

TECHNICAL NOTE

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GUIDE TO RECORDING WITH DiGiCo SYSTEMS

All DiGiCo consoles include at least one MADI port. This provides a convenient high channel count interface to connect to recording devices.

MADI (AES10)

Before connecting a 3rd party device to a MADI Port on a DiGiCo product, there are several technical aspects to consider.

Running at 48K, MADI generally carries between 56 and 64 channels of digital audio. DiGiCo implement 56 channels of audio and use **channel 57** to transmit control data to stage racks.

Connecting to a console – In the Audio IO Panel [Master Screen – Setup Menu] select the relevant MADI Port and define it as a Standard MADI Connection. It will now only transmit 56 Channel.

Connecting to a rack – MADI Splits from racks can be configured to run with either 56 or 57 channel counts. You should ensure that the MADI outputs you are using are configured as 56 Channel streams. **The presence of channel 57 will cause problems with some recording devices.**

Running at 96K, there are additional checks to be made.

In addition to the 56 / 57 channel MADI configuration, there are two 96K configurations.

MADI at 96K supports half the channel count of MADI at 48K. So what was 56 channels at 48K becomes 28 channels at 96K. To achieve the full 56 channel capability, two connections are required – the first connection carries channels 1-28, the second channels 29-56.

The two versions of 96K MADI are referred to as SMUX and Hi-Speed. Both formats carry the same channel count, but have a different data structure. Manufacturer support of these two formats varies, so it is important to make sure you have compatible hardware.

DiGiCo SD Racks are capable of generating 64 channel MADI. Do not use this mode.

Instructions for checking / turning off channel 57 are at the end of this document

The following section details compatibility of a number of 3rd party devices with DiGiCo product.

56 Channel 48K mode is universally supported.

RME : HDSP MADI Interface (for PC & Mac with Nuendo, Logic, Maxtraxx etc...)

Supports both SMUX and Hi-Speed 96K modes.

Unaffected by the presence of DiGiCo Channel 57

Avid : MADI I/O

Supports Hi-Speed 96K Mode. Does not support SMUX. **Must be fed from console – not compatible with SD Rack MADI Output.**

Not compatible with DiGiCo Channel 57. MADI Stream must be defined as 56 Channels.

Euphonix : FC727 Series

Supports Hi-Speed 96K Mode. Does not support SMUX. Must be fed from console – not compatible with SD Rack MADI Output.

Not compatible with DiGiCo Channel 57. MADI Stream must be defined as 56 Channels.

SSL : XLogic Delta Link and MADI Extreme Card for PC & Mac (with Nuendo, Logic etc)

Supports both SMUX and Hi-Speed 96K modes.

Not compatible with DiGiCo Channel 57. MADI Stream must be defined as 56 Channels.

JoCoe : BlackBox MADI Recorder (BBR64)

Supports both SMUX and Hi-Speed 96K modes.

Unaffected by the presence of DiGiCo Channel 57

Rocknet : RN.334.MD MADI Interface

Supports SMUX 96K Mode. Does not support Hi-Speed.

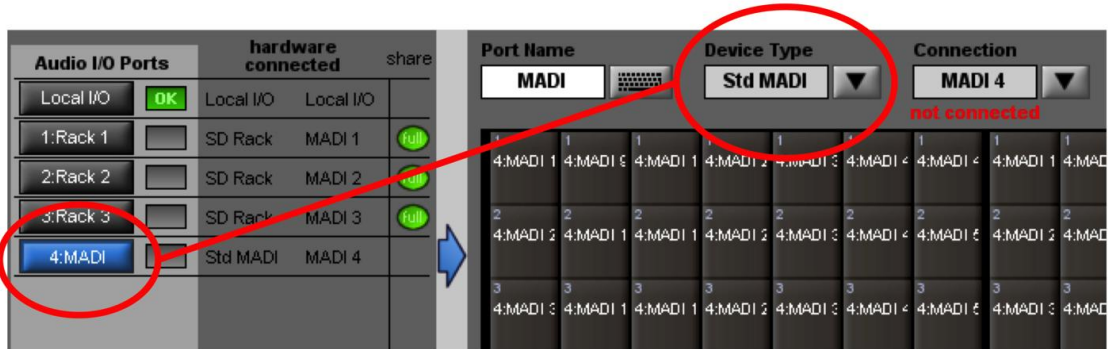
Unaffected by the presence of DiGiCo Channel 57 at 48K and 96K.

**For full technical details regarding MADI implementation in DiGiCo systems
please refer to Technical Note 294**

Turning off Channel 57

On a console, defining a MADI Port as Standard MADI automatically disables channel 57.

On the Master Screen, touch **Setup** (Top right hand corner) and select **Audio I/O**. In the panel that opens, select the appropriate **MADI Port**, then in the **Device Type** menu, select **Std MADI**.



On an SD Rack

Unlock the Menu system by pressing and holding the left and right buttons for 2 seconds.

Using the Up / Down buttons, scroll down to the menu for the MADI Splits.. labelled MadiSM for the Main MADI Split, and MadiSX for the Aux MADI Split. Using the menu system detailed below, ensure that the split(s) you are using are set to 56 channel mode. The settings are highlighted in the picture below.

			r:M id11 s:M 48K WMXO				
Set Opto ID < 12 >	Set Opto ID < 13 >	Set Opto ID < 14 >	Set Opto ID < 15 >	Set Opto ID < 16 >	Set Opto ID < 17 >	Set Opto ID < 18 >	Set Opto ID < 19 >
		Fibre Speed < 1G >	Fibre Speed < 2G >				
		USB select < Opto >	USB select < Rack >				
		Set Sync <INT>	Set Sync <AUTO>	Set Sync <WCLK>	Set Sync < RxM>	Set Sync < RxX>	Set Sync <OPTO>
INT SampRt < 44K1 >	INT SampRt < 48K >	INT SampRt < 88K2 >	INT SampRt < 96K >	INT SampRt < 176K >	INT SampRt < 192K >		
			Routing Mode <AUTO>	Routing Mode < RxM>	Routing Mode < RxX>	Routing Mode <OPTO>	
	MAIN MADI SPLIT	MadiSM Split < OFF >	MadiSM Split < ON >	MadiSM Split < GT >	MADI Split Enabled : Optional Gain Tracking (GT)		
		MadiSM SampRt < SYS >	MadiSM SampRt < SYS/2 >	If Rack is running at 96K, option to downsample MADI to 48K			
		MadiM type < 56ch >	MadiSM type <SD rck>	MadiSM type < 64ch >	Set to 56 Channels to switch off Channel 57		
	AUX MADI SPLIT	MadiSX Split < OFF >	MadiSX Split < ON >	MadiSX Split < GT >			
		MadiSX SampRt < SYS >	MadiSX SampRt < SYS/2 >				
		MadiM type < 56ch >	MadiSX type <SD rck>	MadiSX type < 64ch >			

Turning off Channel 57

On a DiGiRack

Unlock the menu system by pressing the two data buttons (Data Dec & Inc) together.

Scroll up / down the menu system to the items called TxA and TxB

TxA relates to the Main MADi Output. TxB relates to the Aux MADi Output.

With TxA or TxB selected, use the data buttons to set the number of MADi Channels being transmitted to 56 Channels. This disables channel 57.

Note : The DiGiRack runs at 48K only.