IWCS iriSelect Mode Switch User Manual

User manual
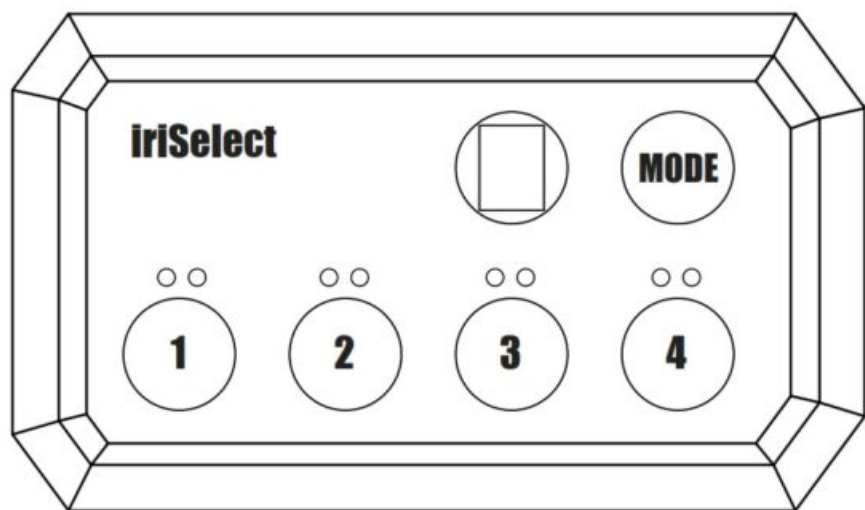
iriSelect
V. 03/24FA

Contents

iriSelect Mode Switch

CONGRATULATIONS ON YOUR NEW PRODUCT FROM IRIDIUM WATERPROOF COMMUNICATION SYSTEMS
iriSelect
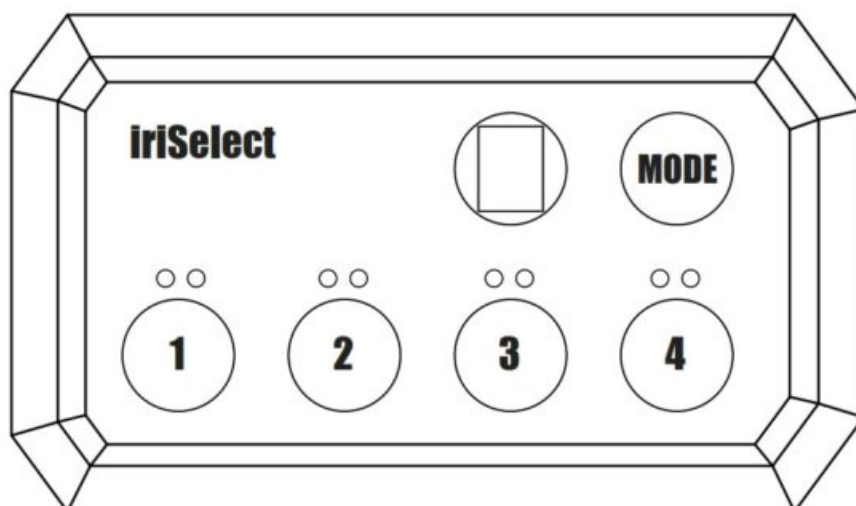
IWCS HOPE YOU WILL ENJOY THE BENEFITS OF TROUBLE FREE HIGH QUALITY INTERCOM. PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE FIRST USE.
IF INSTALLED, OPERATED AND MAINTAINED ACCORDING TO THIS MANUAL THE iriSelect WILL BE A RELIABLE PARTNER FOR MANY YEARS TO COME.
THOMAS B SVENNINGSEN CO-FOUNDER OF IWCS

Introduction

1.1 Disclaimer
Any responsibility or liability for loss or damage in connection with the use of this product and the accompanying documentation is disclaimed by IWCS.
The information in this manual is provided for information purposes only, is subject to change without notice and may contain errors or inaccuracies.
Manuals issued by IWCS are periodically revised and updated.
Anyone relying on this information should acquire the most current version e.g. upon request at **info@iwcs.eu**
IWCS is not responsible for the content or accuracy of any translations or reproductions, in the whole or in part, of this manual from any other source.

1.2 Copyright
2024 Iridium Waterproof Communication Systems ApS. All right reserved.
Printed in Denmark.

1.3 Trademark
iriSelect is a Trademark by Iridium Waterproof Communication Systems ApS.

1.4 Safety warning
The following general safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the equipment. IWCS assumes no liability for the customer's failure to comply with these requirements.

- CE $UKCA$ **EMC / RF EXPOSURE**

  iriSelect is CE and UKCA certified as stated in the Declaration of Conformity.

- **FIRE**

  In case of fire, harmful gases and fumes may occur.

  One should immediately leave the area and seek help.

