OACIS

Open Architecture Control Integrated System

How to Update Firmware

Version 01.08



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I. SOFTWARE PREPARATION

A. Install the Emulation Driver

- Find the driver file "setupCCSPlatinum_v30330.exe" and run it. You can also get the driver from www.spectrumdigital.com >> Support (Downloads/Drivers) >> JTAG Emulators & Drivers (Installation under CCS3.3) >> Download Spectrum Digital Driver Release 3.03.30[25_June_2009]
- Run the file "setupCCSPlatinum_v30330.exe"

| SD CCS 3.3 Emulation Drivers - InstallShield Wizard | | | | | | |
|---|--|--|--|--|--|--|
| | Welcome to the InstallShield Wizard for SD CCS 3.3 Emulation Drivers | | | | | |
| | The InstallShield Wizard will install SD CCS 3.3 Emulation Drivers on your computer. To continue, click Next. | | | | | |
| | < Back Next > Cancel | | | | | |

Continue to install





• Complete to install

| SD CCS 3.3 Emulation Drivers - InstallShield Wizard | | | | | | |
|---|--|--|--|--|--|--|
| | InstallShield Wizard Complete Setup has finished installing SD CCS 3.3 Emulation Drivers on your computer. | | | | | |
| | < Back Finish Cancel | | | | | |

B. Install the Emulator Utility

- Find the driver file "sdf28xx_v3_3_serial.exe" and run it. You can also get the driver from www.spectrumdigital.com >> Support (Downloads/Drivers) >> JTAG Emulators & Drivers (JTAG Emulator Utilities) >> SDFlash (Link) >> V3.3 SDFlash serial patch for flash programming via an RS232 serial link
- Run the file "sdf28xx_v3_3_serial.exe"

| 😰 Setup - SDFlash Serial v3.3 | |
|-------------------------------|---|
| | Welcome to the SDFlash Serial v3.3 Setup Wizard |
| | This will install SDFlash Serial v3.3 on your computer. |
| | It is recommended that you close all other applications before continuing. |
| | Click Next to continue, or Cancel to exit Setup. |
| | |
| | |
| | |
| | |
| | |
| | Next > Cancel |



I. SOFTWARE PREPARATION

• Continue to install

| j🖫 Setup - SDFlash Serial v3.3 | |
|---|--------|
| Ready to Install Setup is now ready to begin installing SDFlash Serial v3.3 on your computer. | |
| Click Install to continue with the installation, or click Back if you want to review or change any settings. | br |
| Destination location: C:₩CCStudio_v3.3₩specdig₩sdflash | * |
| < | • |
| < Back Install | Cancel |

| 🔂 Setup - SDFlash Serial v3.3 | |
|--|----------|
| Installing Please wait while Setup installs SDFlash Serial v3.3 on your computer. | |
| Extracting files C:₩₩v100₩DSP281x_common₩include₩DSP281x_SWPrioritizedIsrL | .evels.h |
| | |
| | |
| | |
| | Cancel |

| 🔁 Setup - SDFlash Serial v3.3 | |
|--|--|
| Information Please read the following important information before continuing. | |
| When you are ready to continue with Setup, click Next. | |
| V3.3 of the SDFlash serial algos supports the following devices, and uses the liste Flash API algorithms: TMS320F2801 with Flash API V3.02 TMS320F2802 with Flash API V3.02 TMS320F2802 with Flash API V3.02 TMS320F2806 with Flash API V3.02 TMS320F2806 with Flash API V3.02 TMS320F2809 with Flash API V3.02 TMS320F2809 with Flash API V3.02 TMS320F2810 with Flash API V3.02 TMS320F2810 with Flash API V3.02 TMS320F2810 with Flash API V2.10 TMS320F2811 with Flash API V2.10 TMS320F2815 with Flash API V2.10 TMS320F2815 with Flash API V2.10 TMS320F28016 with Flash API V1.00 TMS320F28016 with Flash API V1.00 | |
| Next > | |



Complete to install

| 📳 Setup - SDFlash Serial v3.3 | |
|-------------------------------|---|
| | Completing the SDFlash Serial v3.3 Setup Wizard Setup has finished installing SDFlash Serial v3.3 on your computer. Click Finish to exit Setup. |
| | < <u>B</u> ack <u>Finish</u> |

