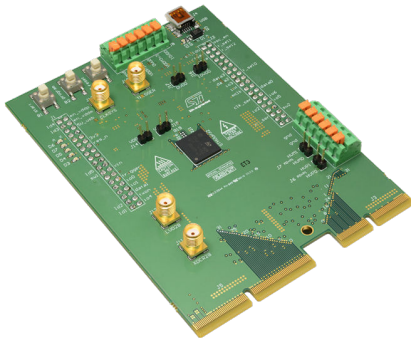


32-channel high-speed ultrasound pulser with integrated transmit beamformer



The picture shown is for illustration purpose only. Actual product may vary depending on buyer's selection and availability.

Features

- Power lift gate features:
 - 32-channel high-voltage output (XDCR)
 - 32-channel low-voltage output (LVOUT)
 - No loads on XDCR and LVOUT
 - USB connector to change programs and waveforms
 - Button interface to program, start and stop the generation of the waveforms
 - LEDs to monitor STHVUP32 behavior
 - System based on STM32
- 2-layers (modules) staked:
 - STM32 Nucleo-32 board
 - STHVUP32 module
 - Low-voltage supplies generated on board
 - Only one external supply is needed (7-12 V) for LV supply rails generation
 - Dedicated connector for the four high-voltage supply rails
 - GUI or textual interface to configure STEVAL-IME016A by yourself

Description

The **STEVAL-IME016A** is an evaluation kit demonstrating the **STHVUP32** performances.

The **STHVUP32** is a 32-channel monolithic high-voltage and high-speed pulser with an integrated beamformer.

The **STHVUP32** is specifically designed for pulse generation in multichannel low-power and ultraportable medical ultrasound applications.

The waveforms generated by **STHVUP32** are described with sequences of up to 32 states stored in the device memory.

With each state, it is possible to configure each individual output channel to be connected to high-voltage supplies (positive or negative), clamped to the ground, or left in high-impedance.

The **STHVUP32** also embeds a digital core that manages the delay profile used in the beamformer of the channels.

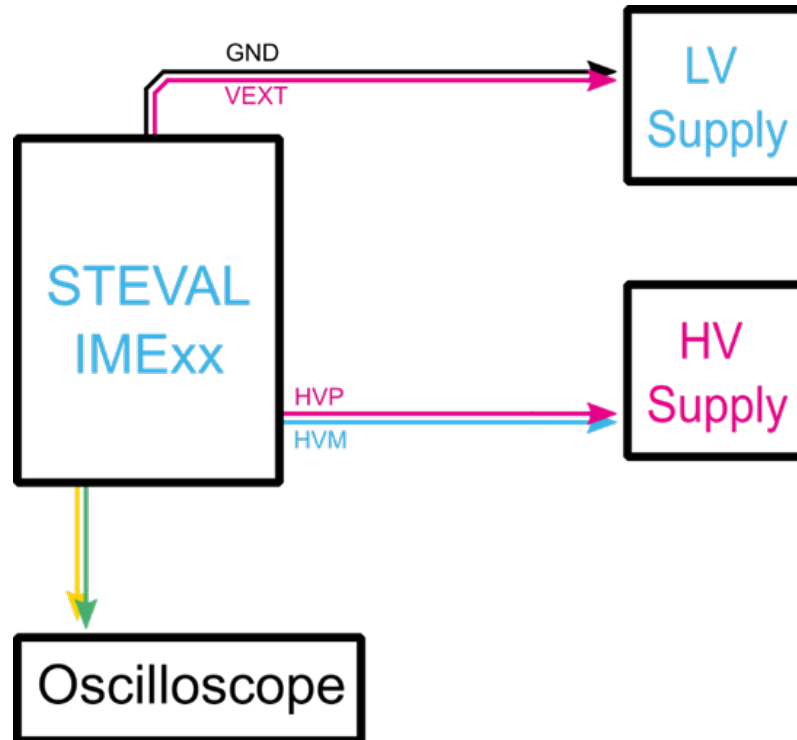
For demonstration purposes, dedicated connectors have been added to which the probes of an oscilloscope or an analog front-end can be connected to display or process the high-voltage signals generated by the **STHVUP32**.

