

Table C--Programmers

Company	Product	Supported architectures and devices	Directly supported package(s)	Packages supported thru adapter(s)	JTAG or standalone	Number of sockets	PC interface	Other features	Price
Altera	ByteBlasterMV	Altera Stratix, Mercury, Excalibur, APEX II, APEX 20K, FLEX 10K, ACEX 1K, MAX 7000AE, MAX 7000B, MAX 3000A, EPC configuration devices	All	NA	JTAG	1	LPT	Performs direct in-system programming of all of Altera's ISP-capable devices and can configure Altera's SRAM PLD's in-system. Now supports IEEE-1532 programming standard	\$150
Altera	MasterBlaster	Altera Stratix, Mercury, Excalibur, APEX II, APEX 20K, FLEX 10K, ACEX 1K, MAX 7000AE, MAX 7000B, MAX 3000A, EPC configuration devices	All	NA	JTAG	1	USB & RS-232	Performs direct in-system programming of all of Altera's ISP-capable devices and can configure Altera's SRAM PLD's in-system. Now supports IEEE-1532 programming standard	\$495
Altera	Altera Programming Unit	MAX 7000AE, MAX 7000B, MAX 3000A, EPC configuration devices	NA	All	Standalone	1	USB	EPC devices support configuration of all Altera SRAM based devices	\$1,995
Atmel	ATDH1150VPC 5V/3.3V ISP programing cable	Atmel ATF15xx CPLD famiies	All packages	NA	JTAG	none	parallel port	NA	\$50
Atmel	ATDH1160VPC 5V/3.3V programming board based on ISP(Includes ISP cable and SW)	Atmel ATF15xx CPLD famiies	84-pin PLCC	44-pin PLCC, 44-pin TQFP, 68-pin PLCC, 100-pin TQFP, 100-pin PQFP, 160-pin PQFP, more coming	JTAG	1, unlimited number can be cascaded	parallel port	NA	\$295 , plus \$75 each for additional adapters

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BP Microsystems	Silicon Sculptor II	All Actel antifuse and flash devices — eX, MX, SX, SX-A, SX-S, ProASIC 500K and ProASIC Plus; also legacy antifuse devices and RT/RH products	NA	All Actel's packages using Universal socket modules. Complete list can be found at Actel website	JTAG	1	LPT	Built in self-test	\$1,800
Cypress Semiconductor	CY3900I	Cypress Ultra37000, Quantum38K, Delta39K	All	NA	JTAG	NA	Parallel	Kits with USB cable also available	\$99
First Silicon Solutions	Flash Pro	Actel ProASIC 500K and ProASIC Plus families	Not package-specific — supports programming through on-	NA	JTAG	NA	LPT	Voltage sensing, STAPL support, daisy chain Support	\$600
Lattice Semiconductor	ispEngineering Kit - Model 300	Lattice ispMACH, MACH, ispLSI, ispGDX, ispPAC, and ispGAL device families	None	All	Standalone	1	LPT	ispDOWNLOAD cable, power adapter, 28-pin ZIF adapter	\$495
Lattice Semiconductor	ispDOWNLOAD Cable	Lattice ispMACH, MACH, ispLSI, ispGDX, ispPAC, and ispGAL device families	All	None	Standalone	1	LPT	6' ISP programming cable with 8-Flywire connectors, ispVM system programming software	\$125
Lattice Semiconductor	ispDOWNLOAD Cable	Lattice ispMACH, MACH, ispLSI, ispGDX, ispPAC, and ispGAL device families	All 2.5V-to-5V devices	None	Standalone	1	LPT	6' ISP programming cable with 8-pin AMP or 10-pin JTAG connector, ispVM system programming software	\$65
Macraigor Systems LLC	Wiggler (WNPJ-COP)	Triscend E5, Triscend A7	All	NA	JTAG	1	LPT	NA	\$150
Macraigor Systems LLC	Wiggler (WNPJ-ARM-14)	Triscend A7	All	NA	JTAG	1	LPT	NA	\$150
Macraigor Systems LLC	Wiggler (WNPJ-ARM-20)	Triscend A7	All	NA	JTAG	1	LPT	NA	\$150

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QuickLogic	DeskFab	QuickLogic pASIC, Eclipse, QuickRAM	None	PLCC 44, 68, 84; PQFP 208, 240; TQFP 100, 144, BGA 256, 280, 456, 484, 516, 672, 680; Ceramic BGA 68, 84, 144; Ceramic QFP 100, 160, 208	Standalone	1 or 4	COM	NA	\$1,495
STMicroelectronics	FlashLINK	ST Flash PSDs and DSMs	All	NA	JTAG	1	LPT	PSDsoft Express development software	\$59
STMicroelectronics	PSDpro	ST Flash PSDs and DSMs	All	All	standalone	1	LPT	PSDsoft Express development software	\$399
Various	DB-25 parallel printer cable	Triscend E5 on Triscend E5 Evaluation or Development Kit, XESS XSTE5 CSoC Board	All	NA	JTAG	1	LPT	NA	~\$10
Xilinx	Parallel Cable IV	All Xilinx Platform FPGAs, Virtex, Spartan, CPLDs, System ACE MPM, and ISP PROMs	NA	NA	JTAG and Slave Serial	NA	DB25	High-speed download cable that offers a simple interface to any Xilinx device with I/Os from 5V to 1.5V.	\$95
Xilinx	MultiLINX	All Xilinx Platform FPGAs, Virtex, Spartan, CPLDs, System ACE MPM, and ISP PROMs	NA	NA	JTAG, Slave Serial, and Xilinx SelectMAP	NA	USB, RS-232, DB9, DB25	Flexible download cable that interfaces to most PCs and workstations and supports USB.	\$495

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Xilinx	HW-130	Xilinx OTP PROMs, CoolRunner and XC9500/XL CPLDs	NA	8-pin PDIP, 8-pin SOIC, 8-pin TSOP, 20-pin SOIC, 20-pin PLCC, 44-pin PLCC, 44-pin VQFP, 144-pin TQFP, 208-pin, PQFP, 100-pin VQFP, 48-pin CSP, 56-pin CSP, 144-pin CSP, 280-pin CSP, 256-pin FBGA, 64-pin VQFP, 84-pin PLCC, 100-pin PQFP, 100-pin TQFP, 160-pin PQFP, 208-pin HQFP, 256-pin, BGA, 352-pin BGA	Standalone	30	RS-232	Low-cost stand-alone solution to program, verify, test, and erase Xilinx CPLD and PROM devices.	\$795
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