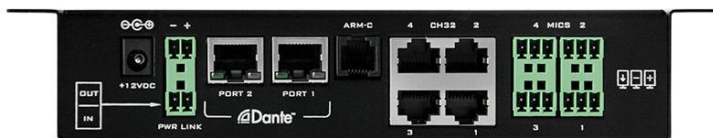**CLOCKAUDIO**

Improving Sound Quality and Simplifying Microphone Cabling in Boardrooms, Conference Rooms & Videoconference Rooms

In response to the need to streamline data and power cables for boardrooms, conference rooms, and video conference rooms, the CDT-100 reduces cabling requirements from multiple and individual microphones from the conference table to the AV cabinet.

This advanced, professional communication product combines audio and control transport using network based Dante protocol. By taking advantage of the Dante technology and based on the high performance and pre-configurable hardware platform, this product transfers audio and control signals via widely used Ethernet for perfect sound quality.

THE DIGITAL REVOLUTION

Until now, it appears that the analog sunset may have missed part of the AV industry. Traditional room design multiple cable runs for equipment, controls and terminations in order to provide the proper level of connectivity and sound capture. But if the digital revolution is really here, shouldn't there be a better way to install the microphones in these spaces? **With the CDT-100, there is.**

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PREVIOUS METHODOLOGY

Traditional microphone design includes a number of components and installation methods such as:

- Running dedicated, specially shielded microphone cables from the closet to EACH and EVERY microphone.
- Soldering and terminating bulky XLR cables on site with costly and inexperienced labor.
- Dumb monitoring, control and maintenance of deployed microphones

This begs the question. When there are better alternatives,
WHY DO WE STILL TRANSPORT MICROPHONE SIGNALS AS ANALOG?

THERE IS A BETTER WAY

Incorporating an audio/control transport like the CDT-100 is a welcome answer to those challenged with handling multiple cable runs back to the AV cabinet. It makes installations simpler and easier for integrators and provides a cleaner, more streamlined and even higher quality end product for clients.

Besides reducing the mic cables and terminations, the single cat 5/6 cable that provides the audio transport for the CDT-100 further simplifies the connectivity and the need for multiple power supply units. In fact, up to 6 CDT-100's as well as the power requirements for the control devices can be powered by one PSU for additional savings in time, labor and money.

THE KEY TO AUDIO QUALITY:

The CDT-100 integrates Dante to provide an advanced professional communication product that combines its audio and control transport using network based Dante protocol.

APPLICATIONS FOR THE CDT-100 WITH DANTE IN CORPORATE AV INCLUDE:

- Boardrooms   - Meeting Rooms
- Conference Rooms   - Auditoriums
- Video Conference Rooms

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COMPATIBILITY

All Clockaudio microphones are compatible with the CDT-100, as well as custom microphone configurations.

On the control side, all of the following Clockaudio products are compatible with the CDT-100 regarding control transport:

CH32   **TS001**   **S80S**

CS-S Series

Retracta 200S-RF, Retracta 202S-RF, Retracta 203S-RF   **SM80S**

TABLE MICS & CONTROL CONNECTED WITH ONE CAT 5 CABLE

FEATURES OF THE CDT-100

- Audio and control signals transported over Dante
- 4 audio inputs, multiple units may be daisy chained
- Provides Phantom Power for each mic input
- 4 control inputs compatible
- Direct connection to CH32 Litetouch Switch & LED and all Clockaudio control devices
- Direct connection to ARM-C controller
- Open API for interfacing with Control Systems
- Compatible with any Dante capable Audio DSP

**EASY TO INSTALL UNDER TABLE
MOUNTING FOR THE CDT-100**

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TABLE
MICROPHONES
w/ LED

CDT 100

DANTE

AUDIO DSP

ADVANTAGES OF SINGLE CAT 5 INSTALLATION USING THE CDT-100

- Reduces project cost and condenses installation timeline
- Reduces diversity of cabling utilized in design
- Reduces cable congestion at the AV cabinet
- Web interface allows for remote operation, monitoring and control
- Improved audio performance - no signal degradation over long runs

