



MONITOR SOFTWARE OSD IC

GENERAL DESCRIPTION

The W82C610 and *SoftControl* software provide a proprietary Software On-Screen-Display (OSD) solution for monitors. It delivers excellent performance and flexibility over hardware OSD solution in current monitor industry. User can adjust monitor from *SoftControl* under Window (R) environment instead of adjustment from front panel. The W82C610 decodes the RGB video signals generated by a *SoftControl* program from the host, over normal VGA cable, and produces control data that can be accessed by the display microcontroller.

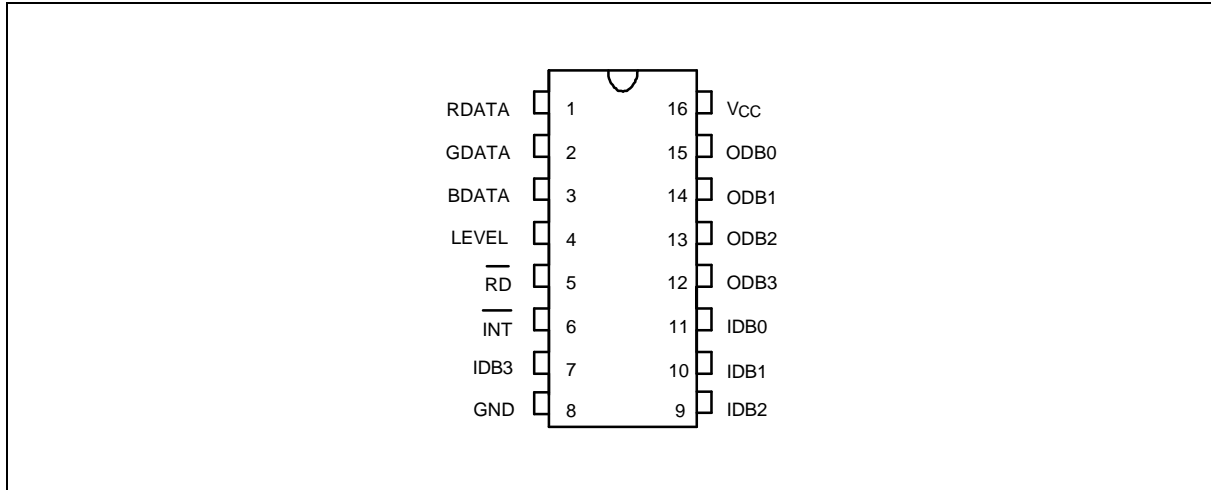
FEATURES

- A delicate solution for software On-Screen-Display
- Excellent performance and flexibility over Hardware OSD
- Low cost implementation for existing monitors
- 16-pin PDIP
- 5V CMOS device
- ESD protection (> 4 KV)

***SoftControl* Feature List**

- Five languages selectable for icon label
- Fully adjustable
 - Brightness, Contrast, Parallelogram, Pincusion
 - Position, Size, Symmetry, Trapezoid, Color
 - Factory Preset
- Current system status
 - Input connect type
 - H/V frequency, Interlace/Non-interlace
 - Operating resolution
 - Degauss
- Visual Inspection
 - Aspect Ratio, Color Purity, Dynamic Converge
 - High Voltage, Static Converge, White Balance
 - Screen Resolution, Text Resolution

