



Sound, not equipment



TOA Canada Corporation

□ Acoustics



- *Large spaces*
can exhibit substantial reverberation and reflections
- *Excessive reverberation*
can cause lower speech intelligibility
- *Excitation of the reverberant field*
is caused by non directional speaker energy



- ❑ Acoustics
- ❑ Conventional speakers



Typical Box Speaker



- Typically have poor dispersion control
- Lower frequency control is a problem
- Reflections excite reverberation
- Poor speech intelligibility
- Placement and aiming not critical

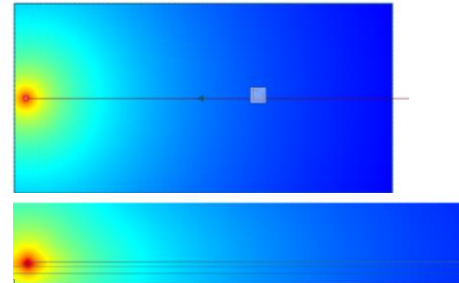


- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics

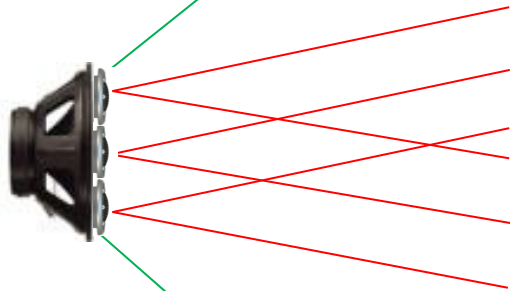


Concentric Speaker Alignment

- Excellent vertical dispersion control
- The length of the array determines control over distance- taller better
- Better low frequency control
- Improved control means less excited reverberant field
- Creating better speech intelligibility
- Critical placement and aiming



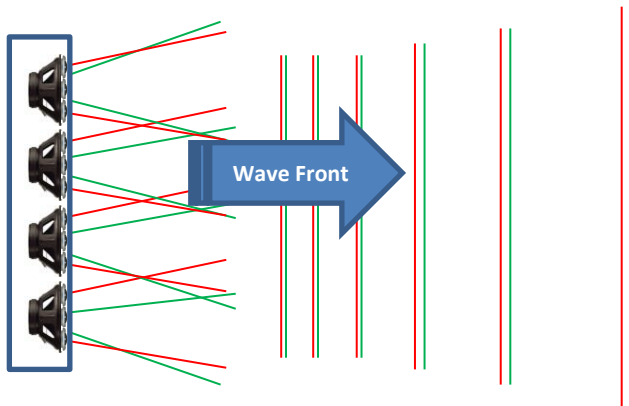
- ❑ Acoustics
- ❑ Conventional speakers
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Multiple Tweeter Drivers

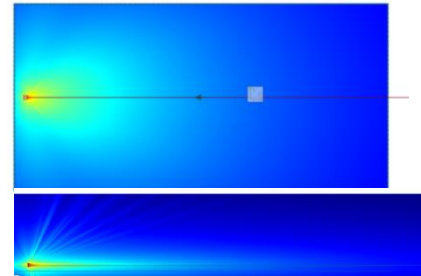
- Excellent vertical dispersion control
- The length of the array determines control over distance- taller better
- Better low frequency control
- Improved control means less excited reverberant field
- Creating better speech intelligibility
- Critical placement and aiming
- High frequency control

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics

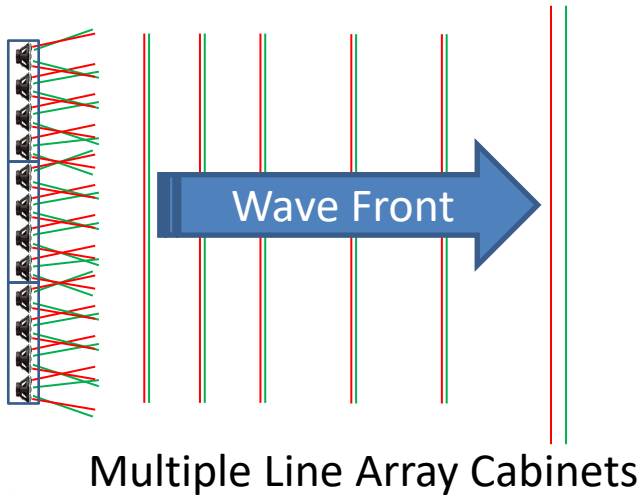


Multiple Woofers and Tweeters

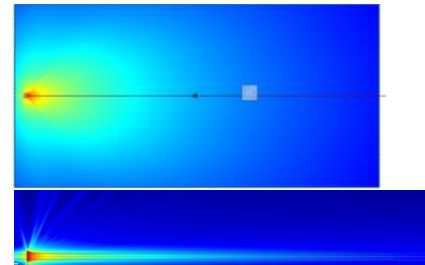
- Excellent vertical dispersion control
- The length of the array determines control over distance- taller better
- Better low frequency control
- Improved control means less excited reverberant field
- Creating better speech intelligibility
- Critical placement and aiming
- Low frequency vertical control
- Planar wave front



