ClearOne®

Large
Class Room

Design Guide

DOC-0553-001 - V 2.0 - May 2024

ClearOne®

Room Application

Large classroom area where the instructor audio needs to be locally amplified.

Included Interfaces

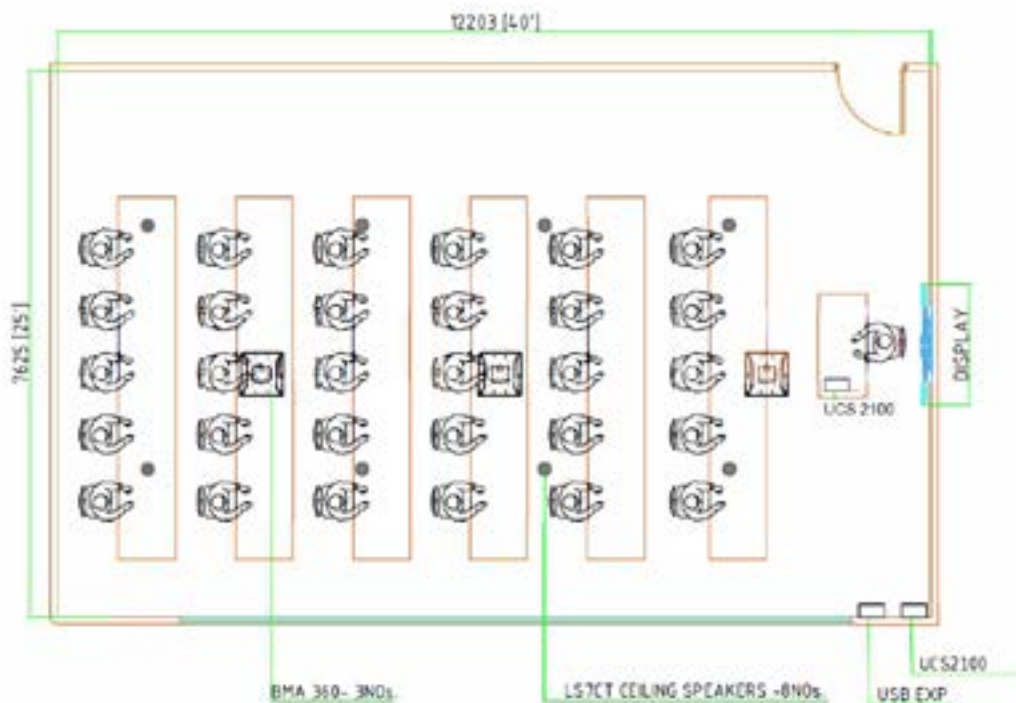BYOD, VoIP, Telco, Wireless Presentation.

