

# XILINX IP SELECTION GUIDE

Function	Vendor Name	IP Type	Virtex-II Pro	Virtex-II	Virtex-E	Virtex	Spartan-II E	Spartan-II	Spartan	Implementation Example			Key Features	Application Examples	
										Occ	MHz	Device			
<b>Communication &amp; Networking</b>															
3G FEC Package	Xilinx	LogiCORE		V-II	V-E	V							Viterbi Decoder, Turbo Codec, Convolutional Encoder	3G Wireless Infrastructure	
3GPP Compliant Turbo Convolutional Decoder	Xilinx	LogiCORE		V-II	V-E	V					80%	40	XC2V500	3GPP specs, 2 Mbps, BER=10-6 for 1.5dB SNR	3G Wireless Infrastructure
3GPP Compliant Turbo Convolutional Encoder	Xilinx	LogiCORE		V-II	V-E	V					65%	60	XC2V250	Compliant w/ 3GPP, puncturing	3G Wireless Infrastructure
3GPP Turbo Decoder	sysonchip	AllianceCORE		V-II	V	V					87%	66	XC2V500-5	3GPP/UMTS compliant, IMT-2000, 2Mbps data	Error correction, wireless
8b/10b Decoder	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-II E	S-II		1 BRAM	100	XC2V1000	Industry std 8b/10b en/decode for serial data transmission	Physical layer of Fiber Channel	
8b/10b Encoder	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-II E	S-II		1 BRAM	100	XC2V1000	Industry std 8b/10b en/decode for serial data transmission	Physical layer of Fiber Channel	
ADPCM 1024 Channel	Amphion	AllianceCORE		V-II	V	V							G.721, 723, 726, 726a, 727, 727a, u-law, a-law	DECT, VOIP, cordless telephony	
ADPCM 16 Channel	Amphion	AllianceCORE			V	V		S-II		89%	16	XCV150-6	G.721, 723, 726, 726a, 727, 727a, u-law, a-law	DECT, VOIP, cordless telephony	
ADPCM 256 Channel	Amphion	AllianceCORE		V-II	V	V							G.721, 723, 726, 726a, 727, 727a, u-law, a-law	DECT, VOIP, cordless telephony	
ADPCM 512 Channel	Amphion	AllianceCORE		V-II	V	V									
ADPCM 768 Channel	Amphion	AllianceCORE		V-II	V	V				89%	50	XC2V500-5	G.721, 723, 726, 726a, 727, 727a, u-law, a-law	DECT, VOIP, cordless telephony	
ADPCM Speech Codec, 32 Channel (DO-DI-ADPCM32)	Xilinx	LogiCORE		V-II	V-E	V		S-II		62%	25	XC2V500	G.726, G.727, 32 duplex channels	DECT, VOIP, Wireless local loop, DSLAM, PBX	
ADPCM Speech Codec, 64 Channel (DO-DI-ADPCM64)	Xilinx	LogiCORE		V-II	V-E	V		S-II		61%	27	XC2V500	G.726, G.727, 64 duplex channels	DECT, VOIP, Wireless local loop, DSLAM, PBX	
BOOST Lite Bluetooth Baseband Processor	NewLogic	AllianceCORE		V-II	V	V				73%	33	XC2V1000-4	Compliant to Bluetooth v1.1, BQB qualified software for L2CAP, LMP, H1, voice support	Bluetooth applications	
Cell Assembler (CC-201)	Paxonet	AllianceCORE			V	V			S	44%	60	XC4005XL-1	Octet wide operation, HEC compute, cell scrambling	ATM adapter cards, routers, switches	
Cell Delineation (CC-200)	Paxonet	AllianceCORE			V	V			S	67%	40	XC4010XL-9	Octet wide operation, HEC verification, cell scrambling	ATM adapter cards, routers, switches	
Convolutional Encoder	TILAB	AllianceCORE			V	V			S	2%	144	XCV50-6	code rate, gen. vectors, CMSTR length customizable	Error correction	
Convolutional Encoder	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-II E	S-II		10%	26	XC2V40	k from 3 to 9, puncturing from 2/3 to 12/13	3G base stations, broadcast, wireless LAN, cable modem, xDSL, satellite com, uwave	
CRC10 Generator and Verifier (CC-130)	Paxonet	AllianceCORE			V	V			S	22%	20	XCS30-4	Separate generator and verifier blocks, compatible with ITU-T I.363 for AAL3/AAL4	ATM, SONET, and Ethernet	
CRC32 Generator and Verifier (CC-131)	Paxonet	AllianceCORE			V	V			S	43%	29	XCS30-4	Separate generator and verifier blocks, compat with ITU-T I.363 for AAL5	ATM, SONET, and Ethernet	
DES	Memecore	AllianceCORE			V	V		S-II	S	79%	25	XC520-4	NIST certified, supports ECB, CBC, CFB, and OFB	Secure communication, data storage	
DES - Triple DES Cryptoprocessor	inSilicon	AllianceCORE			V	V		S-II	S	93%	48	XC2S150-6	Compliant with ANSI X9.52, 128-bit key or two independent 64-bit keys	Secure communication, data storage	
DES Cryptoprocessor	inSilicon	AllianceCORE			V	V		S-II	S	20%	94	XC2S100-6	NIST certified, supports ECB, CBC, CFB, OFB	Secure communication, data storage	
Distributed Sample Descrambler	TILAB	AllianceCORE			V	V		S-II	S	14%	74	XCV50-6	ITU-T I.432. Param data width, cell & header length	ATM PHY layer	
Distributed Sample Descrambler	TILAB	AllianceCORE			V	V		S-II	S	14%	74	XCV50-6	ITU-T I.432. Param data width, cell & header length	ATM PHY layer	
Distributed Sample Scrambler	TILAB	AllianceCORE			V	V		S-II	S	9%	104	XCV50-6	Compliant with ITU-T I.432 scrambler. Param data width, cell length, header length	ATM PHY layer	
DVB Satellite Modulator Core	Memecore	AllianceCORE			V	V		S-II	S	39%	45-70	XCV50-4	Conforms to ETSI EN 300 421 v1.1.2, selectable convolutional code rate	Digital broadcast, microwave transmitter	
DVB-RCS Turbo Decoder	iCODING	AllianceCORE		V-II	V	V				54%	69	XC2V2000-5 DVB-RCS	Compliant, 9Mb/s, data rate, switchable code rates and frame sizes	Error correction, wireless, DVB, Satellite data link	
Fast Ethernet (10/100 Mbps) MAC Evaluation Board	Paxonet	AllianceCORE			V	V		S-II	S				IEEE 802.3 compliant RMON, MIBs stats, MII	Ethernet switched, hub, NICS	
Fast Ethernet (10/100 Mbps) Media Access Controller Transmitter and Receiver Cores	Paxonet	AllianceCORE			V	V		S-II	S	90%	50	XCV150-4	IEEE 802.3 compliant RMON, MIBs stats, MII	Ethernet switched, hub, NICS	
10 Gigabit Ethernet MAC (DO-DI-10GEMAC)	Xilinx	LogiCORE	V-IIIP	V-II		V				25%	312 Mbps (156.25 DDR)	XC2V3000-5	IEEE 802.3ae, version D3.2 compliant, 32-bit XGMII interface, supports WAN/LAN functionality, Statistics gathering	Layer 2 switches/hubs, test equipment, bridge to POS PHY4, iSCSI line cards	