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics



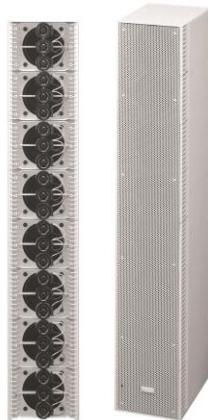
- Excellent vertical dispersion control
- The length of the array determines control over distance- taller better
- Better low frequency control
- Improved control means less excited reverberant field
- Creating better speech intelligibility
- Critical placement and aiming
- Increased lower frequency vertical control
- Increased planar wave front distance



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing

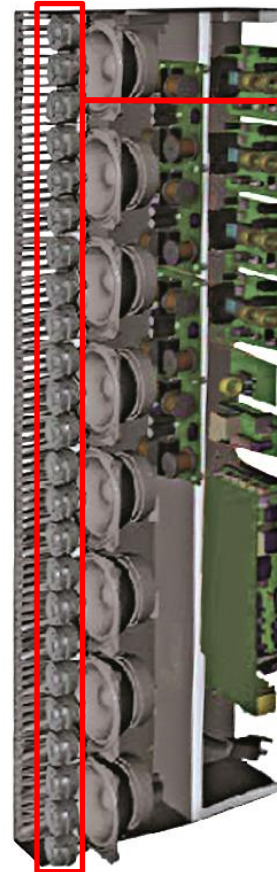
- Waveform shaping technology
- Precise control of frequency energy
- Tailor sound to account for room acoustics
- Augment frequencies in the speech pass band
- Control signal levels

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ **Steerable Line Array SR-D8**



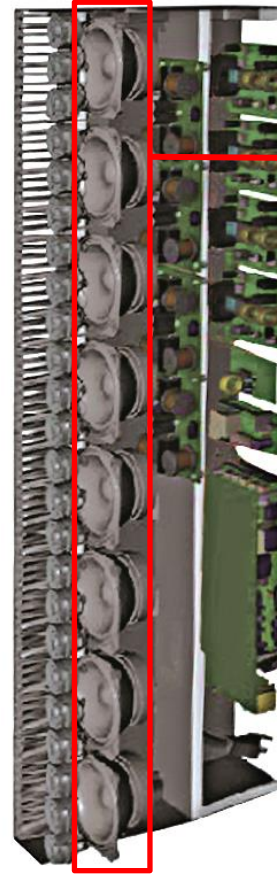
- The SR-D8 combines all of the desirable features discussed plus;
- Beam steering
- Beam vertical width control
- Built in 8 channel 30W digital amplifiers
- 8 Woofers and 24 tweeters per speaker
- Real time software control and visualization
- CobraNet redundant audio channels
- Analog backup channels bypasses DSP
- Configured as Stacks of 1 to 4 speakers
- 4x SR-D8's max = 1 STACK (Master, 3 Slaves)
- Four stacks maximum (16 speakers)

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ **Steerable Line Array SR-D8**



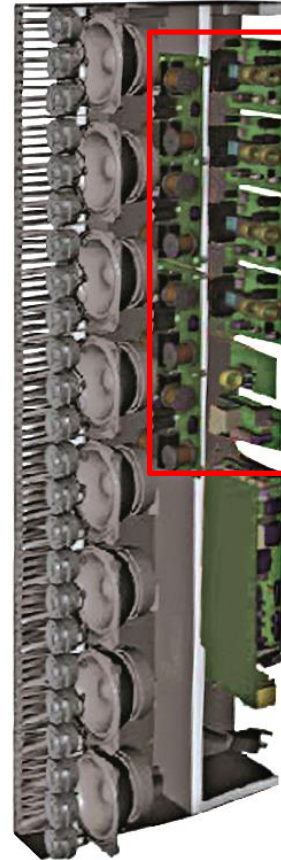
24 Tweeter Array

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ **Steerable Line Array SR-D8**



