N_2	V8		
2	IO_L38P_2	V9		
2	IO_L39N_2	R6		
2	IO_L39P_2	P5		
2	IO_L40N_2/VREF_2	R4		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
2	IO_L40P_2	R5		
2	IO_L41N_2	V6		
2	IO_L41P_2	V7		
2	IO_L42N_2	R3		
2	IO_L42P_2	P3		
2	IO_L43N_2	R1		
2	IO_L43P_2	R2		
2	IO_L44N_2	W10		
2	IO_L44P_2	W11		
2	IO_L45N_2	T7		
2	IO_L45P_2	R7		
2	IO_L46N_2/VREF_2	T4		
2	IO_L46P_2	T5		
2	IO_L47N_2	W9		
2	IO_L47P_2	Y10		
2	IO_L48N_2	T1		
2	IO_L48P_2	T2		
2	IO_L49N_2	U6		
2	IO_L49P_2	T6		
2	IO_L50N_2	W7		
2	IO_L50P_2	Y8		
2	IO_L51N_2	U4		
2	IO_L51P_2	T3		
2	IO_L52N_2/VREF_2	U2		
2	IO_L52P_2	U3		
2	IO_L53N_2	Y11		
2	IO_L53P_2	Y12		
2	IO_L54N_2	V4		
2	IO_L54P_2	V5		
2	IO_L55N_2	V1		
2	IO_L55P_2	V2		
2	IO_L56N_2	Y6		
2	IO_L56P_2	Y7		
2	IO_L57N_2	W5		
2	IO_L57P_2	W6		
2	IO_L58N_2/VREF_2	W3		
2	IO_L58P_2	V3		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
2	IO_L59N_2	AA11		
2	IO_L59P_2	AA12		
2	IO_L60N_2	W1		
2	IO_L60P_2	W2		
2	IO_L85N_2	Y2		
2	IO_L85P_2	Y3		
2	IO_L86N_2	AA9		
2	IO_L86P_2	AA10		
2	IO_L87N_2	AA5		
2	IO_L87P_2	AA6		
2	IO_L88N_2/VREF_2	AA4		
2	IO_L88P_2	Y4		
2	IO_L89N_2	AA7		
2	IO_L89P_2	AA8		
2	IO_L90N_2	AA2		
2	IO_L90P_2	AA3		
3	IO_L90N_3	AB5		
3	IO_L90P_3	AB6		
3	IO_L89N_3	AB11		
3	IO_L89P_3	AB12		
3	IO_L88N_3	AB2		
3	IO_L88P_3	AB3		
3	IO_L87N_3/VREF_3	AB4		
3	IO_L87P_3	AC4		
3	IO_L86N_3	AB9		
3	IO_L86P_3	AB10		
3	IO_L85N_3	AC2		
3	IO_L85P_3	AC3		
3	IO_L60N_3	AD5		
3	IO_L60P_3	AD6		
3	IO_L59N_3	AB7		
3	IO_L59P_3	AB8		
3	IO_L58N_3	AD1		
3	IO_L58P_3	AD2		
3	IO_L57N_3/VREF_3	AE4		
3	IO_L57P_3	AE5		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
3	IO_L56N_3	AC11		
3	IO_L56P_3	AC12		
3	IO_L55N_3	AD3		
3	IO_L55P_3	AE3		
3	IO_L54N_3	AE1		
3	IO_L54P_3	AE2		
3	IO_L53N_3	AC6		
3	IO_L53P_3	AC7		
3	IO_L52N_3	AF2		
3	IO_L52P_3	AF3		
3	IO_L51N_3/VREF_3	AF6		
3	IO_L51P_3	AG6		
3	IO_L50N_3	AD10		
3	IO_L50P_3	AD11		
3	IO_L49N_3	AG4		
3	IO_L49P_3	AG5		
3	IO_L48N_3	AF4		
3	IO_L48P_3	AG3		
3	IO_L47N_3	AC10		
3	IO_L47P_3	AD9		
3	IO_L46N_3	AG1		
3	IO_L46P_3	AG2		
3	IO_L45N_3/VREF_3	AG7		
3	IO_L45P_3	AH7		
3	IO_L44N_3	AC8		
3	IO_L44P_3	AD7		
3	IO_L43N_3	AH4		
3	IO_L43P_3	AH5		
3	IO_L42N_3	AH1		
3	IO_L42P_3	AH2		
3	IO_L41N_3	AE10		
3	IO_L41P_3	AE11		
3	IO_L40N_3	AJ6		
3	IO_L40P_3	AJ7		
3	IO_L39N_3/VREF_3	AH6		
3	IO_L39P_3	AJ5		
3	IO_L38N_3	AE8		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	XC2VP125
3	IO_L38P_3	AE9		
3	IO_L37N_3	AH3		
3	IO_L37P_3	AJ3		
3	IO_L36N_3	AJ1		
3	IO_L36P_3	AJ2		
3	IO_L35N_3	AE6		
3	IO_L35P_3	AE7		
3	IO_L34N_3	AK6		
3	IO_L34P_3	AK7		
3	IO_L33N_3/VREF_3	AK3		
3	IO_L33P_3	AK4		
3	IO_L32N_3	AE12		
3	IO_L32P_3	AF12		
3	IO_L31N_3	AL5		
3	IO_L31P_3	AL6		
3	IO_L30N_3	AL3		
3	IO_L30P_3	AL4		
3	IO_L29N_3	AF10		
3	IO_L29P_3	AF11		
3	IO_L28N_3	AK2		
3	IO_L28P_3	AL2		
3	IO_L27N_3/VREF_3	AL7		
3	IO_L27P_3	AM6		
3	IO_L26N_3	AF7		
3	IO_L26P_3	AF8		
3	IO_L25N_3	AM4		
3	IO_L25P_3	AM5		
3	IO_L24N_3	AM1		
3	IO_L24P_3	AM2		
3	IO_L23N_3	AG10		
3	IO_L23P_3	AG11		
3	IO_L22N_3	AM7		
3	IO_L22P_3	AN7		
3	IO_L21N_3/VREF_3	AN5		
3	IO_L21P_3	AN6		
3	IO_L20N_3	AG8		
3	IO_L20P_3	AG9		

