

Advance Data CLC945/CLC946

APPLICATIONS:

- Digital cameras
- Optical scanners
- DSP front ends
- Mobile telecommunications
- Data acquisition
- Instrumentation
- Medical imaging

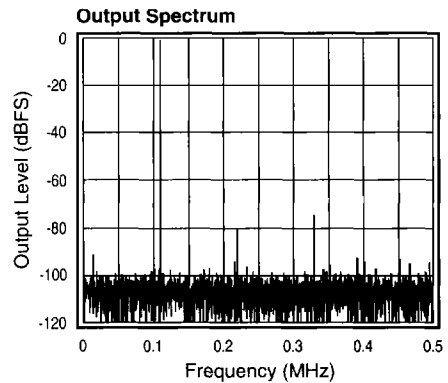
FEATURES:

- Low-power
- SNR of 72dB
- THD of -82dB
- Single +5V power supply
- Internal sample & hold
- Internal 2:1 analog multiplexer
- Low power standby mode

DESCRIPTION

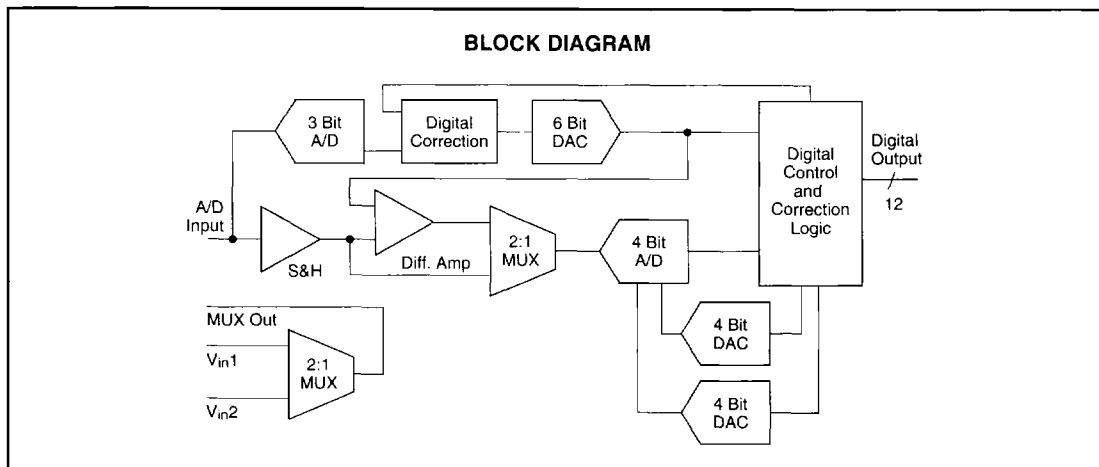
Featuring an internal 2:1 multiplexer, internal sample and hold amplifier and a complete A/D converter, the CLC945 and CLC946 make data acquisition system design easy. The CLC945 is capable of a maximum conversion rate of 1 Mega Sample-per-Second (MSPS) whereas the CLC946 is able to convert signals at rates up to 1.5MSPS. The low power of these parts (75mW for the CLC945 and 200mW for the CLC946) is a feature that will help to extend the battery life in battery powered applications. In addition there is a mode in which the devices may be powered down to dissipate only 250µW with a simple digital power down signal. Further enhancing the suitability of these devices for battery powered applications is the fact that they require only one power supply.

The CLC945 and CLC946 are fabricated in a fine line CMOS technology. The CLC945AJQ, CLC945BJQ and CLC946AJQ are specified over the industrial temperature range of -40°C to +85°C and are packaged in the 44-pin PLCC plastic chip carrier.



Applications Support

Comlinear maintains a staff of applications engineers who are available for design and applications assistance. To make use of this service call (800) 776-0500 or (970) 225-7422.



CLC945/CLC946 Electrical Characteristics ($V_{CC} = +5V$, $V_{REF1} = 4.096V$, $F_{IN} = 100KHz$, $F_S = 1MSPS$, $V_{REF} = 0V$)

PARAMETERS	CONDITIONS	TYP	GUARANTEED MIN/MAX		UNITS	NOTES
Ambient Temperature	CLC945/CLC946	+25°C	+25°C	-40 to 85°C		
DYNAMIC CHARACTERISTICS						
overvoltage recovery time					ns	
effective aperture delay		20			ns	
DISTORTION AND NOISE RESPONSE						
SINAD	CLC945/CLC946	71/70			dB	
intermodulation distortion		80			dB	
total harmonic distortion	CLC945/CLC946	82/80			dB	
DC ACCURACY AND PERFORMANCE						
differential non-linearity		0.4			LSB	
integral non-linearity	CLC945	0.4			LSB	
	CLC946	0.4			LSB	
missing codes		0			Codes	
gain error	CLC945	0.2			LSB	
	CLC946	0.3			LSB	
power supply sensitivity	CLC945/CLC946		0.75/1.0		LSB	
VOLTAGE REFERENCE CHARACTERISTICS						
reference resistance		750			Ω	
reference input range		0- V_{CC}				
ANALOG INPUT CHARACTERISTICS						
input range		GND- V_{CC}				
input leakage		0.1			μA	
MUX on channel leakage		0.1			μA	
MUX off channel leakage		0.1			μA	
MUX input capacitance		7			pF	
MUX off isolation		92			dB	
analog input capacitance		25			pF	
DIGITAL INPUTS						
input voltage, logic low				0.8	V	
input voltage, logic high				2.0	V	
input current, logic low		0.1		1.0	μA	
input current, logic high		0.1			μA	
digital input capacitance		4			pF	
DIGITAL OUTPUT						
output voltage, logic low				0.4	V	
output voltage, logic high				4.25	V	
output voltage, logic low	$I_{out} = -100\mu A$			2.4	μA	
TRI-STATE® output leakage current	$I_{out} = -360\mu A$	0.1			μA	
TRI-STATE® output capacitance		5			pF	
TIMING						
maximum conversion rate	CLC945/CLC946	1.0/1.5			MSPS	
conversion time	CLC945/CLC946	740/580			ns	
S/H pulse width maximum	CLC945/CLC946	550/400			ns	
S/H pulse width minimum		5			ns	
S/H to EOC low	CLC945/CLC946	95/90			ns	
access time		10			ns	
TRI-STATE® control time		25			ns	
delay from RD low to INT high		35			ns	
EOC high to data valid		5			ns	
MUX address setup time				50	ns	
MUX address hold time				50	ns	
CS setup time				20	ns	
CS hold time				20	ns	
wakeup time		1			μs	
data hold time						
POWER REQUIREMENTS						
supply current	CLC945	12			mA	
	CLC946	34			mA	

Comlinear reserves the right to change specifications without notice.