

LINGUA IR

USER & INSTALLATION GUIDE



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

INTRODUCTION

This chapter will give you a short introduction to this manual and a general description of the Lingua IR and its functionalities.

GETTING STARTED

About This Manual

Throughout this guide we use different icons to designate different types of information:

	This is a note. A note gives additional information, such as the meaning of the color of the LEDs. A note also provides information that may only be applicable to some situations.
	This is a tip. A tip gives you an alternative way to do a particular step or procedure, or lets you know of an option that you may find helpful.
	This indicates that something is very important. Important information is something that you need to do in order to accomplish a certain task.
	This provides safety precaution information, that is, information that you need to be careful about to prevent potential problems when using our systems.

Compatibility

This user manual applies to the following products:

Product	Version
Lingua RAD_H (71.98.0220 and 71.98.0223)	≥ 1.0
Lingua T (71.98.0215)	≥ 1.0
Lingua R6 (71.98.0205)	≥ 1.0
Lingua R12 (71.98.0206)	
Lingua R40 (71.98.0208)	
Lingua CHC (71.98.0235)	≥ 1.0
Lingua BP (71.98.0234)	≥ 1.0

ABOUT LINGUA IR

Concept And Design

Lingua Infrared (IR) is Televic Conference's wireless solution for language distribution using infrared. You can combine this system with Plixus engines or another third-party system to feed the floor and interpreter audio to the Lingua IR. Link this audio source to the Lingua IR transmitter through a Dante™ connection.

The transmitter will send the audio signal to the radiators inside the room. The radiator will then send the audio signal as infrared radiation to the receivers present in the room. These will then convert the radiation back into an audio signal. Finally, with the receiver the participant can use which languages they wish to hear.

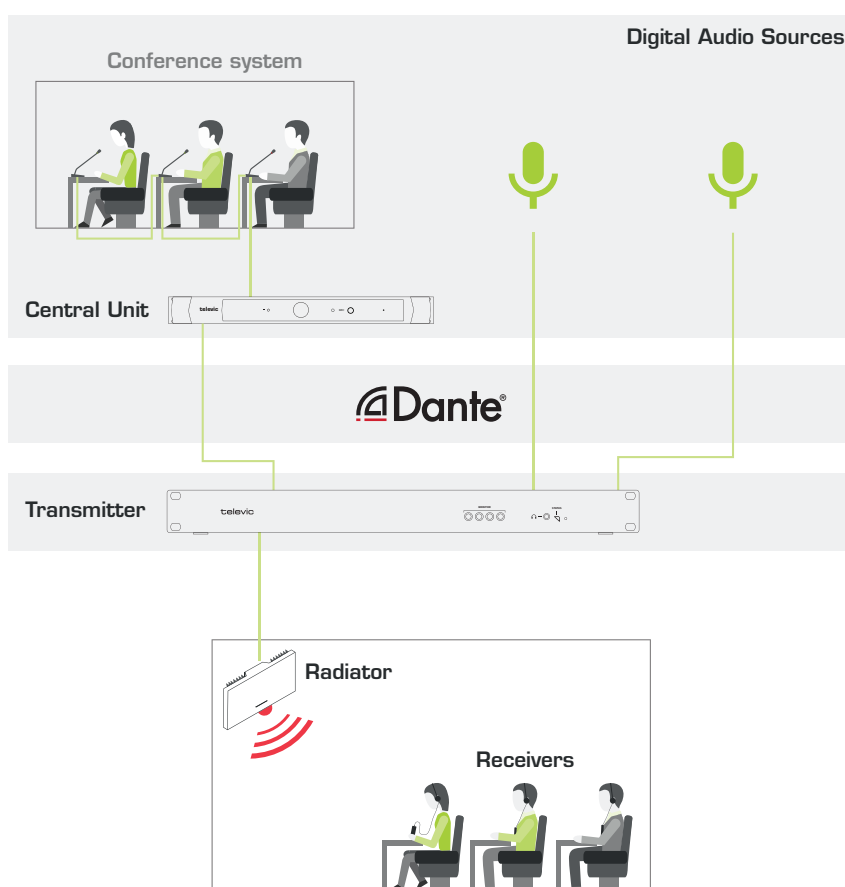


Figure 1-1 A typical Lingua IR setup where one or more audio sources (such as a conference system) are used to feed audio into the infrared system. Participants present in the room can listen to the audio they want using the receivers that pick up the infrared radiation.

Lingua IR consists out of four parts:

- **Lingua T** (transmitter): accepts the audio signal from the conference system (for example Plixus) and transmits the signal to the radiator(s). By default you can transmit up to 6 channels, however additional licenses are available to transmit 12 (Lingua L12) or 40 channels (Lingua L40).
- **Lingua RAD_H** (radiator): distributes the signal throughout the conference venue.
- **Lingua Rx** (receiver): allows attendees to select the language they want to hear the speaker in. Three variants are available to receive 6, 12 or 40 channels.
- **Lingua CHC** (charging case): case to charge and transport receivers in.

SAFETY INSTRUCTIONS

The safety instructions contain general safety guidelines that integrators, installers, operators, end users, and anyone else who installs or uses Televic Conference material is required to read and follow at all times.

Safety

All Televic Conference systems are state of the art devices and have been designed to meet all quality standards. Nevertheless, the individual components of the conference system can cause danger for persons and material assets if

- › the conference system is not used as intended,
- › the conference system is set up by personnel not familiar with the safety regulations,
- › the conference system is converted or altered incorrectly,
- › the safety instructions are not observed.

FCC & ICES Information

(U.S.A and Canadian Models only).

This Class B digital apparatus complies with Canadian norm ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- › Reorient or relocate the receiving antenna
- › Increase the separation between the equipment and receiver
- › Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- › Consult the dealer or an experienced radio/TV technician for help

- Consult the Federal Communications Commission's manual "How to Identify and Resolve Radio-TV Interference Problems"

Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.



Changes or modifications made to this equipment not expressly approved by Televic Conference may void the FCC authorization to operate this equipment.

Conformity And Certification Info For Japan

This device has been granted a designation number by Ministry of Internal Affairs and Communications according to:

Ordinance concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment (特定無線設備の技術基準適合証明等に関する規則)

Article 2 clause 1 item 19/3

Approval No.:

- 202WW10120791/2
- 202XW10120791/2



This device should not be modified, otherwise the granted designation number will be invalid.

Important Safety Instructions

1. **Read Instructions.** All the safety and operating instructions should be read before the product, device or system is operated.
2. **Retain Instructions.** The safety and operating instructions should be retained for future reference. The instructions should be kept in the vicinity of the product or system.
3. **Heed Warnings.** All warnings on the product and the operating instructions should be closely adhered to.
4. **Follow Instructions.** All instructions for installation or operating/use should be followed closely.

5. **Cleaning.** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.
6. **Ventilation.** Any slots and openings in the device or equipment are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a chair, table, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
7. **Heat.** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat. Do not use or operate any equipment in environments that exceed the standard operating temperatures.
8. **Modifications.** Do not use any modifications, extension, or other attachments not recommended by the product manufacturer as they may cause hazards.
9. **Accessories.** Only use attachments/accessories specified by the manufacturer. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
10. **Water and Moisture.** Do not use this product near water or in a humid environment.
11. **Moving.** A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
12. **Power Sources.** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply of your room, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
13. **Power Lines.** An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
14. **Grounding or Polarization.** Do not defeat the safety purpose of the polarized or ground-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety.

If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

15. **Power-Cord Protection.** Power-supply cords should be routed to that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plug, convenience receptacles, and the point where they exit from the product.
16. **Lightning.** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges. (Not applicable when special functions are to be maintained, such as evacuation systems.)
17. **Overloading.** Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry.** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Inflammable and Explosive Substance.** Avoid using this product where there are gases, and also where there are inflammable and explosive substances in the immediate vicinity.
20. **Heavy Shock or Vibration.** When carrying this product around, do not subject the product to heavy shock or vibration.
21. **Servicing.** Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
22. **Damage Requiring Service.** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
 - b. If liquid has been spilled, or objects have fallen into the product.
 - c. If the product has been exposed to rain or water.
 - d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - e. If the product has been dropped or damaged in any way.
 - f. When the product exhibits a distinct change in performance-this indicates a need for service.

