

STSW-L99LD21ADIS

L99LD21-ADIS discovery board

Data brief



Description

The STSW-L99LD21ADIS is the Graphical User Interface (GUI) dedicated to set and control the L99LD21-ADIS. This is a flexible LED driver board, designed for the control of four independent high brightness LED strings for automotive front lighting applications.

The STSW-L99LD21ADIS has been developed by using C++ and it works with SPC56B-ADIS programmed with a dedicated Firmware.

Features

 Complete Graphical User Interface (GUI) for L99LD21-ADIS discovery board

Table 1. Device summary

Order code	Reference
STSW-L99LD21ADIS	STSW-L99LD21ADIS GUI for L99LD21-ADIS

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Software installation DB3655

1 Software installation

- Download GUI from www.st.com.
- Run the downloaded executable file this will extract the files to <your chosed folder>
- Open the folder and open the directory <GUI_Installer>
- Click and run the setup file Setup_L99LD2021.exe
- This can be placed in your choice of folder
- Open the folder
- Click on executable file L99LD2021.exe and window below should appear

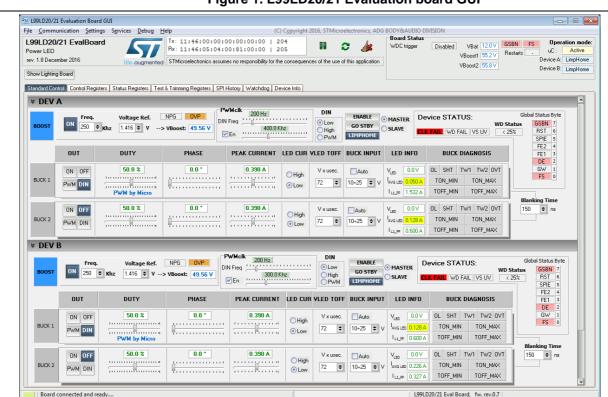


Figure 1. L99LD20/21 Evaluation board GUI



DB3655 Getting started

2 Getting started

Follow all the indication reported in the L99LD21-ADIS user manual.

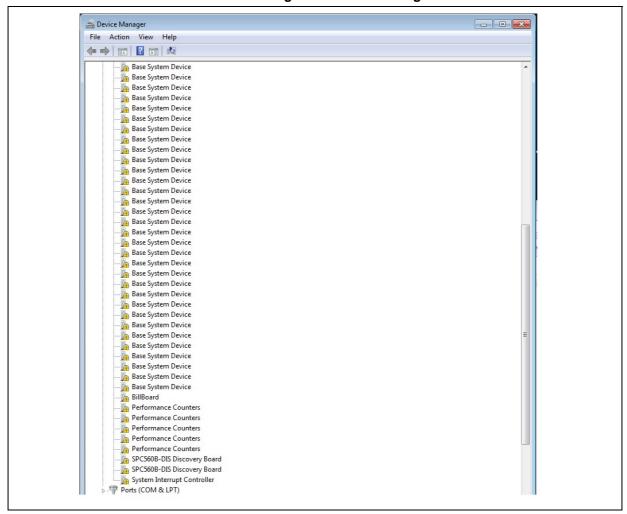


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3 Drivers installation (be sure you are administrator in your machine)

- Following steps must be executed only if connecting USB cable, this error appears: "Device driver software was not successfully installed"
- Select Start->Control Panel->system->device manager:





• Select first item SPC560B-DIS Discovery Board, press right button of the mouse, select update driver chosing Browse my computer for driver software:

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Update Driver Software - SPC560B-DIS Discovery Board

How do you want to search for driver software?

Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software
for your device, unless you've disabled this feature in your device installation
settings.

Browse my computer for driver software
Locate and install driver software manually.

Cancel

Figure 3. Update Driver Software

Select <your chosed folder>\driver and the following message will appear:

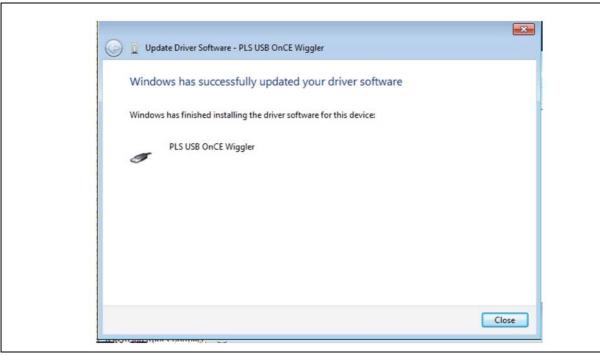


Figure 4. Finished update driver software

- Repeat the previous steps also for the second item SPC560B-DIS Discovery Board in the device manager
- This must be the final result in device manager window:



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🚔 Device Manager File Action View Help Performance Counters

System Interrupt Controller Ports (COM & LPT) Processors Security Devices

Sound, video and game controllers Storage controllers ▶ 1 System devices 🗸 🏺 Universal Serial Bus controllers Generic USB Hub Generic USB Hub
Intel(R) C610 series/X99 chipset USB Enhanced Host Controller #1 - 8D26 Intel(R) C610 series/X99 chipset USB Enhanced Host Controller #2 - 8D2D Intel(R) USB 3.0 eXtensible Host Controller Intel(R) USB 3.0 Root Hub PLS USB OnCE Wiggler PLS USB OnCE Wiggler B USB 2.0 MTT Hub USB 2.0 MTT Hub USB 3.0 Hub USB Composite Device
USB Composite Device
USB Root Hub
USB Root Hub

