METANOIA 義傳科技股份有限公司 Metanoia Communications Inc.

Falcon Device

Single VDSL Analog Front End Chip “MT3201”

General Description

The MT3201 VDSL AFE provides all analog functions necessary for receiving and transmitting VDSL data according to ETSI and ANSI. The device includes in the transmit path a 14-bit DAC and a fully integrated line driver. The receive path consists of an integrated hybrid and a variable gain amplifier with up to 35dB gain and a 14 bit ADC. As single port device it is intended to be used in customer premises equipment (CPE). The full 12HMz bandwidth support in downstream and upstream direction also allows the use in central office (CO).

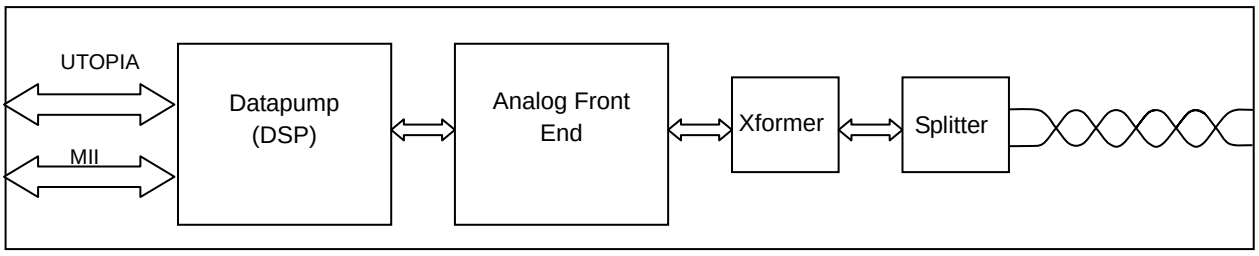
Key Features

- Fully integrated VDSL Analog Front End (AFE) including line driver
- Realized in standard CMOS
- 5V/2.5V dual analog supply for high efficiency line driver
- Digital I/O supply variable from 1.2V up to 3.3V
- Low power consumption 950mW/channel @ 14.5dBm line power
- Supports 2, 3 and 4 bands of operation (U0 optional)
- I/O data stream at 35 MSPS
- 14 bit resolution / 12 bit accuracy DAC with low out of band noise fitting PSD masks
- Line driver with SNDR of 75dB at 14.5dBm transmit power
- Variable gain amplifier (VGA) with up to 35dB gain
- 14 bit resolution / 12 bit accuracy ADC with sophisticated Sigma-Delta architecture
- On-chip clean-up PLL
- Minimum of external components necessary
- Selectable power down modes
- 35.328MHz crystal reference oscillator
- Operation with 30MHz reference clock for QAM available
- All functions controllable through serial bus interface
- 56 pin Quad Flat No lead package (QFN)

Applications

The MT3201 Single Channel Analog Front End is optimized for CPE applications where the degree of integration enables a very dense PCB layout. 2, 3 and 4 band operating modes make the MT3201 suitable for MDU/MTU applications as well.

Application Block Diagram



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