There are also programming, start and reset buttons, and a GUI is provided to facilitate demo-kit programming operations.

Product summary	
32-channel high-speed ultrasound pulser with integrated transmit beamformer	STEVAL-IME016A
32 channels ± 100 V, $\pm 0.4/0.8$ A, 3/5-level RTZ, TR switch, high-speed ultrasound pulser with integrated transmit beamformer	STHVUP32
Applications	Ultrasound imaging

1 Block diagram

Figure 1. Block diagram



2 Schematic diagrams

Important: These schematics are for illustration purpose only. Actual product may vary depending on buyer's selection and availability.

Figure 2. STEVAL-IME016A circuit schematic (1 of 3)

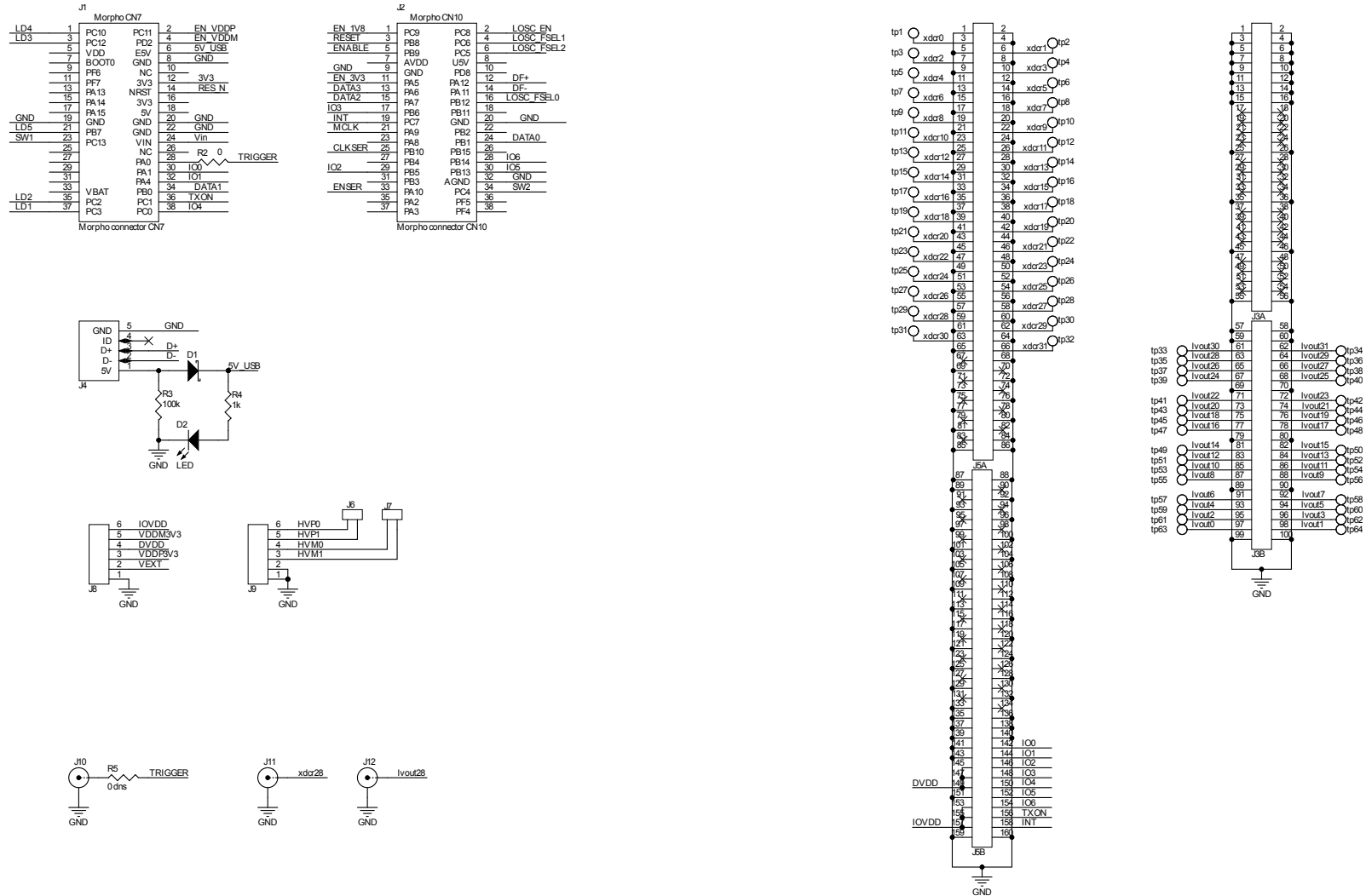


Figure 3. STEVAL-IME016A circuit schematic (2 of 3)

