audio-technica

Product Training

ATND1061 Beamforming Ceiling Array Microphone

ATND1061
Beamforming Ceiling Array Microphone


Beamforming Microphone Array


Microphone Manager Software

Digital Processing


Plenum Rated

AEC


Noise Reduction

Dante Output (ATND1061DAN)

- The ATND1061 Beamforming Ceiling Array Microphone is a state-of-the-art, **professional conferencing solution for meetings of any size** – from boardrooms to classrooms.

- The ATND1061 has **six individual output channels**. Collectively, these channels can be configured with up to **32 user-defined microphone pickup zones**, providing the **flexibility to cover a wide variety of room sizes and meeting types**. Plus, exclusion zones can be set to avoid known sources of unwanted noise, such as air-handling systems.

- Industrial design with a familiar form factor (**roughly the size of a wireless access point**)

ATND1061
Beamforming Ceiling Array Microphone

- **Use one or more of the ATND1061 microphones** to capture every person speaking in a room with clear, natural audio that reduces distracting environmental sounds.
- With its **voice activity detection technology**, the microphone discerns between voices and unwanted noises, such as paper shuffling.
- **Powerful onboard digital signal processing** includes automix, acoustic echo cancelation, noise reduction, automatic gain control, and 4-band EQ.
- Room configuration, beam setup, and other settings are handled through the **user-friendly Digital Microphone Manager software** application.
- Offers **flexibility for mounting options**; VESA, Surface, Flush

ATND1061
Beamforming Ceiling Array Microphone

Audio-Technica has a History of Array Technology

- Delta Beam (1999)
  5 element broadcast shotgun

- ES954 (2019)
  4 element steerable array for meeting spaces

ATND1061
Beamforming Ceiling Array Microphone

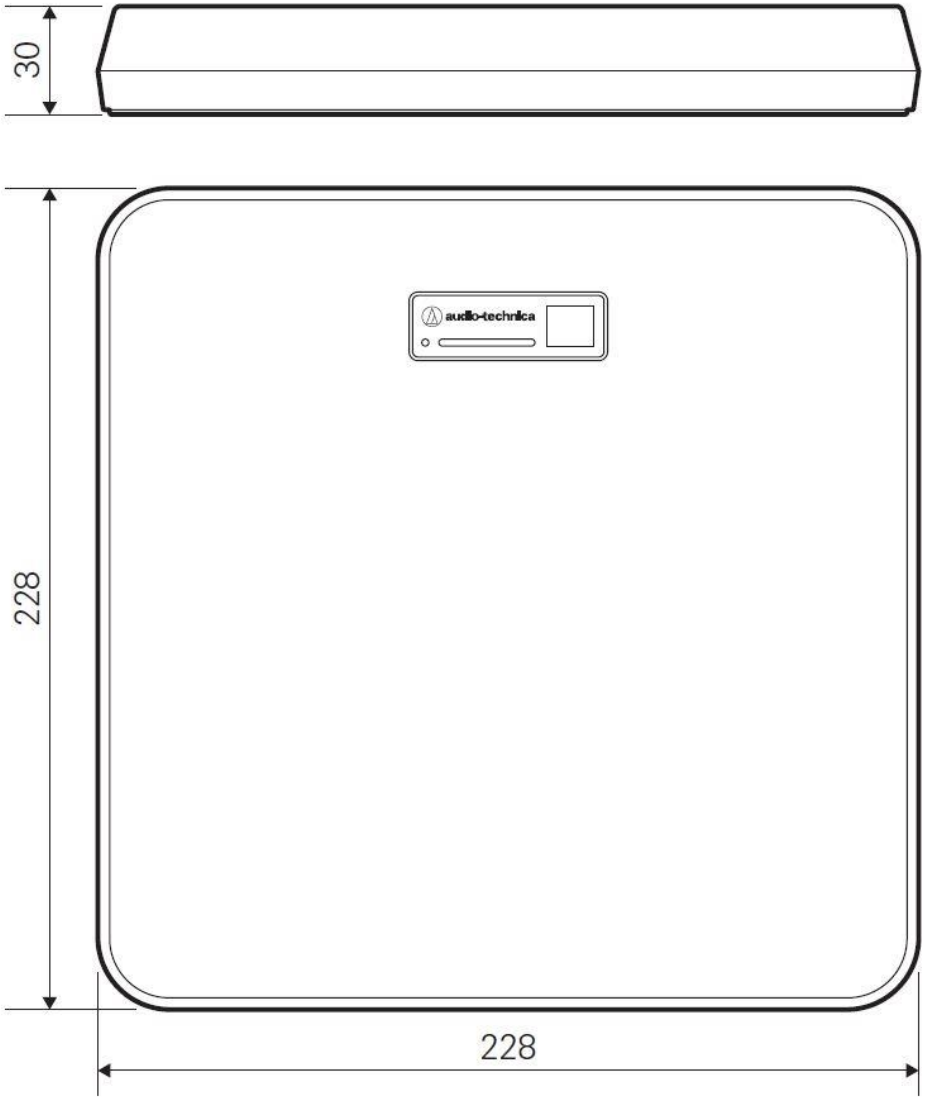
Form Factor

Low profile device
8.98” (228 mm) x 8.98” (228 mm) x 1.19” (30 mm)

White plastic housing
UL-2043 plenum rated

White metal grille

Multi-color status LED

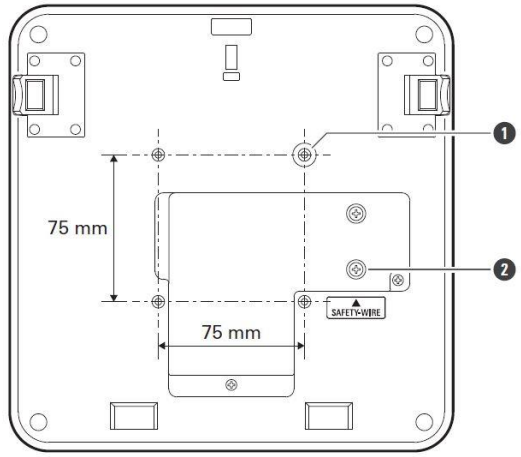


ATND1061
Beamforming Ceiling Array Microphone

Mounting Options – VESA Mount

VESA 75 mm x 75 mm standard spacing
Chief/Legrand RPA or RPA Mini series
VESA MIS-D 75

Threaded for M4 screws (not to exceed 8 mm depth)



1 Screw holes for VESA mount
2 Screw for seismic cable

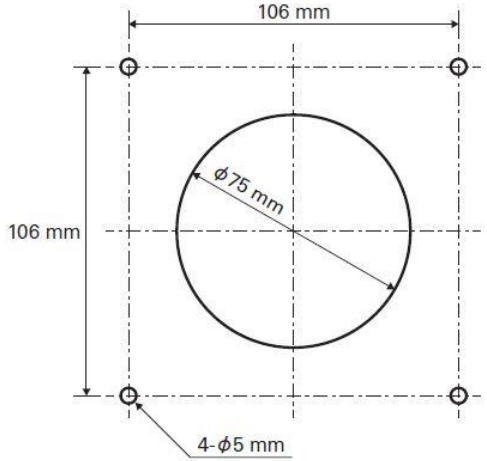
ATND1061
Beamforming Ceiling Array Microphone

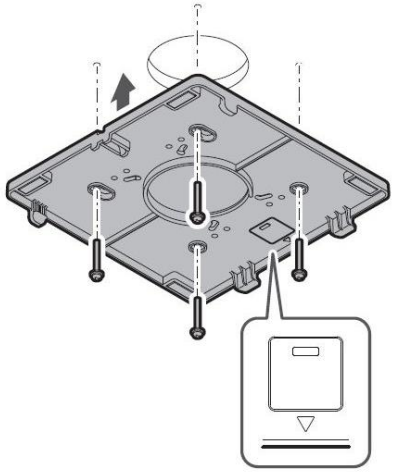
Mounting Options – Surface Mount

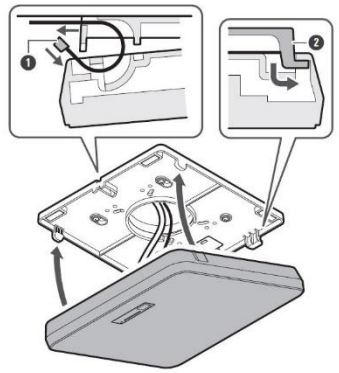
Surface Mount Adapter Plate (included)

Snaps in for easy installation

Safety tie secures unit against falling







1 Zip tie
2 Tab on surface mount adapter

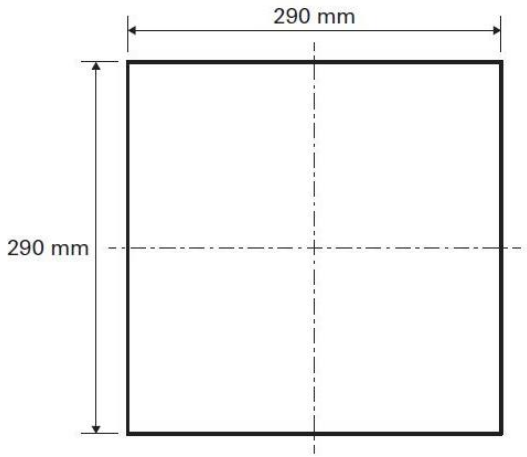
ATND1061
Beamforming Ceiling Array Microphone

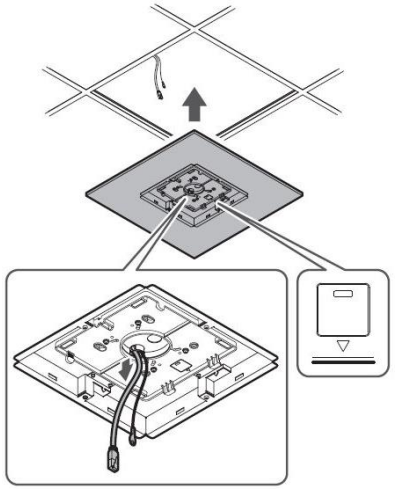
Mounting Options – Flush Mount

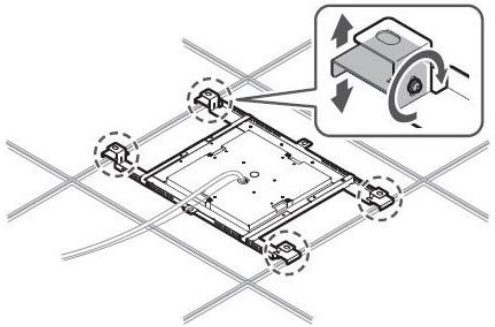
Flush mount assembly (included)
Metal back box (Flush mount Adapter)
Tile bridges
Seismic cable
Trim ring