C. Assign COM1 as an Emulator Port

- Open the file "sdopts.cfg", then Add the Command Statements in the red box below and save it. You can find the file "sdopts.cfg" in C:\WINDOWS\system32(for 32bits) or C:\WINDOWS\sysWOW64(for 64bits). If you have to use a USB Converter cable, you need to install a proper USB-to-Serial driver to the USB cable.
- Open the file "sdopts.cfg"

| | Do no office of | 1.1.9 | | | | | × | | |
|---|------------------|---------------------|--------------------|--------|------|--|---|--|--|
| 🕽 😜 📲 🗼 Computer > Local Disk (C:) > Windows > SysWOW64 > | | | | | | | | | |
| File Edit View Tools Help | | | | | | | | | |
| Organize 👻 🦳 Open 👻 | Burn New folder | | | | 8= • | | ? | | |
| | Name | Date modified | Туре | Size | | | | | |
| 词 Libraries | 🚳 sdiageng.dll | 2009-07-14 오전 10:16 | Application extens | 174 KB | | | | | |
| Documents | 📧 sdiagnhost | 2009-07-14 오전 10:14 | Application | 21 KB | | | | | |
| J Music | sdiagprv.dll | 2009-07-14 오전 10:16 | Application extens | 235 KB | | | | | |
| Pictures | sdohlp.dll | 2009-07-14 오전 10:16 | Application extens | 350 KB | | | | | |
| 🛃 Videos | sdopts | 2014-07-16 오전 9:17 | CFG File | 36 KB | | | | | |
| | 🚳 sdsmg51095.dll | 2000-07-19 오후 1:39 | Application extens | 116 KB | | | | | |
| P Computer | sdspi515.dll | 2008-03-20 오후 2:24 | Application extens | 120 KB | | | | | |
| Local Disk (C:) | sdspi525.dll | 2008-03-20 오후 2:24 | Application extens | 116 KB | | | | | |
| 🙀 External_Upload (\\192.16 | sdtsrv.dll | 2007-11-15 오후 4:13 | Application extens | 104 KB | | | | | |
| | sdxds510usb.dll | 2006-12-15 오후 2:03 | Application extens | 92 KB | | | | | |
| 📬 Network | SearchFilterHost | 2011-05-04 오후 1:28 | Application | 85 KB | | | | | |
| - | SearchFolder.dll | 2010-11-21 오후 12:23 | Application extens | 631 KB | | | | | |
| sdopts Date modified: 2014-07-16 오전 9:17 Date created: 2009-02-11 요전 8:15 CFG File Size: 35.1 K8 Date created: 2009-02-11 요전 8:15 | | | | | | | | | |

 Add the four lines of command statements in the red box to the end of the file as seen below and save it





D. Change the mode of the RS232 Port.

- Run the OACIS program(OACIScom.exe), then Go to the system configuration >> RS232 Ports. Check "Data Out" mode in RS232 Port #1. If "Scan In" mode is set, change it to "Data Out" mode.
- Open the System Configuration (Password is 1)



Check "Data Out" mode in RS232 Port #1

| OACIScom - SYSTEM CONFIGURATION | | | | | | | | | |
|--|-----|-------------------|---|----------------|-------------------|--------------------|----------------|-----------------------|---------------------------------------|
| OPEN from OACIS OPEN from PC | | | | | SAVE (OACIS & PC) | | SAVE (PC Only) | Set as Offline Config | |
| CONFIGURATION NAME DATE and TIME VERSION | | | | | | | VERSION | | |
| None | | | | | | | 000000/ | 000000 | V01.0 |
| AXES | | ANALOG INPUTS (1) | | RS232 Ports | | ENCODER | INPUTS (| (TTL) | ENCODER INPUTS (Line Receiver) |
| RS232 PORT #1 |] | | | | | | | | |
| MODE | | BAUD RATE | | PARITY | _ ! | STOP BIT | | DATA BIT | |
| Scan In | • | 9600 | • | None | • | 1 | • | 8 | • |
| Not Use Form | nat | STARTING BYTE No. | | LENGTH | 1 | TOTAL LENGTH | | LINKED DO Ch. | |
| Not use form | iat | 02 | × | 06 | × | 10 | × | 01 | • |
| Alugues | | START DELIMITER | | END DELIMITER | 1 | TIME LIMIT (x100 m | ns) | | |
| | | 0×00 - Not Use | Ŧ | 0×39 - '9' | - | 01 | * | | |
| | | POINT TYPE | | POINT POSITION | 1 | DATA OUT MODE | | | |
| | | Floating | Ŧ | 1 | Ŧ | DAA | Ŧ | 001 | × |
| | | | | | | | | | |
| RS232 PORT #2 | | | | | | | | | |
| MODE | | BAUD RATE | | PARITY | : | STOP BIT | | DATA BIT | |
| Data Out | - | 9600 | • | None | • | 1 | • | 8 | • |
| Alog Une Free | | STARTING BYTE No. | | LENGTH | 1 | TOTAL LENGTH | | LINKED DO Ch. | |
| not use rom | nat | 00 | × | 00 | ÷ | 00 | * * | 00 | • |
| Alwaye | | START DELIMITER | | END DELIMITER | 1 | TIME LIMIT (x100 m | ns) | | |
| Aiways | | 0×00 - Not Use | - | 0×00 - Not Use | Ŧ | 00 | × | | |
| | | POINT TYPE | | POINT POSITION | [| DATA OUT MODE | | | |
| | | Floating | • | 1 | • | DAA | * | 001 | A V |
| | | | | | | | | | · · · · · · · · · · · · · · · · · · · |