PIN CONFIGURATION

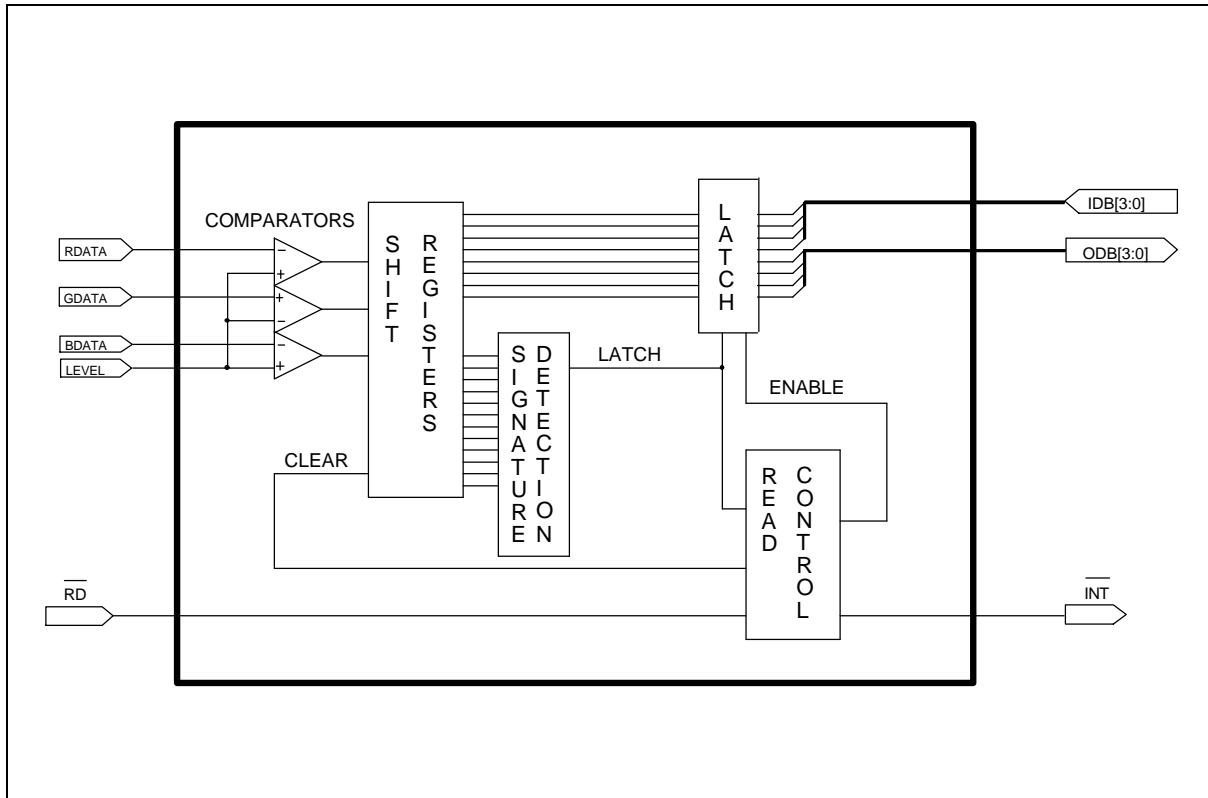


PIN DESCRIPTION

| NO. | NAME | TYPE | DESCRIPTION |
|-----|------------------|-------------|---|
| 1 | RDATA | Input | AC-coupled red video (0.7 V _{PP} typ) |
| 2 | GDATA | Input | AC-coupled green video (0.7 V _{PP} typ) |
| 3 | BDATA | Input | AC-coupled blue video (0.7 V _{PP} typ) |
| 4 | LEVEL | Input | Comparator trip level for RGB video |
| 5 | \overline{RD} | Input | Read enable. Enables the ODB[3:0] bus of the <i>SoftControl</i> code output to be read by the controller. |
| 6 | \overline{INT} | Output (OD) | Enabled whenever <i>SoftControl</i> identification code is detected. |
| 7 | IDB3 | Input | 4-bit bus for data input from key pad |
| 8 | GND | Power | Ground |
| 9 | IDB2 | Input | 4-bit bus for data input from key pad |
| 10 | IDB1 | Input | 4-bit bus for data input from key pad |
| 11 | IDB0 | Input | 4-bit bus for data input from key pad |
| 12 | ODB3 | Output | 4-bit bus for data output |
| 13 | ODB2 | Output | 4-bit bus for data output |
| 14 | ODB1 | Output | 4-bit bus for data output |
| 15 | ODB0 | Output | 4-bit bus for data output |
| 16 | Vcc | Power | +5V |

*OD: Open-drain output

BLOCK DIAGRAM



FUNCTIONAL DESCRIPTION

The W82C610 converts analog video signals to digital data and detects the *SoftControl* signature code. If the signature code is detected, the W82C610 informs the microcontroller and places the *SoftControl* data on the parallel bus.

SoftControl allows the PC to communicate with the monitor over the normal video cable. No additional circuits are required in the PC. Communication is accomplished by means of coded data transferred on the RGB video signals by the *SoftControl* program. To prevent false readings, data are sent with a 12-bit signature code.

The W82C610 provides a data path for inputs from key pad to microcontroller. Output ODB0-ODB3 can be either from key pad (IDB0-IDB3) or from VGA cable (RDATA, GDATA, BDATA).



ABSOLUTE MAXIMUM RATINGS

| PARAMETER | RATING | UNIT |
|--------------------------------------|--------------------|------|
| Supply Voltage (Vcc to Vss) | 5.5 | V |
| Analog Input Voltage | Vss-0.5 to Vcc+0.5 | V |
| Digital Input Voltage | Vss-0.5 to Vcc+0.5 | V |
| Power Dissipation | 5 | mW |
| Ambient Operating Temperature | 0 to 70 | °C |
| Lead Temperature (Soldering, 10 sec) | 250 | °C |

Note: Exposure to conditions beyond those listed under Absolute Maximum Ratings may adversely affect the life and reliability of the device.