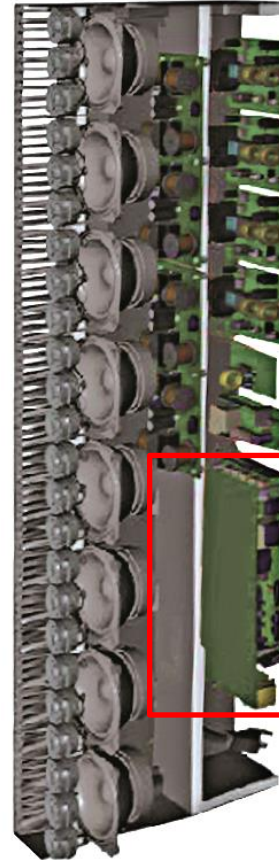
8 Woofers

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ **Steerable Line Array SR-D8**



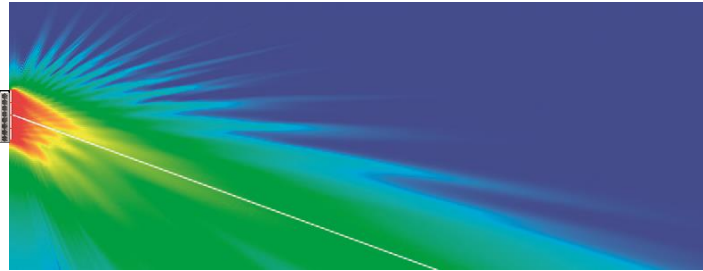
8 amplifiers/xovers

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ **Steerable Line Array SR-D8**



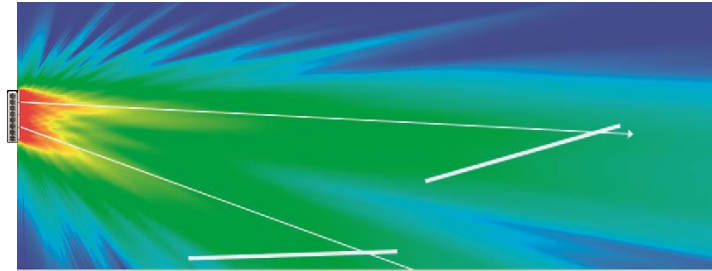
Power Supply

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8



Beam angle adjusted

- *Why Steerable and Beam width control?*
- Each stack can be split into two beams.
- Beams can independently adjust vertically
- Vertical height placement is less critical
- Beams angle can be adjusted based on height
- Split beams can cover different areas.
- Adapts to changing venue configurations