UL-2043 plenum rated

Seismic cable secures unit against falling







ATND1061DAN
Beamforming Ceiling Array Microphone

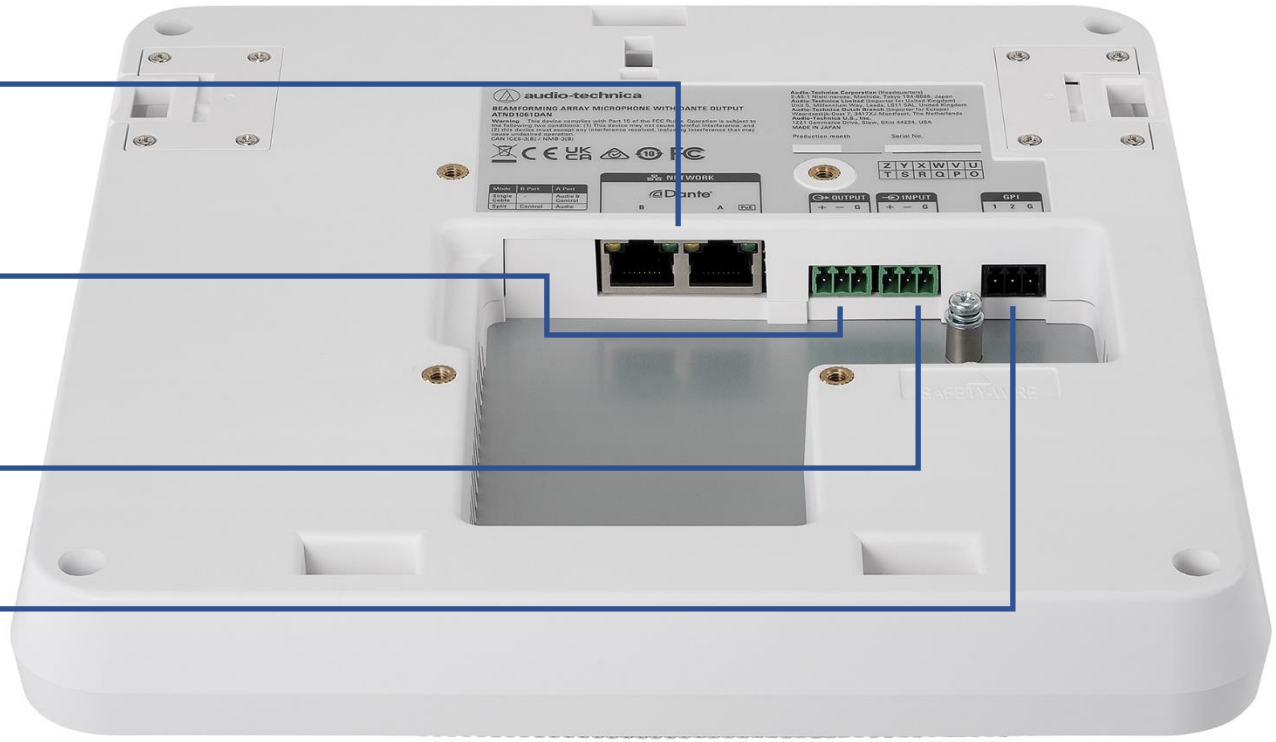
Connections

2 x RJ45 Network Connections
PoE Network + Dante
Optional separation of control and Da

1 x analog balanced audio output
Auto-mixed output
Audio output for hardware CODEC’s

1 x analog balanced audio input
AEC reference

2 x GP/I
Power Save Mode
Reboot



1 x IR remote
For quick audio output muting
Recall up to 4 microphone presets (16 total presets can be configured in DMM)
Cycle Power Save Mode

ATND1061
Beamforming Ceiling Array Microphone

Housing

Microphone Status LED
The microphone status reflects mute, un-mute, and power save mode.
Any one of 7 colors and OFF can be selected to represent these modes.

IR Receive Window

It is not recommended to remove or paint the microphone grill.

ATND1061
Beamforming Ceiling Array Microphone

Beam and Zone Operation
ATND1061 has 6 highly directional dynamic (steering) beams

Beams are activated based on a proprietary
Voice Activity Detection (VAD) algorithm
Sensitivity can be adjusted:

Low – Slower reaction, but lowers false trigger potential

Medium – Balance between reaction and trigger accuracy

High – Quicker reaction, but can false trigger on noises

ATND1061
Beamforming Ceiling Array Microphone

Beam and Zone Operation

Beam 1
- Automatically steers towards up to 16 user defined Coverage Zones
- Output is sent to Dante channel 1 ATND1061DAN (Dante enabled version) as well as analog auto mix output

Beams 2 through 6
- Automatically steer towards up to 16 user defined Priority Zones
- Outputs are sent to Dante channels 2 through 6 as well as analog auto mix output

Dante output 6 may be selected as beam 6 output ATND1061DAN (Dante enabled version) or auto mix

While the beam is active, it will follow the source within the zone. When the source leaves a zone, the beam will remain centered on the last location and the audio will either be attenuated by 14 dB or remain on at the last triggered location (user selectable).

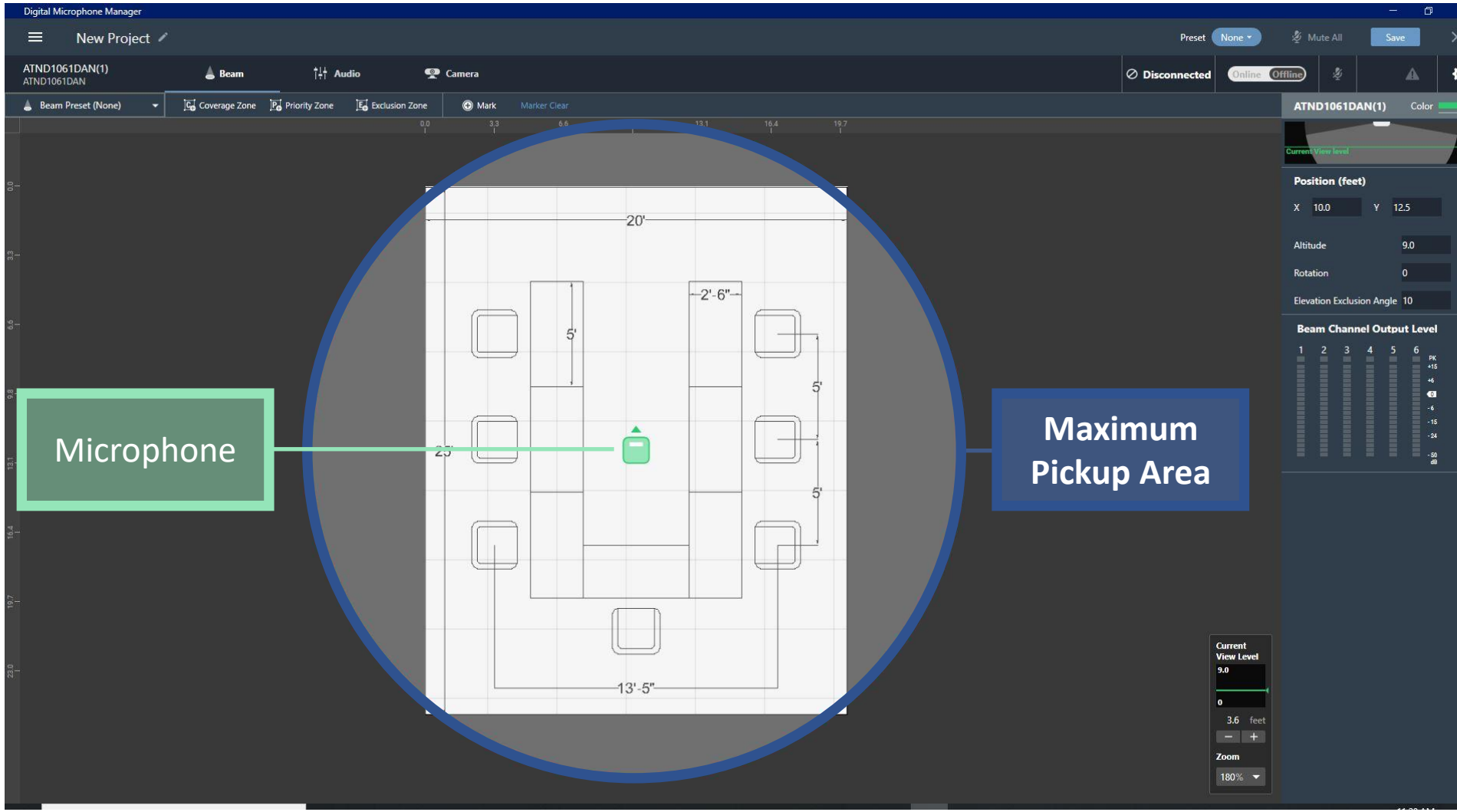
All beams are restricted to prevent activation from voices originating within user defined Exclusion Zones

ATND1061
Beamforming Ceiling Array Microphone

Beam and Zone Operation

Blue Circle represents maximum pickup area based on 9 ft mounting height and 3.6 ft talker height as automatically calculated in the software.

The shown 20X25 meeting space falls within the pickup area.



