FPGA IP Cores (Wishbone)

Product Name	Functional Description	Logic Elements	I/O Pin Count min - max	Software Support
16Z001_SMB	I2C Controller	600	2 – 2	VxWorks, Linux 2.4.x driver on request, OS-9 driver on request
16Z014_PCI	PCI to Wishbone Interface	800	50 – 53	No software required
16Z016_IDE	IDE UDMA Controller	1500	30 – 30	Included in MontaVista Linux BSP EM4A, EM3/A Included in SYSGO ELinOS BSP EM3/A
16Z023_IDE	IDE Controller	120	28 – 34	ELinOS, VxWorks, QNX, OS-9
16Z024_SRAM	SRAM Controller	110 - 280	26 – 60	Windows, Linux, VxWorks, QNX, OS-9
16Z025_UART	1-4 UARTs	700 – 1800	3 – 33	MENMON, VxWorks, OS-9, Linux, QNX
16Z029_CAN	CAN Controller	2000	2 – 2	Windows, Linux, VxWorks, QNX, OS-9 (CanOpen and CAN Layer 2)
16Z031_SPI	SPI Controller for Touch Controller	130	5 – 5	Included in MENMON for EM1/A, EM1N, EM3/A, EM4N Included in VxWorks BSPs EM1/A, EM1N, EM3/A, EM4N Included in OS-9 BSP EM4N
16Z034_GPIO	GPIO Controller (Input and Output)	250	1 – 8	Windows, Linux, VxWorks, QNX, OS-9
16Z037_GPIO	GPIO Controller with Serial Interface	120	4 – 4	Windows, Linux, VxWorks, QNX, OS-9
16Z042_LPC	LPC to Wishbone Bridge	260	13	No software required
16Z043_SDRAM	SDRAM Controller	1200	38 – 57	No software required
16Z044_DISP	Display Controller 1280x1024, 1024x800, 800x600, 640x480	800	20 – 48	Windows, Linux, VxWorks, WindML 3.x, 4.x
16Z045_FLASH	Flash Interface	80	32 – 41	Flash-Tool 13Z100-60/70/91 (VxWorks, W2k/XP, Linux)
16Z048_ISA	Wishbone to ISA Interface	245	48 – 66	No software required
16Z049_TMR	8254-Compatible Counter	3300	3 – 9	n/a
16Z050_BIO	BIOC – Binary I/O Controller	600	4 – ..	Windows, Linux, VxWorks, QNX, OS-9
16Z052_GIRQ	Global Interrupt Controller	100	1 – 64	Special support for VxWorks planned – no software required for other operating systems
16Z055_HDLC	Single channel HDLC Controller	1050	6	Linux, QNX
16Z056_SPI	SPI Controller	200 typ.	4	No software required
16Z057_UART	DOS-Compatible UART	1800	9 – 33	DOS, Windows, Linux, VxWorks
16Z058_SRAM	SRAM over SPI Interface	245	4 – 4	No software required

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16Z061_PWM	PWM – Pulse Width Modulation	80	1 – 15	Windows, Linux, VxWorks, QNX, OS-9
16Z066_MMOD	Wishbone to M-Module Bridge with Registers	300	52 - 70	No software required
16Z069_RST	Reset Controller	204	variable	No software required
16Z070_IDEDISK	IDE to NAND Interface	4200	14	MENMON, Windows, Linux, VxWorks, OS-9
16Z072_OWB	One Wire Bus Controller	700	1 - 2	Windows, Linux, VxWorks, QNX, OS-9
16Z073_QDEC	Quadrature Decoder	100	2 - 3	Windows, Linux, VxWorks, QNX, OS-9
16Z075_SPEED	Frequency Counter	122	1	Windows, Linux, VxWorks, QNX, OS-9
16Z076_QSPI	QSPI Interface	482	4 - 7	Windows, Linux, VxWorks, QNX, OS-9
16Z077_ETH	Ethernet MAC	2200	18	Linux
16Z079_ANYBUS	Anybus Interface	1900	40	No software required
16Z082_IMPULSE	Impulse Counter with Programmable Debouncer	131	1	Windows, Linux, VxWorks, QNX, OS-9
16Z083_MM2WB	M-Module to Wishbone Interface	93	22-47	No software required
16Z087_ETH	Ethernet Controller	3100 - 3400	14 - 18	Linux, VxWorks
16Z123_IDENHS	IDE Controller	120	28-34	ELinOS, VxWorks, QNX, OS-9
16Z125_UART	1-4 UARTs	1800	2-33	Linux, VxWorks

FPGA IP Cores (Wishbone)

Some examples of custom IP cores developed by MEN:

- DMA on Wishbone Bus with scatter-gather
- Display Zoom (Resolution Converter for 640x480 to 800x600)
- VME-to-Wishbone Bridge
- Pattern Generator (for serial test patterns, e.g., for Ethernet frames)
- Async. High Speed WB-WB Bridge via LVDS
- Wishbone-to-ADC Interface
- Flexible SST49LF008A FWH Emulation (up to 4x 1 MB)
- NS-Bridge (FPGA-to-FPGA parallel multiplexed interconnection for Wishbone bus)
- DVI Graphics Monitor
- Board Management Controller
- BMCX (FPGA-to-FPGA serial interconnection with ECC)
- PE_COM (Communication controller for CAN to Wishbone-Bus bridge)
- BitBlitter (2D Graphics hardware acceleration)
- Display Controller with sprite support (for mouse cursor or frame-in-frame support)
- PCI Master/Slave with ECC protection