Be smart. Prototype online.

Infineon Designer Getting Started

April 16, 2018

Get support: mailto:support@infineon.com

Agenda

1. Infineon Designer Overview
2. Infineon Designer New Features & New Circuits
3. Getting Started Examples
4. Support

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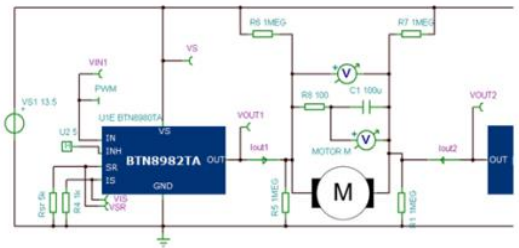
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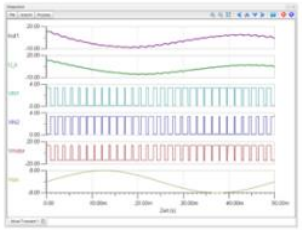
Infineon Designer - Online Digital Prototyping Engine (www.infineon.com/ifxdesigner)



powered by...

TINA
WEB-BASED CIRCUIT DESIGN & ANALYSIS
Cloud
PC, Mac, Tablet, Smartphone
Available in 22 languages





Great user experience

- Multiple platforms (IE, Safari, Chrome, Firefox, etc.)
- No installation
- Unlimited licenses
- Fast simulation due to 16-core server CPU configuration

Features

- Accurate transient and system efficiency simulation of products and applications
- Fast parameter configuration with interpreter window
- Digital/analog co-simulation
- 150+ application circuits (lighting, power supplies, motor control, mobile RF front-end)

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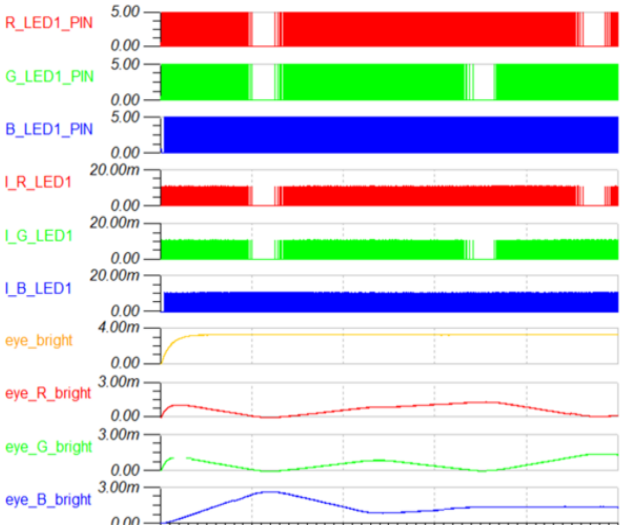
World's First Online Analog-Digital Debugger

Press Release Electronica 2016

1 Select XMC1200 circuit



Example circuit: 32-bit MCU XMC1200 controlling the RGB color walk with constant brightness



3 Co-simulate MCU software with analog circuit

2 Choose simulation mode

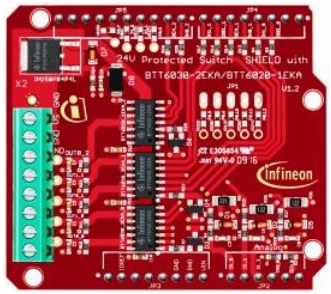
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Highlight: Digital Design Example ATV
24V Arduino Shield PROFET™+ 24V Family

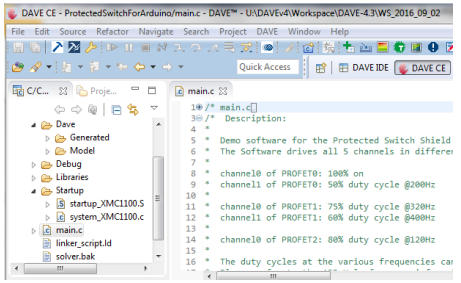
- Unique Value Proposition
  - Customer explore the board by "click & play", w/o reading through manuals & datasheets
  - Customer adapt the soft board (hardware & software) to his own application needs prior to Buy Online

- Full Hardware & Software Design
  - HW: Arduino Shield
  - SW: DAVE
  - Online Circuit: TINA SPICE
  - Engine: DesignSoft
  - Hosting: Infineon & DesignSoft

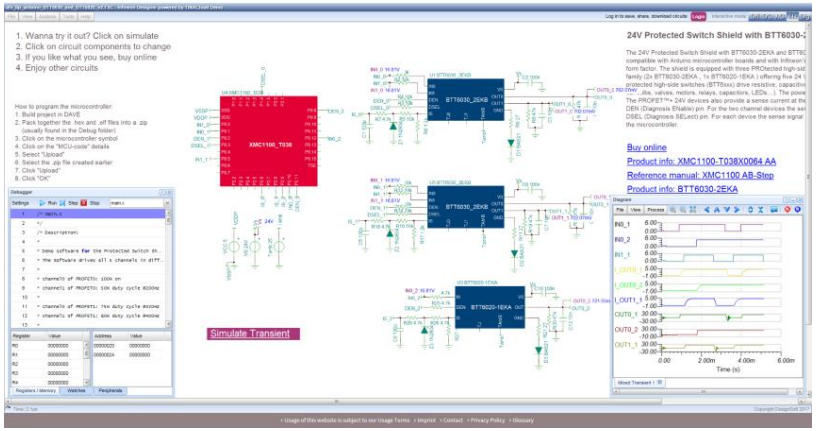
Hardware



Software



Online Virtualization



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Infineon Designer Versions
Landing Page: www.infineon.com/ifxdesigner

