



Single and 32 Channel HDLC Controllers

LogiCORE Products



Two new HDLC Controller Cores

- ◆ Agenda -
 - Introduction
 - HDLC Overview
 - Typical Applications
 - Core Features
 - Example Implementations
 - Pricing & Availability
 - Summary



HDLC1 & HDLC32 Cores

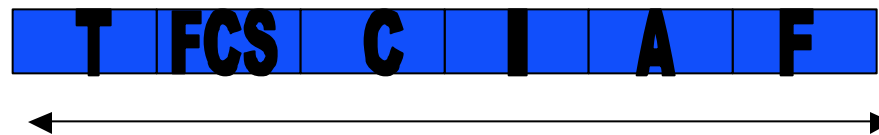
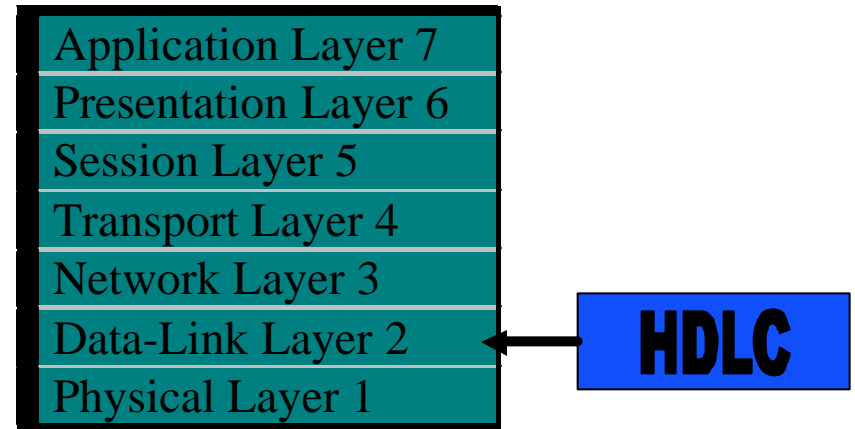
- ◆ High performance modules for the HDLC protocol
- ◆ Low cost, fixed function netlist cores
 - Virtex-E
 - Virtex
 - Spartan-II
 - Future families
- ◆ Downloadable over the Internet
- ◆ Licensed from Integrated Silicon Systems, Ltd. (ISS)

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HDLC Operation

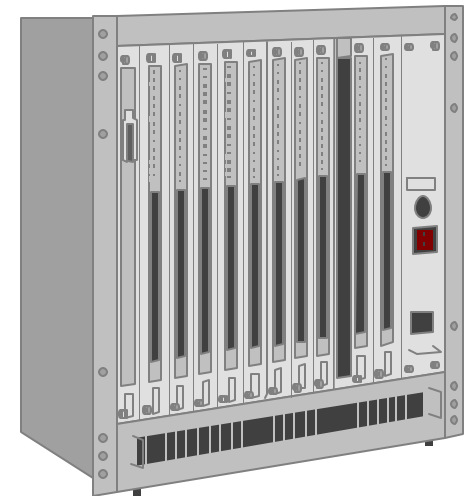
- ◆ High-Level Data Link Control (HDLC) Protocol
- ◆ Connects physical layer with the Network Layer
- ◆ Data transmitted according to required "Quality of Service"
- ◆ Data must be passed to correct destination, intact and at correct rate
- ◆ Data entities segregated as Frames



HDLC Frame

HDLC Controller Applications

- ◆ Frame Relay Switches
- ◆ X.25 Layer 2 protocol
- ◆ Video Conferencing over ISDN
 - ISDN B-Channel (64 kBit/s) and D-Channel (16 kBit/s)
- ◆ Cable Modem
- ◆ CO based xDSL
- ◆ Private Packet Data Networks & Switches
- ◆ Sonet Termination

