

AXIR/0

User Manual



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Introduction

AXIR/O Outdoor Design Column Speaker

The AXIR/O are design column speakers which are especially designed for providing an extraordinary sound with surprisingly high power in outdoor or humid environments where a high audibility and clear reproduction of music and speech are desired.

They are equipped with a specially designed waterproof AWX-5 connector, providing selection out of 4 different power taps. Three power taps for 40 Watt, 20 Watt and 10 Watt for use in 100 Volt constant voltage public address systems and one power tap for 6 Ohm low impedance applications are provided.

A separate UV resistant cloth in front of every driver keeps the elements of nature at a safe distance, while a special cone treatment for the speakers protects against penetrating humidity. Further added reliability is achieved by using an aluminium front grill and an electroplated stainless steel mounting bracket.

The stylish and elegant aluminum housing in combination with the lightweight design and the specially designed wall bracket, which allows focussing of the speaker in any direction, ensure the best possible appearance combined with a great sound and high audibility.

All the special measures of the loudspeaker makes it weather and humidity resistant according to the IP55 regulation.

Precautions

READ FOLLOWING INSTRUCTIONS FOR YOUR OWN SAFETY

- ALWAYS KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE. NEVER THROW THEM AWAY
- ALWAYS HANDLE THIS UNIT WITH CARE
- CLEAN ONLY WITH DRY CLOTH
- HEED ALL WARNINGS AND FOLLOW ALL INSTRUCTIONS
- NEVER EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, ANY DRIPPING OR SPLASHING LIQUID. AND NEVER PLACE AN OBJECT FILLED WITH LIQUID ON TOP OF THIS DEVICE
- DO NOT INSTALL THIS UNIT NEAR ANY HEAT SOURCES SUCH AS RADIATORS OR OTHER APPARATUS THAT PRODUCE HEAT
- DO NOT PLACE THIS UNIT IN ENVIRONMENTS WITH A HIGH LEVEL OF DUST, HEAT, OR VIBRATION
- ONLY USE ATTACHMENTS & ACCESSORIES SPECIFIED BY THE MANUFACTURER.
- ONLY INSTALL THE SPEAKER IN LOCATIONS THAT CAN STRUCTURALLY SUPPORT THE WEIGHT OF THE SPEAKER. IGNORING THIS CAN BRING THE SPEAKER DOWN.
- DO NOT USE ANY OTHER METHOD THAN SPECIFIED TO MOUNT THE SPEAKER. IF EXTREME FORCE IS APPLIED TO THE SPEAKER, IT COULD FALL DOWN
- ATTACH A SAFETY WIRE TO THE SPEAKER WHEN IT IS MOUNTED HIGH UP. ONLY USE INDUSTRY-ACCEPTED RIGGING TOOLS AND METHODS
- INSTALLATION OF THIS UNIT SHOULD ALWAYS BE DONE BY QUALIFIED TECHNICIANS.
- CAREFULLY CHECK THE UNIT'S CONDITION AFTER UNPACKING. IF THERE IS ANY DAMAGE TO THE CARTON BOX OR THE UNIT ITSELF, INFORM YOUR VENDOR IMMEDIATELY.

CAUTION

- USE CABLES OF THE RIGHT GAUGE TO CONNECT THE LOUDSPEAKER
- USE CABLES WITH CLEAR COLOUR CODING INDICATING THE POLARITY AND MAINTAIN THE SAME POLARITY THROUGHOUT THE WHOLE SYSTEM.
- ONLY USE THE CORRECT AMPLIFIER OUTPUT VOLTAGE AND IMPEDANCE. EXCEEDING THESE LIMITS COULD CAUSE FIRE OR OTHER FAILURES.
AVOID EXPLOSIONS: DO NOT USE THE SPEAKER AROUND GASOLINE, THINNER OR OTHER COMBUSTIBLES
- AVOID ELECTRIC SHOCKS: SWITCH OFF THE AMPLIFIER WHEN CONNECTING THE LOUDSPEAKER
- DO NOT USE THE LOUDSPEAKER FOR AN EXTENDED PERIOD OF TIME AT DISTORTED SOUND. THIS COULD CAUSE PERMANENT DAMAGE.



CAUTION – SERVICING

This product contains no user serviceable parts. Refer all servicing to qualified service personnel. Do not perform any servicing (unless you are qualified to do so.)