  In case of suspected smoke in the lungs, a doctor should be consulted

- **POWER LOSS**

  Power interruptions limited to IriSelect will not affect other users communication. A general power outage will turn off the entire intercom system. IWCS is not responsible for any power outages or consequences thereof, of any kind.
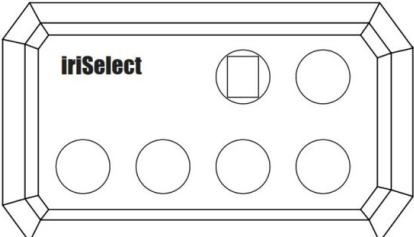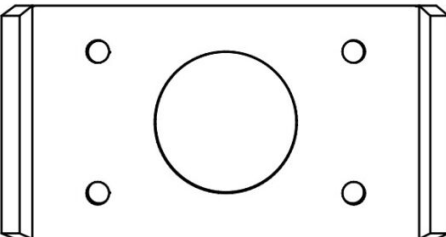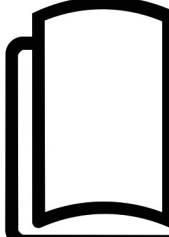
- **WARRANTY LIMITATIONS**

  IMPORTANT – This unit is a sealed waterproof unit (classified IP67). To create and maintain its waterproof integrity it has been assembled in a controlled environment using special equipment. This unit is NOT a user serviceable unit, and under no circumstances should the unit be opened except by authorized personnel. Unauthorized opening of the unit will invalidate the warranty.

- **DISPOSAL**

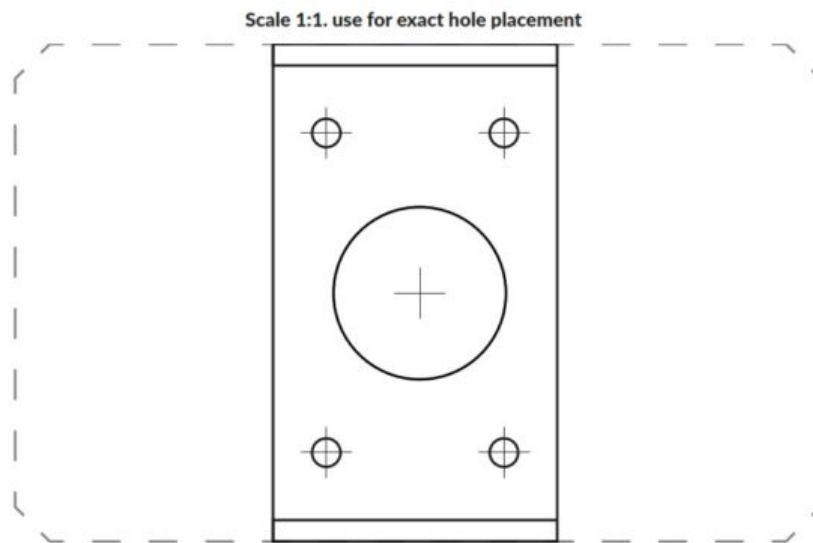 When disposing of IriSelect and related equipment, it must happen in accordance with applicable national law.

Unboxing

2.1 In The Box

1 x iriSelect	1 x Mounting Bracket	1 x User Manual

Installation

3.1 Drill Template 1:1

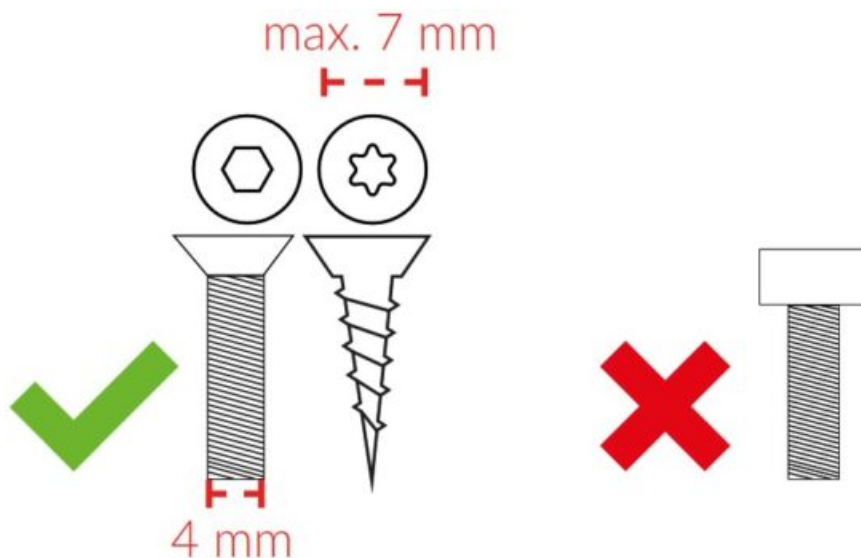Scale 1:1. use for exact hole placement

Backside of drill template

3.2 Tools
Before installation please prepare the following tools:

- Tape
- 4,5 or 3,3 mm drill bits
- 25 mm hole saw drill bit
- Drill
- Screw heads may not exceed 7 mm

max. 7 mm

4 mm

3.3 Screws and screwholes
When mounting the IriSelect, it is essential to consider the material and the appropriate drill bit size.
Please note the following guidelines:
If you are using wood screws you will need:

- 3x 4 mm screws.
- Drill 3.3 mm holes.

If you are using machine screws you will need:

- 3x 4 mm screws.
- 3x locking bolts.
- 3x washers.
- Drill 4.5 mm holes.

*Note that no mounting equipment is included in the box.