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Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
3	IO_L19N_3	AM3		
3	IO_L19P_3	AN3		
3	IO_L18N_3	AN1		
3	IO_L18P_3	AN2		
3	IO_L17N_3	AG12		
3	IO_L17P_3	AH12		
3	IO_L16N_3	AP6		
3	IO_L16P_3	AP7		
3	IO_L15N_3/VREF_3	AP3		
3	IO_L15P_3	AP4		
3	IO_L14N_3	AH10		
3	IO_L14P_3	AH11		
3	IO_L13N_3	AR6		
3	IO_L13P_3	AR7		
3	IO_L12N_3	AR4		
3	IO_L12P_3	AR5		
3	IO_L11N_3	AH8		
3	IO_L11P_3	AH9		
3	IO_L10N_3	AR2		
3	IO_L10P_3	AR3		
3	IO_L09N_3/VREF_3	AP2		
3	IO_L09P_3	AR1		
3	IO_L08N_3	AJ10		
3	IO_L08P_3	AJ11		
3	IO_L07N_3	AT7		
3	IO_L07P_3	AT8		
3	IO_L72N_3	AT3		
3	IO_L72P_3	AT4		
3	IO_L71N_3	AJ12		
3	IO_L71P_3	AK12		
3	IO_L70N_3	AT1		
3	IO_L70P_3	AT2		
3	IO_L69N_3/VREF_3	AT6		
3	IO_L69P_3	AU6		
3	IO_L68N_3	AK10		
3	IO_L68P_3	AK11		
3	IO_L67N_3	AT5		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
3	IO_L67P_3	AU5		
3	IO_L66N_3	AU1		
3	IO_L66P_3	AU2		
3	IO_L65N_3	AJ9		
3	IO_L65P_3	AK8		
3	IO_L64N_3	AU8		
3	IO_L64P_3	AV8		
3	IO_L63N_3/VREF_3	AU7		
3	IO_L63P_3	AV7		
3	IO_L62N_3	AL8		
3	IO_L62P_3	AL9		
3	IO_L61N_3	AU3		
3	IO_L61P_3	AV2		
3	IO_L84N_3	AV6		
3	IO_L84P_3	AW5		
3	IO_L83N_3	AM8		
3	IO_L83P_3	AM9		
3	IO_L82N_3	AV4		
3	IO_L82P_3	AW4		
3	IO_L81N_3/VREF_3	AV3		
3	IO_L81P_3	AW3		
3	IO_L80N_3	AN9		
3	IO_L80P_3	AP8		
3	IO_L79N_3	AW1		
3	IO_L79P_3	AW2		
3	IO_L78N_3	AY7		
3	IO_L78P_3	AY8		
3	IO_L77N_3	AR8		
3	IO_L77P_3	AR9		
3	IO_L76N_3	AW7		
3	IO_L76P_3	AY6		
3	IO_L75N_3/VREF_3	AY3		
3	IO_L75P_3	AY4		
3	IO_L74N_3	AT9		
3	IO_L74P_3	AU9		
3	IO_L73N_3	AY5		
3	IO_L73P_3	BA5		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
3	IO_L06N_3	BA8		
3	IO_L06P_3	BB8		
3	IO_L05N_3	AW8		
3	IO_L05P_3	AW9		
3	IO_L04N_3	BA7		
3	IO_L04P_3	BB7		
3	IO_L03N_3/VREF_3	BA6		
3	IO_L03P_3	BB6		
3	IO_L02N_3	AY9		
3	IO_L02P_3	BA9		
3	IO_L01N_3/VRP_3	BA4		
3	IO_L01P_3/VRN_3	BB4		
4	IO_L01N_4/DOUT	AL11		
4	IO_L01P_4/INIT_B	AL12		
4	IO_L02N_4/D0	AV10		
4	IO_L02P_4/D1	AU10		
4	IO_L03N_4/D2	AN11		
4	IO_L03P_4/D3	AM11		
4	IO_L05_4/No_Pair	AT10		
4	IO_L06N_4/VRP_4	AY11		
4	IO_L06P_4/VRN_4	AY10		
4	IO_L07N_4	BB10		
4	IO_L07P_4/VREF_4	BA10		
4	IO_L08N_4	AU11		
4	IO_L08P_4	AT11		
4	IO_L09N_4	AR11		
4	IO_L09P_4/VREF_4	AP11		
4	IO_L19N_4	AW11		
4	IO_L19P_4	AV11		
4	IO_L20N_4	BB11		
4	IO_L20P_4	BA11		
4	IO_L21N_4	AN12		
4	IO_L21P_4	AM12		
4	IO_L25N_4	AR13		
4	IO_L25P_4	AT12		
4	IO_L26N_4	AV12		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	No Connects XC2VP125
4	IO_L26P_4	AU12		
4	IO_L27N_4	AR12		
4	IO_L27P_4/VREF_4	AP12		
4	IO_L28N_4	AW13		
4	IO_L28P_4	AW12		
4	IO_L29N_4	BA12		
4	IO_L29P_4	AY12		
4	IO_L30N_4	AN13		
4	IO_L30P_4	AM13		
4	IO_L34N_4	AU13		
4	IO_L34P_4	AT13		
4	IO_L35N_4	BA13		
4	IO_L35P_4	AY13		
4	IO_L36N_4	AM14		
4	IO_L36P_4/VREF_4	AL14		
4	IO_L76N_4	AR15		
4	IO_L76P_4	AT14		
4	IO_L77N_4	AV14		
4	IO_L77P_4	AU14		
4	IO_L78N_4	AP14		
4	IO_L78P_4	AN14		
4	IO_L79N_4	AW15		
4	IO_L79P_4	AY14		
4	IO_L80_4/No_Pair	BB14		
4	IO_L83_4/No_Pair	BA14		
4	IO_L84N_4	AM15		
4	IO_L84P_4	AL15		
4	IO_L85N_4	AT16		
4	IO_L85P_4	AT15		
4	IO_L86N_4	AV15		
4	IO_L86P_4	AU15		
4	IO_L87N_4	AP15		
4	IO_L87P_4/VREF_4	AN15		
4	IO_L37N_4	AY16		
4	IO_L37P_4	AY15		
4	IO_L38N_4	BB15		
4	IO_L38P_4	BA15		

