CT22501

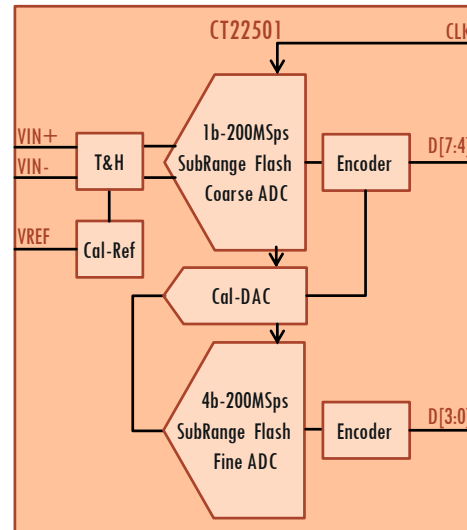## 8bits, 200Msps Sub-Ranging Flash AD Converter

Status

- Silicon Proven
- OnSemi ONC18 0.18μm HV-CMOS technology
- Easy portability

Deliverables

- Datasheet
- Integration guidelines
- GDS2 and LVS Netlist
- Footprint (.LEF)
- Test Specifications

Applications

- Automotive Ethernet
- Baseband Telecom

Features

- 8bits, 200MSPS Sub-ranging AD Converter
- 0.18μm Technology
- Supply 1.8V
- Differential Input, rail to rail
- Offline Calibration
- INL = ±1 LSB
- 20mA supply current at full speed

Description

CT22501 is a dual stage sub-ranging 8bits ADC which is able to operate at 200MSps.

The conversion is thus carried out in 2 stages. The 4 most significant bits (MSBs) results from the operation of a Coarse Flash ADC. Its outputs are feed to a DAC in order to generate the inputs for the Fine Flash ADC (FADC) depending both on the input signal to be converted and on the results of the first part of the conversion.

The flash ADCs are implemented using dynamic latched comparators, in order to minimize static/DC power dissipation. In order to improve accuracy, self-calibration of the FADCs is employed. A redundant FADC is implemented so that calibration can be performed in background without stopping conversion, and is in power down while not converting and not performing calibration. Conversion takes 2 clock cycles. CT22501 features a track and hold circuit that samples the input signal and feeds it to the flash ADCs.

Application Example

In this application example, the bundle of the CT20307, the CT20116, the CT20900 and the CT22501, constitutes the complete voltage, current and clock reference plus the signal conditioning and conversion section of a Telecom PHY product in onsemi 180n process (Silicon-Proven and in mass-production implementation).

The bundle provides to the Telecom PHY Product the following timing references:

- The low (< 20ps) jitter, 25MHz ±100ppm XTAL clock (CT20116)
- The 33MHz, 50MHz, 66MHz and the 200MHz low jitter (< 50ps) clock references (CT20900)
- 1.2V Voltage Reference with ± 2% accuracy
- 10uA current reference with ± 10% accuracy

The CT22501 is 8 bits, dual stage sub-ranging ADC which operates at 200MSps and clocked by the CT20900.
The CT22501 ADC has been designed to be used for wired telecommunication signals in the ranges of 25MHz-100MHz.
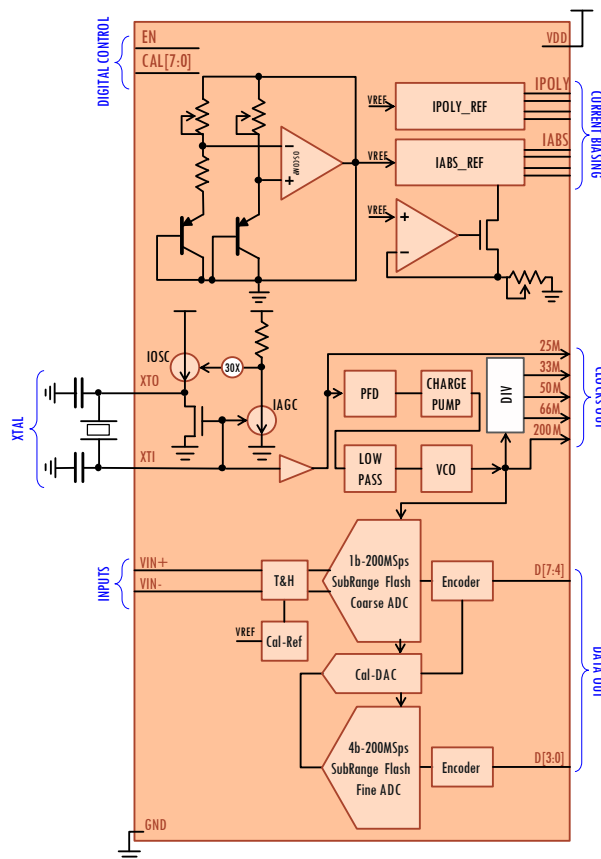
FAQs

Q: May I ask Canova Tech to migrate the IPs to a different manufacturing foundry and process?
A: Yes, you can. Our business model includes porting of the IPs to your preferrable silicon foundry supplier.

Q: May I ask Canova Tech to develop custom and dedicated analog and/or digital on top of the IPs?
A: Yes, you can. Our business model includes custom and dedicated Design Services to facilitate the integration of our IPs into your chip architecture. This business model includes the possibility for you to assign Canova the responsibility for design of a complete integrated circuit (GDS IP) based upon our IPs and your requirements.

Q: Which options do I have for licensing the Canova Tech silicon IPs solution?
A: You can have several licensing options which includes:
- single-use/multiple-use license: the IPs (single or in bundle) are delivered as object-code and licensed for the use on a well-defined product code (single-use) or for unlimited product codes (multiple-use).
- manufacturing license: here Canova Tech can develop your entire product, based upon our IPs (single or in bundle) and your product specifications. The GDS IP is licensed and delivered to you (including all necessary documentation and support) for you to manufacture your product and brand it.

Q: What kind of Support and IP Maintenance will I get from Canova?
A: You will get all required Support and IP Maintenance to ensure proper IP integration into your products for 12 months following the IP licensing. You can then subscribe, at your option, annual renewals of the Support and Maintenance agreement.