

ML605 Power Bus Monitoring

April 2009

Overview

- Caution!
- Xilinx ML605 Board
- Hardware & Software Requirements
- Setup
 - ML605
 - Software Requirements
 - Connect TI USB Interface Adapter
- TI Fusion Digital Power Designer Tutorial
- TI Fusion Digital Power Manufacturing Tool Tutorial



Caution!

- The TI Software used in this presentation can adjust the power supply outputs on the ML605
- If used improperly, it may seriously damage your ML605
- Before making any adjustments not specifically covered in this presentation,
 - Understand the power requirements for Virtex-6 Devices
 - Understand the consequences of the change you are making
- NOTE: This presentation uses an ML605 as an example. These instructions may be followed for an SP605 as well.







Xilinx ML605 Board



EXILINX.

Note: Presentation applies to the ML605

Hardware Requirements

- TI USB Interface Adapter EVM
 - TI Part number: USB-TO-GPIO





Software Requirements

• TI Digital Power Software

- TI Part Number: FUSION_DIGITAL_POWER_DESIGNER
- Download: <u>http://www.ti.com/lit/zip/slvc118</u>

| About Texas Instruments Fusion Digital Power Designer | | | | | | |
|---|---|--|--|--|--|--|
| TEXAS INSTRUMENTS Technology for Innovators [™] | | | | | | |
| Texas Instruments Fusion Digital Power I Version 1.6.44.2 Built On Tuesday, March 03, 2009 4:41:46 PM Centr Copyright © Texas Instruments, Inc 2008-2008 This software utilizes material that is © 1994-2007 D licensors, all rights reserved. Portions © 2000-2007 2004 Eran Kampf. Licensed under LGPL. Portions © reserved. | Designer ral America Standard Time DUNDAS DATA VISUALIZATION, INC. and its 7 Developer Express, Inc. Sharp3D.Math © 2000-2007 Michael S. Muegel, all rights | | | | | |



Software Requirements

TI Digital Power Software

- TI Part Number: FUSION_MFR_GUI
- Download: http://www.ti.com/lit/exe/sldc005

| About Texas Instruments Digital Power Manufacturing Tool | | | | | | | |
|--|--|--|--|--|--|--|--|
| TEXAS INSTRUMENTS Technology for Innovators [™] | | | | | | | |
| ✓ Texas Instruments Technology for Innovators [™] Texas Instruments Digital Power Manufacturing Tool Version 1.2.39 Built On Wednesday, May 12, 2010 12:59:24 PM Mountain Daylight Time Copyright © Texas Instruments, Inc 2006-2010 View License | | | | | | | |



Software Setup

Install the TI Fusion Digital Power Designer (DPD) Software

| 🔁 WinZip - slvc118p.zip | | |
|---|-----------------------|------------------|
| <u>File Actions Options H</u> elp | | |
| 🏷 🐼 🐼 🐼 🖉 🤌 | | |
| Name | Path | Modified |
| TI-Fusion-Digital-Power-Designer-1.6.44.2.exe | | 3/3/2009 4:42 PM |
| Selected 0 files, 0 bytes | Total 1 file, 7,482KB | 🗖 🔿 🗇 🖉 |



Connect TI USB Interface Adapter

On the TI USB Adapter

- Connect the Ribbon Cable
- Connect the USB Cable







Connect TI USB Interface Adapter

Connect the Ribbon Cable to the ML605

Red stripe towards pin 1





Open Digital Power Designer (DPD)

DEXAS INSTRUMENTS

Fusion Digital Power Designer

Version 1.6.44.2 [2009-03-03]

Fusion Digital Power Designer is a Graphical User Interface (GUI) used to configure and monitor Texas Instruments digital power controllers.

If this is your first time using the GUI, please review the <u>user's quide</u>. The guide is in Adobe Acrobat (PDF) format. You can also launch the user's guide from the Help menu.

