

TECHNICAL NOTE

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Changing / Updating Optocore® Firmware on SD Series

This Technical Note describes how to perform Optocore Firmware Upgrades for Optocore_221 on SD5, SD7, SD8, SD10 and Post 2013 SD9 & SD11 consoles, SDRacks, SD Mini, SD Nano and DRacks.

PLEASE NOTE:

SD Racks and D-Racks cannot use Optocore_220 firmware – please do not attempt to program them with Optocore_220 code.

Optocore_220 code is solely intended for SD consoles that are required to work with older DiGiCo DigiRacks, MADIRacks and MiNiRacks.

You must be running SD application V380+ in order for the console to work with Optocore_V221

V221 Versions

Optocore V221 firmware for SD Series was updated as of May 2014 (V685). Please ensure you are using the correct firmware that matches the application your console is running.

SD Series Software V380 – V634 uses V221 version V3R5A
SD Series Software V685 or higher uses V221 version V5R3

Optocore R series devices will only function a DiGiCo Optocore loop if all DiGiCo hardware is running V221 V5R3 and running V685 or higher.

All SD devices present on the Optocore Loop (Both Consoles and Racks) MUST be running the same Optocore Firmware.

To check which version of code your SD Console is using, you will need to run **OptocoreUpgrade.exe** which is located in D:\SDxx\Optocore_V221 folder.

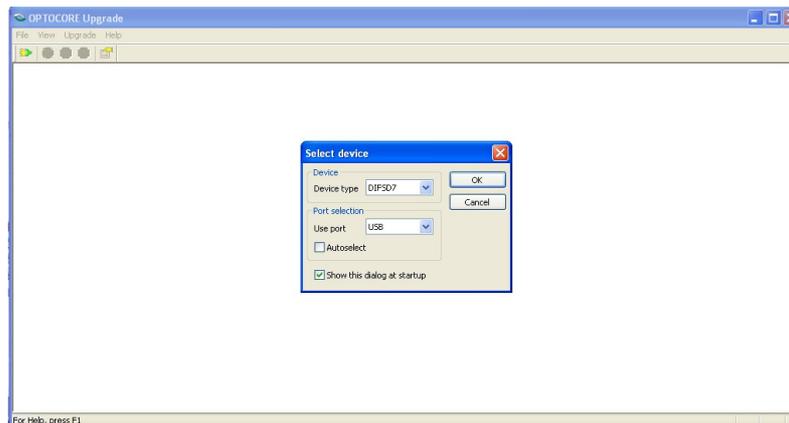
To Check the Optocore Firmware version of your SD Racks, you will need to run **OptocoreUpgrade.exe** from a Windows based computer connected to your rack via USB. Please refer to Page 5 of this TN for further details.

IMPORTANT: Please disconnect all Optical Connections to the consoles and racks while performing the procedure.

Converting SD Consoles from V220 to V221 or upgrading V221 V3R5A to V221 V5R3 for use with SD Racks and Optocore R Series Devices

Turn on the console. Once the console has started, please quit the SD application to Windows (Alt-F4) - on both engines for an SD7.

1. Right click on the Start button and select Explore. Navigate to **D:\SDxx\Optocore_221**
2. Run **OptcrUpgrade.exe**. This will start the Optocore Upgrade Program and open the Select Device Window.



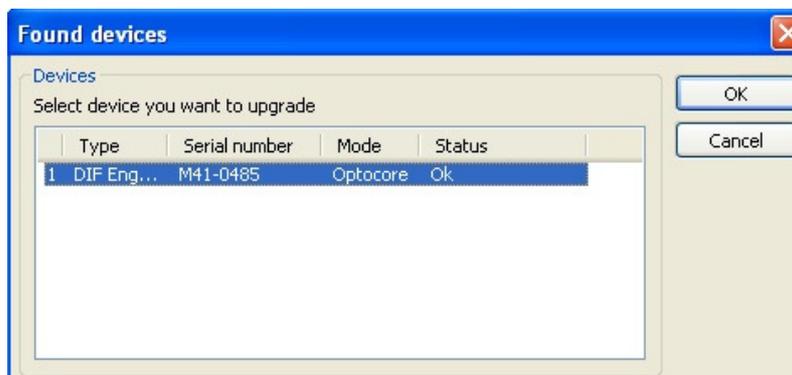
Device Type should be **DIFSD7**.