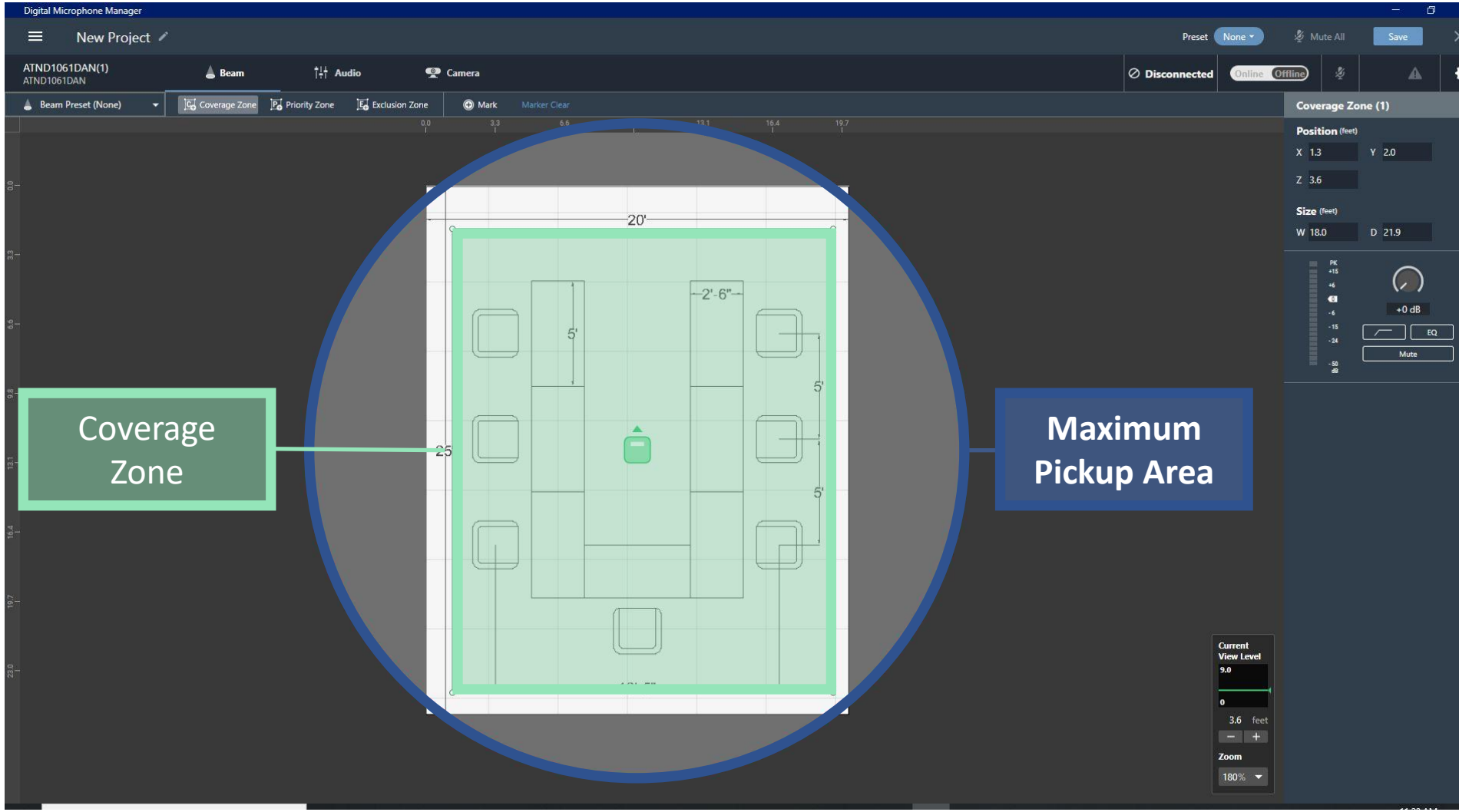
ATND1061
Beamforming Ceiling Array Microphone

Single Coverage Zone Example

Here the green rectangle shows a single defined Coverage Zone.

Up to 16 Coverage Zones can be created within this pickup area.

Any Coverage Zones created will share a single beam which will be output to Auto Mix Out and to Dante Out #1 in Dante enabled version.

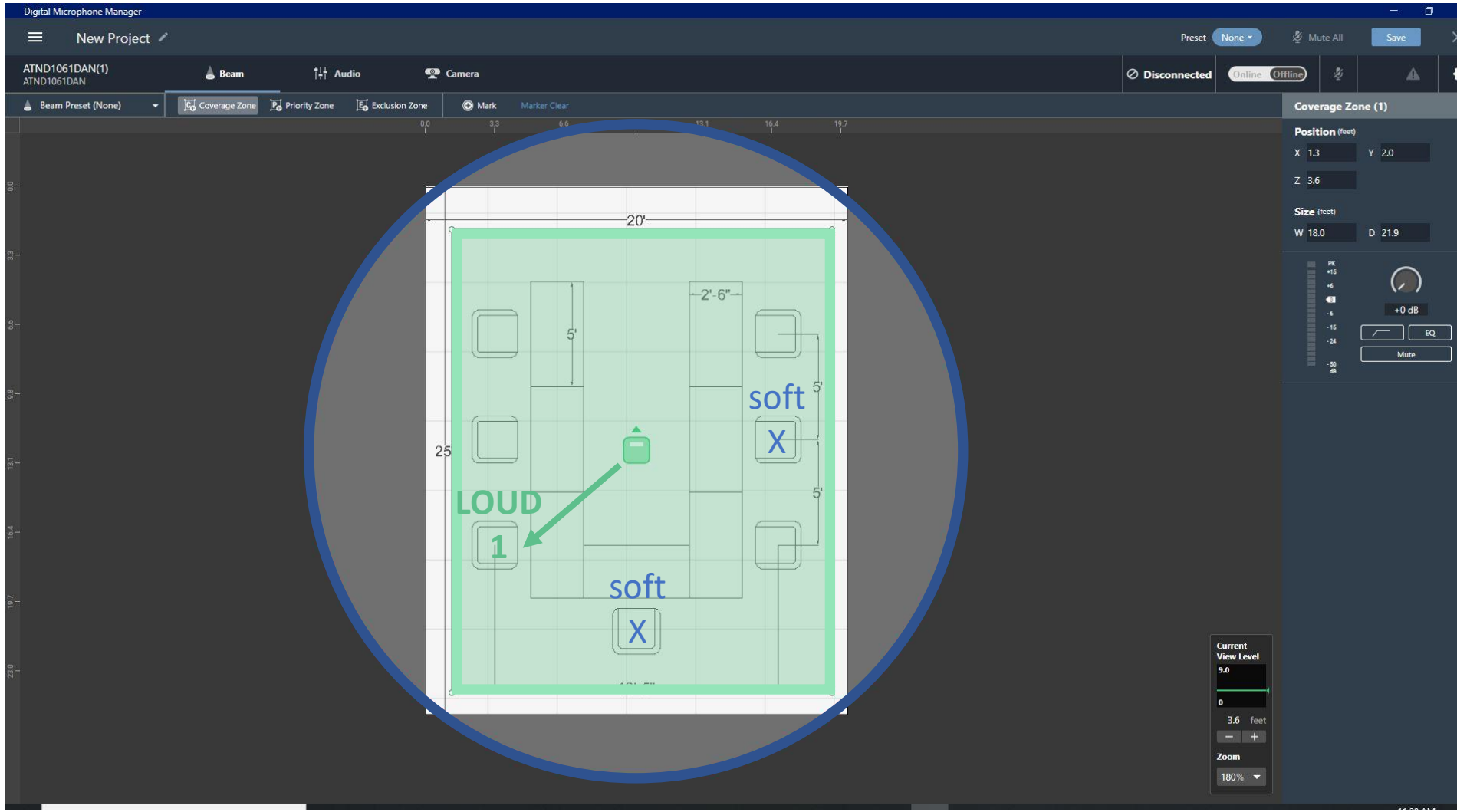


ATND1061
Beamforming Ceiling Array Microphone

Single Coverage Zone Example

If a voice is detected within a Coverage Zone, the beam will steer to that location.

If more than one voice is detected within a Coverage Zone, the beam will steer to the loudest voice.