Split Beam

- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software

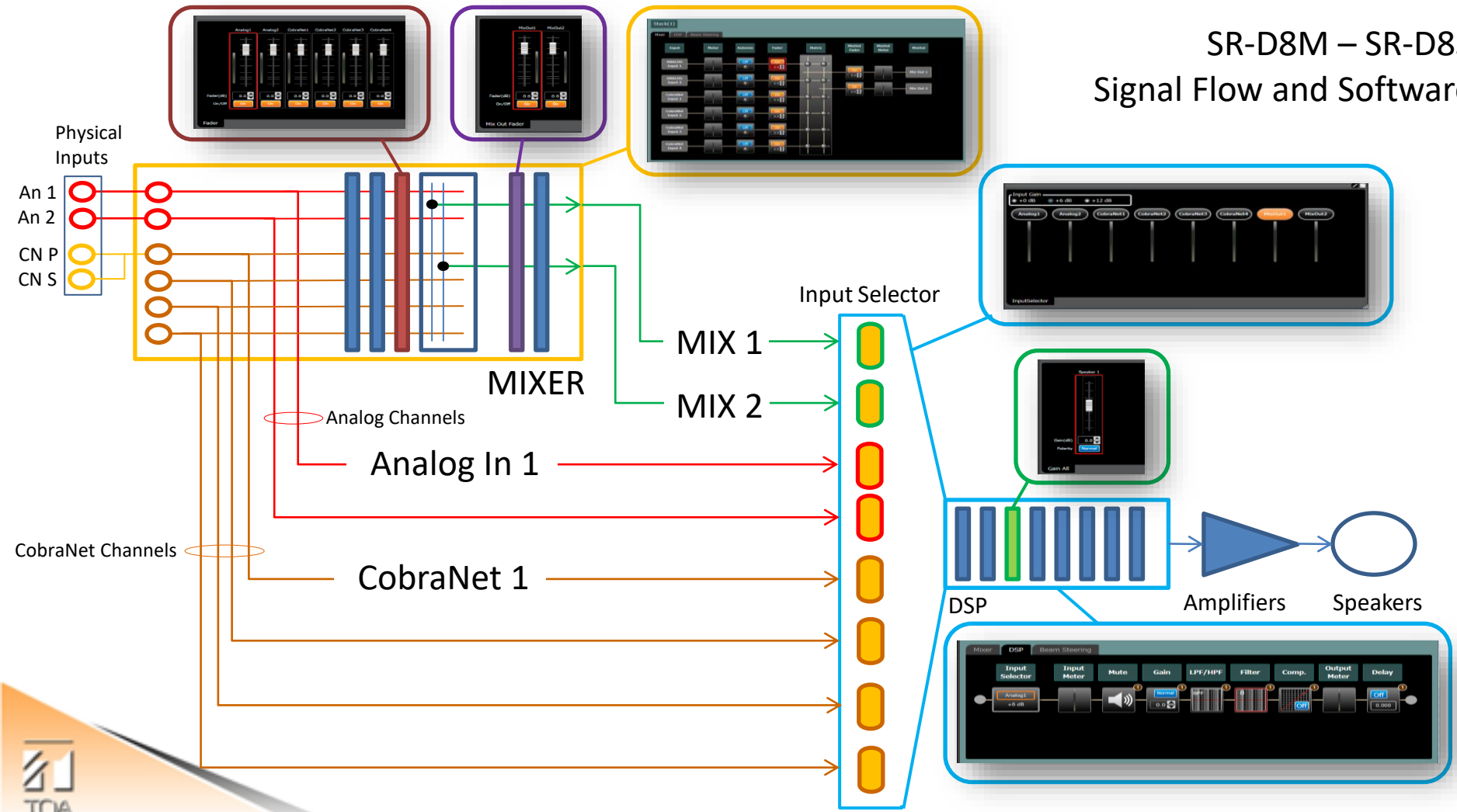


- PC based real time configuration
- Computer connection not required for normal operation.



SR-D8M – SR-D8S

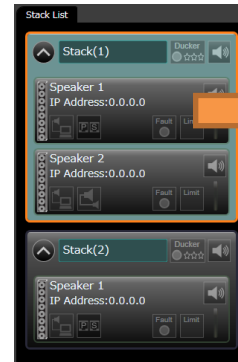
Signal Flow and Software



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software



- PC based real time configuration
- Speaker STACK management and Monitoring



Normal



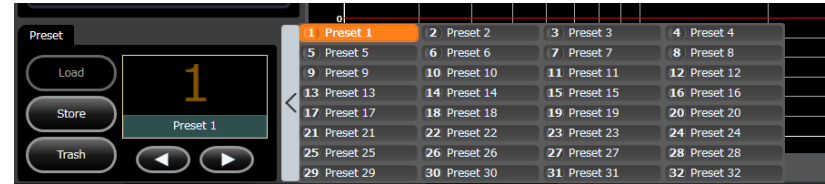
Error



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software



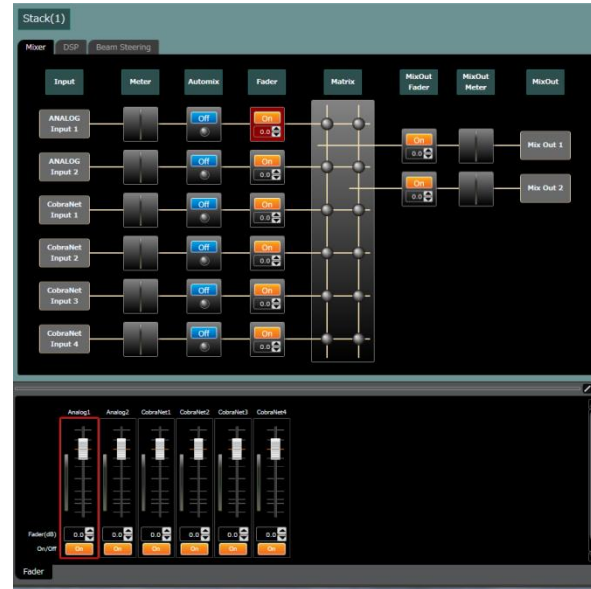
- PC based real time configuration
- Speaker STACK management and Monitoring
- 32 Scene memories for different setups