The GUI can run in one of two modes:

- Online. The GUI configures one or more devices connected to one or more USBbased serial bus adapters. For each USB adapter found, the GUI automatically detects devices on the serial bus. The GUI needs to be instructed what type of device you expect to configure, however. This will be done on the next screen.
- Offline. The GUI can store a device's configuration, along with GUI-centric configuration data such as design input parameters, in a project file. This lets you configure your device offline. You can either open an existing project file or create a new file based on a canned, EVM default configuration.

Every time the GUI starts up, it will look for the USB adapter and scan for devices. If the USB adapter is not present or no devices could be found, you can switch to offline mode by clicking the "Offline Mode" button.

Launch User's Guide

OK

S XILINX

Click on UCDXXX and Similar

TEXAS INSTRUMENTS

Fusion Digital Power Designer

Version 1.6.44.2 [2009-03-03]

Select Device Scanning Mode

If you have one or more devices connected, select the type of device you wish to configure

UCD9XXX and Similar

UCD9111, UCD9112, UCD9240, and other digital power controllers that support the DEVICE_ID protocol for device detection.

TPS40400 TPS53951

Analog power controllers.

Your selection will be used the next time Fusion Digital Power Designer launches.

Clear Scan Address Customizations

Offline Mode

Exit Program

S XILINX

Note: Presentation applies to the ML605

The DPD opens; Click on Monitor

| 🚸 Fusion Digital Power D | Designer - UCD9240 @ Address 2 Rail #1 - Texas Instruments | × |
|-------------------------------------|---|--------------|
| File Device Tools He | UCD9240 @ Address 2 Rail #1 | \checkmark |
| Configure | Vout Config Other Config Advanced Config Phase/Rail Config GPIO Config CLA Banks | |
| Write to Hardware | Soft Start & Stop Timing UCD9240 @ 2 Rail #1 | ווב |
| Auto write on rail or device change | 2.75 Image: Set point, Margins, and Limits 2.50 E UCD9240 @ 2 Rail #3 UCD924 Vout Max: 1.600 ⊕ V (Edit Voltage Feedback Design) | |
| Discard Changes | 1.75 → V 15.0 → % OV Response ∨ | |
| Store RAM To Flash | 9 1.25 1.00 1.00 UCD9240 @ 2 Rail #1 Over Warn: 1.125 ♥ V 12.5 ♥ % | |
| | 0.75 0.50 Margin High: 1.100 ↔ V 10.0 ↔ % | |
| Restore Flash to RAM | 0.25 0.25 0.00 ↓ Vout: 1.000 ↓ V | |
| Clear Restore Notices | 0 4 8 12 16 20 24 28 32 36 Margin Low: 0.900 ↔ V -10.0 ↔ % ✓ Synchronize margins/limits/ | |
| Plot: | Time Under Warn: 0.875 ⊕ V -12.5 ⊕ % PG to Vout | |
| di Configure | Under Fault: 0.850 V -15.0 % UV Response V | |
| Design | Select Rail to Edit Device Rail Name Vout . Rise Over Current LV: 0.900 V -10.0 V OC LV Response | |
| - Monitor | UCD924 1 UCD9240 1.000 5.0 1 Power Good On: 0.900 ↔ V -10.0 ↔ % | |
| | UCD924 2 UCD9240 2.500 5.0 1 Power Good Off: 0.875 ↔ V -12.5 ↔ % | |
| 🤣 Status | | |
| 🤣 Security | VOUT_MARGIN_LOW [0x26,Rail #1] Transaction Log | |
| Fusion Digital Power Designer | r v1.6.44.2 [2009-03-03] UCD9240 Firmware v3.24.0.8163 [2008-09-15] USB Adapter v1.0.10 [P 😽 TEXAS INSTRUMENTS fusion digital pow | ver |

