

# Status of TPC-electronics with Time-to-Digit Converters

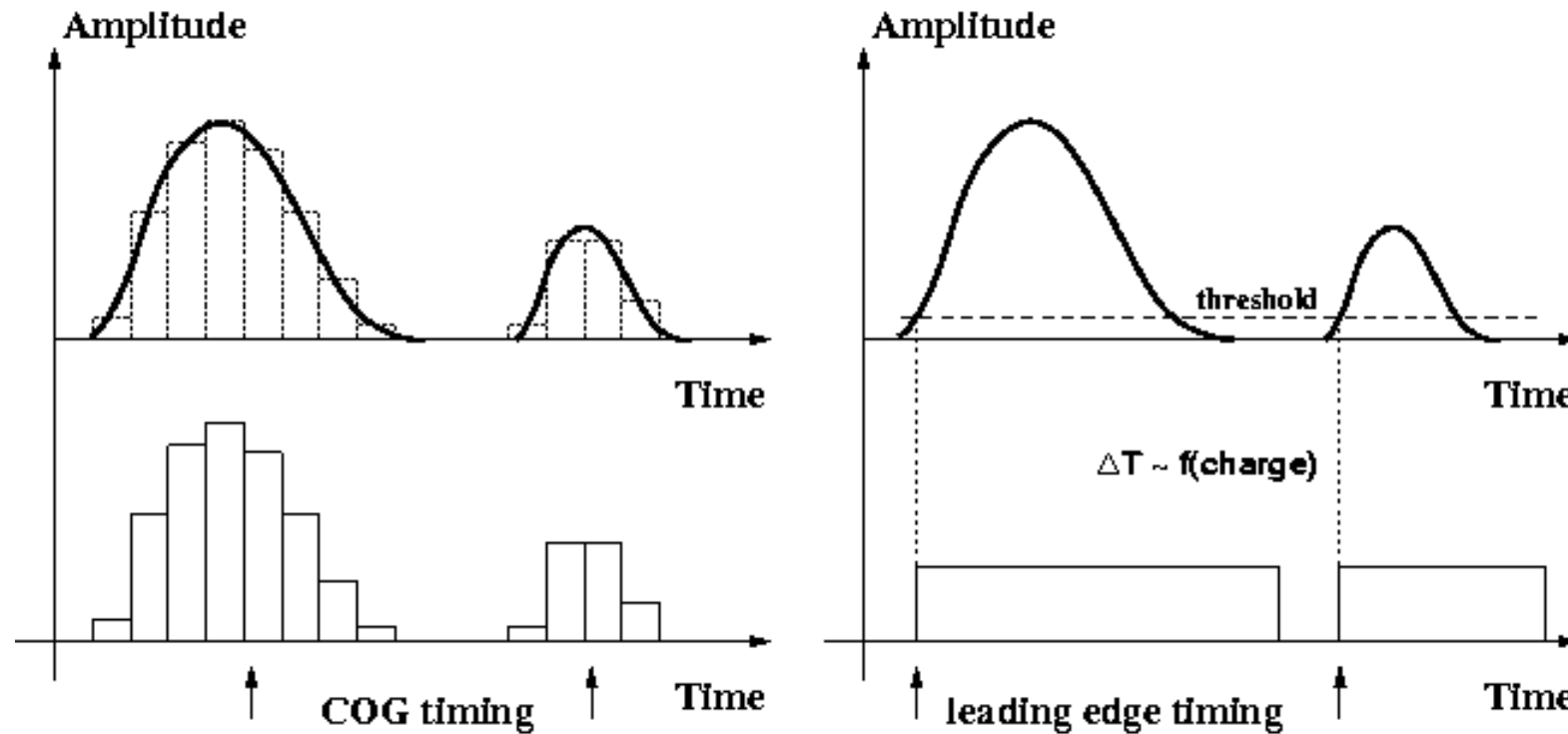


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