Infineon server	DesignSoft server

Online

www.infineon.com/ifxdesigner

Simulate
Share



Design
Simulate
Share

www.tinacloud.com

TINA WEB-BASED CIRCUIT DESIGN & ANALYSIS Cloud

PC, Mac, Tablet, Smartphone
Available in 22 languages

Design
Simulate
Share

Online

Upgrade

Firewall

Offline

TINA v11

Design
Simulate

Offline

DesignSoft
Excellence in Computer Aided Design and Educational Software

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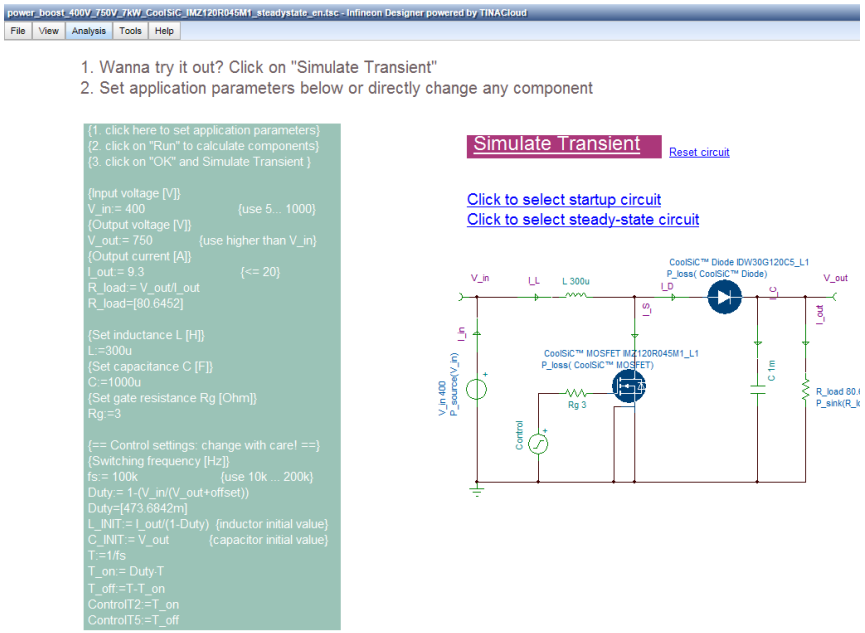
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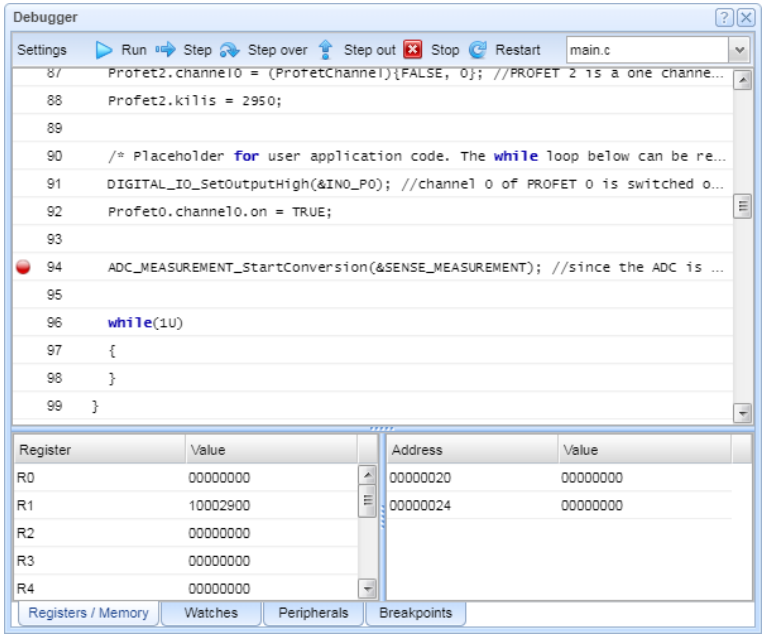
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Infineon Designer
New Features

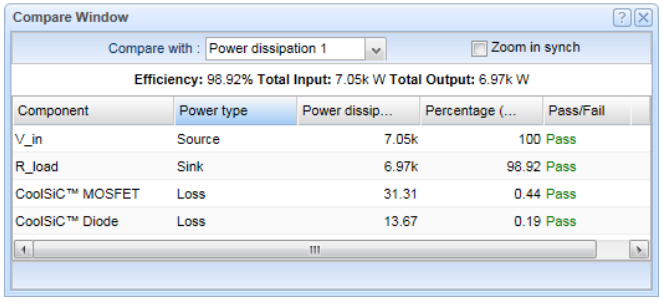
Parametric configurable circuit



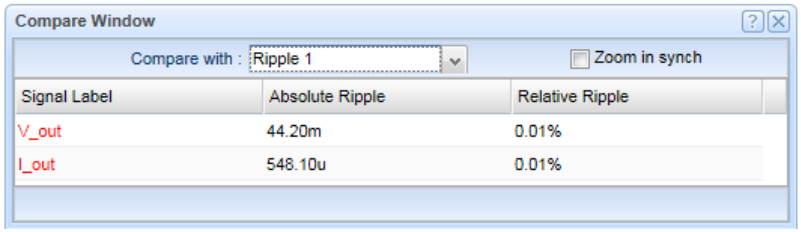
Enhanced MCU debugging



Power dissipation & efficiency



Signal processing, e.g. ripple



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Infineon Designer
New Circuits Highlights