Select Vin and lin – Input voltage and current from the Power Brick

- 12 V Input, and 8 Amps current draw

| 📲 Fusion Digital Power Designer - UCD9240 @ Address 2 Rail #1 - Texas Instruments 📃 🗖 🔀 | | | | | | |
|---|--|--|--------|--|--|--|
| File Device Tools H | elp | UCD9240 @ Address 2 Rail #1 | \sim | | | |
| Monitor | Readings | Vin - Input Voltage | อ | | | |
| Show/Hide Plots: Vin Iin Pin Vtrack Pin(conv Vout Iout Pout Temp Duty Eff(conv) | Vin: 12.172 V Iin: 8.17 A Pin: 99.50 W Vtrack: V Vout: 1.013 V Pout: 1.31 W Duty Cycle: 10.11 % | OVF: 14.500 ÷ V OVW: 14.000 ÷ V UVW: 6.000 ÷ V UVF: 5.500 ÷ V VinON: 6.000 ÷ V VinOFF: 5.000 ÷ V Write 12.172 V 10 5 5 5 | | | | |
| Fit All Plots on Screen Scale Plots to Screen Width Height: 175 | Fan Speed: 0 RPM Pin(conv): 1.58 W Eff(conv): 82.32 % Iout: Temp: | 0 30:00 30:20 30:40 31:00 31:20 Tin - Input Current | - | | | |
| Show Warn & Fault Limit Editors Show Value Labels on Plots Stop Polling Rail Dashboard System Dashboard | Phase #1 1.28 A 60 °C Status Registers/Lines Vout: OK Iout: OK Temp: OK Input: OK CML: OK Fans: None installed Misc: OK | 10 8.17 A 8 6 4 2 0 20,00 20,20 20,40 21,00 21,20 | | | | |
| | Logged Faults: OK | JU.00 JU:20 JU:40 JI:00 JI:20 | | | | |

Select Vout lout, Pout, and Temp – Measurements for VCCINT_FPGA (1.0 V)

- TI <u>PTD08A020W</u> - 20A, 4.75V to 14V, Non-Isolated, Digital PowerTrain Module (U42)

| 🦑 Fusion Digital Power Designer - UCD9240 @ Address 2 Rail #1 - Texas Instruments 📃 🗖 🔀 | | | | | | | |
|--|---|---|---|--|--|--|--|
| File Device Tools He | elp | | | UCD9240 @ Address 2 Rail #1 | | | |
| Monitor | Readings | | Vout Rail #1 - Output Voltage 🛛 💌 | Iout Rail #1 - Output Current | | | |
| Show/Hide Plots: Vin Iin Pin Vtrack Pin(conv Vout Iout Pout Temp Duty Eff(conv) Fit All Plots on Screen Scale Plots to Screen Width | Vin: 12.188 V Iin: 8.16 A Pin: 99.25 W Ytrack: V Yout: 1.013 V Pout: 1.33 W Duty Cycle: 9.84 % Fan Speed: 0 RPM Pin(conv): 1.56 W Eff(conv): 84.44 % | = | OVF: 1.150 ↓ V OVW: 1.125 ↓ V UVW: 0.875 ↓ V UVF: 0.850 ↓ V Write 1.4 0.8 1.013 ↓ 0.4 0.4 0.4 0.4 0.4 37:40 37:40 38:00 38:20 | OCF: 14.00 ↔ A OCW: 13.00 ↔ A UCF: -10.00 ↔ A Write 15 10 5 0 -5 -10 -15 37:40 38:00 38:20 38:40 | | | |
| Height: 175 🖨 | Iout: Temp: Phase #1 1.30 A 59 °C | | Pout Rail #1 - Output Power | Temp Rail #1 - Maximum Temperatur¥ OTF: 80 ♀ ℃ | | | |
| Show Value Labels on Plots Stop Polling Rail Dashboard System Dashboard | Status Registers/Lines Vout: OK Iout: OK Temp: OK Input: OK CML: OK Fans: None installed Misc: OK Logged Faults: OK | | 1.32 W 1 0.5 0 37:40 38:00 38:20 38:40 | OTW: 75 ⊕ °C Write 100 80 60 40 20 0 37:40 38:00 38:20 38:40 | | | |