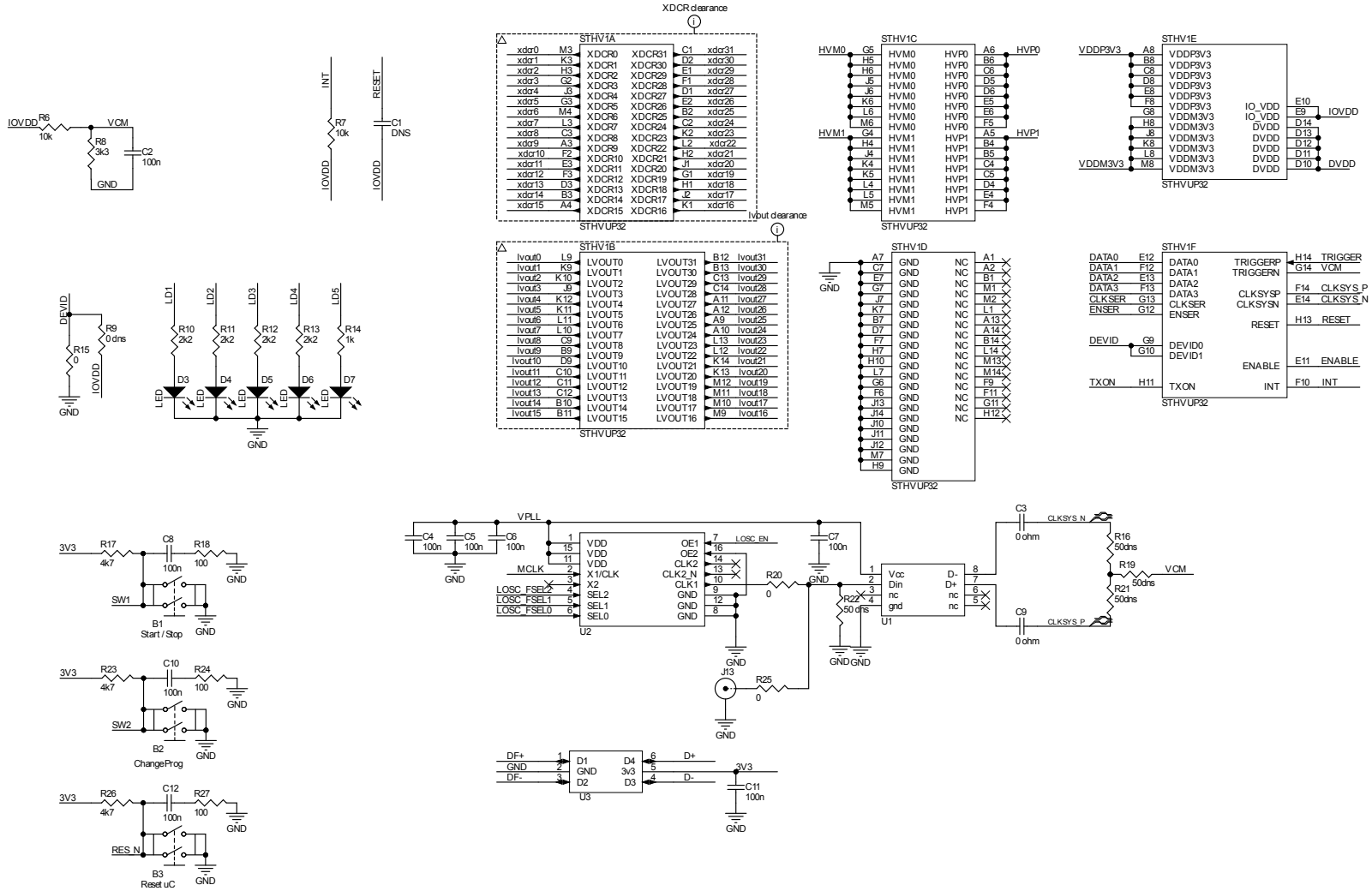
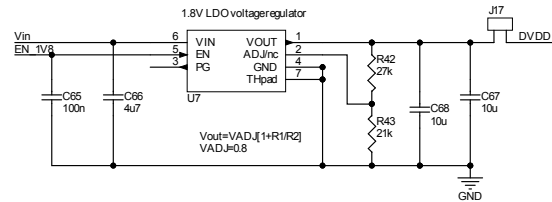
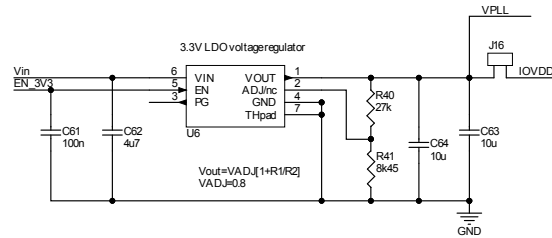
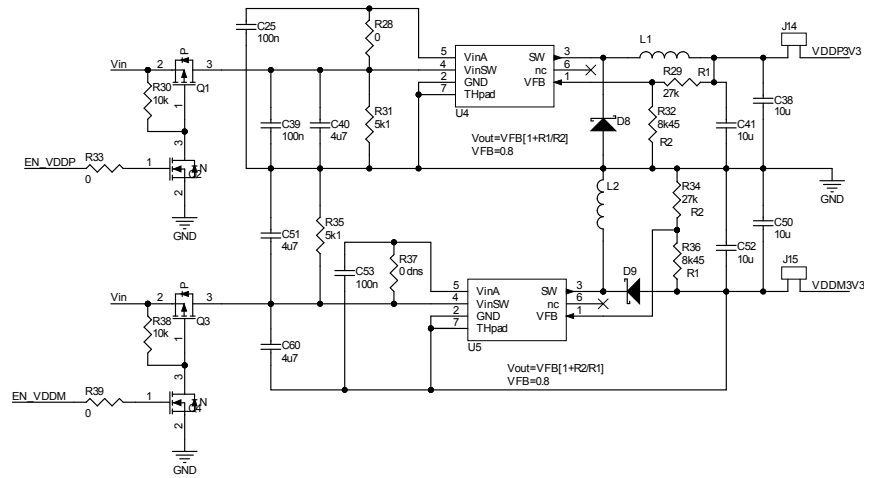
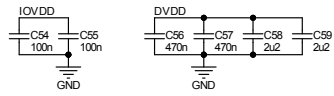
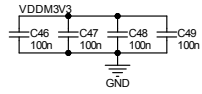
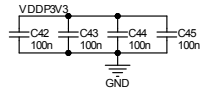
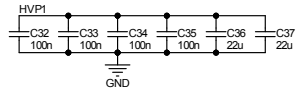
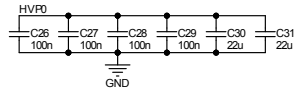
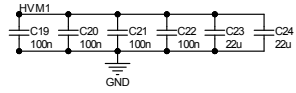
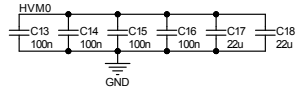


Figure 4. STEVAL-IME016A circuit schematic (3 of 3)



Vext = 7 to 12V
 MAX CURRENT:
 800mA when Vext=7V
 450mA when 7V < Vext < 9V
 250mA when 9V < Vext < 12V





3 Custom evaluation boards information

Notice: These evaluation boards are custom designed and built, in small quantities, according to specific requests from customers and are destined for evaluation and testing of ST products in a research and development setting. Please contact ST to provide your specific requests and get your custom built board(s).

Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Nov-2023	1	Initial release.

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