3.4 Clear space
When installing the iriSelect, it's essential to take into account the space behind the mounting surface.
IWCS recommends a minimum of 100 mm of clear space to avoid stressing the cables.
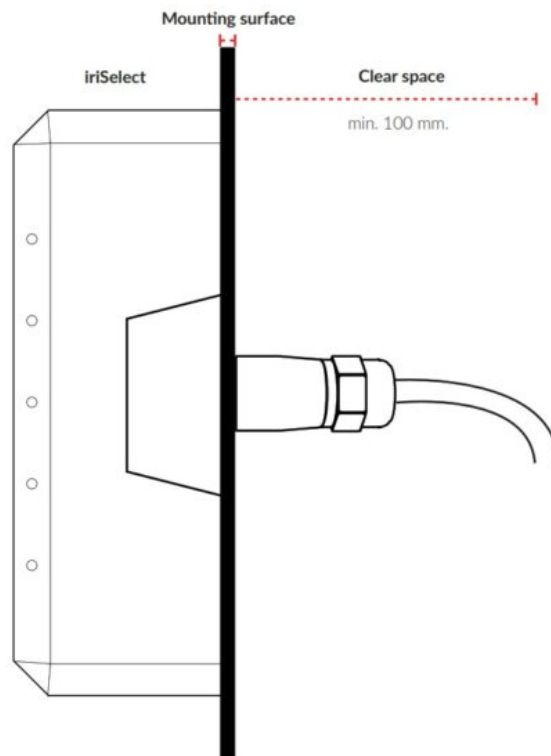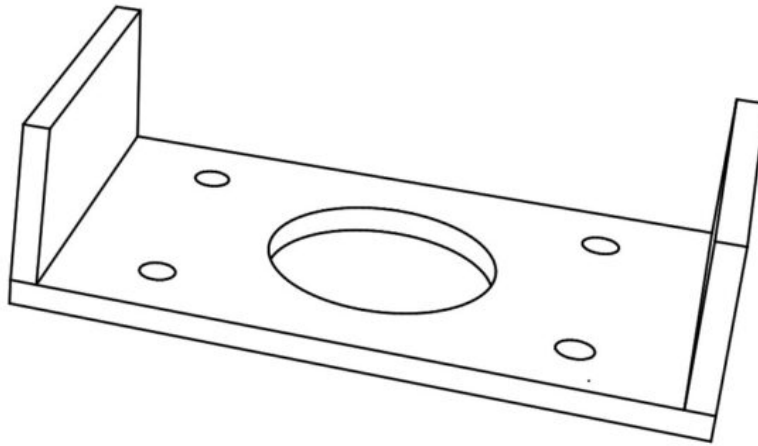

3.5 Installing the Bracket
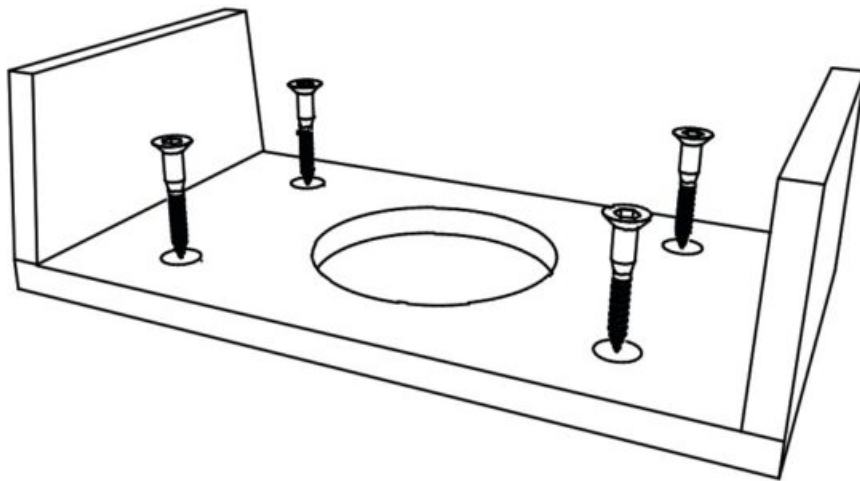**Placing the Bracket**
The bracket serves as a secure mounting solution for the iriSelect.
It is crucial to ensure that sufficient space is provided around the bracket to accommodate cables and wiring.

Screws and holes

After determining the desired location for the iriSelect, select screws that are appropriate for the surface you will be mounting it on to. Depending on the material, you may need to drill holes prior to securing the bracket. Ensure the screws provide a secure hold to keep the iriSelect in place.

3.6 Installing the iriSelect

Once the bracket is securely in place, you can proceed to insert the iriSelect into the designated slot. You might need to wiggle the iriSelect slightly to make it fit between the bracket arms.

