TECHNICAL NOTE



Date May 2012 ref TN 277 Raised by: RW Distributed to : As Required

Digico(UK) Ltd. unit 10 Silverglade Business Park Chessington Surrey KT9 2QL England Tel: +44 1372 845600 Fax: +44 1372 845656 email: <u>support@digiconsoles.com</u>

SD Rack Dante Card Operation

The SD Rack Dante card is a bi-directional 8 input / 8 output module which can be installed in any SD Rack slot from 1-7. It should not be installed in slots 8-14. On an SD MiNi or SD Nano Rack the card can be installed in any slot of your choice. The card can run in DiGiCo systems at 48KHz or 96Khz and has both Primary and Secondary Ports for

main and redundant connections.

All Dante devices are connected to each other via CAT5 connections using a Gigabit Ethernet switch but the Primary and Secondary Ports must be connected to 2 separate Ethernet switches. All Primary connections on one switch and all Secondary connections on another.



When the card is installed and the rack switched on and connected to an SD Series console the card will appear in the relevant port's rack picture in the Audio I/O panel (see below). The rack should be conformed in the normal way.

										-			
1	1 48	1 48	1 48	1 48	1 48	1 48	1	1 -10	1 -10	1 -10	1 -10	1 BR sys	1 BR sys
1:Dante	1:Mic 1	1:Mic 9	1:Mic 17	1:Mic 25	1:Mic 33	1:Mic 41	1:Dante	1:Line ou	1:Line ou	1:Line ou	1:Line ou	1:AES ou	1:AES ou
											Master		
	0.00 d8	0.00 d8	0.00 dB	0.00 dB	0.00 dB	0.00 d8	_	_					
2	2 48	2 48	2 48	2 48	2 48	2 48	2	2 -10	2 -10	2 -10	2 -10	2 BR sys	2 BR sys
T:Dante .		T:MIC TU	1:101C 18	1:MIC 20	1:MIC 34	1:010 42	T:Dante .	I:Une ou	I:Une ou	T:Une ou	T:Une ou	T:AES OU	TRAES OU
	0.00 ets	0.00 ets	0.00 etc	0.00 -18	0.00 -18	0.00 ets					Master H		
3	3 48	3 48	3 48	3 48	3 48	3 48	3	3 -10	3 -10	3 -10	3 -10	3 88 595	3 88.595
1:Dante 3	1:Mic 3	1:Mic 11	1:Mic 19	1:Mic 27	1:Mic 35	1:Mic 43	1:Dante :	1:Line ou	1:Line ou	1:Line ou	1:Line ou	1:AES ou	1:AES ou
	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB							
L.	L 48	48	L 48	48	L 48	L 48	L.	↓ -10	ا -10	↓ -10	↓ -10	ER sys	ER sys
1:Dante ·	1:Mic 4	1:Mic 12	1:Mic 20	1:Mic 28	1:Mic 36	1:Mic 44	1:Dante •	1:Line ou	1:Line ou	1:Line ou	1:Line ou	1:AES ou	1:AES ou
	0.000-00	0.000	0.000	0.000	0.00								
-	0.00 00	0.00 08	0.00 00	0.00 08	0.00 08	0.00 08	e .	E 10	E 10	E 10	5 10	C 1717 mm	5 D.D
1 · Dante ·	1 % fo 5	1 Mio 12	1.6460.21	1 Mio 20	1 Mio 27	1 % for 45	a 1∙Danto :	1 line ou	1 line ou	1 line ou	1 line ou		
T.Dante -	1.1010 0	1.010 10	1.1010 21	1.1010 28	1.1010 01	1.1010 40	T.Dante -	1. Line ou	1. une ou	1. une ou	T. Line ou	T.ALU OC	T.ALU UC
	0.00 d8	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 d8							
6	6 48	6 48	6 48	6 48	6 48	6 48	6	6 -10	6 -10	6 -10	6 -10	6 BR sys	6 BR sys
1:Dante I	1:Mic 6	1:Mic 14	1:Mic 22	1:Mic 30	1:Mic 38	1:Mic 46	1:Dante I	1:Line ou	1:Line ou	1:Line ou	1:Line ou	1:AES ou	1:AES ou
	0.00 d8	0.00 d8	0.00 d8	0.00 d8	0.00 dB	0.00 dB	_						
1.Dente 1	1 48 1 46 7	48 1.64a 15	48	48	48	1.48 48	1.Dente 1	1 -10 Lilina au	1 -10 Lilina au	-10 1 Jine au	/ -10		1 AEC of
T.Dante	1.0007	1.000 10	1.1010 2.5	1.1010-51	1.1010-38	1.1010 47	T.Dante	Lune ou	T. Line ou	r.une ou	T. Line ou	T.AES OC	LAES UC
	0.00 d8	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB							
8	8 48	8 48	8 48	8 48	8 48	8 48	8	8 -10	8 -10	8 -10	8 -10	8 BA sys	8 BR sys
1:Dante :	1:Mic 8	1:Mic 16	1:Mic 24	1:Mic 32	1:Mic 40	1:Mic 48	1:Dante :	1:Line ou	1:Line ou	1:Line ou	1:Line ou	1:AES ou	1:AES ou
	0.00 d8	0.00 d8	0.00 d8	0.00 d8	0.00 dB	0.00 dB	GT®®8P	GT BBP	GT 0 08P	GT ⁰ BP	GT 08P	GT 0 08P	GT ^{® ®} BP
DANTE	MIC	MIC	MIC	MIC	MIC	MIC	DANTE	LIN	LIN	LIN	LIN	AESO	AESO

The Dante card's sockets will appear in the console's input and output routing panels and therefore routing to and from the console to the Dante card is achieved in the same way as with any other DiGiCo Input/Output card.