23. **Replacement Parts.** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
24. **Safety Check.** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
25. **Coax Grounding.** If an outside cable system is connected to the apparatus, be sure the cable system is grounded. U.S.A. models only: Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge apparatus, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
26. **Eye exposure.** Beware of permanent eye damage due to the infrared radiation. Permanent exposure is allowed at a distance of 50 cm ($E=100 \text{ W/m}^2$ limit according to IEC62471 2006-2007 first edition). At distances below 10 cm (=for servicing, installation testing), limit is reached after 20 to 30 seconds. Take precautions : cover the LEDs during servicing/testing and limit the exposure time. Avoid looking directly into the LEDs and limit the exposure time. At distances between 10 to 50 cm : avoid looking directly into the LEDs and limit the exposure time.

Lithium Batteries



DANGER

ELECTRICAL MISUSAGE

- Only use the dedicated charging case to charge the battery
- Do not charge the battery by an electric outlet directly or a cigarette lighter charger
- Do not charger the battery reversely

ENVIRONMENTAL MISUSAGE

- Do not leave the battery near the fire or a heated source.
- Do not throw the battery into the fire.
- Do not leave, charge or use the battery in a place where the inside temperature may be over 60°C
- Do not immerse, throw or wet the battery in water

OTHER

- Do not fold the battery cased with laminated film such as pouch and Polymer.
- Do not store the battery in a pocket or a bag together with metallic objects such as keys, necklaces, hairpins, coins, or screws.
- Do not short circuit (+) and (-) terminals with metallic object intentionally.
- Do not pierce the battery with a sharp object such as a needle, screw drivers.
- Do not heat partial areas of the battery with heated objects such as soldering iron.
- Do not hit battery with heavy objects such as a hammer.
- Do not step on the battery and throw or drop the battery on a hard floor to avoid mechanical shock.
- Do not disassemble the battery or modify the battery design including electric circuit.
- Do not solder on the battery directly.
- Do not use seriously scared or deformed battery.
- Do not put the battery into a microwave oven, dryer ,or high-pressure container.
- Do not use or assemble the battery with other makers' batteries, different types and/or models of batteries such as dry batteries, nickel-metal hydride batteries, or nickel-cadmium batteries.
- Do not use or assemble old and new batteries together.



WARNING

- Stop charging the battery if charging isn't completed within the specified time.
- Stop using the battery if the battery becomes abnormally hot, order, discoloration, deformation, or abnormal conditions is detected during use, charge, or storage.
- Keep away from fire immediately when leakage or foul odors are detected. If liquid leaks onto your skin or cloths, wash well with fresh water immediately.
- If liquid leaking from the battery gets into your eyes, don't rub your eyes and wash them with clean water and go to see a doctor immediately.
- If the terminals of the battery become dirty, wipe with a dry cloth before using the battery.

- The battery can be used within the following temperature ranges. Don't exceed these ranges.
 - Charge temperature ranges : 0°C ~ 45°C
 - Discharge Temperature ranges : -20°C ~ 60°C
- Store the battery at temperature below 60°C
- Cover terminals with proper insulating tape before disposal.



CAUTION

ELECTRICAL MISUSAGE

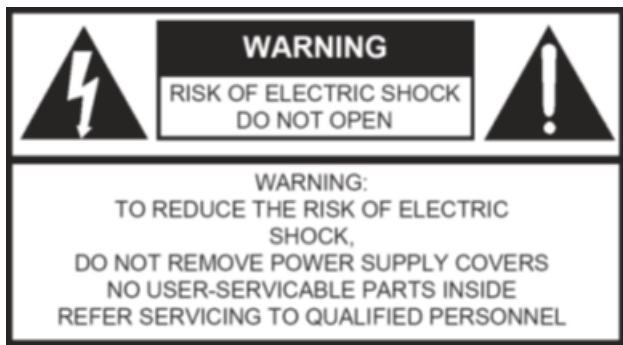
- Battery must be charge with constant current-constant voltage (CC/CV).
- Charge current must be controlled by specified value in Cell specification.
- Cut-off Voltage of charging must be 4.2V.
- Charger must stop charging battery by detecting either charging time or current specified in Cell's specification.
- Discharge current must be controlled by specified value in Cell's specification.
- Cut-off Voltage of discharging must be over 2.5V.

OTHERS

- Before using the battery or charging case, read the user manual and precaution of it's handling.
- Replace the battery when using time of battery becomes much shorter than usual.
- Cover terminals with insulating tape before proper disposal.
- If the battery is needed to be stored for an long period, battery should be removed from the application and stored in a place where humidity and temperature are low.
- While the battery is charged, used and stored, keep it away from object materials with static electric chargers.

Power Connections

For permanently connected equipment, a readily accessible disconnect device shall be incorporated in the fixed wiring; For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.



This label may appear on the bottom of the apparatus due to space limitations.



The lightning flash with an arrowhead symbol, with an equilateral triangle, is intended to alert the user to the presence of un-insulated 'dangerous voltage' within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture. Do not open the cabinet; refer servicing to qualified personnel only.



To prevent electric shock, do not use this (polarized) plug with an extension cord receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.



Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.



Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

LINGUA IR TRANSMITTER

Overview

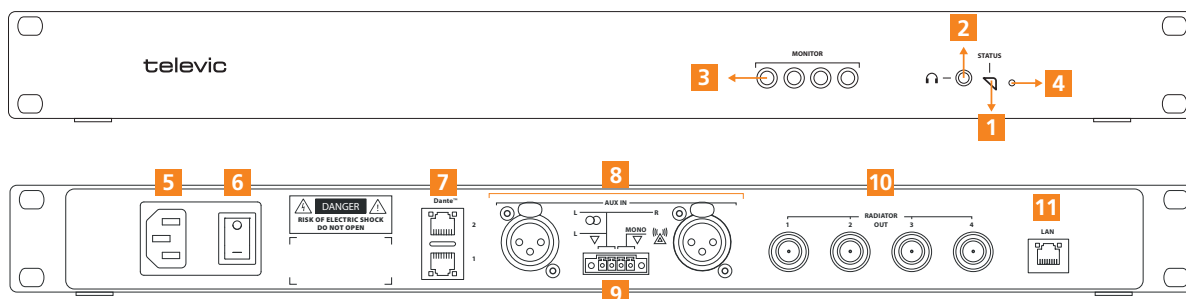


Figure 1-2 Front and back view of Lingua IR transmitter

1. **Transmitter status LED:** shows the current status of the transmitter
2. **Headphone connector:** plug in headphone to check all audio input (audio over Dante™ and audio from the auxiliary audio inputs). Select the channel and adjust the volume using the web server.
3. **Monitoring Infrared LEDs:** LED lights transmitting the same IR signal as the radiator, this allows you to monitor the transmitted audio using a Lingua IR receiver.
4. **Reset button:** different reset options are available see "Reset the Lingua IR transmitter" on the next page for more information.
5. **Mains connection:** with fuse and spare fuse
6. **On/Off switch**
7. **Dante™ signal input:** interface to connect the transmitter to a conference system. The primary connector is marked by "1" and the secondary by "2" (use for redundancy).
8. **Auxiliary audio inputs:** connect with audio installation (left) or emergency system (right).
9. **Emergency/Override switch connector:** Close the left switch to override the audio on all output channels, use right switch to broadcast emergency signal on all output channels. If both switches are closed the emergency signal has priority.
10. **Radiator connector:** four BNC output connectors to connect the transmitter to the radiators.
11. **LAN connector:** use LAN connection to configure the transmitter settings using the web server.