CLOCKAUDIO®   **CDT100**

Switch Address   A   IP Address   192.168.187.100

Phantom Power   ARM-C
Channel 1   Channel 2   Channel 3   Channel 4   Microphone

ON   OFF   ON   OFF   UP

CH32
Channel 1   Channel 2   Channel 3   Channel 4

LED Status

Button Status

Preset
Press button to load. Hold for 3 seconds to save.
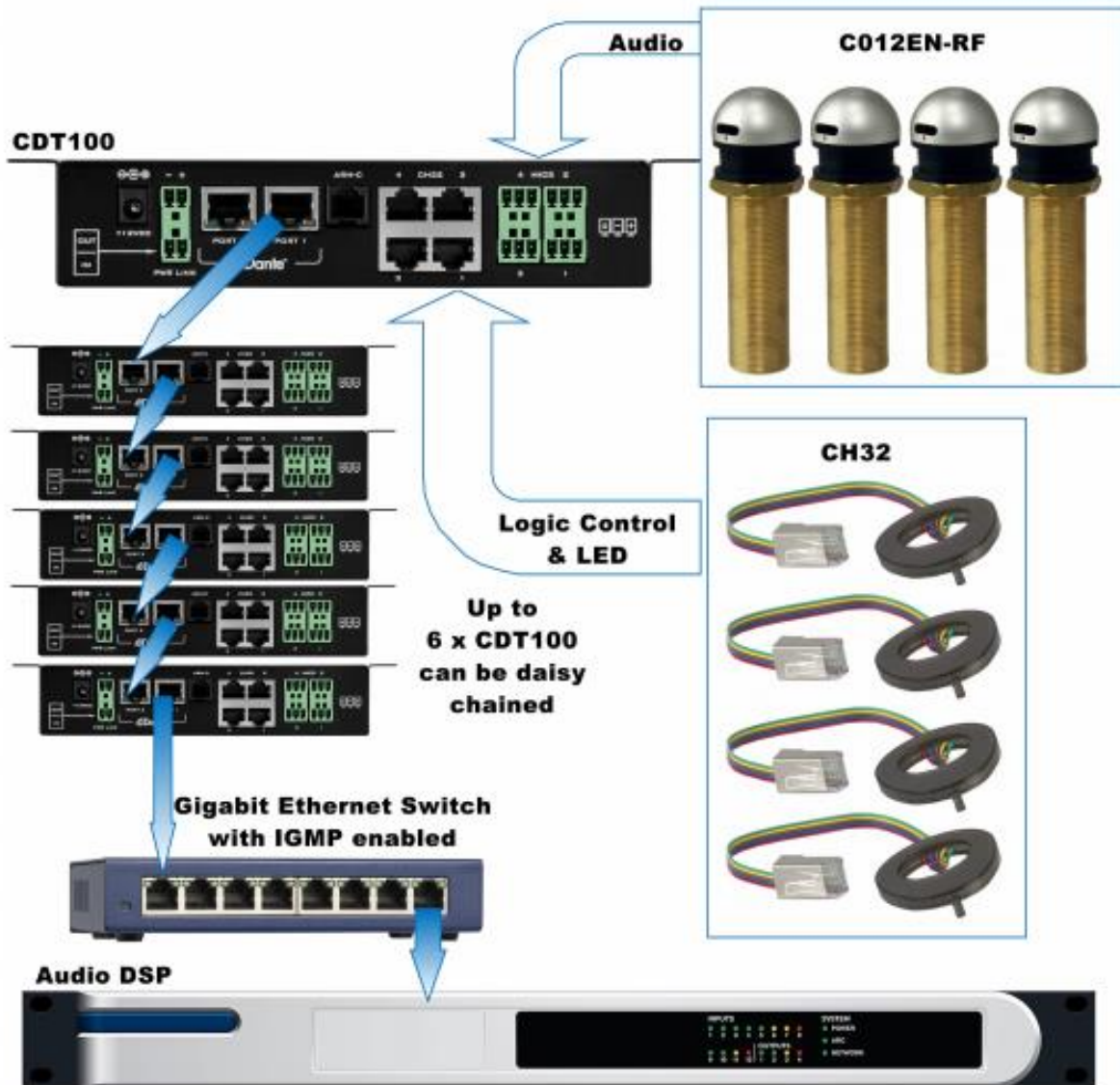
PROGRAMMING & CONTROLS
For ease of use, web and remote control can be managed through a Crestron, AMX, or Extron system.
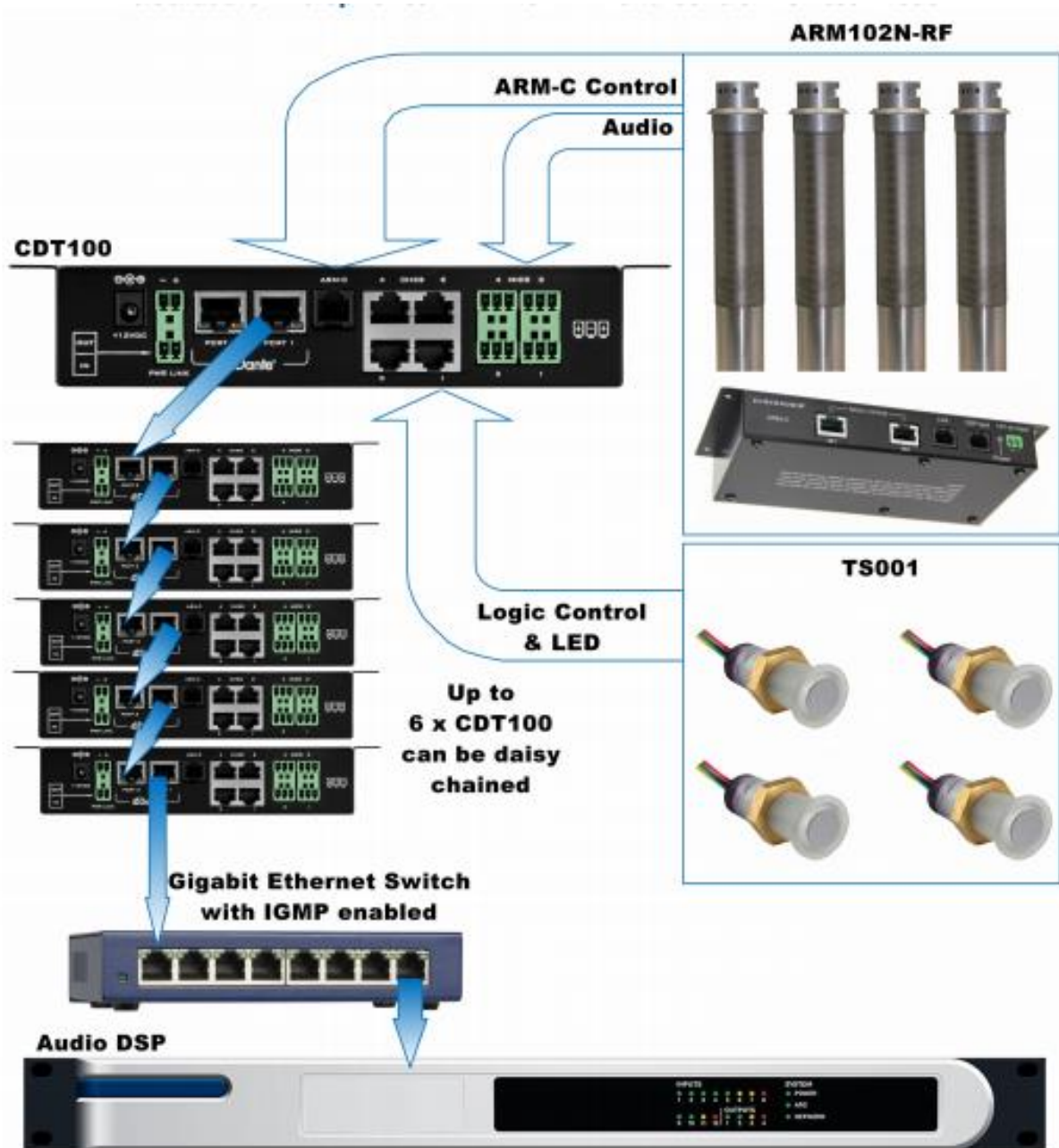
DSP COMPATIBIILITY
The CDT-100 is compatible with a variety of third party vendor hardware including BiAmp, ClearOne, Polycom, QSC and Symetrix.

