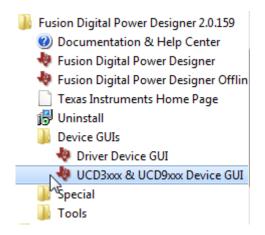
## Procedure for Recreating the Program Flash Checksum for UCD9xxxx Devices which fail to execute program code when removed from the Fusion Digital Power Designer GUI

- 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