Transmitter Status LED Meaning

LED status	Meaning
White	During startup
Green	System operating normally
Blinking blue	Updating system
Blinking green	Emergency
Red	Indicates an error
Yellow	Fallback mode

Reset The Lingua IR Transmitter

There is a reset button on the transmitter that allows you to reset specific settings depending on the reset procedure you perform:

RESET NETWORK SETTINGS:

When the status LED is green (after power-up), you can reset the network settings back to **192.168.0.140** with subnet mask 255.255.255.0. **Press and hold** the reset button until the status **LED changes to red** (approximately **10 seconds**). After you release the reset button, the transmitter will reboot with the default network settings.

FACTORY RESET

When you perform a factory reset you **reset network settings and all configurations**. **Press and hold** the reset button **before switching on the power** of the transmitter. Hold the reset button until the status **LED turns blue**. Release the reset button to reboot the transmitter in fallback mode.

In **fallback mode**, the web server will have reduced functionalities. You are only able to upload an update file. After reboot, the web server will have all functionalities again. Now, upload the update file again to complete the update process of the firmware. After the final reboot, you can create new configurations.

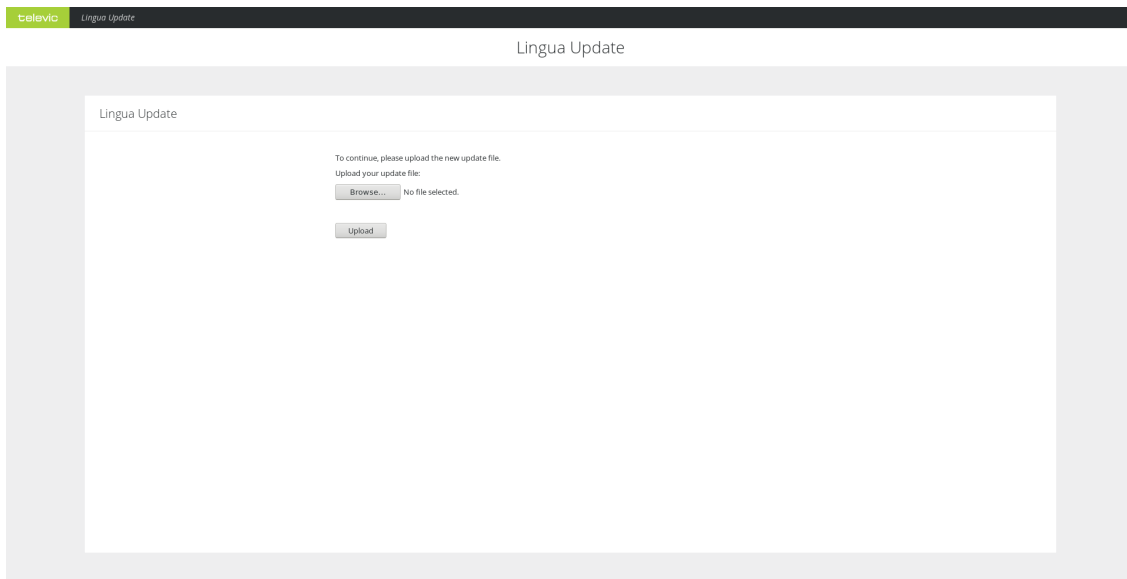


Figure 1-3 *The transmitter web server in fallback mode*

LINGUA IR RADIATOR

Overview

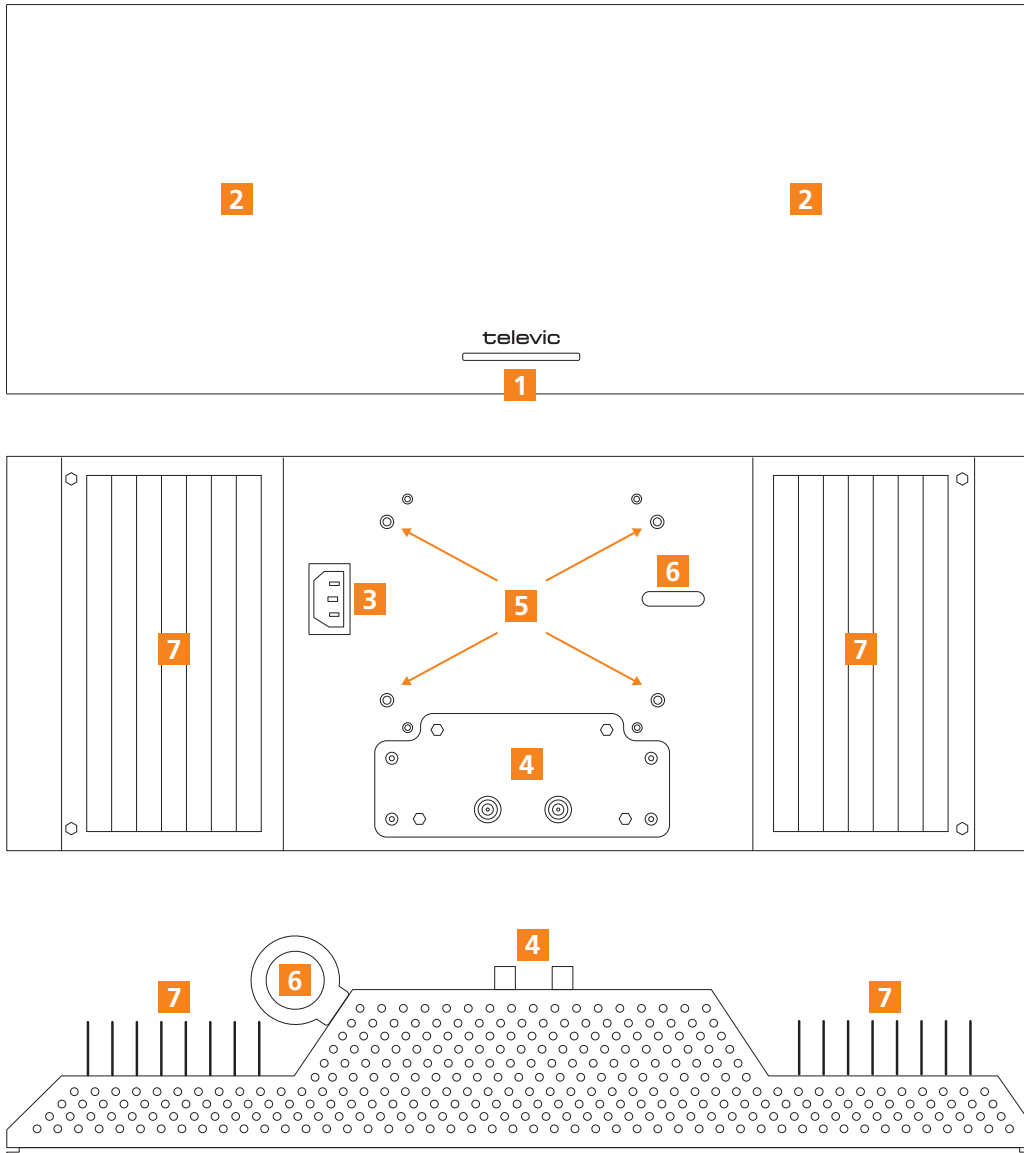


Figure 1-4 Front, back, and top view of Lingua IR radiator

1. **Status LED:** consists of three multicolor LED lights that show the radiator status and other radiator related information.
2. **Infrared LEDs:** the LED lights that transmit the IR signal. Adjust the intensity by changing the power settings.
3. **Mains connector**

4. **IR signal connector:** connect to transmitter or other radiator using a RG59 coax cable with BNC connectors.
5. **VESA mounting holes:** compatible with all **VESA 100 × 100** mounts
6. **Safety eye:** for additional security to mount the radiator
7. **Cooling fins:** to cool the radiator during usage

Radiator Power Levels

The Lingua IR radiator has four different power modes, which you can set using the web server. You can use different power levels to increase the life span of the infrared LEDs (by reducing the power level) or to increase the range of your infrared signal (by increasing the power level). The following power levels are available:

Power level	Description
Power off	No power
Reduced power	Power at 33% of its maximum capacity
Normal power	Power at 66% of its maximum capacity
Boost power	Power at 100% of its maximum capacity. Beware that when you use the radiator at this power level this reduces the life span of the infrared LEDs.

