

general features

- compact SIOX rev.B DCMs communicate with host TORNADO DSP via serial port
- 12, 14 and 16-bit high accuracy AD/DA
- high sampling frequency
- single- and multi-channel AD/DA configurations
- single- and dual-/quad- ADC/DAC configurations with synchronous sampling
- ideal for instrumentation, telecom, industrial control, biomedical and many more applications

details

- quad (T/SDAS-ADDA4) and dual (T/SDAS-102/202, T/SBDAS-AD16) ADC/DAC configurations with synchronous sampling
- 8:1 MUX (T/SBDAS-7890/8420) and 16:1/8:1 MUX (T/SBDAS-AD16) per ADC for multi-channel support
- low-cost, high-accuracy and high-speed single-channel AD/DA (T/SDAS-121/61, T/SDAS-7869)

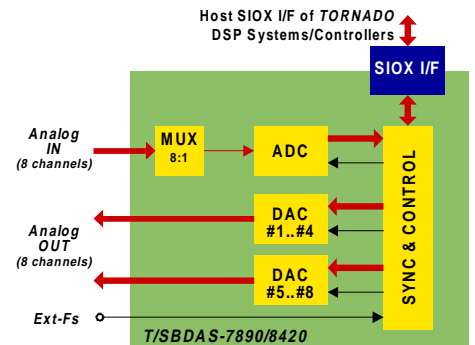
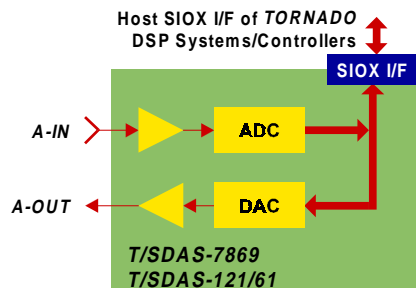
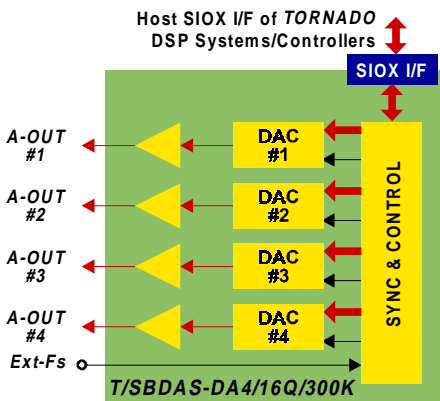
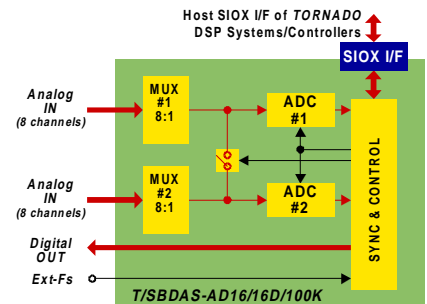
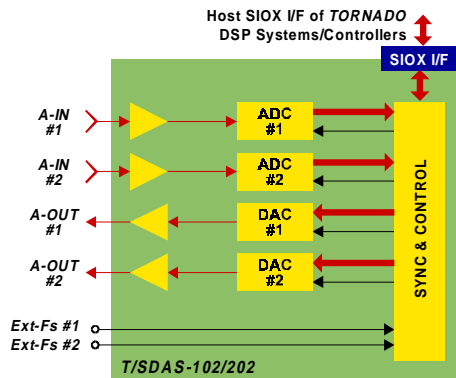
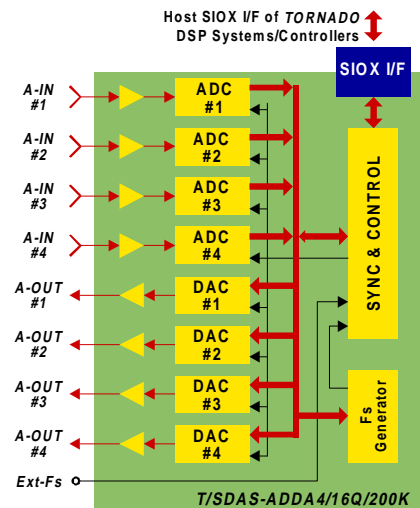
- sampling frequency up to 84kHz..300kHz defined by either SIOX timers or external source
- high-resolution sampling frequency generator (T/SDAS-ADDA4)
- “asynchronous” and “synchronous” operation modes
- SIOX-bus support (T/SBDAS-xxxx) with up to 8 DCMs per one DSP serial port