- Motor Control (ATV)
  - 24V DC Motor Control Shield with BTN8982TA for bi-directional DC brushed motor (with torque simulation)
  - 12V DC Motor Control Shield with BTN8982TA for two uni-directional or one bi-directional DC brushed motor
  - 12V DC Motor Control Shield with BTN8982TA and XMC1100 for two uni-directional or one bi-directional DC brushed motor
- Smart Low-Side & High-Side Switches (ATV)
  - 24V PROFET™ shield with BTT6030-2EKA and BTT6020-1EKA for Arduino
  - 13.5V low side over-temperature protection with HITFET™ BTF3050TE
  - 24V high side over-current and over-temperature protection with PROFET™ BTT6020-1EKA
  - 13.5V high side short-circuit protection and thermal shutdown with restart using PROFET™ BTS4140N
- ESD Protection
  - ESD Protection Diode with Low clamping voltage bi-directional ESD237-B1-W0201 Electrical Characteristics
  - ESD Protection Diode with Low clamping voltage bi-directional ESD241-B1-W0201 Insertion Loss
- Power Converter (Expert Talk)
  - 200V Boost Converter with CoolMOS™ P6 and EiceDRIVER™ 2EDN7523F
  - Expert Talk: What is a Power Converter (SMPS)?
  - Expert Talk: What is a DC-DC Converter (SMPS)?

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Infineon Designer Example
Getting Started

Infineon Designer: Getting Started

Infineon Designer is based on the easy to use multi-language TinaCloud environment. This is the online version of the popular TINA circuit simulation software now running in your browser without installation, on multiple platforms (PC, laptop, mobile, tablets, etc.). Analog circuits are modeled in Spice and can be co-simulated with digital systems using hardware description languages such as VHDL and Verilog.

How to select a device?

1) type Strg/CTRL-F and search for e.g. "U1"
2) the MOSFET device will turn red
3) click on the red symbol and open properties
4) click on "SubCkt-Type" to change the part
5) type the name into search or
6) use the pull-down to select a technology
7) click on OK and the part will change (may take a while)

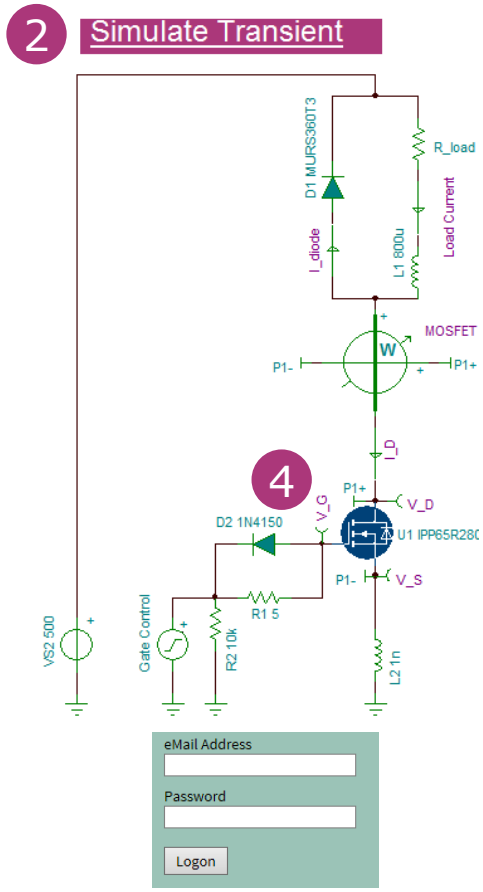
How to search and display signals?

1) click on "Simulate Transient"
2) search with "Strg/CTRL-F" for "V_G" voltage pin turning red
3) click on the voltage pin and open properties
4) change the "IO state" to "Output" for display
5) Label "V_G:2" will be displayed as signal number 2
6) now simulate again and the signal will be displayed

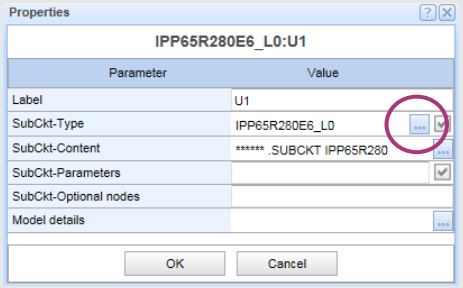
How to save & share circuits?

1) click on login in the menu above
2) File -> Open -> Infineon Examples
3) change the circuit and click on File -> Save as
4) the circuit will be saved in the "My Circuits" folder
5) File -> Share and copy the link -or-
6) send an Email to share your circuit

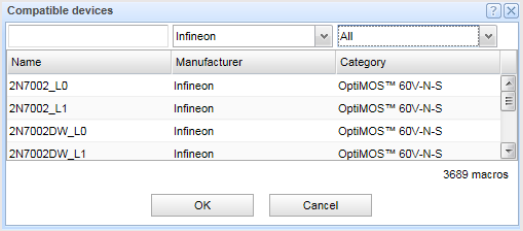




1. Open circuit getting started
2. Click on Simulate Transient
3. Learn about functions & signals in the diagram window
4. Click on the MOSFET symbol and click on "…" "SubCkt-type"



