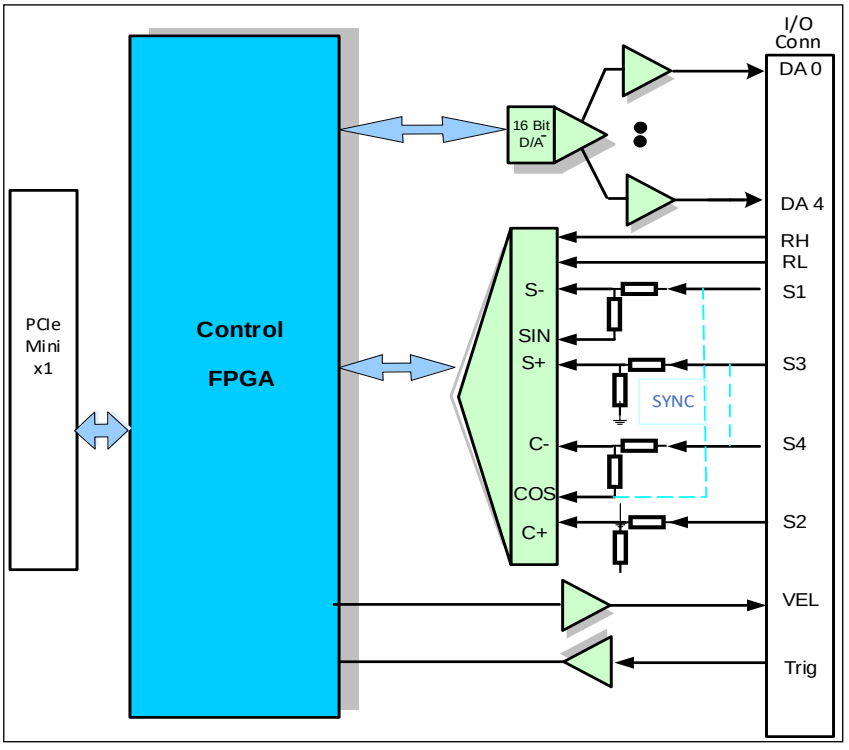
16-bit Synchro/Resolver with Four Channels, 16 bits D/A

Features

- 16-bit Resolver-to-Digital Converter
- Programmable features
  - Resolution: 10, 12, 14, or 16 bits
  - Accuracy up to 1 Arc Minute
  - Bandwidth: DC to 10KHz
  - Velocity output scaling and encoder emulation
  - Synchro input option 11.8V or 90V
  - On board excitation
- Four Channels, 16-bit SoftSpan™ DAC
  - Programmable output ranges ±10V
  - 10µs settling time
  - 30mA output drive

Block Diagram and Operational Overview



The PCIe-Mini-SYNCHRO module is a one channel Synchro/Resolver controller. It uses a state of the art 16-bit monolithic Resolver-to-Digital converter. This single chip converter offers programmable features such as resolution, bandwidth, velocity output scaling and encoder emulation.

Resolution programming allows selection of 10, 12, 14, or 16 bits, with accuracies to 1 Arc Minute. The internal Synthesized Reference feature eliminates errors due to quadrature voltage and ensures operation with a rotor-to-stator phase shift of up to 45 degrees. The velocity output (VEL) can be used in place of a tachometer. This converter provides the option of using a second set of filter components, which can be used in dual bandwidth or switch on the fly applications. This module also has four channels, 16-bit DAC with 10µs settling time and ±10V outputs.

PCIe-Mini-SYNCHRO

Synchro Resolver capabilities

- Accuracy up to 1 Arc Minute
- Used to Interpolate Synchro, Resolver, Inductosyn, LVDT, RVDT, and Hall sensors
- DC to 10KHz
- Internal synthesized reference
- Programmable resolution, dual bandwidth, and tracking rate
- Internal encoder emulation with independent resolution control
- Velocity output eliminates tachometer
- Built-In-Test (BIT) output, no 180° hang-up with AC Reference
- The RDC channels can have several different input configurations:
  - Direct
  - Differential
  - Resolver
  - Synchro
- With 16 Bits Resolution:
  - Tracking rate of 18 RPS
  - Bandwidth 300Hz
  - Acceleration constant Ka of 360K 1/sec²
  - Settling time 50ms

Digital to Analog capabilities

- Four Channels DAC
- 16-Bit Resolution
- 10µs settling time
- Buffered Voltage Output
- 30mA drive per Channel

Applications

Applications include antenna positioning, scientific, laboratory, medical and machine control.

Available Software Drivers

- Linux® drivers
- Windows® drivers
- VxWorks® drivers

Mechanical

- Size: Mini PCIe Module (30mm x 50.95mm)
- Power: 240mA
- Front panel I/O
- Vibration: 0.5G, 20-2000Hz rand
- Shock: 20G, 11ms, ½ sine
- Weight: 10g (0.4oz)
- MTBF: >250,000 hours

Operating Environment

- Operating temperature
  Commercial: 0 to +70ºC
  Industrial: -40ºC to +85ºC
- Non-operating: -50ºC to +90ºC
- Airflow requirement: .5CFM
- Humidity: 5 to 90% (non-cond)
- Altitude: 0 to 10,000 feet

Ordering information

PCIe-Mini-SYNCHRO-1	One Channel Synchro/Resolver 11.8V, Commercial Temp 0ºC to +70ºC
PCIe-Mini-SYNCHRO-1-I	One Channel Synchro/Resolver 11.8V, Industrial Temp -40ºC to +85ºC
PCIe-Mini-SYNCHRO-2	One Channel Synchro/Resolver 90V, Commercial Temp 0ºC to +70ºC
PCIe-Mini-SYNCHRO-2-I	One Channel Synchro/Resolver 90V, Industrial Temp -40ºC to +85ºC
	Append -CC for Conformal Coat

Optional Accessories

CBL-SYNCHRO-12	13 pin pigtail Cable, 12in length

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