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Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
4	IO_L39N_4	AM16		
4	IO_L39P_4	AL16		
4	IO_L43N_4	AR17		
4	IO_L43P_4	AR16		
4	IO_L44N_4	AV16		
4	IO_L44P_4	AU16		
4	IO_L45N_4	AP16		
4	IO_L45P_4/VREF_4	AN16		
4	IO_L10N_4	AW17	NC	
4	IO_L10P_4	AW16	NC	
4	IO_L11N_4	BB16	NC	
4	IO_L11P_4	BA16	NC	
4	IO_L12N_4	AL18	NC	
4	IO_L12P_4	AL17	NC	
4	IO_L16N_4	AU17	NC	
4	IO_L16P_4	AT17	NC	
4	IO_L18N_4	BA17	NC	
4	IO_L18P_4/VREF_4	AY17	NC	
4	IO_L46N_4	AT19		
4	IO_L46P_4	AT18		
4	IO_L47N_4	AN17		
4	IO_L47P_4	AM17		
4	IO_L48N_4	AV18		
4	IO_L48P_4	AU18		
4	IO_L49N_4	AY19		
4	IO_L49P_4	AY18		
4	IO_L50_4/No_Pair	AM19		
4	IO_L53_4/No_Pair	AM18		
4	IO_L54N_4	BB18		
4	IO_L54P_4	BA18		
4	IO_L55N_4	AR20		
4	IO_L55P_4	AR19		
4	IO_L56N_4	AP18		
4	IO_L56P_4	AN18		
4	IO_L57N_4	AV19		
4	IO_L57P_4/VREF_4	AU19		
4	IO_L58N_4	AW20		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
4	IO_L58P_4	AW19		
4	IO_L59N_4	AP19		
4	IO_L59P_4	AN19		
4	IO_L60N_4	BB19		
4	IO_L60P_4	BA19		
4	IO_L64N_4	AU20		
4	IO_L64P_4	AT20		
4	IO_L65N_4	AL21		
4	IO_L65P_4	AL20		
4	IO_L66N_4	BA20		
4	IO_L66P_4/VREF_4	AY20		
4	IO_L67N_4	AR21		
4	IO_L67P_4	AP21		
4	IO_L68N_4	AN20		
4	IO_L68P_4	AM20		
4	IO_L69N_4	AU21		
4	IO_L69P_4/VREF_4	AT21		
4	IO_L73N_4	AW21		
4	IO_L73P_4	AV21		
4	IO_L74N_4/GCLK3S	AN21		
4	IO_L74P_4/GCLK2P	AM21		
4	IO_L75N_4/GCLK1S	BA21		
4	IO_L75P_4/GCLK0P	AY21		
5	IO_L75N_5/GCLK7S	AY22		
5	IO_L75P_5/GCLK6P	BA22		
5	IO_L74N_5/GCLK5S	AM22		
5	IO_L74P_5/GCLK4P	AN22		
5	IO_L73N_5	AV22		
5	IO_L73P_5	AW22		
5	IO_L69N_5/VREF_5	AT22		
5	IO_L69P_5	AU22		
5	IO_L68N_5	AM23		
5	IO_L68P_5	AN23		
5	IO_L67N_5	AP22		
5	IO_L67P_5	AR22		
5	IO_L66N_5/VREF_5	AY23		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
5	IO_L66P_5	BA23		
5	IO_L65N_5	AL23		
5	IO_L65P_5	AL22		
5	IO_L64N_5	AT23		
5	IO_L64P_5	AU23		
5	IO_L60N_5	BA24		
5	IO_L60P_5	BB24		
5	IO_L59N_5	AN24		
5	IO_L59P_5	AP24		
5	IO_L58N_5	AW24		
5	IO_L58P_5	AW23		
5	IO_L57N_5/VREF_5	AU24		
5	IO_L57P_5	AV24		
5	IO_L56N_5	AN25		
5	IO_L56P_5	AP25		
5	IO_L55N_5	AR24		
5	IO_L55P_5	AR23		
5	IO_L54N_5	BA25		
5	IO_L54P_5	BB25		
5	IO_L53_5/No_Pair	AM25		
5	IO_L50_5/No_Pair	AM24		
5	IO_L49N_5	AY25		
5	IO_L49P_5	AY24		
5	IO_L48N_5	AU25		
5	IO_L48P_5	AV25		
5	IO_L47N_5	AM26		
5	IO_L47P_5	AN26		
5	IO_L46N_5	AT25		
5	IO_L46P_5	AT24		
5	IO_L18N_5/VREF_5	AY26	NC	
5	IO_L18P_5	BA26	NC	
5	IO_L16N_5	AT26	NC	
5	IO_L16P_5	AU26	NC	
5	IO_L12N_5	AL26	NC	
5	IO_L12P_5	AL25	NC	
5	IO_L11N_5	BA27	NC	
5	IO_L11P_5	BB27	NC	