1 Gigabit Ethernet MAC (DO-DI-1GEMAC)	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V		S-II E		23%	125	XC2V1000-4	IEEE 802.3-2000 compliant, 8-bit GMII interface, Statistics gathering	GbE Network Interface Cards (NICs), Edge switches and terabit routers – packet based line cards, iSCSI line cards, PL3 to Gb Ethernet and other bridges	
Flexbus 4 Interface Core, 16-Channel (DO-DI-FLX4C16)	Xilinx	LogiCORE	V-IIIP	V-II		V				31%	200	XC2V3000 FG676-5	OIF SPI-4 Phase 1 and Flexbus4 compliant. Fully HW interoperable with AMCC OC-192 framers.	Line card: terabit routers & optical switches	
Flexbus 4 Interface Core, 4-Channel (DO-DI-FLX4C4)	Xilinx	LogiCORE	V-IIIP	V-II		V				27%	200	XC2V1000 FG456-5	OIF SPI-4 Phase 1 and Flexbus4 compliant. Fully HW interoperable with AMCC OC-192 framers.	Line card: terabit routers & optical switches	
Flexbus 4 Interface Core, 1-Channel (DO-DI-FLX4C1)	Xilinx	LogiCORE	V-IIIP	V-II		V				12%	200	XC2V1000 FG456-5	OIF SPI-4 Phase 1 and Flexbus4 compliant. Fully HW interoperable with AMCC OC-192 framers.	Line card: terabit routers & optical switches	
G.711 PCM Codec	Xilinx	LogiCORE			V-E	V		S-II		12%	44	XCV50	μ-Law, ITU G.711, EBI for A-Law	Digital telephony, DECT, T1 & E1 Links	
G.711 PCM Compressor	Xilinx	LogiCORE			V-E	V		S-II		7%	44	XCV50	μ-Law, ITU G.711, EBI for A-Law	Digital telephony, DECT, T1 & E1 Links	
G.711 PCM Expander	Xilinx	LogiCORE			V-E	V		S-II		6%	57	XCV50	Digital telephony, DECT, T1 & E1	Digital telephony, DECT, T1 & E1 Links	
HDLC Controller Core, 32 Channels	Xilinx	LogiCORE		V-II	V-E	V		S-II		34%	81	XC2V250	32 full duplex, CRC-16/32, 8/16-bit address insertion/deletion	X.25, POS, cable modems, frame relay switches, video conferencing over ISDN	
HDLC Controller Core, Single Channel	Xilinx	LogiCORE		V-II	V-E	V		S-II		15%	115	XC2V250	16/32-bit frame seq, 8/16-bit addr insert/delete, flag/zerop insert/detect	X.25, POS, cable modems, frame relay switches, video conferencing over ISDN	
IMA-32 Inverse Multiplexer for ATM	Mindspeed	AllianceCORE			V	V				78%	50	XCV400E-6	Compliant ATM Forum IMA, prog. groups & links, SW driver available	Network adapters, routers, multiplexers	
IMA-8 Inverse Multiplexer for ATM	Mindspeed	AllianceCORE			V	V		S-II		100%	50	XC2S150-5	Compliant with ATM Forum IMA, prog. groups & links, SW driver	Network adapters, routers, DSLAMs	
Interleaver Deinterleaver	TILAB	AllianceCORE			V	V		S-II	S	21%	73	XVC50-6	Block & convolutional support. param features. 3GPP, UMTS, GSM, DVB compliant	Channel coding in telecom/wireless, broadcast	
Interleaver/De-interleaver	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-II E	S-II		30%	187	XC2V40	Block & convolutional, width up to 256 bits, 256 branches	Broadcast, wireless LAN, cable modem, xDSL, satellite com, uwave nets, digital TV, CDMA2000	
IPlogiCAM Internet Protocol Content Addressable Memory	TILAB	AllianceCORE			V	V		S-II	S	9%	49	XCV50-6	Hardware control blk works with s/w CAM	IP routers	
MT1F T1 Frammer	Virtual	AllianceCORE			V	V				*	*	*	D4, ESF, SLC-96 formats. For XC4000.	DS1 trunk, PBX I/F	
Noisy Transmission Channel Model	TILAB	AllianceCORE			V	V		S-II	S	22%	100	XCV50-6	Programmable noise generation profile	Noise emulation in transmission channel	
PARSER: Bit Stream Analyzer and Data Extractor	TILAB	AllianceCORE			V	V		S-II	S	32%	67	XCV50-6	Data syntax analysis of IP, MPEG, ATM	ATM, IP, MPEG	
PE-MACMII Dual Speed 10/100 Mbps Ethernet MAC	Alcatel	AllianceCORE		V-II	V	V		S-II		33%	60	XC2V500-4	802.3 compliant, Supports single & multimode fiber optic devices, M11 interfaces, RMON and Etherstate statistics	Networking, Broadband, SOHO, Home networking, storage, routers, switches, printers, NIC	

Function	Vendor Name	IP Type	Virtex-II Pro	Virtex-II	Virtex-E	Virtex	Spartan-II E	Spartan-II	Spartan	Implementation Example			Key Features	Application Examples
										Occ	MHz	Device		
<b>Communication &amp; Networking (continued)</b>														
POS-PHY Level 3 Link Layer Interface Core, 48 Channel (DO-DI-POS3LINK48A)	Xilinx	LogiCORE		V-II						33%	104	XC2V6000 FF152-4	OIF SPI-3 compliant. Fully HW interoperable with PMC-Sierra OC-48 framers.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L3 Link Layer Interface, 16-Ch (DO-DI-POS3LINK16)	Xilinx	LogiCORE		V-II						40%	104	XC2V1000 FG456-4	OIF SPI-3 compliant. Fully HW interoperable with PMC-Sierra OC-48 framers.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L3 Link Layer Interface, 4-Ch (DO-DI-POS3LINK4)	Xilinx	LogiCORE		V-II		VE				15%	104	XC2V1000 FG456-4	OIF SPI-3 compliant. Fully HW interoperable with PMC-Sierra OC-48 framers.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L3 Link Layer Interface, 2-Ch (DO-DI-POS3LINK2)	Xilinx	LogiCORE	V-IIP	V-II		VE	S-II E			55%	200	XCV50E-8	OIF SPI-3 compliant. Fully HW interoperable with PMC-Sierra OC-48 framers.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L3 Link Layer Interface, Single Channel	Xilinx	LogiCORE		V-II		VE				6%	104	XC2V1000 FG456-4	OIF SPI-3 compliant. Fully HW interoperable with PMC-Sierra OC-48 framers.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L3 Physical Layer Interface (DO-DI-POS3PHY)	Xilinx	LogiCORE	V-IIP	V-II		VE				52%	104	XCV50E-8	OIF SPI-3 compliant.	Line cards, iSCSI cards, gigabit routers and switches
POS-PHY L4 Multi-Channel Interface (DO-DI-POS4MC)	Xilinx	LogiCORE		V-II						29%	700 Mbps (350 DDR)	XC2V3000 FG676-5	OIF SPI-4 Phase 2 compliant. Fully HW interoperable with PMC-Sierra and Mindspeed OC-192 framers.	Line cards, switches, routers and optical switches
POS-PHY L4 to Flexbus 4 Bridge (DO-DI-PL42FB4)		LogiCORE		V-II						35%	200 on FB4, 700 Mbps (350 DDR) on PL4, 175 internal	XC2V3000 FG676-5	OIF SPI-4 Phase 1 & 2 compliant. Fully HW interoperable with AMCC, PMC-Sierra and Mindspeed OC-192 framers.	
