## User's Manual

**DIGITAL SNAKE SYSTEM** 



## **Important Safety Instructions**



<u>/</u>

This symbol, wherever used, alerts you to the presence of un-insulated and dangerous voltages within the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions.

Please read.



Alternating current/voltage (for adapter).

- **ON:** Denotes the product is turned on.
- OFF: Denotes the product is turned off.

### WARNING

Describes precautions that should be observed to prevent the possibility of death or injury to the user.



### CAUTION

Describes precautions that should be observed to prevent damage to the product.

Disposing of this product should not be placed in municipal waste but rather in a separate collection.

### WARNING

### **Power Supply**

Ensure that them a inssource voltage (AC outlet) matches the voltage rating of the product. Failure to do so could result in damage to the product and possibly the user. Unplug the product before electrical storms occur and when unused for long periods of time to reduce the risk of electric shock or fire.

### **External Connection**

Always use proper ready-made insulated mains cabling (power cord). Failure to do so could result in shock/death or fire. If in doubt, seek advice from a registered electrician.

### **Do Not Remove Any Covers**

Within the product are areas where high voltages may present. To reduce the risk of electric shock do not remove any covers unless the AC mains power cord is removed. Covers should be removed by qualified service personnel only.

No user serviceable parts inside.

### Fuse (for adapter).

To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

### **Operating Conditions**

Always install in accordance with the manufacturer's instructions.

To avoid the risk of electric shock and damage, do not subject this product to any liquid/rain or moisture. Do not use this product when in close proximity to water.

Do not install this product near any direct heat source. Do not block areas of ventilation. Failure to do so could result in fire.

Keep product away from naked flames.

### **IMPORTANT SAFETY INSTRUCTIONS**

Read these instructions Follow all instructions Keep these instructions. Do not discard. Heed all warnings. Only use attachments / accessories specified by the manufacturer.

### Cleaning

When required, either blow off dust from the product or use a dry cloth.

Do not use any solvents such as Benzol or Alcohol. For safety, keep product clean and free from dust.

### Servicing

Refer all servicing to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.

### PORTABLE CART WARNING



Carts and stands - The component should be used only with a cart or stand that is recommended by the manufacturer. A component and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the component and cart combination to overturn.

## **Table of Contents**

1. Preface	4
2. Features	4
3. Useful Data	4
4. Function Introduction	5
5. System Linkage Controls	6
6. PC Software Controls	13
7. PC Firmware Updates	14
8. System Linkage Diagram	18
9. Block Diagram	19
10. Technical Specification	20
11. Troubleshooting	21

These product are for professional use. They can be used in following electromagnetic environment: residential, commercial and light industrial, urban outdoors. They are intended for rack mounting. When under the EM disturbance, the ratio of signal-noise may be changed above 3dB.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC Statement:

"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Introduction

Thank you for purchasing the Digital Snake System. Up to 100-meter or more than 1000-meter transmission distance can be reached when using the CAT5 cable or fiber cable separately. It delivers uncompressed digital audio in high quality, extra low noise and real time through a standard Ethernet network. The audio transmission function can be set with professional software and stored in the device for independent usage so that it makes usage more flexible and affordable. All of signals will be transmitted through digital Ethernet network so that it can avoid the distortion issue caused by sending analog signal. It can help to save the cost for installation and maintenance as the unit is suitable for any situation and transmits signal through Ethernet network. Also the unit also can be controlled remotely through discovering software.

It is recommended that you read the manual of this machine carefully before use in order to familiarize yourself with the features applications and operation procedures and avoid some problems during furtuer installation and operations.



### **Features**

- 24 MIC analog inputs / 12 XLR analog outputs.
- 48V phantom power control and power indicator.
- 0dB~50dB input digital gain control.
- 100~240V wide voltage switching power.
- Up to 24 inputs for T-DANTE / 12 output network real-time transmission of digital signals & multiple expansions. Support to modify the device ID with PC software.

## **Useful Data**

Please write your serial number here for future reference.

Serial Number:

Date of Purchase:

Purchased at:

## **Function Introduction**





### **1. Power Indicator**

The indicator lights up when the power is turned on.

### 2. Linked-status indicator

Under the Dante mode, that the LED lights up means current sampling rate is 96K.

### 3. MIC Input Jack

Equipped with 24 MIC input channels.

### 4. Analog output channel

XLR jack used to output analog signals.

### **REAR PANEL**



### 5. Power Switch

### 6. AC input

It used forAC input.

Note: 100-240V-50/60Hz. Fuse: T1.6AL AC250V. Power consumption: 40W.

### 7. DANTE port

Two DANTE ports labeled "primary" and "secondary". Only need to connect the "primary" Ethernet port not both, Or it will become a redundant fail safe. That is, in case the "primary" port loses communication, the secondary port will quickly take over. It can provide extremely high reliability in critical application by the feature of carefully network design and topology.

Two LEDs are equipped for each ethernet port. When the yellow lights for the "secondary" Ethenet port, it shows the Ethernet port can be used after your Digital Snake System is powered. The green on the Ethernet port will flash when there is a data transfer.

## 5

## System Linkage Controls

### About system linkage

About the setting when the digital snake system is used with DM series digital mixer together. Hookup diagram for system linkage.