Radiator LED Status Meaning

LED status	Meaning	Remark
Middle LED red	Power OK, but there is no signal	
Middle LED Green	Power on, signal present	
Middle LED Orange	Power on, signal present Synchronization error	
Middle LED blue	Calibration started	
Right LED green	Calibration successful	
Right LED red	Calibration failed	All IR LEDs are forced to power off

LED status	Meaning	Remark
Left LED red	Temperature error	All IR LEDs are forced to power off
Left LED green	No temperature error, less than three IR diode lines defective	
Left LED orange	Three or more IR diode lines defective Board defective	

LINGUA IR RECEIVER

With the receiver you can listen to the audio transmitted by the radiator. Depending on your license you can receive six, twelve or forty channels. The receiver has 270° wide reception angle and needs no configuration to use. With the clip available on the back, you can easily attach the receiver to your clothes while keeping your hands free.

When you plug in the headphone, the receiver automatically switches on.

Overview

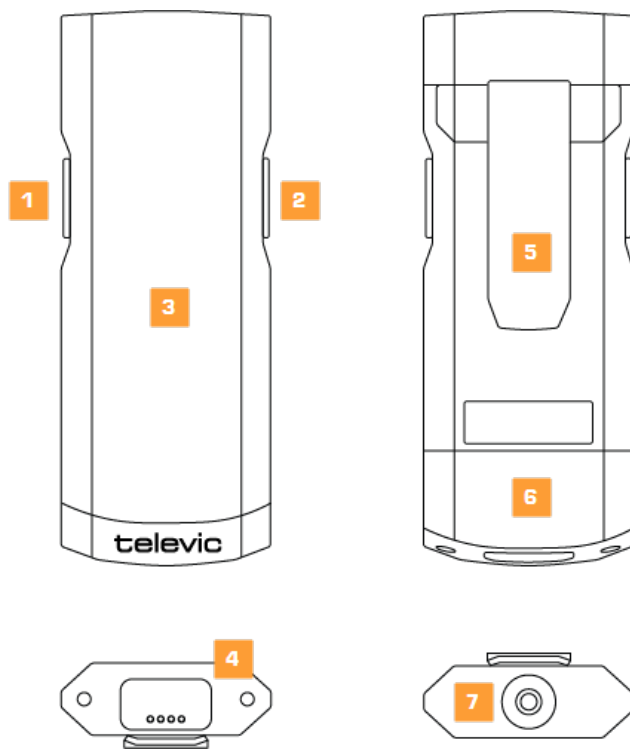


Figure 1-5 The Lingua IR receivers

1. **Volume control:** Use the up or down buttons to adjust the volume accordingly.
2. **Channel selector:** press the up and down buttons to switch between channels.
3. **LCD display:** shows the ISO code of the selected language and channel number. Additional information can be displayed when you press and hold different button combinations. See note for more information.
4. **Charging contacts:** these need to be aligned correctly with the contacts in the charging case to charge correctly.

5. **Clip:** use the clip to attach the receiver to your clothes or belts.
6. **Battery:** to change the battery, unfasten the screws at the bottom of the receiver.
7. **Headphone connector:** plug in the headphone to switch on the receiver.



Keep the top part of the receiver free at all times. This part holds the infrared sensitive diode and placing objects (like stickers or headphone cords) on top of the LED will block the infrared signal and prevent you from receiving the audio.

For optimal reception of the IR signal, aim the back of the receiver towards the radiator. All objects between the receiver and the radiator will block the infrared signal from reaching the receiver.



When you press different buttons at the same time you can see additional information on the receiver screen. The following combinations are possible:

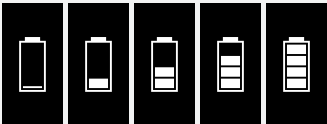

- > For **application, bootloader, VHDL and hardware version**: press and hold the top buttons on each side of the receiver and plug in the headphone.
- > For **logging**: press and hold the top button on one side and the bottom button on the other side and plug in the headphone. Press the right button to reset the logging




Receiver Variants

Different variants are available for the Lingua IR receiver with different amounts of channels. The amount of channels is hard coded into the devices, which means you cannot upgrade the receiver when you need additional channels.

Receiver Information

On the OLED screen of the receiver different information can be displayed. You can see the channel and the language (ISO) , and the volume of the receiver. There are also different icons available that have a specific meaning:

Icon	Description
	Shows the remaining battery life of the receiver (5%, 25%, 50%, 75%, 100%).  The receiver will indicate when the battery is almost empty

Icon	Description
	<p>Problem with fuel gauge of battery: it is not possible to see the battery life of the receiver.</p> <p>Remove the battery and insert it again to solve the problem.</p>
	<p>Plug in the headphone</p>
	<p>The emergency signal is being broadcast</p>

LINGUA CHARGING CASE

Overview

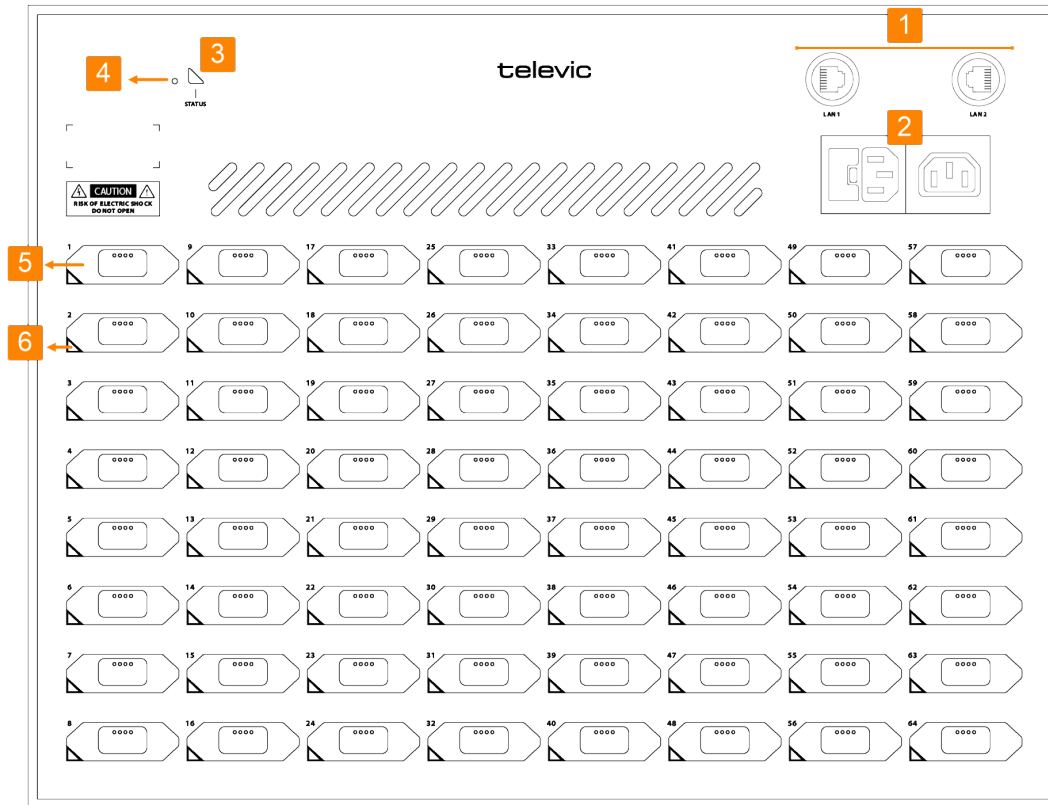


Figure 1-6 Lingua IR charging case

1. **LAN connection:** two connections to daisy chain multiple charging cases and to configure the charging case and receiver settings using the web server.
2. **Two mains connections** for loop through. You can daisy chain up to three charging cases when using 125V or maximum of six for 230V.
3. **Status LED:** shows the status of the Lingua IR charging case.
4. **Reset button:** different reset options are available see "Reset the Lingua IR Charging Case" on the next page for more information.
5. **Receiver slot:** positions in the case to charge and update Lingua IR receivers.
6. **Receiver LED:** indicates the status of the receiver.



