![MicroLAB Systems logo]

Lμ MicroLAB Systems
Ultimate DSP Development Solutions

Speech/Fax/Modem SIOX DCM

*SIOX AD/DA Daughter-card Modules with Telephone I/F Options
for TORNADO DSP Systems/Controllers for Speech/Fax/Modem Applications*

covers:
T/SDAS-SCOM1, T/SDAS-SCOM2, T-X/XTLI, T/X-XTSI

general features

- compact SIOX DCMs (T/SDAS-SCOM1 and T/SDAS-SCOM2) fit to *TORNADO* SIOX rev.B site
- single-channel (T/SDAS-SCOM1) and dual-channel (T/SDAS-SCOM1) configurations
- each channel of T/SDAS-SCOM1 and T/SDAS-SCOM2 SIOX DCMs connects to either external Line/MIC/Phones set, or to external Telephone Line I/F (T/X-XTLI) or to external telephone station I/F (T/X-XTSI)
- ideal for speech/fax/modem applications with optional telephone line/equipment interfacing

T/SDAS-SCOM1 and T/SDAS-SCOM2 SIOX DCM features

- each A/D channel comprises of 14-bit ADC (THD= -65dB), programmable low-pass anti-aliasing filter, high-pass filter and PGA
- each D/A channel comprises of 14-bit DAC (THD= -65dB), programmable low-pass anti-aliasing filter and SIN(X)/X reconstruction filter
- programmable sampling frequency up to 24 kHz with instant phase adjustment
- line and microphone input mux for each A/D channel
- line and phone outputs for each D/A channel
- two digital input and two digital outputs per every AD/DA channel

T/X-XTLI and T/X-XTSI features

- external options for T/SDAS-SCOM1 and T/SDAS-SCOM2 SIOX DCMs
- connect any AD/DA channel of T/SDAS-SCOM1 and T/SDAS-SCOM2 SIOX DCMs to either PSTN phone line (T/X-XTLI) or to local telephone equipments (T/X-XTSI)
- meet and exceed FCC, DOC and other requirements
- V34/Fast 56kbps compatible

software tools

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

applications

- vocoders/fax/modem
- speech recognition
- PSTN and telephone equipment interfacing
- answering machines and office phone-menus
- automatic speech/fax/modem PSTN recorders
- speech/fax/modem encryption
- low-cost instrumentation
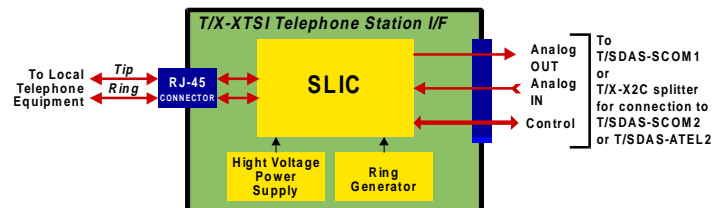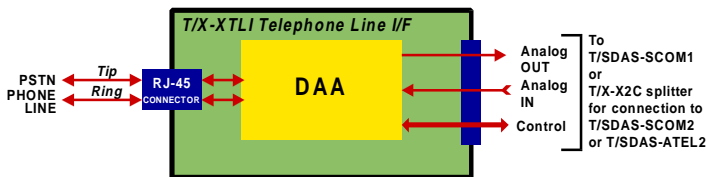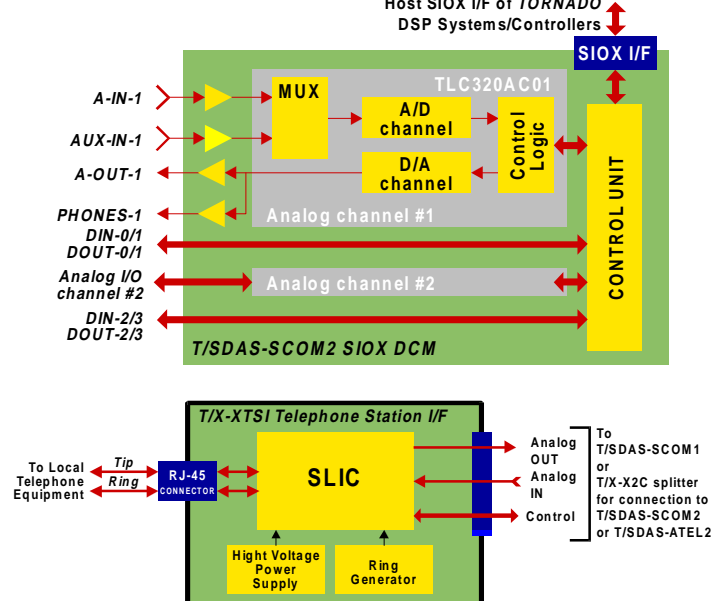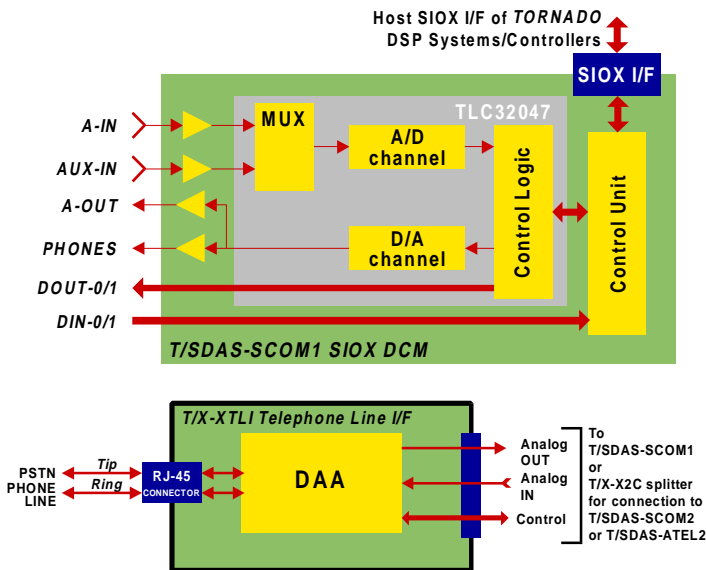
T/SDAS-SCOM1 SIOX DCM   T/SDAS-SCOM2 SIOX DCM   T/X-XTLI Telephone Line I/F   T/X-XTSI Telephone Station I/F