If you are Upgrading an SD7, “**Use port**” should be set to **COM1**.

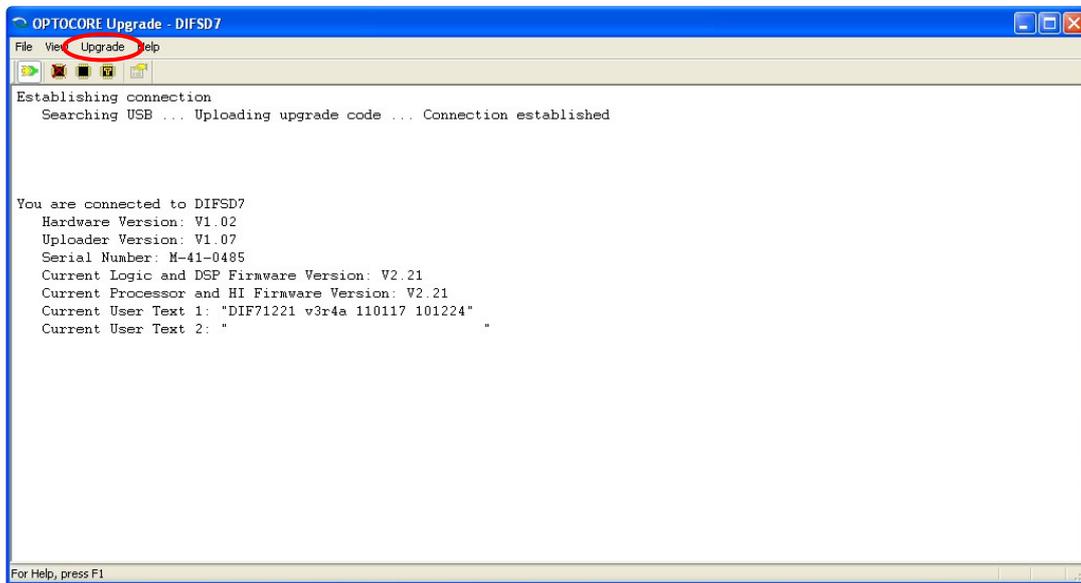
If you are Upgrading an SD5, SD8, SD9, SD10, SD11, SDRack or DRack, “**Use Port**” should be set to **USB**

Once the required Device type and port have been selected, Click “**OK**”.

If you are upgrading Via USB, the following window will appear.



Click “**OK**” and you will enter upgrade mode.



This shows you the current Firmware version and details of the Optocore Board. The above shows a card running V221 v3r4a firmware. The Current User Text 1 entry shows the specific version and date eg v3r4a in the picture with codes dated 17/01/11 and 24/12/10. If in doubt which version of V221 firmware you should be using, please contact DiGiCo Support.

3. Go to the **Upgrade** Menu and select the **“Upload Firmware”** Option. A dialogue box will open select **“Yes”** and the upload process will begin.

Once this process is complete, another dialogue box will appear confirming that the Firmware upload has been successful. Uncheck **“Exit Upgrade Mode”** and click **OK**. This will return you to the Upgrade Mode Window.

4. Go to the Upgrade Menu and select **“Erase All Settings”**. When the dialogue box opens, click **“OK”**.

Once complete, another Dialogue box will open confirming completion of the process. Check the **“Exit Upgrade Mode”** box and Click **“OK”**.

You may now close the Optocore Upgrade Program.