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software



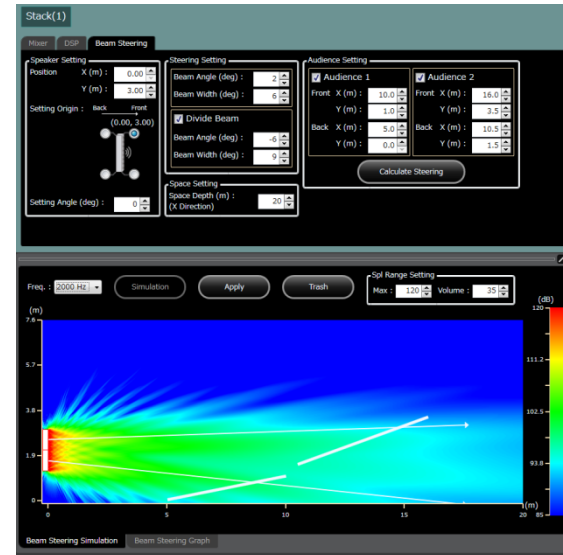
- PC based real time configuration
- Speaker STACK management and Monitoring
- 32 Scene memories for different setups
- Matrix control of Inputs/Outputs



- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software



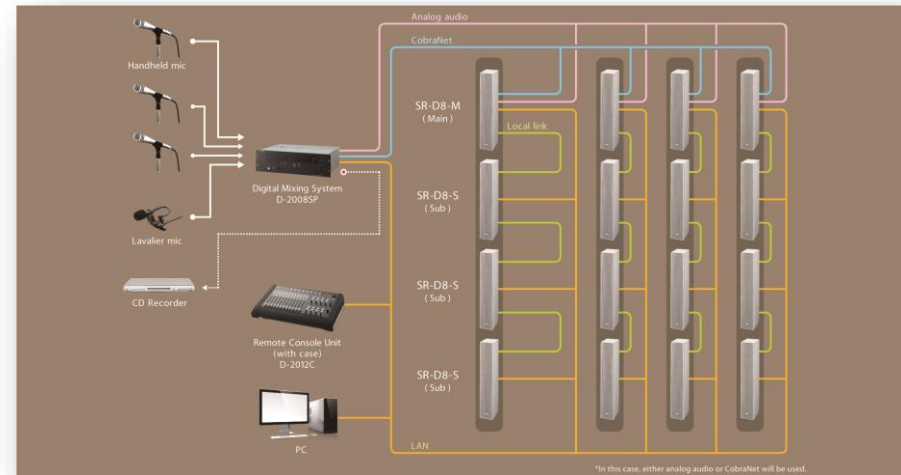
- PC based real time configuration
- Speaker STACK management and Monitoring
- 32 Scene memories for different setups
- Matrix control of Inputs/Outputs
- Auto Beam Steering simulation



- Stack position
- Manual control
- 2 seating planes
- Beam calculation
- Coverage simulation
- Apply settings
- Visual rendering

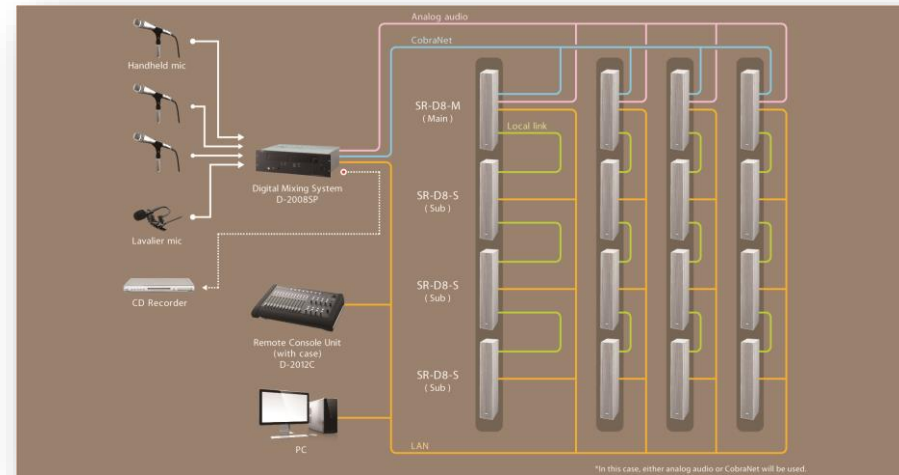
- ❑ Acoustics
- ❑ Conventional speakers
- ❑ Line array characteristics
- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software
- ❑ Network