EC DECLARATION OF CONFORMITY

This product conforms to all the essential requirements and further relevant specifications described in following directives: 2004/108/EC (EMC) and 2006/95/EC (LVD)



WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The WEEE marking indicates that this product should not be disposed with regular household waste at the end of its product life. This regulation is created to protect both the environment and human health.

This product is developed and manufactured with high quality materials and components which can be recycled and/or reused. Please dispose this product to your local collection point or recycling centre for electrical and electronic waste. This will make to sure that it will be recycled on an environmentally friendly manner, and will help to protect the environment in which we all live.

Chapter 1

Installation

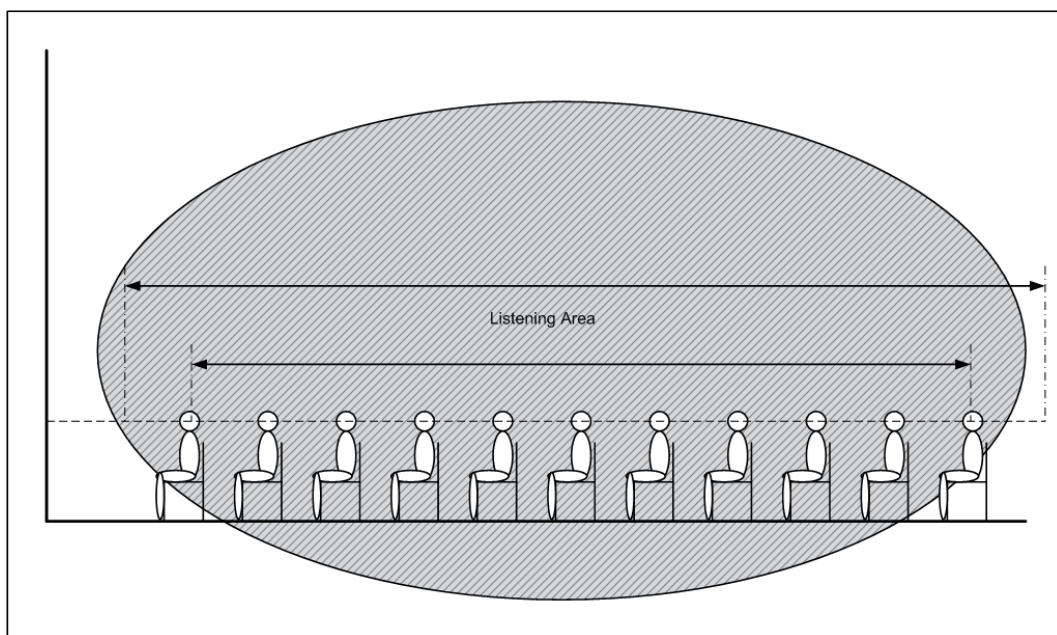
To achieve the best possible intelligibility and sound quality with a column speaker, you need to pay extra attention so that the mounting of the speaker is done properly. The dimensions of the desired listening area have to be determined from which the correct mounting height and angle can be derived.

A step by step installation procedure describes the method to determine the mounting height and angle for the AXIR.

DETERMINING LISTENING AREA AND MOUNTING HEIGHT

STEP 1:

Determine the dimensions of the desired Listening Area. This is a horizontal plane at the same level as the listeners ears. Refer to the dashed line in following figure.