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
5	IO_L10N_5	AW27	NC	
5	IO_L10P_5	AW26	NC	
5	IO_L45N_5/VREF_5	AN27		
5	IO_L45P_5	AP27		
5	IO_L44N_5	AU27		
5	IO_L44P_5	AV27		
5	IO_L43N_5	AR27		
5	IO_L43P_5	AR26		
5	IO_L39N_5	AL27		
5	IO_L39P_5	AM27		
5	IO_L38N_5	BA28		
5	IO_L38P_5	BB28		
5	IO_L37N_5	AY28		
5	IO_L37P_5	AY27		
5	IO_L87N_5/VREF_5	AN28		
5	IO_L87P_5	AP28		
5	IO_L86N_5	AU28		
5	IO_L86P_5	AV28		
5	IO_L85N_5	AT28		
5	IO_L85P_5	AT27		
5	IO_L84N_5	AL28		
5	IO_L84P_5	AM28		
5	IO_L83_5/No_Pair	BA29		
5	IO_L80_5/No_Pair	BB29		
5	IO_L79N_5	AY29		
5	IO_L79P_5	AW28		
5	IO_L78N_5	AN29		
5	IO_L78P_5	AP29		
5	IO_L77N_5	AU29		
5	IO_L77P_5	AV29		
5	IO_L76N_5	AT29		
5	IO_L76P_5	AR28		
5	IO_L36N_5/VREF_5	AL29		
5	IO_L36P_5	AM29		
5	IO_L35N_5	AY30		
5	IO_L35P_5	BA30		
5	IO_L34N_5	AT30		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
5	IO_L34P_5	AU30		
5	IO_L30N_5	AM30		
5	IO_L30P_5	AN30		
5	IO_L29N_5	AY31		
5	IO_L29P_5	BA31		
5	IO_L28N_5	AW31		
5	IO_L28P_5	AW30		
5	IO_L27N_5/VREF_5	AP31		
5	IO_L27P_5	AR31		
5	IO_L26N_5	AU31		
5	IO_L26P_5	AV31		
5	IO_L25N_5	AT31		
5	IO_L25P_5	AR30		
5	IO_L21N_5	AM31		
5	IO_L21P_5	AN31		
5	IO_L20N_5	BA32		
5	IO_L20P_5	BB32		
5	IO_L19N_5	AV32		
5	IO_L19P_5	AW32		
5	IO_L09N_5/VREF_5	AP32		
5	IO_L09P_5	AR32		
5	IO_L08N_5	AT32		
5	IO_L08P_5	AU32		
5	IO_L07N_5/VREF_5	BA33		
5	IO_L07P_5	BB33		
5	IO_L06N_5/VRP_5	AY33		
5	IO_L06P_5/VRN_5	AY32		
5	IO_L05_5/No_Pair	AT33		
5	IO_L03N_5/D4	AM32		
5	IO_L03P_5/D5	AN32		
5	IO_L02N_5/D6	AU33		
5	IO_L02P_5/D7	AV33		
5	IO_L01N_5/RDWR_B	AL31		
5	IO_L01P_5/CS_B	AL32		
6	IO_L01P_6/VRN_6	BB39		
6	IO_L01N_6/VRP_6	BA39		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
6	IO_L02P_6	BA34		
6	IO_L02N_6	AY34		
6	IO_L03P_6	BB37		
6	IO_L03N_6/VREF_6	BA37		
6	IO_L04P_6	BB36		
6	IO_L04N_6	BA36		
6	IO_L05P_6	AW34		
6	IO_L05N_6	AW35		
6	IO_L06P_6	BB35		
6	IO_L06N_6	BA35		
6	IO_L73P_6	BA38		
6	IO_L73N_6	AY38		
6	IO_L74P_6	AU34		
6	IO_L74N_6	AT34		
6	IO_L75P_6	AY39		
6	IO_L75N_6/VREF_6	AY40		
6	IO_L76P_6	AY37		
6	IO_L76N_6	AW36		
6	IO_L77P_6	AR34		
6	IO_L77N_6	AR35		
6	IO_L78P_6	AY35		
6	IO_L78N_6	AY36		
6	IO_L79P_6	AW41		
6	IO_L79N_6	AW42		
6	IO_L80P_6	AP35		
6	IO_L80N_6	AN34		
6	IO_L81P_6	AW40		
6	IO_L81N_6/VREF_6	AV40		
6	IO_L82P_6	AW39		
6	IO_L82N_6	AV39		
6	IO_L83P_6	AM34		
6	IO_L83N_6	AM35		
6	IO_L84P_6	AW38		
6	IO_L84N_6	AV37		
6	IO_L61P_6	AV41		
6	IO_L61N_6	AU40		
6	IO_L62P_6	AL34		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
6	IO_L62N_6	AL35		
6	IO_L63P_6	AV36		
6	IO_L63N_6/VREF_6	AU36		
6	IO_L64P_6	AV35		
6	IO_L64N_6	AU35		
6	IO_L65P_6	AK35		
6	IO_L65N_6	AJ34		
6	IO_L66P_6	AU41		
6	IO_L66N_6	AU42		
6	IO_L67P_6	AU38		
6	IO_L67N_6	AT38		
6	IO_L68P_6	AK32		
6	IO_L68N_6	AK33		
6	IO_L69P_6	AU37		
6	IO_L69N_6/VREF_6	AT37		
6	IO_L70P_6	AT41		
6	IO_L70N_6	AT42		
6	IO_L71P_6	AK31		
6	IO_L71N_6	AJ31		
6	IO_L72P_6	AT39		
6	IO_L72N_6	AT40		
6	IO_L07P_6	AT35		
6	IO_L07N_6	AT36		
6	IO_L08P_6	AJ32		
6	IO_L08N_6	AJ33		
6	IO_L09P_6	AR42		
6	IO_L09N_6/VREF_6	AP41		
6	IO_L10P_6	AR40		
6	IO_L10N_6	AR41		
6	IO_L11P_6	AH34		
6	IO_L11N_6	AH35		
6	IO_L12P_6	AR38		
6	IO_L12N_6	AR39		
6	IO_L13P_6	AR36		
6	IO_L13N_6	AR37		
6	IO_L14P_6	AH32		
6	IO_L14N_6	AH33		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
6	IO_L15P_6	AP39		
6	IO_L15N_6/VREF_6	AP40		
6	IO_L16P_6	AP36		
6	IO_L16N_6	AP37		
6	IO_L17P_6	AH31		
6	IO_L17N_6	AG31		
6	IO_L18P_6	AN41		
6	IO_L18N_6	AN42		
6	IO_L19P_6	AN40		
6	IO_L19N_6	AM40		
6	IO_L20P_6	AG34		
6	IO_L20N_6	AG35		
6	IO_L21P_6	AN37		
6	IO_L21N_6/VREF_6	AN38		
6	IO_L22P_6	AN36		
6	IO_L22N_6	AM36		
6	IO_L23P_6	AG32		
6	IO_L23N_6	AG33		
6	IO_L24P_6	AM41		
6	IO_L24N_6	AM42		
6	IO_L25P_6	AM38		
6	IO_L25N_6	AM39		
6	IO_L26P_6	AF35		
6	IO_L26N_6	AF36		
6	IO_L27P_6	AM37		
6	IO_L27N_6/VREF_6	AL36		
6	IO_L28P_6	AL41		
6	IO_L28N_6	AK41		
6	IO_L29P_6	AF32		
6	IO_L29N_6	AF33		
6	IO_L30P_6	AL39		
6	IO_L30N_6	AL40		
6	IO_L31P_6	AL37		
6	IO_L31N_6	AL38		
6	IO_L32P_6	AF31		
6	IO_L32N_6	AE31		
6	IO_L33P_6	AK39		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
6	IO_L33N_6/VREF_6	AK40		
6	IO_L34P_6	AK36		
6	IO_L34N_6	AK37		
6	IO_L35P_6	AE36		
6	IO_L35N_6	AE37		
6	IO_L36P_6	AJ41		
6	IO_L36N_6	AJ42		
6	IO_L37P_6	AJ40		
6	IO_L37N_6	AH40		
6	IO_L38P_6	AE34		
6	IO_L38N_6	AE35		
6	IO_L39P_6	AJ38		
6	IO_L39N_6/VREF_6	AH37		
6	IO_L40P_6	AJ36		
6	IO_L40N_6	AJ37		
6	IO_L41P_6	AE32		
6	IO_L41N_6	AE33		
6	IO_L42P_6	AH41		
6	IO_L42N_6	AH42		
6	IO_L43P_6	AH38		
6	IO_L43N_6	AH39		
6	IO_L44P_6	AD36		
6	IO_L44N_6	AC35		
6	IO_L45P_6	AH36		
6	IO_L45N_6/VREF_6	AG36		
6	IO_L46P_6	AG41		
6	IO_L46N_6	AG42		
6	IO_L47P_6	AD34		
6	IO_L47N_6	AC33		
6	IO_L48P_6	AG40		
6	IO_L48N_6	AF39		
6	IO_L49P_6	AG38		
6	IO_L49N_6	AG39		
6	IO_L50P_6	AD32		
6	IO_L50N_6	AD33		
6	IO_L51P_6	AG37		
6	IO_L51N_6/VREF_6	AF37		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
6	IO_L52P_6	AF40		
6	IO_L52N_6	AF41		
6	IO_L53P_6	AC36		
6	IO_L53N_6	AC37		
6	IO_L54P_6	AE41		
6	IO_L54N_6	AE42		
6	IO_L55P_6	AE40		
6	IO_L55N_6	AD40		
6	IO_L56P_6	AC31		
6	IO_L56N_6	AC32		
6	IO_L57P_6	AE38		
6	IO_L57N_6/VREF_6	AE39		
6	IO_L58P_6	AD41		
6	IO_L58N_6	AD42		
6	IO_L59P_6	AB35		
6	IO_L59N_6	AB36		
6	IO_L60P_6	AD37		
6	IO_L60N_6	AD38		
6	IO_L85P_6	AC40		
6	IO_L85N_6	AC41		
6	IO_L86P_6	AB33		
6	IO_L86N_6	AB34		
6	IO_L87P_6	AC39		
6	IO_L87N_6/VREF_6	AB39		
6	IO_L88P_6	AB40		
6	IO_L88N_6	AB41		
6	IO_L89P_6	AB31		
6	IO_L89N_6	AB32		
6	IO_L90P_6	AB37		
6	IO_L90N_6	AB38		
7	IO_L90P_7	AA40		
7	IO_L90N_7	AA41		
7	IO_L89P_7	AA35		
7	IO_L89N_7	AA36		
7	IO_L88P_7	Y39		
7	IO_L88N_7/VREF_7	AA39		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
7	IO_L87P_7	AA37		
7	IO_L87N_7	AA38		
7	IO_L86P_7	AA33		
7	IO_L86N_7	AA34		
7	IO_L85P_7	Y40		
7	IO_L85N_7	Y41		
7	IO_L60P_7	W41		
7	IO_L60N_7	W42		
7	IO_L59P_7	AA31		
7	IO_L59N_7	AA32		
7	IO_L58P_7	V40		
7	IO_L58N_7/VREF_7	W40		
7	IO_L57P_7	W37		
7	IO_L57N_7	W38		
7	IO_L56P_7	Y36		
7	IO_L56N_7	Y37		
7	IO_L55P_7	V41		
7	IO_L55N_7	V42		
7	IO_L54P_7	V38		
7	IO_L54N_7	V39		
7	IO_L53P_7	Y31		
7	IO_L53N_7	Y32		
7	IO_L52P_7	U40		
7	IO_L52N_7/VREF_7	U41		
7	IO_L51P_7	T40		
7	IO_L51N_7	U39		
7	IO_L50P_7	Y35		
7	IO_L50N_7	W36		
7	IO_L49P_7	T37		
7	IO_L49N_7	U37		
7	IO_L48P_7	T41		
7	IO_L48N_7	T42		
7	IO_L47P_7	Y33		
7	IO_L47N_7	W34		
7	IO_L46P_7	T38		
7	IO_L46N_7/VREF_7	T39		
7	IO_L45P_7	R36		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	No Connects XC2VP125
7	IO_L45N_7	T36		
7	IO_L44P_7	W32		
7	IO_L44N_7	W33		
7	IO_L43P_7	R41		
7	IO_L43N_7	R42		
7	IO_L42P_7	P40		
7	IO_L42N_7	R40		
7	IO_L41P_7	V36		
7	IO_L41N_7	V37		
7	IO_L40P_7	R38		
7	IO_L40N_7/VREF_7	R39		
7	IO_L39P_7	P38		
7	IO_L39N_7	R37		
7	IO_L38P_7	V34		
7	IO_L38N_7	V35		
7	IO_L37P_7	P41		
7	IO_L37N_7	P42		
7	IO_L36P_7	P36		
7	IO_L36N_7	P37		
7	IO_L35P_7	V32		
7	IO_L35N_7	V33		
7	IO_L34P_7	M41		
7	IO_L34N_7/VREF_7	N41		
7	IO_L33P_7	N39		
7	IO_L33N_7	N40		
7	IO_L32P_7	U35		
7	IO_L32N_7	U36		
7	IO_L31P_7	N36		
7	IO_L31N_7	N37		
7	IO_L30P_7	M39		
7	IO_L30N_7	M40		
7	IO_L29P_7	U32		
7	IO_L29N_7	U33		
7	IO_L28P_7	M37		
7	IO_L28N_7/VREF_7	M38		
7	IO_L27P_7	L37		
7	IO_L27N_7	M36		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
7	IO_L26P_7	V31		
7	IO_L26N_7	U31		
7	IO_L25P_7	L41		
7	IO_L25N_7	L42		
7	IO_L24P_7	K40		
7	IO_L24N_7	L40		
7	IO_L23P_7	T34		
7	IO_L23N_7	T35		
7	IO_L22P_7	L38		
7	IO_L22N_7/VREF_7	L39		
7	IO_L21P_7	K36		
7	IO_L21N_7	L36		
7	IO_L20P_7	T32		
7	IO_L20N_7	T33		
7	IO_L19P_7	K41		
7	IO_L19N_7	K42		
7	IO_L18P_7	K37		
7	IO_L18N_7	K38		
7	IO_L17P_7	R34		
7	IO_L17N_7	R35		
7	IO_L16P_7	H42		
7	IO_L16N_7/VREF_7	J41		
7	IO_L15P_7	J39		
7	IO_L15N_7	J40		
7	IO_L14P_7	R32		
7	IO_L14N_7	R33		
7	IO_L13P_7	J36		
7	IO_L13N_7	J37		
7	IO_L12P_7	H40		
7	IO_L12N_7	H41		
7	IO_L11P_7	T31		
7	IO_L11N_7	R31		
7	IO_L10P_7	H38		
7	IO_L10N_7/VREF_7	H39		
7	IO_L09P_7	H36		
7	IO_L09N_7	H37		
7	IO_L08P_7	P34		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
7	IO_L08N_7	N35		
7	IO_L07P_7	G41		
7	IO_L07N_7	G42		
7	IO_L72P_7	G39		
7	IO_L72N_7	G40		
7	IO_L71P_7	P32		
7	IO_L71N_7	P33		
7	IO_L70P_7	F38		
7	IO_L70N_7/VREF_7	G38		
7	IO_L69P_7	F37		
7	IO_L69N_7	G37		
7	IO_L68P_7	N32		
7	IO_L68N_7	N33		
7	IO_L67P_7	G35		
7	IO_L67N_7	G36		
7	IO_L66P_7	F41		
7	IO_L66N_7	F42		
7	IO_L65P_7	P31		
7	IO_L65N_7	N31		
7	IO_L64P_7	E41		
7	IO_L64N_7/VREF_7	F40		
7	IO_L63P_7	E36		
7	IO_L63N_7	F36		
7	IO_L62P_7	M34		
7	IO_L62N_7	M35		
7	IO_L61P_7	E35		
7	IO_L61N_7	F35		
7	IO_L84P_7	D40		
7	IO_L84N_7	E40		
7	IO_L83P_7	L34		
7	IO_L83N_7	L35		
7	IO_L82P_7	D39		
7	IO_L82N_7/VREF_7	E39		
7	IO_L81P_7	D38		
7	IO_L81N_7	E37		
7	IO_L80P_7	K34		
7	IO_L80N_7	J35		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
7	IO_L79P_7	D41		
7	IO_L79N_7	D42		
7	IO_L78P_7	C39		
7	IO_L78N_7	C40		
7	IO_L77P_7	H34		
7	IO_L77N_7	H35		
7	IO_L76P_7	C37		
7	IO_L76N_7/VREF_7	D36		
7	IO_L75P_7	B38		
7	IO_L75N_7	C38		
7	IO_L74P_7	F34		
7	IO_L74N_7	G34		
7	IO_L73P_7	C35		
7	IO_L73N_7	C36		
7	IO_L06P_7	A39		
7	IO_L06N_7	B39		
7	IO_L05P_7	D34		
7	IO_L05N_7	D35		
7	IO_L04P_7	A37		
7	IO_L04N_7/VREF_7	B37		
7	IO_L03P_7	A36		
7	IO_L03N_7	B36		
7	IO_L02P_7	B34		
7	IO_L02N_7	C34		
7	IO_L01P_7/VRN_7	A35		
7	IO_L01N_7/VRP_7	B35		
7	VCCO_7	W39		
7	VCCO_7	P39		
7	VCCO_7	K39		
7	VCCO_7	F39		
7	VCCO_7	D37		
7	VCCO_7	W35		
7	VCCO_7	P35		
7	VCCO_7	K35		
7	VCCO_7	M33		
7	VCCO_7	H33		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
7	VCCO_7	AA29		
7	VCCO_7	Y29		
7	VCCO_7	W29		
7	VCCO_7	V29		
7	VCCO_7	U29		
7	VCCO_7	T29		
7	VCCO_7	R29		
7	VCCO_7	AA28		
7	VCCO_7	Y28		
7	VCCO_7	W28		
7	VCCO_7	V28		
7	VCCO_7	U28		
7	VCCO_7	T28		
6	VCCO_6	AU39		
6	VCCO_6	AN39		
6	VCCO_6	AJ39		
6	VCCO_6	AD39		
6	VCCO_6	AW37		
6	VCCO_6	AN35		
6	VCCO_6	AJ35		
6	VCCO_6	AD35		
6	VCCO_6	AR33		
6	VCCO_6	AL33		
6	VCCO_6	AH29		
6	VCCO_6	AG29		
6	VCCO_6	AF29		
6	VCCO_6	AE29		
6	VCCO_6	AD29		
6	VCCO_6	AC29		
6	VCCO_6	AB29		
6	VCCO_6	AG28		
6	VCCO_6	AF28		
6	VCCO_6	AE28		
6	VCCO_6	AD28		
6	VCCO_6	AC28		
6	VCCO_6	AB28		
5	VCCO_5	AW33		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
5	VCCO_5	AL30		
5	VCCO_5	AW29		
5	VCCO_5	AR29		
5	VCCO_5	AJ26		
5	VCCO_5	AW25		
5	VCCO_5	AR25		
5	VCCO_5	AJ25		
5	VCCO_5	AH25		
5	VCCO_5	AJ24		
5	VCCO_5	AH24		
5	VCCO_5	AJ23		
5	VCCO_5	AH23		
5	VCCO_5	AJ22		
5	VCCO_5	AH22		
4	VCCO_4	AJ21		
4	VCCO_4	AH21		
4	VCCO_4	AJ20		
4	VCCO_4	AH20		
4	VCCO_4	AJ19		
4	VCCO_4	AH19		
4	VCCO_4	AW18		
4	VCCO_4	AR18		
4	VCCO_4	AJ18		
4	VCCO_4	AH18		
4	VCCO_4	AJ17		
4	VCCO_4	AW14		
4	VCCO_4	AR14		
4	VCCO_4	AL13		
4	VCCO_4	AW10		
3	VCCO_3	AG15		
3	VCCO_3	AF15		
3	VCCO_3	AE15		
3	VCCO_3	AD15		
3	VCCO_3	AC15		
3	VCCO_3	AB15		
3	VCCO_3	AH14		
3	VCCO_3	AG14		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
3	VCCO_3	AF14		
3	VCCO_3	AE14		
3	VCCO_3	AD14		
3	VCCO_3	AC14		
3	VCCO_3	AB14		
3	VCCO_3	AR10		
3	VCCO_3	AL10		
3	VCCO_3	AN8		
3	VCCO_3	AJ8		
3	VCCO_3	AD8		
3	VCCO_3	AW6		
3	VCCO_3	AU4		
3	VCCO_3	AN4		
3	VCCO_3	AJ4		
3	VCCO_3	AD4		
2	VCCO_2	AA15		
2	VCCO_2	Y15		
2	VCCO_2	W15		
2	VCCO_2	V15		
2	VCCO_2	U15		
2	VCCO_2	T15		
2	VCCO_2	AA14		
2	VCCO_2	Y14		
2	VCCO_2	W14		
2	VCCO_2	V14		
2	VCCO_2	U14		
2	VCCO_2	T14		
2	VCCO_2	R14		
2	VCCO_2	M10		
2	VCCO_2	H10		
2	VCCO_2	W8		
2	VCCO_2	P8		
2	VCCO_2	K8		
2	VCCO_2	D6		
2	VCCO_2	W4		
2	VCCO_2	P4		
2	VCCO_2	K4		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