Primary Equipment

- BMA 360
- Versa UCS2100 Switcher Kit

Software/Firmware revisions utilized

- Console Ai Version: v7.7.0.14
- DSP Version: 8.7.14.13
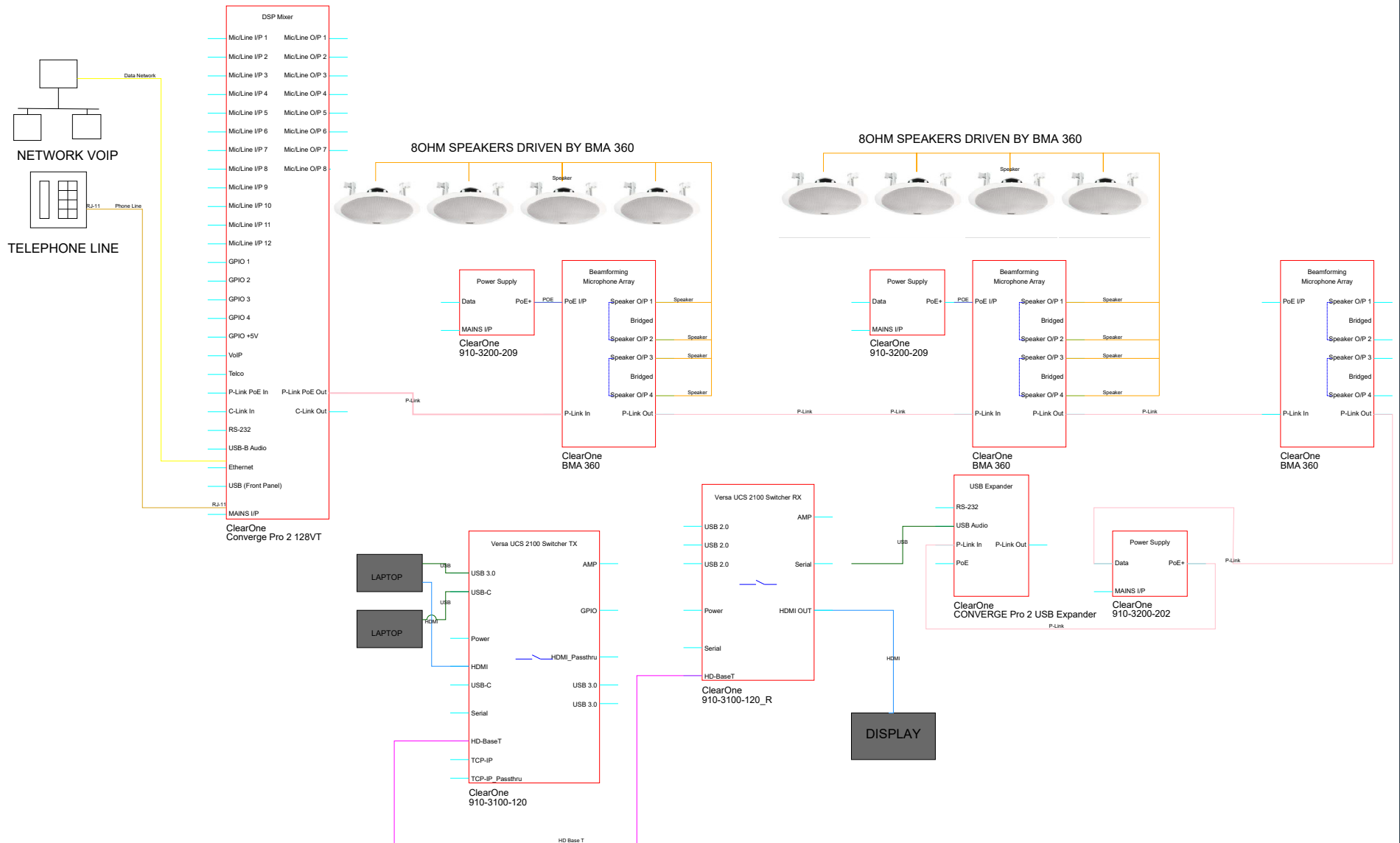- BMA 360 Version: 1.0.8.4

Room Illustrations

Room Description

Excellent BMA 360 focused system design for hands free microphone pickup, Instructor voice lift and room speaker amplification in classrooms of up to 50 students.
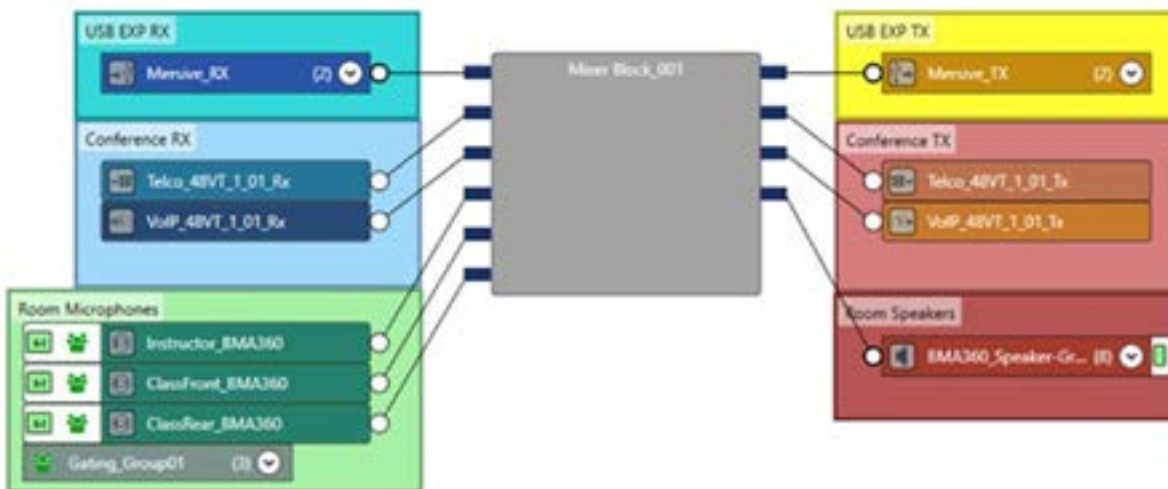
Wiring Diagram