Select Address 2, Rail #2



View VCC2V5_FPGA (2.5 V)

- TI <u>PTD08A020W</u> - 20A, 4.75V to 14V, Non-Isolated, Digital PowerTrain Module (U43)

| File Device Tools Help Monitor Show/Hide Plots: Image: Comparison of the product of the | 🤚 Fusion Digital Power Designer - UCD9240 @ Address 2 Rail #2 - Texas Instruments | | | | | | | |
|--|---|---|---|--|--|--|--|--|
| Monitor Readings Vout Rail #2 - Output Voltage Iout Rail #2 - Output Current Iout Rail #2 - Output Current Iout Rail #2 - Output Current Show/Hide Plots: Vin: 12.172 V Iin: 8.16 A Pin Vtrack: V Vout: 2.750 © V V Vout: 2.511 V Vin: 2.250 © V V Vin: 13.00 © A Vout: 2.511 V Vout: 2.250 © V Vin: 2.2511 V Pout: 0.06 W UVF: 2.200 © V Write 100 A Vin: Scale Plots to Screen Width Pin(conv): 0.08 W Eff(conv): 9.42 % Pout: 53:00 53:20 53:40 54:00 Status Registers/Lines Vout: 0.05 0.08 W 0.08 W 0.15 0.15 0.15 0.15 0.15 0.16 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.15 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % 0.05 0.08 % <td>File Device Tools He</td> <td>elp</td> <td></td> <td>UCD9240 @ Address 2 Rail #2</td> | File Device Tools He | elp | | UCD9240 @ Address 2 Rail #2 | | | | |
| Show/Hide Plots: Vin: 12.172 V In: 8.16 A Pin: 99.38 W Vinconv Vout Vine: 2.511 V Im: 0.06 % Vout: 2.511 V Pout: 0.08 W Duty Cycle: 20.75 % Fit All Plots on Screen Rai Deshboard Scale Plots to Screen Inc: Yout: 0.8 W Duty Cycle: 20.75 % Fan Speed: 0 RPM Phase #1 0.03 A Status Registers/Lines 0.15 Vout: 0.14 OV: 0.08 W 0.05 0.08 W 0.05 0.08 W Eff(conv): 99.42 % Pout Rail #2 - Output Power Temp: Phase #1 0.03 A 60 °C Status Registers/Lines 0.15 Vout: 0.14 0.08 W 0.05 0.08 W 0.08 W 0.15 0.08 W 0.08 W 0.16 0.08 W 0.08 W 0.17 0.08 W 0.08 W 0 | Monitor | Readings | Yout Rail #2 - Output Voltage 🛛 🙁 | Tout Rail #2 - Output Current 🛛 🔳 | | | | |
| Width Eff(conv): 99.42 % Indut: Temp: ✓ Show Warn & Fault Limit Editors Iout: Temp: OK Other Control Content Control Control Control Control Control | Show/Hide Plots: Vin Iin Pin Vtrack Pin(conv Vout Iout Pout Temp Duty Eff(conv) Fit All Plots on Screen Scale Plots to Screen | Vin: 12.172 V Jin: 8.16 A Pin: 99.38 W Vtrack: V Vout: 2.511 V Pout: 0.08 W Duty Cycle: 20.75 % Fan Speed: 0 RPM Pin(conv): 0.08 W | $= \begin{array}{c} 0 \forall F: 2.800 & \forall \\ 0 \forall W: 2.750 & \forall \\ 0 \forall W: 2.250 & \forall \\ 0 \forall W: 2.250 & \forall \\ 0 \forall W: 2.200 & \forall \\ 0 \forall W: 2.200 & \forall \\ 0 \forall W \\ 0 W \\ 0 \forall W \\ 0 \forall W \\ 0 W \\ 0 \forall W \\ 0 \forall W \\ 0 \forall W \\ 0 W \\ 0$ | OCF: 14.00 ↔ A OCW: 13.00 ↔ A UCF: -10.00 ↔ A | | | | |
| Limit Editors Show Value Labels on Plots Stop Polling Rail Dashboard System Dashboard System Dashboard Linged Faults: OK Logged Faults: OK | Width Height: 175 💭 | Eff(conv): 99.42 % Iout: Temp: Phase #1 0.03 A 60 ℃ | Pout Rail #2 - Output Power 0.15 | Temp Rail #2 - Maximum Temperatur≭ OTF: 80 ⊕ °C | | | | |
| | Limit Editors Show Value Labels on Plots Stop Polling Rail Dashboard System Dashboard | Status Registers/Lines Vout: OK Iout: OK Temp: OK Input: OK CML: OK Fans: None installed Misc: OK Logged Faults: OK | 0.1 0.08 W 0.05 0 52:40 53:00 53:20 53:40 54:00 | OTW: 75 ⊕ °C Write 100 80 60 40 20 52:40 53:00 53:20 53:40 54:00 | | | | |