### Indirect wiring diagram via router/switcher.



## Setting steps based on the digital audio expander as receiver.

1. Select the channel to send DANTE signal source for the digital mixer.

1.1. Press down the "sends" button on the front panel and then the Bus assignment page shown on LCD screen.



1.2. Touch the "ON" switch shown on this interface to assign the channel signals into the Bus.





1.3. Press the "Output Patch" button on the front panel to enter below interface. Then touch "DANTE Output" box on LCD screen and then select related "DANTE OUT" you want from "DANTEOUT01~32" by touching and then select related channels from pop-up menus as signal sources of DANTE output.

MIXERS	. US	CA LAYE	ir p Er dyn	eq Iamic	GEQ BUS MIX	ER	TB/OSC EFFECT		AUTO MIX GROUP SET		USB KEY USER KEYS	ME	ters . Room	DANTE S	H SET	SYSTEM
DANTE OU	101	DANTE	OUTO2	DANTE	OUT03	DANTE	OUT04		DANTE OUTOS		DANTE OUT	06	DANTE	OUT07	DANTI	OUTOS
OFF	T	OFF	V	OFF	V	OFF	1	7	OFF	V	OFF	V	OFF	▼	OFF	
DANTE OU	109	DANTE	OUT10	DANTE	OUT11	DANTE	OUT12		DANTE OUT13	1	DANTE OUT	14	DANTE	OUT15	DANTI	OUT16
OFF	T	OFF	V	OFF	V	OFF		7	OFF	V	OFF	V	OFF	▼	OFF	V
DANTE OU	17	DANTE	OUT18	DANTE	OUT19	DANTE	OUT20		DANTE OUT21	l.	DANTE OUT	22	DANTE	OUT23	DANTI	OUT24
OFF	V	OFF	V	OFF	▼	OFF	1	7	OFF	V	OFF	V	OFF	V	OFF	T
DANTE OU	125	DANTE	OUT26	DANTE	OUT27	DANTE	OUT28		DANTE OUT29		DANTE OUT	30	DANTE	OUT31	DANTI	OUT32
OFF	V	OFF	▼	OFF	▼	OFF		7	OFF	▼	OFF	V	OFF	▼	OFF	▼
INPUT PA	лтсн						ou	TPL	IT PATCH							
INPUT F	АТСН	B	us Mix Inp	ut			An	alog	output	DA	ANTE Output		INSERT	SEND	INSO	RT RETURN





### 2. Setting steps when local signal sent to DANTE channel

Press the "system" button on the front panel or touch the "system" icon on LCD screen to etner below interface. And then touch "digital level control" box on LCD screen to open the digital output channels by clicking "ON" icon.

MIXERS CHANNEL	DCA LAYER USER LAYER	PEQ DYNAMIC	GEQ BUS MIXER	TB/OSC EFFECT	AUTO MIX GROUP SET	USB KEY USER KEYS	METERS CTRL ROOM	PATCH DANTE SET	SYSTEM ENGI
NO.	ITEM	DESCRIPTI	ON	SPEC					
01-01 AU	IO CLOCK	SAMPLING RATE	48kHz			Enter	SAFE M	ODE M	UTE Groups
01-02 SLC	π	CARD TYPE	DANTE				-		
01-03 NE	ER	PEAK HOLD					PATCH S	Setup D	ANTE Setup
01-04 SO	TVARE	VERSION			De	vice Setup	Automix	Setup C	Control
					Pa	anel Setup	Default S	etting Upd	late Firmwa 2
					U	ser Setup	User La Setu	iyer (	SROUP Set
					Net	work Sctup	Passw Setu	ord p Op	Enter erator Mode
					Au	idio Setup	Current Pro	eset	
					-		Default		
					U	ser Keys	Device Nan	16	
							DH48.20		
								Fa	ctory Setting

MIXERS CHANNEL	DCA LAYER USER LAYER	PEQ DYNAMIC	GEQ BUS MIXER	TB/OSC EFFECT	AUTO MIX GROUP SET	USB KEY USER KEYS	METERS CTRL ROOM	PATCH DANTE SET	SYSTEM
0.0 OUTPUTO1 ON	O. OUTPI		0.0 JTPUTO3 ON	0.0 OUTPUT04 ON	OUTPUTOS	OUTPU	T06 OU	0.0 TPUT07 ON	0.0 OUTPUTOS ON
0.0 OUTPUTOS ON	0. OUTPI		0.0 JTPUT11 ON	0.0 OUTPUT12 ON	0.0 OUTPUT13 ON	0.0 OUTPU ON	T14 OU	0.0 TPUT15 ON	0.0 OUTPUT16 ON
0.0 OUTPUT17 ON	O. I OUTPI ON	JT18 OL	0.0 JTPUT19 ON	0.0 OUTPUT20 ON	0.0 OUTPUT21 ON	0.0 OUTPU ON	T22 OU	0.0 TPUT23 ON	0.0 OUTPUT24 ON
0.0 OUTPUT25 ON	O.I OUTPI	JT26 OL	0.0 JTPUT27 ON	0.0 OUTPUT28 ON	0.0 OUTPUT29 ON	0.0 OUTPU ON	T30 OU	0.0 TPUT31 ON	0.0 OUTPUT32 ON
DANTE Set	up		c	ligital Input/Out	put Level Contre	ы	Input Char	nel O.	utput Channel

### 3. The assignment of DANTE routing

3.1 Press the "system "button on the front panel or touch the "system" icon on LCD screen to enter below interface. And then touch "DANTE setup " box on LCD screen to enter the interface on below right. The name & ID number of linked digital snake system will be displayed on "DANTE receiver list".