Figure 5. USB device manager



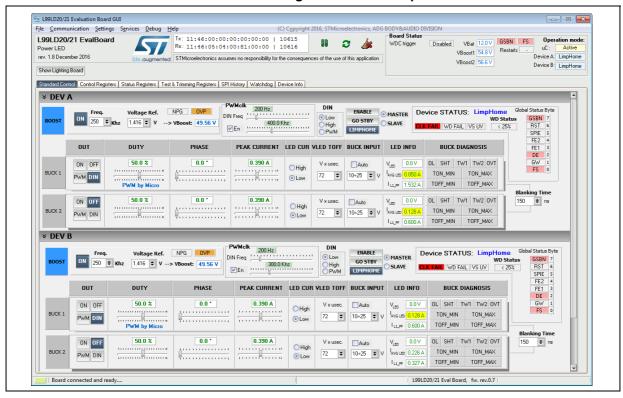
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DB3655 GUI setup

4 GUI setup

- Launch the Evaluation board GUI L99LD2021.exe
- The GUI should appear with Limp Home flashing in the device status boxes (following picture)

Figure 6. GUI start up



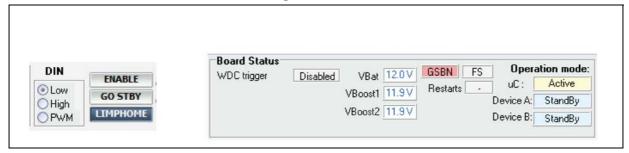


GUI test setup DB3655

5 GUI test setup

Click on 'Go STBY' for both DEV A & B

Figure 7. GUI Board status



Check the Board status and confirm both devices are in standby.

Note: The Vboost will read 12V when boost convertor are switched off

 Click on 'Enable' for both DEV A & B, check status is Active, repeat second time if required to confirm status is active.

Note: The controls for the Bucks will got to a default setting, shown below.

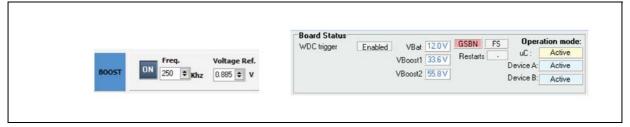
Standard Control | Control Registers | Status Registers | Test & Trimming Registers | SPI History | Watchdog | Device Info * DEV A Voltage Ref. NPG OVP DIN Freq 2000 Hz DIN Freq 40.00 K/hz Freq 2000 Hz ON 250 © Khz 1.416 • V --> VBoost: 49.56 V LIMPHOME DUTY PEAK CURRENT LED CUR VLED TOFF BUCK INPUT LED INFO 0.390 A V_{LED} 0.0 V OL SHT TW1 TW2 OVT 50.0 % 0.0 * ON OFF OHigh V x usec. Auto TON_MIN 72 • 10+25 • V @ Low ILL® 1.532 A TOFF_MIN V_{LED} 0.0 V OL SHT TW1 TW2 OVT 50.0 % Auto OHigh BUCK 2 TON_MIN TON_MAX PWM DIN TOFF MIN TOFF MAX

Figure 8. GUI standard control

6 Example – Set Vboost & PWM

- Click on OFF for BUCK 1 for both DEV A & B
- Ensure Master is selected for both DEV A & B
- For all Bucks set Buck Input to Auto
- Set Vboost for DEV A to ~33.0 V, select 0.885 V under Voltage Ref.
- Vboost for DEV B should remain ~56.5 V, Voltage Ref. set to 1.416 V

Figure 9. GUI Vboost and PWM set up



- DEV A BUCK 1 set PWM to 1.0%, LED Cur to High, Peak Current to 0.340 A
- DEV A BUCK 2 set PWM to 0.6%, LED Cur to Low, Peak Current to 0.170 A
- DEV B BUCK 1 set PWM to 0.5%, LED Cur to High, Peak Current to 0.340 A
- DEV B BUCK 2 set PWM to 2.0%, LED Cur to Low, Peak Current to 0.170 A
- DEV B BUCK 2 set VLED TOFF setting Vxusec to 28

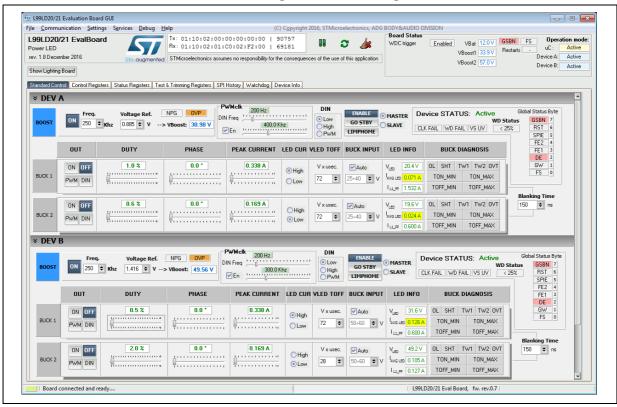


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7 Example – GUI configured

GUI Settings – confirm same as below.

Figure 10. GUI configured





8 Example – Light up the board

- Connect the 4 loads
- Set all bucks to PWM.
- LED Info on the GUI information displays string voltage, average current and peak measurements.



Revision history DB3655

9 Revision history

Table 2. Document revision history

Date	Revision	Changes
26-Jun-2018	1	Initial release.

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