5. Select a new MOSFET from the drop-down menu

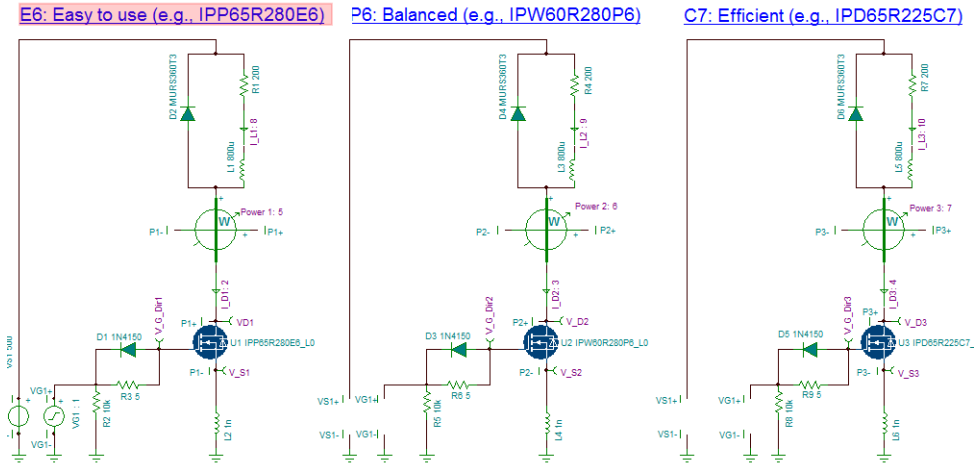


6. Login with your My Infineon account to save or share your circuit

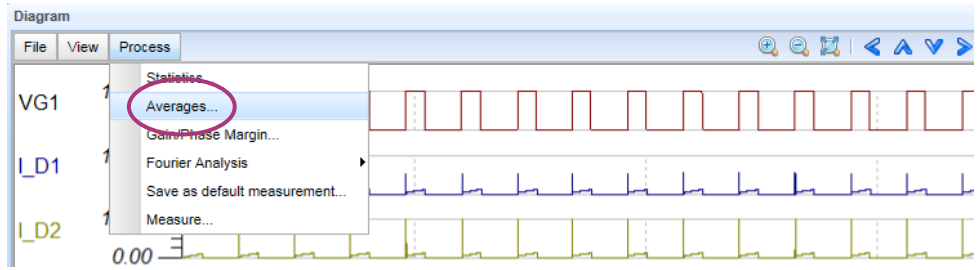
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Infineon Designer Example
MOSFET Performance Comparison

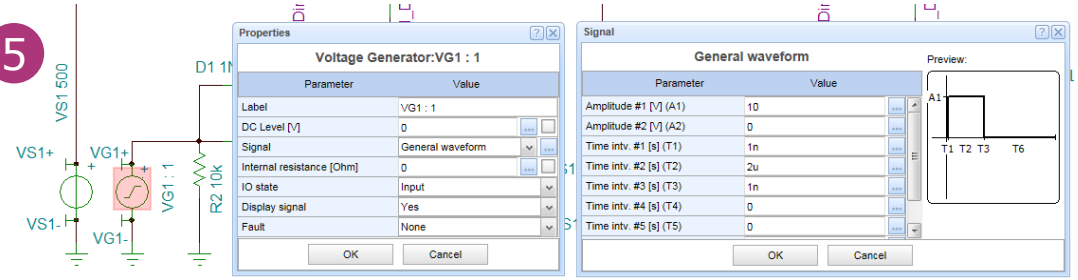
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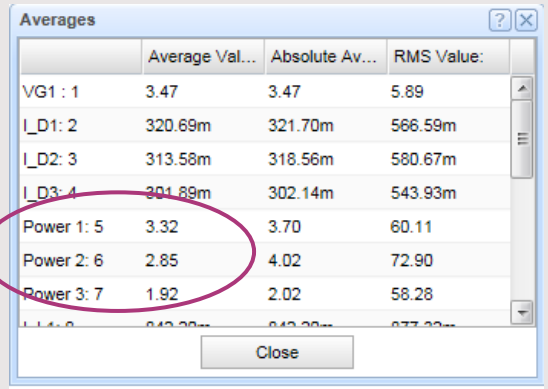
3



5



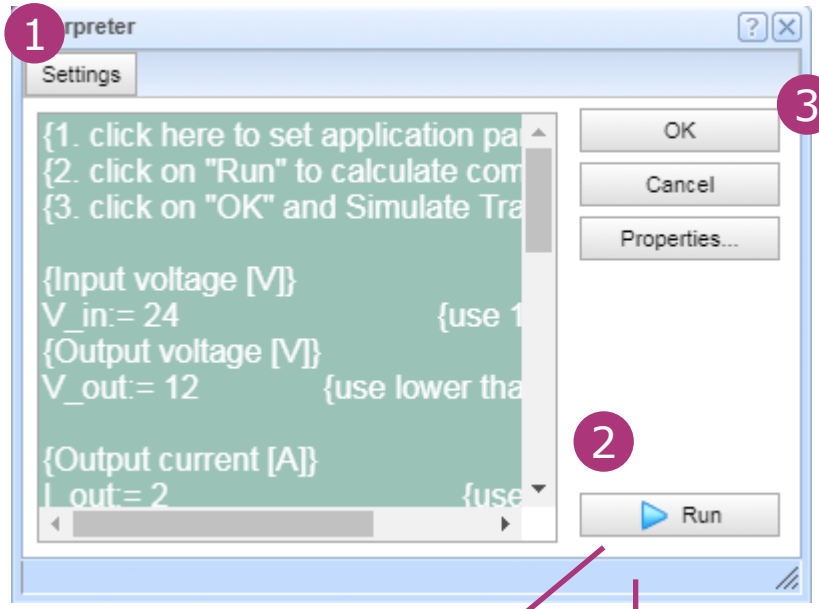
1. Open circuit MOSFET performance comparison
2. Click on Simulate Transient
3. Click on the menu item process → Averages in the diagram window