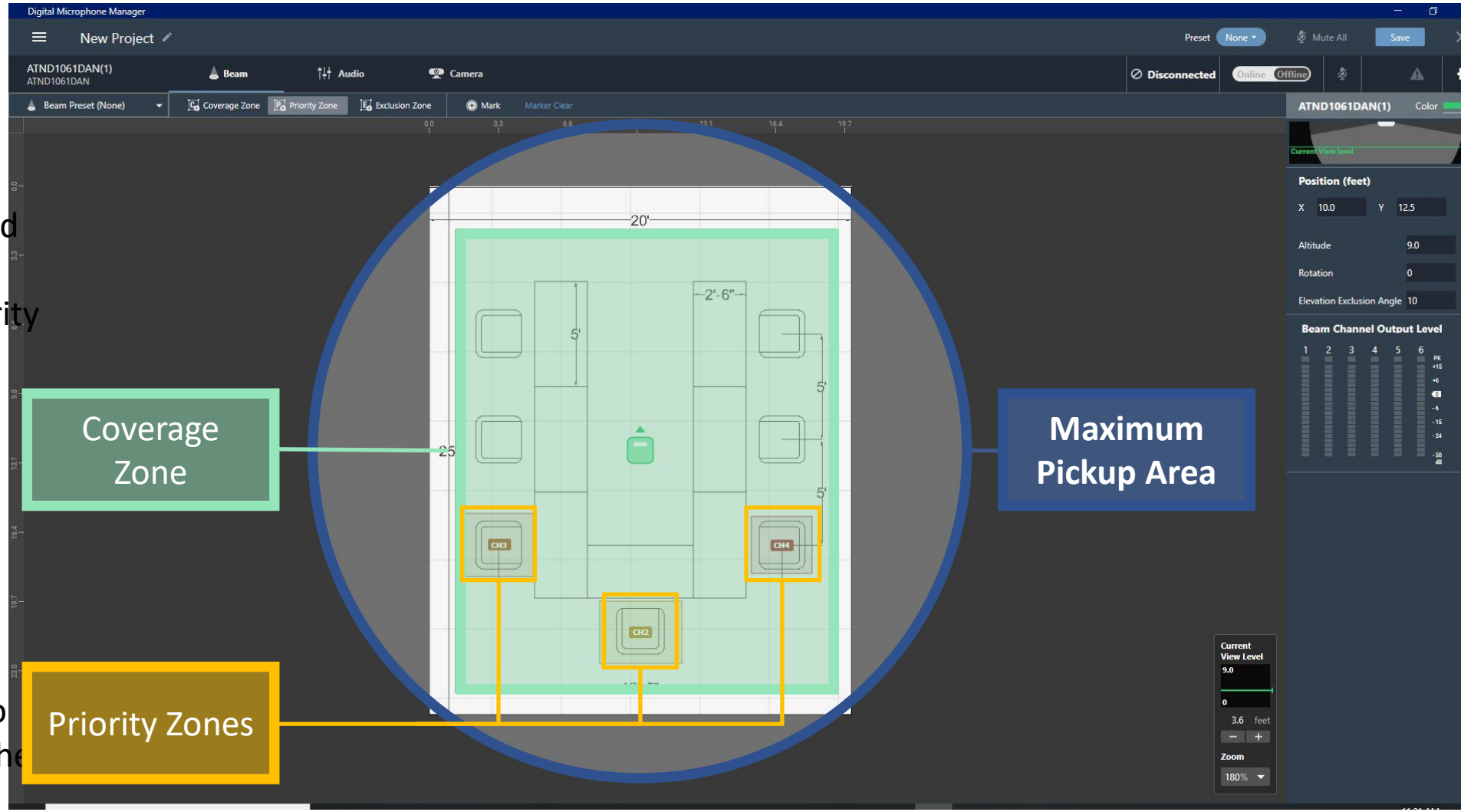


ATND1061
Beamforming Ceiling Array Microphone

Single Coverage Zone with Priority Zones Example

Priority Zones can be created to dedicate a beam to a specific zone. Up to 16 Priority Zones can be created and assigned to outputs 2 through 6.

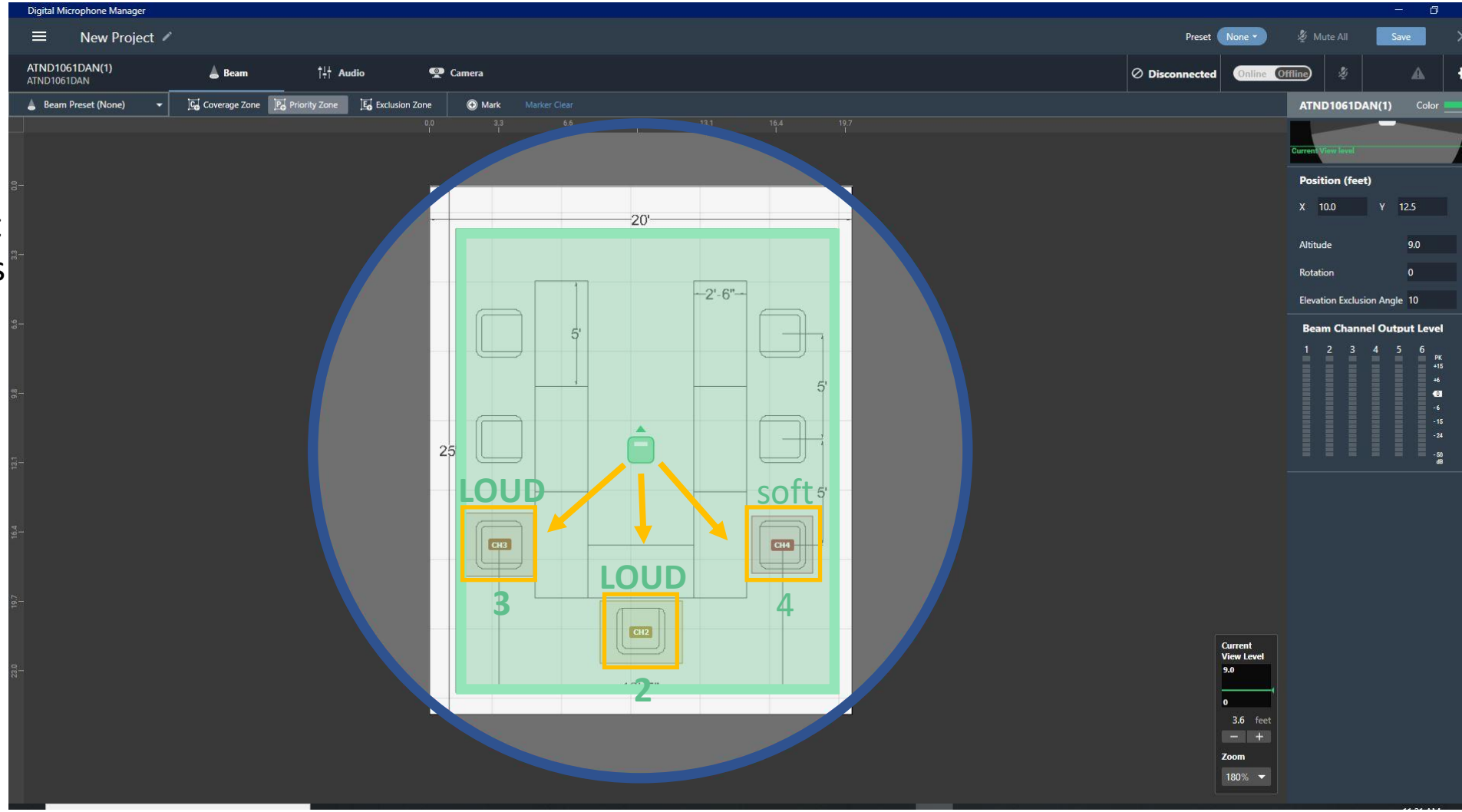
When a Priority Zone is overlapped by a Coverage Zone, the Priority Zone will take priority, leaving the Coverage Zone beam free to track other sources within the Coverage Zone.



ATND1061
Beamforming Ceiling Array Microphone

Beam and Zone Operation

As long as talkers are in Priority Zones with different output channel assignments all talkers will be picked up regardless of volume based on Voice Activity Detection (VAD) settings

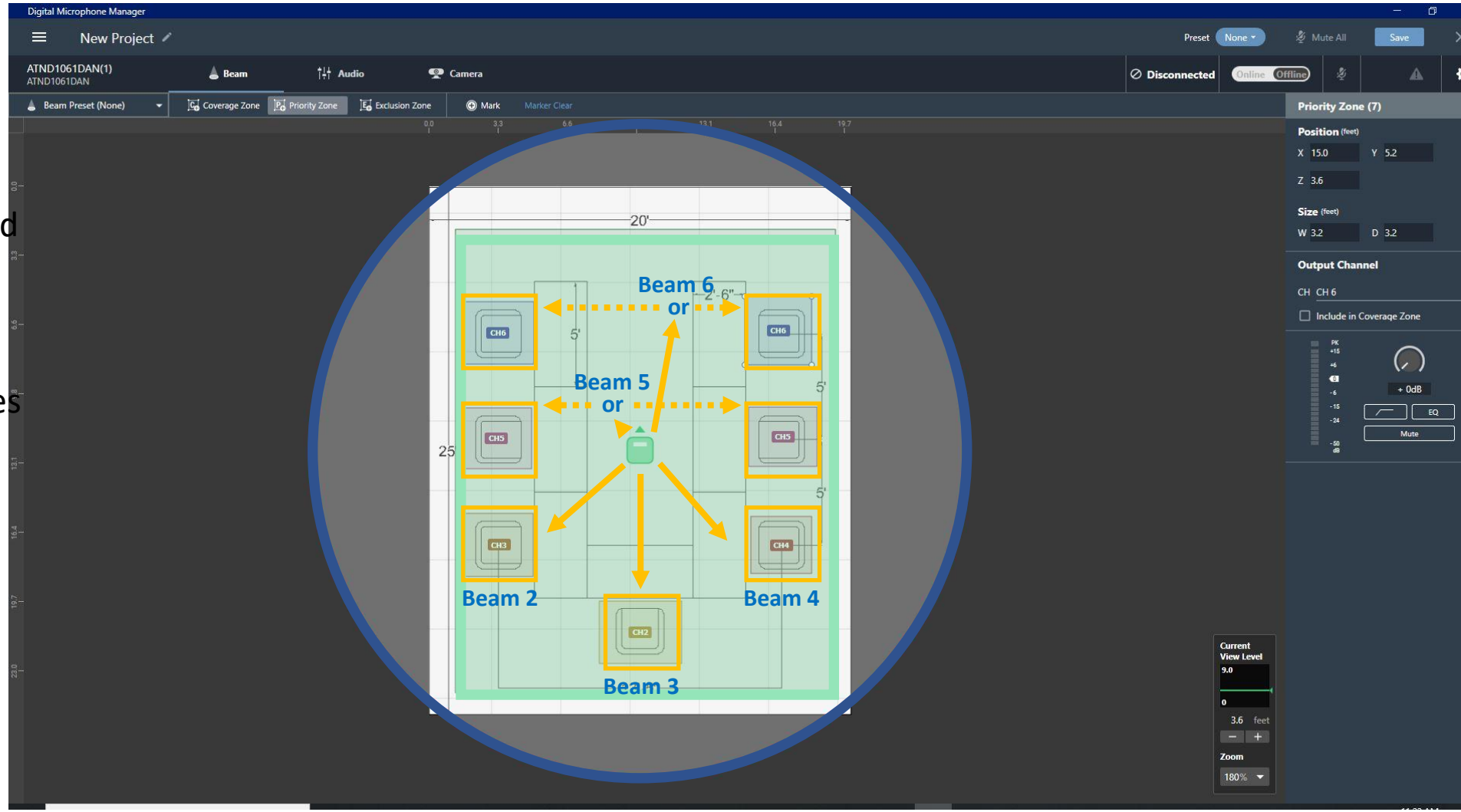


ATND1061
Beamforming Ceiling Array Microphone

Single Coverage Zone with Priority Zones Example

Priority Zones can be created to dedicate a beam to a specific zone or zones

When multiple Priority Zones are assigned to the same output channel
(as shown in the example above for beams 5 and 6), the beam seamlessly switch between the zones.