MIXERS	DCA LAYE	iR ER	PEQ DYNAMIC	GO BUS N	iQ AIXER	TB/OSC EFFECT	AUTO MIX GROUP SET	USB KEY USER KEYS	METERS CTRL ROOM	PATCH DANTE SET	ENGINEER	CHANNE	S DCA U EL USER U
NO.	ITEM		DESCRIPT	10N		SPEC						DANTE	Receiver Ust
01-01	AUDIO CLOCK	SAM	PLING RATE		48kHz			Enter	SAFE M	ODE M	UTE Groups	001	DM48-100
01-02	SLOT	CAR	D TYPE		DANTE								
01-03	NETER	PEA	K HOLD						PATCH S	Setup D.	ANTE Setu	002	
01-04	SOFTWARE	VER	SION		¥ 3.0		D	vice Setup	Automix	Setup	ligital Level Control	\$ 003	D10-300
							P	anel Setup	Default S	letting Upd	late Firmware	004	NC
							U	ser Setup	User La Setu	ayer (	ROUP Set	005	NC
							Net	work Sctup	Passw Setu	ord p Op	Enter erator Mode	006	NC
							A	idio Setup	Current Pro	eset		007	NC
-									Default				
								Jser Keys	Device Nan	ne		800	NC
									DH48.20				
										Fa	ctory Setting		

MIXERS CHANNEL	DCA LAYER USER LAYER	PEQ DYNAMIC	GEQ BUS MIXER		TB/OSC EFFECT	AUT	0 MIX JP SET	USB KEY USER KEYS	Ē	IETERS RL ROOM	PA	ich E set	SYSTEM
DANTE Rec	elver Ust		Total: 02										
					Transmitt	er -	Chann	đ		Transmit	ter	Chan	el 🛛
001 DM4	8-100			CH01	NC	V	NC	▼	CHO2	NC	V	NC	V
					Transmitt	er.	Chann	đ		Transmitt	ter	Chan	wil .
002 NC				CH03	NC	T	NC	▼	CH04	ис	V	NC	▼
		_	_		Transmitt	er.	Chann	d		Transmit	ter	Chan	sel
003 DIC	-300			CHOS	NC	V	NC	▼	CHOS	ис	V	NC	V
					Transmitt	er.	Channe	el		Transmitt	ter	Chan	vel
004 NC				CH07	NC	۷	NC	▼	CH08	NC	V	NC	V
0.05 NC					Transmitt	er.	Chann	đ		Transmitt	ter	Chan	wil
000 NC				CHO9	NC	V	NC	▼	CH10	NC	V	NC	V
006 NC					Transmitt	ser -	Chann	d		Transmitt	ter	Chan	vel
000 110				CH11	NC	V	NC	▼	CH12	ис	▼	NC	V
007 NC			- 11		Transmitt	er.	Channe	d		Transmitt	ter	Chan	xl .
				CH13	NC	V	NC	▼	CH14	мс	V	NC	V
008 NC					Transmitt	ær	Chann	đ		Transmitt	ter	Chan	wil
				CH15	NC	V	NC	▼	CH16	ис	V	NC	V
Scan							ſ	Digital Level Control		IN 1-16	;		IN 17-32

# 5

## System Linkage Controls

3.2. Selecting receiver and transmitter from the list

Select "DIO-300" shown on "DANTE receiver list" as receiver and the touch any transmitter channel on the right to select DM48-100 as transmiter from pop-up submenu.



3.3. Connect the DANTE card to your PC, Then open the "DANTE Controller" software installed in your PC and click "fresh" button to recognize related devices and then enter below interface. Also it is available to proceed MATRIX setting for DANTE card.

🧕 Dante Controller - Network View		• ×
File Device View Help		
🐓 🖿 🗙 🗸 🖼 🕀	Master Clock: DIO-200	0
Routing Device Info Clock Status Netwo	ork Status Events	
Dante Filter Transmitters	- 000-000	
Filter Receivers		
H  Dante Receivers		
E D648-100		
	(	F
8 🖬	Multicast Bandwidth: 0 bps Event Log: Clock Status	Monitor:

3.4 The MATRIX system divided into two parts (receiver and transmitter)

Select "DIO-300" shown on "DANTE receiver list" as receiver and the touch any transmitter channel on the right to select DM48-100 as transmiter from pop-up submenu. then click related channels for further setting.