DC CHARACTERISTICS

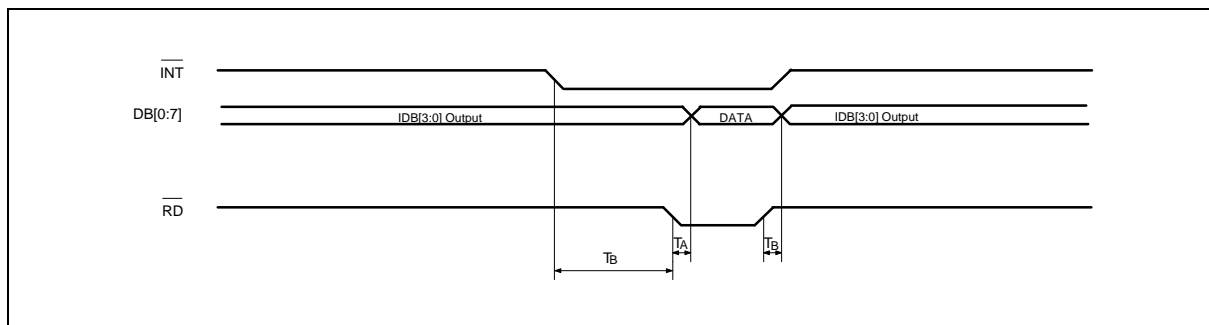
Vcc = 5V +/- 5%, Ta = 0° C to 70° C

| PARAMETER | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|---------------------|-----------------|---------|------|---------|------|
| Vcc Supply Current | | | | 1 | mA |
| Leakage Current | Ta = 70° C | - | - | 10 | µA |
| Logic Input, VIH | | 0.7 VDD | - | - | V |
| Logic Input, VIL | | 0 | - | 0.2 VDD | V |
| Logic Output, VOH | Io ≥ 24 mA | 2.5 | 3.5 | - | V |
| Logic Output, VOL | Io ≤ 6 mA | - | 0.3 | 0.4 | V |
| Operating Frequency | | - | - | Note | MHz |

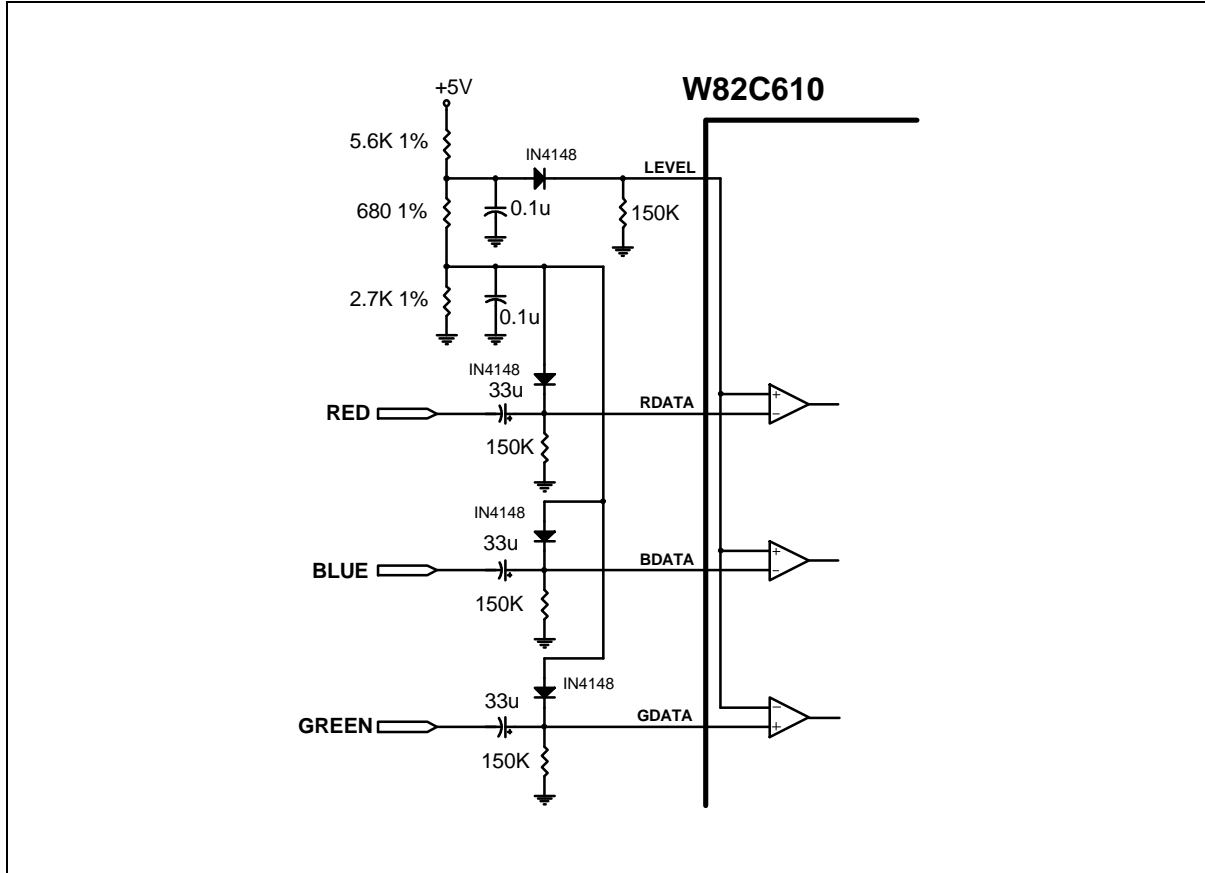
Note: Depending on level input voltage (Level Voltage (V)/Max Frequency (Mhz)):
(3/2, 2.5/10, 2/13, 1.5/15, 1/15, 0.5/10).

AC CHARACTERISTICS AND TIMING WAVEFORMS

Read *SoftControl* Data



RC NETWORK



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Note: All data and specifications are subject to change without notice.