ClearOne®

CONVERGE Pro 2 is the industry's most advanced professional audio DSP platform for conferencing and sound reinforcement applications. It outperforms in any size room, audio environment, and application.

The 128D model mixer has 12 inputs with AEC, 8 outputs, USB audio; GPIO, RS232, IP control interfaces; P-Link and C-Link expansion buses; and Dante™ digital audio interfaces.

CONVERGE Pro 2 is optimized to work with the new Beamforming Mic Array 2 and DIALOG® 20 2-Channel Wireless Microphone System through its native connection.

Powerful Architecture

+ 12 Mic/Line inputs with AEC
+ Built-in USB for PC-based conferencing
+ Built-in Dante™ for networked audio
+ Reduced footprint and power consumption

Audio Signal Processing

+ Next-gen Acoustic Echo Cancellation processing
+ Distributed Echo Cancellation® on every mic input
+ Noise Cancellation with Adaptive-Ambience
+ Acoustic Intelligence with faster convergence
+ DARE™ feedback elimination
+ Advanced microphone gating

Scalable Connectivity

+ Standalone and daisy-chained system
+ Stack up units up to 144 Mic/Line inputs
+ Expansion bus "C-Link" with 64 channels
+ "P-Link" bus to connect peripheral devices

Applications

+ PC-based conferencing & Unified Communications
+ Dante™ for audio networking
+ Video codec-based Video Conferencing

Configuration & Management

+ New CONSOLE® software
+ Auto-discovery of devices
+ MatrixView™ for entire system
+ FlowView™ for visualized audio signal paths
+ System monitoring and troubleshooting

Flexible Control Options

+ Dialer app for Windows, Mac, iOS, Android
+ Touch Panel Controller with tabletop and wall mount options
+ 3rd-party control modules

APPLICATIONS

Boardrooms

Conference Rooms

Huddle Rooms

Training Rooms

Lecture Halls

Courtrooms

Auditoriums

Telemedicine Facilities

Front Panel

Capacitive Touch Button

Status
Locate
Power

CONVERGE PRO 2
128D

ClearOne

Mounting Rack Ears

LEDs
1. Status
2. Location
3. Power

Mounting Rack Ears

USB-B for
connecting to
CONSOLE software

Back Panel

3.81mm Mic/Line
Audio Inputs

4 GPIO Ports
for Control, Status,
Variable Voltage Control

Primary RJ-45
for Dante™ Audio

RJ-45
Ethernet

RS-232
for serial
commands

RJ-45
P-Link In

RJ-45
C-Link In

100 - 240VAC 2A
50Hz / 60Hz

Mic / Line Out

Mic / Line In

+5V 1 2 3 4

Audio

P-Link PoE

C-Link In

GPIO

Pri @Dante Sec

Ethernet

RS-232

P-Link Out

C-Link Out

100-240V AC,
50/60Hz Power

3.81mm Mic/Line
Audio Outputs

USB-B
for Audio

Secondary RJ-45
for Dante™ Audio

RJ-45
P-Link Out

RJ-45
C-Link Out

CONVERGE Pro 2		Conferencing									Sound Reinforcement	
	128	**128D**	128T	128TD	128V	128VD	48T	48V	120	012	128SR	128SRD
System												
Mic/Line inputs	12	**12**	12	12	12	12	4	4	12	✗	12	12
Mic/Line outputs	8	**8**	8	8	8	8	8	8	✗	12	8	8
AEC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
C-link expansion bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P-link peripheral bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
USB audio interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet, RS-232, GPIO interface	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Applications												
Built-in USB for PC-based conferencing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
Built-in Telco for teleconferencing	✗	✗	✓	✓	✗	✗	✓	✗	✗	✗	✗	✗
Built-in VoIP for VoIP conferencing	✗	✗	✗	✗	✓	✓	✗	✓	✗	✗	✗	✗
Microsoft Skype for Business audio conferencing	✗	✗	✗	✗	✓	✓	✗	✓	✗	✗	✗	✗
Sound Reinforcement applications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Built-in Dante for audio networking	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗	✗	✓
Peripheral Devices												
Beamforming Mic Array 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗
DIALOG® 20 - Wireless Mic System	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GPIO Expander	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
USB Expander	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configuration, Management & Control												
New CONSOLE® software	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dialer app - Win, Mac, iOS, Android	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Touch Panel Controller	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Third-party control modules	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

PRODUCT SPECIFICATIONS

Unless otherwise specified, all measurements are performed with a 20Hz to 22kHz BW (no-weighting).

MIC/LINE INPUTS & OUTPUTS
Inputs: Balanced audio inputs, 3.81mm Orange color Phoenix/Euroblock type male header, Push-on mini-terminal block
Outputs: Balanced audio outputs, 3.81mm Black color Phoenix/Euroblock type male header, Push-on mini-terminal block
Frequency Response:
20Hz – 22kHz @ +4dBu, +/- 0.5dBu
EIN (Equivalent Input Noise):
20kHz BW, max gain, Rs = 150Ω, -126dBu
THD + N (Total Harmonic Distortion + Noise):
- 20Hz – 22kHz @ +4dBu, line level, 0.006%
- 20Hz – 22kHz @ -56dBu, mic level, <0.04%

Dynamic Range:
20Hz – 20kHz @ 0dB, >105dB
Crosstalk (Mic/Line):
Channel to Channel, stimulus at 20dBu to receptor at -56dBu, 1kHz, < -98dB
Input Impedance:
Balanced (line to ground), 2.2kΩ, 1%
Nominal Input Level:
Adjustable -56dB to 0dB, 7dB step coarse gain
Maximum Input Level: -65dBu to 20dBu
Phantom Power: 48V, Impedance 6.81kΩ
Output Impedance:
Balanced (line to ground), 95Ω, 1%
Output Level:
0dBu (Nominal), 20dBu (Max), -40dBu (Selectable)

