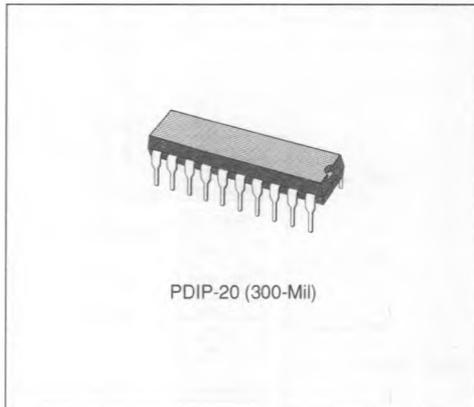


ON-SCREEN CHARACTER GENERATOR

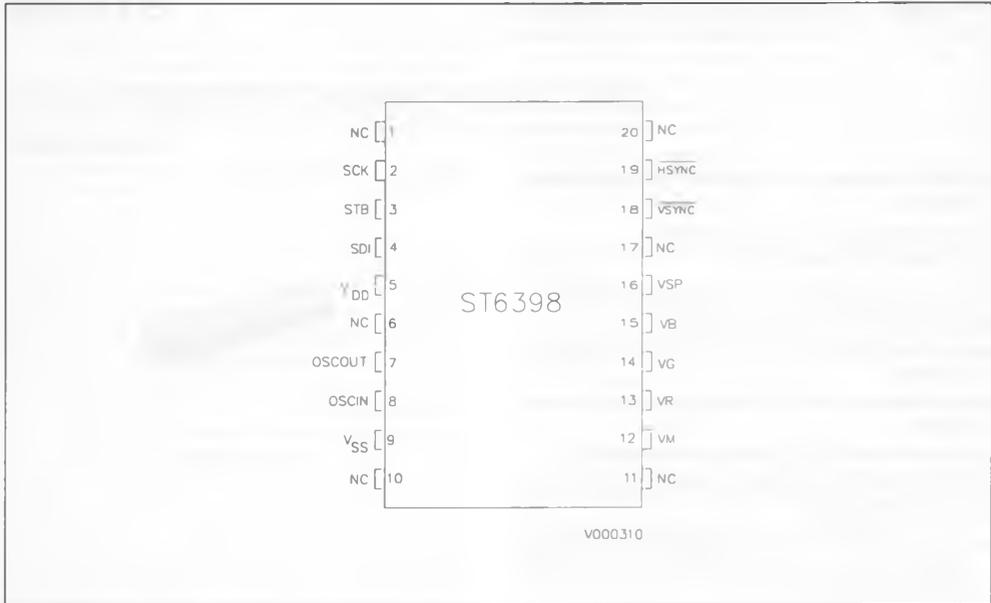
ADVANCE DATA

- ST63 TV FAMILY, STAND-ALONE OSD MACROCELL
- 3-WIRE SERIAL BUS INTERFACE
- HCMOS TECHNOLOGY
- 4.5 TO 5.5 V SUPPLY OPERATING RANGE
- 4 TO 8MHZ CLOCK FREQUENCY
- 26 CHARACTERS BY 11 ROWS DISPLAY FORMAT
- SOFTWARE SELECTABLE DISPLAY POSITION
- 12H BY 18V DOTS CHARACTER MATRIX
- 8 COLOR VALUES (INCLUDING BLACK) PLUS TRANSPARENCY
- 256 ADDRESSABLE CHARACTER FONTS, 128 ROM AND 4 RAM BASIC CHARACTERS IMPLEMENTED
- 3 CHARACTER BACKGROUND TYPES, SELECTED ON A CHARACTER-BY-CHARACTER BASIS: TRANSPARENT, BGC0 OR BGC1 SOLID COLOR. THE BACKGROUND COLOR SET IS REDEFINABLE FOR THE WHOLE SCREEN
- ONE SOLID COLOR CHARACTER FOREGROUND, SELECTABLE IN A 4 FOREGROUND COLOR SET, SELECTED ON A CHARACTER-BY-CHARACTER BASIS. THE FOREGROUND COLOR IS DEFINABLE FOR THE WHOLE SCREEN. THE FOREGROUND BORDER CAN BE OUTLINED IN THE COLOR DEFINED FOR THE WHOLE SCREEN. THE FOREGROUND BORDER ENABLING IS DONE ON ROW-BY-ROW BASIS.
- INDIVIDUAL OFFSET CAN BE ADDED TO THE HORIZONTAL POSITION OF EACH ROW. THE VERTICAL POSITION OFFSET CAN BE SUPPLIED BY EITHER ADDING "N" LINES TO THE ROW OR SKIPPING THE "N" FIRST LINES



- THE DISABLED ROW IS DISPLAYED IN THE SCREEN BACKGROUND COLOR AND TRANSPARENCY
- RASTER CONTROL: WHEN DISPLAY IS DISABLED THE FULL SCREEN IS DISPLAYED IN THE SCREEN BACKGROUND COLOR AND TRANSPARENCY; SCREEN COLOR SELECTABLE AMONG 8 VALUES PLUS TRANSPARENCY; DISABLED SCREEN, DISABLED ROWS AND TRANSPARENT CHARACTER BACKGROUNDS ARE DISPLAYED IN SCREEN COLOR; VME ENABLES THE CORRESPONDING TERMINAL OUTPUT TO MARK THE FOREGROUND PIXELS
- OSCILLATOR ENABLE/DISABLE FUNCTION
- 20 PIN DUAL IN LINE PACKAGE

Figure 1 : ST6398 Pin Configurations.