PPP8 HDLC Core CC318f	Paxonet	AllianceCORE				V		S-II		76%	80	XC2S150-6	RFC1619 (IP&PX) POS, 16/32 bit FCS generation and verification, stats	Bridges, switches, WAN links
Reed Solomon Decoder	Memecore	AllianceCORE				V		S-II	S	83%	73	XCV50-6	Customizable, >580 Mbps	Error correction
Reed Solomon Decoder	Amphion	AllianceCORE				V		S-II	S	51%	50	XCV100-4	Supports ETSI 300 421, 300 429, >300 Mbps	Error correction
Reed Solomon Encoder	Memecore	AllianceCORE				V		S-II	S	13%	113	XCV50-6	Customizable, > 900 Mbps	Error Correction
Reed Solomon Encoder	Amphion	AllianceCORE				V		S-II	S	11%	82	XCV50-4	Supports ETSI 300 421, 300 429	Error correction
Reed-Solomon Decoder	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II	S	40%	98	XC2V250	Std or custom coding, 3-12 bit symbol width, up to 4095 symbols	Broadcast, wireless LAN, cable modem, xDSL, satellite com, uwave nets, digital TV
Reed-Solomon Decoder	TILAB	AllianceCORE		V-II		V				56%	61	XC2V1000-5	Parameterizable, RTL available	Error correction, wireless, DSL
Reed-Solomon Encoder	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II	S	42%	180	XC2V40	Std or cust coding, 3-12 bit width, up to 4095 symbols with 256 check symb.	Broadcast, wireless LAN, cable modem, xDSL, satellite com, uwave nets, digital TV
SDLC Controller	CAST	AllianceCORE		V-II		V				38%	158	XC2V100-5	Like Intel 8XC152 Global Serial Channel, Serial Comm., HDLC apps, telecom	Embedded systems, professional audio, video
Single-Channel XF-HDLC Controller	Memecore	AllianceCORE				V		S-II		95%	77	XC2S15-5	16/32-bit frame seq, 8/16-bit addr insert/delete, flag/zero insert/detection	X.25, Frame Relay, B/D-Channel
SPEEDROUTER Network Processor	IP	AllianceCORE		V-II		V				64%	80MHz, 2.5 Gbps	XC2V1500-5	Solution requires SPEEDAnalyzer ASIC, 2.5 Gbps fdx wire speed; net processor (NPV)	Networking, edge and access, Switches and routers
T1 Deframer	Xilinx	LogiCORE			V-E	V		S-II		15%	54	XC2S150		ISDN PRA links, mux equip, satellite com, digital PABX, high-speed computer links
T1/E1 Framer	Xilinx	LogiCORE			V-E	V		S-II		7%	72	XC2S150		ISDN PRA links, mux equip, satellite com, digital PABX, high-speed computer links
Turbo Decoder - 3GPP	SysOnChip	AllianceCORE		V-II		V				88%	65	XC2V2000-5	3GPP/UMTS compliant, 2Mbps data rate	Error correction, wireless, DSL
Turbo Encoder	TILAB	AllianceCORE		V-II		V		S-II		48%	120	XC2V80-5	3GPP/UMTS compliant, upto 4 interleaver laws	Error correction, wireless
TURBO_DEC Turbo Decoder	TILAB	AllianceCORE		V-II		V				99%	65	XC2V2000-5	3GPP/UMTS compliant, >2Mbps data rate	Error correction, wireless
UTOPIA Level-2 PHY Side RX Interface	TILAB	AllianceCORE				V		S-II	S	8%	53	XCV50-6	Protocol conversion from Pb (RACE BLNT) to UTOPIA L2, 8/16 bit operation	ATM PHY layer
UTOPIA Level-2 PHY Side TX Interface	TILAB	AllianceCORE				V		S-II	S	10%	61	XCV50-6	Protocol conversion from UTOPIA L2 Pb (RACE BLNT), 8/16 bit operation	ATM PHY layer
UTOPIA Level-3 ATM Receiver	inSilicon	AllianceCORE				V		S-II	S	5%	164	XCV100E-8	Supports ATM Forum UTOPIA Level-3. Configurable cell format, data width	High capacity ATM switches
UTOPIA Level-3 ATM Transmitter	inSilicon	AllianceCORE				V		S-II	S	6%	150	XCV100E-8	Supports ATM Forum UTOPIA Level-3. Configurable cell format, data width	High capacity ATM switches
UTOPIA Level-3 PHY Receiver	inSilicon	AllianceCORE				V		S-II	S	21%	104	XCV100E-8	Supports ATM Forum UTOPIA Level-3. Configurable cell format, data width, configurable FIFO size	High capacity ATM switches
UTOPIA Level-3 PHY Transmitter	inSilicon	AllianceCORE				V		S-II	S	22%	100	XCV100E-8	Supports ATM Forum UTOPIA Level-3. Configurable cell format, data width, configurable FIFO size	High capacity ATM switches
UTOPIA Master (CC140f)	Paxonet	AllianceCORE				V		S-II	S	*	*	*	SPHY, MPH, HEC processing, round robin polling, ind. transmitter receiver	ATM PHY layer
UTOPIA Slave (CC141)	Paxonet	AllianceCORE				V		S-II	S	*	*	*	Cell handshake in SPHY mode, 8/16 bit operation, internal FIFO, detects runt cells	ATM PHY layer
UTOPIA Slave (CC143S)	Paxonet	AllianceCORE				V		S-II	S	26%	79	XCV50-4	Cell handshake in SPHY mode, 8/16 bit operation, 32 bit FIFO interface, detects runt cells	ATM PHY layer
Viterbi Decoder	TILAB	AllianceCORE				V		S-II	S	65%	56	XCV50-6	Radix-2/radix4 architectures, BER, depuncturing. Code rate, constraint length parameterizable	Data transmission, wireless
Viterbi Decoder	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II		80%	100	XC2V250	Puncturing, serial & parallel architecture, dynamic rate change, parameterized constraint length, soft/hard decision with programmable number of soft bits	3G base stations, broadcast, wireless LAN, cable modem, xDSL, satellite com, uwave, CDMA2000
Viterbi Decoder, IEEE 802-compatible	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II		70%	147	XC2V250	Constraint length(k)=7, G0=171, G1=133	L/M/MDS, broadcast equip, wireless LAN, cable modem, xDSL, sat com, uwave nets
<b>Digital Signal Processing</b>														
1024-Point Complex FFT/IFFT	Xilinx	LogiCORE			V-E	V								
1024-Point Complex FFT/IFFT for Virtex-II	Xilinx	LogiCORE		V-II						62%	41us, 100MHz	XC2V500	16 bit complex data, 2's comp, forward and inverse transform	
16-Point Complex FFT/IFFT	Xilinx	LogiCORE		V-II	V-E	V								
16-Point Complex FFT/IFFT for Virtex-II	Xilinx	LogiCORE		V-II						37%	123ns 130MHz	XC2V500	16 bit complex data, 2's comp, forward and inverse transform	
256-Point Complex FFT/IFFT	Xilinx	LogiCORE		V-II	V-E	V								
