TECHNICAL NOTE

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SD Series Dual loop Optocore® Systems

The SD Series Optocore implementation is designed to allow 2 independent fibre loops to be operated, with up to 14 SD Racks or certain Optocore® interface units and 504 Channels of audio per loop at both 48K and 96K.   This results in any dual loop console having access to 1008 Channels of IO, from up to 28 IO locations across the 2 loops.

These notes are intended an introduction for operators familiar with the standard single loop system. New users should familiarize themselves with this before attempting to use dual loops.

Both the SD7 and SD5 have the ability to have 2 Optocore loops fitted. Other mixers with only single optical interfaces can be connected to one or other of these 2 loops.

When using a dual loop system, the following rules apply:-

Dual loop consoles must have the lowest ID's in the system.
For example, in a system consisting of a dual loop SD7 and two Single loop SD10s, the SD7 Optocore Network ID must be 1+2. The SD10s can be set to any other primary ID eg 3, 5, 7 or 9.

In a system with two dual loop SD7s and two single loop SD10s, the 2 SD7s would have to have Optocore Network IDs of 1+2 & 3+4 and the SD10s would have IDs of either 5, 7 or 9.

The Loop 1 and Loop 2 must be independent.
Loop 1 and Loop 2 fibers cannot be mixed. They cannot be cross connected or combined in any way.

Anything connected to loop 1 can only be seen and accessed on loop 1 and anything connected to loop 2 can only be seen and accessed on loop 2.

There can only be one Loop 2.
In a multi console, dual loop system anything connected to loop 2 on one console must be present on loop 2 of all other dual loop consoles in the system. Any console with dual loops installed cannot have its own independent loop 2 connection.

Engine input and output limits.
The Optocore system can create a map for 1008 channels of audio across the two loops, however each engine can only have access to 496 inputs and 496 outputs across the 2 loops. Which inputs/outputs each console has access to is set in the Audio IO page.

Setting up Single Loop Consoles on a 2 Loop System.

SD8, SD9, SD10 and SD11 consoles are only available fitted with one loop. This can be setup to be connected to either loop on a dual loop console.

In the Options>Console menu, the Enable Optocore option allows the console to be set to be either be a loop 1 console or loop 2 console (shown below) without having to alter any internal connections.

Single loop consoles operate independently on each loop. For example, a system can consist of a dual loop SD7 (IDs 1+2), an SD8 (ID3) on loop 1 and an SD10 (also ID3) on loop 2.

SD5s & SD7s that only have a single loop fitted can also be set to operate on either loop 1 or Loop 2 using the same procedure.

Setting up a Dual Loop System

Each console and rack should have its Optocore network ID set accordingly. If a Dual loop console is ID 1, it will be ID 1 on both loops. Racks can only exist on either loop 1 or loop 2 therefore their physical presence on the loop determines which loop they are on. Pressing conform all ports in Audio IO will assign Rack IDs to either loop 1 or loop 2.

The picture below shows the Audio IO from a dual loop SD7 once all ports have been conformed and the system mapped.

Racks on Loop 1 have IDs 1.XX and racks on loop 2 have IDs 2.XX

On the Audio IO page, press the Setup Optocore button to show Optocore Details

ID	name	ok	\<input cards\> 1	2	3	4	5	6	7	8	\<engine ID » output cards\> 1	2	3	4	5	6	7	8
1.02	16:Con Send	ok									1» video	1» con						
1.03	18:Con Rcv																	
1.11	5:Rack 1.11	ok	mic	mic	mic	mic					1» lin	1» lin	1» lin	1» lin			1» lin	
1.12	6:Rack 1.12	ok	mic	mic	mic	mic	mic	mic	mic		1» lin	1» lin	1» lin	1» lin	1» lin	1» lin	1» lin	
1.13	7:Rack 1.13	ok	mic	mic	mic	mic	mic	mic			1» lin		1» lin	1» lin	1» lin			
1.16	8:Rack 1.16	ok	mic	mic	mic	mic	mic				1» lin	1» lin	1» lin	1» lin	1» lin			
1.22	9:Rack 1.22	ok	mic	mic	mic	aesio	mic	mic						1» aesio				
2.02	17:Con Send	ok									1» video	1» con						
2.05	19:Con Rcv																	
2.11	10:Rack 2.11	ok	mic	mic							1» lin	1» lin						
2.17	11:Rack 2.17	ok	mic									1» lin						
2.18	12:Rack 2.18	ok	aesio	aesio	aesio						1» aesio	1» aesio	1» aesio	1» lin				

totals:	inputs	outputs	available (fibre)	speed	max length		
Loop 1:	224	192	88	2Gb	350m	Broadcast All Output IDs	Clear All Outputs
Loop 2:	176	200	128	2Gb	350m	Broadcast Only My Output IDs	X Close
available (engine):	96	104		sample rate	96000 Hz		

The Optocore Details Panel (shown above) shows the number of inputs and outputs mapped on each loop, the number of fibre channels available on each loop and the number of engine inputs and engine outputs remaining.

Console Send and Receive (Snd/Rcv) Ports
Each console can create an opto snd port for each loop and can also separate opto rcv ports for each loop.

The picture below shows ID 1 having a snd port for both loop 1 and loop 2 and rcv ports form ID3 on loop 1 and ID 5 on loop 2.

A dual loop console can have 2 snd ports (one per loop) and upto 8 Rcv ports (4 per loop).
Console Snd/Rcv ports will use up some of your 1008 optocore channels and also Engine input and output resources.