3.5. It is available to proceed audio transmission after all above settings completed.

MIXERS	DCA LAYER USER LAYER	PEQ DYNAMIC	GEQ BUS MIXE	R	TB/OSC EFFECT	AUT GROU	D MIX	USB KEY USER KEY	s 🚮	IETERS RL ROOM	DANT	e set	SYSTE
DANTE Rec	elver Ust		Total 02										
					Transmitte	r	Channe	8		Transmitt	er	Chann	wil .
001 DM4	8-100			CH01	DH48-100	▼	Output	01 V	CH02	DH48-100	▼	Outpu	t02 🔍
					Transmitte	ir	Channe	1		Transmitt	er -	Chann	wil .
002 NC				CH03	DH48-100	₹	Output	03 🔻	CH04	DM48-100	▼	Outpu	t04 🔍
		_			Transmitte	ir.	Channe	đ		Transmitt	er	Chann	vel .
003 DIC	)-300			CHOS	DH48-100	V	Output	05 🔻	CH06	DM48-100	V	Outpu	t06 🔍
					Transmitte	r	Channe	4		Transmitt	er	Chann	wil
UU4 NC				CH07	DH48-100	₹	Output	67 🔻	CH08	DH48-100	▼	Outpu	t08 🔍
005 NC					Transmitte	ir.	Channe	8		Transmitt	er:	Chann	iel
005 NC				CH09	DH48-100		Output	09 🔻	CH10	DH48-100		Outpu	t10 V
006 NC					Transmitte	r	Channe	-		Transmitt	er	Chann	wil.
					DH48-100	V	Output	11 🔻	CH12	DH48-100	V	Outpu	t12 🔍
007 NC					Transmitte	ir	Channe	1		Transmitt	er 🛛	Chann	id I
				CH13	NC	▼	NC	•	CH14	мс	V	NC	
008 NC					Transmitte	ir.	Channe			Transmitt	er	Chann	wil.
				CH15	NC	V	NC	▼	CH16	ис	V	NC	T
Scan								Control		IN 1-16	-		IN 17-32

### Setting steps based on the digital mixer as receiver

### 1. Select the channel to send DANTE signal source for your digital expander.

1.1 Press down the "input patch" button on the front panel to enter below interface. Then switch a certain number of analog channels into digital channels based on the number of connected expander by following below diagram. For example: 24 channels will be selected as digital signal sources when one expander connected.

MIXERS CHANNEL	DC US	CA LAYER SER LAYER	PI DYN	eq Amic	GEQ BUS MIX	ER EF	/0SC FECT	AUTO MIX GROUP SET	u	USB KEY ISER KEYS		TERS ROOM	DANTE S	H SET	ENG	STEM NEER
CH01		CH02		CHO3		CH04		CH05		CH06		CH07		CHOE	l.	
Ana log1	V	Analog2	V	Analo	93 🔍	Analog4	V	Analog5	V	Analog6	V	Analo	7 🔻	Ana	8601	
CH09		CH10		CH11		CH12		CH13		CH14		CH15		CHIE	i	
Analog9	V	Analog10	V	Analo	911 V	Analog1	2 🔻	Analog13	V	Analog14	V	Analo	15 🔻	Ana	10916	V
CH17		CH18		CH19		CH20		CH21		CH22		CH23		CH24		
Analog17	V	Analog18	V	Analo	919 V	Analog2	0 V	Analog21	V	Ana log22	V	Analo	23 🔻	Ana	10924	V
CH25		CH26		CH27		CH28		CH29		CH30		CH31		CH32		
Analog25	V	Analog26	T	Analo	927 🔻	Analog2	8 🔻	Analog29	V	Ana log30	T	Analo	31 🔻	Ana	10932	V
CH33		CH34		CH35		CH36		CH37		CH3B		CH39		CH4E		
Digital 1	V	Digital 2		Digit	al 3 🔻	Digital	4 V	Digital 5	V	Digital 6	V	Disit	17 🔻	Dig	ital 8	V
CH41		CH42		CH43		CH44		CH45		CH46		CH47		CH48		
Digital 9	V	Digital 1	0 🔻	Digit	al 11 🔻	Digital	12 🔻	Digital 13	V	Digital 1	4 🔻	Digiti	1 15 🔻	Dig	ital 16	$\mathbf{\nabla}$
TB/OSC																
OFF	V															
INPUT PATCH						OUTPI	JT PATCH									
INPUT PATE	INPUT PATCH Bus Mix Input					Analog output D			DANTE Output		INSERT	SEND	INS	ERT RE	TURN	

CHANNE		CA LAYER	P DYN	eq Amic	GEQ BUS MIX	ER E	B/OSC FFECT	AUTO GROUP	MIX	USB KEY USER KEY		TERS ROOM	DANTE	N SET	SYSTEM ENGINEER
CHO1 Digit		CHO2 Analosi		CHO3 Analog	3 🔻	CH04 Analog	4 ▼	CHO5 Analog	5 ₹	CH06 Analog	5 ₹	CHO7 Analos	a7 V	CHO8 Analo	98 V
CH09 Analog9	Š	CH10 Analog1	0 🔻	CH11 Analog	11 🔻	CH12 Analog	12 🔻	CH13 Analog	13 🔻	CH14 Analog	14 🔻	CH15 Analos	a15 🔻	CH16 Analo	916 🔻
Analog I	Analog 2	Analog 3	Analog 4	Analog 5	Analog 6	Analog 7	Analog B	Analog 9	Analog IO	Analog II	Analog 12	Analog B	Analog 14	Analog IS	Analog 16
Analog 17	Analog 18	Analog 19	Analog 20	Analog 21	Analog 22	Analog 23	Analog 24	Analog 25	Analog 26	Analog 27	Analog 28	Analog 29	Analog 30	Analog 31	Analog 32
Digital I	Digital 2	Digital 3	Digital 4	Digital 5	Digital 6	Digital 7	Digital B	Digital 9	Digital IO	Digital II	Digital 12	Digital B	Digital 14	Digital IS	Digital IG
Digital 17	Digital 18	Digital 19	Digital 20	Digital 21	Digital 22	Digital 23	Digital 24	Digital 25	Digital 26	Digital 27	Digital 28	Digital 29	Digital 30	Digital 31	Digital 32
								OFF					EXIT		
Digital	9 🔻	Digital	10 🔻	Digita	l 11 🔻	Digita	1 12 🔻	Digita	1 13 🔻	Digita	14 🔻	Digita	1 15 🔻	Digit	al 16 🔻
TB/OSC OFF	v														
INPUT P	ATCH						OUTPI	JT PATCH							
INPUT	РАТСН	But	Mix Inpu	rt			Analo	g output	D	ANTE Outp	ut	INSERT	SEND	INSEP	T RETURN

