







## ELECTRO AVIL-ES Propuesta Tarjetas Altera – Precios Académicos

ALTERA DE2	ALTERA DE1	ALTERA DE0
 <p><b>Altera Cyclone II 2C35 FPGA with 35,000 LEs</b></p> <ul style="list-style-type: none"> <li>•Altera Serial Configuration devices (EPCS16) for Cyclone II 2C35</li> <li>•USB Blaster built in on board for programming and user API controlling</li> <li>•JTAG Mode and AS Mode are supported</li> <li>•8Mbyte (1M x 4 x 16) SDRAM</li> <li>•512K byte(256K X16) SRAM</li> <li>•4Mbyte Flash Memory (upgradeable to 4Mbyte)</li> <li>•SD Card Socket</li> <li>•4 Push-button switches</li> <li>•18 DPDT switches</li> <li>•9 Green User LEDs</li> <li>•18 Red User LEDs</li> <li>•16 x 2 LCD Module</li> <li>•50MHz Oscillator and 27MHz Oscillator for external clock sources</li> <li>•24-bit CD-Quality Audio CODEC with line-in, line-out, and microphone-in jacks</li> <li>•VGA DAC (10-bit high-speed triple DACs) with VGA out connector</li> <li>•TV Decoder (NTSC/PAL) and TV in connector</li> <li>•10/100 Ethernet Controller with socket.</li> <li>•USB Host/Slave Controller with USB type A and type B connectors.</li> <li>•RS-232 Transceiver and 9-pin connector</li> <li>•PS/2 mouse/keyboard connector</li> <li>•IrDA transceiver</li> <li>•Two 40-pin Expansion Headers with diode protection</li> <li>•DE2 Lab CD-ROM which contains many examples with source code to exercise the boards, including: SDRAM and Flash Controller, CD-Quality Music Player, VGA and TV Labs, SD Card reader, RS-232/PS-2 Communication Labs, NIOSII, and Control Panel API</li> <li>•Size: 153*203 mm</li> </ul>	 <p><b>Altera Cyclone II 2C20 FPGA with 20,000 LEs</b></p> <ul style="list-style-type: none"> <li>•Altera Serial Configuration devices (EPCS4) for Cyclone II 2C20</li> <li>•USB Blaster built in on board for programming and user API controlling</li> <li>•JTAG Mode and AS Mode are supported</li> <li>•8Mbyte (1M x 4 x 16) SDRAM</li> <li>•4Mbyte Flash Memory</li> <li>•512Kbyte(256Kx16) SRAM</li> <li>•SD Card Socket</li> <li>•4 Push-button switches</li> <li>•10 DPDT switches</li> <li>•8 Green User LEDs</li> <li>•10 Red User LEDs</li> <li>•4 Seven-segment LED displays</li> <li>•50MHz oscillator ,24MHz oscillator ,27MHz oscillator and external clock sources</li> <li>•24-bit CD-Quality Audio CODEC with line-in, line-out, and microphone-in jacks</li> <li>•VGA DAC (4-bit R-2R per channel) with VGA out connector</li> <li>•RS-232 Transceiver and 9-pin connector</li> <li>•PS/2 mouse/keyboard connector</li> <li>•Two 40-pin Expansion Headers</li> <li>•DE1 Lab CD-ROM which contains many examples with source code</li> <li>•Size: 153*153 mm</li> </ul>	 <p><b>FPGA Cyclone III 3C16 FPGA with 15,408 LEs</b></p> <ul style="list-style-type: none"> <li>■56 M9K Embedded Memory Blocks</li> <li>■504K total RAM bits</li> <li>■56 embedded multipliers</li> <li>■4 PLLs</li> <li>■346 user I/O pins</li> <li>■FineLine BGA 484-pin package</li> <li>■One 8-Mbyte Single Data Rate Synchronous Dynamic RAM memory chip</li> <li>■4-Mbyte NOR Flash memory</li> <li>■Support Byte (8-bits)/Word (16-bits) mode</li> <li>■Provides both SPI and SD 1-bit mode SD Card access</li> <li>■On-board USB Blaster for programming</li> <li>■Using the Altera EPM240 CPLD</li> <li>■Altera EPCS4 serial EEPROM chip</li> <li>■3 pushbutton switches</li> <li>■10 Slide switches</li> <li>■10 Green color LEDs</li> <li>■4 seven-segment displays</li> <li>■16x2 LCD Interface (Not include LCD module)</li> <li>■50-MHz oscillator</li> <li>■Uses a 4-bit resistor-network DAC</li> <li>■With 15-pin high-density D-sub connector</li> <li>■Supports up to 1280x1024 at 60-Hz refresh rate</li> <li>■One RS-232 port (Without DB-9 serial connector)</li> <li>■One PS/2 port (Can be used through a PS/2 Y Cable to allow you to connect a keyboard and mouse to one port)</li> <li>■72 Cyclone III I/O pins, as well as 8 power and ground lines, are brought out to two 40-pin expansion connectors</li> <li>■40-pin header is designed to accept a standard 40-pin ribbon cable used for IDE hard drives. Size: 99.7*128.02 mm</li> </ul>
<p><b>Precio \$490 + iva (Total \$ 548.80)</b></p>	<p><b>Precio \$250 + iva (Total \$ 280.00)</b></p>	<p><b>Precio \$215 + iva (Total \$ 240.80)</b></p>