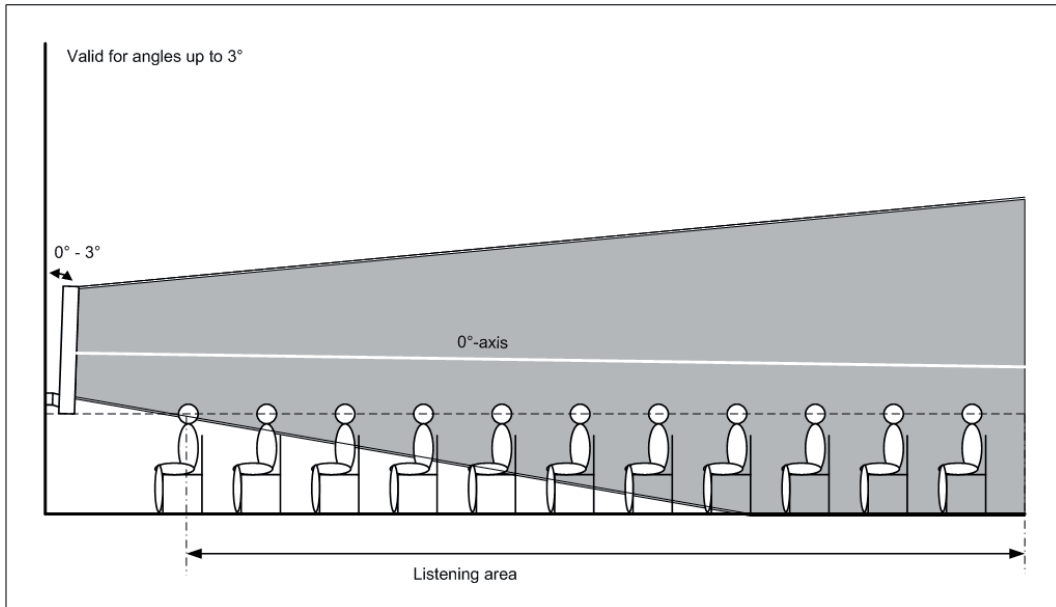


STEP 2:

Now that the listening area is known, determine at which angle the loudspeaker array should be mounted. The AXIR column speaker was designed to aim the sound just above the heads of the listeners, and it is recommended not to exceed an angle of 6° . There are two different approaches to determine the mounting angle, each with specific advantages and disadvantages. Which approach you choose, depends on what you want to achieve: a maximum listening area or a minimal variation in sound pressure level.