NETWORK VOIP

TELEPHONE LINE

DSP Mixer

Mic/Line I/P 1	Mic/Line O/P 1
Mic/Line I/P 2	Mic/Line O/P 2
Mic/Line I/P 3	Mic/Line O/P 3
Mic/Line I/P 4	Mic/Line O/P 4
Mic/Line I/P 5	Mic/Line O/P 5
Mic/Line I/P 6	Mic/Line O/P 6
Mic/Line I/P 7	Mic/Line O/P 7
Mic/Line I/P 8	Mic/Line O/P 8
Mic/Line I/P 9	
Mic/Line I/P 10	
Mic/Line I/P 11	
Mic/Line I/P 12	
GPIO 1	
GPIO 2	
GPIO 3	
GPIO 4	
GPIO +5V	
VoIP	
Telco	
P-Link PoE In	P-Link PoE Out
C-Link In	C-Link Out
RS-232	
USB-B Audio	
Ethernet	
USB (Front Panel)	
MAINS I/P	

ClearOne Converge Pro 2 128VT

Data Network

RJ-11 Phone Line

RJ-11

8OHM SPEAKERS DRIVEN BY BMA 360

Speaker

Power Supply

Data	PoE+
MAINS I/P	

ClearOne 910-3200-209

Beamforming Microphone Array

PoE I/P	Speaker O/P 1
	Bridged
	Speaker O/P 2
	Speaker O/P 3
	Bridged
P-Link In	Speaker O/P 4
	P-Link Out

ClearOne BMA 360

8OHM SPEAKERS DRIVEN BY BMA 360

Speaker

Power Supply

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MAINS I/P	

ClearOne 910-3200-209

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ClearOne BMA 360

Beamforming Microphone Array

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	Bridged
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	P-Link Out

ClearOne BMA 360

P-Link

Versa UCS 2100 Switcher TX

USB 3.0	AMP
USB-C	GPIO
Power	
HDMI	HDMI_Passthru
USB-C	USB 3.0
Serial	USB 3.0
HD-BaseT	
TCP-IP	
TCP-IP_Passthru	

ClearOne 910-3100-120

LAPTOP

LAPTOP

USB

USB

HDMI

Versa UCS 2100 Switcher RX

USB 2.0	AMP
USB 2.0	
USB 2.0	Serial
Power	HDMI OUT
Serial	
HD-BaseT	

ClearOne 910-3100-120_R

USB

USB Expander

RS-232	
USB Audio	
P-Link In	P-Link Out
PoE	

ClearOne CONVERGE Pro 2 USB Expander

Power Supply

Data	PoE+
MAINS I/P	

ClearOne 910-3200-202

P-Link

HDMI

DISPLAY

HD Base T

ClearOne®

Equipment list:

Qty	Part Number	Product Name	Description
1	910-3200-006	Converge Pro 2 128VT	DSP Mixer with 12 Mic/Line AEC Inputs, 8 Mic/Line Outputs, USB Audio, VoIP, Telephone Interface
2	910-3200-209	90W PoE++ power supply kit for BMA	Includes 1 x 90 Watt PoE++ Injector, 2 x 25 ft CAT6 cables
1	910-3200-202	36W PoE+ power supply kit for BMA	Includes 1 x 36 Watt PoE+ Injector, 2 x 25 ft CAT6 cables
3	910-3200-208	BMA 360 24 Inch	BMA with 4 x 15 Watt Power Amplifiers. PoE Injector and CAT6 cables not included. 910-3200-208-I 600 mm model also available.
1	910-3200-302	USB Expander for CONVERGE Pro 2	Includes 6 ft USB cable
4	910-151-001-01-1	Ceiling Speakers	Includes 2 x LS7CT ceiling speakers with 8 ohm and 70V/100V transformer taps and ceiling tile bridges.
1	910-3001-120	Versa UCS2100 Switcher Kit	Presentation switcher kit with USB and video extension over HDBT CAT6 cable and with dual USB host capability. Transmitter provides USB 3.0, HDMI, analog audio out, GPIO, RS-232, TCP/IP. Receiver provides USB 2.0, HDMI, analog audio out, RS-232, Ethernet passthrough.

FlowView™ Diagram

Included Macros

- Microphone_Unmute : Unmutes all room BMA 360 Microphones.
- Room_SPKR_Mute : Mutes all room speaker channels.
- Room_SPKR_Unmute : Unmutes all room speaker channels.
- Room_VOL_DN : Decreases the room speaker volume by 3 dB per execution.
- Room_VOL-UP : Increases the room speaker volume by 3 dB per execution.
- Presenter_Mode : Limits student area pickup and accentuates Presenter audio.
- QA_Mode : Opens all student and presenter microphone channels for transmission.

* Macros can be executed via Telnet or serial communications.
  Refer to the Converge Pro 2 Serial Command Reference Manual for details.

Download the Large Class Room files:

Example Console Configuration File | Download
DWG Wiring Diagram | Download
Stardraw Wiring Diagram | Download

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