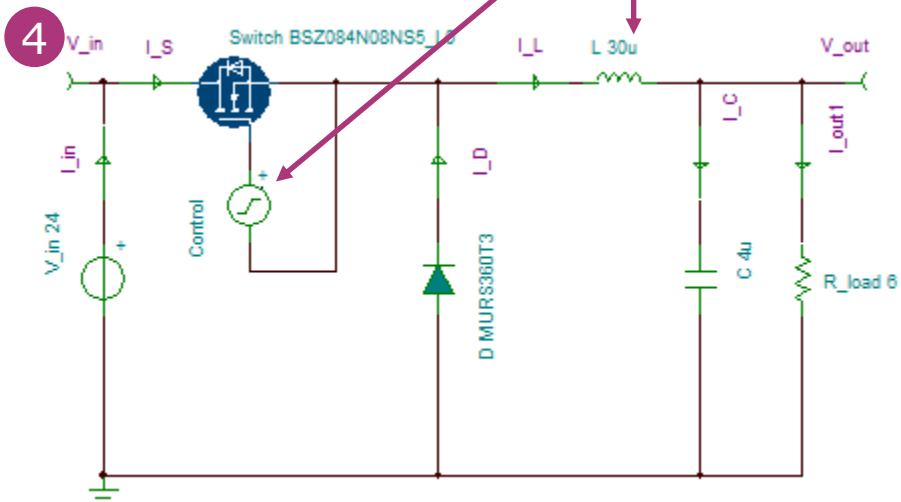


4. Compare the different power losses of the 3 MOSFETs
5. Change the PWM pattern of VG1 voltage generator and simulate again
6. Click on Buy online and compare the prices

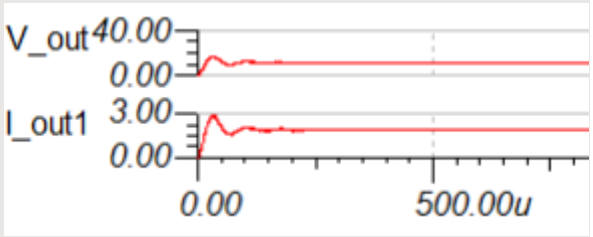
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Infineon Designer Example: Circuit Configurator





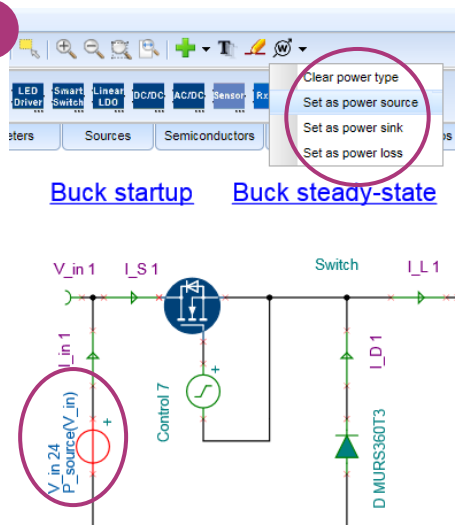
1. Open circuit Design a 24V Buck Converter in CCM mode
2. Click on green window and configure converter input to output spec in interpreter
3. Click on Run and interpreter will configure all circuit components (Duty Cycle, L, etc.)
4. Click on OK and run Simulate Transient
5. Check new converter input to output spec in diagram window



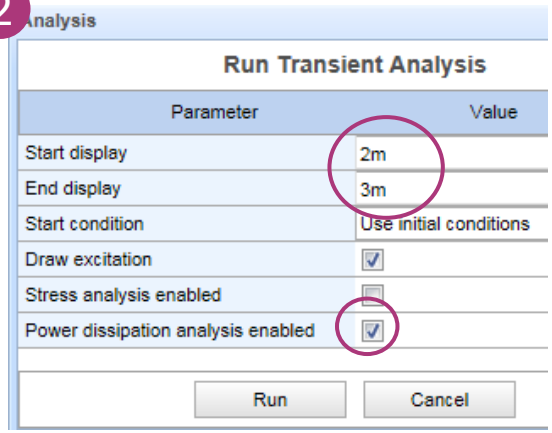
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Infineon Designer Example:
Power Dissipation & Efficiency Calculation