At Address 2, Rail #3, view VCCAUX (2.5 V)

- TI PTD08A010W - 10A, 4.75V to 14V, Non-Isolated, Digital PowerTrain Module (U91)



Select Address 3, Rail #1

- Click Monitor

| 👆 Fusion Digital Power D | Designer - UCD9240 @ Address 3 Rail #1 - Texas Instruments | × |
|-------------------------------------|--|--------------|
| File Device Tools He | UCD9240 @ Address 3 Rail #1 | \checkmark |
| Configure | Vout Config Other Config Advanced Config Phase/Rail Config GPIO Config CLA Banks | |
| Write to Hardware | Soft Start & Stop Timing UCD9240 @ 3 Rail #1 | |
| Auto write on rail or device change | 3.50 UCD9240 @ 3 Rail #4 3.00 E 2.50 E | |
| Discard Changes | 2.30 → 9 9 2.00 | |
| Store RAM To Flash | UCD9240 @ 3 Rail #2 UCD9240 @ 3 Rail #3 Over Warn: 1.075 ⊕ V 7.5 ⊕ % | |
| Partera Elarte ta DAM | 0.50 - Margin High: 1.050 ⊕ V 5.0 ⊕ % | |
| Restore Hash to RAM | 0.00 + 0. | |
| Clear Restore Notices | Time Margin Low: 0.950 + V -5.0 + % Synchronize margins/limits/ | |
| Plot: | Under Warn: 0.925 V -7.5 W PG to Vout | |
| 🚸 Configure | Select Rail to Edit Under Fault: 0.900 V -10.0 V UV Response V | |
| 🚸 Design | Device Rail Name Vout . Rise UCD924 1 UCD9240 1.000 5.0 1 | |
| - Monitor | UCD924 2 UCD9240 1.250 5.0 1 Power Good On: 0.925 V -7.5 V | |
| Monicor | UCD924 3 UCD9240 1.500 1 Power Good Off: 0.900 ♥ V -10.0 ♥ % | |
| 🦑 Status | | 1 |
| 👆 Security | VOUT_MARGIN_HIGH [0x25,Rail #1] Transaction Log | Ĵ |
| Fusion Digital Power Designer | er v1.6.44.2 [2009-03-03] UCD9240 Firmware v3.24.0.8163 [2008-09-15] USB Adapter v1.0.10 [P 😽 Texas Instruments fusion digital powe | er - |

At Address 3, Rail #1, view MGT_AVCC (1.0 V)

