Cameleon4™

Spectrometer for NMR and MRI
(0.5 – 600 MHz)
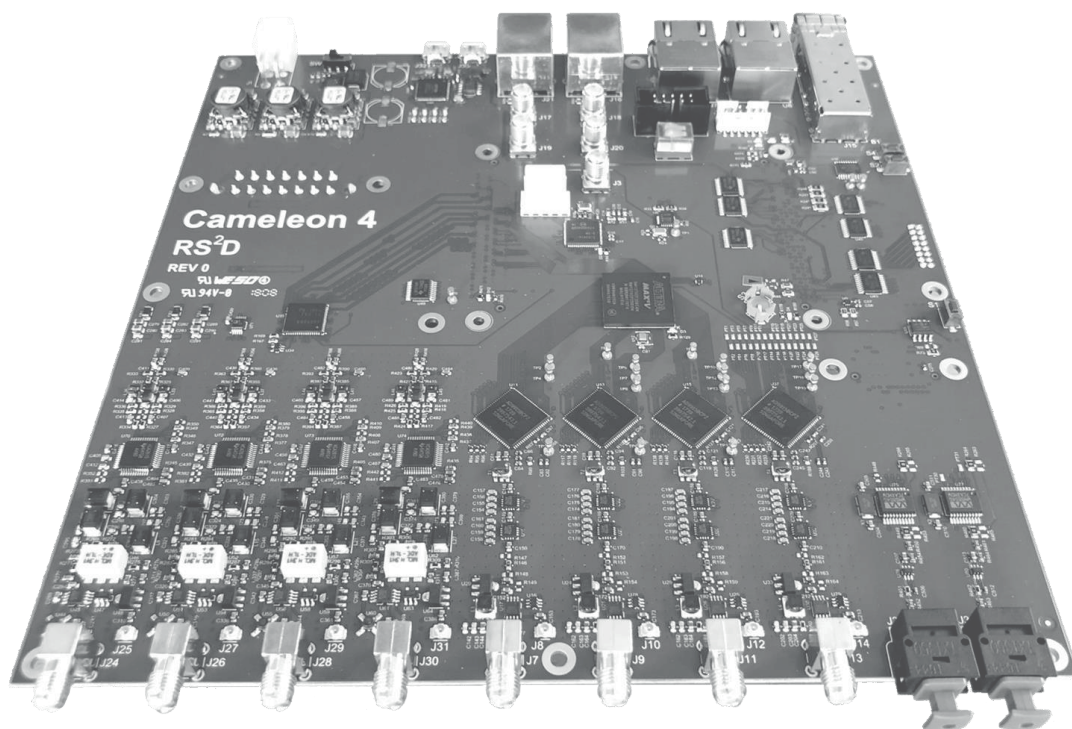
RS²D
REINVENT
SYSTEMS
FOR SCIENCE
& DISCOVERY

POWERED BY CAM4

SEE THE DIFFERENCE.

Applications

Compact electronic design based on the latest FPGA SoC technology

Highly configurable and versatile. The Cameleon4™ electronic platform powers all levels of magnet technology, and from relaxometry to NMR spectroscopy, and from clinical to preclinical MRI.

Cameleon4

- Latest FPGA SoC technology
- Embedded Linux on dual core ARM processor up to 1 GHz
- FPGA: Arria 10 SX, F34 package; 270 K Logic M20K memory blocks 2.133
- 32 GBytes of flash
- Memory: DDR4 HPS 2 GBytes @2133 MTS/s - DDR4 FPGA 2 GBytes @2133 MTS/s for speed grade -2

Transmitter

- 63 dB attenuation
- Amplitude and phase modulation with 102 ns delay
- Adjustable max voltage
- Multi-transmit capability

GPIOs

- 5 GPIOs for RF amplifier blanking, coil controls, sequence triggering, etc.

Receiver

- Low noise figure of 2.3 dB
- 60 dB gain control
- Simultaneous (^{1}H and X nucleus) multi-channel observation
- 32-bit signal data resolution

Gradient

- ± 5 V / 10 V (NMR / MRI)
- 24-bit amplitude resolution / 5.4 µsec time resolution
- Analog gradient channels
- Eddy current compensation
- External optical gradient receiver: HD audio DAC 24 / 192 kHz / 113 dB dynamic range

RX 0 - 3
TX 0 - 1
RX 4 - 7
TTL 4 - 8
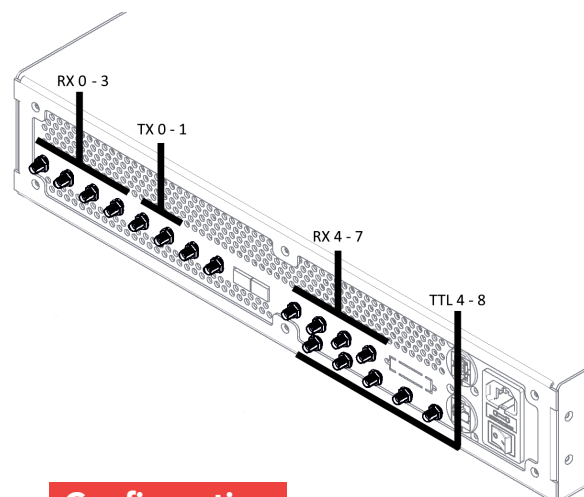
Configuration

- 2-3 Transmitters (Tx) + Magnet lock control for NMR
- 4 Receivers (Rx) 5 - 600 MHz
- 5 GPIOs (TTL)

Options

- 4 Rx Low-field (0.5 - 5 MHz)
- 4 Rx High-field (5 - 600 MHz)

Software suite

- Prim: MRI acquisition software
- SPINit: NMR acquisition software
- Pulse sequence development software
- Tools: third party integration, electronic testing