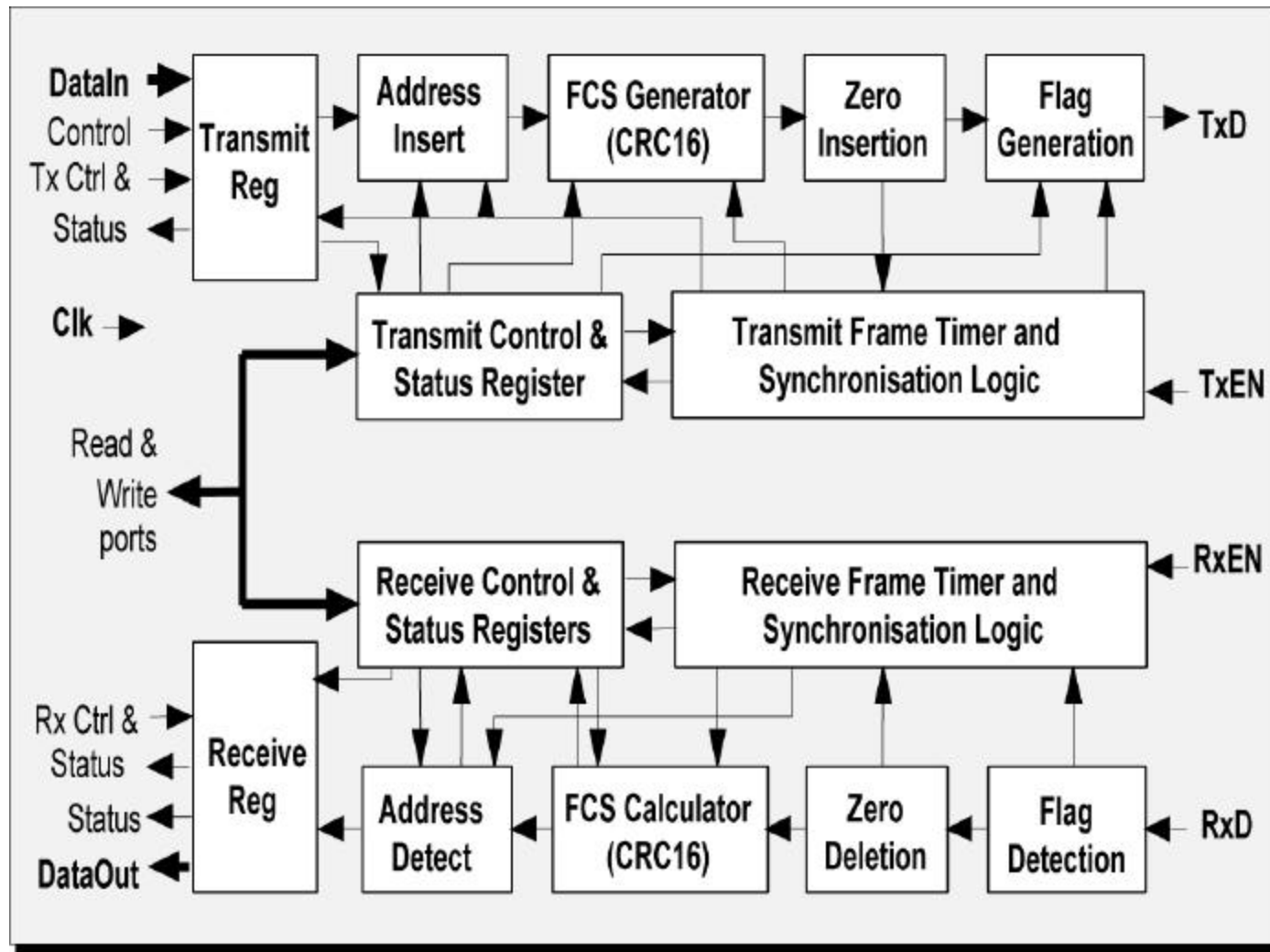




Core Features

- ◆ Fully Compliant with ITU Q.921, X.25, ISO/IEC 3309, ISDN Channels B & D
- ◆ 8 or 16-bit; selectable all frames and broadcast modes
- ◆ Programmable 16 & 32-bit CRC (FCS)
- ◆ Both cores suited for multiple HDLC scaling
- ◆ Full duplex operation, with 32 channel multiplex capability
- ◆ T1/E1 stream support using External mux/de-mux
- ◆ Generic 8 bit host interface for control and status registers
- ◆ Fully synchronised with bit-rate
- ◆ Optimized for Virtex, Virtex-E and Spartan-II