			No Connects	
Bank	**Pin Description**	**Pin Number**	**XC2VP100**	**XC2VP125**
2	VCCO_2	F4		
1	VCCO_1	R21		
1	VCCO_1	P21		
1	VCCO_1	R20		
1	VCCO_1	P20		
1	VCCO_1	R19		
1	VCCO_1	P19		
1	VCCO_1	R18		
1	VCCO_1	P18		
1	VCCO_1	H18		
1	VCCO_1	D18		
1	VCCO_1	P17		
1	VCCO_1	H14		
1	VCCO_1	D14		
1	VCCO_1	M13		
1	VCCO_1	D10		
0	VCCO_0	D33		
0	VCCO_0	M30		
0	VCCO_0	H29		
0	VCCO_0	D29		
0	VCCO_0	P26		
0	VCCO_0	R25		
0	VCCO_0	P25		
0	VCCO_0	H25		
0	VCCO_0	D25		
0	VCCO_0	R24		
0	VCCO_0	P24		
0	VCCO_0	R23		
0	VCCO_0	P23		
0	VCCO_0	R22		
0	VCCO_0	P22		
N/A	CCLK	AM10		
N/A	PROG_B	J33		
N/A	DONE	AN10		
N/A	M0	AP33		
N/A	M1	AN33		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects XC2VP100	XC2VP125
N/A	M2	AM33		
N/A	TCK	K10		
N/A	TDI	M32		
N/A	TDO	M11		
N/A	TMS	L10		
N/A	PWRDWN_B	AP10		
N/A	HSWAP_EN	K33		
N/A	RSVD	J10		
N/A	VBATT	M12		
N/A	DXP	M31		
N/A	DXN	L33		
N/A	VCCINT	AK30		
N/A	VCCINT	N30		
N/A	VCCINT	AJ29		
N/A	VCCINT	P29		
N/A	VCCINT	AJ28		
N/A	VCCINT	AH28		
N/A	VCCINT	R28		
N/A	VCCINT	P28		
N/A	VCCINT	AJ27		
N/A	VCCINT	AH27		
N/A	VCCINT	AG27		
N/A	VCCINT	AF27		
N/A	VCCINT	AE27		
N/A	VCCINT	AD27		
N/A	VCCINT	AC27		
N/A	VCCINT	AB27		
N/A	VCCINT	AA27		
N/A	VCCINT	Y27		
N/A	VCCINT	W27		
N/A	VCCINT	V27		
N/A	VCCINT	U27		
N/A	VCCINT	T27		
N/A	VCCINT	R27		
N/A	VCCINT	P27		
N/A	VCCINT	AH26		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