Securely in place

Gently use your hands to apply pressure and push the iriSelect into place within the bracket. Ensure a firm and secure fit by pressing it all the way until you feel a snap, indicating that it is properly seated in the sockets. It is important to note that this should be done manually without the use of any tools.
Avoid excessive force or using tools as it may cause damage to the device or bracket.
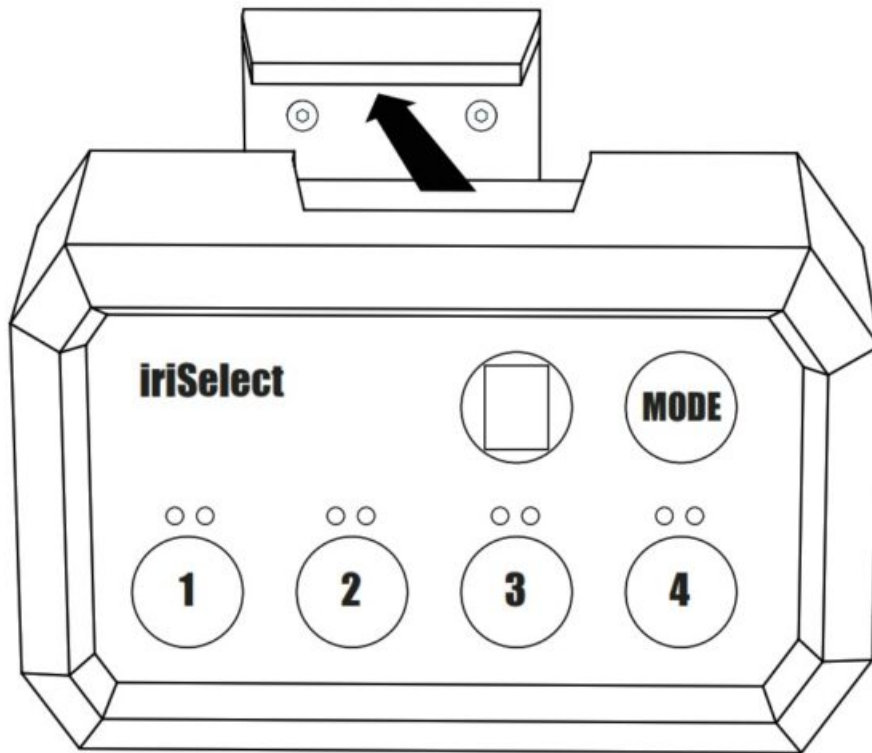
NOTE: This should be done manually without the use of any tools. Avoid excessive force or using tools as it may cause damage to the device or bracket.

4.1 Main Desciption
iriSelect provides a MULTI-control and status interface for the iriSound Intelligent Intercom System.
iriSelect has 5 main function:

- Automatic Brightness Control
- External Radio PPT with RX/TX indication
- Mode selector for customer defined grids
- AVAD – Adaptive Voice Activity Detection
- Error message

Starting up
iriSelect connects to iriSound 4, iriSound 6 and iriSound 8.
iriSelect is powered by your iriSound unit.
When your iriSound is switched ON, iriSelect automatically turns ON.
iriSelect always starts up in Basic Mode "0"

4.2 Panel overview
When the bracket is fastened, an IWCS Data Bus cable is pulled from the inside, through the 22,0 mm center hole.

1. MODE switch
2. Display
3. Error indicator
4. Light sensor
5. RX indicator
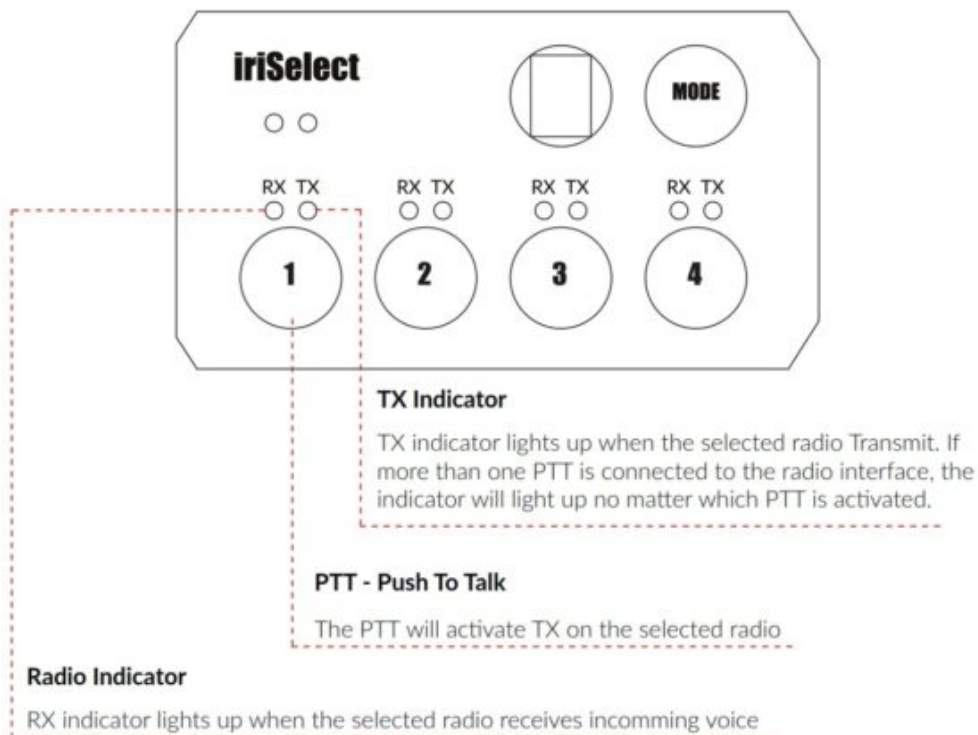6. External Radio PTT
7. TX indicator
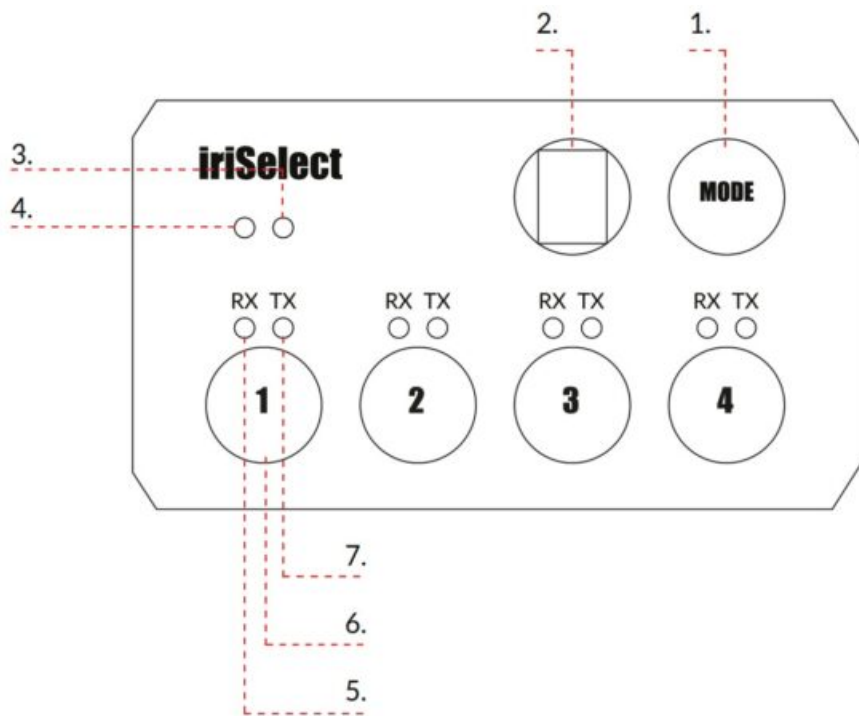
4.3 Dimmer