- Discrete Components

| 🜵 Fusion Digital Power Designer - UCD9240 @ Address 3 Rail #1 - Texas Instruments 🔹 💷 🔀 | | | | | | | |
|---|---------------------------|----------------|---------|---|---|--|--|
| File Device Tools He | łp | | | | UCD9240 @ Address 3 Rail #1 | | |
| Monitor | Readings | | \land | Vout Rail #1 - Output Voltage 🛛 🙁 | Tout Rail #1 - Output Current 🛛 🔳 | | |
| Show/Hide Plots: | Vin: 12.203 | V | | OVF: 1.100 ⊕ V | OCF: 5.00 ⊕ A | | |
| 🗌 Vin 📄 Iin | Iin: 8.17 | A | | | | | |
| Pin 🗌 Vtrack | Pin: 99.75 | w | | 0vw: 1.075 v | 0Cw: 4.00 V A | | |
| Pin(conv 🗹 Vout | Vtrack: | v | | UVW: 0.925 🕀 V | UCF: -10.00 🖨 A Write | | |
| Iout ⊻Pout | Yout: 1.020 | v | _ | UVF: 0.900 🗘 V Write | 5 | | |
| Temp Duty | Pout: 0.54 | W | | 1-9 1 | 0 | | |
| | Duty Cycle: 8.34 | % | | 1.020 V | -5 | | |
| • Fit All Plots on Screen | Fan Speed: 0 | RPM | | | -10 | | |
| O Scale Plots to Screen | Pip(copy): 0.53 | w | | 09:20 09:40 10:00 10:20 10:40 | -15 09:20 09:40 10:00 10:20 10:40 | | |
| Width | Eff(conv): 100.18 | 0/. | | | | | |
| Height: 175 🖨 | En(conty). 100.10 | | | Pout Rail #1 - Output Power 💌 | Temp Rail #1 - Maximum Temperatur 🗶 | | |
| | Iout: | Temp: | | | OTF: 200 👽 ℃ | | |
| 🗄 Configure | Phase #1 0.52 A | 99 °C | | 0.5 | OTW: 75 € °C Write | | |
| | Status Registers/Lines | | | | 250 + | | |
| 🤣 Design | Yout: OK | | | 0.4 | 200 | | |
| -Britania | Iout: OK | | | | 150 | | |
| Monitor | Temp: OT warnin | ng 🔤 | | 0.2 | 100 <u>99</u> °C | | |
| 3 Status | Input: OK | | | | 50 | | |
| - Status | CML: OK | | | 0 | 0 | | |
| Security | Mise: None insta | alled | \sim | 09:20 09:40 10:00 10:20 10:40 | 09:20 09:40 10:00 10:20 10:40 | | |
| Eusion Digital Power Designer | V1 6 44 2 [2009-03-03] | 7D9240 Eirrows | | 3 24 0 8163 [2008-09-15] USB 6decter v1 0 1 | 0 FP Ja Toxas Instrumenter I fueion divital norma | | |
| r usion Digital Fower Designer | VI.0.44.2 [2009-03-03] 00 | CD9240 Finnwa | ne v | 2124/010103 [2000-09-12] D20 Multher A1/01 | I LEXAS INSTRUMENTS TUSION digital power | | |

At Address 3, Rail #2, view MGT_AVTT (1.2 V)