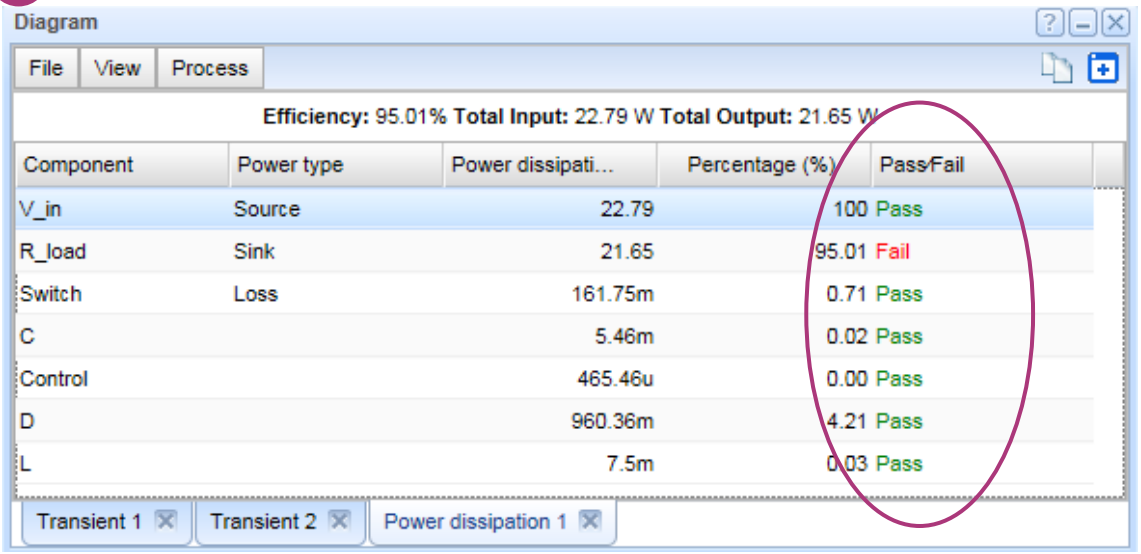
1



2



3

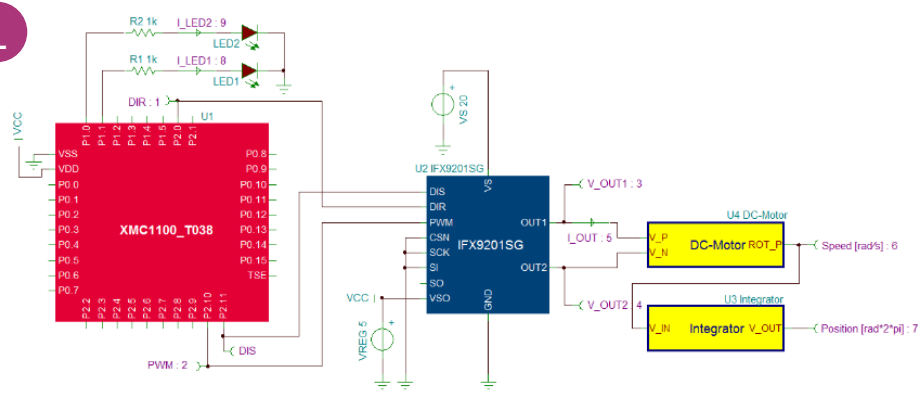


1. Open circuit where power type are set
2. Open Analysis -> Transient and enable Power dissipation analysis
   Important: set start display and end display to steady state timing (signals need to be stable)
3. Click on Simulate Transient
4. Open Power dissipation tab after simulation
   - Efficiency
   - Power Dissipation of all components sorted by Source, Sink, Loss
   - Pass or Fail depending on component rating

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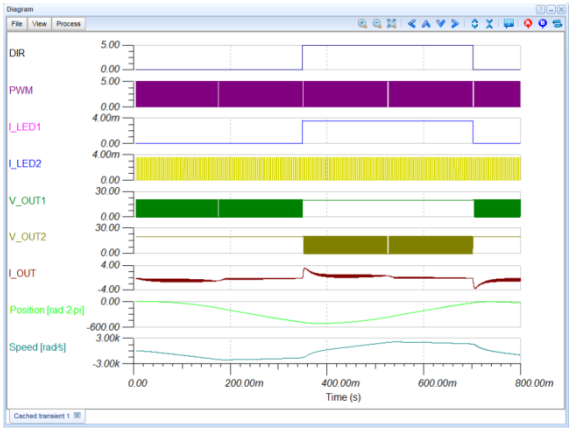
Infineon Designer Example: Enhanced MCU Debugging (H-bridge Kit 2Go)

1

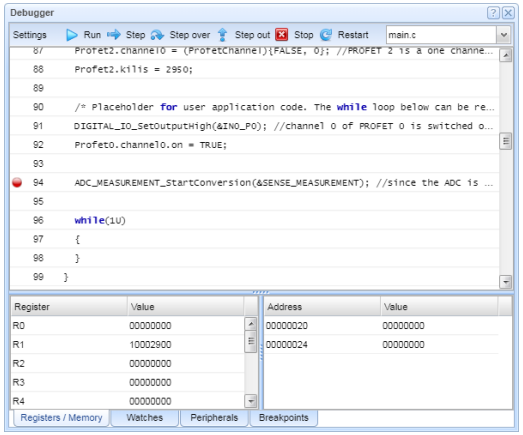


2 Simulate Transient

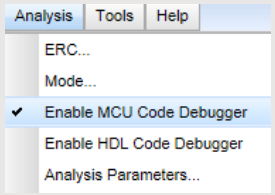
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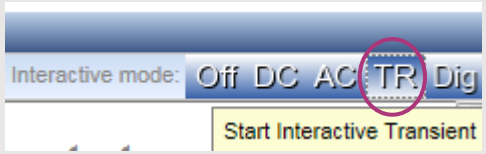
5



1. Open Design H-bridge Kit 2Go
2. Click on Simulate Transient
3. Learn about functions & signals in the diagram window
4. Enable MCU code debugger