iriSelect has a built-in light sensor, 3 that automatically adjust the LED light to a comfortable level.
The light will be adjusted at iriSelect, headset interface and radio interfaces.
DO NOT COVER THE SENSOR

3.4 Radio PTT

iriSelect has 4 radio PTTs, each with both RX and TX indication.
Both RX and TX indications are normally OFF.
Each PTT will only be functional, if the certain Radio Interface and external radio is connected.

TX Indicator

TX indicator lights up when the selected radio Transmit. If more than one PTT is connected to the radio interface, the indicator will light up no matter which PTT is activated.

PTT - Push To Talk

The PTT will activate TX on the selected radio

Radio Indicator

RX indicator lights up when the selected radio receives incomming voice

4.5 Mode Selector

iriSelect can handle up to 10 (0-9) different user grids. "0" is preset and "1-9" are user defined.
iriSelect (IR-20-1040-XX-01) is delivered with standard grid "0" unless additional grids (IR-1X-0010-01) are ordered.

The individual audio modes are pre-loaded into iriSelect at the factory based on definitions received from the customer. A special spreadsheet tool is used for this purpose.

The mode switch selects one of up to 10 preset audio routing schemes (modes), which is instantly sent to iriSound. Each mode defines the complete port-to-port routing of all audio. As just one example you can setup separate intercom nets (groups) and assign individual radios to each net.

At the push of a button you can then switch over to a mode where everybody is in full intercom including all (or any number) of the radios.
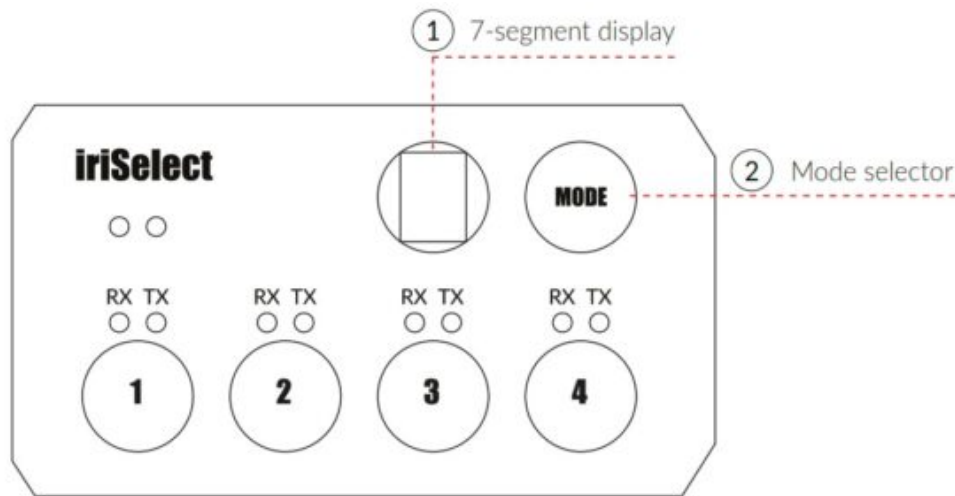
When toggling through MODEs 1 the selected MODE 2 will be uploaded 1 second after the button is released. When the selected grid is uploaded to iriSound, a dot will appear in the lower right corner of the Display

4.6 UNDERSTAND USER DEFINED GRIDS

Below are 2 examples. First example is the default "Mode 0". Fully open grid, allowing Everybody to hear everybody.

