



**Weltrend Semiconductor, Inc.**

---

**WT6802**

**Monitor OSD with Auto-calibration**

**Data Sheet**

**REV. 1.0**

**April, 9, 2001**

**The information in this document is subject to change without notice.**

**© Weltrend Semiconductor, Inc. All Rights Reserved.**

2F, No. 24, Indust E. 9<sup>th</sup> RD., Science-Based Industrial Park, Hsin-Chu, Taiwan

TEL:886-3-5780241 FAX:886-3-5794278.5770419 Email:support@weltrend.com.tw





WT6802

## Weltrend Semiconductor, Inc. Rev.1.0 Data Sheet

### DESCRIPTION

WT6802 is designed to interface with a MCU to do the OSD (On Screen Display) function in CRT Monitor, besides the fancy auto-calibration function is also included.

The on-chip PLL generates a wide-ranged system clock up to 60MHz to meet the resolution requirements(OSD resolution is programmable) of different display modes. The full OSD screen size is 30 columns x 15 rows, and the OSD position can be freely programmed by setting the internal registers. Special functions include color font, character bordering, shadowing, blinking, double height, double width, all blanking effect, row to row spacing control, 4 windows with shadowing, and programmable fin in/fan out effect.

WT6802 has 8 channels of PWM DAC, each PWM DAC can be respectively controlled by an 8-bit register which contains a 5-bit PWM and 3-bit BRM, and the PWM clock is also programmable. The horizontal back/front porch and vertical black/front porch data can be read by MCU through the I<sup>2</sup>C bus in order to do the horizontal size/center and vertical size/center auto-calibration.

### FEATURES

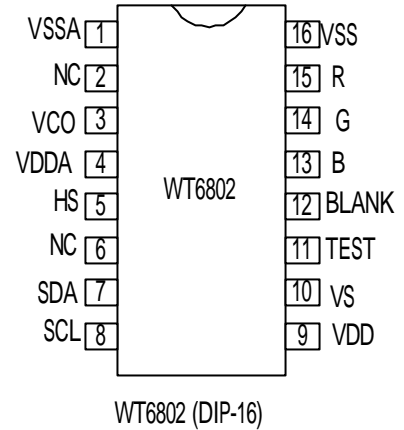
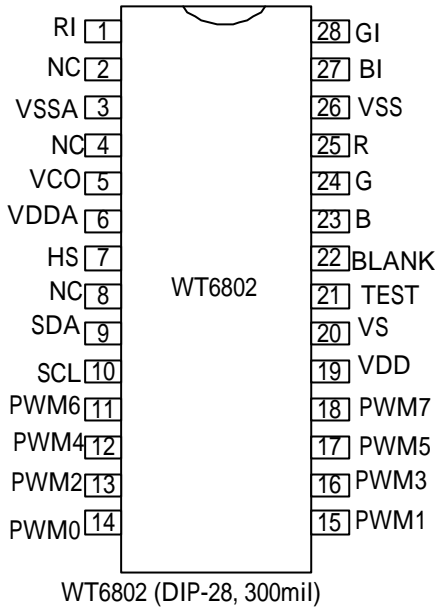
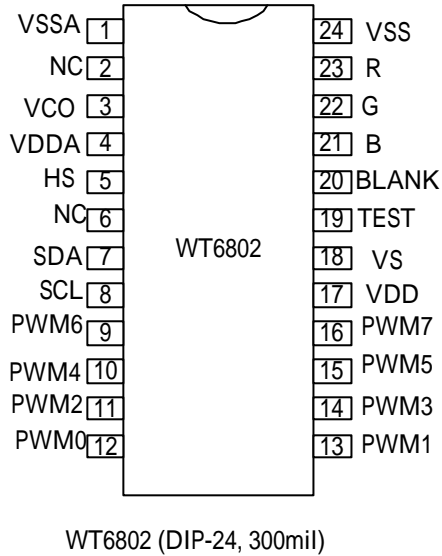
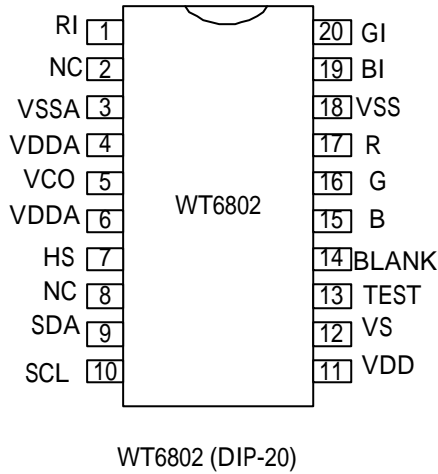
- ♦ Input horizontal synchronous frequency .....15k-130kHz
- ♦ Dot Frequency generated by On-chip PLL ....up to 160MHz
- ♦ Resolution .....programmable, up to 2040 dots/line
- ♦ Screen .....30 columns x 15 rows
- ♦ Character .... 12(H) x 18(V) dot matrix
  - Fonts .....512 characters and 16 color fonts
- MCU interface                                    I<sup>2</sup>C bus
- ♦ Color(R, G, B with intensity attribute)
  - Character foreground                    8(R, G, B)
  - Character background                7(no blank)
  - Window                                    8(R, G, B)
  - Window shadowing                    8(R, G, B)
- ♦ PWM DAC                                    8 channels
- ♦ Row to row spacing control
- ♦ Double character height and width
- ♦ Programmable character height control 18-69 lines
- ♦ Character blinking, bordering(or shadowing)
- ♦ 4 programmable background windows with multi-level operation
- ♦ Horizontal/vertical size and center Auto-calibration



# WT6802

## Weltrend Semiconductor, Inc. Rev.1.0 Data Sheet

### PIN CONFIGURATION





WT6802

**Weltrend Semiconductor, Inc. Rev.1.0 Data Sheet**

**PIN DESCRIPTION**

PIN No				Symbol	Pin Name	Input/ output	Description
28 pin	24 pin	20 pin	16 pin				
1	--	1	--	RI	Red Input	input	Video Red input from Pre-AMP
2	--	2	--	NC			
3	1	3	1	VSSA	Analog ground	—	
4	2	4	2	NC	No connectio n	—	
5	3	5	3	VCO	VCO	—	Connected to external loop filter circuit
6	4	6	4	VDDA	Analog power	—	+5 V
7	5	7	5	HS	Horizonta l SYNC	Input	Horizontal synchronous input signal
8	6	8	6	NC	No connectio n	—	
9	7	9	7	SDA	Serial data	Input/out put	I <sup>2</sup> C data
10	8	10	8	SCL	Serial clock	input	I <sup>2</sup> C clock
11~18	9~16	--	--	PWM0~ PWM7	PWM DACs	output	8 channels of 8-bit PWM DAC. Refer to pin assignment in page1 for each PWM DAC's pin assignment.
19	17	11	9	VDD	Digital power	—	+5 V
20	18	12	10	VS	Vertical SYNC	input	Vertical synchronous input signal
21	19	13	11	TEST	TEST	output	Output test only
22	20	14	12	BLANK	Blank	output	Blank signal output



WT6802

**Weltrend Semiconductor, Inc. Rev.1.0 Data Sheet**

---

23	21	15	13	B	Blue output	output	Blue signal output
24	22	16	14	G	Green output	output	Green signal output
25	23	17	15	R	Red output	output	Red signal output
26	24	18	16	VSS	Digital Ground		
27	--	19	--	BI	Blue input	input	Video Blue input from Pre-AMP
28	--	20	--	GI	Green input	input	Video Green input from Pre-AMP