5. Start Simulation in interactive mode, set break point, step through the code, watch variables and registers



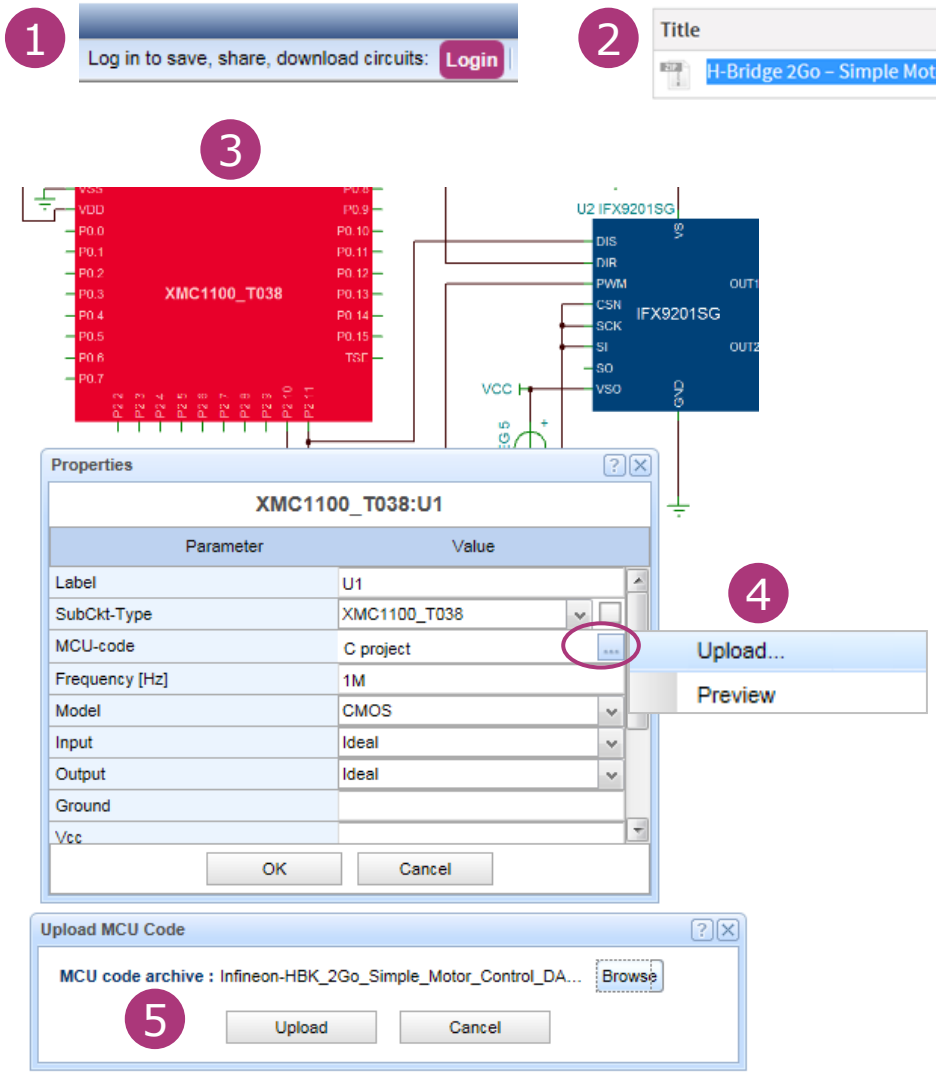
6. Purchase sample & board



Buy online

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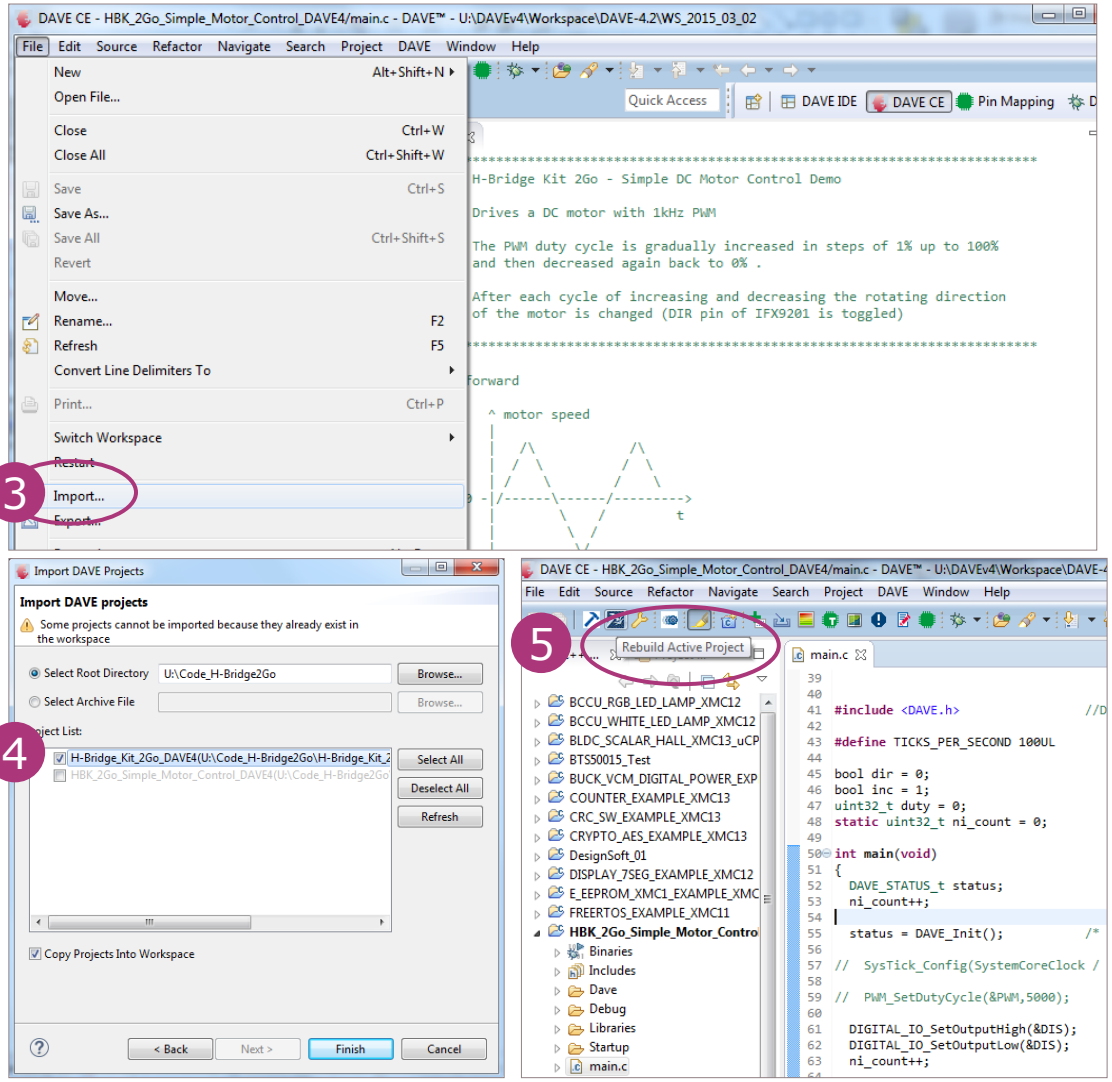
Infineon Designer XMC™ software example H-bridge Kit 2Go (Part 2/3: software upload)



