PLESSEY
Semiconductors

SL1488

T-77-07-05

VIDEO BUFFER AMPLIFIER WITH AGC AND BLACK LEVEL CLAMP

The SL1488 is a high input impedance video amplifier featuring 6dB of AGC range and dc restoration of the output signal. Two points on the video waveform, (generally the frame sync tips and the black level) can be accurately clamped to adjustable dc levels applied to two device pins, hence controlling the amplitude and dc level of the output video. External gating inputs control the timing of the clamping action. The clamped and amplitude controlled output is available on two isolated pins whilst a third output of similar amplitude but clamped to an internal 4V reference is also provided. A blanking input can be used to switch off the video from this output, the output voltage being held at the 4V clamping level when the video is off.

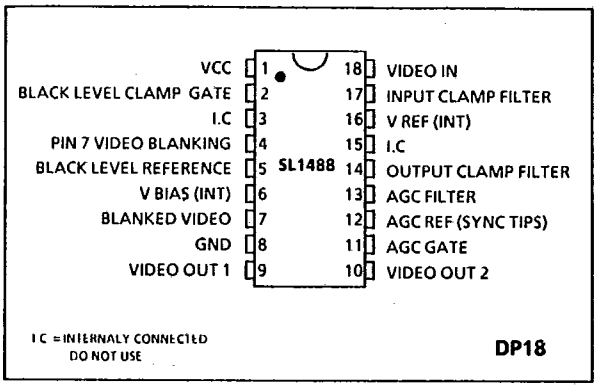

Fig 1 Pin Connections - top view

FEATURES

- 6dB AGC range (minimum)
- D.C. level restoration
- 3 video outputs
- Blanked video output available
- High impedance AC coupled input
- Wide video bandwidth 8MHz at 1dB down
- 30pf drive capability
- Excellent linearity

ABSOLUTE MAXIMUM RATINGS

Supply voltage VCC	15V
Storage temperature	-55°C to + 125°C
Operating temperature	0°C to + 70°C

APPLICATIONS

- Professional video systems
- RGB level control
- Video ADC driver

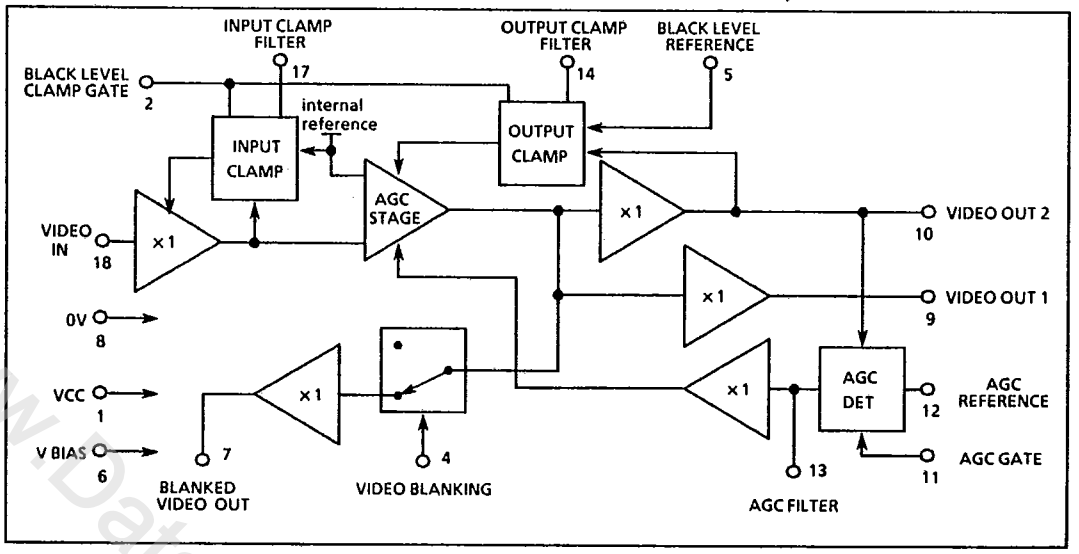

Fig 2 SL1488 Block Diagram

ELECTRICAL CHARACTERISTICS

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Test conditions (unless otherwise stated)
T_{amb} = 0°C to +70°C, V_{CC} = 10.8Vto 13.2V

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current I_{CC}	1		56	75	mA	
Video amplifier						
Output impedance	9,10		8		Ω	
Input impedance	18	50	88		Kohm	measured at DC
AGC range	18,9,10	6	8.9		dB	
Gain	18,8,10		1.1	1.4	dB	V_{18} = 710mVp-p V_{12} = 2.75V
Gain	18,9,10	2.8	3.2		dB	V_{18} = 350mVp-p V_{12} = 2.25V
Bandwidth	18,9,10		8		MHz	0.5dB point
Integral linearity	18,9,10		1		%	1V p-p video
Differential gain	18,9,10		1		%	1V p-p video
Differential phase	18,9,10		0.5		Degree	1V p-p video
Reference Inputs						
Black level reference input range	5	2.5		4.5	V	
AGC reference input range	12	1.6		4	V	
Reference input current	5,12			10	µA	
Blanked Video						
Output gain with reference to pin 10	7	1.1	1.2	1.3		V7/V10
Output bandwidth	7		8		MHz	0.5dB point
Clamp level	7		4		V	Internally generated ref.
Black level clamp						
Gate input high	2	2.5		5.5	V	
Gate input low	2			0.5	V	
High level sink current	2			100	µA	V2 = 2.5V
Low level source current	2			10	µA	V2 = 0.5V
AGC gate input						
High level	11	2.5		5.5	V	
Low level	11			0.5	V	
High level sink current	11			100	µA	V11 = 2.5V
Low level source current	11			10	µA	V11 = 0.5V
Blanking Input						
High level	4	4.0		5.5	V	Blank video to grey
Low level	4			1.5	V	Pass video
High level sink current	4			20	µA	V4 = 4.0V
Low level source current	4			5	µA	V4 = 1.5V