You can use multiple charging cases in one setup. Simply connect the different charging cases using the LAN connection provided on the case.

Charging Case Status LED Meaning

LED status	Meaning
Green	Normal operating system
Blinking blue	Updating receivers or charging case
Red	Indicates an error
Yellow	fallback mode

Charging Case Receiver LED Meaning

LED status	Meaning
Blinking green	The receiver is charging
Green	The receiver is fully charged and functional
Blue	Indicates the receiver is updating
Red	Indicates that there is something wrong with the receiver, go to the receiver web server to see the type of error.

Reset The Lingua IR Charging Case

There is a reset button on the charging case that allows you to reset specific settings depending on the reset procedure you perform:

RESET NETWORK SETTINGS:

When the status LED is green (after power-up), you can reset the network settings back to **192.168.0.150** with subnet mask 255.255.255.0. **Press and hold** the reset button until the status **LED changes to red** (approximately **10 seconds**). After you release the reset button, the charging case will reboot with the default network settings.

FACTORY RESET

When you perform a factory reset you **reset network settings and all configurations**. **Press and hold** the reset button **before switching on the power** of the charging case. Hold the reset button until the status **LED turns blue**. Release the reset button to reboot the charging case in fallback mode.

In **fallback mode**, the web server will have reduced functionalities. You are only able to upload an update file. After reboot, the web server will have all functionalities again. Now, upload the update file again to complete the update process of the firmware. After the final reboot, you can create new configurations.

GENERAL INFRARED GUIDELINES

Rules And Standards

The Lingua IR systems conforms to **IEC 61603 part 7** (for 24 channels), the international standard for digital infrared transmission of audio signals for conference use and similar applications.

Infrared Bands And Channels

The Lingua IR system can use a maximum of **ten infrared bands**, each band can have up to **four channels**. The maximum amount of channels on your system depends on the license you have (6, 12 or 40 channels).

Infrared Influencing Elements

SENSITIVITY OF THE RECEIVER

The positioning of the receiver relative to the radiator(s) has an effect on how efficiently you will receive a signal. For maximum sensitivity aim the back side of the receiver (the side with the clip) directly towards the radiator. When you tilt the receiver this will reduce the sensitivity of the receiver. The receiver has a **270° wide reception angle**.

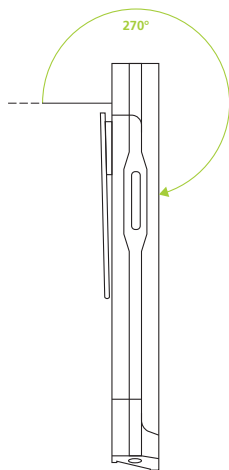


Figure 1-7 The reception angle of the Lingua IR receiver

AMBIENT LIGHTING

Ambient lighting can **disturb** the distribution of the infrared signal. For this reason the Lingua IR system should not be used in outdoor conditions or in rooms with very bright lightning.

VENUE PROPERTIES AND RADIATOR POSITION

Different elements present in the room can effect the infrared signal transmission. Most objects **reflect** infrared, with the exception of dark and rough surfaces that absorb a large portion of the infrared signal. Infrared will not pass through objects that are **opaque** to visible light, therefore it is important to position your radiators carefully.



Do not put objects between the radiator and the receivers because this will hinder the infrared signal. This also applies to people, the radiation will not pass through people. Therefore you should position enough radiators at the correct locations inside the venue for optimal coverage.

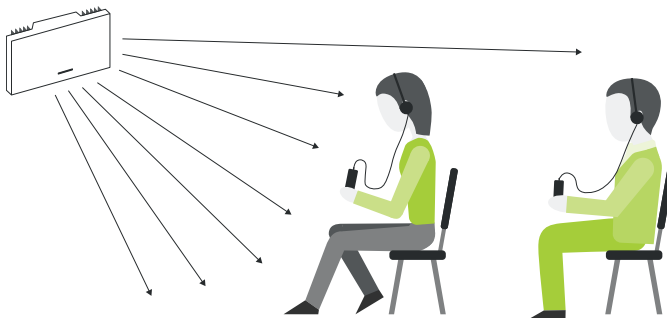


Figure 1-8 Effect of positioning the radiator too low, preventing people sitting in further rows from picking up the infrared signal

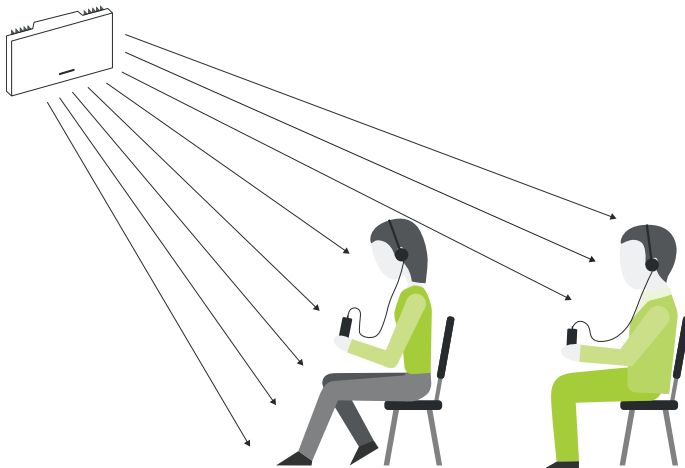


Figure 1-9 Correct position of the radiator, participants on all rows can pick up the infrared signal

If the venue permits it, the receiver can pick up reflected infrared radiation as well as direct radiation. The radiation can be reflected by the wall, floor or other objects present in the room.

Footprint Of The Radiator

Every radiator has a certain reach. This is the area that can receive the infrared radiation, this is called the footprint of the radiator. The footprint of the radiators depends on the position of the radiator as well as the amount of channels used.

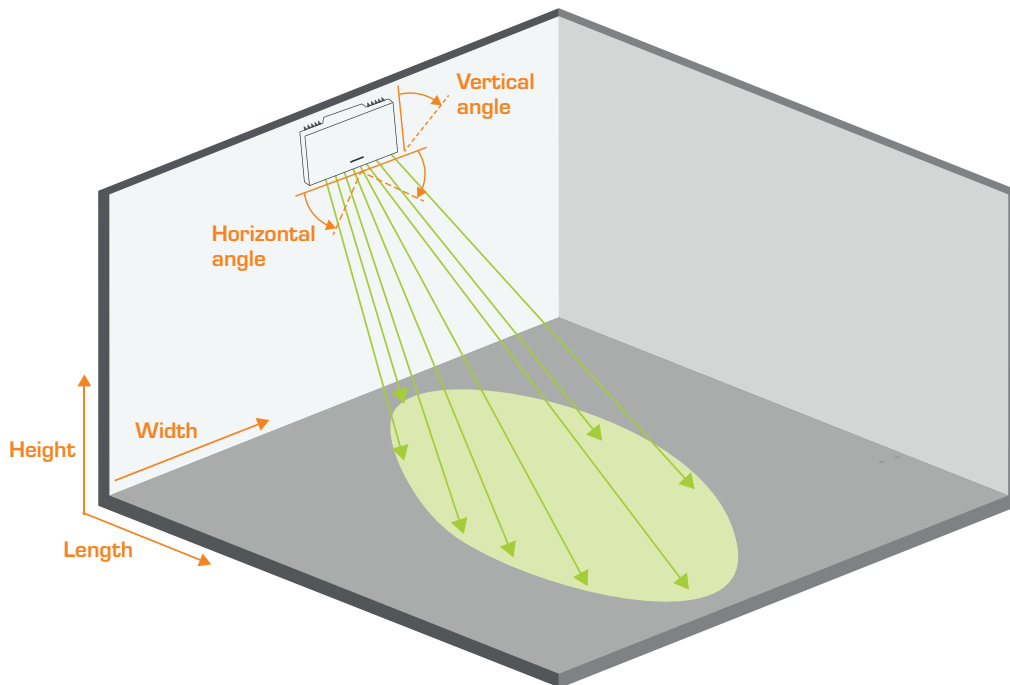


Figure 1-10 The footprint of the radiator and the physical parameters that influence the footprint

The position of the radiator is determined by the following parameters:

- > The **x position** in the room
- > The **y position** in the room
- > The **height** of the mounted radiator
- > The **vertical angle**: how the radiator is tilted
- > The **horizontal angle**: the angle the radiator is turned left or right

For a detailed description of how these parameters effect the footprint see "Position the Lingua IR components" on page 38.