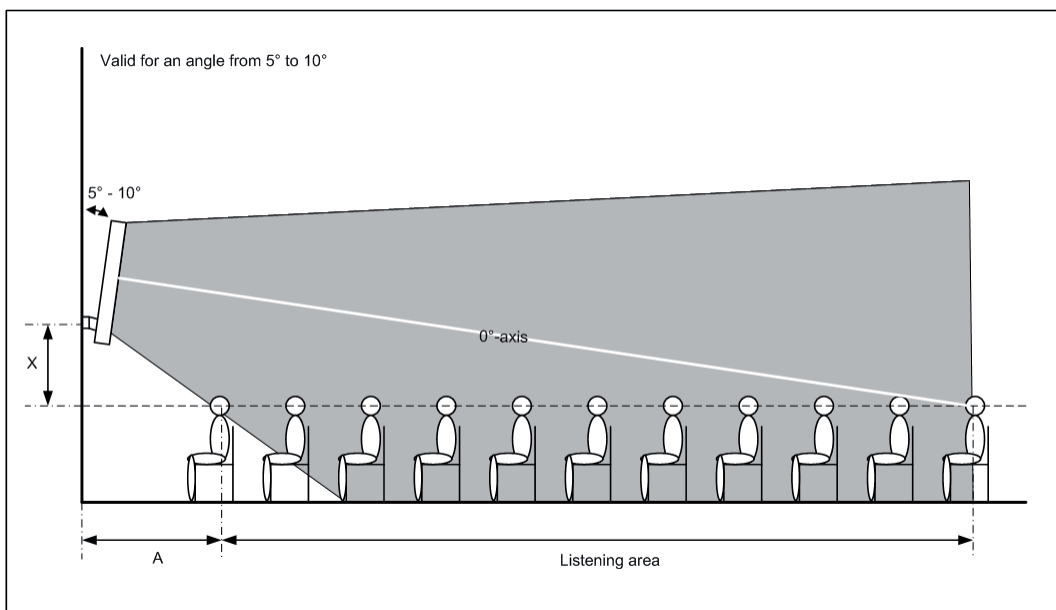
– Approach 1: Maximum listening area

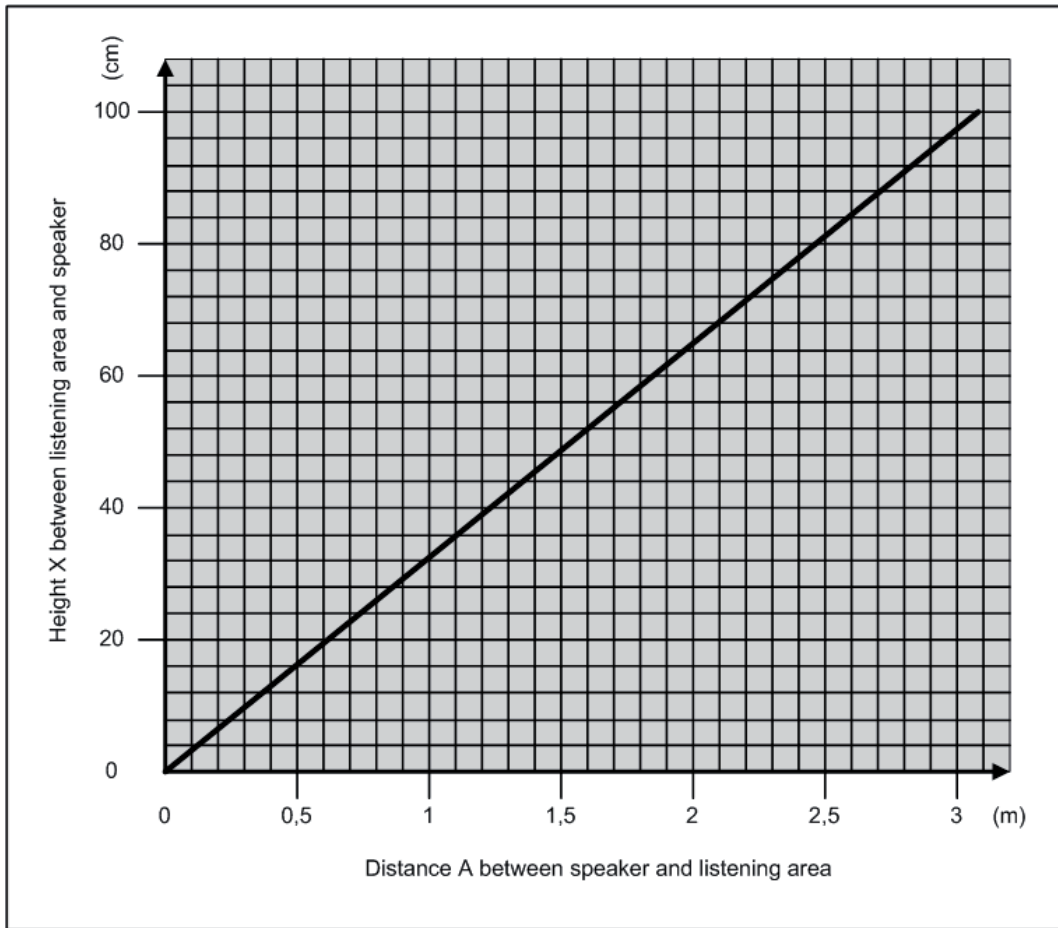
When a large listening area is desired, an angle of around 3° is recommended. When you move away from the loudspeaker, the sound pressure level will be decreased. This decrease depends on the reverberation of the room in which the speaker is placed. If you want the high tones to be clearly audible, make sure the listener is able to see the loudspeaker array.



– Approach 2: Minimal variation in sound pressure level

When a minimal variation in sound pressure level is desired, an angle of 5° is ideal. The size of the total listening area becomes smaller compared to the previous approach. The space nearby the loudspeaker 'A' does not belong to the listening area. (Diagram 1 shows the relationship between 'A' and the mounting height of the loudspeaker when using an angle of 5°)





STEP 3:

When you've chosen one of the approaches above to determine your mounting angle, you proceed by determining the mounting height. This height is determined by aiming the 0° axis of the AXIR in the desired position, precisely above the ear level of the listener who's the furthest away from the speaker. This can be adjusted by mounting the loudspeaker higher and lower on the wall.

STEP 4:

When you've determined the mounting angle and height, you can start installing the speaker.

OTHER POINTS TO PAY ATTENTION TO:

While mounting a column speaker, there are still some other points you need to pay attention to.