HDLC Block Diagram



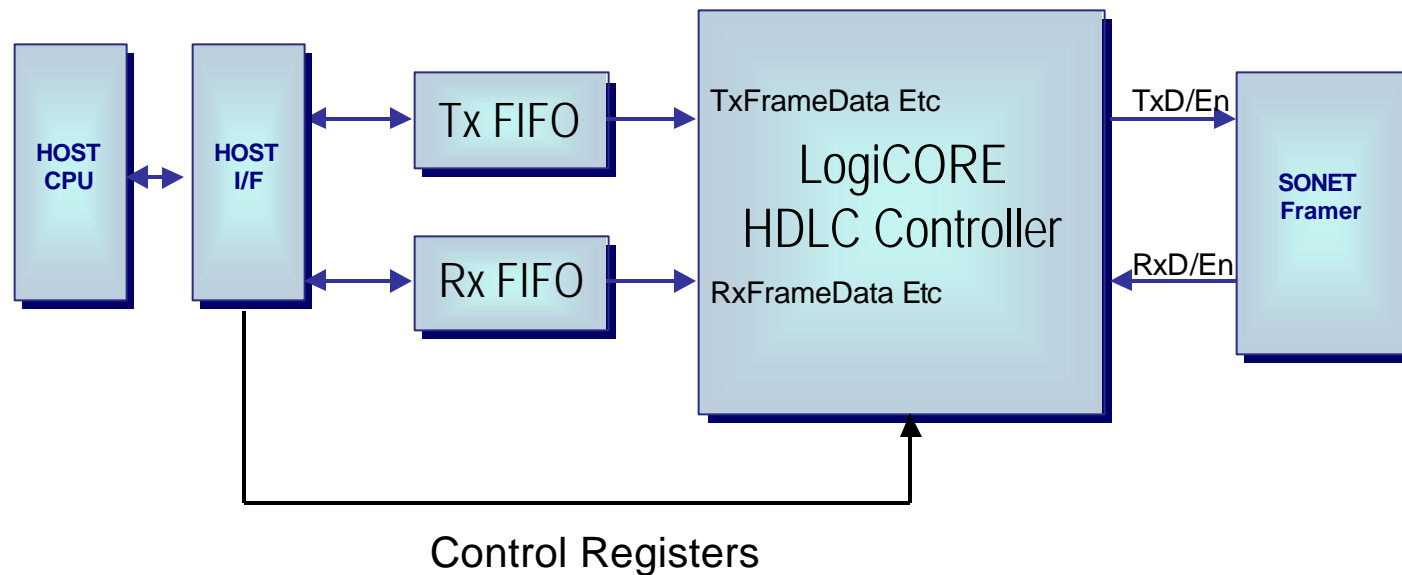
Example Implementations

Target Device HDLC1	Virtex xcv100-4	Virtex-E xcv100e-8	Spartan II xc2s100-5
<i>Size</i>	216 Slices	216	216
<i>Speed</i>	61.5 MHz	85.9 MHz	64.1 MHz
Target Device HDLC32	Virtex xcv100-6	Virtex E xcv100e-6	Spartan II xc2s100-6
<i>Size</i>	513 Slices	523 Slices	523 Slices
<i>Speed</i>	47.2 MHz	49.5 MHz	56.1 MHz

•Obtainable without stringent place and route constraints

Example Integration

Packet over SONET



Pricing & Availability

- ◆ Single Channel
 - DO-DI-HDLC1
 - Contact your local sales person
 - Single Use License
- ◆ 32 Channel
 - DO-DI-HDLC32
 - Contact your local sales person
 - Single Use License
- ◆ Products available as of June 26th

Summary

- ◆ LogiCore HDLC provides a high performance solution with a simple interface for full control
- ◆ Performance comparable to other solutions
- ◆ Compliance with all relevant standards
- ◆ Easy integration into Xilinx tools flow
- ◆ Available through Xilinx Coregen