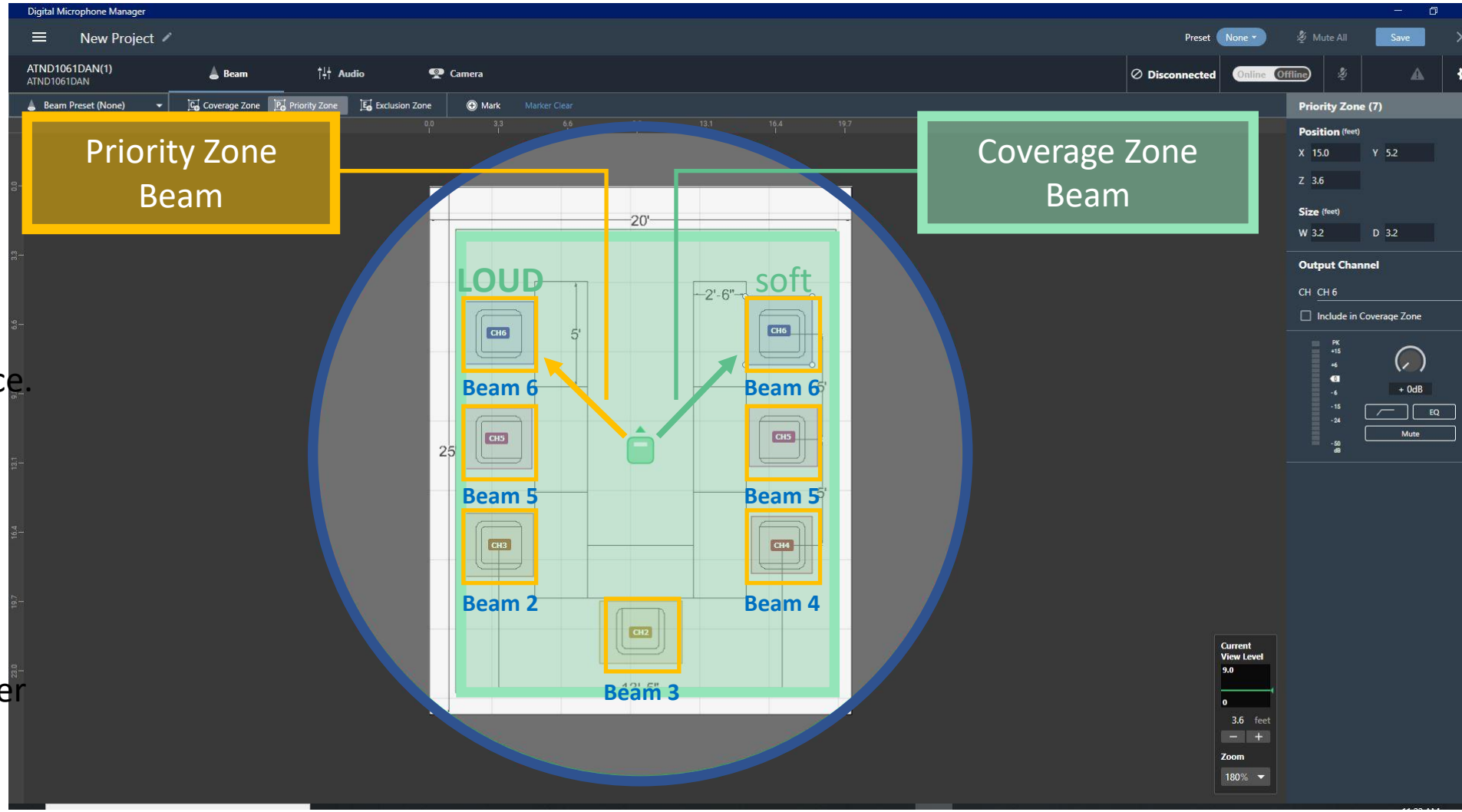


ATND1061
Beamforming Ceiling Array Microphone

Single Coverage Zone with Priority Zones Example

If more than one voice is detected within a Priority Zones that are assigned to the same beam, the beam will steer to the loudest voice.

In this example, for simultaneous talkers within Priority Zones assigned to the same beam, a Coverage Zone will cover the lower volume zone while the higher volume zone is assigned to the Priority Zone beam.



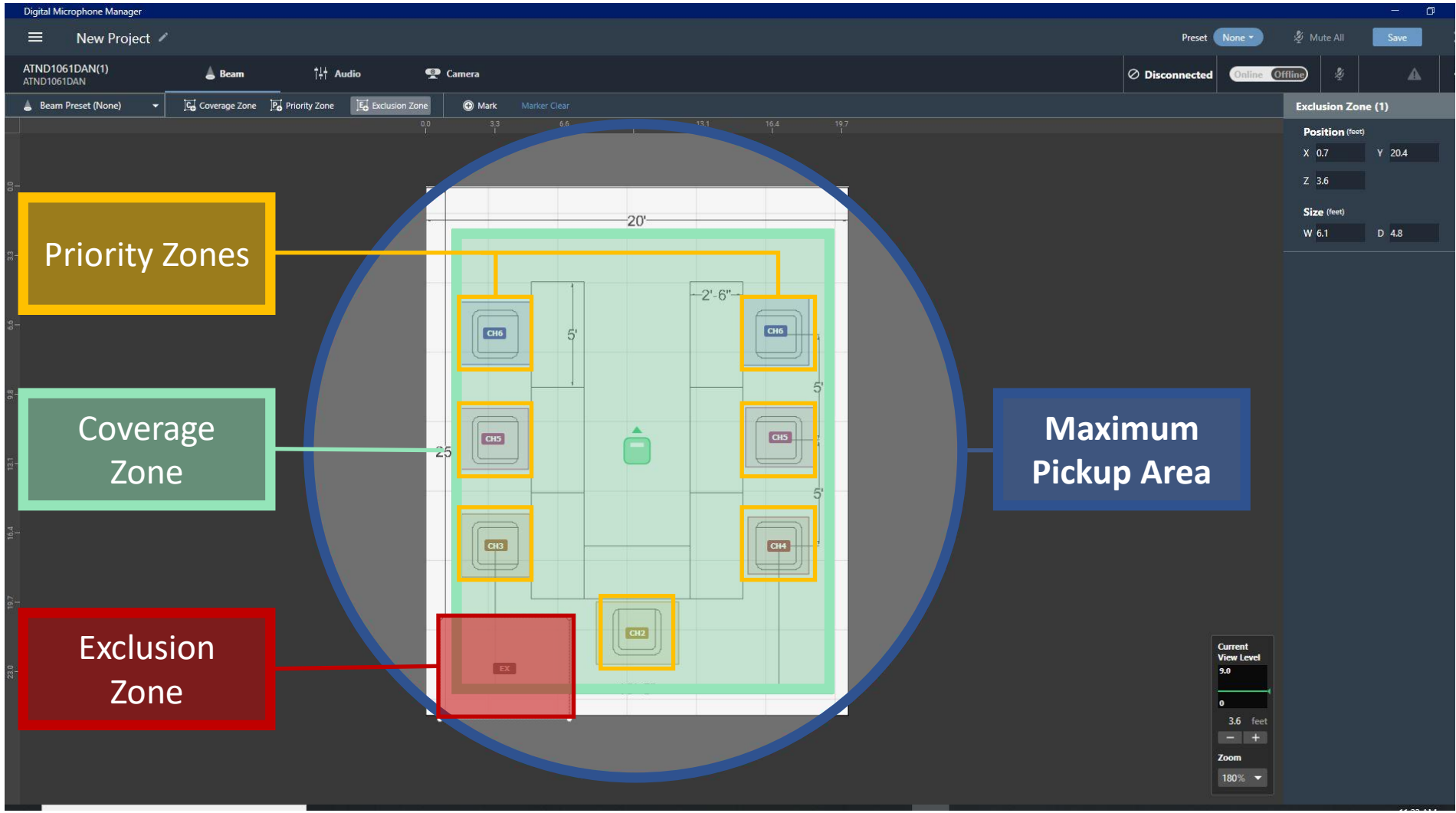
ATND-1061
Beamforming Ceiling Array Microphone

Exclusion Zones

Defines an area in which no sound will be permitted to activate a beam.

Unlimited number of Exclusion Zones.

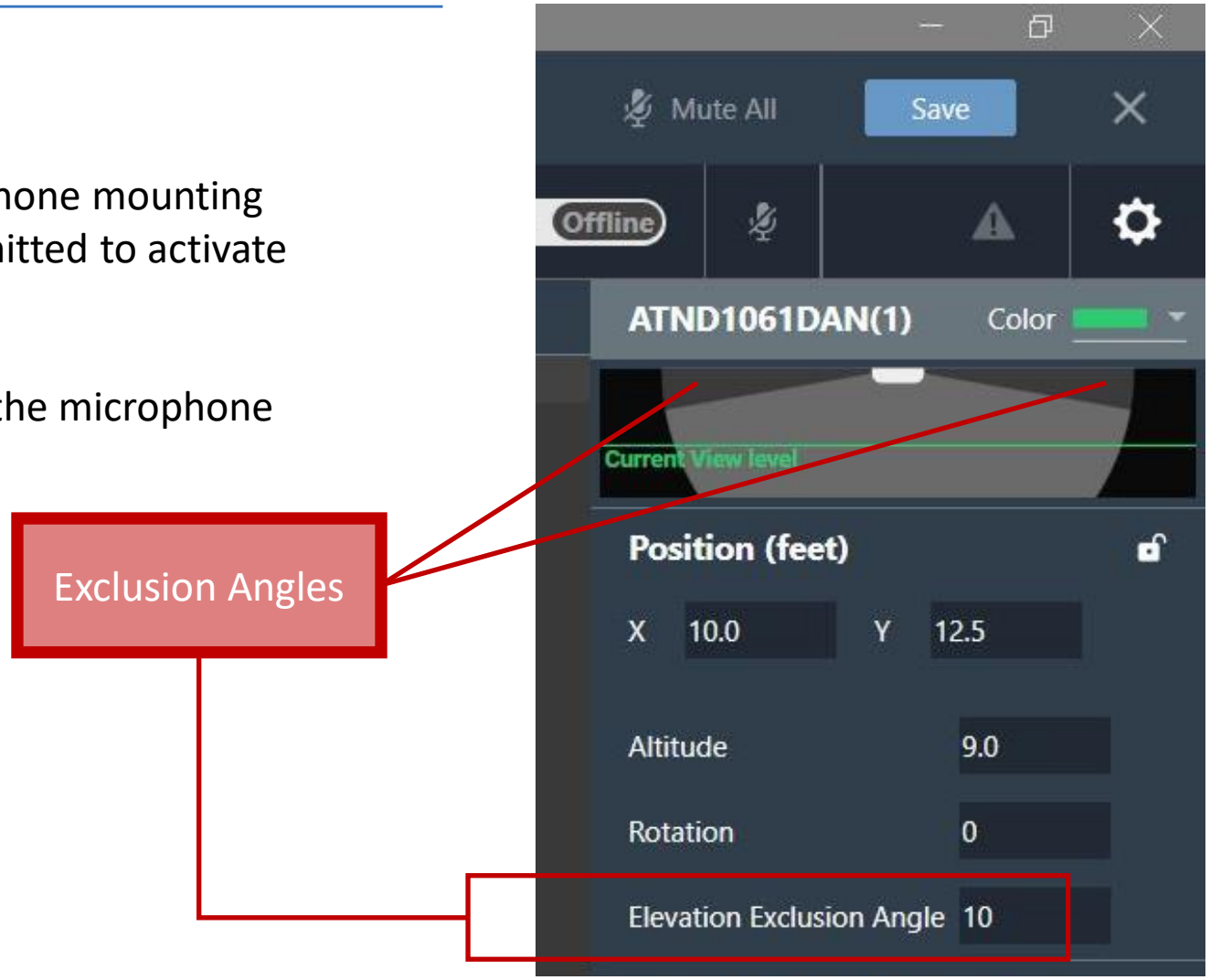
May overlap any other zone type.



