AFE Cross-reference

TI AFE and AKM devices

October 30, 2020

Texas Instruments

TI AFE and AKM AFE comparison table

- Sample order can be placed from the TI.com Link

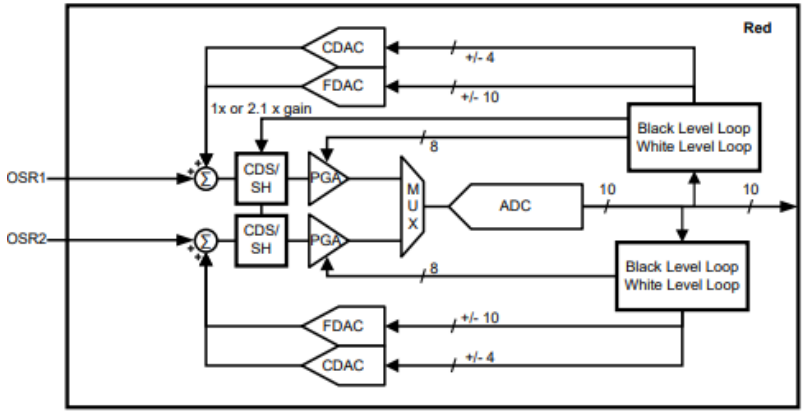
	Channels(#)	Resolution (Bits)	Maximum Conversion Rate [MSPS/Ch]	Supply voltage (V)	Output data format	Others	TI.com Link
LM98620	6	10	35	3 to 3.6V	LVDS	-	https://www.ti.com/product/LM98620
LM98519	6	10	32.5	3 to 3.6V	CMOS	-	https://www.ti.com/product/LM98519
LM98725	3	16	30	3 to 3.6V	LVDS/CMOS	TG	https://www.ti.com/product/LM98725
LM98714	3	16	30	3 to 3.6V	LVDS/CMOS	TG	https://www.ti.com/product/LM98714
LM98722	3	16	22.5	3 to 3.6V	LVDS/CMOS	TG	https://www.ti.com/product/LM98722
VSP3010	3	12	12	3 to 3.6V	CMOS	-	https://www.ti.com/product/VSP3010
VSP3200	3	16	8	3 to 3.6V	CMOS	Dual Output	https://www.ti.com/product/VSP3200
VSP5010	2	12	31	3 to 3.6V	CMOS	-	https://www.ti.com/product/VSP5010
VSP5610	4	16	35	3 to 3.6V	CMOS	-	https://www.ti.com/product/VSP5610
VSP5611	4	16	50	3 to 3.6V	CMOS	-	https://www.ti.com/product/VSP5611
VSP5612	4	16	70	3 to 3.6V	CMOS	-	https://www.ti.com/product/VSP5612
VSP5621	4	16	50	3 to 3.6V	CMOS	LED Driver	https://www.ti.com/product/VSP5621
AK8446	6	10	50	1.7 to , 3.0 to 3.6V	LVDS	TG	
AK8462	6	10	40	1.7 to 2.0, 3 to 3.6V	V-by-One® HS	TG	
AK8448	6	10	20	3 to 3.6V	CMOS	-	
AK8473	4	16	16	3 to 3.6V, 3 to 5.7V	LVDS	TG, LED Driver	
AK8471	4	16	12	3 to 3.6V, 3 to 5.7V	LVDS	LED Driver	
AK8456	3	16	10	3 to 3.6V, 4.5 to 5.7V	CMOS	LED driver	
AK8442	3	16	35	3 to 3.6V	LVDS	TG	
AK8464	3	10	35	3 to 3.6V	LVDS	TG	

