

general features

- compact PIOX-16 DCM install into PIOX-16 site of TORNADO DSP Systems/Controllers
- high-speed and high-accuracy multi-channel AD/DA with synchronous sampling and high-speed external digital I/O data streams
- ideal for telecom, radar, sonar, and high-speed instrumentation applications

details

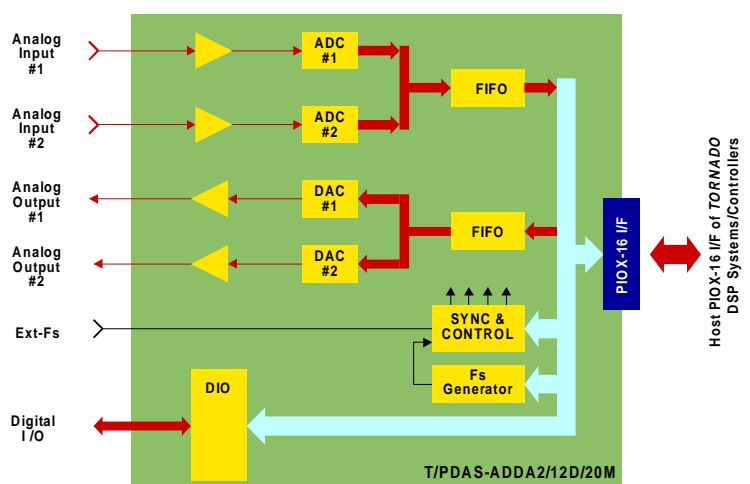
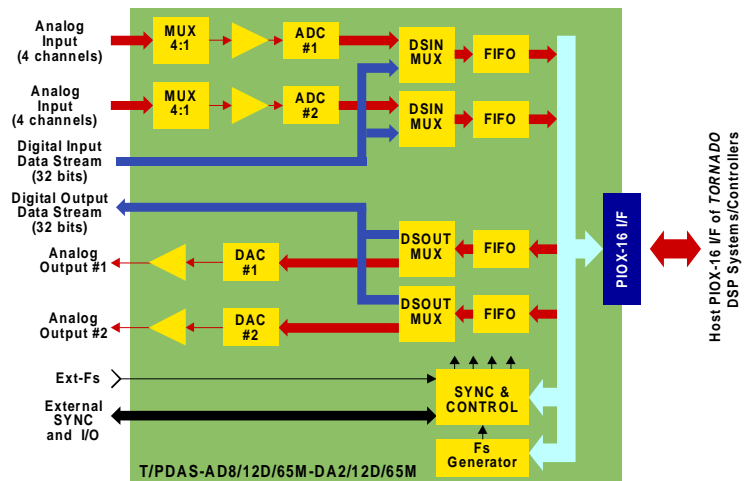
- dual 12-bit pipelined A/D with synchronous sampling allows accurate I/Q A/D signal conversion
- 4:1 input static mux for each A/D channel allows multi-channel I/Q support (T/PDAS-AD8/12D/65M-DA2/12D/65M)
- 50 Ohm analog I/O impedance
- dual 12-bit DAC with synchronous sampling allows accurate I/Q D/A signal conversion
- on-board I/O data stream multiplexers for selection between acquisition of on-board ADC/DAC I/O data streams and acquisition of external 32-bit synchronous digital I/O data streams (T/PDAS-AD8/12D/65M-DA2/12D/65M)
- high-density 32K (T/PDAS-ADDA2/12D/20M) and 256K (T/PDAS-AD8/12D/65M-DA2/12D/65M) FIFO for each of on-board A/D and D/A channel allow to store huge amount of high-speed real-time I/O data streams
- programmable A/D and D/A data acquisition controllers
- one-pass and pass-through data acquisition modes
- integration with host DSP on-chip DMA controllers
- MASTER/SLAVE operation modes for synchronization of multiple DCM
- on-board high-resolution software programmable sampling frequency generator
- sampling frequency up to 20MHz for T/PDAS-ADDA2/12D/20M and 65MHz for T/PDAS-AD8/12D/65M-DA2/12D/65M
- external sampling frequency and start-up synchronization options
- digital I/O pins for external control