- Audio is distributed via a redundant **Cobranet** audio network to master



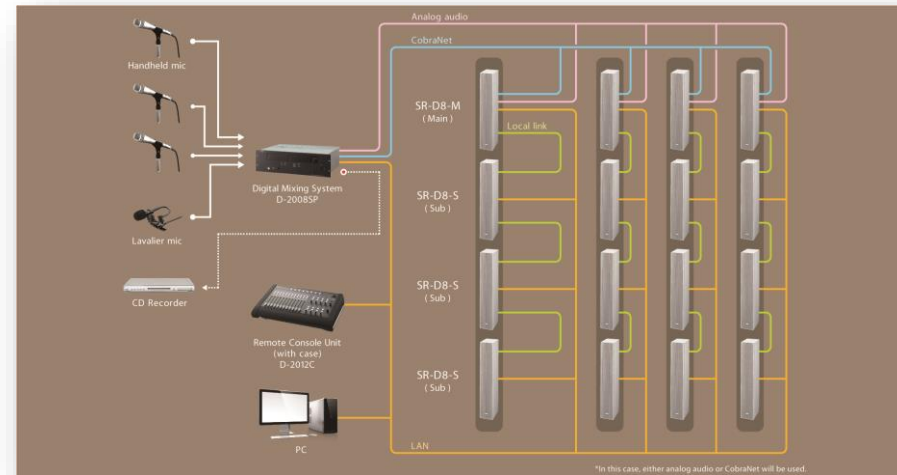
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- ❑ Network

- Audio is distributed via a redundant Cobranet audio network to master
- **Secondary analog** audio connection



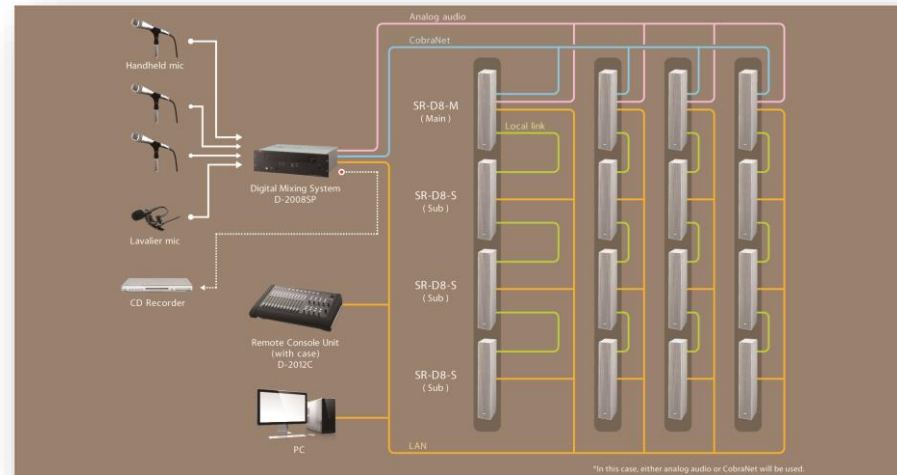
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- ❑ Software
- ❑ Network

- Audio is distributed via a redundant **Cobranet** audio network to master
- **Secondary analog** audio connection
- **Local** audio link between master and slaves



- ❑ Acoustics
- ❑ Conventional speakers
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- ❑ DSP- Digital Signal Processing
- ❑ Steerable Line Array SR-D8
- ❑ Software
- ❑ Network

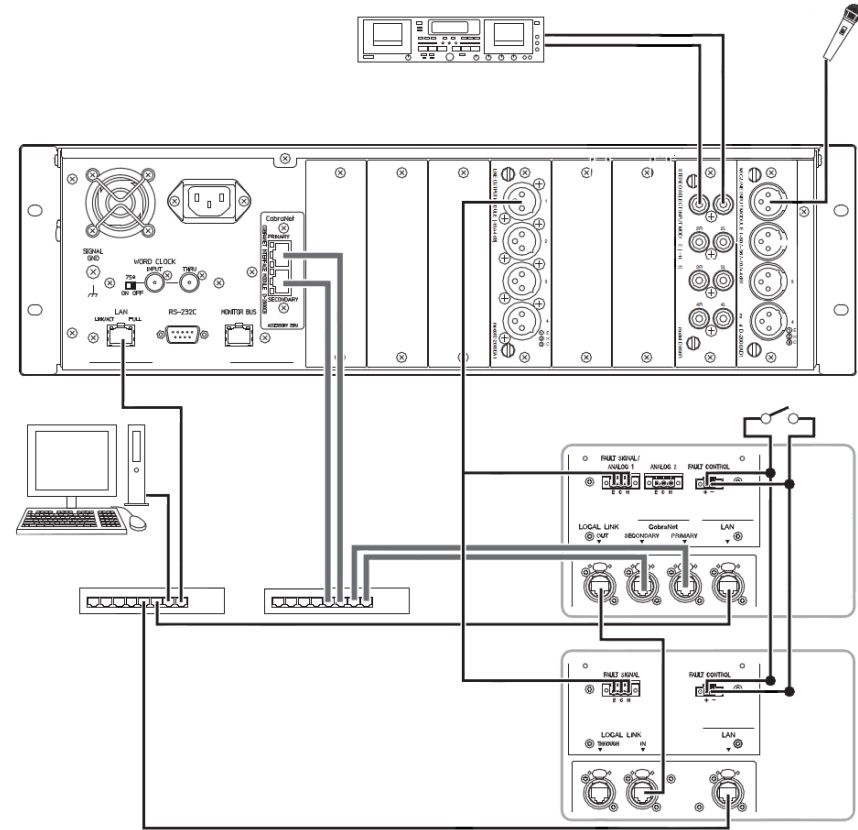
- Audio is distributed via a redundant **Cobranet** audio network to master
- **Secondary analog** audio connection
- **Local** audio link between master and slaves
- **PC LAN** connection to each SR-D8 (M and S)