| Bank | Pin Description | Pin Number | No Connects | |
			XC2VP100	XC2VP125
N/A	VCCINT	AG26		
N/A	VCCINT	AF26		
N/A	VCCINT	U26		
N/A	VCCINT	T26		
N/A	VCCINT	R26		
N/A	VCCINT	AG25		
N/A	VCCINT	T25		
N/A	VCCINT	AG24		
N/A	VCCINT	T24		
N/A	VCCINT	AG23		
N/A	VCCINT	T23		
N/A	VCCINT	AG22		
N/A	VCCINT	T22		
N/A	VCCINT	AG21		
N/A	VCCINT	T21		
N/A	VCCINT	AG20		
N/A	VCCINT	T20		
N/A	VCCINT	AG19		
N/A	VCCINT	T19		
N/A	VCCINT	AG18		
N/A	VCCINT	T18		
N/A	VCCINT	AH17		
N/A	VCCINT	AG17		
N/A	VCCINT	AF17		
N/A	VCCINT	U17		
N/A	VCCINT	T17		
N/A	VCCINT	R17		
N/A	VCCINT	AJ16		
N/A	VCCINT	AH16		
N/A	VCCINT	AG16		
N/A	VCCINT	AF16		
N/A	VCCINT	AE16		
N/A	VCCINT	AD16		
N/A	VCCINT	AC16		
N/A	VCCINT	AB16		
N/A	VCCINT	AA16		
N/A	VCCINT	Y16		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	VCCINT	W16		
N/A	VCCINT	V16		
N/A	VCCINT	U16		
N/A	VCCINT	T16		
N/A	VCCINT	R16		
N/A	VCCINT	P16		
N/A	VCCINT	AJ15		
N/A	VCCINT	AH15		
N/A	VCCINT	R15		
N/A	VCCINT	P15		
N/A	VCCINT	AJ14		
N/A	VCCINT	P14		
N/A	VCCINT	AK13		
N/A	VCCINT	N13		
N/A	VCCAUX	BA42		
N/A	VCCAUX	AY42		
N/A	VCCAUX	AL42		
N/A	VCCAUX	AB42		
N/A	VCCAUX	AA42		
N/A	VCCAUX	M42		
N/A	VCCAUX	C42		
N/A	VCCAUX	B42		
N/A	VCCAUX	BB41		
N/A	VCCAUX	A41		
N/A	VCCAUX	BB40		
N/A	VCCAUX	A40		
N/A	VCCAUX	BB31		
N/A	VCCAUX	A31		
N/A	VCCAUX	BB22		
N/A	VCCAUX	A22		
N/A	VCCAUX	BB21		
N/A	VCCAUX	A21		
N/A	VCCAUX	BB12		
N/A	VCCAUX	A12		
N/A	VCCAUX	BB3		
N/A	VCCAUX	A3		
N/A	VCCAUX	BB2		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