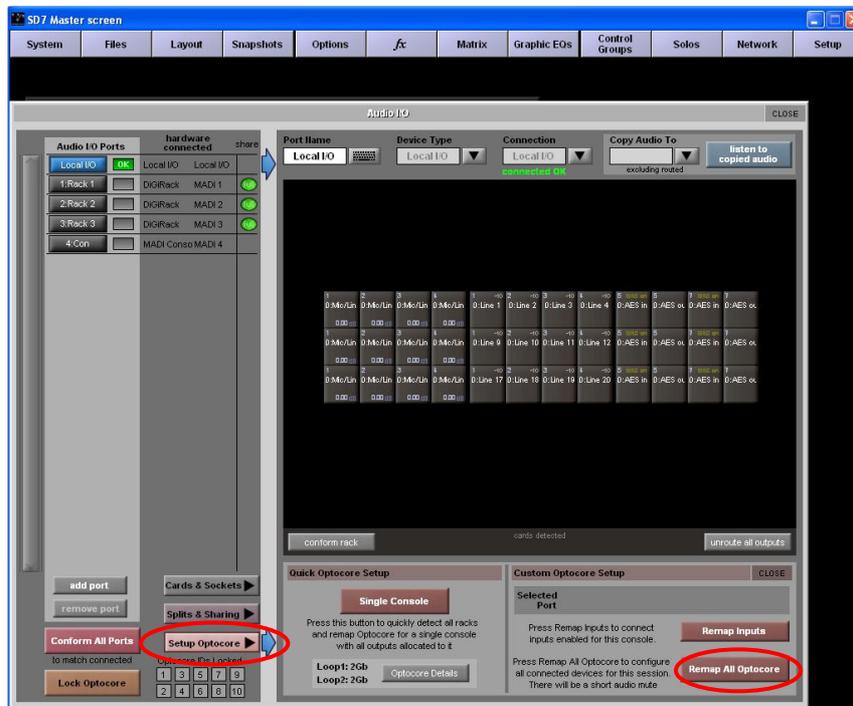
If you are upgrading an SD7, now go and perform the same process on the other engine.

5. From the **Start** Menu, shut down the console and switch off completely.

6. Restart the console and wait until the SD Application is running.

7. Open the **Network** panel and Select your console’s Optocore ID (1-10).If you are using an SD7, the Engine ID’s must be consecutive numbers with the “A” engine being the odd number. Eg. SD7 Engine A = ID1 and SD7 Engine B = ID2 – ID’s 1 and 2 are paired then 3 and 4 are paired etc.

8. Go to the **Audio I/O** panel and press the **Setup Optocore** button



Once this Menu is open, Press the “**Remap All Optocore**” Button and a confirmation box will appear. Press “**Yes**”.

Close the **Audio I/O** panel and repeat the process on the second SD7 engine

Now from the **System** menu, select “Shut Down” on each engine and power off the console.

This completes the Upgrade Process.

Converting SD Consoles from V221 to V220 for use with DiGiRacks & MiNiRacks

Turn on the console. Once the console has started, please quit the SD application to Windows (Alt-F4) - on both engines for an SD7.

Right click on the Start button and select Explore. Navigate to **D:\SDxx\Optocore_220**

Now proceed from Point (1) to Point (3) above to perform the downgrade

Note: When the downgrade is complete and you have power cycled the console, the Network Panel Optocore ID will only allow values from 1 to 4 (2 Redundant engine pairs)

If you are using an SD7, the Engine ID's must be consecutive numbers with the “A” engine being the odd number. Eg. SD7 Engine A = ID1 and SD7 Engine B = ID2 – ID's 1 and 2 are paired then 3 and 4 are paired etc.

In the **Setup/Audio I/O** panel there will be no **Optocore Setup** button as Optocore V220 has a fixed configuration that can use only four engine IDs (1-4) and four rack IDs (30-33).

Upgrading SD Racks and D Racks

Important Note: The Optocore Upgrade Program is a 32 Bit Windows PC application. The upgrade process can also be performed on a Mac with the application started in Windows running via Parallels or Boot Camp.

You will need a copy of the Optocore_V221 folder on your computer in order to perform the upgrade.

The USB connection on the rack must be set to communicate with the Optocore Board. On an SD Rack, this is done via the Menu System. Set the USB mode to “**Opto**”. Note the default mode for this connection is “**Rack**”.

