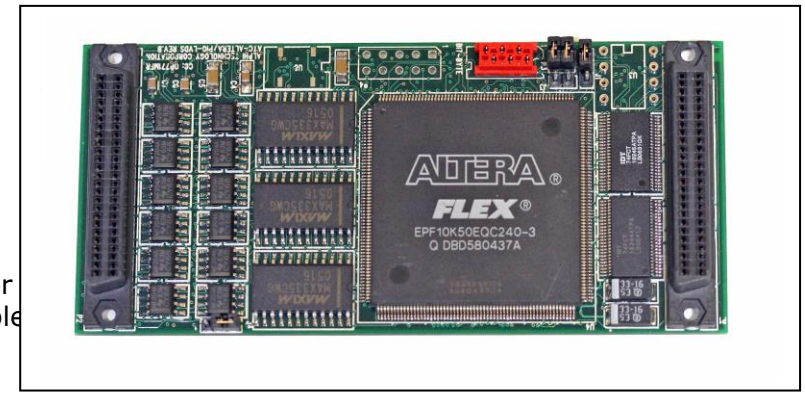
IP-10K50E-LVDS

IP Module

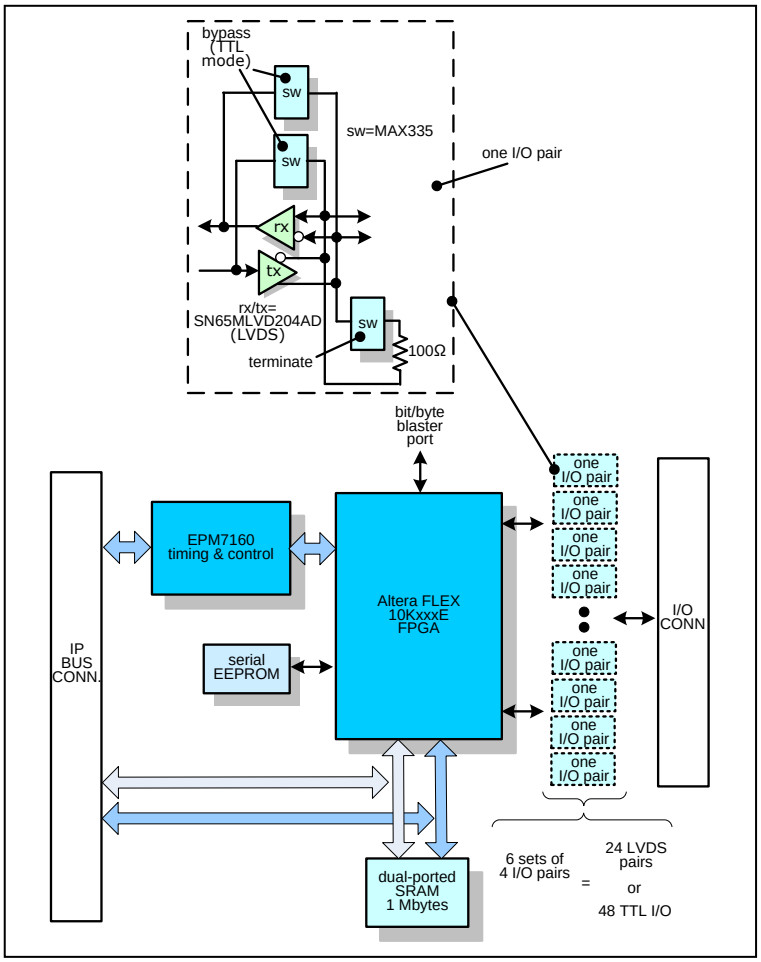
IP ALTERA 10K50E with LVDS Parallel I/O

Features



- Single wide industry pack board format
- Altera FPGA 10K50E, or 10K100E or 10K130E
- Up to 24 LVDS driver/receiver pairs (SN65MLVD204AD) or 48 TTL I/O lines
- Each line can be separately selected as input or output in TTL mode
- Programmable in groups of 4 I/O
- 100Ω terminating resistor or no resistor for LVDS I/O, resistor software selectable using MAX335 switch
- Up to 512K x 8 x 2 dual ported SRAM
- EPM7160 timing device for IP bus, DPR bus, and FLEX device access
- 8 or 32 MHz clock
- Optional user clock on board running at different speed than IP bus
- 2 interrupts and 2 slave DMA IP bus lines
- FPGA programmable through bit/byte Blaster header, onboard serial EPROM, or through IP bus
- VITA 4 compliant

