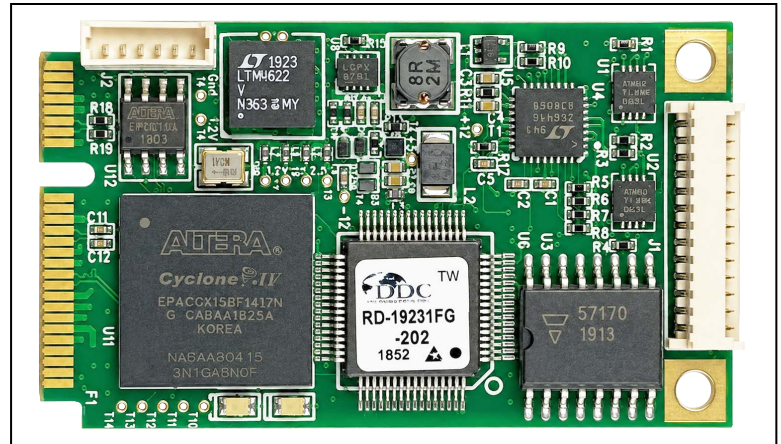


16-bit Synchro/Resolver with Four Channels, 16 bits D/A

Features

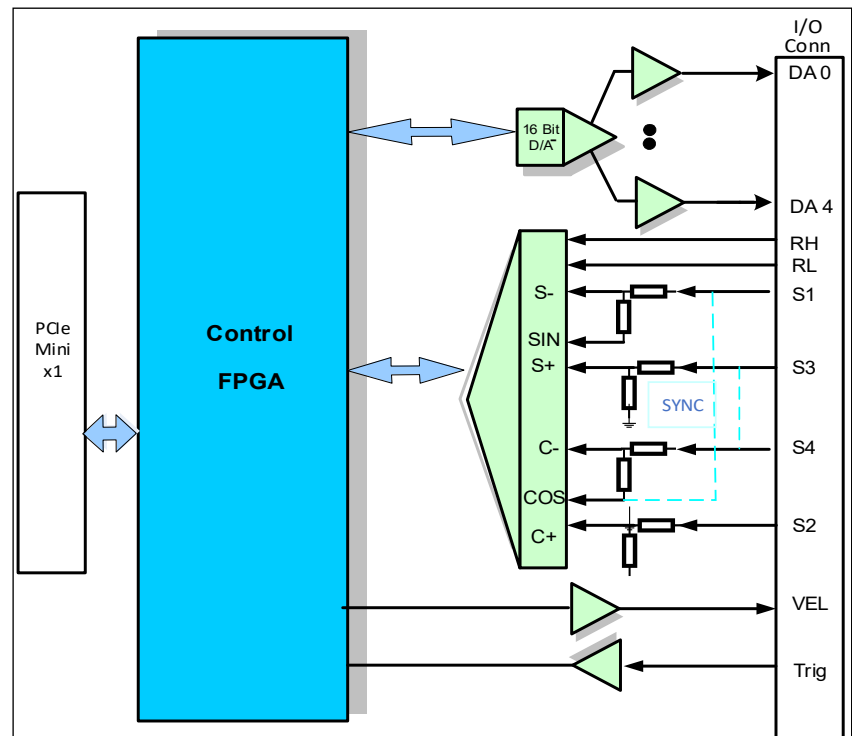
- 16-bit Resolver-to-Digital Converter
- Programmable features
 - Resolution: 10, 12, 14, or 16 bits
 - Accuracy up to 1 Arc Minute
 - Bandwidth: DC to 10KHz
 - Velocity output scaling and encoder emulation
 - Synchro input option 11.8V or 90V
 - On board excitation
- Four Channels, 16-bit SoftSpan™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



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

Ordering information

PCle-Mini-SYNCHRO-1S	One Channel Synchro 11.8V, Industrial Temp -40°C to +85°C
PCle-Mini-SYNCHRO-1R	One Channel Resolver 11.8V, Industrial Temp -40°C to +85°C
PCle-Mini-SYNCHRO-2S	One Channel Synchro 90V, Industrial Temp -40°C to +85°C
PCle-Mini-SYNCHRO-2R	One Channel Resolver 90V, Industrial Temp -40°C to +85°C

Append -CC for Conformal Coat

Optional Accessories

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