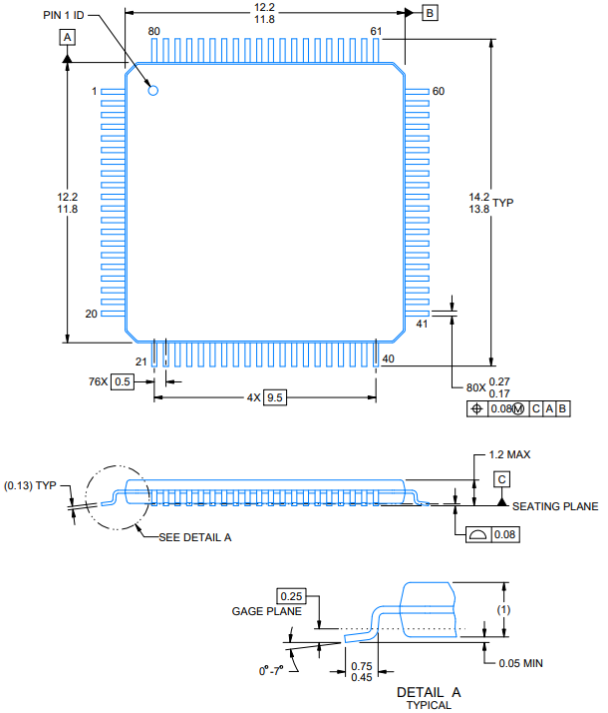
LM98620

10-bit 70 MSPS 6 Channel Imaging Signal Processor with LVDS Output

https://www.ti.com/product/LM98620

Simplified Schematic



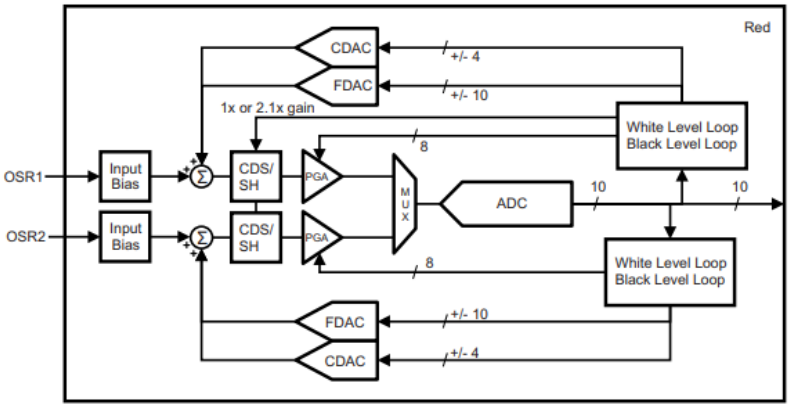


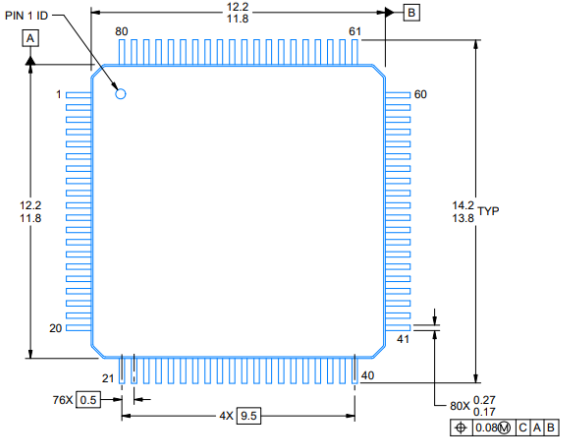
LM98519

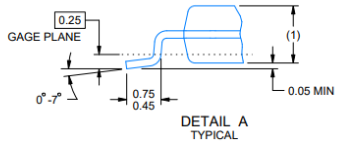
10-bit 65 MSPS 6 Channel Imaging Signal Processor