256-Point Complex FFT/IFFT for Virtex-II	Xilinx	LogiCORE		V-II						54%	7.7us, 100MHz	XC2V500	16 bit complex data, 2's comp, forward and inverse transform	
32-Point Complex FFT/IFFT	Xilinx	LogiCORE		V-II	V-E	V	S-II E	S-II						
64/256/1024 Point Complex FFT/IFFT	Xilinx	LogiCORE	V-IIP	V-II										
64-Point Complex FFT/IFFT	Xilinx	LogiCORE			V-E	V								
64-Point Complex FFT/IFFT for Virtex-II	Xilinx	LogiCORE		V-II						38%	1.9us, 100MHz	XC2V500	16 bit complex data, 2's comp, forward and inverse transform	
Bit Correlator	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					4096 taps, serial/parallel input, 4096 bits width	
Cascaded Integrator Comb (CIC)	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					32 bits data width, rate change from 8 to 16384	
Comb Filter	Xilinx	LogiCORE							S					
Direct Digital Synthesizer	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					8-65K samples, 32-bits output precision, phase dithering/offset	
Distributed Arithmetic FIR Filter	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					32-bit input/coeff width, 1024 taps, 1-8 chan, polyphase, online coeff reload	

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										Occ	MHz	Device		
<b>Digital Signal Processing (continued)</b>														
Dual-Channel Numerically Controlled Oscillator	Xilinx	LogiCORE			V-E	V	S-II E	S-II	S				Ext SRAM I/F	DSP prototyping
GVA-200A DSP Hardware Accelerator	GV	AllianceCORE							S	NA	NA	*	Ext SRAM I/F, 2 FPGA's	DSP prototyping
GVA-220 DSP Hardware Accelerator	GV	AllianceCORE							S	NA	NA	*	2 FPGAs, 2 SRAMs	DSP prototyping
GVA-250 Virtex DSP Hardware Accelerator	GV	AllianceCORE				V				NA	NA	*	Virtex-E support, 2 FPGAs, ZBT SRAMs	DSP prototyping
GVA-270 Virtex-E DSP Hardware Accelerator	GV	AllianceCORE				V				NA	NA	*	2 Virtex-E, Spartan-II FPGAs, 1 CPLD, Matlab I/F	DSP prototyping
GVA-290 Virtex-E DSP Hardware Accelerator	GV	AllianceCORE				V				NA	NA	*	2 Virtex-II, Spartan-II FPGAs, 1 CPLD, Matlab I/F	DSP prototyping
GVA-300 Virtex-II DSP Hardware Accelerator	GV	AllianceCORE		V-II						NA	NA	*	2 Virtex-II, Spartan-II FPGAs, 1 CPLD, Matlab I/F	DSP prototyping
LFSR, Linear Feedback Shift Register	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					168 input widths, SRL16/register implementation	
Nonsymmetric 16-Deep Time-Skew Buffer	Xilinx	LogiCORE							S					
Nonsymmetric 32-Deep Time-Skew Buffer	Xilinx	LogiCORE							S					
Numerically Controlled Oscillator	Xilinx	LogiCORE			V-E	V	S-II E	S-II	S					
Parallel Distributed Arithmetic FIR Filter	Xilinx	LogiCORE							S					
Serial Distributed Arithmetic FIR Filter	Xilinx	LogiCORE							S					
Symmetric 16 Deep Time-Skew Buffer	Xilinx	LogiCORE							S					
<b>Math Functions</b>														
1s and 2s Complement	Xilinx	LogiCORE							S					
Accumulator	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256s bit wide	
Adder Subtractor	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256s bit wide	
Constant Coefficient Multiplier	Xilinx	LogiCORE							S					
Constant Coefficient Multiplier - Pipelined	Xilinx	LogiCORE							S					
DFP2INT Floating Point to Integer Converter	Digital	AllianceCORE		V-II		V		S-II		39%	66	XC2V250-5	Full IEEE-754 compliance, 4 pipelines, Single precision real format support	DSP, Math, Arithmetic apps
DFPADD Floating Point Adder	Digital	AllianceCORE		V-II		V		S-II		39%	66	XC2V250-5	Full IEEE-754 compliance, 4 pipelines, Single precision real format support	DSP, Math, Arithmetic apps
DFPCOMP Floating Point Comparator	Digital	AllianceCORE		V-II		V		S-II		16%	91	XC2V80-5	Full IEEE-754 compliance, 4 pipelines, Single precision real format support	DSP, Math, Arithmetic apps
DFPDIV Floating Point Divider	Digital	AllianceCORE		V-II		V		S-II		99%	53	XC2V250-5	Full IEEE-754 compliance, 15 pipelines, Single precision real format support	DSP, Math, Arithmetic apps
DFPMUL Floating Point Multiplier	Digital	AllianceCORE		V-II		V		S-II		44%	74	XC2V250-5	Full IEEE-754 compliance, 7 pipelines, 32x32 mult, Single precision real format support	DSP, Math, Arithmetic apps
DFPSQRT Floating Point Square Root	Digital	AllianceCORE		V-II		V		S-II		39%	66	XC2V250-5	Full IEEE-754 compliance, 15 pipelines, Single precision real format support	DSP, Math, Arithmetic apps
DINT2FP Integer to Floating Point Converter	Digital	AllianceCORE		V-II		V		S-II		37%	73	XC2V250-5	Full IEEE-754 compliance, double word input, 2 pipelines, Single precision real output	DSP, Math, Arithmetic apps
Dynamic Constant Coefficient Multiplier	Xilinx	LogiCORE			V-E	V								
Integrator	Xilinx	LogiCORE							S					
Multiply Accumulator (MAC)	Xilinx	LogiCORE	V-IIP	V-II		V	S-II E	S-II					Input width up to 32 bits, 65-bit accumulator, truncation rounding	
Multiply Generator	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					64-bit input data width, constant, reloadable or variable inputs, parallel/sequential implementation	
Parallel Multipliers Area Optimized	Xilinx	LogiCORE							S					
Pipelined Divider	Xilinx	LogiCORE		V-II	V-E	V	S-II E	S-II	S				32-bit input data width, multiple clock per output	
Registered Adder	Xilinx	LogiCORE							S					
Registered Loadable Adder	Xilinx	LogiCORE							S					
Registered Loadable Subtractor	Xilinx	LogiCORE							S					
Registered Scaled Adder	Xilinx	LogiCORE							S					
Registered Serial Adder	Xilinx	LogiCORE							S					
Registered Subtractor	Xilinx	LogiCORE							S					
Scaled-by-One-Half Accumulator	Xilinx	LogiCORE							S					
Sine Cosine Look Up Table	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II	S				3-10 bit in, 4-32 bit out, distributed/block ROM	