| | | | No Connects | |
Bank	Pin Description	Pin Number	XC2VP100	XC2VP125
N/A	VCCAUX	A2		
N/A	VCCAUX	BA1		
N/A	VCCAUX	AY1		
N/A	VCCAUX	AL1		
N/A	VCCAUX	AB1		
N/A	VCCAUX	AA1		
N/A	VCCAUX	M1		
N/A	VCCAUX	C1		
N/A	VCCAUX	B1		
N/A	GND	AV42		
N/A	GND	AP42		
N/A	GND	AK42		
N/A	GND	AF42		
N/A	GND	AC42		
N/A	GND	Y42		
N/A	GND	U42		
N/A	GND	N42		
N/A	GND	J42		
N/A	GND	E42		
N/A	GND	BA41		
N/A	GND	AY41		
N/A	GND	C41		
N/A	GND	B41		
N/A	GND	BA40		
N/A	GND	B40		
N/A	GND	BB38		
N/A	GND	AV38		
N/A	GND	AP38		
N/A	GND	AK38		
N/A	GND	AF38		
N/A	GND	AC38		
N/A	GND	Y38		
N/A	GND	U38		
N/A	GND	N38		
N/A	GND	J38		
N/A	GND	E38		
N/A	GND	A38		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	BB34		
N/A	GND	AV34		
N/A	GND	AP34		
N/A	GND	AK34		
N/A	GND	AF34		
N/A	GND	AC34		
N/A	GND	Y34		
N/A	GND	U34		
N/A	GND	N34		
N/A	GND	J34		
N/A	GND	E34		
N/A	GND	A34		
N/A	GND	AD31		
N/A	GND	W31		
N/A	GND	BB30		
N/A	GND	AV30		
N/A	GND	AP30		
N/A	GND	J30		
N/A	GND	E30		
N/A	GND	A30		
N/A	GND	BB26		
N/A	GND	AV26		
N/A	GND	AP26		
N/A	GND	AE26		
N/A	GND	AD26		
N/A	GND	AC26		
N/A	GND	AB26		
N/A	GND	AA26		
N/A	GND	Y26		
N/A	GND	W26		
N/A	GND	V26		
N/A	GND	J26		
N/A	GND	E26		
N/A	GND	A26		
N/A	GND	AF25		
N/A	GND	AE25		
N/A	GND	AD25		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	AC25		
N/A	GND	AB25		
N/A	GND	AA25		
N/A	GND	Y25		
N/A	GND	W25		
N/A	GND	V25		
N/A	GND	U25		
N/A	GND	AL24		
N/A	GND	AF24		
N/A	GND	AE24		
N/A	GND	AD24		
N/A	GND	AC24		
N/A	GND	AB24		
N/A	GND	AA24		
N/A	GND	Y24		
N/A	GND	W24		
N/A	GND	V24		
N/A	GND	U24		
N/A	GND	M24		
N/A	GND	BB23		
N/A	GND	AV23		
N/A	GND	AP23		
N/A	GND	AF23		
N/A	GND	AE23		
N/A	GND	AD23		
N/A	GND	AC23		
N/A	GND	AB23		
N/A	GND	AA23		
N/A	GND	Y23		
N/A	GND	W23		
N/A	GND	V23		
N/A	GND	U23		
N/A	GND	J23		
N/A	GND	E23		
N/A	GND	A23		
N/A	GND	AF22		
N/A	GND	AE22		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	AD22		
N/A	GND	AC22		
N/A	GND	AB22		
N/A	GND	AA22		
N/A	GND	Y22		
N/A	GND	W22		
N/A	GND	V22		
N/A	GND	U22		
N/A	GND	AF21		
N/A	GND	AE21		
N/A	GND	AD21		
N/A	GND	AC21		
N/A	GND	AB21		
N/A	GND	AA21		
N/A	GND	Y21		
N/A	GND	W21		
N/A	GND	V21		
N/A	GND	U21		
N/A	GND	BB20		
N/A	GND	AV20		
N/A	GND	AP20		
N/A	GND	AF20		
N/A	GND	AE20		
N/A	GND	AD20		
N/A	GND	AC20		
N/A	GND	AB20		
N/A	GND	AA20		
N/A	GND	Y20		
N/A	GND	W20		
N/A	GND	V20		
N/A	GND	U20		
N/A	GND	J20		
N/A	GND	E20		
N/A	GND	A20		
N/A	GND	AL19		
N/A	GND	AF19		
N/A	GND	AE19		