https://www.ti.com/product/LM98519

Simplified Schematic



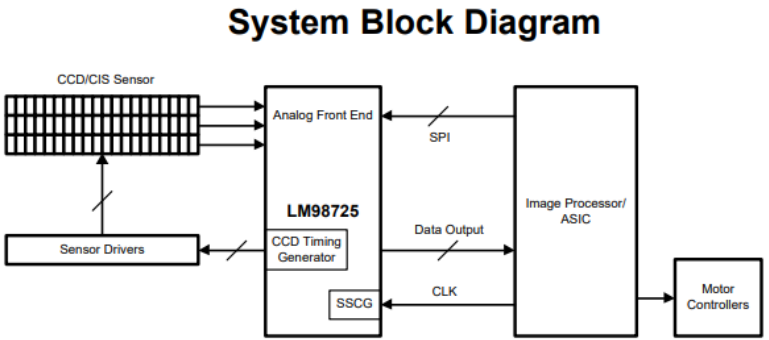


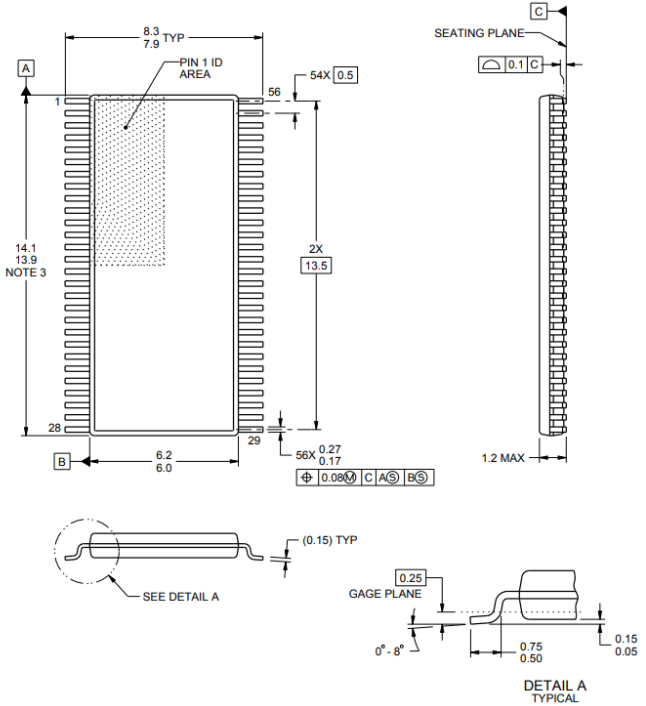


LM9725

3 Ch 16-Bit 81 MSPS AFE w/ LVDS/CMOS Output & Integrated CCD/CIS Sensor Timing Generator

https://www.ti.com/product/LM98725

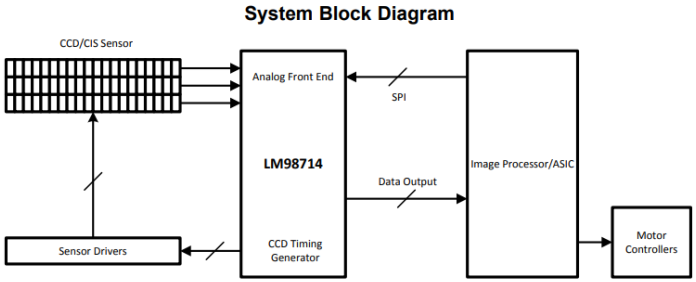


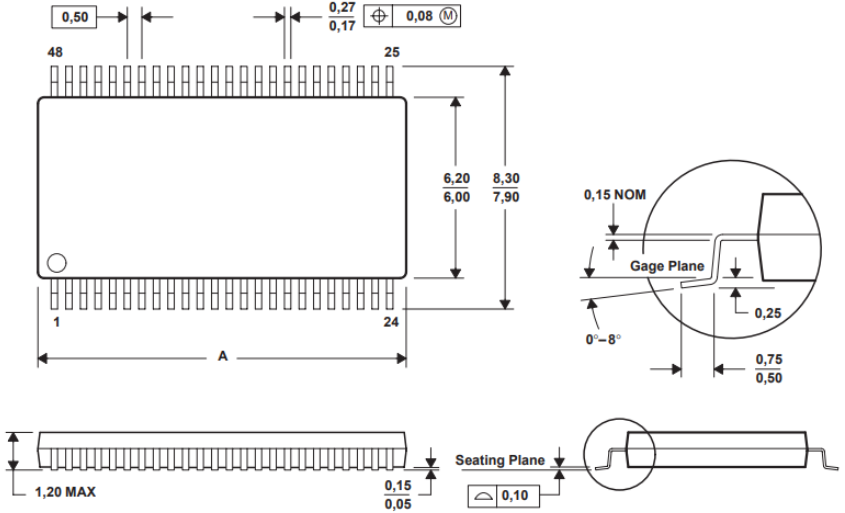


LM9714

3 Ch 16-Bit 45 MSPS Digital Copier AFE w/ Integrated CCD/CIS Sensor Timing Generator & LVDS Output

https://www.ti.com/product/LM98714





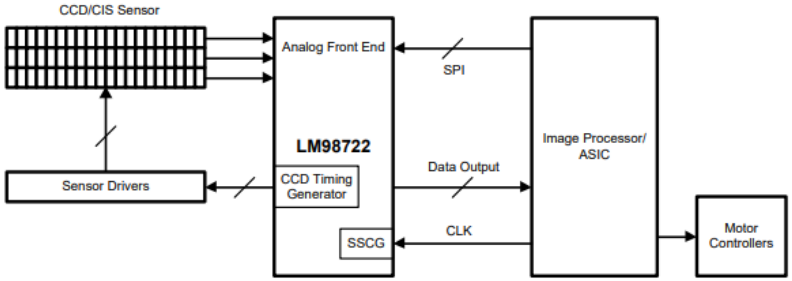
DIM \ PINS **	48	56	64
A MAX	12,60	14,10	17,10
A MIN	12,40	13,90	16,90

