STSW-ILL035GUI Quick Start Guide

STMicroelectronics

APMS - Analog sub group - GPA

GUI Main Features

GUI Title and Board Status

Load/Save Configuration

Board Settings

Device Toolbar

Channels Configuration

Device Settings

Device Status

STEVAL-ILL035V1 Version 0.9 - Eval Board Detected

Load   Save   LREN   EXT CLK 5.3MHz

Enable   Reload   Enable CHs   Disable CHs

	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
BRT	443	517	443	1070	1513	2657	3579	2768	1550	701	1476	2509	3616	2878	2214	369
CHSEL	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☑	☐	☑	☐	☑

CHSTA

EDMI   OVFW   OTAF   CFP   OVRS   VB 32.3V

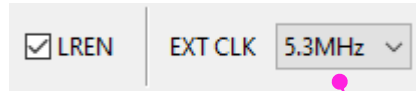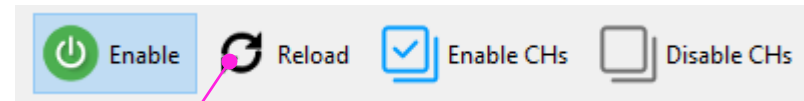| DEVCFG0	
Open Channel Auto Disc.	Disabled
Shorted Channel Auto Disc.	Disabled
Regulation Window	600mV
LED Short Detection	Disabled
Grayscale Mode	Grayscale Dimming
Current Range	20mA - 45mA
Output Voltage Regulation	Enabled
Slave Device Mode	No Slave Devices
DEVCFG1	
Current Gain Range	1 - 1.492
Current Gain Adjust	0
Dimming Latency Cycles Range	0 - 64K
Brightness Data Format	16x16 (12bit res)
Dimming Timing Inversion	Off Phase First
Brightness data update	On LE Falling Edge
Dimming Synch Pin	GSSY Output Pin
Continuous Status Reading	DISABLED
GSLAT	

GUI Title and Toolbar

STEVAL-ILL035V1 Version 0.9 - Eval Board Detected

The GUI Title shows the SW version and informs about the connection status of the STEVAL board.

Load   Save

☑ LREN   EXT CLK 5.3MHz ⌄

⏻ Enable   ⟳ Reload   ☑ Enable CHs   ☐ Disable CHs

Using the Load/Save buttons, the user can save any device configuration in a .cfg file. Once loaded, the content of the .cfg file are applied immediately. The configuration files store the EXT CLK setting, but not the LREN setting.
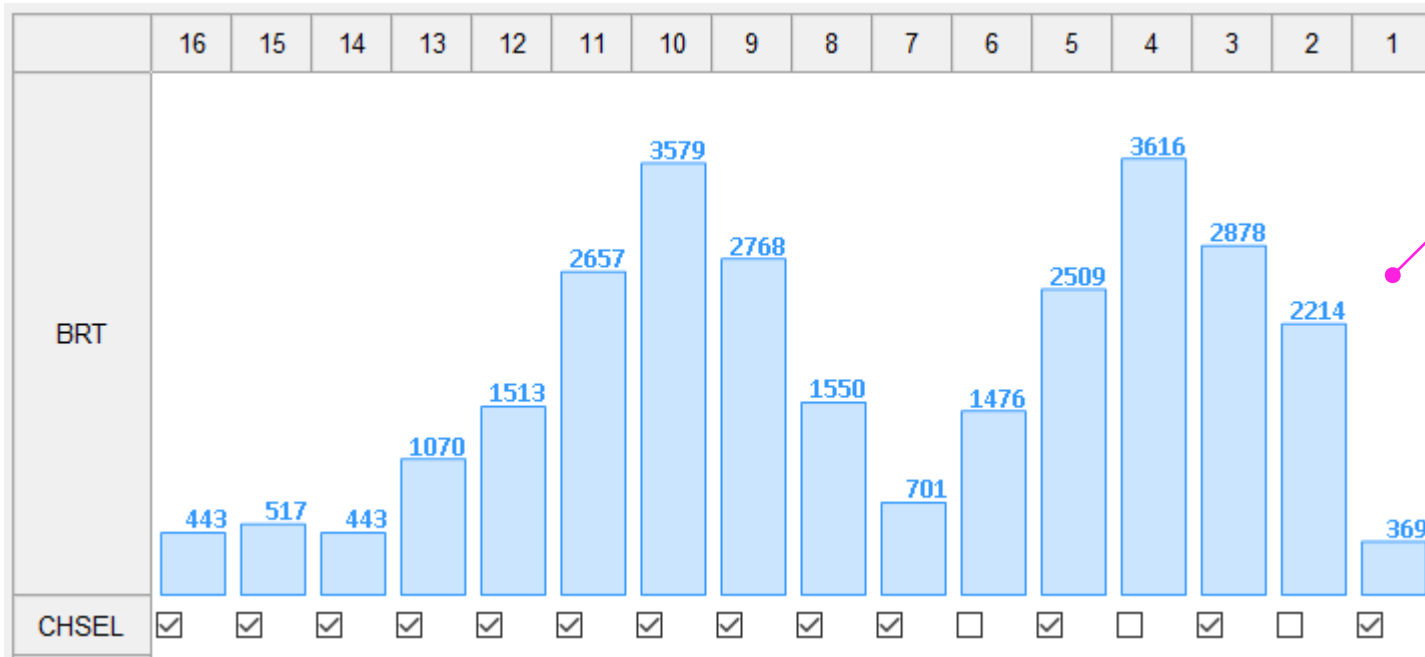
The board settings control the LREN and the GSCK pins of the LED7708. Once a STEVAL board is detected, the LREN setting is automatically enabled, in order to operate with the device.

Device Toolbar

The **Enable** button acts on the DEN bit of the DEVCFG0 register
The **Reload** button reads all the Devices registers refresh the content of the GUI.
The **Enable/Disable CHs** buttons, enables or disables all the device channels.

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Channels Configuration and Status

From here, the user can enable and set the brightness of each individual channel. The number upon each channel bar indicates the register value of the channel brightness. The full scale of the number can change according to the **Brightness Data Format** setting located on the DEVCFG1 settings (right side of the GUI). To change the BRTx of any channel, just drag up or down the bar.

The channels status are reported here. Each indicator is the bit of the CHSTA register. Below are reported the DEVCFGx readonly bits.
The status is refreshed periodically.

The device BOOST voltage is refreshed periodically and showed here.

DEVCFG0	
Open Channel Auto Disc.	Disabled
Shorted Channel Auto Disc.	Disabled
Regulation Window	600mV
LED Short Detection	Disabled
Grayscale Mode	Grayscale Dimming
Current Range	20mA - 45mA
Output Voltage Regulation	Enabled
Slave Device Mode	No Slave Devices
DEVCFG1	
Current Gain Range	1 - 1.492
Current Gain Adjust	0
Dimming Latency Cycles Range	0 - 64K
Brightness Data Format	16x16 (12bit res)
Dimming Timing Inversion	Off Phase First
Brightness data update	On LE Falling Edge
Dimming Synch Pin	GSSY Output Pin
Continuous Status Reading	DISABLED
GSLAT	

The most of the DEVCFGx register fields, and the GSLAT as well, are reported here. Each time a value is updated, the SW writes the new configuration, and subsequentially, reload the register involved to be sure the value has been applied.

Note: a particular attention must be taken when changing the **Output Voltage Regulation** field. If its value is **disabled**, the BOOST won't work and the LED strings will not be powered by the STEVAL.

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