SR-D8 Powered Steerable Line Array with DSP

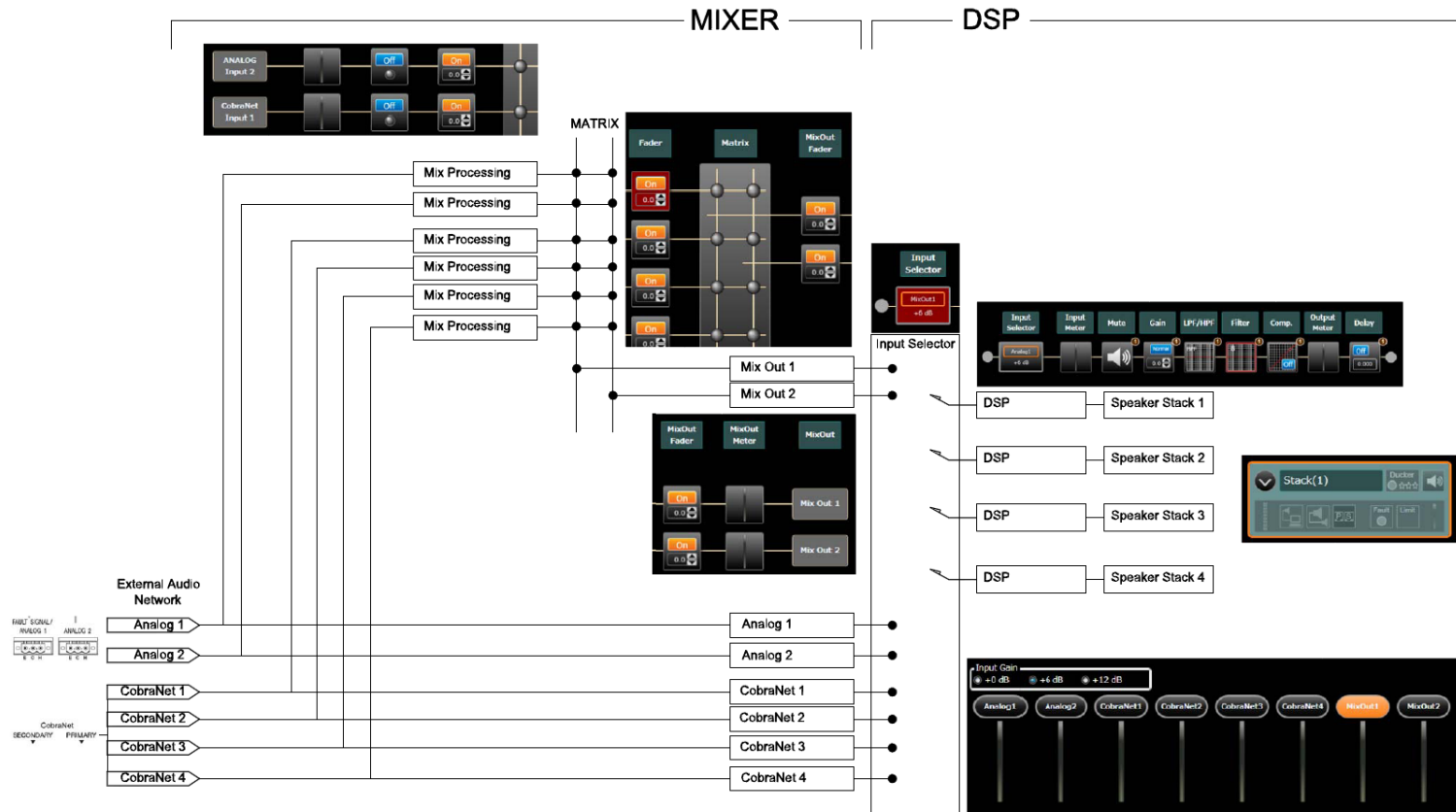
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- ❑ Steerable Line Array SR-D8
- ❑ Software
- ❑ Network
- ❑ SR-D8M + SR-D8S Demonstration