Once a console route is in place the routing of the signal within the Dante network ie From one Dante device to another, must be set up using Audinate's Dante Controller running on a standalone computer (PC or Mac).

This controller application and detailed instructions for its use can be downloaded from http://www.audinate.com/

DiGiCo Dante cards will appear in the Dante Controller routing panel as follows:

This picture shows the Routing tab from the Dante Controller with 2 Dante cards. The green ticks represent routing from outputs across the top row to inputs in the left hand column.

For example, Output 1 from DiGiCo-060438 is routed in the Dante network to all of the inputs on DiGiCo-060438.



The Device Status tab shows details of the 2 cards including the automatically assigned IP addresses for both Primary and Secondary ports and the link speeds.

Routing Device Status Clock Status Events								
Device Name	Product Type	Product Version	Primary Address	Primary Link Speed	Secondary Address	Secondary Link Speed		
DiGiCo-060438	Bklyn2	3.5.2	169.254.167.25	1Gbps	172.31.167.26	100Mbps	~	
DiGiCo-06043a	Bklyn2	3.5.2	169.254.167.27	1Gbps	172.31.167.28	100Mbps		

The Clock Status tab shows shows which Dante Card is currently Clock Master and allows the user to select a Preferred Master and/or whether the cards are Slaved to external Word Clock.

NOTE: The External Word Clock is provided by the Host device which, in this case, is the DiGiCo rack so one card should be set to External Word Clcok to ensure that the Dante network is synced to the rack. The rack is normally synced from the attached DiGiCo console so all devices will then have a common sync source.

Routing Device Status Clock Status Events							
Device Primary Interface Name Clock Status		Secondary Interface Clock Status	Clock Role	Slave To External Word Clock			
DiGiCo-060438	Master	Master	Preferred Master	Ves	^		
DiGiCo-06043a	Slave	Passive	Preferred Master	Yes			

Double clicking on any card name will open another window with further information about the system in Device view. Cards can be selected from the drop down box and their information is then displayed. In the picture below there is detail about the Status of DiGiCo-06043B.

🙎 Dante Controller - Device View (DiGiCo-060438)						
File Device Help						
S 🔆 💿 🞾 DiGiCo-060438 🗸	?					
Receive Transmit Status Device Config Network Config Baseboard						
Dante Information Model: Bklyn2 Software Version: 3.5.2 Firmware Version: 3.5.2 Preferred: No Frequency Offset: -8000 ppb Primary Interface If Address: 169.254.167.25 MAC Address: 00:1D:C1:06:04:38 Tx Utilisation: 11 MBps Errors: 0 Rx Utilisation: 5 MBps Errors: 0 Rx Utilisation: 11 MBps Errors: 0						

The Device Config tab allows the user to adjust the sample rate of the Dante device and in the picture below it is set to 48KHz.

Dante cards can run at a different sample rate to the Host system but you can only route to or from devices that are set to the same sample rate.

Dante Controller - Device View (DiGiCo-060438)									
iile Device Help									
P ≫ OiGiCo-060438 ▼									
Receive Transmit Status	Device Config Network Config Baseboard								
Rename Device									
	DiGiCo-060438								
Sample Rate									
Sample	Sample Rate: 48k V Pull-up/down:								
	This device does not support Pull-up/down configuration.								
Receive Latency—	Receive Latency								
Current latency:	1.0 msec								
Latency	Latency Maximum Network Size								
0.15 msec	Gigabit network with one switch	_							
0.25 msec	O 0.25 msec Gigabit network with three switches								
0.5 msec	0.5 msec Gigabit network with five switches								
1.0 msec	1.0 msec Gigabit network with ten switches or gigabit network with 100Mbps leaf nodes								
🚫 5.0 msec	○ 5.0 msec Safe value								
-Reset Device									
	Reboot Factory Reset								

The Network Config tab allows the user to set the mode of the card.

DiGiCo Dante cards are designed to run in REDUNDANT mode allowing use of the Secondary port. If the Primary port is disconnected the audio will continue to pass via the Secondary port if it is connected.

Dante Controller - Device View (DiGiCo-060438)								
le Device Help								
× 💿 🞾	iiCo-060438 💙							
ceive Transmit Status Device Config Network Config Baseboard								
-Dante Perfundancy								
Current: Redundant								
New: Redundant 💙								
Addresses								
Obtain an IP Address Automatically (default) Obtain an IP Address Automatically (default)								
Manually configure an IP Address Manually configure an IP Address								
IP Address:	P Address:							
Netmask:	Jetmask:							
DNS Server:	DNS Server:							
Gateway:	5ateway:							
This device does not support static addressing								
Apply Revert								
-Reset Device								
Reboot Factory Reset								