USB AUDIO
Port Type: USB-B connector
Audio: Digital Audio, 2 x 2 bidirectional channels
Sample Rate: 48kHz
Sample Bit Depth: 24-Bit
Compatible:
- USB 2.0
- USB 3.0

ETHERNET
Port Type:
RJ-45, 10/100Mbps Ethernet Network, Auto Negotiation
IP address: IPv4 (IPv6 upgradeable through future s/w, f/w upgrade)

DANTE™ AUDIO
Port Type: RJ-45 Gigabit Ethernet connectors for Primary and Secondary Ports
Audio: Digital Audio, 16 x 16 bidirectional channels
Sample Rate: 48kHz / 96kHz
Sample Bit Depth: 24-Bit

C-LINK EXPANSION BUS
Ports Type: RJ-45 (Cat5e or Cat6)
C-Link In & Out: Proprietary Expansion Bus
Audio: 64 Expansion channels
Cable: Solid core, factory terminated Cat 5e or 6 cable
Distance: Up to 150' (45M)

P-LINK PERIPHERAL BUS
Ports Type: RJ-45 (Cat5e or Cat6)
P-Link In & Out: Proprietary Peripheral Bus
PoE In:
- P-Link In Port
- PoE 802.3af Mode B, Midspan
- Power on "spare pairs" 4,5 and 7,8
- Input voltage range: 48V to 56V

Audio: Up to 3 Beamforming Microphone Array 2 units + up to 3 DIALOG 20 Wireless Receiver units + Up to 3 USB Expander units + Up to 3 GPIO Expander units
Cable: Solid core, factory terminated Cat 5e or 6 cable
Distance: Up to 200' (60M)
Long Distance P-Link:
- Increases P-Link distance from 200 Ft to 650 Ft
- 650 Ft (200M) maximum cable distance between any two units
- Cat6, 550 MHz, 23 AWG, solid conductor cable
- Do not use Copper Clad Aluminum (CCA) cable
- Available only for BFM2 peripheral units
- 48V PoE Midspan Mode B power injector for 1 BFM2 unit
- 56V PoE Midspan Mode B power injector for 3 BFM2 units

RS232
Port Type: DB9 Female
Settings: 9600/19200/38400/57600/115200 Baud; Serial Echo; Flow Control
Support: Serial commands

GPIO
Port Type:
5.08mm Green color Phoenix/Euroblock type male header
Support: Control, Status, Variable Voltage Control
Power Pin: 5V DC @ 350mA Power Source
Pin 1 to 4:
- Open Collector Outputs: 40VDC @ 250mA
- Active Outputs (Source/Sink): 5VDC @25mA
- Logic Inputs: 40.2kΩ pull up
- Variable Voltage Control Inputs: 5VDC max

Ground Pin: GND

USB CONTROL
Port Type: USB-B connector
Location: Front Panel
Compatible:
- USB 2.0
- USB 3.0

LEDs
Location: Front Panel
Status LED:
- Off: Unit still initializing
- Blue - Fast Blinking: Stack Syncing in progress
- Blue - Slow Blinking: Unit not configured
- Blue - Solid: Configured unit
- Red - Fast Blinking: Stack Sync error

Locate LED:
Blue - Blinking: Unit "Locate" command received
Power LED:
Blue - Solid: Unit is powered on

TOUCH SENSOR
Sensor Type: Capacitive Touch Button
Location: Front Panel

POWER & THERMAL
Port Type: AC Inlet
Mains Voltage: 100-240V AC, 50/60Hz
Power Consumption: 50 Watts Typical
Thermal: 170 BTU/Hr Typical
Operating Temperature:
14°F (-10°C) to 104°F (40°C) Ambient Temperature

DIMENSION & WEIGHT
RU size: 1 RU
Width x Depth x Height:
1. Without rack-ears:
   17"W x 10.73"D x 1.72"H (43.2cmW x 27.3cmD x 4.4cmH)
2. With rack-ears:
   19"W x 10.73"D x 1.72"H (48.3cmW x 27.3cmD x 4.4cmH)

Unit Weight: 9.3 lbs (4.2 kg) (Approximately)
Shipping Weight: 13.8 lbs (6.3 kg) (Approximately)

PACKAGE
Power Cord: 6' (1.8M), Grounded, Qty 1
Input Connectors:
Terminal Block Connector, 3 Position (Orange), Qty 12
Output Connectors:
Terminal Block Connector, 3 Position (Black), Qty 8
GPIO Connector:
Terminal Block Connector, 6 Position (Green), Qty 1
C-Link Cable:
RJ-45 To RJ-45 Cable, 18" (45.7cm), Qty 1
USB Cable: USB Type A to Type B, 6' (1.8M), Qty 1
Rack Ears: Pre-installed, Qty 2
Screw/Washer Kit: Rack Decor, Qty 4

PART NUMBERS

Part Number	Product
910-3200-001	CONVERGE Pro 2 128
910-3200-001-D	**CONVERGE Pro 2 128D**
910-3200-002	CONVERGE Pro 2 128T
910-3200-002-D	CONVERGE Pro 2 128TD
910-3200-003	CONVERGE Pro 2 128V
910-3200-003-D	CONVERGE Pro 2 128VD
910-3200-005	CONVERGE Pro 2 48T
910-3200-006	CONVERGE Pro 2 48V
910-3200-004	CONVERGE Pro 2 120
910-3200-007	CONVERGE Pro 2 012
910-3200-101	CONVERGE Pro 2 128SR
910-3200-101-D	CONVERGE Pro 2 128SRD