The amount of channels can also change the footprint of the radiator. When you have more than four, eight, twelve, etc. channels, this will drastically reduce the size of the radiator footprint.

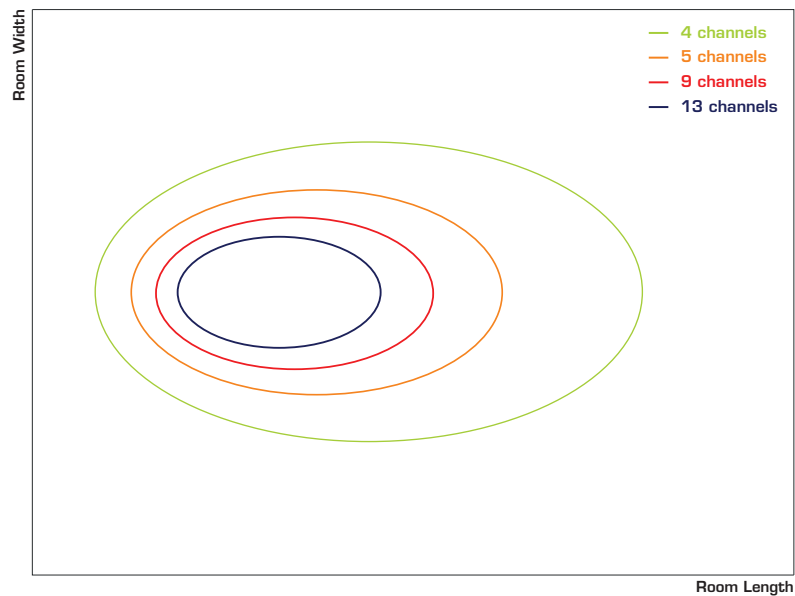


Figure 1-11 The effect of the amount of channels on the footprint of the radiator

OVERLAPPING FOOTPRINTS

When there are multiple radiators in a room, the footprints of the different radiators can overlap. If these radiators are connected to the transmitter with cables having different lengths then the signal will reach the radiators at a different time. This mismatch will result in the reduction or canceling of the infrared signal (in places where the IR signal of the radiators have equal strength), thus creating **black spots**. For more information see

POSITION THE LINGUA IR COMPONENTS

Lingua IR Radiator Position

The position of the radiators is very important for a successful set up. Depending on the layout of your room, the radiators need to be set up in different places of the room. Below you can find some examples of different setups and the position of the radiators.



To see the effect of the position and angle of all radiator on the footprint of the radiators and the IR reception in the room, use the calculator tool. You can find the calculator on Sharefile in the folder **TCS-Marketing > Public > Technical Documentation > Calculators**.

In the first example all seats are pointing towards the stage in the same direction. In order for everyone to receive the infrared signal, you need to place two radiators in two corners of the room to cover the entire room (by reflected and direct radiation).



When the length of the cables from the transmitter to the radiators differs, then this difference should be corrected using the automatic delay line calibration.



Figure 1-12 Conference setup with all chairs pointing in the same direction



In cases where beam width is an issue, you can position multiple radiators on a cluster. The loop through the different radiators in the cluster should be done with a short cable (1m).

For rooms where the rearrangement can change or rooms where seats are positioned concentrically, radiators should be present in every corner of the room.

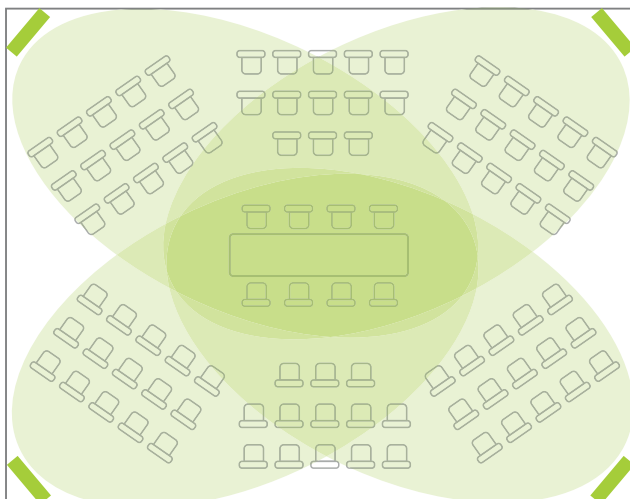


Figure 1-13 Position of the radiators in a concentrically organized room

In case of rooms with a balcony, an additional radiator needs to be present under the balcony to ensure the transmission of the signal to the seats under the balcony.

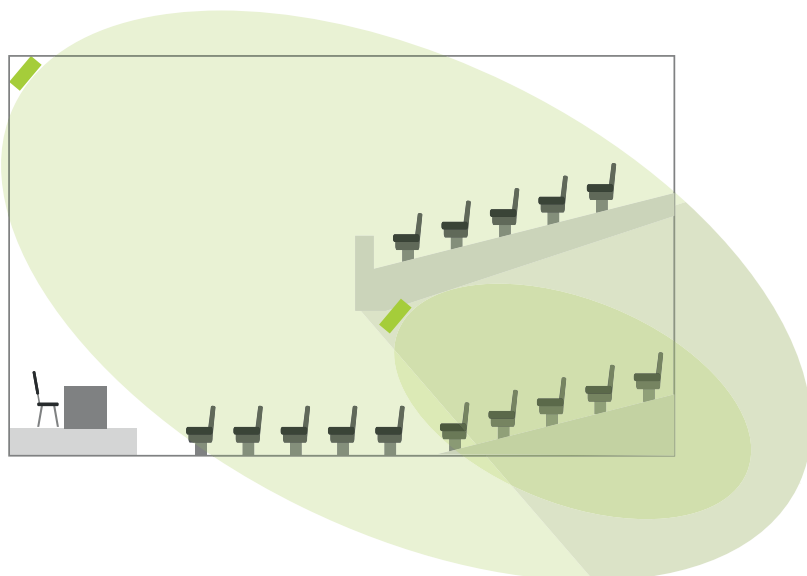


Figure 1-14 Radiator setup for room with a balcony. The balcony blocks all radiation therefore you should place an additional radiator below the balcony to extend the signal to the people sitting below the balcony.

COMPATIBILITY WITH OTHER SYSTEMS

One of the benefits of the Lingua IR system is that you can combine different components of the system with those of other party systems. The table below shows which functions are compatible with other systems.

Different icons show how compatible the systems are:

- > **A** components are compatible and all functionality is maintained
- > **B** components are compatible, main functionality is maintained, but there are some limitations
- > **C** components are not compatible

Compatibility Of Lingua IR Transmitter

RADIATOR

Lingua RAD_H	Aladdin RAD	Bosch RAD
A	A	A
Automatic delay line compensation	No automatic delay line compensation	No automatic delay line compensation



Do not mix radiators from different manufacturers on one transmitter. However, when it is inevitable, you need to keep the following in mind: each radiator from another manufacturer has different internal delay values. Mixing these radiators may result in bad or even no reception. This phenomenon especially occurs in regions where the footprints of the radiators overlap.

RECEIVER

The table below shows the compatibility of the Lingua IR transmitter with receivers from different manufacturers.

