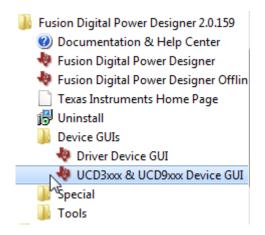
Procedure for Recreating the Program Flash Checksum for UCD9xxxx Devices which fail to execute program code when removed from the Fusion Digital Power Designer GUI

- 1. Close any open instances of the Fusion Digital Power Designer
- 2. Cycle the input voltage to the UCD9xxxx power controllers or sequencers, the device with the issue needs to be in the non-functioning state. Connect the device to PC.
- 3. Navigate to Start → All Programs → Texas Instruments → Fusion Digital Power Designer → Device GUIs → UCD3000 Device GUI
 - a. Depending on GUI version, the Tool may be labeled UCD3xxx Device GUI or UCD3xxx & UCD9xxx Device GUI, they all function the same



4. Under the **Tools** section click on **Scan Device in ROM Mode** and the following screen should be displayed if the device is missing the Program Flash Checksum.

| VCD3XXX / UCD9XXX Device GUI | | | | |
|--|---|--|--|--|
| Settings | | | | |
| Status | | Tools | | |
| Attached: ROM UCD30xx | | Scan Device in ROM Mode | | |
| Last ROM Found IC Info: ROM Info: Package ID: | UCD30xx ROM v2 IC v2 64-pin und: | Scan for Device in Program Mode: DEVICE ID DEVICE CODE IC DEVICE ID PMBUS REVISION ✓ When a device is found, dump additional PMBus commands Command ROM to execute its program (SendByte 0xF0 to Address 11) Command Program to jump to ROM (SendByte 0xF0) Flash Checksums SMBus/I2C Debug Utilities Trim Multi-image SAA Adapter Settings Configure SAA Adapter settings SMBus Debug Read/Write data and send commands ROM API Make calls to ROM functions for UCD30xx PEC & SMBus -> I2C Translation Tool PEC byte calculator + Converts SMBus requests into I2C transactions | | |
| Log | | | | |
| Timestamp | Message | | | |
| 13:06:10.588 | Click one of the scan buttons to find a device in | ROM or program mode | | |
| 13:11:10.967 | Looking for device in ROM mode at address 11d | | | |
| 13:11:10.967 | Reading ROM version | | | |
| 13:11:11.016 Found ROM v2 IC v2 - UCD30xx Copy Log Clear Log Display all SMBus/I2C activity in log | | | | |
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5. In the lower half of the **Tools** section, click the **Checksums** tab, then the **Calculate** link. The Program Flash checksum will be calculated and displayed in the **Log** section.

| Status Tools Attached: ROM UCD30xx Scan Device in ROM Mode Last ROM Found: Vertice in Program Mode: DEVICE ID DEVICE CODE IC DEVICE ID PMBUS IC Info: UCD30xx ROM Info: ROM v2 IC v2 Package ID: 64-pin Last Program Found: Command ROM to execute its program (SendByte 0xF0 to Address 11) Command Program to jump to ROM (SendByte 0xF0 to Address 11) Command Program to jump to ROM (SendByte 0xO9) Flash Checksums SMBus/I2C Debug (Utilities) DEVICE_ID: MFR_MODEL: MFR_REVISION: Program size: 32768 Bytes Dump Calculate Recreate Validate | REVISI | | |
|--|--------|--|--|
| Last ROM Found: IC Info: UCD30xx ROM Info: ROM v2 IC v2 Package ID: 64-pin Last Program Found: Command ROM to execute its program (SendByte 0xF0 to Address 11) Address: DEVICE_ID: MFR_MODEL: | REVISI | | |
| Last ROM Found: IC Info: UCD30xx ROM Info: ROM v2 IC v2 Package ID: 64-pin | | | |
| Dx00000000 | Clea | | |
| Block Configuration: 0 | | | |
| og | | | |
| Timestamp Message | | | |
| 13:11:10.967 Looking for device in ROM mode at address 11d | | | |
| 13:11:10.967 Reading ROM version | | | |
| 13:11:11.016 Found ROM v2 IC v2 - UCD30xx | | | |
| | | | |
| | | | |
| 13:15:14.666 Calculated program checksum is 0x003B7D29 | | | |
| | | | |

6. Compare the checksum calculation against the checksum value provided on page 45 of *Configuration Programing of UCD Devices* document.

http://e2e.ti.com/cfs-file/__key/communityserver-discussions-components-files/212/1007.Configuration-Programming-of-UCD-Devices.pdf

If the calculated checksum doesn't match the provided checksum value, it means the firmware is changed or corrupted. Abort this procedure and contact TI representative.

If the calculated checksum matches the provided checksum, click the link to **Recreate** the checksum. (Note: if the calculated checksum doesn't match the provided checksum value, clicking **Recreate** may "brick" the device).

| 🜵 UCD3XXX / UCD9XXX Device GUI | | | | | |
|--|--|--|--|--|--|
| Settings | | | | | |
| Status | Tools | | | | |
| Attached: ROM UCD30xx | Scan Device in ROM Mode | | | | |
| Last ROM Found: IC Info: UCD30xx ROM Info: ROM v2 IC v2 Package ID: 64-pin | Scan for Device in Program Mode: <u>DEVICE ID</u> <u>DEVICE CODE IC DEVICE ID</u> <u>PMBUS REVISION</u> When a device is found, dump additional PMBus commands Command ROM to execute its program (SendByte 0xF0 to Address 11) Command Program to jump to ROM (SendByte 0xD9) | | | | |
| Last Program Found: Address: | Flash Checksums SMBus/I2C Debug Utilities Trim Multi-image | | | | |
| DEVICE_ID: MFR_MODEL: MFR_REVISION: | 0x00007FFC Program checksum <u>Dump Calculate Recreate Validate Clear</u> Progam size: 32768 Bytes 0x00000000 Block Configuration: 0 V | | | | |
| Log | | | | | |
| Timestamp Message | 4 | | | | |
| 13:11:11.016 Found ROM v2 IC v2 - UCD30xx | | | | | |
| 13:15:13.644 Issuing request for ROM to calculate program flash | Issuing request for ROM to calculate program flash checksum | | | | |
| 13:15:14.666 Calculated program checksum is 0x00387D29 | = | | | | |
| 13:34: 19.686 PFlash checksum created; was 0x00000000, is now 0x00387D29 | | | | | |
| Copy Log Clear Log | Display all SMBus/I2C activity in log | | | | |
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- 7. When the GUI Log has indicated that the PFlash checksum has been created, close the GUI.
- 8. Disconnect the PMBus interface
- 9. Power cycle the board and it should now execute the program code