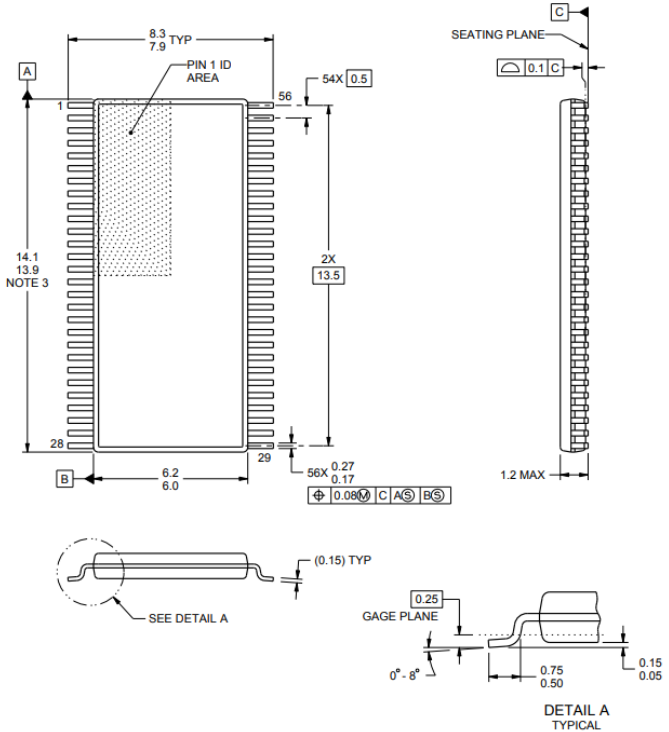
LM9722

3 Ch 16-Bit 45 MSPS AFE w/ LVDS/CMOS Output & Integrated CCD/CIS Sensor Timing Generator

https://www.ti.com/product/LM98722

Simplified Schematic

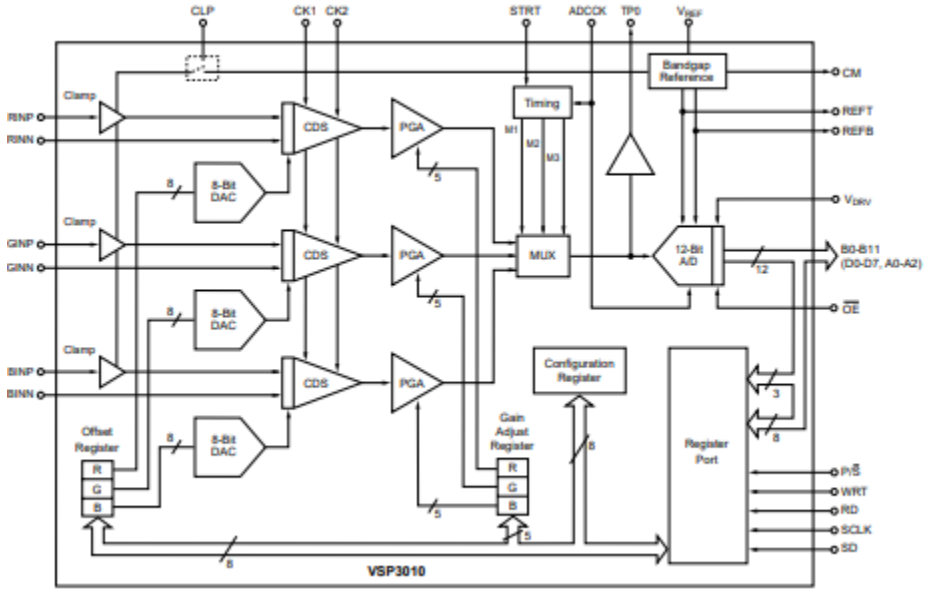




VSP3010

12-bit, 12 MSPS, 3-Channel AFE for CCD/CMOS/CIS Sensors

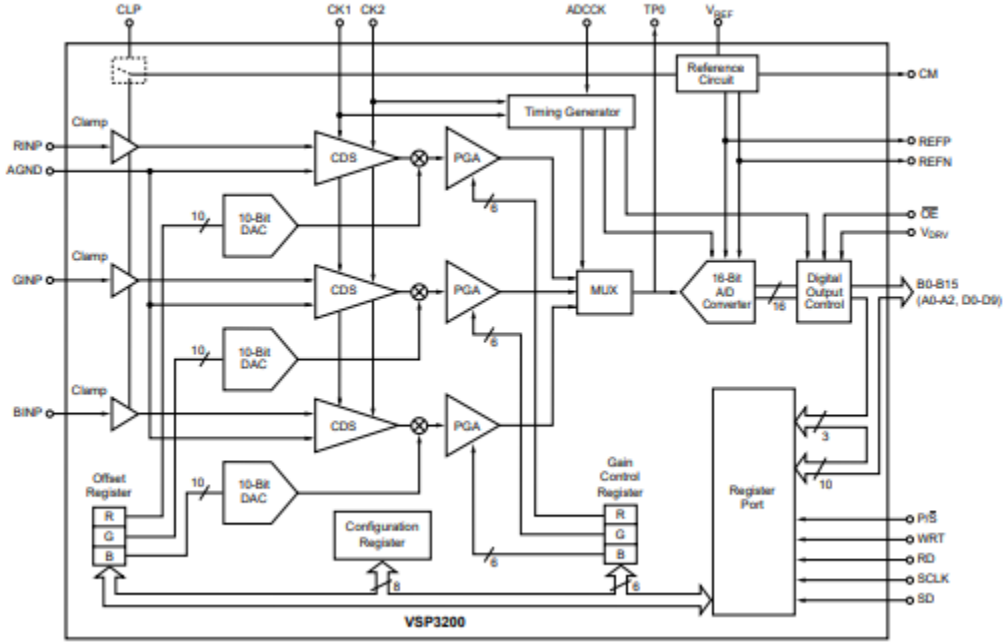
https://www.ti.com/product/VSP3010



VSP3200

16-bit, 8 MSPS, 3-Channel AFE for CCD/CMOS/CIS Sensors, Dual output mode

https://www.ti.com/product/VSP3200



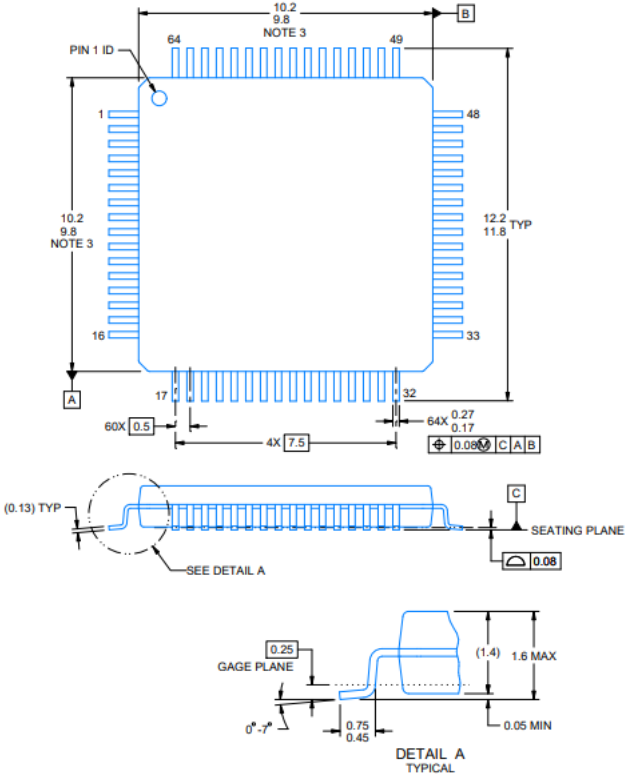
VSP5010

12-bit, 31 MSPS, 2-Channel AFE for CCD/CMOS/CIS Sensors

https://www.ti.com/product/VSP5010

FEATURES

- Dual-Channel CCD Processing:
  - Correlated Double Sampler (CDS)
  - Sample-and-Hold Mode (S/H)
  - Digital Programmable Amplifier
  - CCD Offset Correction (OB Loop)
- High-Performance ADC:
  - 12-Bit Resolution
  - INL: ±2 LSB
  - DNL: ±0.5 LSB
  - No Missing Codes Ensured
- High-Speed Operation:
  - Sample Rate: 31 MHz (max, Design Ensured)
  - 78-dB SNR (at 0-dB Gain)
- Low-Power Consumption:
  - Low Voltage: 3.0 V to 3.6 V
  - Low Power: 290 mW (typ at 3.3 V)
  - Standby Mode: 20 mW (typ)