- Discrete Components

| 🤚 Fusion Digital Power Designer - UCD9240 @ Address 3 Rail #2 - Texas Instruments | | | | | | | |
|---|---------------------------------------|--|--|--|--|--|--|
| File Device Tools He | elp | | UCD9240 @ Address 3 Rail #2 | | | | |
| Monitor | Readings | 🔺 🖌 Yout Rail #2 - Output Yoltage 🛛 💌 | Tout Rail #2 - Output Current 🛛 🔳 | | | | |
| Show/Hide Plots: | Vin: 12.188 V | OVF: 1.375 ⊕ V | OCF: 5.00 🗢 A | | | | |
| Vin Iin | Iin: 8.16 A | 0VW: 1344 🗁 V | | | | | |
| Pin Vtrack | Pin: 99.38 W | | | | | | |
| Pin(conv 🗹 Vout | Ytrack: V | UVW: 1.156 👽 V | UCF: -10.00 A Write | | | | |
| Iout I Pout | Yout: 1.279 V | = UVF: 1.125 ↔ V Write | 5 | | | | |
| | Pout: 0.36 W | 1.5 | -5 0.27 A | | | | |
| | Duty Cycle: 10.28 % | 1.279¥ | -10 | | | | |
| Fit All Plots on Screen | Fan Speed: 0 RPM | | -15 | | | | |
| O Scale Plots to Screen | Pin(conv): 0.33 W | 17:20 17:40 18:00 18:20 18:40 | 17:20 17:40 18:00 18:20 18:40 | | | | |
| Width | Eff(conv): 102.07 % | Pout Rail #2 - Output Power | Temp Rail #2 - Maximum Temperatur | | | | |
| Height: 175 😴 | Iout: Temp: | | | | | | |
| | Phase #1 0.27 A 98 °C | 0.4 0.36 W | | | | | |
| 🌵 Configure | | | OTW: 75 ⊕ °C Write | | | | |
| Decian | Status Registers/Lines | 0.3 | 250 | | | | |
| w Design | Vout: OK | 0.2 | 200 | | | | |
| 🚸 Monitor | Iout: OK | | 150 | | | | |
| | Temp: OT warning | 0.1 | 100 | | | | |
| 🤣 Status | | | 50 | | | | |
| T- | Eans: None installed | | | | | | |
| Security | Misc: POWER GOOD# | | 17.20 17.40 10.00 10.20 10:40 | | | | |
| Fusion Digital Power Designe | r v1.6.44.2 [2009-03-03] UCD9240 Firm | vare v3.24.0.8163 [2008-09-15] USB Adapter v1.0.10 | P P TEXAS INSTRUMENTS fusion digital power | | | | |

At Address 3, Rail #3, view VCC1V5_FPGA (1.5 V)

- TI <u>PTD08A010W</u> - 10A, 4.75V to 14V, Non-Isolated, Digital PowerTrain Module (U20)

| 📲 Fusion Digital Power Designer - UCD9240 @ Address 3 Rail #3 - Texas Instruments | | | | | | | |
|---|---------------------------------|---|---|--|--|--|--|
| File Device Tools Help UCD9240 @ Address 3 Rail #3 | | | | | | | |
| Monitor | Readings | 🛛 🎦 Yout Rail #3 - Output Voltage 🛛 💌 🛛 Iout Rail #3 - Output Current 🛛 💌 | ח | | | | |
| Show/Hide Plots: | Vin: 12.172 ∀ | OVF: 1.650 ⊕ V OCF: 9.00 ⊕ A | | | | | |
| Vin Lin | Iin: 8.16 A | OVW: 1.612 V OCW: 10.00 A | Н | | | | |
| | Pin: 99.25 W | | | | | | |
| I Iout I Pout | Vtrack: V | | Ш | | | | |
| ✓ Temp □ Duty | Yout: 1.512 V | = UVF: 1.350 ♥ Write 5 0.02 A | | | | | |
| Eff(conv) | Pout: 0.05 W | | | | | | |
| | Duty Cycle: 11.36 % | 1 1.512 ¥ | | | | | |
| Fit All Plots on Screen | Fan Speed: 0 RPM | | • | | | | |
| Scale Plots to Screen Width | Pin(conv): 0.02 W | 15.20 15.40 20.00 20.20 20.40 | J | | | | |
| Height: 175 🕀 | Eff(conv): 109.36 % | Pout Rail #3 - Output Power 📧 Temp Rail #3 - Maximum Temperatur® | | | | | |
| | Iout: Tem | 0.06 OTF: 200 ⊕ °C | Н | | | | |
| Configure | Phase #1 0.02 A 99 9 | | Н | | | | |
| Connigure | Status Registers/Lines | 0.04 | | | | | |
| 🖑 Design | Yout: OK | | | | | | |
| -Base-stern | Iout: OK | 150 | | | | | |
| Monitor | Temp: OT warning | 100 | | | | | |
| 🚸 Status | Input: OK | 50 | • | | | | |
| | CML: UK Eaps: None installed | | · | | | | |
| Security | Mise: POWER GOOD# | | | | | | |
| Fusion Digital Power Designer v1.6.44.2 [2009-03-03] UCD9240 Firmware v3.24.0.8163 [2008-09-15] USB Adapter v1.0.10 [P 😽 TEXAS INSTRUMENTS fusion digital power | | | | | | | |