Lingua Rx	Alladin / Taiden Rx (up to 32 channels)	Taiden Rx (40 channels)	Bosch Rx
A	A	A	A
Up to 40 channels	Maximum 32 channels	Maximum 32 channels	Maximum 32 channels



It is possible to mix receiver from different manufacturers in one setup.

Compatibility Of Lingua IR Radiator

Lingua Tx	Aladdin / Taiden Tx (up to 32 channels)	Taiden Tx (40 channels)	Bosch Tx
A	B	B	B
< Automatic delay line compensation	< No delay line compensation: minimize cable length and use equal cables lengths	< No delay line compensation: minimize cable length and use equal cables lengths	< No delay line compensation: minimize cable length and use equal cables lengths



Do not mix radiators from different manufacturers.

Compatibility Of Lingua IR Receiver

Lingua Tx	Aladdin / Taiden Tx (up to 32 channels)	Taiden Tx (40 channels)	Bosch Tx
A	B	C	B
< Supports mono medium quality < Flexible name indication from web server	< Only supports mono medium quality (MMQ) audio < No channel information displayed on receivers	Not compatible	< Only supports mono medium quality (MMQ) audio

HOW TO USE THE FOOTPRINT CALCULATOR TOOL

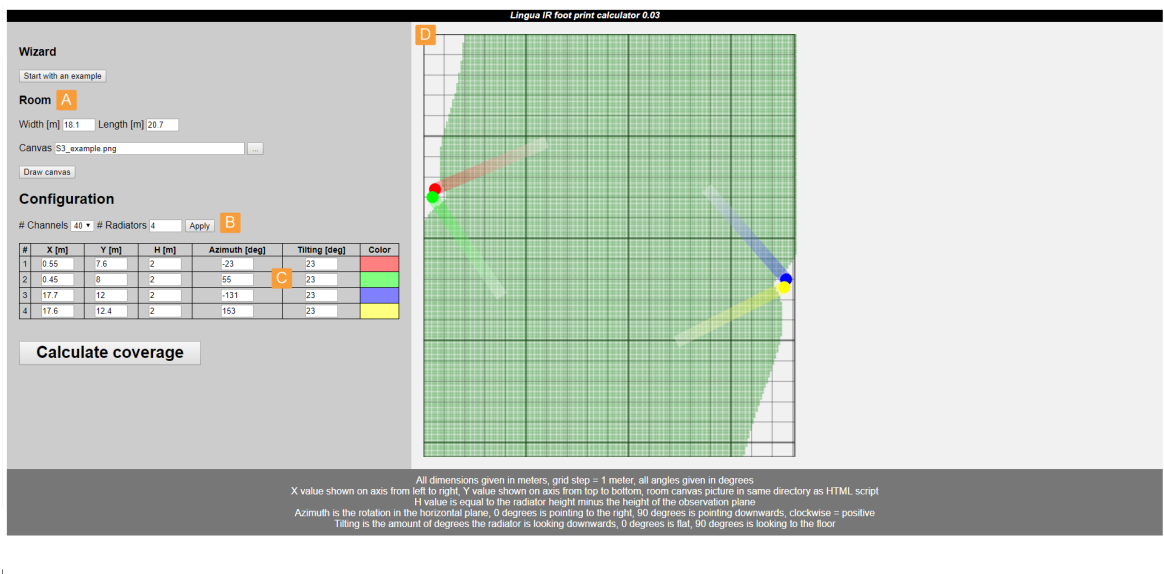


Figure 1-15 The footprint calculator tool

With this tool you can visualize the footprint of your radiators by adjusting the position parameters of the radiators. To get a clear picture of the different footprints in your room, start by defining the length and width (A) You can also upload an image of your room setup by clicking the button next to the **Canvas** parameter, then you can check if all seats have reception. Click **Draw canvas** to visualize the room.

Select the number of channels (B), because this can significantly affect the footprint of the radiators. Then add the radiators to the room. Enter the number of radiators and click **Apply**. Per radiator you can define the following parameters (C):

Parameter	Description
X [m]	The X position of the radiator in the room
Y [m]	The Y position of the radiator in the room
H [m]	The height of the mounted radiator
Azimuth [deg]	The radius of the radiator in a horizontal pane
Tilting [deg]	The tilting angle of the mounted radiator

Each radiator has a different color. If you want to remove radiators, reduce the number of radiators in the **#Radiators** field and click **Apply**. The last radiator(s) in the list will be removed. Click **Calculate coverage** to visualize the radiator footprints. When you change one of the parameters, you need to click **Calculate coverage** again to update the footprints.

The visualization (D) shows all radiators and the direction of the radiation they emit. In this view you can also see the combined footprint of all radiators. You can easily add or adjust the radiators to cover your complete room.



The calculator takes into account the boost mode of the Lingua IR radiator.

INSTALLATION PROCESS

This chapter describes how to physically set up and install the Lingua IR system.
Here you can find all technical details needed to correctly install all Lingua IR components.

Make sure to read the safety instructions before installing the system because the infrared radiation may cause damage to your eyes.

MOUNT THE RADIATORS

The design of the radiators does not restrict you to a specific mount. The radiator supports all **VESA 100 × 100** mounts. Below you can find a detailed description of how to install Televic Conference's radiator mount. For other VESA mounts you can use a similar installation process.

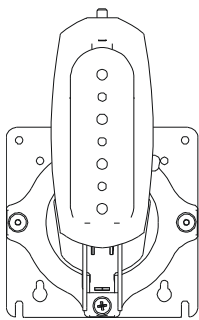


Position the radiator as defined by the calculator tool. After mounting you will still need to test the coverage of the transmitter using the Lingua IR receivers.

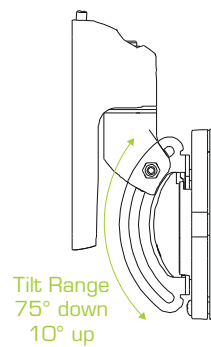
Lingua RAD Mount Specifications

Televic Conference also provides a radiator mount. This is a basic VESA mount which you can tilt and turn sideways.

Wall Mounting Side



Side View



Radiator Mounting Side

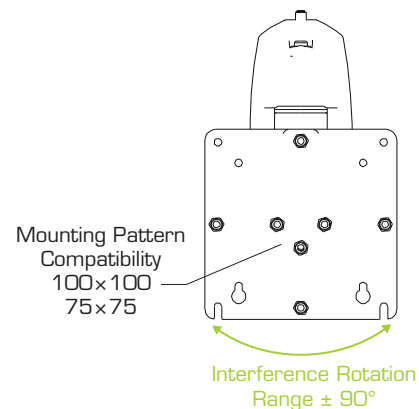


Figure 1-16 The front, side, and back view of the Lingua RAD view together with tilting and pivoting range of the mount

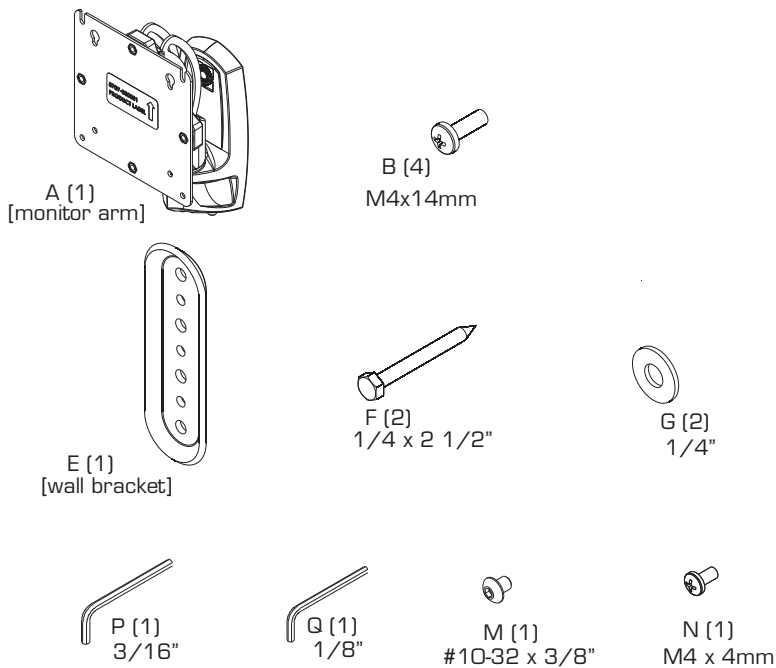


Figure 1-17 Lingua RAD mount parts

Attach Lingua RAD Mount To The Wall

Follow the procedure described below to attach the RAD mount to a wall:

1. Determine the mounting location on the wall.
2. Use a stud finder to locate 2" x 4" wood stud
3. Use wall bracket (E) to mark and drill two 1/8 x 2 1/2" holes in wall at desired mounting location.
(See Figure 1-18)
4. Use two 1/4-2 1/2" hex head lag screws (F) and two 1/4" washers (G) to install wall bracket (E) onto wall.