VSP5610

16-bit, 35 MSPS, 4-Channel AFE

https://www.ti.com/product/VSP5610

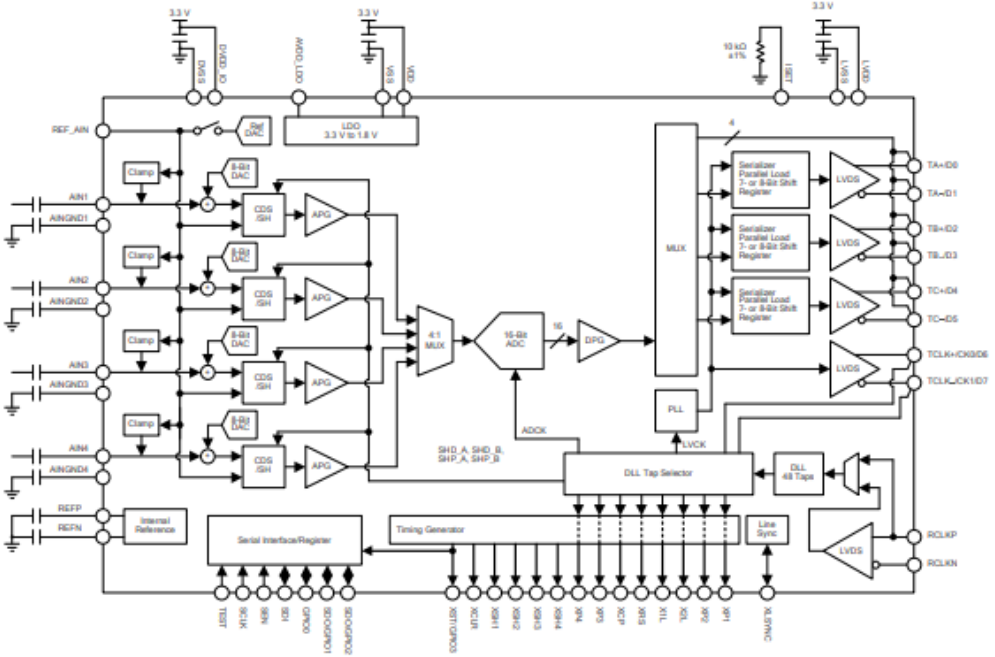


Figure 3. VSP5610/11/12 Block Diagram

VSP5611

16-bit, 50 MSPS, 4-Channel AFE

https://www.ti.com/product/VSP5611

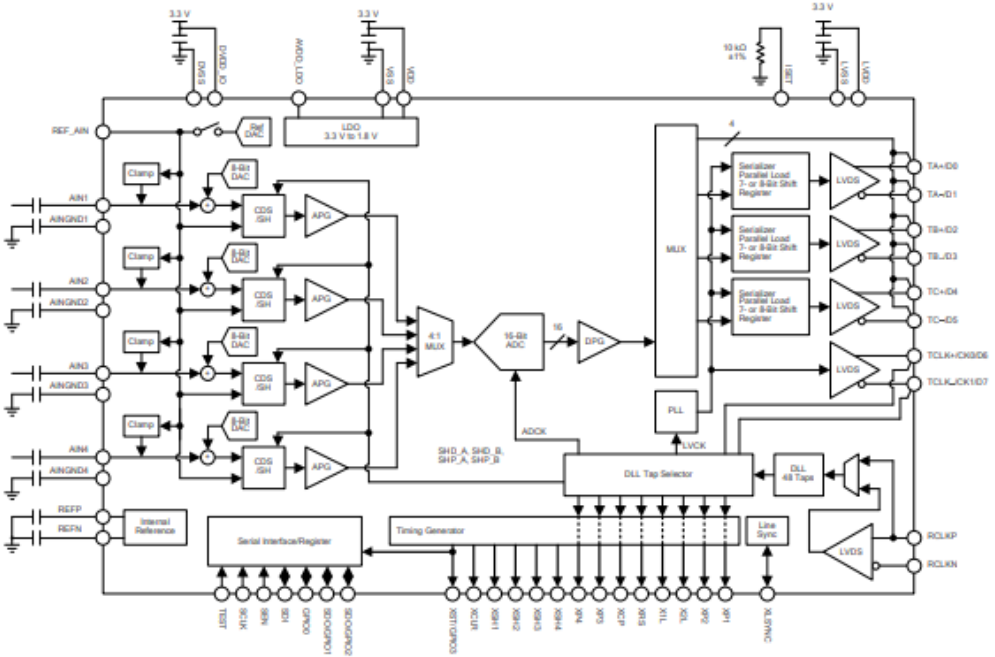