⬤ Incoming speech level will be distributed 100%

🟠 Incoming speech level will be distributed 12 % (Feedback of users own voice)

◯ Incoming speech wil NOT be distributed

Default mode "0"

User defined 1-9 (example)

Incoming

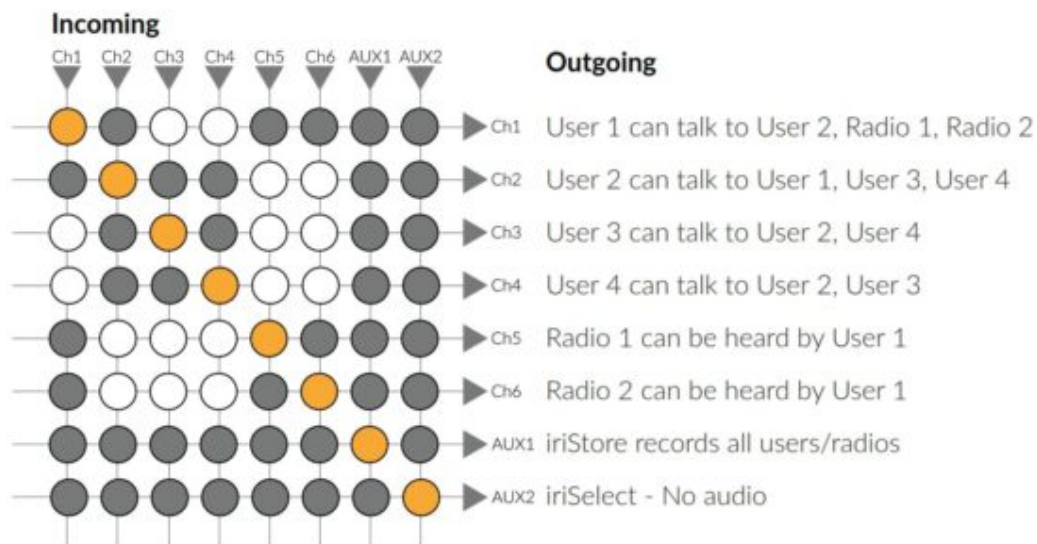|	Ch1	Ch2	Ch3	Ch4	Ch5	Ch6	AUX1	AUX2	**Outgoing**	
	●	●	○	○	●	●	●	●	▶ Ch1	User 1 can talk to User 2, Radio 1, Radio 2
	●	●	●	●	○	○	●	●	▶ Ch2	User 2 can talk to User 1, User 3, User 4
	○	●	●	●	○	○	●	●	▶ Ch3	User 3 can talk to User 2, User 4
	○	●	●	●	○	○	●	●	▶ Ch4	User 4 can talk to User 2, User 3
	●	○	○	○	●	●	●	●	▶ Ch5	Radio 1 can be heard by User 1
	●	○	○	●	●	●	●	●	▶ Ch6	Radio 2 can be heard by User 1
	●	●	●	●	●	●	●	●	▶ AUX1	iriStore records all users/radios
	●	●	●	●	●	●	●	●	▶ AUX2	iriSelect - No audio
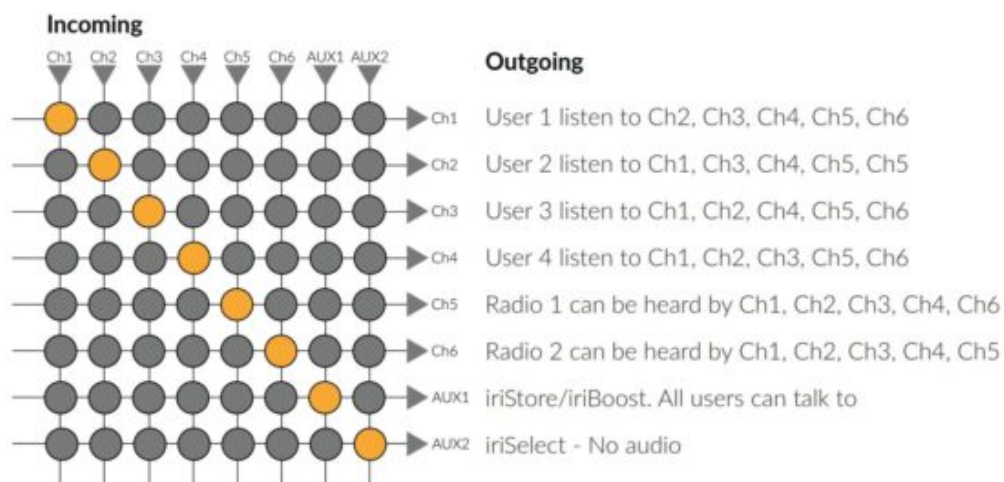
4.7 AVAD
ADAPTIVE VOICE ACTIVITY DETECTION

AVAD is a very complex and intelligent squelch circuit. AVAD is adapting and will adjust itself according to surrounding noise.