Square Root	Xilinx	LogiCORE							S					
Twos Complementer	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					Input width up to 256 bits	
Variable Parallel Virtex Multiplier	Xilinx	LogiCORE			V-E	V	S-II E	S-II						
<b>Memories &amp; Storage Elements</b>														
Asynchronous FIFO	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256 bits, 15-65535 words, DRAM or BRAM, independent I/O clock domains	
Content Addressable Memory (CAM)	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-512 bits, 2-10K words, SRL16	
Distributed Memory	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-1024 bit, 16-65536 word, RAM/ROM/SRL16, opt output regs and pipelining	
Dual-Port Block Memory	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256 bits, 2-13K words	
Pipelined Delay Element	Xilinx	LogiCORE							S					
Registered ROM	Xilinx	LogiCORE							S					
Registered Single Port RAM	Xilinx	LogiCORE							S					
Single-Port Block Memory	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256 bits, 2-128K words	
Synchronous FIFO	Xilinx	LogiCORE							S					
Synchronous FIFO	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II					1-256 bits, 16-256 words, distributed/block RAM	
<b>Microprocessors, Controllers &amp; Peripherals</b>														
10/100 Ethernet MAC	Xilinx	LogiCORE	V-IIP	V-II	V-E	V	S-II E	S-II				Virtex-II	Interfaces through CoreConnect Bus	Networking, communications, processor apps
16-Word-Deep Registered Look Up Table	Xilinx	LogiCORE							S					
200 MHz SDRAM Controller Core	Rapid	AllianceCORE				V		S-II						
ARC 32-bit Configurable RISC Processor	ARC	AllianceCORE				V		S-II		89%	37	XC2S150-6	4 stage pipeline, 16 single cycle instructions/10, 3 interrupt exception levels, 24 bit stack pointer	32 bit processing, DSP
AX1610 16-bit RISC Processor	Loarant	AllianceCORE		V-II		V		S-II		12%	91	XC2V500-5	44 opcode, 64-K word data, program, Harvard arch.	Control functions, State mach, Coprocessor



Function	Vendor Name	IP Type	Virtex-II Pro	Virtex-II	Virtex-E	Virtex	Spartan-II-E	Spartan-II	Spartan	Implementation Example			Key Features	Application Examples
										Occ	MHz	Device		
<b>Microprocessors, Controllers &amp; Peripherals (continued)</b>														
C16450 UART	CAST	AllianceCORE				V		S-II		29%	60	XC2550-6	Independently controlled transmit, receive and data interrupts. 16X clock.	Serial data applications, modems
C16550 UART with FIFOs	CAST	AllianceCORE				V		S-II			51	XC2550-6	Prog. Data width, parity, stop bits. 16X internal clock, FIFO mode, false start bit detection	Serial data applications, modems
C165X MicroController	CAST	AllianceCORE		V-II		V		S-II		60%	134	XC2V80-5	Microchip 16C5X PIC like	Embedded systems, telecom
C2901 Microprocessor Slice	CAST	AllianceCORE				V		S-II		19%	36	XC2550-6	Eight function ALU, 4 status flags- Carry, Overflow, Zero and Negative	Simple microcontroller applications
C2910a Microprogram Controller	CAST	AllianceCORE				V		S-II	S	13%	63	XC2V50-6	Based on AMD 2910a	High-speed bit slice design
C68000 Microprocessor	CAST	AllianceCORE		V-II		V		S-II		90%	32	XC2V500-5	MC68000 Compatible	Embedded systems, pro audio, video
C8051 MicroController	CAST	AllianceCORE				V		S-II		52%	68	XC2V200E-8	80C31 instruction set, 8 bit ALU, 8 bit control, 32 bit I/O ports, two 16 bit timer/counters, SFR I/F	Embedded systems, telecom
C8250 UART	CAST	AllianceCORE				V		S-II			98	XC2V50E-8	UART & Baud rate generator, 16X clock generator, loopback & echo modes	Serial data applications, modems
C8254 Programmable Interval Timer/Counter	CAST	AllianceCORE				V		S-II		38%	66	XC2V100E-8	Status feedback, counter latch, square wave mode, binary/BCD count, LSB/MSB R/W	Event counter, baud rate generator
C8255A Peripheral Interface	CAST	AllianceCORE				V		S-II		10%	227	XC2V50E-8	Three 8-bit peripheral ports, 24 programmable I/O lines, 8-bit bidi data bus	Processor I/O interface
C8259A Programmable Interrupt Controller	CAST	AllianceCORE				V		S-II		28%	47	XC2550-6	8 vectored priority interrupts, all 8259/A modes programmable- e.g., special mask, buffer	Real-time interrupt based uP designs
Compact UART	CAST	AllianceCORE				V		S-II	S	7%	142	XC2V50-6	1 start bit, 1 stop bit. Polling and interrupt modes	Serial data applications, modems
Compact Version of D80530 Microcontroller	CAST	AllianceCORE				V		S-II		88%	51	XC2S150-6	32 bit I/O, 3 counters, interrupt controller, SFR interface, dual data pointer	Low cost embedded systems, telecom
CPU + FPGA (Virtex/Spartan-II) MicroEngine Cards	NMI	AllianceCORE				V		S-II		NA	NA	NA	Hitachi SH-4 CPU	Embedded systems
CPU + FPGA (Virtex-II) MicroEngine Cards	NMI	AllianceCORE		V-II						NA	NA	NA	Hitachi SH-3 CPU	Embedded systems
CZ80CPU Microprocessor	CAST	AllianceCORE		V-II		V		S-II		55%	72	XC2V500-5	Zilog Z80 compatible, 8-bit processor	Embedded systems, Communications
D80530 8-bit Microcontroller	CAST	AllianceCORE				V				81%	66	XC2V200E-8	32 bit I/O, 3 counters, 27-bit watchdog timer, 3-priority interrupt controller, SFR interface	Embedded systems, telecom
DDR SDRAM Controller Core	Memecore	AllianceCORE		V-II		V		S-II		7%	133	XC2V1000-4	DDR SDRAM burst length support for 2,4,8 per access, supports data 16,32, 64, 72.	Digital video, embedded computing , networking
DFPIC125X Fast RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		49%	126	XC2V80-5	PIC 12c4x like, 2X faster, 12-bit wide instruction set, 33 instructions	Embedded systems, telecom, audio and video