Figure 3. VSP5610/11/12 Block Diagram

VSP5612

16-bit, 70 MSPS, 4-Channel AFE

https://www.ti.com/product/VSP5612

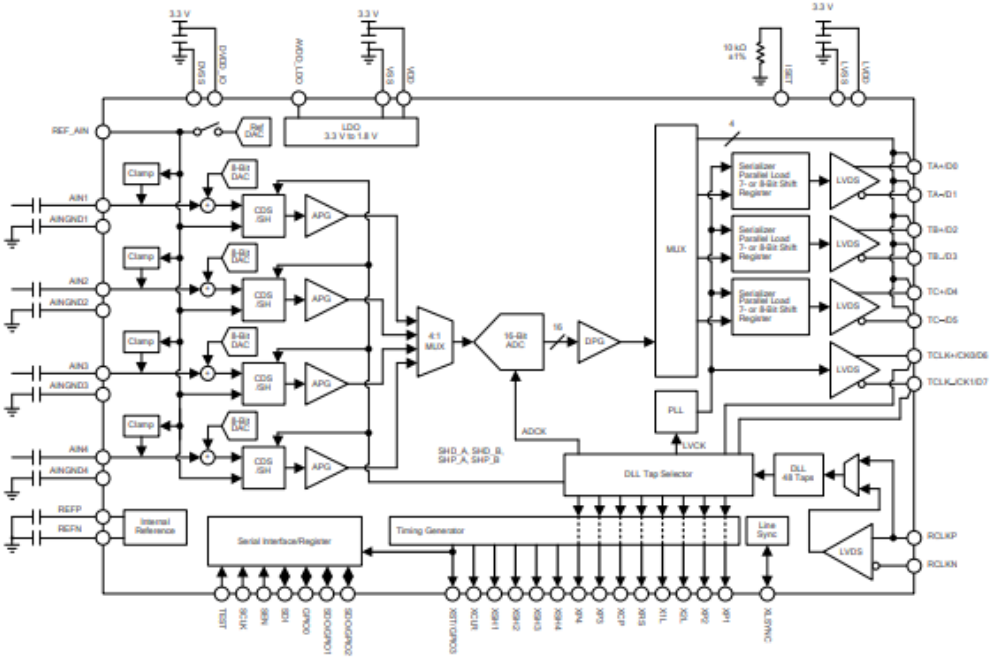


Figure 3. VSP5610/11/12 Block Diagram

VSP5621

16-bit, 50 MSPS, 4-Channel, CCD/CMOS Sensor AFE with LED Driver

https://www.ti.com/product/VSP5621