**Orden Mínima 2 unidades. Más información: Martin Avilés [ventas@electroavil-es.com](mailto:ventas@electroavil-es.com) Telef. 095578103 – 094956470**

## ELECTRO AVIL-ES Propuesta Tarjetas Altera – Precios Académicos

<p><b>ALTERA DE2-70</b></p> 	<p><b>ALTERA DE2-115</b></p> 	<p><b>ALTERA DE0 NANO</b></p> 
<p><b>Altera Cyclone II 2C70 FPGA with 70,000 LEs</b></p> <ul style="list-style-type: none"> <li>•USB Blaster (on board) for programming and user API control; both JTAG and Active Serial (AS) programming modes are supported</li> <li>•2-Mbyte SSRAM</li> <li>•Two 32-Mbyte SDRAM</li> <li>•8-Mbyte Flash memory</li> <li>•SD Card socket</li> <li>•4 pushbutton switches</li> <li>•18 toggle switches</li> <li>•18 red user LEDs</li> <li>•9 green user LEDs</li> <li>•50-Mhz oscillator and 28.63-Mhz oscillator for clock sources</li> <li>•24-bit CD-quality audio CODEC with line-in, line-out, and microphone-in jacks</li> <li>•VGA DAC (10-bit high-speed triple DACs) with VGA-out connector</li> <li>•2 TV Decoder (NTSC/PAL) and TV-in connector</li> <li>•10/100 Ethernet Controller with a connector</li> <li>•USB Host/Slave Controller with USB type A and type B connectors</li> <li>•RS-232 transceiver and 9-pin connector</li> <li>•PS/2 mouse/keyboard connector</li> <li>•IrDA transceiver</li> <li>•1 SMA connector</li> <li>•Two 40-pin Expansion Headers with diode protection</li> <li>•Size: 153*203 mm</li> </ul>	<p><b>Altera Cyclone IV 4CE115 FPGA with 114,800 LEs</b></p> <ul style="list-style-type: none"> <li>•Altera Serial Configuration devices (EPCS4) ) for Cyclone IV 4CE115</li> <li>•On-board USB-Blaster circuitry</li> <li>•JTAG and AS Mode configuration supported</li> <li>•128Mbyte (32M x32bit) SDRAM</li> <li>•8MB (4Mx16) Flash with 8-bit mode</li> <li>•2MB(1Mx16) SRAM</li> <li>•32kbit EEPROM</li> <li>•SD Card Socket</li> <li>•18 switches and 4 push-buttons</li> <li>•18 red and 9 green LEDs</li> <li>•8 Seven-segment LED displays</li> <li>•Three 50MHz oscillator clock inputs, SMA connectors (external clock input/output)</li> <li>•24-bit encoder/ decoder (CODEC) with line-in, line-out, and microphone-in jacks</li> <li>•16x2 LCD module</li> <li>•Two Gigabit Ethernet Ports 10/100/1000, supports Industrial cores</li> <li>•172-pin High Speed Mezzanine Card (HSMC)</li> <li>•VGA-out Connector (high speed triple DACs)</li> <li>•USB type A and B provide host and device controller</li> <li>•RS-232 (DB-9 serial connector) port with flow control</li> <li>•PS/2 mouse or keyboard connector</li> <li>•40-pin Expansion Headers</li> <li>•Remote control (infrared receiver module)</li> <li>•TV-in Connector TV decoder (NTSC/PAL/SECAM)</li> <li>•Desktop DC input, switching and step-down regulators LM3150MH</li> <li>•Size : 210.8*156 mm</li> </ul>	<p><b>•FPGA Cyclone IV 4CE22 FPGA with 22,320 LEs</b></p> <ul style="list-style-type: none"> <li>■594 Embedded memory (kbits)</li> <li>■66 Embedded 18x18 multipliers</li> <li>■56 embedded multipliers</li> <li>■4 PLLs</li> <li>■153 Maximum FPGA I/O pins</li> <li>■On-board USB-Blaster circuit for programming</li> <li>■32MB SDRAM</li> <li>■2kb I2C EEPROM</li> <li>■8 green LEDs</li> <li>■2 push-buttons</li> <li>■4 DIP switches</li> <li>■G-Sensor 3-axis accelerometer (13-bit)</li> <li>■A/D Converter 8-channel, 12-bit, 50 ksp/s to 200 ksp/s</li> <li>■On-board 50MHz clock oscillator</li> <li>■USB Type mini-AB port (5V)</li> <li>■Two DC 5V pins of the GPIO headers (5V)</li> <li>■2-pin external power header (3.6-5.7V)</li> <li>■Connectivity with some daughter cards</li> <li>■Size : 49*75.2mm</li> </ul>
<p><b>Precio \$510 + iva (Total \$ 571.20)</b></p>	<p><b>Precio \$540 + iva (Total \$ 604.80)</b></p>	<p><b>Precio \$180 + iva (Total \$ 201.60)</b></p>

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