T/SDAS-SCOM1 SIOX DCM (block diagram)

Host SIOX I/F of *TORNADO* DSP Systems/Controllers — SIOX I/F

A-IN, AUX-IN → MUX → A/D channel (TLC32047) → Control Logic → Control Unit
A-OUT, PHONES ← D/A channel
DOUT-0/1, DIN-0/1

T/SDAS-SCOM2 SIOX DCM (block diagram)

Host SIOX I/F of *TORNADO* DSP Systems/Controllers — SIOX I/F

A-IN-1, AUX-IN-1 → MUX → A/D channel (TLC320AC01) → Control Logic
A-OUT-1, PHONES-1 ← D/A channel — Analog channel #1
DIN-0/1, DOUT-0/1
Analog I/O channel #2 — Analog channel #2 → CONTROL UNIT
DIN-2/3, DOUT-2/3

T/X-XTLI Telephone Line I/F

PSTN PHONE LINE — Tip / Ring — RJ-45 CONNECTOR — DAA — Analog OUT / Analog IN / Control — To T/SDAS-SCOM1 or T/X-X2C splitter for connection to T/SDAS-SCOM2 or T/SDAS-ATEL2

T/X-XTSI Telephone Station I/F

To Local Telephone Equipment — Tip / Ring — RJ-45 CONNECTOR — SLIC — Analog OUT / Analog IN / Control — To T/SDAS-SCOM1 or T/X-X2C splitter for connection to T/SDAS-SCOM2 or T/SDAS-ATEL2
Hight Voltage Power Supply   Ring Generator

DSP TEXAS INSTRUMENTS — Third Party Network Member

Technical Specifications for T/SDAS-SCOM1 and T/SDAS-SCOM2 DCM

number of AD/DA channels	1 (T/SDAS-SCOM1) 2 (T/SDAS-SCOM2)
A/D resolution	14 bits (A/D section of TLC32047 for T/SDAS-SCOM1 and A/D section of TLC320AC01 for T/SDAS-SCOM2)
A/D THD	-65dB typ (T/SDAS-SCOM1) -68dB typ (T/SDAS-SCOM2)

input A/D signal range	T/SDAS-SCOM1:
	        A-IN: ±1.5v, ±3v, ±6v @ 1 MOhm
	        AUX-IN: ±0.15v, ±0.3v, ±0.6v, ±1.5v, ±3v, ±6v @ 1MOhm
	
	T/SDAS-SCOM2:
	        A-IN: ±0.75v, ±1.5v, ±3v @ 1 MOhm
	        AUX-IN: ±0.015v, ±0.15v, ±0.3v, ±0.75v, ±1.5v, ±3v @ 1 MOhm

A/D channel filters	low-pass programmable anti-aliasing filter optional high-pass 300Hz filter
D/A resolution	14 bits (D/A section of TLC32047 for T/SDAS-SCOM1 and D/A section of TLC320AC01 for T/SDAS-SCOM2)
D/A THD	-65dB typ (T/SDAS-SCOM1) -68dB typ (T/SDAS-SCOM2)

output D/A signal range	T/SDAS-SCOM1:
	        A-OUT: ±3v/SE, ±6v/DIFF @ 600 Ohm
	        SPEAKER/PHONES-OUT: ±4v @ 8 Ohm
	
	T/SDAS-SCOM2:
	        A-OUT: ±0.75v, ±1.5v, ±3v @ 600 Ohm
	        SPEAKERS/PHONES-OUT: ±1v, ±2v, ±4v @ 8 Ohm

D/A channel filters	low-pass programmable anti-aliasing filter SIN(X)/X reconstruction filter
sampling frequency	24 kHz max with instant phase adjustment. All standard fax/modem baud rates are available.
digital I/O levels	TTL @3.2mA
host TORNADO I/F	SIOX rev.B with SIO-0 port used

Technical Specifications for T/X-XTLI and T/X-XTSI External Telephone I/F Options

host connection method	connects as external option to T/SDAS-SCOM1 or to any channel of T/SDAS-SCOM2 and T/SDAS-ATEL2 via dual-channel splitter T/X-X2C

available functions	T/X-XTLI:
	        detects incoming ring, programmable pick-up the phone
	
	T/X-XTLI:
	        programmable outgoing ring, line battery, detects line pick-up

compatible modem communication	V34/Fast
external line/equipment connector	RJ-45
applicable PSTN standards	FCC, DOC