NOTES (Refer to fig 4 opposite)

1. The output clamp will attempt to adjust the video level at pin 10 during the black level gate period to the level set at the black level reference (pin 5).

2. The AGC will attempt to adjust the amplitude of the output at pin 10 such that the video level during the AGC gate period is equal to that set on the AGC reference (pin 12).

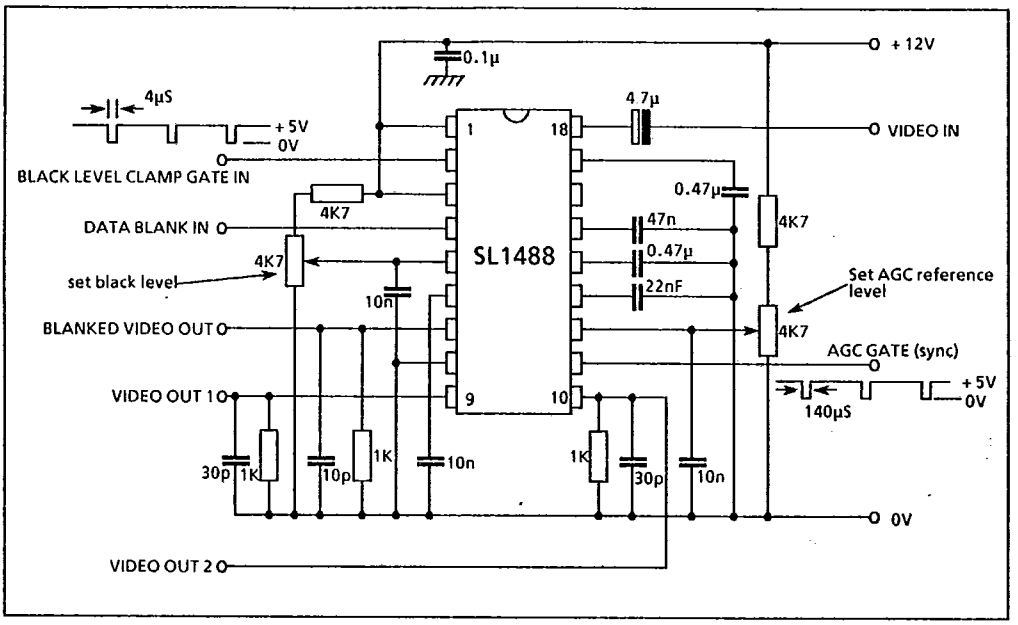

Fig 3 Typical application for PAL video

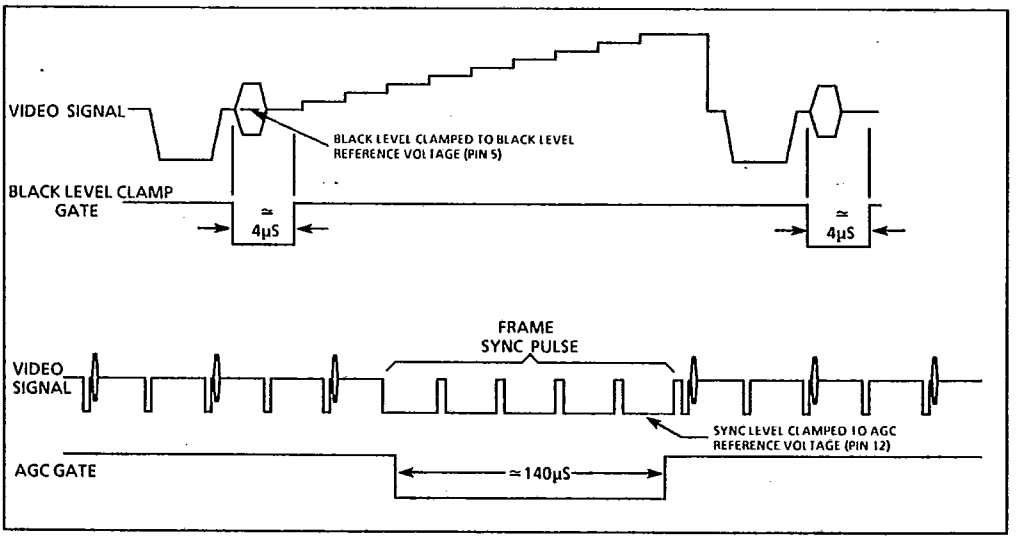

Fig 4 Typical black level clamp and AGC gate waveforms (see note page 2)