At Address 3, Rail #4, view VCC3V3 (3.3 V)

- TI PTD08A010W - 10A, 4.75V to 14V, Non-Isolated, Digital PowerTrain Module (U21)



Restoring Power Levels

• Unzip included file: TI_Power.zip

| 🗐 WinZip Pro - TI Powe | er.zip | - | | | | | | | | _ □ | X |
|------------------------------|---------------------|----------------|-----------|---------|--------------|----------|---------------|------------|----|-------|------------------|
| <u>File Actions View J</u> | obs <u>O</u> ptions | <u>H</u> elp | | | | | | | | | |
| New Open | Favorites | Add | Extract E | ncrypt | Siew | CheckOut | Wizard | View Style | | | |
| Address TI Power\Scri | pts\ | | | | | | | | - | 3 🤌 💽 | . – 🗀 |
| Folders > | Name | | | | | Туре | Modified | Size | Ra | Pack | |
| [TI Power.zip] | PML605_TI_ | Addr52_53_r0.> | ml | | | XML Docu | 5/3/2010 2 | 2: 21,164 | 88 | 2,576 | |
| Inputs Outputs Scripts | SP605_TI_4 | \ddr52_53_r0.x | ml | | | XML Docu | 5/3/2010 3 | 3: 20,121 | 88 | 2,477 | |
| | | | | | | | | | | Ĵ | |
| Selected 0 files, 0 bytes | | | | Total 6 | files, 1,218 | КВ | | | | | • • • |

Open Manufacturer's GUI

| 🌵 Digital Power Manufacturing Tool | _ 🗆 🔀 |
|--|---------|
| File Help | |
| 🚰 Load Script 🍃 Run Script | |
| Select script that you wish to use for manufacturing and click "Load". | |
| | Browse |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
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Load xml script from TI_Power directory

 TI_Power/Scripts/SP605_TI_Addr52_53_r0.xml or TI_Power/Scripts/ML605_TI_Addr52_53_r0.xml

| 🌵 Digital Power Manufacturing Tool | _ 🗆 🔀 |
|--|-------|
| File Help | |
| 🗇 Load Script 🌛 Run Script | |
| Select script that you wish to use for manufacturing and click "Load". | |
| I:\CM_Tests\TSS0139\SP605\SP605_TI_CM_rev4\Manufacturing Script Solution\Scripts\SP605_TI_Addr52_5: 💙 [Bro | vse |
| Factory Script Device: UCD9240@52 Startup [Normal] Configure_and_Validate Clear_Faults Clear_Logged_Faults Set_Manufacturing_Date Set_Serial_Number Device_Reset | |
| | |
| Factory Script Version 1.0.3 Description | |
| Number of devices 2 | |
| Bus Mode Serial | ~ |
| ⊮≣ Loa | d |

Click Run Script tab and then Start

| Digital Power Manufacturing Tool - I:\CM_Tests\T550139 | ,SP605\SP605_TI_CM_rev4\Manufacturing Script Sol 💶 🗖 |
|--|--|
| File Help | |
| 📑 Load Script 🏼 ঌ Run Script | |
| Evad Script Run Script | Execution summary Log (Last Run) Drag a column header here to group by that column Under the state of the state |
| Batch option: Set the number of times to re-run script Runs Left # 0 save edit | |
| Session start: 14:39 Fri May 28 Operator: | # Runs: 0 # Pass: 0 # Fail: 0 # Cancel: 0 • Cancel |
| | |

- Operator ID is irrelevant, click OK and wait for the board to finish programming
- Default Serial number is OK as well.

| 🚸 Device serial number | × |
|---|---|
| Enter serial number of EVM. | |
| NOTE:Disregard any initial letters. Enter the numbers only. | |
| | |
| | |
| | |
| | |
| | _ |
| Default: 5000 | |
| | |
| 5000 | |
| OK Cancel | |

• Finished!