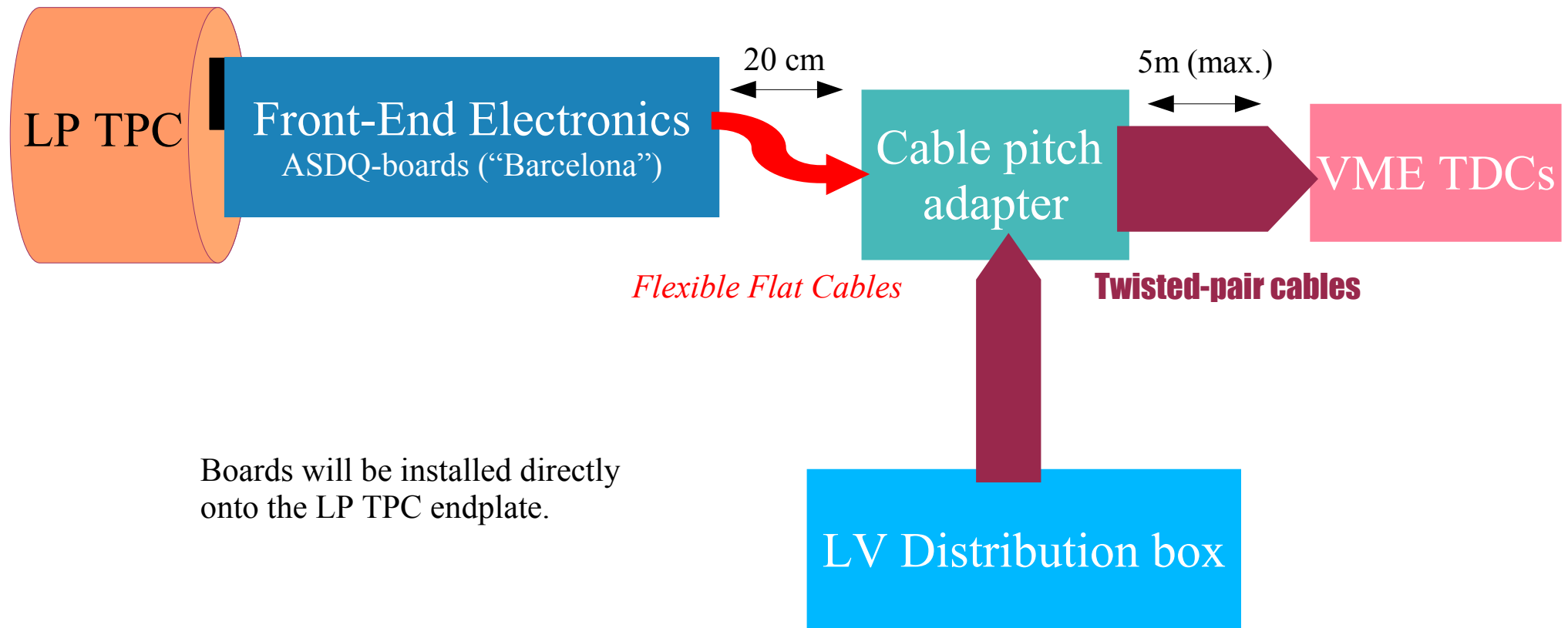
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# TPC signal processing with Time-to-Digit Converter