-

The CDT-100 GAME CHANGER
Consider the tremendous impact transporting audio and control in a single Cat 5 Cable has on reducing equipment, cable, and labor costs in AV Design

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SAMPLE SYSTEM SCHEMATIC USING THE C012EN-RF, CH-32, CDT-100, DSP & ETHERNET SWITCH

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SAMPLE SYSTEM SCHEMATIC USING THE ARM102N-RF, TS001, ARM CONTROLLER, CDT-100, DSP & EHERNET SWITCH

AN AV CONSULTANT'S PERSPECTIVE ON THE TOP 10 ADVANTAGES OF THE CDT-100

1. Using the CDT and Dante reduces the need for multiple conduits from the conference table floor box to the AV equipment cabinet.

2. For a conference room with 24 microphones, 24 mic cables would be required --plus the needed control cables, control interfaces and wiring required to support the buttons / LED's with each microphone.

3. When using the CDT, both audio signals and control protocol are "converted" onto the Dante buss.

4. Dante is digital and it is not susceptible to the typical hum & noise interference picked up in microphone cables.

5. Using Clock Audio microphones and LED buttons --all connections are via prefabricated RJ45 connections, no pinning or soldering connections.

6. The CDT-100 is designed specifically for under table mounting.

7. By daisy-chaining CDT's together, a single CAT5 cable will transport all microphone and control signals to the AV cabinet for a single connection to the DSP.

8. Using the CDT-100 reduces the need for additional cumbersome low voltage power supplies.

9. Instead of terminating 24 microphones at the DSP –a single RJ45 connects all the microphone audio and control signals, thus reducing the amount of labor in wiring and terminations.

10. Dante is the leading on-network protocol for transporting audio over Ethernet, as a digital signal. As of Feb. 2016 over 275 manufactures have integrated Dante into their products.

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COMPETITIVE COSTS ANALYSIS - TRADITIONAL INSTALLATION

SCENARIO: 24 Table Microphones with Buttons / LED control

PROJECT COST: $17,700.00

(3) 1" conduits x 100 = 300 feet	$2,100
Installation - Estimate 2 men 1 day	$1,400
(24) Belden 8451 x 100' (each) cable run from table to AV = 2400 feet of cable	$600
(1) Control Cable x 100'	
Control interface modules	$1,200
Additional Control Programming	$800
24 channel DSP (estimate, depending on DSP)	$8,400
Additional DC Power Supplies	$400
Cabling Contractor installation of 24 mic cables & (1) control cable	
(24) XLR (solder) connections at 24 mic inputs at table floorbox	
(24) three pin Phoenix connector (at DSP)	
Installation - Estimate 2 men 2 days	$2,800

CLOCKAUDIO ALTERNATIVE INSTALLATION – USING THE CDT-100 / DANTE SOLUTION

SCENARIO: 24 Table Microphones with Buttons / led control

PROJECT COST: $12,146.OO

(6) CDT-100	$5,200
(24) Prefabricated RJ45 Cat5e jumpers	$36
(1) Cat5e cable run from table to AV = 50 feet of cable	$10
Cabling Contractor installation of (1) Cat5e cable.	$300
DSP with Dante input (estimate, depending on DSP)	$6,300
POE Switch (8 port)	$300

No separate control cable required.
No separate control interfaces required.

WITH THE CLOCKAUDIO CDT-100 SOLUTION, THERE IS A PROJECT SAVINGS OF $ 5,554.00
– APPROX. 30% BUDGET COST REDUCTION

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COST ANALYSIS / BASELINE DSP FOR 24 ANALOG INPUTS

BiAmp	Tesira (with all required VOIP and input cards)	$8,600
ClearOne	Converge Pro 880 (with 2 expansion units)	$9,900
Polycom	SoundStructure	$8,400
Symetrix	Radius 12x8 EX (with VOIP and AEC expansion card)	$6,500

Considering the cost analysis presented in this solution spotlight paper, it is clear to see that overall project costs can be significantly reduced by incorporating Clockaudio technologies.

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ABOUT CLOCKAUDIO

For over 20 years, Clockaudio has been dedicated to manufacturing innovative pro-audio products.

With corporate headquarters located in the United Kingdom and additional offices in both North America (Montreal, Canada) and Asia (Singapore), Clockaudio is led by a talented team of audio specialists dedicated to quality, service and innovation.

Globally, audio professionals actively seek out and recommend Clockaudio for its reputation as a trusted and responsive manufacturer and its customer driven approach to audio solutions. Central to this is the in-house research and development that Clockaudio consistently reinvests in which allows clients to explore customized prototypes and develop specific briefs in partnership.

Consultants and contractors alike help to drive Clockaudio's product development process and appreciate the opportunity to be involved in the engineering process and final solution. The ability to customize is just one of the many factors which makes Clockaudio...clearly different.

* * * * * *

For more on this project or other Clockaudio projects, please contact news@clockaudio.com.

CONCLUSION

In summary, the availability of the CDT-100 is a game changer with regard to the integration of microphone technologies and control devices in Boardrooms, Conference Room and Videoconference Centers.

The device streamlines installation by reducing the number of cables and cable terminations necessary to properly mic a space. The integrity of the sound quality is not affected by the length of cable runs, nor are they susceptible to noise. Savings are realized in the amount of conduit, units, cabling and labor.

The integrated Dante platform and protocol compatibility position the product to meet the needs of even the most challenging AV designs now and in the future.

The CDT-100 brings digital audio and control transport to a whole new level.

For more about the CDT-100 or Clockaudio, contact news@clockaudio.com or visit Clockaudio on the web at www.clockaudio.com.

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