

# ADC12b054kS180nm

12 Bit 54 kS/s Cyclic ADC

## Key Parameters

- Resolution: 12 bit
- Conversion rate: up to 54 kS/s
- Power consumption: 370  $\mu$ W @ 2.4 V
- Integral non-linearity: +/- 1.6 LSB
- Supply voltage: 2.4 V – 3.6 V
- Operation clock: up to 650 kHz
- Input voltage range: 1.9 V
- Operating temperature -40 – 125°C

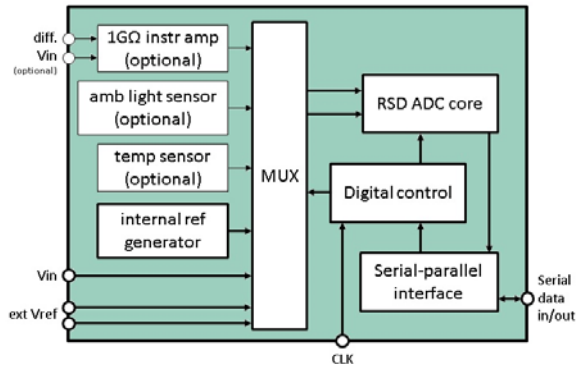


Fig. 1: IP-Level Block Diagram

## General Description

This cyclic ADC, based on redundant-signed-digit (RSD) conversion, is optimized for sampling frequency and high accuracy. It provides 12 bit resolution for sampling frequencies up to 54 kS/s for continuous input signals.

This **single ended** ADC is designed to convert input signals with input swing of 1.9 V. The resolution is configurable (12 bit, 16 bit). Reference voltages can be generated on-chip or applied from outside.

The ADC IP includes serial-to-parallel interface (optional), reference voltage generation and buffers and high-precision trimmed bandgap reference (optional).

Different on-chip sensors (ambient light, temperature) and sensor frontends (instrumentation amplifier) are available.

The ADC is **silicon evaluated** using the **XFAB XH018** process. Measurement results and samples are available.

Fraunhofer IIS provides a **detailed documentation** and **support** for the IP integration.

**Modifications, extensions and technology ports** of the IP are available on request.

## Benefits

- Accelerated design service
- Design safety (first-time-right)
- Customer-specific flexible IPs
- Automated DfR and verification
- Seamless technology migration

## Deliverables

- GDSII data
- Simulation model
- Documentation
- Integration and customizing support

## CONTACT

Fraunhofer IIS

mixed-signal-ic-design@iis.fraunhofer.de

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