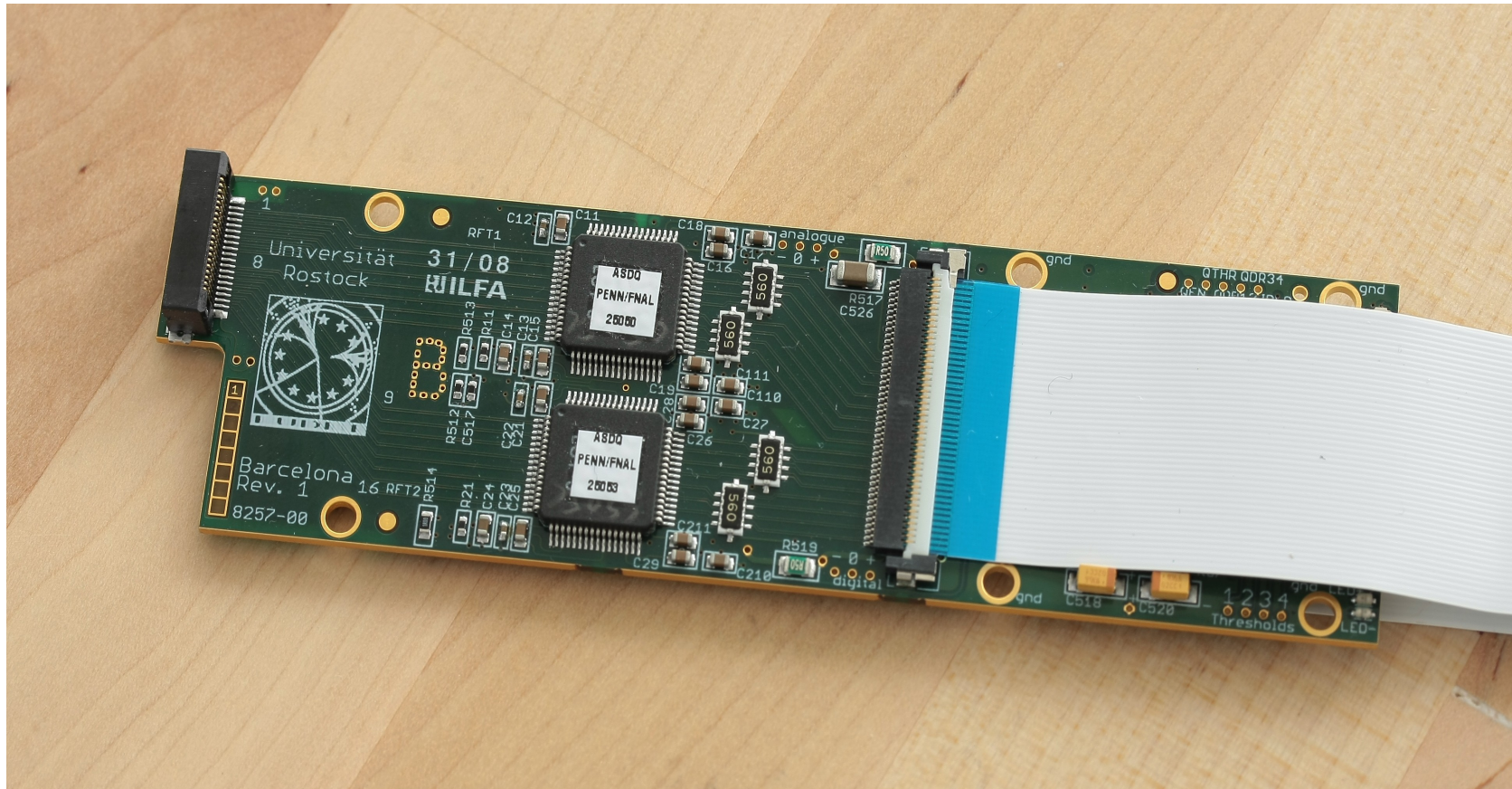


- The time of arrival is derived using the leading edge discriminator.
- The charge of the input signal is encoded into the width of output digital pulse.

