Xpander Logic
The simple solution to system expansion

Enhanced I/O expander

STMicroelectronics' Xpander Logic family of devices is designed to increase the number of I/O ports and enhance the control and mixed signal capability of existing microcontrollers/microprocessors.

This new family of devices allows the system processor to access a wide range of additional features through a serial interface (I^2C/SPI).

Xpander Logic is also highly optimized for micro-power operation and with its advanced power management support helps modern portable systems achieve longer battery life.

Key features

- 4, 8, 16 and 24 I/Os
- I^2C standard and high speed interface
- Open drain interrupt output pin
- Reset pin
- Intelligent features:
  - Keypad controller for up to 96 keys
  - Rotator controller
  - 3 independent advanced PWM controllers
  - Analog multiplexer
  - 10-bit Analog-Digital converter (ADC)
  - 8-bit Digital-Analog converter (DAC)
- Automatic dimming unit for LCD backlight control
- Very small packages (QFN16, µTFBGA36)

Main applications

- QWERTY keypad
- Mobile and smart phones
- Game consoles
- GPS navigation units
- Multi-function printers
- IP-phones
- Portable media devices

www.st.com/xpanderlogic

Intelligent features

Keypad Controller

The Xpander Logic family integrates a highly sophisticated keypad controller supporting a maximum of 96 keys (8 x 12 matrix). The keypad controller operates independently from the system CPU and interrupts the CPU only when a key is pressed. It supports simultaneous key-pressing and key event buffering for system CPU access.
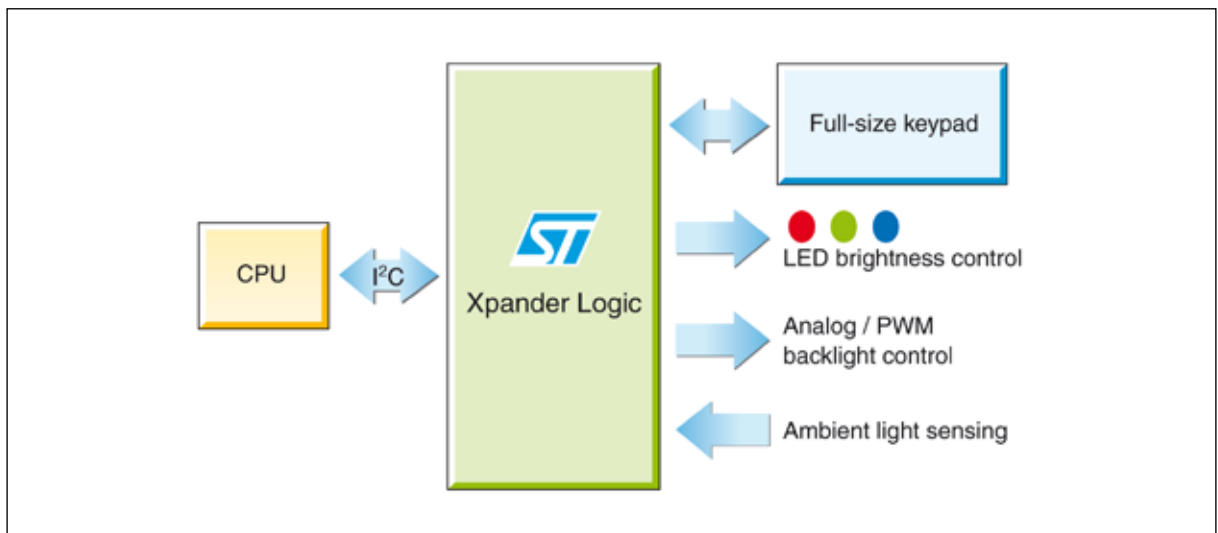
PWM Controller

The Xpander Logic's PWM controller is designed not only to adjust the brightness of the LEDs, but also to perform sophisticated brightness patterns without the CPU intervention. This function also allows the system to have blinking/ramping/dimming LEDs even when the CPU is in sleep mode.

Rotator Controller

The rotating wheel is an increasingly popular interface in portable electronics. Xpander Logic integrates a 3-wire rotating wheel controller that detects the motion of the wheel and provides monitoring/buffering features.

ADC/DAC Automatic Dimming Unit

Xpander Logic integrates ADC and DAC, allowing the host system to implement a wide range of mixed signal features. An internal programmable translation table links the ADC input to DAC output. This automatic dimming unit allows the ambient light sensor to control a backlight unit without CPU intervention.

Xpander Logic in embedded systems

Xpander Logic portfolio

Part number	GPIO	Package	Description
STMPE801	8	QFN16 (2.6x1.8mm)	Basic I/O expander
STMPE2401	24	µTFBGA36 (3.6x3.6mm)	Keypad, PWM and rotator controllers

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Full product information at www.st.com

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