

DANTE AoIP for Quantum codecs

Introduction

The DANTE is trademark of AUDINATE Corporation. DANTE is specified as an uncompressed, multi-channel digital audio network interface (AoIP). For further general introduction please refer to www.audinate.com.

This paper should give some insight about using Quantum audio codecs with DANTE option.

The DANTE interface is just an audio interface for Quantum codecs; once enabled, this interfaces is valid for audio inputs and outputs¹. This is an obvious concept for studio Quantum, one side of the “box” is the audio input, while the other side will the WAN interface carrying out the compressed media stream. In the same way for the opposite flow.

¹ While the audio input interface must be univocal for Quantum (i.e. either DANTE, AES/EBU and analogue), the codec plays the audio out, on the same time, on any available audio output.





Figure : Enabling <AES67> Menu /Audio /Inputs for DANTE

Also users of Quantum commentary units (e.g. Quantum XL or W) should keep in mind the same concept; although using likely a more complex arrangement of input signals coming from microphones, DANTE i/f, and AES/EBU.

The Quantum DANTE port

Quantum codecs with DANTE interface provides one or two additional RJ45 sockets for 1000BT connectivity and one SFP module socket² for fiber connectivity.

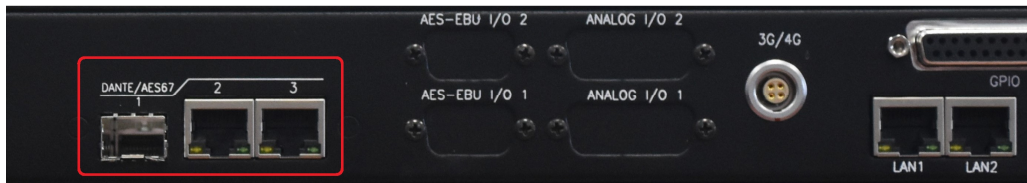


Figure 1: example Quantum MC with DANTE interface



Figure 2: example Quantum W with DANTE interface

If the Quantum codec is served using a single cable connection³ any port (SFP, RJ45-2 or RJ45-3) can be used. If the Quantum codec is served using redundant⁴ cabling, the primary line should be tied to the SFP port, while the secondary port could use either RJ45-2 or RJ45-3 sockets.

² Please notice the SFP module is not supplied by ProdyS, but SFP socket is an industry standard and should accept third party modules.

³ Single cable connection would be set as <switched> mode at the Network Configuration tab of the Dante Controller software.

⁴ Redundant cable connections would be set as <redundant> mode at the Network Configuration tab of the Dante Controller software

Quantum's DANTE audio channels

Using DANTE Controller software⁵, the audio network administrator will discover exactly a meaningful number of input/output Dante channels to/from a Quantum codec.

Therefore a Quantum ST will show up two inputs/outputs (i.e. one L and R stereo). A Quantum ST DUO will show up four inputs/outputs (i.e. equivalent to two stereo). A Quantum One will show up eight inputs/outputs (L&R channels). A Quantum 3U will show up 28x inputs/outputs (L&R channels).

Please notice inverse meaning of the channel labels: DANTE Controller "Receiver" would mean an "Audio input" for Quantum codec. Each Quantum audio input channel is labeled <Enc_>⁶ (1L, 1R, 2L, 2R, ...14L, 14R. A DANTE Controller "Transmitter" would mean an "Audio output" for Quantum codec.

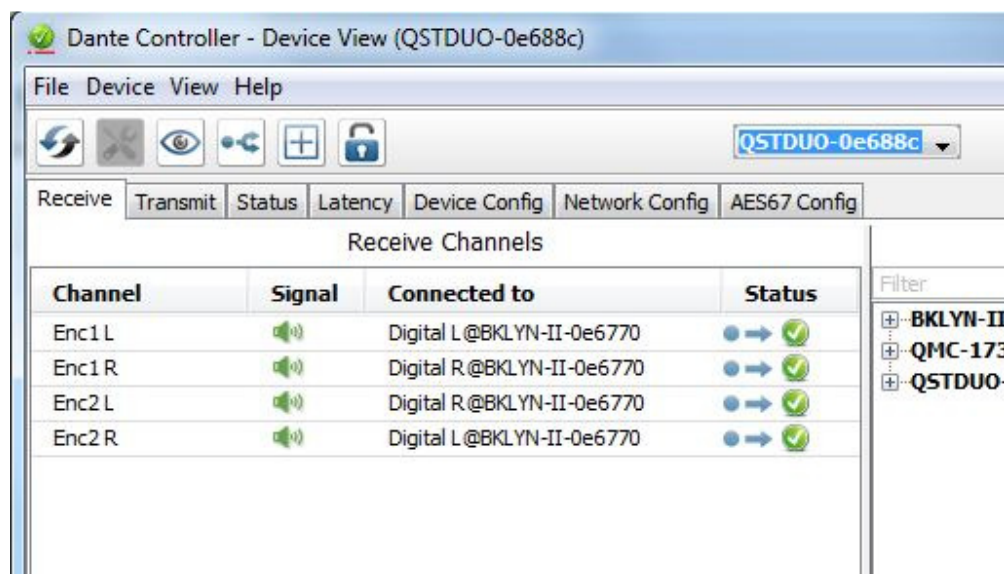


Figure 3: Quantum ST DUO input channels seen with DANTE CONTROLLER

⁵ DANTE Controller software is an Audinate product.