- Make sure that the loudspeaker array is always visible for everyone in the listening–area, this ensures a good audibility of the high tones. High tones can be compared with light. When something is between the observer and the light source, the observer can't see the light source at it's full power, this is what we call shadow. For high tones, the same thing can be said. When someone is standing between the listener and the loudspeaker, the listener is located in the "sound shadow". The "sound shadow" will be experienced as a reduction of high tones.
- When the loudspeaker is installed at a very small angle, a large listening area can be achieved. Depending on the amount of reverberation in the room and the "sound shadow", the speech intelligibility on a far position may be low. In this situation, it is recommended to use more loudspeaker arrays to split the listening area.
- When you move further than the maximum position of the listening area (further than the maximum distance of the loudspeaker array), only the sound pressure level will decrease. There will be almost no tone height variation. The decreasing factor of the sound pressure level depends strongly on the reverberation of the room.
- When you are located too close to the loudspeaker array (closer than the minimum distance) a decline of the high tones will occur very soon.
- Because the loudspeakers are designed to beam the sound just above the listeners ears, it's better to mount the speakers not too high above the listening area.
- When you want to determine where exactly the edges of the listening area are located in your situation, you have to do a practical test at this location. This is a job for an experienced listener with well–trained ears. Put pink noise through the loudspeaker array, and reduce the lower tones for this test because they do not contribute to speech intelligibility. Walk around in the listening area and pay attention to the high tones. The places where the high tones decrease rapidly are the edges of the listening area.

Chapter 2

Connecting the AXIR/O

The rear side of the AXIR/O contains a special 5-pin waterproof AWX-5 connector. This allows the connection of the loudspeaker to the amplifier output. For connecting the loudspeaker, the included connection cable should always be used. The white conductor of the connection cable should always be connected to the COM output of the amplifier and the black conductor should always be connected to the positive terminal of the amplifier output. Mind the polarity markings when wiring the loudspeaker cables.

Power settings

The power settings of the AXIR/O can be made by adjusting the rotation angle for the waterproof connector on the rear side of the loudspeaker. A dot on the connector part indicates the currently selected power tapping. The power settings corresponding with the position of the dot are indicated at the sticker on the rear side of the loudspeaker. The power / impedance selection of the loudspeaker can be set in 3 adjustable steps of impedance for 100V (40 Watt, 20 Watt, 10 Watt) and 1 step for 6 Ohm standard low impedance applications.



- 1) 6 Ohm / 120 Watt
- 2) 40 Watt / 250 Ohm
- 3) 20 Watt / 500 Ohm
- 4) 10 Watt / 1000 Ohm

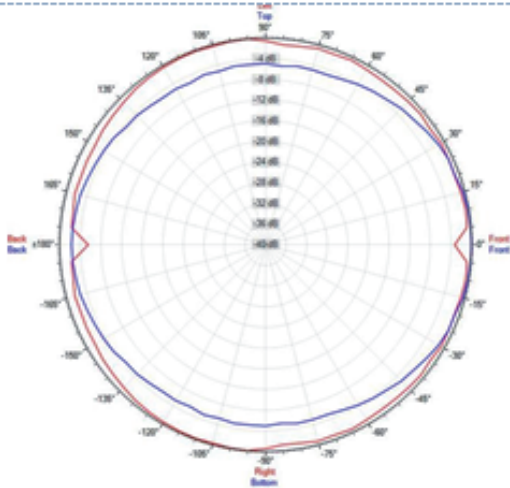
When the loudspeaker is connected to 70.7V facilities, the power indicated in the table above will be reduced to half the power, and when connected to 50V facilities, the power will be reduced to a quarter. When the desired power tap is selected, the loudspeaker is ready to be used.