DFPIC1655X Fast RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		79%	140	XC2V80-5	S/W compatible with PIC16C55X, 14-bit instruction set, 35 instructions	Embedded systems, telecom, audio and video
DFPIC165X Fast RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		49%	126	XC2V80-5	PIC 12c4x like, 2X faster, 12-bit wide instruction set, 33 instructions	Embedded systems, telecom, audio and video
DI2CM I2C Bus Controller Master	Digital	AllianceCORE		V-II		V		S-II	S	58%	143	XC2V50-5	I2C-like, multi master, fast/std. modes	Embedded systems
DI2CM I2C Bus Controller Slave	Digital	AllianceCORE		V-II		V		S-II	S	28%	157	XC2V50-5	I2C-like, Slave	Embedded
DI2CSB I2C Bus Controller Slave Base	Digital	AllianceCORE		V-II		V		S-II	S	15%	187	XC2V50-5	I2C-like, Slave	Embedded Systems
DR8051 RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		68%	73	XC2V250-5	80C31 instruction set, RISC architecture 6.7X faster than standard 8051	Embedded systems, telecom, video
DR8051BASE RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		46%	80-90	XC2V250-5	80C31 instruction set, high speed multiplier, RISC architecture 6.7X faster than standard 8051	Embedded systems, telecom, video
DR8052EX RISC MicroController	Digital	AllianceCORE		V-II		V		S-II		99%	71	XC2V250-5	80C31 instruction set, high speed multi/div, RISC 6.7X faster than standard 8051	Embedded systems, telecom, video
e8254 Programmable Interval Timer/Counter	einfochips	AllianceCORE		V-II		V		S-II		1%	175	XC2V1000-5	Three 8-bit parallel ports, 24 programmable I/O lines, 8-bit bidi data bus	Processor, I/O interface
e8255 Peripheral Interface	einfochips	AllianceCORE		V-II		V		S-II		1%	175	XC2V1000-5	Three 8-bit parallel ports, 24 programmable I/O lines, 8-bit bidi data bus	Processor, I/O interface
EP520 SDRAM Controller	Eureka	AllianceCORE				V		S-II						
Flip805x-PR Core	Dolphin	AllianceCORE				V		S-II	S	68%	20	XC2S150-6	Avg 12X faster and code compatible v. legacy 8051, verification bus monitor, SFR interface	Telecom, industrial, high speed control
Flip805x-PS Microprocessor	Dolphin	AllianceCORE		V-II		V		S-II		39%	38	XC2V1000-5	Avg 8X faster & code compatible v. legacy 8051, verification bus monitor, SFR IF, DSP focused	DSP, Telecom, industrial, high speed control
IIC	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II				Virtex-II	Interfaces through OPB to MicroBlaze/PPC405	Networking, communications, processor apps
IntelliCore Prototyping System	VAutomation	AllianceCORE								*	*	*	USB, 1394, 1284, RS-232, IVDA I/F	Prototyping
LavaCORE Configurable Java Processor Core	Derivation	AllianceCORE		V-II		V				38%	20	XC2V1000-5	32b data/address optional DES	Internet appliance, industrial control
LavaCORE Configurable Java Processor Core	Derivation	AllianceCORE		V-II		V				38%	20	XC2V1000-5	32b data/address optional DES	Internet appliance, industrial control
Lightfoot 32-bit Java Processor Core	Digital	AllianceCORE		V-II		V		S-II		33%	40	XC2V1000-5	32bit data, 24 bit address, 3 Stage pipeline, Java/C dev. tools	Internet appliance, industrial control, HAVi multimedia, set top boxes
M16450 Universal Asynchronous Receiver Transmitter	Virtual	AllianceCORE							S	29%	60	XC2550-6	Independently controlled transmit, receive and data interrupts. 16X clock.	Serial data applications, modems
M16550A UART with FIFOs	Virtual	AllianceCORE							S	90%	16	XCS20-4	Prog. Data width, parity, stop bits. 16X internal clock, FIFO mode, false start bit detection	Serial data applications, modems
M8254 Programmable Timer	Virtual	AllianceCORE				V		S-II	S					
M8255 Programmable Peripheral Interface	Virtual	AllianceCORE				V		S-II	S	10%	227	XC2V50E-8	Three 8-bit peripheral ports, 24 programmable I/O lines, 8-bit bidi data bus	Processor I/O interface
M8259 Programmable Interrupt Controller	Virtual	AllianceCORE				V			S	28%		XC2550-6	8 vectored priority interrupts, all 8259/A modes programmable- e.g., special mask, buffer	Real-time interrupt based uP designs
Memory Tests BRAM	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II						
Memory Tests DDR	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II						
Memory Tests SRAM	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II						
Memory Tests ZBT	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II						
MicroBlaze Soft RISC Processor	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II			125	XC2V80-5	Soft RISC Processor, 82 D-MIPS, 125 MHz, 900 LUTs in Virtex-II	Networking, communications
OPB Arbiter	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications
OPB BRAM	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II					Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications
OPB Bus Structure	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II					CoreConnect Bus (OPB)	Processor applications
OPB Flash	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II					Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications
OPB GPIO	Xilinx	LogiCORE	V-IIIP	V-II	V-E	V	S-IIIE	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications

Function	Vendor Name	IP Type	Virtex-II Pro	Virtex-II	Virtex-E	Virtex	Spartan-II-E	Spartan-II	Spartan	Implementation Example			Key Features	Application Examples	
										Occ	MHz	Device			
<b>Microprocessors, Controllers &amp; Peripherals (continued)</b>															
