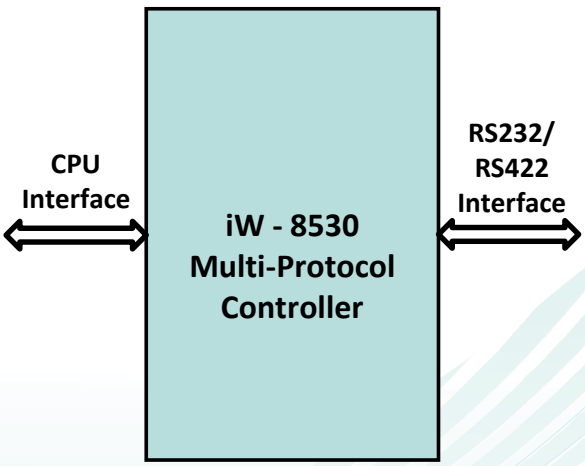
iWave
Embedding Intelligence

FPGA IP CORE

iW- 8530 Multi-Protocol Controller IP



iW - 8530 MPSC Controller (Multi-Protocol Serial Communication Controller) is a general-purpose communication controller which consists of two sets of bi-directional parallel / serial converter circuits for data communication.

Highlights

- Compatible with uPD72001 and 85C30
- Controller supports all three serial protocols (UART, Mono-Sync, Bi-Sync, HDLC and SDLC)

Features

- **Hardware features**
  - Transmit buffer (2 Byte Depth)
  - Receive buffer (4 Byte Depth)
  - Interrupt control function
  - DMA request: 2 for TX and 2 for Rx
  - Overrun error detection
  - Baud rate generator
  - Self-loop back test function
  - GPIO: 4 pins x 2
  - DPLL supported

- **Communication protocol features**
  - Start-stop synchronization
    - Character bit length: 5, 6, 7, 8
    - Stop bit length: 1, 1.5, 2
    - Clock rate: x1, x16, x32, x64
    - Parity generation, check
    - Framing error detection
    - Break generation, detection
  - Character oriented protocol (COP)
    - Operating mode: Mono-sync, Bi-sync, External sync
    - Character bit length: 5, 6, 7, 8
    - SYNC character bit length: 6, 8
    - Character synchronization: internal/external
    - Block check sequence (BCS) generation, check: CRC16, CRC-CCITT
    - Parity generation, check
    - SYNC character automatic transmission, detection, rejection
  - Bit oriented protocol (BOP)
    - Operation mode: HDLC (High-level Data Link Control), SDLC
    - (Synchronous Data Link Control), SDLC Loop
    - Flag transmission, detection
    - Zerinsertion, rejection
    - Address field detection (1 byte)
    - FCS (Frame Check Sequence) generation, detection
    - Short frame detection
    - Abort automatic transmission, detection
    - Idle detection
    - GAhead detection
    - Transmit number data control

- **Processing data format**
  - Encode/decode of NRZ (Non-Return to Zero)
  - Encode/decode of NRZI (Non-Return to ZerInverted)
  - Encode/decode of FM (Frequency Modulation)
  - Decode in Manchester mode

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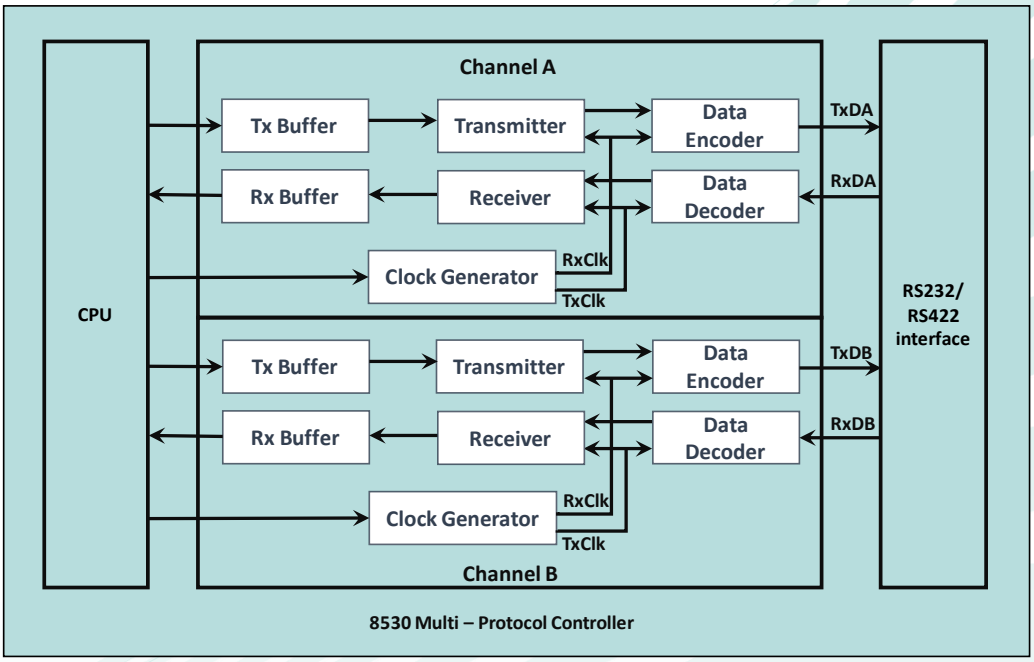
iW 8530 Multi – Protocol IP block diagram



Deliverables

- RTL source code or Netlist
- IP example design
- IP datasheet
- Integration Manual

Licensing Options

- Non-Transferable: Single Project/Product Netlist License – Single Site or Multi Site
- Non-Transferable: Multi Project /Product Netlist License – Single Site or Multi Site
- Non-Transferable: Single Project/Product RTL Source Code License – Single Site or Multi Site
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Technical Support

iWave provides comprehensive support during your system integration & validation.

- The Client may open a new support incident by emailing to a technical support engineer
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- Support assistance shall be delivered by telephone, email and/or remote assistance via a web meeting
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iW- 8530 Multi – Protocol FPGA IP
The IP can be ordered online from the iWave Website http://www.iwavesystems.com/product/8530-multi-protocol-controller
Or from our Local Partners in your region http://www.iwavesystems.com/about-us/business-partner.html

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