Additional Information

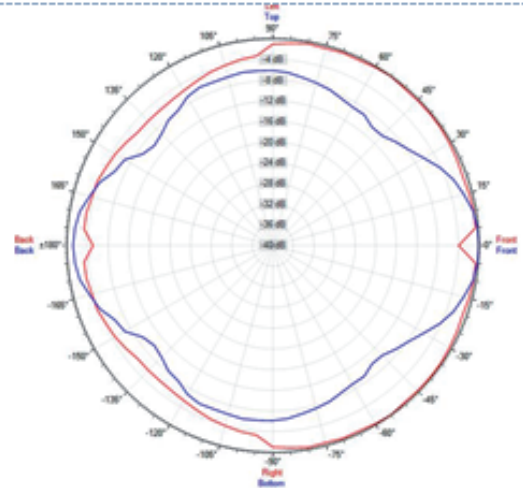
Technical specifications

RMS Power		120 Watt
Max. Power		240 Watt
Nominal Impedance		6 Ohm
Line Transformer power tapings		250 Ohm / 40 Watt 500 Ohm / 20 Watt 1000 Ohm / 10 Watt 6 Ohm / 120 Watt
Sensitivity 1W / 1m		99 dB
Sound pressure Max W / 1m		112 dB
Frequency response –3 dB		100 Hz – 17 kHz
Drivers		12 x 2 inch
Connectors		AWX–5 connector
Mounting bracket		Stainless steel inclinable mounting bracket
Construction		Aluminium
Front finish		Aluminium Grill
Horizontal dispersion		170°
Vertical dispersion		20°
Colour	AXIR/OW AXIR/OB	White (RAL9010) Black (RAL9005)
Dimensions		70 x 1005 x 105 mm
Weight (Incl Bracket)		4.50 Kg
Packaging		Carton box
Shipping weight & Volume		6.05 Kg – 0.032 Cbm
Accessories included		Wall bracket 0.5 meter connection cable

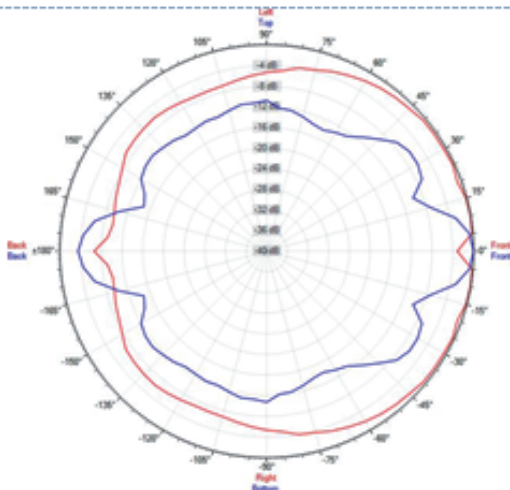
Polar patterns



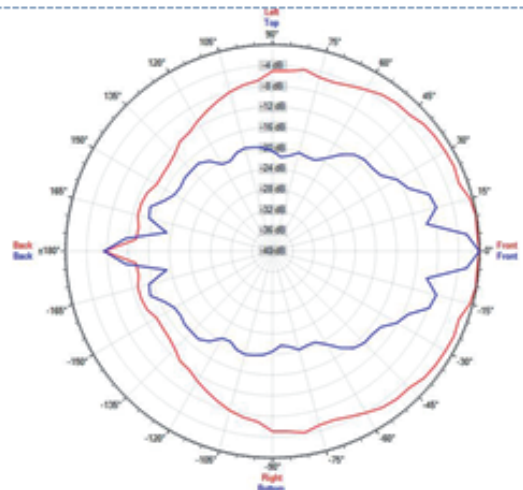
250 Hz



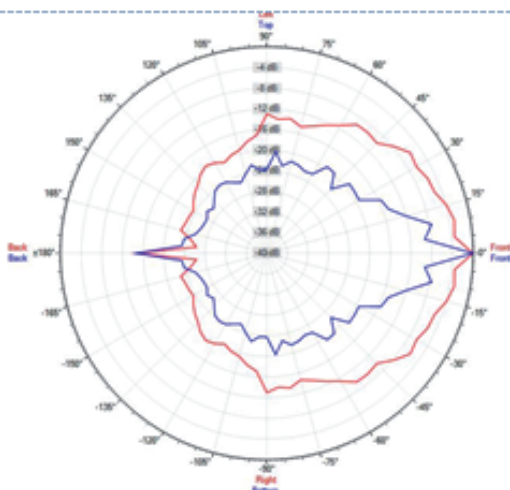
500 Hz



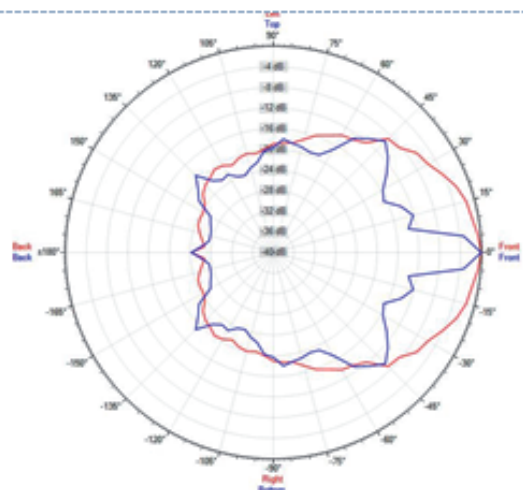
1000 Hz



2000 Hz



4000 Hz



8000 Hz

— Horizontal
— Vertical