ATND1061
Beamforming Ceiling Array Microphone

Elevation Exclusion Angle

- Defines the angle below the microphone mounting level in which no sound will be permitted to activate a beam
- Alters the overall coverage circle of the microphone



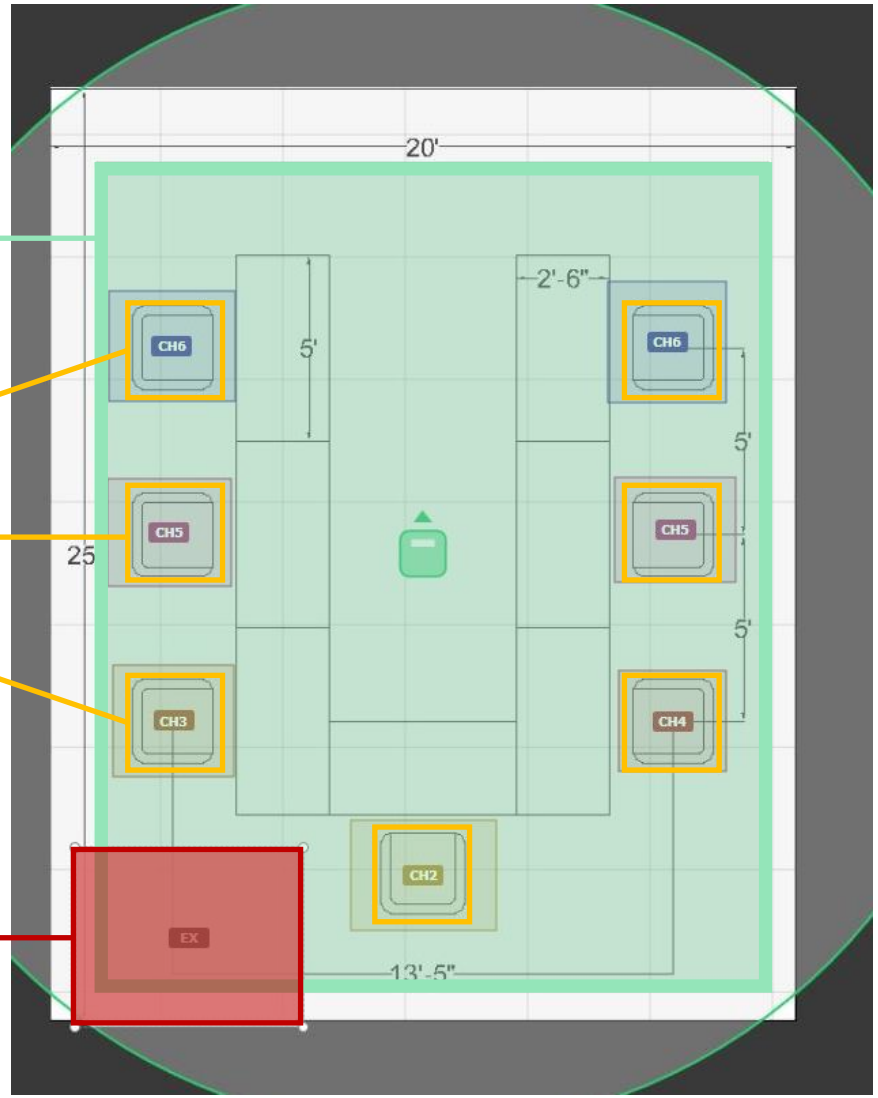
ATND1061
Beamforming Ceiling Array Microphone

Zone Priorities

3 Coverage Zone(s)

2 Priority Zone(s)

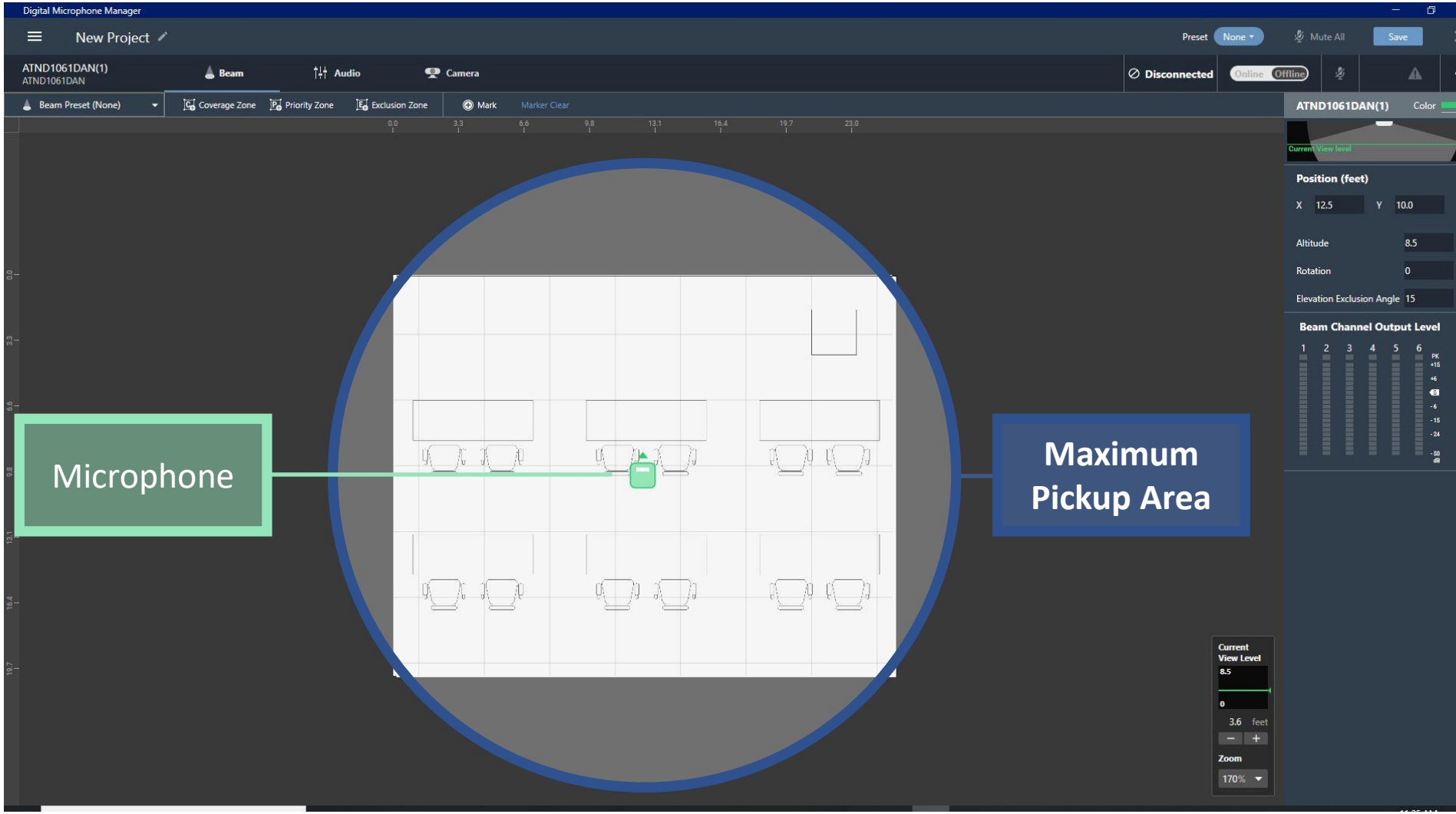
1 Exclusion Zone(s)



ATND1061
Beamforming Ceiling Array Microphone

Typical Classroom Example

In this example the entire classroom falls within the maximum pickup area of a single microphone.



ATND1061
Beamforming Ceiling Array Microphone

Typical Classroom Example

Next 5 Priority Zones are created. In this configuration, 5 people could speak simultaneously, but not within the same zone.

