

## Merlin Device

### Single VDSL2 Analog Front End Chip

#### “MT3301”



#### Introduction

The MT3301 is a highly integrated Analog Front End (AFE) for VDSL2 application which provides all analog functions necessary for receiving and transmitting VDSL2 data according to ETSI and ANSI. The high integrity with low distortion and noise reduces the need for complex and costly external components. A serial control interface allows the software programming of various functional blocks. Power back off combined with power down for each block provides the flexible power saving policy. An on-chip clean up PLL provides all the required internal clocks. As single port device it is intended to be used in customer premises equipment (CPE). The full 8MHz/12MHz/17MHz/30MHz bandwidth support in downstream and upstream direction also allows the use in central office (CO).

#### Key Features

- ◆ Highly integrated VDSL2 Analog Front End (AFE) including line driver
- ◆ 5V/2.5V dual analog supply for high efficiency line driver
- ◆ Digital I/O supply variable from 1.2V up to 3.3V
- ◆ Supports 2, 3, 4, 5 and 6 bands of operation (U0 optional)
- ◆ I/O data stream at 35 MSPS / 70MSPS
- ◆ 14-bit resolution / 12-bit accuracy DAC with low out of band noise fitting PSD masks
- ◆ 4th order programmable low-pass filter
- ◆ 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
- ◆ Various power saving modes
- ◆ 35.328MHz crystal reference oscillator
- ◆ All functions controllable through serial bus interface

#### Applications

- ◆ VDSL2/ADSL2+ CO
- ◆ VDSL2/ADSL2+ CPE
- ◆ Power line networking
- ◆ HPNA

◆ MDU/MTU applications