⁶ E.g. <Enc2L> is the label for the left input of the second encoder of the Quantum ST DUO. Therefore <Dec1R> is the label for the right channel output of the first decoder of the Quantum ST DUO. Following this labeling method: <Enc8L> means the left channel input of the eighth Quantum 3U codec module.

Quantum commentary units (XL or W) with AoIP interface

For Quantum commentary units the input and output channel assignment is flexible using the audio matrix capability of those portable codecs.

The assignment of AoIP inputs to the Quantum encoders are available thru Menu /Audio /Input_Matrix /AES67. A maximum of 6 AoIP channels could be made available for the audio input matrix.

Any of those AoIP channels might be available individually or mixed for the user's headphone monitoring. Please refer to Quantum XL or W hardware manual for further indications.

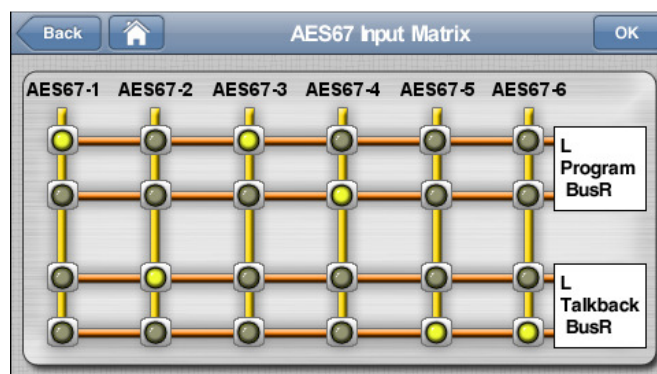


Figure 4: Example cross-connections of AoIP input channels to the encoder channels

The Quantum commentary unit (XL or W) might be set for sourcing other 8 possible AoIP output channels.

Possible channel output assignments for Quantum XL are:

- a) Other plain audio inputs: IN1 ..IN5, AES3L, AES3R, USBL, USBR
- b) Mixed audio signals: PGML, PGMR, TBtxL, TBtxR, IntSoundL, IntSoundR
- c) Special assignments: Test_Tone, Mute

AES67 Menu	
AES67	Signal
AES67-1	IN 1
AES67-2	IN 2
AES67-3	IN 3
AES67-4	AES3L
AES67-5	AES3R
AES67-6	Prog L
AES67-7	Prog R
AES67-8	Int.Snd R

Figure 5: Assignment example for eight output AoIP channels

Keeping the DANTE interface up to date

Quantum users should keep their DANTE interface up to date. This can be performed with the Update function of the DANTE Controller software.

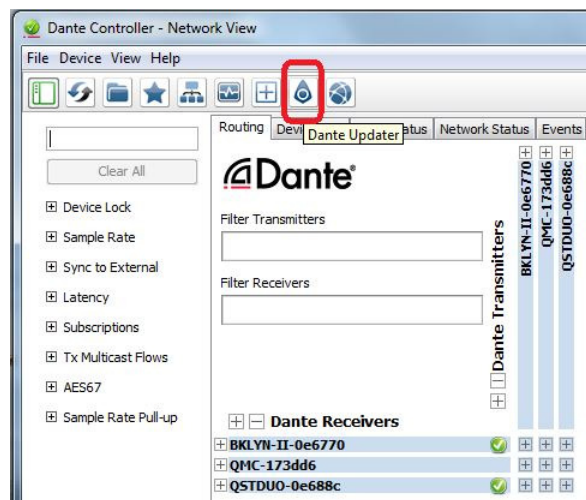


Figure 6: DANTE Updater

DANTE Updater polls over its local network for any suitable interfaces. Information is given if the Quantum interface is current or should be updated with the most recent interface driver.