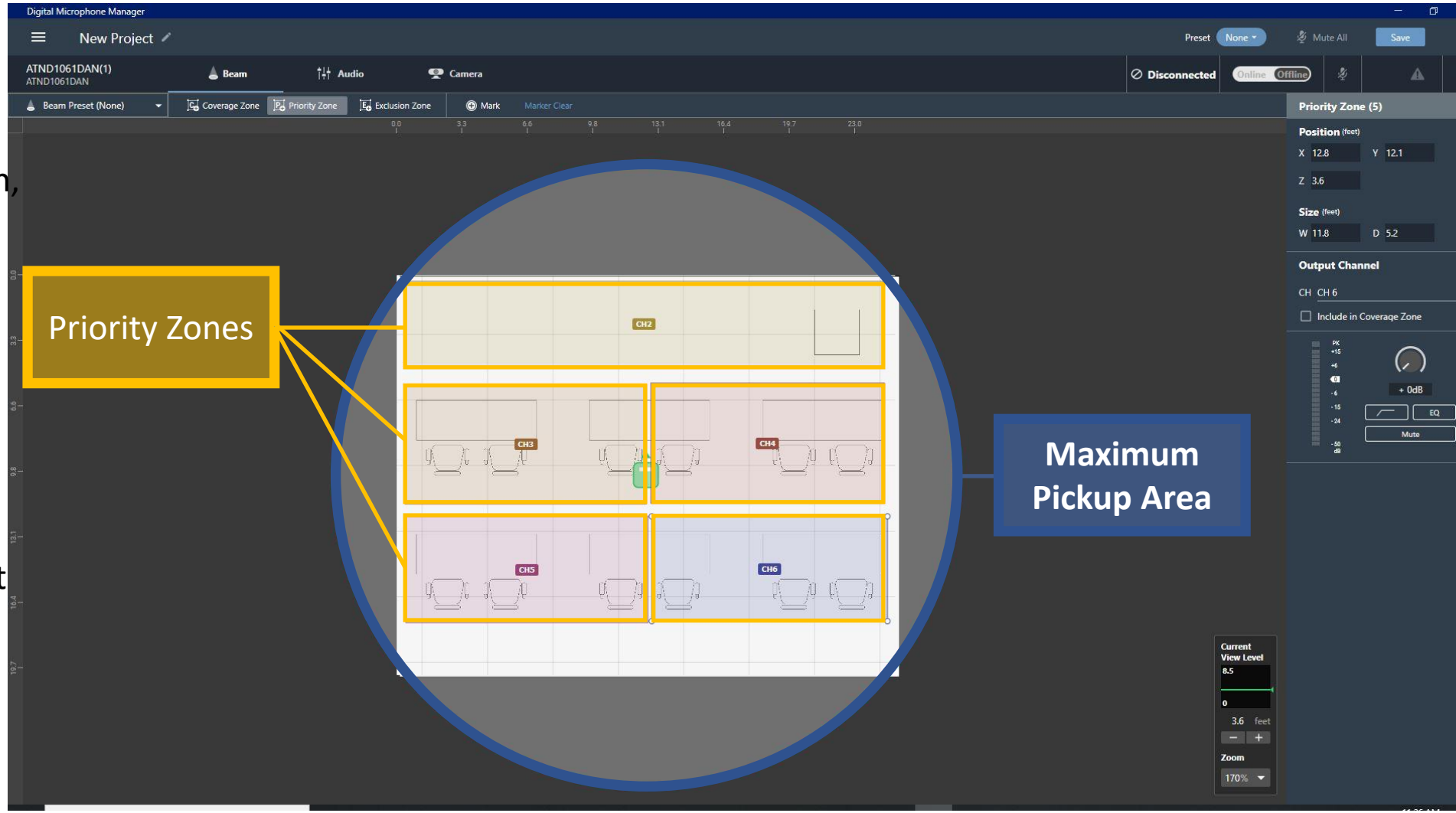
CH2 – Instructor

CH3 – Classroom Front Left

CH4 – Classroom Front Right

CH5 – Classroom Rear Left

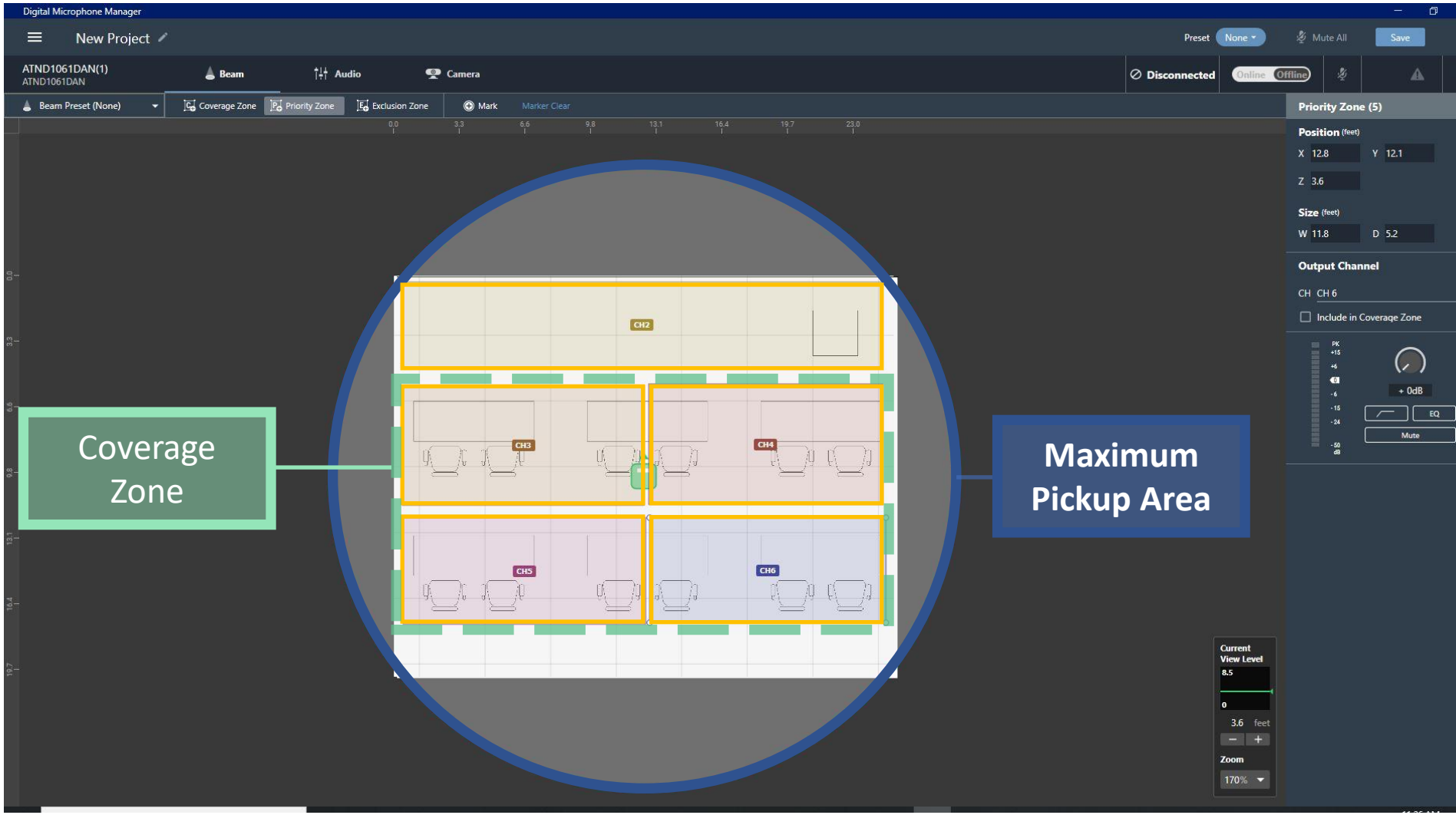
CH6 – Classroom Rear Right



ATND1061
Beamforming Ceiling Array Microphone

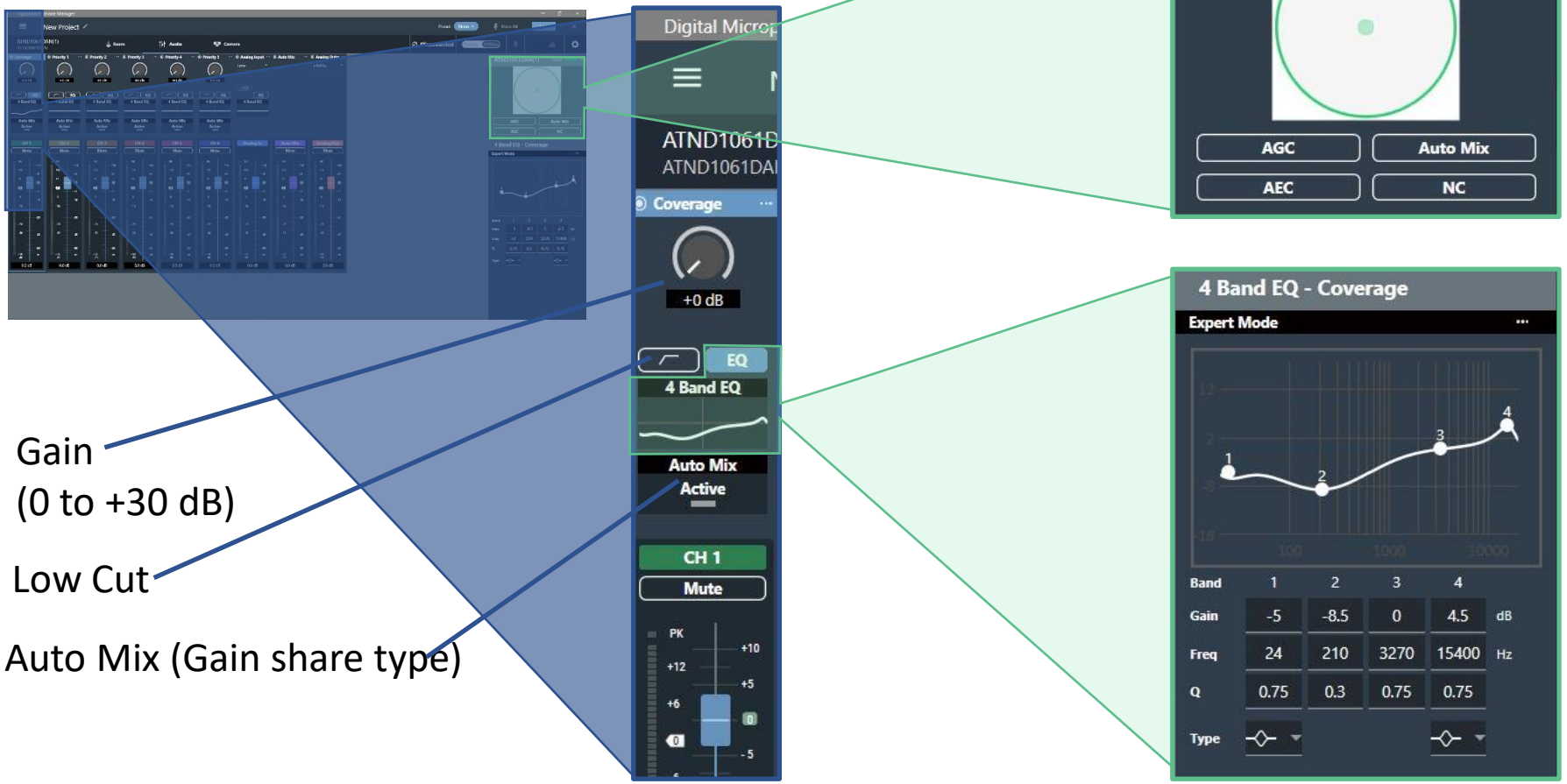
Typical Classroom Example

By laying a Coverage Zone over the 4 seating areas, an additional person in the zone could trigger a beam allowing for 6 simultaneous talkers



