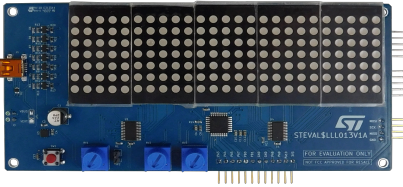## 7x25 LED Matrix panel based on STP16CPC26

Features

- Two selected power supply modes:
    - USB
    - External 5 V supply
- Screen refresh rate > 100 Hz
- 32 levels pixel brightness
- Screen brightness set by potentiometer
- Scrolling effects speed set by potentiometer
- PC SW GUI for banner design
- WEEE compliant
- RoHS compliant

Description

The STEVAL-LLL013V1 is a 7x25 LED matrix board controlled by two STP16CPC26 LED drivers.

It can display banners in which each pixel can have a different level of brightness (32 levels).

The screen refresh rate is higher than 100 Hz. The banners can be scrolled horizontally in both directions for lights effects. The banners are loaded by the use of the STSW-LLL013GUI PC software app.

The STP16CPC26 is a monolithic, low voltage, 16-bit constant current LED sink driver with a serial input/output interface.

Two STP16CPC26 drive a 7x25 LED matrix. The two LED drivers are connected in a daisy chain and controlled by the STM32F042K6T6 MCU, using an SPI IP interface.

The MCU works as a frame generator for the banners, and as a bridge with the PC software app, by implementing a USB VCP device class.
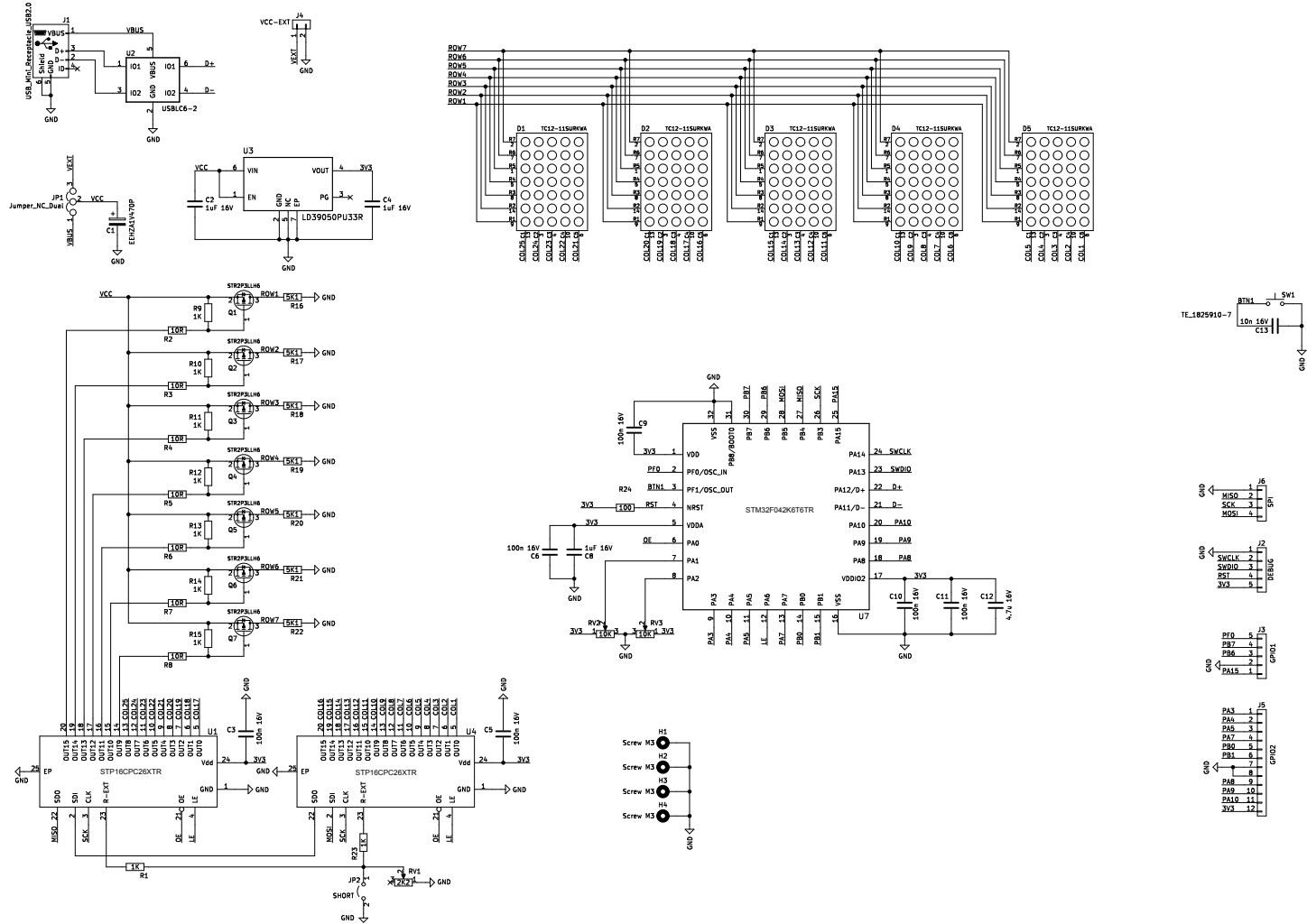
Additional potentiometers on the board allow you to change the brightness of the whole display and the speed of the banner scrolling effects.

To exploit all the potential features of the board, many hardware resources are available, such as pin connectors that deliver additional MCU features, a JTAG interface, and a serial input/output to cascade other LED drivers.

Product summary

7x25 LED Matrix panel based on STP16	STEVAL-LLL013V1
GUI for STEVAL-LLL013V1	STSW-LLL013GUI
Low voltage 16-bit constant current LED sink driver	STP16CPC26XTR
Mainstream Arm Cortex-M0 USB line MCU with 32 Kbytes of Flash memory, 48 MHz CPU, USB, CAN and CEC functions	STM32F042K6T6TR
Applications	Home and Professional Appliances

DB4890 - Rev 1 - February 2023
For further information contact your local STMicroelectronics sales office.

www.st.com

1 Schematic diagram

Figure 1. STEVAL-LLL013V1 schematic diagram

2 Board versions

Table 1. STEVAL-LLL013V1 versions

PCB version	Schematic diagrams	Bill of materials
STEVAL$LLL013V1A [1]	STEVAL$LLL013V1A schematic diagrams	STEVAL$LLL013V1A bill of materials

1. This code identifies the STEVAL-LLL013V1 evaluation board first version. It is printed on the board PCB.

Revision history

Table 2. Document revision history

Date	Revision	Changes
03-Feb-2023	1	Initial release.

IMPORTANT NOTICE – READ CAREFULLY