EB1CSI021

CSI021 Eval Board
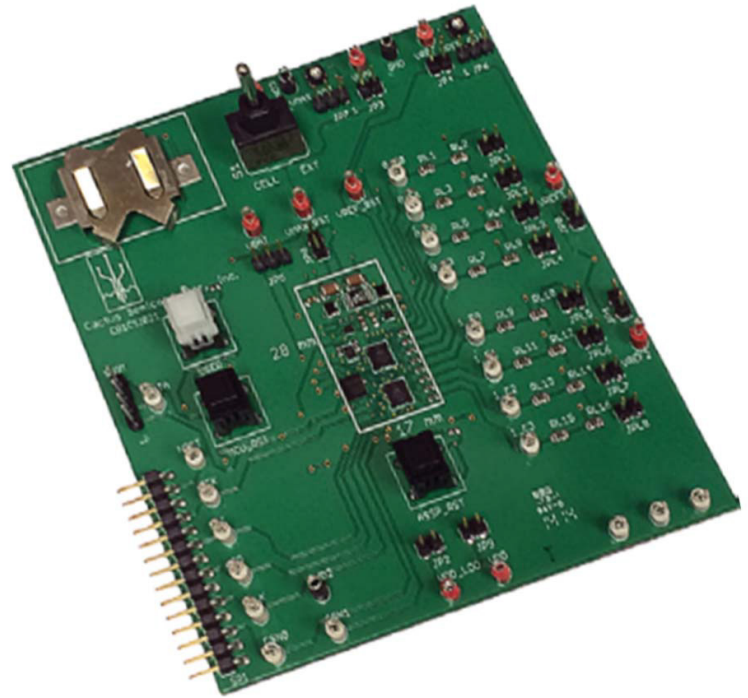## for Neuromodulation Applications

EB1CSI021 Product Datasheet Rev 1.0

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MEDICAL

FEATURES

- Evaluation Board for CSI021 aimed at possible neurostimulation / neuromodulation applications
- Contains two synchronizable CSI021 ICs Onboard low-power 8-bit MCU (STM-8L151G6) with preloaded firmware to program CSI021
- ST-Link V2 dongle provided to communicate and program the MCU or customization
- Onboard adjustable power management circuitry generated from a single battery Voltage
- Test points and options available on all outputs for easy connection to external electrodes

APPLICATIONS

- Neurostimulation/Neuromodulation
- Implantable Pulse Generator/IPG
- MEMs and Sendor Applications
- Battery Powered Applicaitons

GENERAL DESCRIPTION

The EB1CSI021 is designed to evaluate the CSI021, a 4-channel high voltage programmable current sink/source Application Specific Standard Product (ASSP). Evaluation requires an external power supply or a CR2016 button cell and an oscilloscope. The onboard MCU contains firmware to independently program stimulation profiles for each part. The stimulation waveforms can be easily observed on the oscilloscope. The MCU firmware can be reprogrammed to suit custom applications by using the ST-Link V2 dongle and STVD software. The software and supported documentations for the dongle and STVD software is available on the STMicroelectronics® website.

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QUICK SETUP INSTRUCTIONS

1. Place a CR2016 button cell (included) in the holder or apply 3V to 4V at VBAT. Use the switch S1 to choose between the button cell and an external power supply as the VBAT voltage.

2. All jumpers are configured in default positions.

3. Press the USER button once to run the preloaded MCU firmware. This will program the CSI021-0 and CSI021-1 ASSPs.

4. Observe stimulation waveforms on test points, 0_E0, 0_E1, 0_E2, 0_E3, 1_E0, 1_E1, 1_E2, and 1_E3. The stimulation profile will complete after the programmed number of pulses are executed.

5. The MCU_RST or ASSP_RST buttons can be pressed to stop the stimulation before completion.

6. If the MCU_RST button is pressed, both MCU and ASSPs are reset. Pressing the USER button will restart the stimulation profile.

7. If the ASSP_RST button is pressed, only the ASSPs are reset. To restart the stimulation profile, press the MCU_RST button, then press the USER button.

Button Cell

VMAX and VREF

SWIM Connector

Header for External SPI Connection

ASSPs, MCU and Power Management

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