SR-D8M + SR-D8S Demonstration



SR-D8 Powered Steerable Line Array with DSP

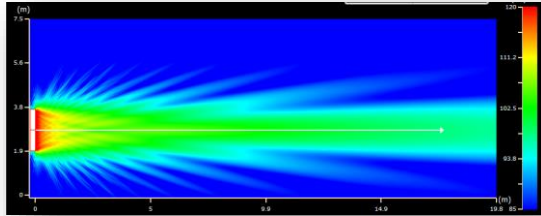
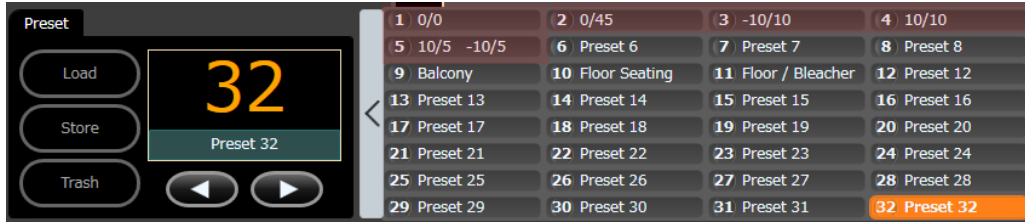
SR-D8M + SR-D8S Demonstration



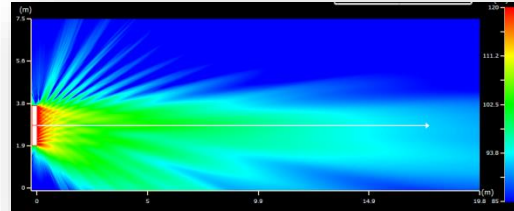
Presets Used 1-6, 9-11



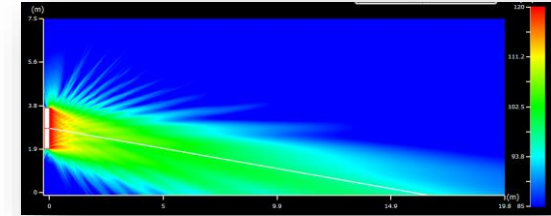
SR-D8 Powered Steerable Line Array with DSP



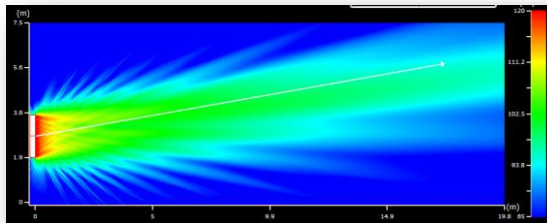
1. Zero beam tilt, zero beam spread



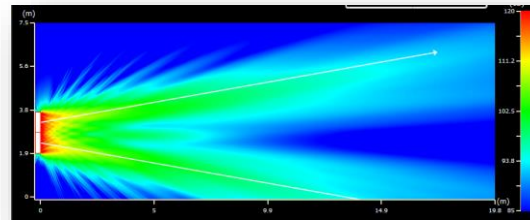
2. Zero beam tilt, 45° beam spread



3. -10° beam tilt, 10° beam spread



4. 10° beam tilt, 10° beam spread

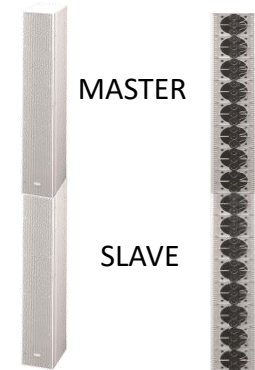


5. Beam split. 10° beam tilt, 5° beam spread
-10° beam tilt, 5° beam spread

SR-D8M + SR-D8S Demonstration

Presets 1-5

Beam Demonstration



SR-D8 Powered Steerable Line Array with DSP

SR-D8M + SR-D8S Demonstration

Presets 9-11

Application Demonstration