MIXERS CHANNEL	DCA U	AYER DY	PEQ NAMIC	GEQ BUS MIX		TB/OSC EFFECT	AUTO MIX GROUP SET	U	USB KEY ISER KEYS	CTRL	ROOM	DANTE S	H SET	SYST	EM
CHO1 Digital 1	CHO:	ital2 ▼	CHO3 Digit	al 3 🔻	CHO4 Digita	al 4. 🔻	CHOS Digital 5	v	CHO6 Digital 6		CHO7 Digita	7 ₹	CHO8 Digi	tal 8 1	7
CHO9 Digital 9	CH11	i ital 10 ▼	CH11 Digit	al 11 🔻	CH12 Digita	al 12 🔻	CH13 Digital 13	v	CH14 Digital 1	4 🔻	CH15 Digita	I 15 🔻	CH16 Digi	tal 16	-
CH17 Digital 17	CH11	ital 18 ▼	CH19 Digit	al 19 ▼	CH20 Digita	al 20 🔻	CH21 Digital 21	v	CH22 Digital 2	2 🔻	CH23 Digita	I 23 🔻	CH24 Digi	tal 24 1	
CH25 Analog25	CH2	log26 🔻	CH27 Analo	927 V	CH28 Analos	28 🔻	CH29 Analog29	v	CH30 Analog30	¥	CH31 Analog	31 🔻	CH32 Anal	0932	-
CH33 Digital 1	CH34	i ital 2 ▼	CH35 Digit	al 3 🔻	CH36 Digita	14 🔻	CH37 Digital 5	v	CH38 Digital 6	V	CH39 Digita	7 ▼	CH40 Digi	tal 8 🕚	-
CH41 Digital 9	CH4:	ital 10 ▼	CH43 Digit	al 11 🔻	CH44 Digita	1 12 🔻	CH45 Digital 13	v	CH46 Digital 1	4 🔻	CH47 Digita	15 ₹	CH48 Digi	tal 16 '	-
TB/OSC OFF	•														
INPUT PATCH	I					OUTPL	JT PATCH								
INPUT PATO	INPUT PATCH Bus Mix Input					Analo	g output	DA	NTE Output		INSERT :	SEND	INSE	RT RETU	RN

### 2. Setting steps based on the digital mixer receiving DANTE signal

Press the "system" button on the front panel or touch the "system" icon on LCD screen and then select "digital level control" from the drop-down menu to open the digital input channels by clicking "ON" icon.



### 3. DANTE Routing assignment

3.1 Press the "system" button on the front panel or touch the "system" icon on LCD screen to enter below iterface. and then touch "DANTE setup " to enter "DANTE assignment " page. The name & ID number of linked digital expander will be displayed on "DANTE receiver list".

CHANNE	DCA LAY	ir peq er dynamic	GEQ BUS MIXER	TB/OSC EFFECT	AUTO MIX GROUP SET	USB KEY USER KEYS	METERS CTRL ROOM	PATCH DANTE SET	SYSTEM ENGINEER
NO.	ITEM	DESCRIPT	TION	SPEC					
01-01	AUDIO CLOCK	SAMPLING RATE	48kH:			Enter	SAFE M	ODE M	IUTE Groups
01-02	SLOT	CARD TYPE	DANTI						
01-03	METER	PEAK HOLD	25				PATCH	Setup D	ANTE Set
01-04	SOFTWARE	VERSION	v 3.1	00	_	_		-	
					De	vice Setup	Automix	Setup	Control
					P	anel Setup	Default S	etting Up	date Firmware
					U	ser Setup	User La Setu	ayer P	GROUP Set
					Net	work Setup	Passw Setu	ord p Oj	Enter Derator Mode
					A	adio Setup	Current Pr	eset	
							Default		
						Jser Keys	Device Nar	ne	
					_		DH48.20		
								R	ictory Setting