1. Open design H-bridge Kit 2Go and login with MyInfineon account
2. Download code .zip file H-bridge Kit 2Go – default simple example routine example from the H-bridge kit board page software & tools tab
3. Click on the red XMC1100 symbol and open the MCU code window by clicking on "…"
4. Browse to the.zip file and select it (contains files .elf, .hex and source files)
5. Upload the code Infineon-HBK_2Go_simple_motor_control_DAVE4.zip-SW-v01_00-EN.zip
6. Click on Simulate Transient
7. Check the results

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Infineon Designer XMC™ software example [H-bridge Kit 2Go](#) (Part 3/3: software rebuild)



1. Download and install DAVE™ software development suite [DAVE™ for windows](#)
2. Download code .zip file [H-bridge Kit 2Go – default Simple example routine](#) example from the H-bridge kit board page [software & tools tab](#)
3. Start DAVE™ and import the unzipped project into your workspace with file → import → Infineon DAVE™ project
4. Click on next and browse to the folder with the project and select it
5. Change the code and rebuild
6. Go to your workspace directory and .zip the updated project folder
7. Got back to the schematic click on the red XMC1100 symbol and upload the MCU code

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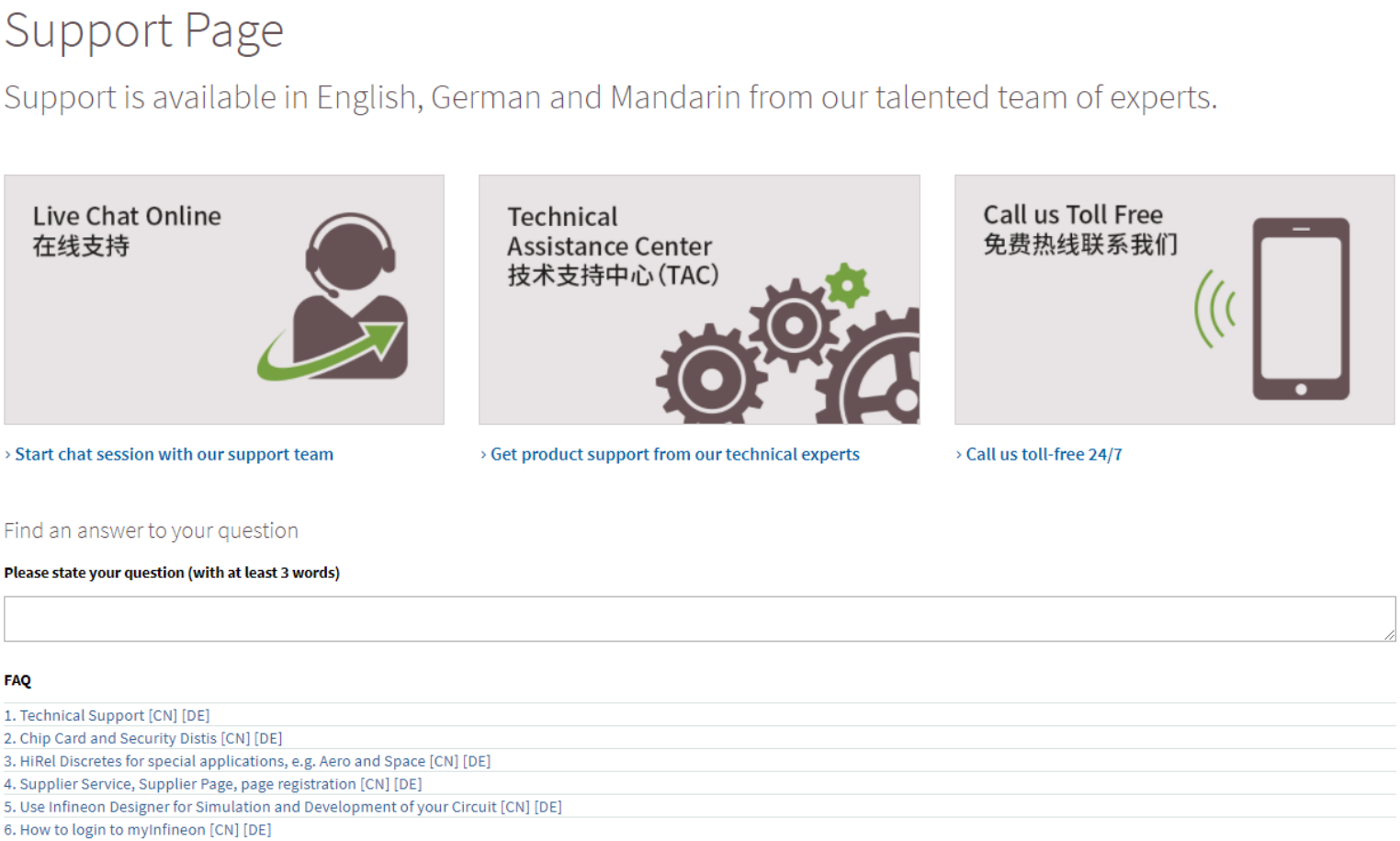
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Technical Support

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