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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.



- 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

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

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



## ELECTRICAL CHARACTERISTICS

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Test conditions (unless otherwise stated)

 $T_{amb} = 0^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ ,  $V_{CC} = 10.8\text{V}$  to  $13.2\text{V}$ 

| Characteristic                       | Pin     | Value |     |     | Units  | Conditions                                                                                                                                                    |
|--------------------------------------|---------|-------|-----|-----|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |         | Min   | Typ | Max |        |                                                                                                                                                               |
| Supply current I <sub>CC</sub>       | 1       |       | 56  | 75  | mA     |                                                                                                                                                               |
| Video amplifier                      |         |       |     |     |        |                                                                                                                                                               |
| Output impedance                     | 9,10    |       | 8   |     | Ω      | measured at DC<br><br>V <sub>18</sub> = 710mVp-p V <sub>12</sub> = 2.75V<br>V <sub>18</sub> = 350mVp-p V <sub>12</sub> = 2.25V<br>0.5dB point<br>1V p-p video |
| Input impedance                      | 18      | 50    | 88  |     | Kohm   |                                                                                                                                                               |
| AGC range                            | 18,9,10 | 6     | 8.9 |     | dB     |                                                                                                                                                               |
| Gain                                 | 18,8,10 |       | 1.1 | 1.4 | dB     |                                                                                                                                                               |
| Gain                                 | 18,9,10 | 2.8   | 3.2 |     | dB     |                                                                                                                                                               |
| Bandwidth                            | 18,9,10 |       | 8   |     | MHz    |                                                                                                                                                               |
| Integral linearity                   | 18,9,10 |       | 1   |     | %      |                                                                                                                                                               |
| Differential gain                    | 18,9,10 |       | 1   |     | %      |                                                                                                                                                               |
| Differential phase                   | 18,9,10 |       | 0.5 |     | Degree |                                                                                                                                                               |
| 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 |        | V <sub>7</sub> /V <sub>10</sub>                                                                                                                               |
| 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      | V <sub>2</sub> = 2.5V<br>V <sub>2</sub> = 0.5V                                                                                                                |
| Gate input low                       | 2       |       |     | 0.5 | V      |                                                                                                                                                               |
| High level sink current              | 2       |       |     | 100 | μA     |                                                                                                                                                               |
| Low level source current             | 2       |       |     | 10  | μA     |                                                                                                                                                               |
| AGC gate input                       |         |       |     |     |        |                                                                                                                                                               |
| High level                           | 11      | 2.5   |     | 5.5 | V      | V <sub>11</sub> = 2.5V<br>V <sub>11</sub> = 0.5V                                                                                                              |
| Low level                            | 11      |       |     | 0.5 | V      |                                                                                                                                                               |
| High level sink current              | 11      |       |     | 100 | μA     |                                                                                                                                                               |
| Low level source current             | 11      |       |     | 10  | μA     |                                                                                                                                                               |
| 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     | V <sub>4</sub> = 4.0V                                                                                                                                         |
| Low level source current             | 4       |       |     | 5   | μA     | V <sub>4</sub> = 1.5V                                                                                                                                         |

## NOTES (Refer to fig 4 opposite)

- i. 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).

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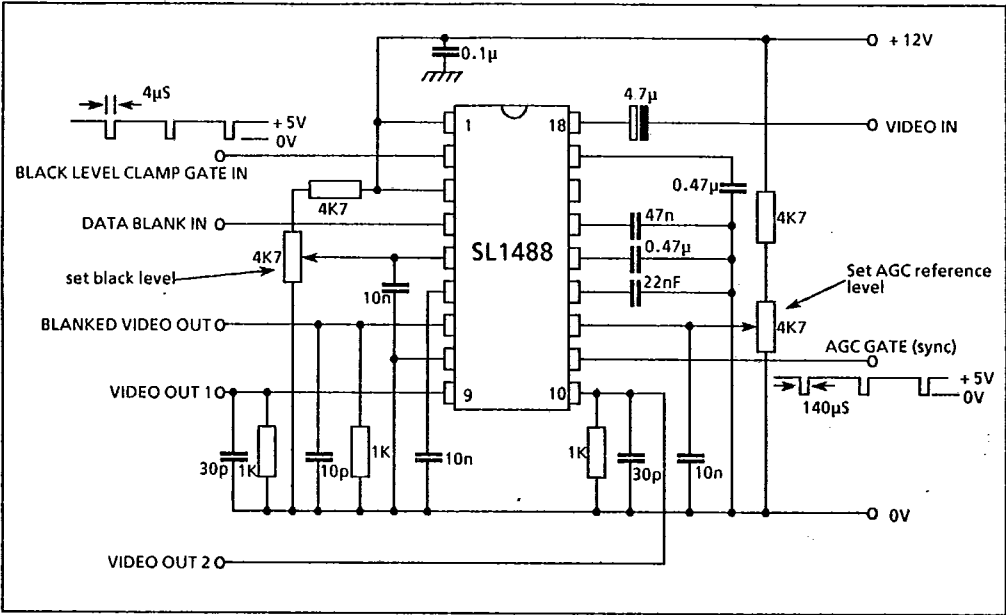


Fig 3 Typical application for PAL video

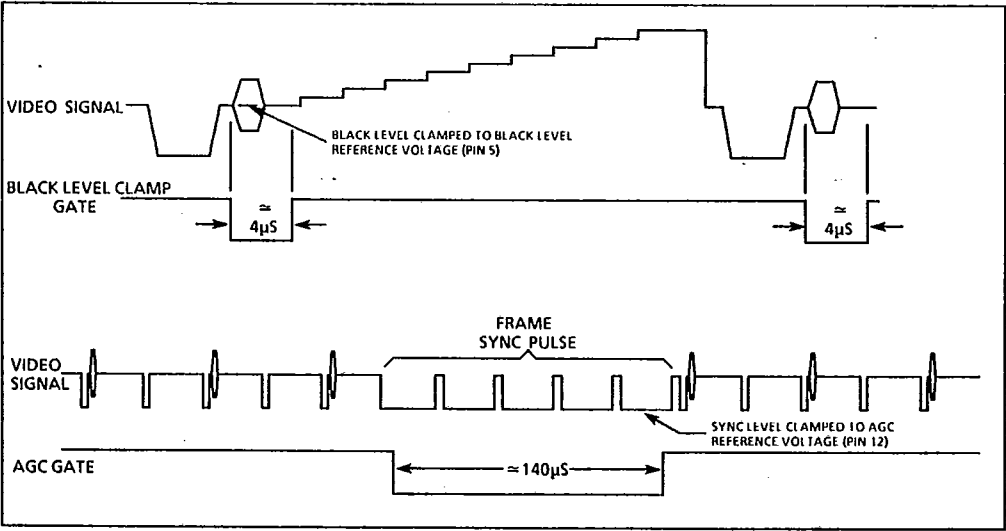


Fig 4 Typical black level clamp and AGC gate waveforms (see note page 2)