MIXERS	DCA LAYER USER LAYER	PEQ DYNAMIC	GEQ BUS MIXE	R	TB/OSC EFFECT	GROU	D MIX	USB KEY USER KEYS		IETERS RL ROOM	DANT	E SET	ENGINEE
DANTE Recei	ver Ust		Total: 02										
					Transmit	ter	Chann	۹. ۲		Transmitt	ter	Chann	vel .
001 DM48	3-100			CH01	NC	V	NC	▼	CH02	NC	V	NC	V
			_		Transmit	ter	Chann	d		Transmitt	ber	Chann	iel
002 NC				CH03	NC	V	NC		CHB4	NC	V	NC	V
					Transmit	ter	Chann	d		Transmit	ter	Chann	xel
003 DIO-	300			CHOS	NC		NC	V	CH06	NC		NC	V
					Transmit	ter	Channe	đ		Transmit	ber	Chann	wil .
004 NC				CH07	NC	▼	NC	▼	CH08	NC	▼	NC	
0.05 NC					Transmit	ter	Channe	d		Transmit	ter	Chann	xel
005 NC				CH09	NC	▼	NC	▼	CH10	ис	V	NC	V
0.06 NC					Transmit	ter	Chann	el		Transmitt	ter	Chann	wil .
000 NC				CH11	NC	▼	NC	▼	CH12	кс	▼	NC	T
007 NC				Transmitter		Channel			Transmitter		Channel		
				CH13	NC		NC	▼.	CH14	NC		NC	V
008 NC					Transmit	ter	Channe	đ		Transmit	ter	Chann	vel 🛛
				CH15	NC		NC		CH16	NC			The second secon

### 3.2 Receiver and Transmitter selection

Select "DM48-100" shown on "DANTE receiver list" as receiver and the touch any transmitter channel on the right to select DIO-300 as transmiter from pop-up submenu. then click related channels for further setting.

MIXERS	DCA LAYER	PEQ	GEQ BUS MIXER	TB/050	AUTO	MIX	USB KEY USER KEYS	C.	NETERS	PAT	ICH SCT	SYSTEM		Selec	Transmitt	er					l
ANTE Rec	elver Ust		Total 02											001	DM48-1	00					
01 DM4	8-100			CHO1 DI0-30	0	Output0	n <b>⊤</b>	CH02	NC		KC	V		002							
002 NC				Transf CH03 NC	itt	Channel	V	CH04	Transmitte NC	ir V	Channe	V		003	D10-30						
003 DIC	)-300			Transa CHOS NC	litter	Channel NC	V	CH06	Transmitte NC	ir V	Channe NC	l V	$\neg \nu$	004		5					
004 NC				Transa CH07 NC	litter V	Channel NC	V	CHO8	Transmitte NC	ir V	Channe NC	۲. T			5can	Previo	us	Next			
005 NC				Transn CHO9 NC	litter	Channel NC	V	CH10	Transmitte NC	ir V	Channe	t. V		Select	Transmit (	hannel					ļ
006 NC				Transa CH11 NC	litter	Channel NC	V	CH12	Transmitte	ir V	Channe			СНО	о сноз	СНОЗ	CHO4	сноя	CH06	CH07	ł
007 NC				Transn CH13 NC	altter	Channel NC		CH14	Transmitte	ir V	Channe	I V		СНІ	СНІВ	СНІЭ	CHSO	СНЗІ	CHSS	СН23	l
008 NC				Transa	iltter	Channel			Transmitte	ir 🗸	Channe	·		СН2	5 СН26	CH27	CH28	СН29	СНЗО	СНЭІ	l
				CHIS NO				1116			- Inter			OF				e	dt		
Scan						Di	gital Level Control		IN 1-16		IN	17-32									

3.3. It is available to transmit audio signals after all above setting steps completed. At this time the digital signals received can be assigned into the Bus or main outputs.

MIXERS DCA LAYER CHANNEL USER LAYER	R PEQ R DYNAMIC	GEQ BUS MIXER		TB/OSC EFFECT	AUTO	MIX P SET L	USB KEY JSER KEYS	5 cm	ETERS RL ROOM	PA	TCH A	SYSTEM ENGINEER
DANTE Receiver List		Total: 02										
001 DM48-100			CH01	DIO-300		Output01		CHO2	DIO-300	ľ	Output0	2 V
002 NC			СНОЗ	Transmitte	•	Channel Output01		CHD4	Transmitte 010-300	•	Channel Output0	
				Transmitte		Channel			Transmitte	r	Channel	
003 DIO-300			CH05	010-300	V	Output0	5 V	CHO6	010-300		OutputO	V
004 NC			CH07	Transmitte DIO-300	r	Channel Output01		снов	Transmitte DIO-300	r	Channel Output0	T T
005 NC		- li	cuoo	Transmitte	-	Channel			Transmitte		Channel	
			CHUS	Transmitte	_	Chappel		CHIO	Transmitte		Changel	
006 NC			CH11	010-300	V	Output11	V	CH12	010-300	V	Output1	<b>V</b>
			CH12	Transmitte	r	Channel		-	Transmitte	r	Channel	
0.08 NC			enta	Transmitte	-	Channel		GILLA	Transmitte	r	Channel	
000 110			CH15	DI0-300	V	Output1	5 🔻	CH16	DIO-300	V	Output1	V
Scan						Dig	ital Cevel Control		IN 1-16	_	IN	7-32

3.4. Connect the DANTE card with PC, open the "DANTE Controller" software installed in PC and click "fresh"button to recognize related devices and then enter below interface. Also it is available to proceed MATRIX setting for DANTE card.