software tools

- Hypersignal RIDE DSP algorithm development & simulation IDE
- software utilities and demo samples

applications

- high-speed telecom
- radar
- sonar
- high-speed instrumentation



Technical Specifications

<i>A/D channels/ADCs</i>	(4+4)/2 (T/PDAS-AD8/12D/65M-DA2/12D/65M), synchronous sampling of 2 channels 2/2 (T/PDAS-ADDA2/12D/20M), synchronous sampling of 2 channels
<i>A/D resolution</i>	12 bits
<i>input analog signal range</i>	± 1 V/SE @ $R_{SRC} = 50$ Ohm
<i>analog input impedance</i>	50 Ohm
<i>input signal bandwidth</i>	0..150 MHz (T/PDAS-AD8/12D/65M-DA2/12D/65M) 0..105 MHz (T/PDAS-AD8/12D/65M-DA2/12D/65M)
<i>A/D differential nonlinearity</i>	± 1.5 LSB (T/PDAS-AD8/12D/65M-DA2/12D/65M) ± 1.5 LSB (T/PDAS-ADDA2/12D/20M)
<i>A/D offset error</i>	± 25 mV typ (T/PDAS-AD8/12D/65M-DA2/12D/65M) ± 20 mV typ (T/PDAS-ADDA2/12D/20M)
<i>A/D SNR</i>	67 dB typ (T/PDAS-AD8/12D/65M-DA2/12D/65M) 70 dB typ (T/PDAS-ADDA2/12D/20M)
<i>D/A channels/DACs</i>	2/2, synchronous sampling of 2 channels
<i>D/A resolution</i>	12 bits
<i>output analog signal range</i>	± 1 V/SE @ $R_L = 50$ Ohm ± 2 V/SE @ $R_L = \infty$ Ohm
<i>analog output impedance</i>	50 Ohm
<i>load impedance</i>	50 Ohm
<i>D/A offset error</i>	± 8 mV typ
<i>A/D differential nonlinearity</i>	± 1 LSB (T/PDAS-AD8/12D/65M-DA2/12D/65M) ± 1.5 LSB (T/PDAS-ADDA2/12D/20M)
<i>D/A signal settling time</i>	38ns typ to 0.1% accuracy (T/PDAS-AD8/12D/65M-DA2/12D/65M) 7ns typ to 10% accuracy (T/PDAS-AD8/12D/65M-DA2/12D/65M) 35ns typ to 0.1% accuracy (T/PDAS-ADDA2/12D/20M)
<i>output frequency range of on-board sampling frequency generator</i>	62.5kHz..65 MHz (T/PDAS-AD8/12D/65M-DA2/12D/65M) 62.5kHz..20 MHz (T/PDAS-ADDA2/12D/20M)
<i>maximum sampling frequency</i>	65 MHz (T/PDAS-AD8/12D/65M-DA2/12D/65M) 20 MHz (T/PDAS-ADDA2/12D/20M)
<i>number of bits of external digital I/O streams</i>	32 bits (T/PDAS-AD8/12D/65M-DA2/12D/65M)
<i>FIFO depth for each of A/D and D/A channel</i>	256Kx16 (T/PDAS-AD8/12D/65M-DA2/12D/65M) 32Kx16 (T/PDAS-AD8/12D/65M-DA2/12D/65M)
<i>digital I/O</i>	4 bits
<i>digital I/O levels</i>	TTL @3.2mA
<i>host TORNADO I/F</i>	PIOX-16

TORNADO-3x, TORNADO-4x, TORNADO-54x, TORNADO-6x, TORNADO-P6x, TORNADO-P3x, TORNADO-P54x, TORNADO-E/EL, TORNADO-PX, TORNADO-SX, MIRAGE-510DX, UECMX, MX-Link, PIOX, PIOX-16, SIOX are trademarks of MicroLAB Systems Ltd. All other products and company names used are trademarks of their respective holders.