OPB Interrupt Controller	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB IPIF Master/Slave Attachment	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB IPIF Address Decode	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB IPIF Interrupt Controller	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB IPIF Read/Write Packet FIFO	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB IPIF DMA	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB IPIF Scatter/Gather	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB), Interface to custom IP	PowerPC embedded system design	
OPB Memory Interface (Flash, SRAM)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB SRAM	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB Timer/Counter	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB UART (16450, 16550)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Interfaces through OPB to MicroBlaze/PPC405	Processor applications	
OPB UART Lite	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB Timebase/WDT	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II			125	XC2V80-5	Bundled in the Development Kit, CoreConnect Bus (OPB)	Processor applications	
OPB ZBT	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					CoreConnect Bus (OPB)	Processor applications	
PF3100 PC/104-Plus Reconfigurable Module	Derivation	AllianceCORE		V-II							N/A	N/A	XC2V1000 FG256	PC/104 & PC/104+ development board	Internet appliance, industrial control
PLB<->OPB Bridge	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PLB Arbiter	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PLB BRAM	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PLB Flash	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PLB SRAM	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PLB ZBT	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
PPC405 Boot Code	Xilinx	LogiCORE	V-II										CoreConnect Bus (PLB)	PowerPC embedded system design	
R8051 RISC MicroController	CAST	AllianceCORE				V		S-II			76%	34	XC2S150-6	12X faster, SRF I/F	Embedded systems
R80515 High-speed 8-bit RISC Microcontroller	CAST	AllianceCORE				V					56%	42	XCV200E-8	RISC implementation, 8 bit ALU, 8 bit control, 32 bit I/O, 16 bit timer/counters, SFR I/F, ext. memory I/F	High speed embedded systems, audio, video
SPI	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II					Virtex-II	Interfaces through OPB to MicroBlaze/PPC405	Networking, communications, processor apps
Synchronous DRAM Controller	NMI	AllianceCORE				V		S-II			5%	137	XCV50-6	SDRAM refresh, customizable	Embedded systems using SDRAMs
System Reset for PPC405	Xilinx	LogiCORE	V-II											Used to reset PowerPC based system	
uEBX Reference and Development Platform	NMI	AllianceCORE				V					NA	NA	NA	Interfaces NMI's MicroEngines to EBX bus	PC104 applications
uPCI Reference and Development Platform	NMI	AllianceCORE				V					NA	NA	NA	Interfaces NMI's MicroEngines to PCI bus	PCI ethernet/graphics applications
V8-uRISC 8-bit RISC Microprocessor	VAutomation	AllianceCORE									*	*	*	8-bit processor, 8 bit ALU, 16 bit stack pointer, 33 opcodes, 4 addr. Modes, 2 user opcodes	Embedded systems, 8-bit processing apps.
VxWorks Board Support Package (BSP)	Xilinx	LogiCORE	V-II											Interfaces HW and WindRiver RTOS	Embedded system design
VxWorks Support	Xilinx	LogiCORE	V-II											Interfaces HW and WindRiver RTOS	Embedded system design
XF8250 UART	Memecore	AllianceCORE						S			59%	10	XCS10-4	DC to 625K baud	Serial communications
XF8255 Programmable Peripheral Interface	Memecore	AllianceCORE						S			64%	8	XCS05-4	Bit set/reset support	Embedded systems
XF8256 Multifunction Microprocessor Support Controller	Memecore	AllianceCORE						S			89%	10	XCS20-4	Baud rate generator for 13 common baud rates, parallel I/O ports, prog. timer/counters	Communication, embedded systems
XF8279 Programmable Keyboard Display Interface	Memecore	AllianceCORE				V		S			46%	8	XCS20-4	8 char keyboard FIFO, 2-key lockout, n-key rollover, 4-16 char display	Embedded systems interface
XF-TWSI Two-Wire Serial Interface Master-Only	Memecore	AllianceCORE				V		S-II	S					I2C-like, multi master fast/std. modes	Embedded systems
XF-TWSI-MS Two-Wire Serial Interface Master-Slave	Memecore	AllianceCORE				V		S-II	S		24%	59	XCV50-4		Embedded systems
XF-UART Asynchronous Communications Core	Memecore	AllianceCORE		V-II		V		S			15%	50	XCS20-4	UART and baud rate generator	Serial data communication
<b>Standard Bus Interfaces</b>															
Arbiter	TILAB	AllianceCORE				V		S-II	S			33	XCV50-6	2 priority classes - strong/weak, access counters	General purpose bus arbitration
CAN Bus Interface R3.0	Sci-worx	AllianceCORE				V		S-II	S		*	*	*Supports	CAN 2.0A, 2.0B, error handling, stuff bit generation, SRC, individual acceptance filtering	Automotive, network, home automation
EP100 PowerPC Bus Slave	Eureka	AllianceCORE				V		S-II							
EP201 PowerPC Bus Master	Eureka	AllianceCORE				V		S-II							
PCI-X 64/66 Interface for Virtex-E (DO-DI-PCIX64-VE). Includes PCI 32 or 64 bit interface at 33 MHz	Xilinx	LogiCORE				VE					30%	66	XCV300E-8	PCI-X 1.0 comp, 64/32-bit, 66 MHz PCI-X initiator and target I/F, PCI 2.2 comp, 64/32-bit, 33 MHz PCI initiator and target I/F, 3.3 V PCI-X at 33-66 MHz, 3.3 V PCI at 0-33 MHz	Comm systems, SAN, clustered servers, Ultra 3 SCSI/Fibre Ch RAID, multi-port Gb
PCI-X 64/100 Interface for Virtex-II (DO-DI-PCIX64-VE). Includes PCI 32 or 64 bit interface at 33 MHz	Xilinx	LogiCORE	V-II	V-II							30%	100	XC2V1000 FG456-5	PCI-X 1.0 comp, 64/32-bit, 66 MHz PCI-X initiator and target I/F, PCI 2.2 comp, 64/32-bit, 33 MHz PCI initiator and target I/F, 3.3 V PCI-X at 33-66 MHz, 3.3 V PCI at 0-33 MHz	Server, Embedded, gb ethernet, U320 SCSI, Fibre Ch, RAID cntl, graphics