🧕 Dante Controller - Network View	
File Device View Help	
😏 🖿 🗙 🗸 🖾 🕀	Master Clock: DIO-300
Routing Device Info Clock Status Netw	ork Status Events
@Dante <sup>-</sup>	
Filter Transmitters	•
Filter Receivers EL St	
Dante Receivers	
EDIG-500	
	· · · · · · · · · · · · · · · · · · ·
P: 🔳	Multicast Bandwidth: 0 bas Event Log: Clock Status Monitor:

3.5 The MATRIX divided into two parts (receiver and transmitter)

Select "DM48-100" shown on "DANTE receiver list" as receiver and the touch any transmitter channel on the right to select DIO-300 as transmiter from pop-up submenu. then click related channels for further setting.



# 5

## System Linkage Controls

3.6 Since related channel has been selected to input signal sources from digital mixer. That adjust gain value of digital snake system or power on/off 48V phantom power can be operated on channel page after corresponding channels selected.

MIXER	6	DCA LA USER LA	YER YER I	PEQ	GEQ BUS MIXER	TB/OSC EFFECT	AUTO MIX GROUP SE	USB T USER	KEY ME	TERS L ROOM	PATCH DANTE SET	SYSTEM ENGINEER
BUSO1 Post	ON 0.0	BUSD2 Post	ON 0.0	+29 0			Main Assign	+15 +19 +5				Digital 1 PATCH
BUS03 Post	0.0	BUSD4 Post	ON 0.0	-20 - -40 -	6		48V	•				INS POST
BUSO5 Post	ON 0.0	BUSD6 Post	ON 0.0	40			Phase	-10				INS ON
BUS07 Post	ON 0.0	BUSD8 Post	ON 0.0		GAIN F	EDUCTION	Mute	4 HRM	■ U+4,2 3,0	3.0	3 1	-10
BUS09 Post	ON 0.0	BUS10 Post	ON 0.0	PRE EQ	CH01	GATE	Solo					
BUS11 Post	ON 0.0	BUS12 Post	ON 0.0	100ms	1000ns	- 4	CH01	<ul> <li>a</li> <li>79</li> </ul>	Q 300	a 1.16k	a ► 4.95k	
BUS13 Post	ON 0.0	BUS14 Post	ON 0.0				CH01	8				
BUS15 Post	ON 0.0	BUS16 Post	ON 0.0	ATTACK	RELEASE	348	*= !=	FREC	FREQ	FREQ	FREQ	42
FX01 Post	ON 0.0	FX02 Post	ON 0.0									-10
FX03 Post	ON 0.0	FX04 Post	ON 0.0	RATIO	GATE ON	GAIN COMP ON	e 21	GAIN	GAIN RTA ON	GAIN	GAIN	-
Sends to B	US			COMP PAG	DYNAMICS	-	• •= =		EQU	ALIZER	_	Control Room
CHAN	NEL	CHU	NNEL	D.0 PRE AN	dB ON	0.0000 mS IELAY	8-1-1-1 8-1-1-1-1	ON FBC	Q - FREQ - GAIN -			SOLO PFL

### Linkage setting steps based on 2 digital snake systems (DIO24) connected

1. Arrange configuration according to the linkage diagram(1) on page18.

2. Connect the DANTE card with PC, open the "DANTE Controller" software installed in PC and click "fresh" button to recognize related devices and then enter below interface. Then proceed the MATRIX settings for DANTE card.

👱 Dante Controller - Network	View			_ <b>— X</b>
File Device View Help				
🛷 🖿 🗙 🗸 🖼 🕀		Master Clock: DIO-	300	0
Routing Device Info Clock Status	Network Status Events			
@Dante <sup>~</sup>				
Filter Transmitters	nitters			
Filter Receivers				
Dante Receivers	(III) Dante			
± DKO-300	S 🗉 🗄			^
±12448-300				
_	<			
P: 🖬		Multicast	Bandwidth: 0 bps Event Log: C	lock Status Monitor: 📃

3. The MATRIX divided into two parts (receiver and transmitter)

Select "DM48-100" shown on "DANTE receiver list" as receiver and the touch any transmitter channel on the right to select DIO-300 as transmiter from pop-up submenu. then click related channels for further setting.



## **PC Software Controls**

6

### **Setting Diagram**



1. Open the DIO24 Control Editor

福案(F) 編輯(E) 检視(V) 工具(T) 說明(H) 組含管理 ◆ 加入至標證嗎 ◆ 共用對象 ◆ 新撤資料表

 DiO 24
 DiO 24
 DiO 24
 Setting.ini

 Control Editor v10.7.exe
 ).doc
 ).doc
 Setting.ini

 2. Select network port from below pop-up dialogue box.

DIO24 Network Interface Cor	nfigure
Network Interface Select	無線網路連線  ▼
ОК	Refresh

3. Click "OK" to enter software-control page as below.



4. Click the "Search" button on the left corner to search related devices. Then select the device from the list for connection.



5. Once sucessful connection, user can control the digital Gain or 48V phantom power of DIO24 under this software interface.



6. Click the "system" on the right corner to setup device name & ID or switch interface language between English and Chinese.



### About DANTE

This product uses the Dante digital audio network protocol to send and receive audio signals. The "24 in 12 out DANTE network audio" as the default configuration network audio protocol. Dante is a protocol developed by Audinate that is designed to deliver multichannel audio signals at various sampling and bit rates, as well as device control signals over a Gigabit Ethernet network. Please visit the Audinate website: <u>http://www.audinate.com</u> for more details.

