

FPGA Kits Vergleich							05.02.2012
	Spartan-6 FPGA LX9 MicroBoard	Nexys3	Atlys	Spartan 3E Starter Board	Nexys2 500k	Basys2 250	
FPGA	LX9 CSG324C	LX16 CSG324	LX45 CSG324	XC3S500E	XC3S500E FG320	XC3S250E	
SDRAM	64MB LPDDR	16MB Cellular RAM (x16)	128MB DDR2	64MB DDR (Micron)	16MB Cellular RAM (x16)	-	
PlatformFlash	-	-	-	XCF04 (512kB)	XCF02	XCF02	
Flash	16MB Multi-I/O SPI	16MB x4-SPI	16MB x4-SPI	2MB SPI (ST M25P16)	-	-	
Flash	-	16MB parallel	-	16MB StartaFlash Intel	16MB StartaFlash Intel	-	
Ethernet	10/100 PHY DP83848J	10/100 PHY LAN8710	10/100/1000 PHY Marvell M88E1111	10/100 PHY SMSC LAN83C185	-	-	
RS232	-	-	-	Two 9-pin (DTE and DCE)	Two 9-pin (DTE and DCE)	-	
USB JTAG-bridge	USB-A plug Full Speed AT90USB162	Micro-AB High speed (CY7C68013A-56) and data exchange 38Mb/s	Micro-AB High speed (CY7C68013A-56) and data exchange 38Mb/s	USB2	USB2 mini-B High Speed (CY7C68013A-56) and data exchange 38Mb/s	USB2 mini-B Full Speed AT90USB162 + data transfer	
USB UART	Full Speed CP2102	Micro-AB (FT232R)	(EXAR XR21V1410)	-	-	-	
USB Host		USB-A (PIC24FJ192) for Mouse / Keyboard / USB-Stick	USB-A (PIC32MX440F) for Mouse / Keyboard / USB-Stick	no USB: PS/2 mouse or keyboard port	no USB: PS/2 mouse or keyboard port (3.3/5V)	no USB: PS/2 mouse or keyboard port (5V)	
VGA	256 Farben	256 Farben	-	8 Farben	256 Farben	256 Farben	
HDMI	-	-	2x IN (buffered, Type A) 1 x Out (buffered, Type A)  1 x In/Out (unbuffered, Type D, shared with PMOD)	-	-	-	
AC-97 Audio Codec	-	-	Line in/out, mic, headphone, LM4550	-	-	-	
ADC	-	-	-	2 x 14bit LTC1407A with pre-amp LTC6912 1.5Ms/s	-	-	
DAC	-	-	-	4 x 12bit (LTC2624)	-	-	
Oscillator	100 / 66.7 / 40 MHz	100 MHz	100 MHz	50MHz and 66MHz	50MHz	100 / 50 / 25 MHz	
I/O	2x PMOD (12pin) =16 I/O	4x PMOD (12pin) =32 I/O	1x PMOD (12pin) =8 I/O shared with HDMI (D-Type)	3x PMOD (6pin) =12 I/O	4x PMOD (12pin) =32 I/O (3.3/5V)	4x PMOD (6pin) =16 I/O	
	-	VMOD =40I/O VCC0: 3.3V or 2.5V VU: 5V or open	VMOD =40I/O VCC0: 3.3V or 2.5V VU: 5V or open	FX2-connector = 40I/O	FX2-connector = 40I/O VCC0: 3.3V VU: 5V or open		
User Interface	4 LED	8 LED	8 LED	8 LED	8 LED	8 LED	
		4-digit 7-segment display	4-digit 7-segment display	LCD 16x2 character	4-digit 7-segment display	4-digit 7-segment display	
		5 buttons	6 buttons	4 buttons	4 buttons	4 buttons	
	4 DIP-Switch	8 slide switch	8 slide switch	4 slide switch	8 slide switch	8 slide switch	
				1 rotary Push-button switch			
Power	USB supply	USB supply or wall power 5W	wall power 20W	wall power	USB supply, wall power or batt connector	USB supply, wall power or batt connector	
SW-licenses	ISE Design Suite IDS 12.4 DVD WebPACK ChipScope Pro SDK (only LX9) with MicroBlaze license	IDS free download	IDS free download	IDS free download	IDS free download	IDS free download	
price w/o tax	86,12 €	151,91 €	266,41 €	144,27 €	113,74 €	75,57 €	
price incl. 19% tax	102,48 €	180,77 €	317,03 €	171,68 €	135,35 €	89,93 €	
at Trezz since	09.02.2011	02.06.2011	23.10.2010	04.02.2009	04.02.2009		
VHDL examples for PMODs	PmodAD1 (2 x 12bit ADC, 1Ms/s)						
		PmodAD2 (4 x 12bit ADC, I2C)					
	PmodDA1 (4 x 8bit DAC, 1Ms/s)	PmodDA1 (4 x 8bit DAC, 1Ms/s)					
	PmodACL 3-axis accelerometer						
needed PMODs		PmodCLP LCD-parallel 16 x 2 characters		integrated LCD			
		PmodENC Rotary encoder		integrated encoder			
		PmodAD1 (2 x 12bit ADC, 1Ms/s)		integrated ADC (2 x 14bit, 1.5Ms/s)			
		PmodDA1 (4 x 8bit DAC, 1Ms/s)		integrated DAC (4 x 12bit)			
		PmodTPH2 Test Point Header 12pin		PmodTPH Test Point Header 6pin			
		PmodLS1 (LineSensing) 4 optical sensors input and 2 x IR Proximity Sensor		PmodLS1 (LineSensing) 4 optical sensors input and 2 x IR Proximity Sensor			
usefull PMODs		PmodDA2 (2 x 12bit DAC, SPI 30MHz)					