Block Diagram Overview



The IP-1OK50E-PIO module is an IP mezzanine card that is populated with an Altera FLEX 10Kxxx embedded programmable FPGA. Three different sized FPGA's can be selected. A dual ported SRAM can be accessed by either some form of CPU/DSP on the IP bus side and/or the FLEX 10Kxxx FPGA. The I/O can be either LVDS or TTL in groups of 4 I/O.

Available Software Drivers:

The customer must have an Altera development tool to implement their own FPGA design.

The IP module can be used as a stand-alone module.

The FPGA's program can be downloaded in one of three ways:

- Bit/byte Blaster header connector connected directly to the FPGA, or
- Local serial EPROM, or
- Through the IP bus.

805-20-000-4100

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Applications:

The IP-10K50E-PIO can be used as a LVDS bus I/O interface for parallel and/or serial communications between carrier systems or simply used as a TTL I/O subsystem for monitoring and/or controlling digitally oriented functions.

The FPGA can be programmed through the Blaster interface for quick design turnaround. The local serial EPROM can be used for local programming. The FPGA can also be programmed by downloading the entire program into the FPGA from the IP bus for those applications that require complete security.

SN65MLVD204AD LVDS Transceiver I/O Features (LVDS mode):

- Signaling rates up to 100 Mbps, clock frequencies up to 50 MHz
- Type 2 receivers provide an offset (100 mV) threshold to detect open-circuit and idle-bus conditions
- Meets or exceeds the M-LVDS standard TIA/EIA-899 for multipoint data interchange
- Controlled driver output voltage transition times for improved signal quality
- -1 V to 3.4 V common-mode voltage range allows data transfer with 2 V of ground noise
- Differential output voltage magnitude = 650 mV max
- Positive going differential input voltage threshold = 150 mV
- Negative going differential input voltage threshold = 50 mV min
- Differential input voltage hysteresis = 0 mV

FLEX I/O Features (TTL mode):

- Low input voltage max = 0.8 VDC
- High input voltage min = 2.0 VDC
- Low output voltage max = 0.45 VDC
- High output voltage min = 2.4 VDC
- Max output current = 25 ma at Vcc = 5.0 VDC

Industry Pack Specifications:

- Meets ANSI/VITA 4-1995
- 8/32 MHz synchronous operation
- Supports ID, 128 byte I/O, interrupt. & 8 Mbyte memory spaces
- 2 Interrupts per module
- Two passive DMA channels are possible.
- Hardware self timed per IP module
- Triggered via system reset and software control
- Jumper or software time-out function
- 5, +/-12 volt reset-able fuse per IP

Mechanical: Environmental:

- Size – VITA 4 compatible
  1.8" x 3.9" or 46 mm x 99 mm
- Power – 1.0 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

Operating Environment:

- Operating temperature
  Commercial: 0 to +70 ºC
  Optional: -25 ºC to +80 ºC
- Non-operating: -40 ºC to +85 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

Ordering Information:

Part Number :	IP-Altera-10K50E-LVDS	LVDS ALTERA 10K50E Industry Pack module
	IP-Altera-10K100E-LVDS	LVDS ALTERA 10K100E Industry Pack module
	IP-Altera-10K130E-LVDS	LVDS ALTERA 10K130E Industry Pack module

Optional Accessories

Part Number :	TB-50-HDR	50 pin terminal block and 1meter flat ribbon cable
Part Number :	CBL-50-HDR	50 pin,1meter flat ribbon cable, IDC header connector

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