PCI32 Single-Use License for Spartan (DO-DI-PCI32-SP)	Xilinx	LogiCORE					S-II-E	S-II	S		12%	66	XC2S200 PQ208-6	v2.2 comp, assured PCI timing, 3.3/5-V, 0-waitstate, CPCL hot swap friendly	PC add-in boards, CPCL, Embedded
PCI32 Interface Design Kit (DO-DI-PCI32-DKT)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II	S		6%	66	XC2V1000 FG456-5	Includes PCB2 board, driver development kit, and customer education 3-day training class	PC boards, CPCL, Embedded, hiperf video, gb ethernet
PCI32 Interface, IP Only (DO-DI-PCI32-IP)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II	S		6%	66	XC2V1000 FG456-5	v2.2 comp, assured PCI timing, 3.3/5-V, 0-waitstate, CPCL hot swap friendly	PC add-in boards, CPCL, Embedded
PCI64 & PCI32, IP Only (DO-DI-PCI-AL)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II	S		6 - 7%	66	XC2V1000 FG456-5	v2.2 comp, assured PCI timing, 3.3/5-V, 0-waitstate, CPCL hot swap friendly	PC boards, CPCL, Embedded, hiperf video, gb ethernet
PCI64 Interface Design Kit (DO-DI-PCI64-DKT)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II	S		7%	66	XC2V1000 FG456-5	v2.2 comp, assured PCI timing, 3.3/5-V, 0-waitstate, CPCL hot swap friendly	PC boards, CPCL, Embedded, hiperf video, gb ethernet
PCI64 Interface, IP Only (DO-DI-PCI64-IP)	Xilinx	LogiCORE	V-II	V-II	V-E	V	S-II-E	S-II	S		7%	66	XC2V1000 FG456-5	v2.2 comp, assured PCI timing, 3.3/5-V, 0-waitstate, CPCL hot swap friendly	PC boards, CPCL, Embedded, hiperf video, gb ethernet
RapidIO 8-bit port LP-LVDS Phy Layer (DO-DI-RI08-PHY)	Xilinx	LogiCORE		V-II							24%	250	XC2V1000 FG456-5	RapidIO Interconnect v1.1 compliant, verified with Motorola's RapidIO bus functional model v1.4	Routers, switches, backplane, control plane, data path, embedded sys, high speed interface to memory and encryption engines, high end video
USB 1.1 Device Controller	Memecore	AllianceCORE		V-II		V		S-II			21%	12	XC2V1000-5	Compliant with USB1.1 spec., Supports VCI bus, Performs CRC, Supports 1.5 Mbps & 12 Mbps	Scanners, Printers, Handhelds, Mass Storage

Function	Vendor Name	IP Type	Virtex-II Pro	Virtex-II	Virtex-E	Virtex	Spartan-II E	Spartan-II	Spartan	Implementation Example			Key Features	Application Examples
										Occ	MHz	Device		
<b>Video &amp; Image Processing</b>														
1-D DCT/IDCT Forward/Inverse Discrete Cosine Transform	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					8-32 pt FDCT, IDCT with 8-24 bits for coeff & input	JPEG, MPEG, H.261, H.263
2-D DCT/IDCT Forward/Inverse Discrete Cosine Transform	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II		32%	140	XC2V1000-5	8x8 parameterized FDCT, IDCT & IEEE 1180-1990 compliant IDCT	JPEG, MPEG, H.261, H.263
FASTJPEG_BW DECODER	BARCO-SILEX	AllianceCORE		V-II		V				67%	73	XC2V1000-4	Conforms to ISO/IEC Baseline 10918-1, Gray-Scale	Video editing, digital camera, scanners
FASTJPEG_C DECODER	BARCO-SILEX	AllianceCORE		V-II		V				78%	56	XC2V1000-4	Conforms to ISO/IEC Baseline 10918-1, color, multi-scan, Gray-Scale	Video editing, digital camera, scanners
FIDCT Forward/Inverse Discrete Cosine Transform	TILAB	AllianceCORE				V		S-II		77%	78	XCV200-6	DCT for 8X8, 16X16, IDCT IEEE1180-1990 compliant	JPEG, MPEG, H.26X
JPEG CODEC	inSilicon	AllianceCORE				V		S-II	S	75%	20	XCV400E-8	Conforms to ISO/IEC Baseline 10918-1, 4 quantization tables, 4 Huffman tables. Stallable	Video editing, digital camera, scanners
logiCVC - Compact Video Controller	xylon	AllianceCORE				V		S-II		35%	88	XC2V250-4	Single & double panel, LCD/CRT support, 4 gray, 256 colors	Video phone, Set-top box, PDA display
Longitudinal Time Code Generator	DELTATEC	AllianceCORE				V				12%	85	XCV100-4	SMPTE/EBU compliant, PAL/NTSC, lock-on external video reference	Audio/Video recording and editing equipment
RGB2YCrCb Color Space Converter	Perigee	AllianceCORE				V		S-II	S	22%	202	XCV100E-8	One clock cycle throughput	HDTV, real time TV output modulation
YCrCb2RGB Color Space Converter	Perigee	AllianceCORE				V		S-II	S	16%		XCV100E-8	One clock cycle throughput	HDTV, real time video
<b>Basic Elements</b>														
BUFE-based Multiplexer Slice	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
BUFT-based Multiplexer Slice	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Binary Counter	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					2-256 bits output width	
Binary Decoder	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					2-256 bits output width	
Bit Bus Gate	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Bit Gate	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Bit Multiplexer	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Bus Gate	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Bus Multiplexer	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					IO widths up to 256 bits	
Comparator	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
FD-based Parallel Register	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
FD-based Shift Register	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-64 bits wide	
Four-Input MUX	Xilinx	LogiCORE							S					
LD-based Parallel Latch	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide	
Parallel-to-Serial Converter	Xilinx	LogiCORE							S					
RAM-based Shift Register	Xilinx	LogiCORE	V-II P	V-II	V-E	V	S-II E	S-II					1-256 bits wide, 1024 words deep	
Register	Xilinx	LogiCORE							S					
Three-Input MUX	Xilinx	LogiCORE							S					
Two-Input MUX	Xilinx	LogiCORE							S					

For the most up-to-date information, go to

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