II. HARDWARE PREPARATION

A. Prepare the RS232 cable

• You need a RS232 cable to connect PC to OACIS. If you have to use a USB Converter cable on the PC side, you will need to install a proper USB-to-Serial driver to the USB cable. The cable PinMap is shown as follows:



- Caution #1 : You should follow the instructions below. Or severe problems might happen in your OACIS system.
 - ①DCD and ⑥DSR on the OACIS side must be connected as shown above (red line).
 - ②RXD on the PC side and ③TXD on the OACIS side must be connected (blue line).
 - ③TXD on the PC side and ②RXD on the OACIS side must be connected (gleen line).
 - SGND on the PC side and SGND on the OACIS side must be connected (black line)
 - > All other pins that are not used must be left open.

B. Connect PC to OACIS via the RS232 cable

 After PC is connected to OACIS via the RS232 cable, Turn on the OACIS power. On the OACIS side, **RSCN1** is connected for the Main DSP update and **RSCN3** for the Control DSP update. When the OACIS power is on, check the top panel of the OACIS box that is Program No and Step No. If it is normal, the panel shows "Nothing" for Main DSP updating and "000 000" for Control DSP updating.

MISC



II. HARDWARE PREPARATION

• Connection ports on the side of OACIS



- Caution #2 : When the OACIS power is off, you should connect PC and OACIS with the RS232 cable. Or severe problems might happen in your OACIS system.
- When the Main DSP is updating, the panel of OACIS shows as follows:



• When the Control DSP is updating, the panel of OACIS shows as follows:



MISC



III. FIRMWARE UPDATES FOR MAIN AND CONTROL DSP

- A. Run the file "SDFlash.exe"
 - You can find it in this directory, C:\#CCStudio_v3.3\#specdig \#sdflash\#bin\#.

| 🍌 🕨 Computer 🕨 Local I | Disk (C:) 🕨 CCStudio_v | 3.3 ► specdig ► sdfl | ash 🕨 bin | | | | |
|------------------------|------------------------|----------------------|-----------|--|--|--|--|
| View Tools Help | | | | | | | |
| 🕶 🗟 Open 🛛 Burn | New folder | | | | | | |
| Name | Date modified | Туре | Size | | | | |
| 🚳 rtdx.dll | 2001-01-29 오후 6: | Application extens | 48 KB | | | | |
| sdflash.CNT | 2001-01-22 오전 5: | CNT File | 2 KB | | | | |
| SDFlash | 2006-10-09 오후 1: | Application | 308 KB | | | | |
| DFlash.FTS | 2001-01-22 오후 5: | FTS File | 37 KB | | | | |
| OFLASH | 2001-01-22 오전 5: | Help file | 1,927 KB | | | | |

B. Open the file "F2812SerialFlash.sdp"

 Click File >> Open Project and you can find "F2812SerialFlash.sdp" in this directory, C: \U00c8CStudio_v3.3\U00f8specdig\U00f8sdflash\U00c8myprojects\U00f8sdf28xx_v3_3_serial\U00e8f2812\U00f8.