AVAD is a default iriSound Integrated software, and works without using the iriSelect interface.

AVAD Monitor the microphone 6000 times each second to maintain relevant information about the en-vironmental noise as well as the speech level. Constantly, the squelch level will be adjusted to a level where only peaks (voice) will open the microphone. AVAD ensures complete silence in between speech.

ADJUSTABLE REFERENCE LEVEL

iriSound is pre-delivered with a 30% reference level. That means in fact that speaking must be 30% higher than the background noise, to activate the squelch gate.

Some user scenarios may benefit from selective levels.

In very quit surroundings, where whispering is preferred, a disconnection of AVAD might be best, and in some cases the squelch opens too early according to speech pattern. Then 50% and 70% may be the choice.

By having an iriSelect connected in the iriSound Intelligent Intercom System, default AVAD settings can be changed.

Press and hold the MODE button until both RX and TX indicator will light up, on the selected level.

Then press a new desired level on button 1-4. The RX/TX indicators on the new selected level will light up.

Then release the MODE button. The new settings are saved and ready to use.
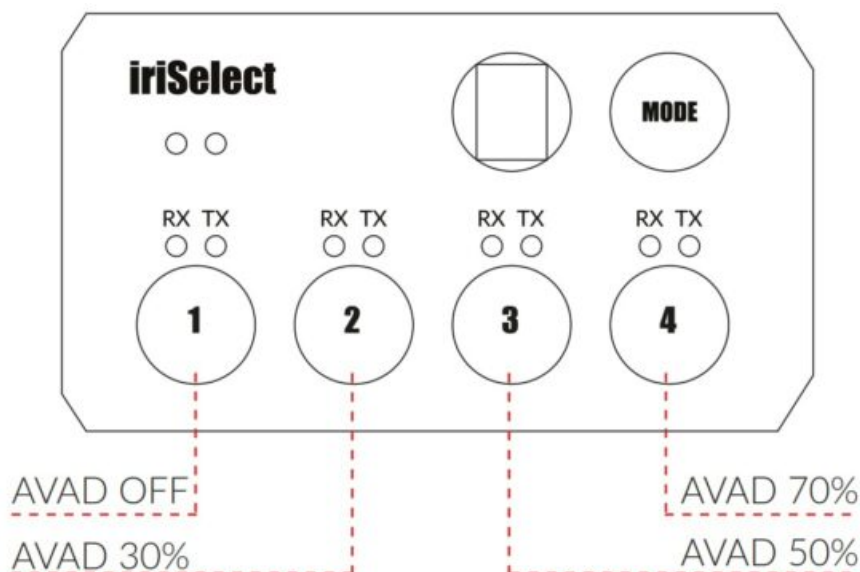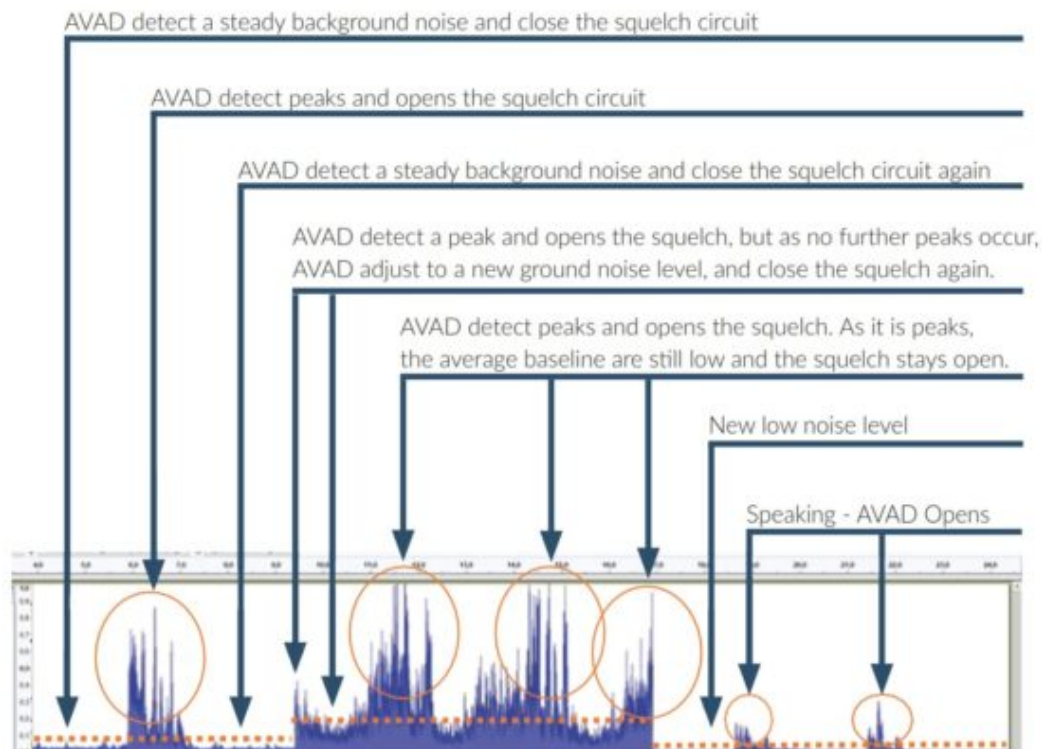

Understand AVAD

To get the full potential of AVAD it is important to understand how AVAD works.