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Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	AD19		
N/A	GND	AC19		
N/A	GND	AB19		
N/A	GND	AA19		
N/A	GND	Y19		
N/A	GND	W19		
N/A	GND	V19		
N/A	GND	U19		
N/A	GND	M19		
N/A	GND	AF18		
N/A	GND	AE18		
N/A	GND	AD18		
N/A	GND	AC18		
N/A	GND	AB18		
N/A	GND	AA18		
N/A	GND	Y18		
N/A	GND	W18		
N/A	GND	V18		
N/A	GND	U18		
N/A	GND	BB17		
N/A	GND	AV17		
N/A	GND	AP17		
N/A	GND	AE17		
N/A	GND	AD17		
N/A	GND	AC17		
N/A	GND	AB17		
N/A	GND	AA17		
N/A	GND	Y17		
N/A	GND	W17		
N/A	GND	V17		
N/A	GND	J17		
N/A	GND	E17		
N/A	GND	A17		
N/A	GND	BB13		
N/A	GND	AV13		
N/A	GND	AP13		
N/A	GND	J13		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	E13		
N/A	GND	A13		
N/A	GND	AD12		
N/A	GND	W12		
N/A	GND	BB9		
N/A	GND	AV9		
N/A	GND	AP9		
N/A	GND	AK9		
N/A	GND	AF9		
N/A	GND	AC9		
N/A	GND	Y9		
N/A	GND	U9		
N/A	GND	N9		
N/A	GND	J9		
N/A	GND	E9		
N/A	GND	A9		
N/A	GND	BB5		
N/A	GND	AV5		
N/A	GND	AP5		
N/A	GND	AK5		
N/A	GND	AF5		
N/A	GND	AC5		
N/A	GND	Y5		
N/A	GND	U5		
N/A	GND	N5		
N/A	GND	J5		
N/A	GND	E5		
N/A	GND	A5		
N/A	GND	BA3		
N/A	GND	B3		
N/A	GND	BA2		
N/A	GND	AY2		
N/A	GND	C2		
N/A	GND	B2		
N/A	GND	AV1		
N/A	GND	AP1		
N/A	GND	AK1		

Table 14: **FF1696 — XC2VP100 and XC2VP125**

Bank	Pin Description	Pin Number	No Connects	
			XC2VP100	**XC2VP125**
N/A	GND	AF1		
N/A	GND	AC1		
N/A	GND	Y1		
N/A	GND	U1		
N/A	GND	N1		
N/A	GND	J1		
N/A	GND	E1		

FF1696 Flip-Chip Fine-Pitch BGA Package Specifications (1.00mm pitch)

Figure 10: **FF1696 Flip-Chip Fine-Pitch BGA Package Specifications**

Revision History

This section records the change history for this module of the data sheet.

Date	Version	Revision
01/31/02	1.0	Initial Xilinx release.
08/14/02	2.0	Added package and pinout information for new devices.
08/27/02	2.1	• Updated SelectIO-Ultra information in Table 4. (Table deleted in v2.3.) • Corrected direction for RXNPAD and TXPPAD in Table 4 (formerly Table 5).
09/27/02	2.2	Corrected Table 2 and Table 3 entries for XC2VP30, FF1152 package, maximum I/Os from 692 to 644.
11/20/02	2.3	Added Number of Differential Pairs data to Table 3. Removed former Table 4.
12/03/02	2.4	Corrections in Table 4: • Reclassified GCLKx (S/P) pins as Input/Output, since these pins can be used as normal I/Os if not used as clocks. • Added cautionary note to PWRDWN_B pin, indicating that this function is not supported.
01/20/03	2.5	Added and removed package/pinout information for existing devices: • In Table 1, added FG676 package information. • In Table 3, added FG676 package option for XC2VP20, XC2VP30, and XC2VP40. • In Table 12, removed FF1517 package option for XC2VP40. • Added FG676 package pinouts (Table 7) for XC2VP20, XC2VP30, and XC2VP40. • Added package diagram (Figure 3) for FG676 package.

Virtex-II Pro Data Sheet

The Virtex-II Pro Data Sheet contains the following modules:

- **Virtex-II Pro™ Platform FPGAs: Introduction and Overview (Module 1)**

- **Virtex-II Pro™ Platform FPGAs: Detailed Description (Module 2)**

- **Virtex-II Pro™ Platform FPGAs: DC and Switching Characteristics (Module 3)**

- **Virtex-II Pro™ Platform FPGAs: Pinout Information (Module 4)**