C. Load the Firmware file(*.out)

• Click "Project/Settings





Click "Project/Settings/Target" and Set "Emulator Address/Id as EmulatorId on the file of "sdopts.cfg"

| PSD_EMU_CONTROLLER_INFO | |
|---|--|
| Processor: GENERIC Driver: | |
| projectsWsdf2&xx_v3_3_serialWf2812WF281xRS232Flash.dll Emulator: | |
| SERIAL_FLASH | |
| C:\UCCStudio_v3.3\U00fWseffa 512 513 Processor Name: cpu_0 | [EmulatorId=C1] EmuPortAddr=0XC1 EmuPortMode=RS232 |
| OK Cancel Help | EmuProductName=SERIAL_FLASH |

 Click "Project/Settings/Programming" and Open "Flash Data File". Then Find the Firmware file(*.out) and Click OK

| F2812SerialFlash.sdp - SDFlash | |
|--|--|
| File View Project Buffer Device Window Help | |
| 🗋 🗅 🚔 🔚 🗐 🔠 R 🛛 🤋 🎀 | |
| PSD_EMU_CONTROLLER_INFO Target Erase Programming Verify Algorithm File: projects\#sdf28xx_v3_3_serial\#f2812\#F2812SerialFlash.out Flash Data File: C:\#Users\#LSW\#D\#Server\#04.Fimware\#1.Main\#OACIS | |
| X MSG: Inte | |
| Ready | |

D. Start to update the Firmware

• Click the following icons in this order, "Save Project" >> "Reset" >> "Flash", then Run "Start" with OACIS turned on. This process can take several minutes to be done. You should update for both Main and Control DSP in the same manner, respectively. You need to load the different firmware file according to the Main or Control DSP update





| ŕ | F2812SerialFlash.sdp - SDFlash | |
|--------------|---|-------|
| | File View Project Buffer Device Window Help | |
| Save Project | | Reset |
| | Flash | |
| Flash | I Erase I Program I Venfy | |
| | Start Stop Close | |
| | MSG: Interface version 1 | |
| | Ready CAP NUM | |

• In case of the Main DSP Update.

| Sp F2812SerialFlash.sdp - SDFlash | X |
|---|----|
| <u>File View Project Buffer Device Window H</u> elp | |
| 🗅 🖙 🖬 🔲 📸 R 🤋 🌾 | |
| | |
| Flash | |
| | |
| | |
| | |
| Connect | |
| | |
| Start Stop Close | |
| | |
| | |
| × MSG: User must now get target to bootload state | |
| MSC: Interface version 1 | |
| MSG: Connecting to target | 23 |
| Interface version 1 MSG: Connecting to target F2812SerialFlash.sdp - SDFlash Eile View Project Buffer Device Window Help | 23 |
| Interface version 1 MSG: Connecting to target Image: Second State Image: Sec | 23 |
| Interface version 1 MSG: Connecting to target Image: Serial Flash.sdp - SDFlash Eile View Project Buffer Device Window Help Image: Serial Flash.sdp - SDFlash Eile View Project Buffer Device Window Help Image: Serial Flash.sdp - SDFlash | 23 |
| Interface version 1 MSG: Connecting to target Image: Second connecting totarget <td>8</td> | 8 |
| Interface version 1 MSG: Connecting to target Image: Second State Image: Sec | |
| F2812SerialFlash.sdp - SDFlash File View Project Buffer Device Window Help | 8 |
| Hos: Interface version I MSG: Connecting to target F2812SerialFlash.sdp - SDFlash Eile View Project Buffer Device Window Help D | 8 |
| Interface version 1 MSG: Connecting to target Image: Second starget | |
| Interface version 1 MSG: Connecting to target Image: Second starget | 8 |
| Interface version 1 MSG: Connecting to target Image: SerialFlash.sdp - SDFlash File View Project Buffer Device Window Help Image: Image: Serial Flash.sdp - SDFlash File View Project Buffer Device Window Help Image: Image: Serial Flash.sdp - SDFlash File View Project Buffer Device Window Help Image: Image: Serial Flash.sdp - SDFlash | 23 |
| Interface version 1 MSG: Connecting to target Image: Second starget | 23 |
| F2812SerialFlash.sdp - SDFlash File View Project Buffer Device Window Help Image: Im | |
| HSG: Erase flash succeeded. | × |
| F2812SerialFlash.sdp - SDFlash File View Project Buffer Device Window Help Image: State State State File View Project Buffer Device Window Help Image: State State State Image: State State State Image: State S | 2 |



In case of the Control DSP Update.



- After the successful update, make sure to read next "Terminate to update the Firmware".
- E. Terminate to update the Firmware
 - When the Firmware update is finished, Turn on and Restart OACIS after removing the RS232 cable.

When the Firmware Update is done, you should first turn off the OACIS power before the removal of the RS232 cable. Or severe problems might happen in your OACIS system.