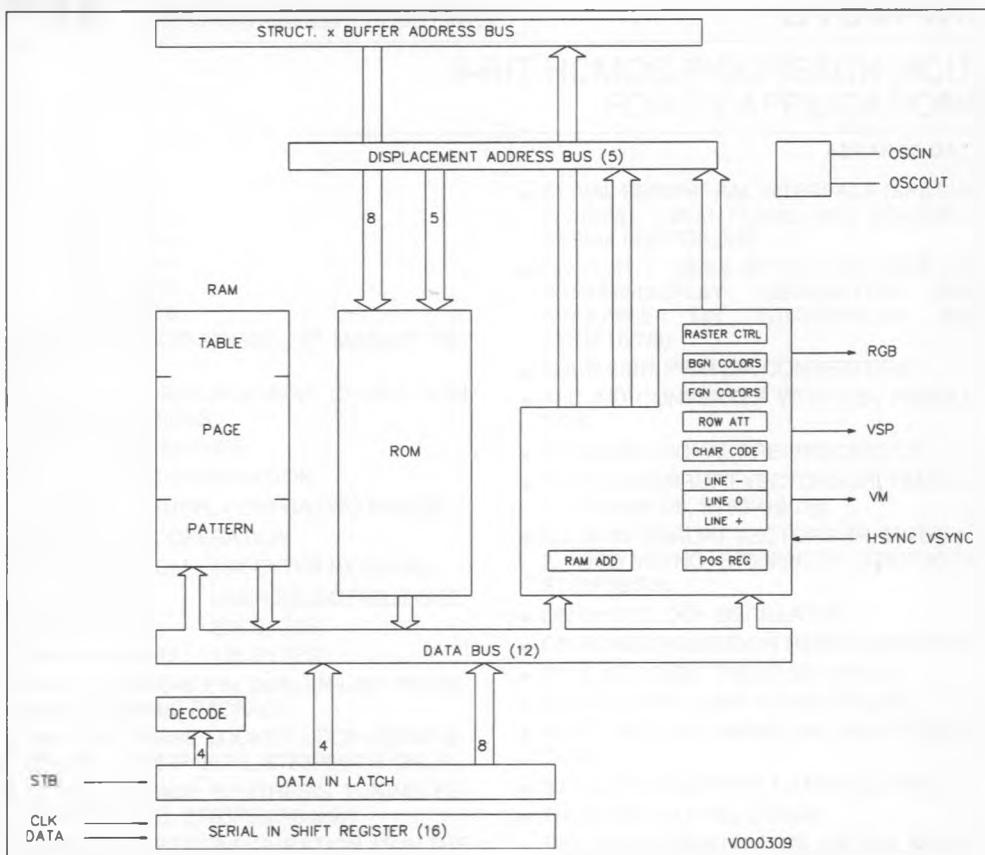


GENERAL DESCRIPTION

The ST6398 is a stand-alone OSD generator macrocell belonging to the ST63 MCU family for TV application. Thanks to the on-chip three wire serial interface it can be easily connected to a microcontroller (ST63XX). The display character format is 26 characters x 11 rows with software selectable display position. The character matrix is 12H x 18V dots while 8 different character colors (including black) plus transparency can be selected. 256 different character fonts can be addressed with 128 ROM and 4 RAM based characters implemented. The character background is character-by-character selectable in three different modes: transparent, Background 0 or Background 1 solid color. The background color set is redefinable for the whole

screen. The character foreground is character-by-character selectable out of a 4 color set. The foreground color set is redefinable for the whole screen. The foreground border may be outlined in a color defined for the whole screen. The foreground border enable is row-by-row based. An individual offset can be added to the horizontal position of each row while the vertical offset can be done either by adding "n" lines to the row or by skipping "n" first lines. When disable the row is displayed in the screen background color and transparency. The OSD oscillator can be enabled/disabled. The ST6398 is packaged in 20 pin dual-in-line package while the power supply is between 4.5V to 5.5V.

Figure 2 : ST6398 Block Diagram.



PIN DESCRIPTION

V_{DD} and V_{SS}. Power is supplied to the MCU using these two pins. V_{DD} is power and V_{SS} is the ground connection.

OSCIN and OSCOUT. These pins are the ST6398 oscillator terminals. To these pins an oscillation capacitor and coil network have to be connected to provide the right signal to the OSD.

SCK, SDI, STB. These pins are the serial clock, data and strobe pulse inputs of the 3-wire serial interface. Through these pins the ST6398 can be easily interfaced with the system microcontroller.

HSYNC, VSYNC. The HSYNC input pin receives the horizontal synchronization signal from the TV set while the VSYNC the vertical synchronization signal. The default active polarity is negative; the polarity of these pins is individually mask programmable.

VR, VG, VB. These output pins provides the pixel color signals (R,G,B) to the TV set. The default active polarity is positive; the polarity of these pins is individually mask programmable.

VSP. This output pin monitors the "solid" pixel signal. The default active polarity is positive; the polarity of this pin is individually mask programmable.

VM. This output pin monitors the foreground output signal. The default active polarity is positive; the polarity of this pin is individually mask programmable.

NC. These pins are usually not connected. These **MUST** not be connected to ground as they could be used for testing purposes.