### 1. Firmware upgrade

The module firmware can be upgraded through the network. User can perform the firmware upgrade through Web interface or uploading the upgrade file with related tool. Also the software & firmware version information can be obtained via the Web interface or the Dante Controller.

Firstly try to download the DANTE Firmware Update Manager from "<u>www.seikaku.hk</u>" and install it. Then process the fimware upgrade by following below steps:

1). After installation completed, please double click the DANTE Firmware Update Manager on your computer and then click the "Next" button.

🙋 Dante Firmware Update Manager v3.10.9.6	- • ×					
Firmware Update Manager	Firmware Update Manager					
Select the network interface used for the primary Da	nte					
1001 LA 100 AA						
區域思線						
Next	Quit					
	.:1					

2). Then click "Update Dante Firmware" button.

🍖 Dante Firmware Update Manager v3.10.9.6	- • ×
audinate	
Firmware Update Manager	
Choose Mode	
Update Dante Firmware	
Failsafe Recovery	
Back	Quit
	ħ.

3). Click "browse" to find the update file path and select which you want, then go "Next".



16 Choose firmware image for update							
🕒 🕗 🖉 🕷 Kk	K ▶ DIO-24条列 ▶ DIO24 Dante Firmware	▼ 😽 搜尋 Di	024 Dante Fir 🔎				
組合管理 ▼ 新	增資料夾	8	• 🗌 0				
★ 我的最愛	▲ 名稱 ▲	修改日期	類型				
下戦	D2412_VER20190903_PULSE_CLOCK(	2021/2/1 14:44	DNT 檔案				
桌面 3 最近的位置							
篇 媒體櫃 圓 視訊 ● 圖片 圓 文件 ↓ 音樂	Ξ						
▲ 電腦							
	欄素名稱(N): D2412_VER20190903_PULSE_CLO ▼	Dante firmware ima 開啟廣檣(O)	age (*.dnt) マ				

4). Click "Override Device Matching", then go "Next".



5). Select "Yes" to start searching for Dante devices.



6). Select the device that needs to be updated, then click START to start the update.



7). Cick OK and wait for the update to complete.



8). Click OK, then the update is successful.

🍲 Dante Firmware Update Manager v3.10.9.6	• 🕺						
audinate							
Firmware Update Manager							
1 matching devices found (of 1 total)							
Upload File: D2412_VER20190903_PULSE_CLOCK(4.0.9.1) (v4.0.9) for							
Upgrade done							
Image: Description         Image:							
確定							
Back Refresh Start	P						

9). The unit needs to restart after fimware updating completed.

### How to update DIO24's firmware

1. Open the below folder "Firmware update tool(DIO24)"





2. Search the device "DIO24"







4. Click "yes" to start updating firmware.



5. Pop up below tips information once firmware update completed.





## System Linkage Diagram

### DIAGRAM(1)



### DIAGRAM(2)



## **Block Diagram**



# Technical Information

Microphone input	Electronically balanced
Frequency Response to Main Output	20Hz $\sim$ 20KHz at 0dBu $\pm$ 1dB
Distortion(THD&N) to Main Output	<0.03% at 0dBu 1KHz
SNR(Signal to Noise Ratio)	108dB
Maximum Input Level	+20dBu
Phantom Power(+/-3V)	+48VDC
EIN(Input noise)	125dB
XLR outputs	
Maximum Output Level	+20dBu
System Crosstalk Adjacent Channels	
Input to Output(at +20dBu 1KHz)	-70dBu
Noise(Bus noise)	-91dBu
Digital Audio	
ADC Dynamic Range	114dB
DAC Dynamic Range	114dB
Internal Processor	32-bit , floating point
ADC,DAC bit depth	32bit
Impedances	
Microphone input	6.8ΚΩ
output	240Ω
operating free-air temperature range	<b>0~40</b> °C
storage temperature range	-20°C ~60°C

## Troubleshooting

Troubleshooting			- 11
Problem	Possible Cause	Suggested Solution	
Power light doesn't on after the device powered on	The power outlet or power strip is not working	Try a different outlet or power strip	
	Power cord is malfunctioning	Replace the Digital Snake System power cord	
Ethernet green LED doesn't work after plugging a Digital Snake System to a router	The router isn't powered on	Power on the router	
	The Ethernet cable is broken	Try a different cable	
	The port on the router not work	Try plugging the cable into a different port on the router	
The Digital Snake System can't be controlled by the Digital Snake System discovery software	There is no Network Interface Card (NIC) used to connect to the Cobra Net network	Select the card to severe as the network adapter used in the discovery process from the network Adapter.	
The green LED of Ethernet port lights on but without output.	No signal route to the transmitter	Make sure the transmitter inputs signal	
	The output channel of the receiver is not assigned signal	Make sure the output channel of the receiver has assigned signal	
	The transmitter's TX bundle number and receiver's Rx bundle number are different	Make sure the bundle numbers of them are the same	
	The sub-count number is less than the channel number of the receiver which you are using	Set the Sub-count number no less than the channel number which you want to use	
	The value of mode Rate Control for the receiver and transmitter are different	Make sure the values of mode Rate Control of the receiver and transmitter are the same	