ATND1061
Beamforming Ceiling Array Microphone

Microphone Channel Processing



Gain
(0 to +30 dB)

Low Cut

Auto Mix (Gain share type)

Automatic Gain Control (+/- 10)
AEC (Acoustic Echo Cancellation)
NC (Noise Cancellation (0-20dB)

4 Band Parametric EQ

ATND1061DAN
Beamforming Ceiling Array Microphone

Auto Mixed Output (Gain Sharing)
Routed to Analog Out
Assignable to Dante Output #6

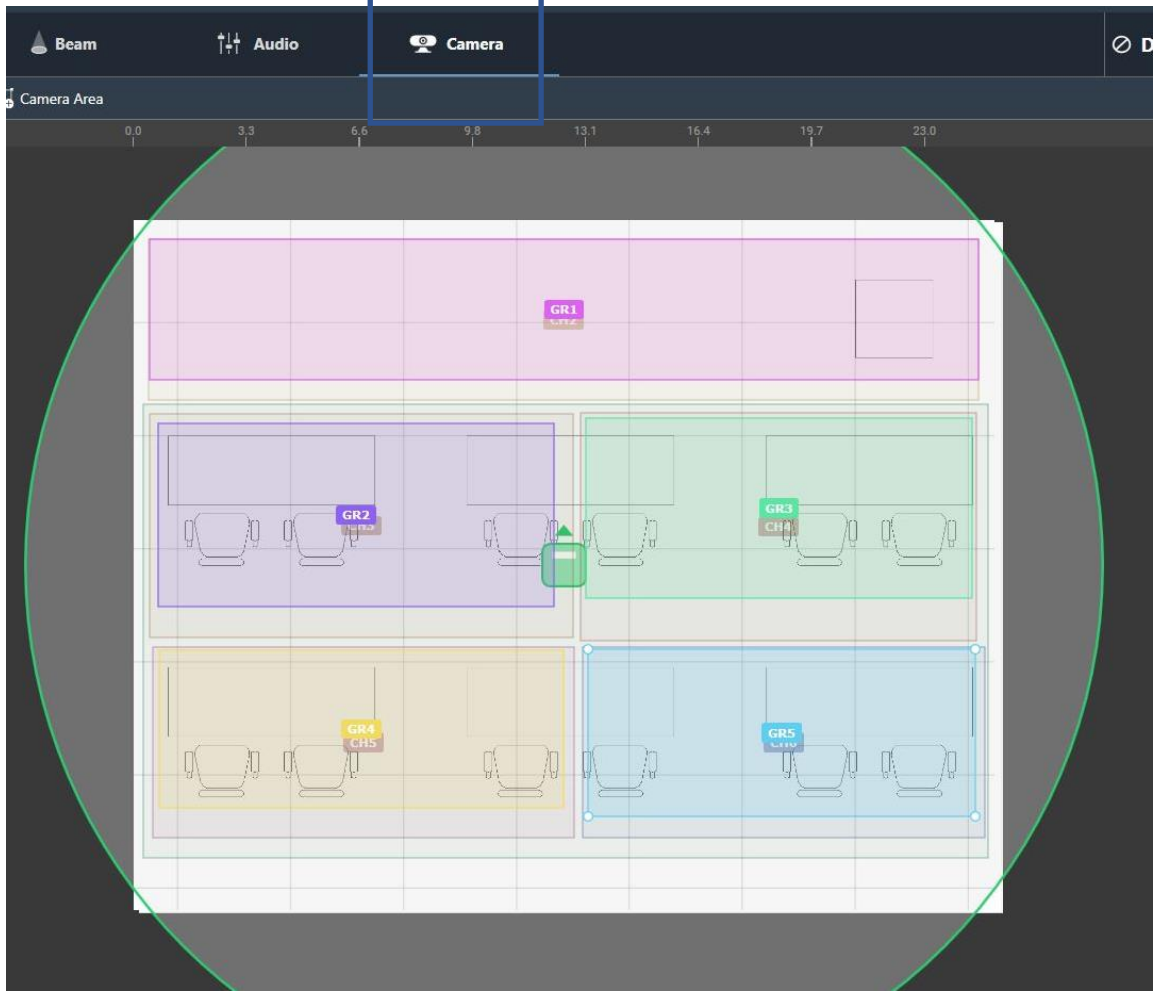
Dante Controller Labeling
Dante #1 – Coverage Output
Dante #2 – Priority Output # 1
Dante #3 – Priority Output # 2
Dante #4 – Priority Output # 3
Dante #5 – Priority Output # 4
Dante #6 – Priority Output # 5 OR Auto Mix Output

ATND1061
Beamforming Ceiling Array Microphone

Camera Groups

Up to 8 camera groups can be created to provide X and Y coordinates to a camera control system.

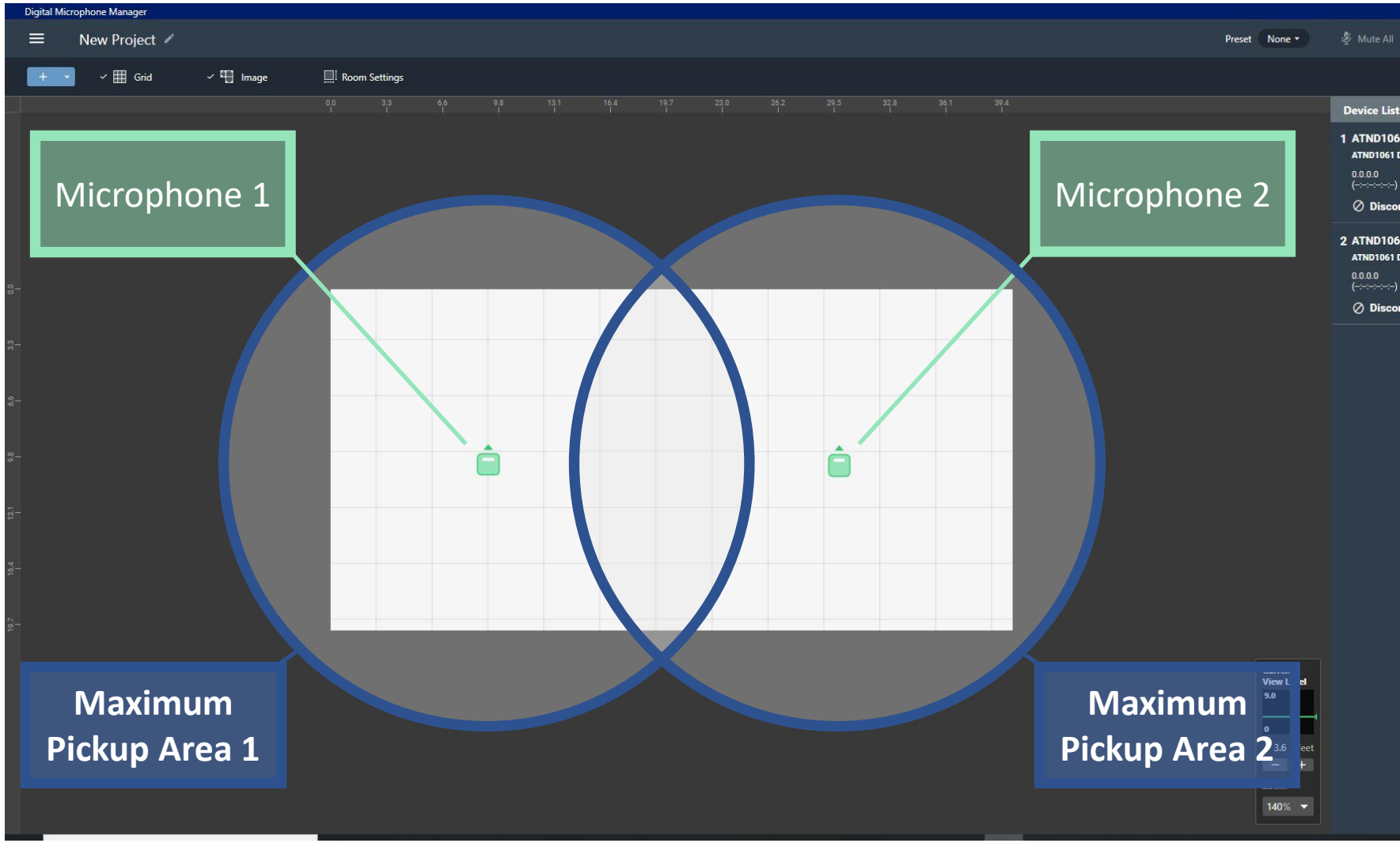
Crestron module and QSC plug-in available



ATND1061DAN
Beamforming Ceiling Array Microphone

Multiple ATND1061 Applications

- Stand Alone Mode
  Each microphone operates independently
- AEC Reference can be shared across the units via Dante
  ATND1061DAN (Dante enabled version)
- Link Mode
  Allow Gain Sharing link
- Multiple ATND1061 units can be managed in the Digital Microphone Manager software



Thank you for attending