software tools

- Hypersignal RIDE DSP algorithm development & simulation IDE
- demo samples

applications

- instrumentation
- telecom
- industrial control
- speech and audio
- biomedical



Technical Specifications

<i>A/D channels/ADCs</i>	(8+8)/2 or 16/1 (T/SBDAS-AD16/16D/100K) with synchronous sampling of two A/D channels 8/1 (T/SBDAS-7890/8420) 4/4 (T/SDAS-ADDA2/16Q/200K) with synchronous sampling of AD/DA channels 2/2 (T/SDAS-102/202) with synchronous sampling of AD/DA channels 1/1 (T/SDAS-121/61, T/SDAS-7869)
<i>A/D resolution</i>	16 bits (T/SDAS-ADDA4/16Q/200K, T/SDAS-102/202, T/SBDAS-AD16/16D/100K) 14 bits (T/SDAS-121/61, T/SDAS-7869) 12 bits (T/SBDAS-7890/8420)
<i>input A/D signal range</i>	±10V SE (T/SDAS-102/202, T/SBDAS-7890/8420, T/SBDAS-AD16/16D/100K) ±5V SE (T/SDAS-ADDA4/16Q/200K, T/SDAS-121/61) ±3V SE (T/SDAS-7869)
<i>input impedance</i>	1 MOhm
<i>A/D nonlinearity</i>	±2 LSB max differential nonlinearity ±3 LSB max integral nonlinearity
<i>A/D offset error</i>	±0.5 mV typ (T/SDAS-ADDA4/16Q/200K, T/SBDAS-AD16/16D/100K) ±3 mV typ (T/SDAS-121/61, T/SDAS-7869) ±10 mV typ (T/SBDAS-7890/8420) ±18 mV typ (T/SDAS-102/202)
<i>A/D THD</i>	-94 dB typ (T/SDAS-ADDA4/16Q/200K, T/SBDAS-AD16/16D/100K) -89 dB typ (T/SDAS-102/202) -85 dB typ (T/SDAS-121/61, T/SDAS-7869) -69 dB typ (T/SBDAS-7890/8420)
<i>D/A channels (DACs)</i>	8 (T/SBDAS-7890/8420) 4 (T/SDAS-ADDA2/16Q/200K) with synchronous sampling of AD/DA channels 4 (T/SBDAS-DA4/16Q/300K) 2 (T/SDAS-102/202) with synchronous sampling of AD/DA channels 1 (T/SDAS-121/61, T/SDAS-7869)
<i>D/A resolution</i>	16 bits (T/SDAS-ADDA4/16Q/200K, T/SDAS-102/202, T/SBDAS-DA4/16Q/300K, T/SDAS-121/61) 14 bits (T/SDAS-7869) 12 bits (T/SBDAS-7890/8420)
<i>output D/A signal range</i>	±10V SE @ 5 kOhm (T/SDAS-102/202, T/SBDAS-DA4/16Q/300K, T/SBDAS-7890/8420) ±5 V SE @ 5 kOhm (T/SDAS-ADDA4/16Q/200K, T/SDAS-121/61) ±3V SE @ 5 kOhm (T/SDAS-7869)
<i>D/A nonlinearity</i>	±1.5 LSB max differential nonlinearity ±3 LSB max integral nonlinearity
<i>D/A offset error</i>	±0.5 mV typ (T/SDAS-ADDA4/16Q/200K) ±3 mV typ (T/SDAS-7869) ±10 mV typ (T/SDAS-121/61, T/SBDAS-DA4/16Q/300K) ±11 mV typ (T/SBDAS-7890/8420) ±20 mV typ (T/SDAS-102/202)
<i>D/A THD</i>	-94 dB typ (T/SDAS-ADDA4/16Q/200K) -89 dB typ (T/SDAS-102/202) -88 dB typ (T/SDAS-121/61, T/SBDAS-DA4/16Q/300K) -78 dB typ (T/SDAS-7869) -70 dB typ (T/SBDAS-7890/8420)
<i>D/A signal settling time</i>	3 us (T/SDAS-121/61, T/SBDAS-DA4/16Q/300K) 5 us (T/SDAS-ADDA4/16Q/200K, T/SDAS-102/202) 10 us (T/SBDAS-7890/8420) 12 us (T/SDAS-7869)
<i>maximum sampling frequency (Fs)</i>	300 kHz (T/SDAS-121/61, T/SBDAS-DA4/16Q/300K) 200 kHz (T/SDAS-ADDA4/16Q/200K, T/SDAS-102/202) 100 kHz (T/SBDAS-AD16/16D/100K, T/SBDAS-7890/8420) 84 kHz (T/SDAS-7869)
<i>sampling frequency generator range</i>	0.625 Hz .. 200 kHz with 100ns resolution (T/SDAS-ADDA4/16Q/200K)
<i>operation modes</i>	“asynchronous” with SIO-XMIT initiated conversion (T/SDAS-ADDA4/16Q/200K, T/SBDAS-AD16/16D/100K, T/SBDAS-7890/8420, T/SBDAS-DA4/16Q/300K) “synchronous” with Fs initiated conversion (T/SDAS-ADDA4/16Q/200K, T/SDAS-102/202, T/SBDAS-AD16/16D/100K, T/SDAS-7869, T/SDAS-121/61, T/SBDAS-7890/8420)
<i>input signal level for external sampling frequency input</i>	TTL
<i>host TORNADO I/F</i>	SIOX rev.B with SIO-0 port used

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.