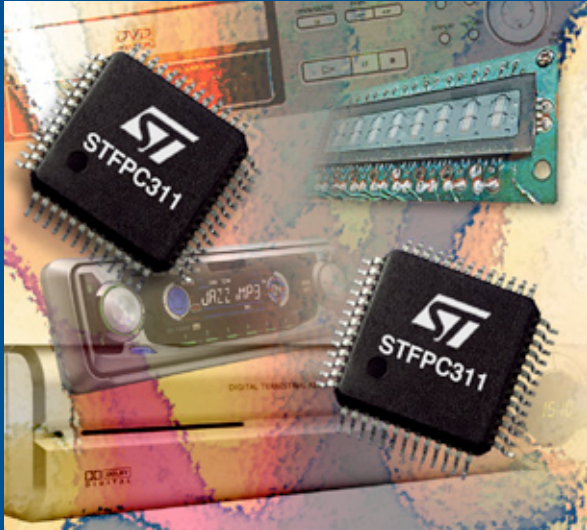


STFPC311: VFD front panel solution

VFD controller / driver with stand-by power management



The STFPC311 is a Vacuum Fluorescent Display (VFD) driver and controller with built-in stand-by power management to the microcontroller (MCU). It represents a complete low-cost, integrated solution to control and drive a front panel VFD display.

The STFPC311 VFD driver and controller allows communication with the MCU through a serial interface. It supports watchdog timer, remote control hotkeys, front panel hotkeys and muting capability during power transition.

A front panel demo-board has been designed for a quick and easy evaluation of the STFPC311 VFD controller.

Key features

- Stand-by power management to the main DVD MPEG board
- Wake-up from front panel/remote control keys
- Audio management to the host prevents pop-sound during stand-by or wake-up
- Supports various filament types (8 digits / 20 segments up to 16 digits / 12 segments)
- Interfaces with the RTC through the IRQ on one of the key scan I/Os
- Infrared decoder for Philips and NEC protocols
- Integrated watchdog timer to detect abnormalities
- Continuous key-scan even during stand-by
- Ultra low stand-by current consumption (400 μ A)
- Attractive to qualify a DVD/STB system to meet energy saving mandate of <1 W or 0.3 W or 0.1 W
- Easy to implement software thanks to the serial interface

Main applications

- DVD players
- Home theatre systems
- Media center PCs and set-top-boxes
- Home AV appliances
- Point of sales (POS) equipments
- Car stereos
- Some industrial applications such as diagnostic and measurement equipment

The STFPC311 VFD driver and controller allows communication with the MCU through a serial interface.

It is also ideal for reducing power consumption when in stand-by mode by reducing the stand-by current of the application to a minimum. Several functions such as watchdog timers and remote control decoding protocols are integrated. It also provides a muting capability to mute the audio before entering the stand-by power saving mode. The STFPC311 supports 28 high-voltage outputs which can be used for displays ranging from 8 digits/20 segments up to 16 digits/12 segments making it ideal for driving a wide variety of blue-green VFD displays. It works with a supply voltage of 3.0 to 3.6 V and is available in the lead-free PQFP52 package which allows ease of PCB routing on a single-layer or double-layer Class 2 or Class 3 type PCB using a low cost soldering technology. Using a simple front-panel PCB, the device results in cost savings to the end manufacturer by eliminating the need of a two-chip architecture.

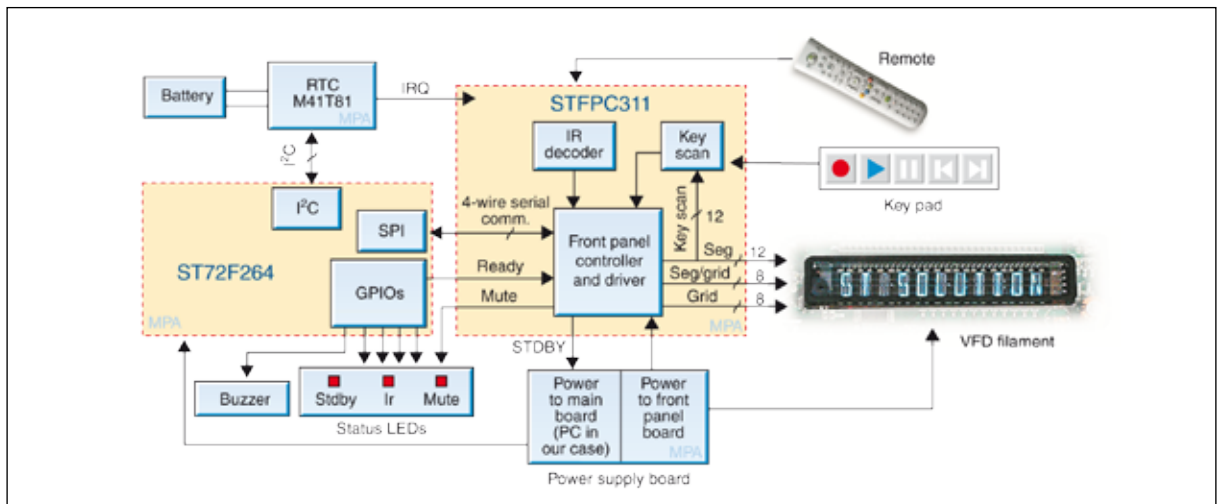
An evaluation kit which emulates the DVD player front-panel is available upon request which contains the following:

- The STFPC311 (VFD controller) + ST72F264 (emulated MPEG decoder) demo board
- Power Supply board (-30 V to -24 V DC, 3.3 V DC, 12 V DC)
- User manual

The demo board operates in two modes: configuration and simulation.

In configuration mode, at startup the STFPC311 VFD controller front panel keys, hot keys, display, remote control and real time clock are programmed. Once they are programmed, the microcontroller drives the READY pin to HIGH level and the demo is configured for operation.

In simulation mode, 'NO DISC' is displayed on the VFD followed by the time. Depending on the front-panel keys selected, the respective status change will appear on the VFD display and LEDs. All the DVD player features are supported through remote control.



STFPC311 application block diagram

ST's Power Logic portfolio

Part number	Display type	Features	V _{CC} [V]	Package
STFPC311	8 digits / 20 segments to 16 digits / 12 segments	12 x 2 keyscan matrix; 8-step dimming; Stand-by management; Infrared (IR) decoder; Watchdog timer; Audio mute output;	3.0 to 3.6	PQFP52
STM86312	4 digits / 16 segment to 11 digits / 11 segments	6 x 4 key-scan matrix; 8-step dimming;	4.5 to 5.5	PQFP44



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