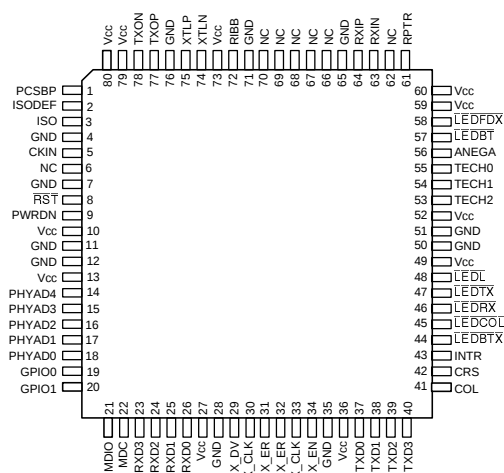


DESCRIPTION

- The 78Q2120 is a 10BASE-T/100BASE-TX Fast Ethernet transceiver. It includes all of the circuit functions required between the Media Independent Interface (MII) and the line transformers for 10/100BASE-TX NICs, Repeaters, and Switches.



The block diagram illustrates the internal architecture of the MII Serial Management & Control block, divided into Transmit and Receive paths.

Transmit Path:

- Transmit Data:** Enters from the left and passes through the **MII Registers & Interface Logic**.
- Encoding:** The data is sent to the **4B/5B Encoder, Scrambler, Parallel/Serial** block at a 100M rate. This block outputs to the **NRZ/NRZI, MTL3 Encoder** block.
- Clocking:** A **TX Clock Generator** provides a clock signal to the **4B/5B Encoder** and the **Pulse Shaper & Filter** block.
- Output:** The **NRZ/NRZI, MTL3 Encoder** outputs to the **Pulse Shaper & Filter** block, which then drives the **UTP Drivers** to produce **TXOP** and **TXON** signals.

Receive Path:

- Input:** **RXIP** and **RXIN** signals enter the **UTP Receiver** block.
- Auto Negotiation:** The **UTP Receiver** outputs a 10M signal to the **Auto Negotiation** block. The **Auto Negotiation** block also provides a 100M signal to the **Adaptive EQ, Baseline Wander Corrector, MTL3 Decoder, NRZI, NRZ** block.
- Decoding:** The **Adaptive EQ** block outputs to the **Clock Recovery** block and the **Serial/Parallel, Descrambler, 5B/4B Decoder** block. The **Clock Recovery** block outputs to the **Manchester Decoder, Serial/Parallel** block.
- Output:** The **Manchester Decoder** outputs to the **MII Registers & Interface Logic**, which then outputs the **Receive** data.

Other Components:

- Carrier Sense, Collision Detect:** Receives a 10M signal from the **MII Registers & Interface Logic** and provides feedback to the **TX Clock Generator**.
- LEDs:** A block with outputs for **LINK**, **TX**, **RX**, **COL**, **100BT**, **10BT**, and **FDX**.
- Power:** The block is powered by **Vcc** and **Ground**, and has a **CKIN** clock input.