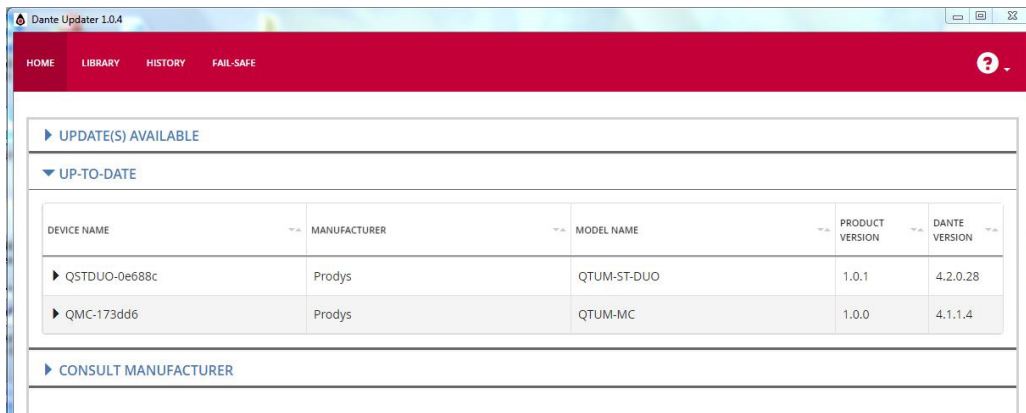


Figure 7: Those Quantum products are current.

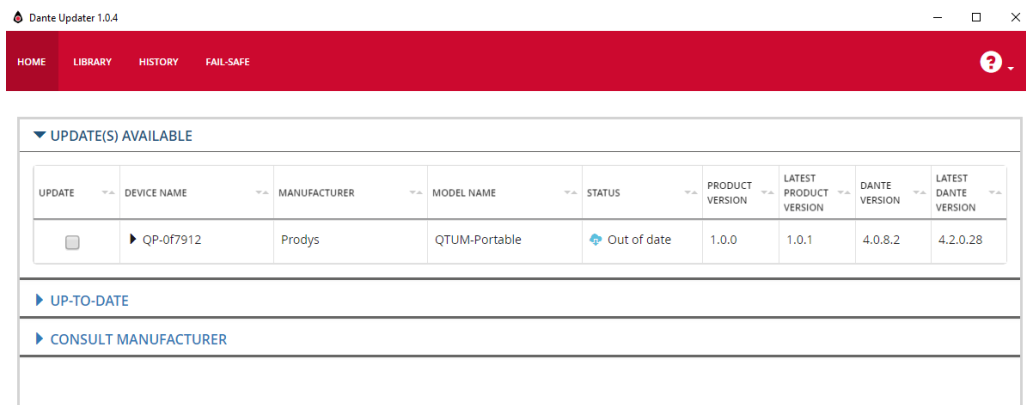


Figure 8: Checking for pending DANTE interface updates.

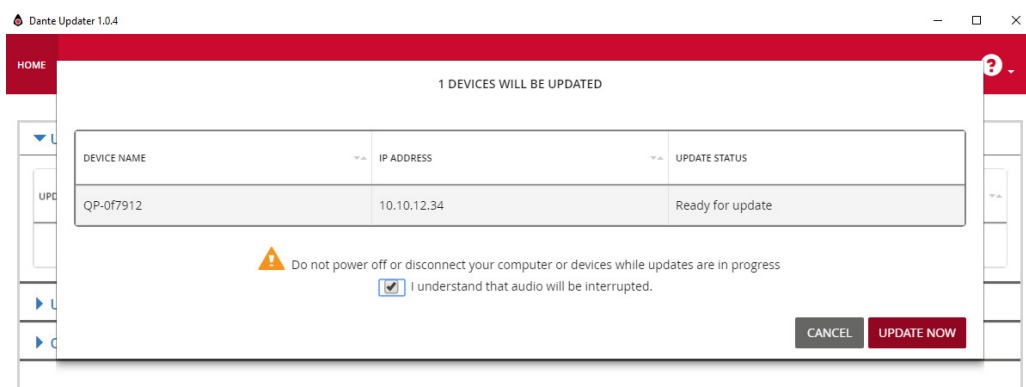


Figure 9: Starting DANTE interface update

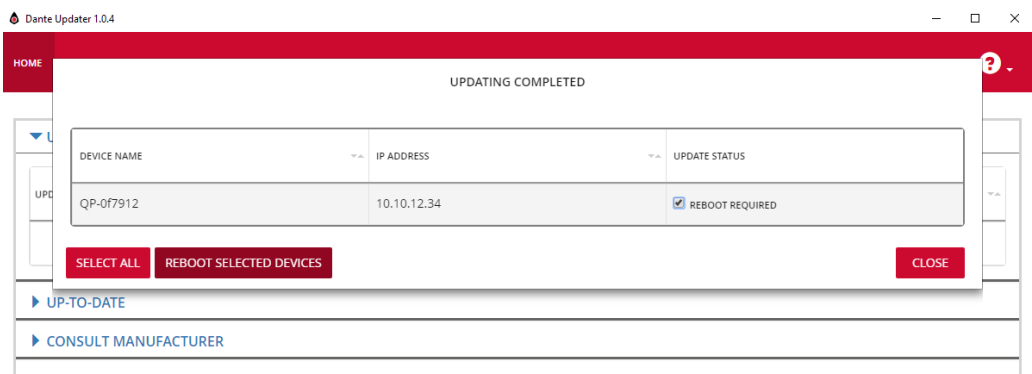


Figure 10: Upon interface upgrade the codec should be rebooted (power cycle)