First of all, AVAD monitors each channel separately. So if one user is working outside in noisy environ-ments and

another user is shielded form the wind, they will both benefit from AVAD.
Eg. If AVAD is set to default 30% reference level, AVAD will constantly be monitoring the background noise, and if the background noise has peaks at 30% or above, AVAD will open the squelch, which will lead background noise into the circuit.

AVAD detect a steady background noise and close the squelch circuit

AVAD detect peaks and opens the squelch circuit

AVAD detect a steady background noise and close the squelch circuit again

AVAD detect a peak and opens the squelch, but as no further peaks occur, AVAD adjust to a new ground noise level, and close the squelch again.

AVAD detect peaks and opens the squelch. As it is peaks, the average baseline are still low and the squelch stays open.

New low noise level

Speaking - AVAD Opens

4.8 Error Messages
iriSelect detect and inform
Constantly all used channels are monitored by iriSound, and iriSound detect any disconnection, whether it is a wired fault or a disconnection on the wireless connections.
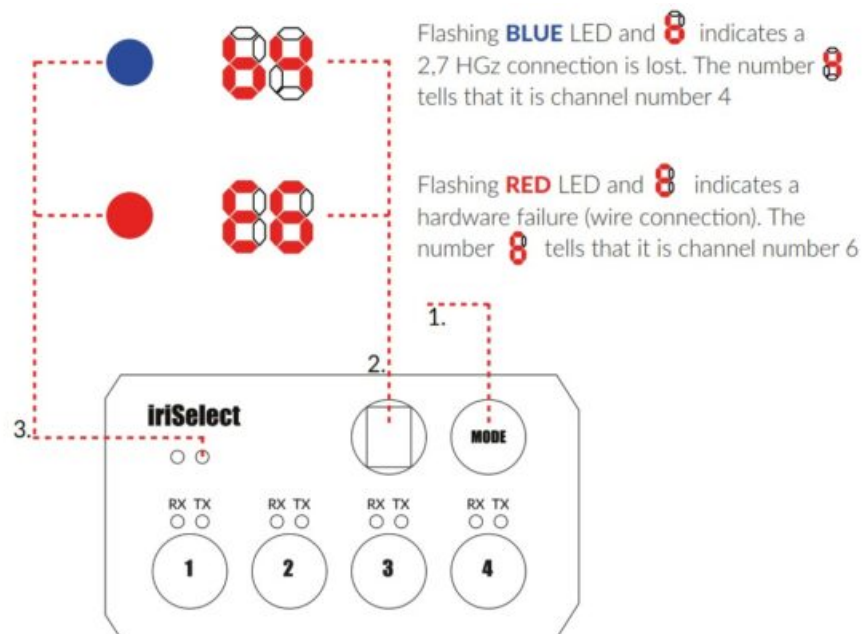
When iriSound is powered ON, iriSound runs a start-up check to verify the connectivity of each channel. If any disconnection is present at the start-up phase, iriSound will not detect the disconnection as a fault, regardless of whether the interruption has occurred with will or if there is a definite error.

Error messages will be shown in the mode display 2 flashing between a letter and a number.
Flash-ing frequency is 1 sec. 2

iriSelect detect and inform
The ERROR indicator 3 is normally OFF. When an error occur the ERROR indicator will flash either blue or red, and the Mode display will start flashing indicating a type and position of the ERROR.

Flashing **BLUE** LED and indicates a 2,7 HGz connection is lost. The number tells that it is channel number 4

Flashing **RED** LED and indicates a hardware failure (wire connection). The number tells that it is channel number 6

By pressing the MODE button 1 error messages can be reset, and MODE selection will reappear. Loss of wireless connectivity is described under TROUBLESHOOT 4.1

Service and Maintenance

5.1 Specifications

iriSelect	
Weight	350 g
Size	110 x 75 x 50 mm
Waterproof	IP67
Temperature range	-20 to +60 °C
Connectivity	IWCS Bus
No. of PTTs	4
Audio modes	Up tp 10
NVG compatible	NVIS Class B (optional)
Power Supply	5 VDC (from iriSound)
Part number	IR-20-1040-02

5.2 Cleaning
Do not use chemicals or solvents to clean your IriSelect. Use only fresh water. Pressure, friction, sharp objects, etc. can damage the product and the warranty may be void.

5.3 Warranty
iriSelect is covered by a two (2) year warranty.

5.4 Service / Upgrades
Any Service or additional Upgrades must be handled by IWCS. Do not try to open or modify the IWCS product.

5.5 Maintenance
If your IWCS IriSelect has been exposed to saltwater, chemicals or any other solvents/liquids, immediately rinse with freshwater and wipe with a dry cloth.

iriSelect
is developed, designed and manufactured by
IWCS Aps
Hejrevang 13 3450 Allerød Denmark
+45 4343 2626
info@iwcs.eu
www.iwcs.eu

Documents / Resources

IWCS iriSelect Mode Switch [pdf] User Manual
V. 03-24FA, iriSelect Mode Switch, iriSelect, Mode Switch, Switch

References

- **User Manual**