

LTDC-X3



2-Channel LiDAR Time-to-Digital Converter

- High resolution (20ps) and multihit capability (5 ns pulse-pair)
- Quad SPI interface for up to 200MBPS
- Low power consumption (max. 50 mA)
- Small package QFN32

2-channel Time-to-Digital Converter

LTDC-X3 is a high-performance 2-channel time-to-digital converter specifically designed for single-beam LiDAR systems.

It has a separate START channel, two STOP channels, measures up to 4 pulses on rising and/or falling edges, has a pulse-pair resolution as low as 5 ns, a typical rms resolution of 20 ps and a range up to 2.4 μ s. It integrates a start pulse generator for generation of trigger signals to an external laser diode driver.

Equipped with a quad SPI interface, the data rate can be as high as 50MHz / 200MBPS.

It comes in a QFN32 package and works in the industrial temperature range.

Key Features

- Two TDC stop channels, one separate TDC start channel
- Pulse measurements on rising and falling edge
- Minimal pulse width 2.5ns
- Minimal pulse-to-pulse spacing 5ns (combined channels)
- Stop measurement of up to 4 pulses on rising and falling edge
- Stop mask window
- Maximal measuring range 2.4us
- Typical rms resolution 20 ps
- Stop input Comparator compatible with LVDS
- 50MHz/200MBPS Quad SPI interface
- Start pulse generator including configurable phase noise

Key Benefits

- Calibrated time measurement results
- Optimized for LiDAR applications
- High efficiency thanks to high sample rate
- Small package, low number of external components
- Reduced cooling thanks to low power consumption

Properties

- Supply voltage 3.3 V
- Temperature range -40°C to +125°C
- QFN32 package

Applications

- Robotics LiDAR
- Range finders
- Door scanners
- Safety scanners

Application diagram