# TDC-based readout electronics for LP TPC



## “Barcelona” board



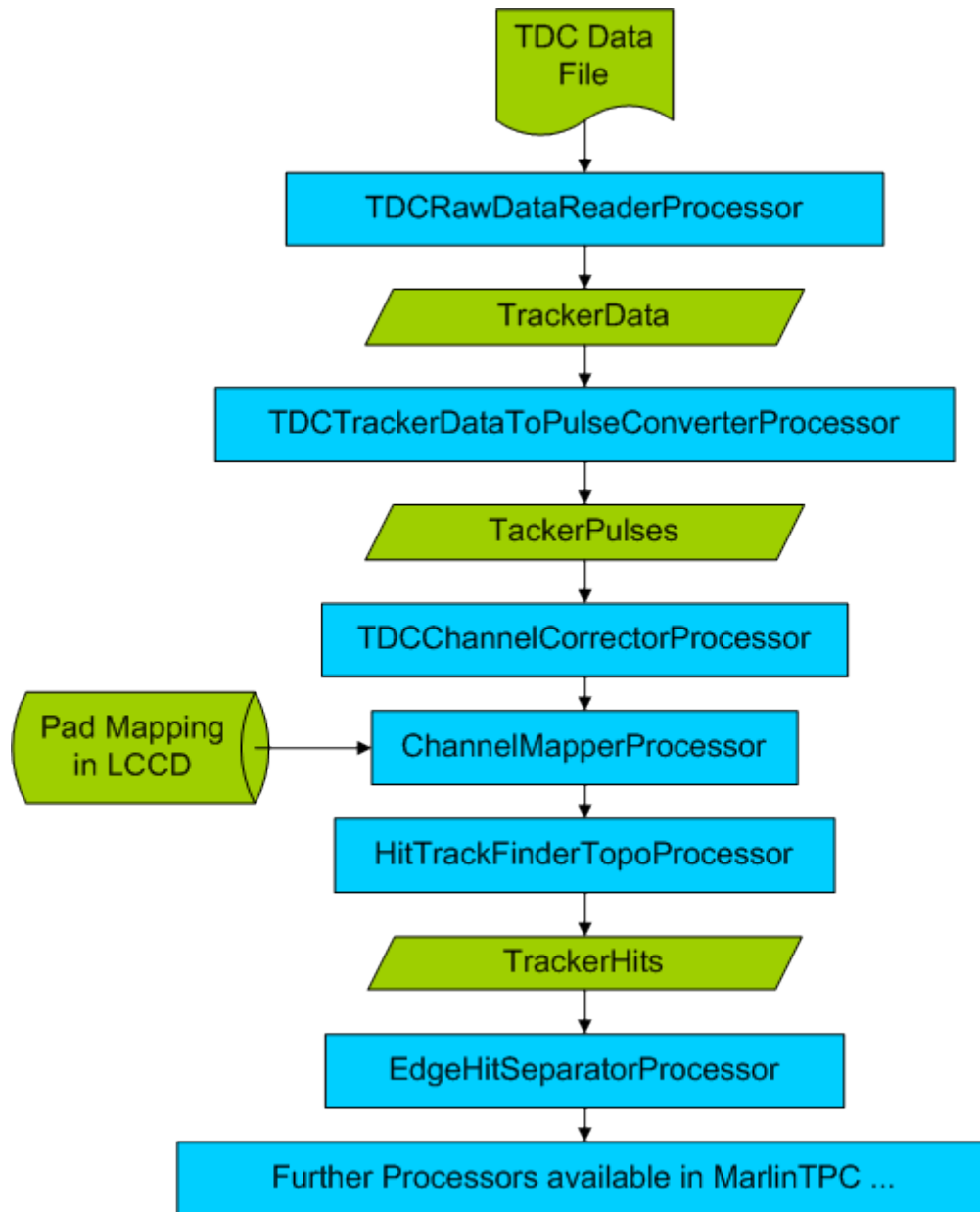
32 channels in 30 mm \* 106 mm  
Top-to-bottom thickness: 4.4 mm  
Weight: ~15g

First tests successful

2 boards assembled for first tests  
28 will be assembled later

20 boards will be used (640 channels)

# TPC data flow



Reads proprietary binary files  
and writes out data LCIO format

Coded by O. Schäfer

# Summary

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Main components of the readout electronics are there.  
Low voltage distribution is still missing.

Next steps:

- Test with small TPC chamber
- Integration with EUDAQ
- Twisted pair cable ?
- Cooling and support structure preparation

Options:

- Compact VME crate (with remote power supply)
- Power cycling ?