Setting SD Rack USB Mode



The LCD Menu System on the SD Rack MADIPod is normally in a locked state and cannot be accessed. The main display will be visible and if the rack is not connected to an SD console the background colour will be light blue.

If an SD console is connected and the rack is correctly receiving control data from it, the display will flash green.

Pressing and holding the 2 buttons marked with left and right arrows for 2 seconds unlocks the Menu System. During the 2 seconds the display will be red and say "Locked" and when unlocked, the display will turn green and say "Unlocked".

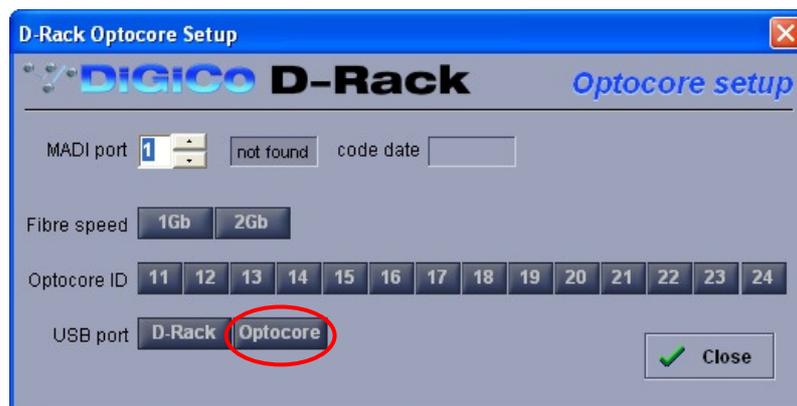
The Up/Down buttons scroll through the pages in the Menu System and the Left/Right buttons are used to select each item within pages that have multiple items. When an item's value can be changed the Up/Down arrows are used for this.

If the rack is left in an idle state for 2 minutes, it will relock itself.

To set the SD Rack USB Mode from “**Rack**” to “**Opto**” – Unlock the Menu system and page down 3 times to reach USB Mode – now use the left right arrows to change the USB Mode to “**Opto**”.

Setting DRack USB Mode

You will need to connect the DRack to an SD9 or SD11 via its CAT5 port or to an SD5, SD7, SD8 or SD10 console via a Little Blue Box and run **D:\SDx\DRackOptocoreSetup.exe** and Select “**Optocore**”



Update Procedure

Once your rack USB is set to Optocore and your Computer is running, connect the rack to your computer using a short USB cable (type A-B). Your computer will search for the appropriate driver and ask you to confirm installation.

Once this is complete, open the Optocore_221 folder that you copied from your console to your PC and Run **OptcrUpgrade.exe**. This will start the Optocore Upgrade Program and open the Select Device Window.

Once the program is running, please follow the same procedure from point 1. for upgrading SD Consoles above.

Once you have completed the upgrade procedure, remove the USB cable from the Rack and Power Cycle the Rack.

If you are using an SD Rack, power the rack back on and using the rack menu system, **Default the Rack** as follows:

Unlock the Menu system and page up once

When the display shows **Default Rack - Yes>**, press the Right arrow button to confirm.

The display will now show **Default Rack - Sure>**, press the Right arrow button to confirm.

Using the Left arrow button will navigate back from **Sure>** to **Yes>**.

Using the Menu system set the required "**Opto ID**" which can be found using the page down button once - The Default ID for the Rack is ID24.

Using the Menu system, navigate to the "**Fibre Speed**" display which can be found one page down from the Opto ID and set it to "**2G**".

If you are using a D Rack, reconnect the rack to an SD Series console and run **D:\SDxx\DRackOptocoreSetup.exe**. From here, please set the **Fibre Speed** to "**2G**" and select the required Optocore ID. The default ID is ID24.

Refer to TN256A for full details of setting up the D-Rack.

Please note: It is only possible to check which Optocore Version a D Rack or an SD Rack is running by using the OptcrUpgrade.exe. It is not accessible via the SD Rack Menu system.

If you require further assistance, please contact your distributor or supplier or DiGiCo Support