Over-tightening screws (F) may cause bracket to compress into soft wall surface resulting in difficult mount installation or improper engaging of set screw in Step 6.

5. Hang monitor arm (A) over wall bracket (E).
6. Secure monitor arm to wall bracket (E) by tightening set screw. Ensure set screw engages back side of wall bracket (E) to properly secure mount.

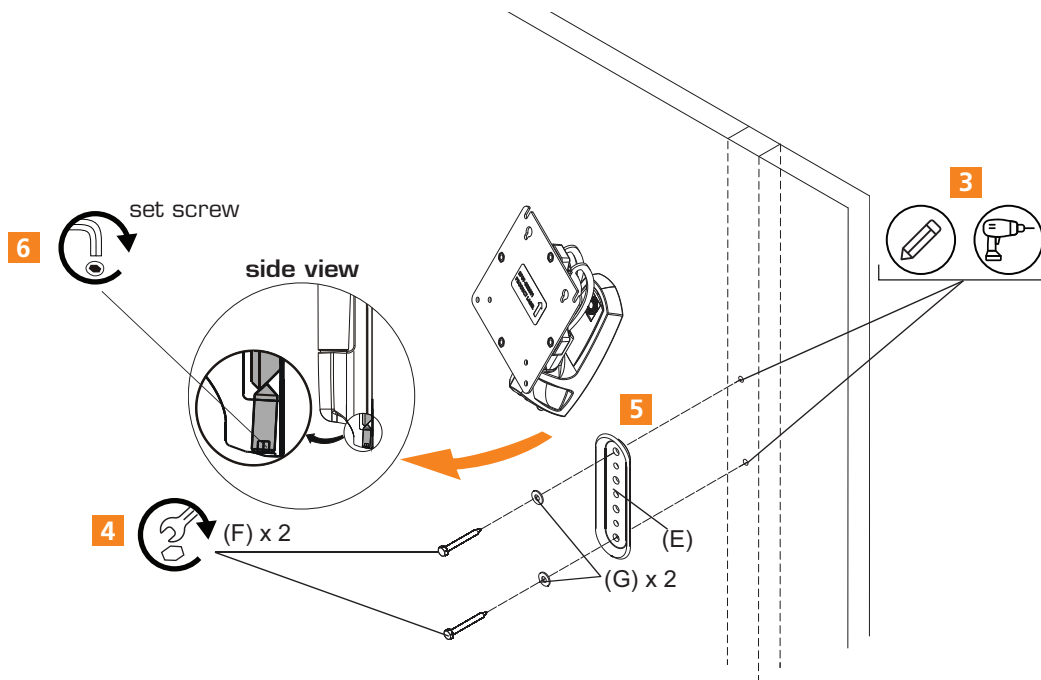


Figure 1-18 How to mount the Lingua RAD mount onto the wall

Prepare Radiator For Mounting

To attach the radiator to the wall, you first need to remove the faceplate from the mount and attach it to the radiator. Follow the instructions below to prepare the radiator:

1. Remove quick release faceplate from mount by pulling quick release lever and sliding faceplate off mount.

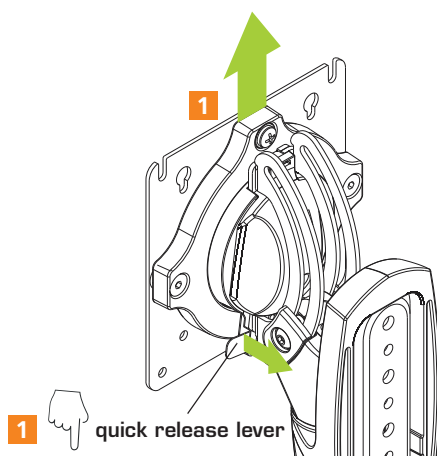


Figure 1-19 How to remove the faceplate from the mount

2. Carefully place front face down on protective surface.
3. Connect faceplate to back cover. Using a Phillips screwdriver, carefully install four M4x14mm screws (B) through corresponding holes on faceplate and into the mounting holes on the radiator. (See Figure 1-20)

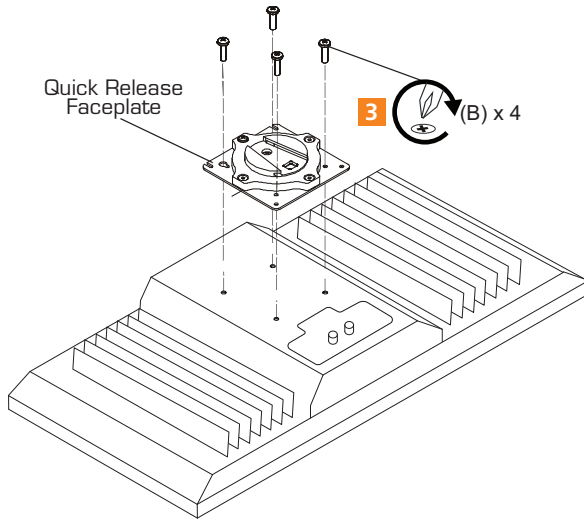


Figure 1-20 Attach faceplate to radiator

4. Position radiator with faceplate attached above mount. (See Figure 1-21)
5. Slide faceplate onto mounting head until quick release tab clicks into place. (See figure below)

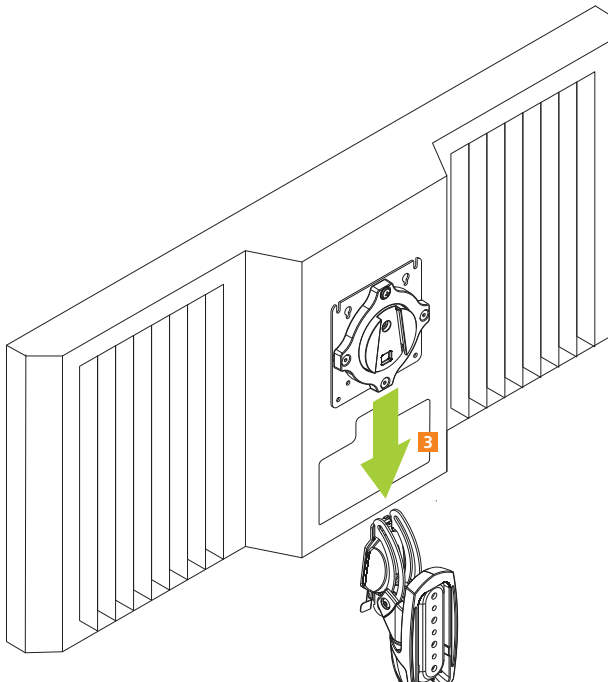


Figure 1-21 Position radiator onto Lingua RAD mount

Adjust Orientation Of Mount

PITCH ADJUSTMENT

1. Adjust pitch to desired tilt position. (See Figure 1-22)
2. Adjust pitch tension screw to change the adjustment tension. (See Figure 1-22)

PIVOT ADJUSTMENT

3. Adjust pivot position as desired. (See Figure 1-22)
4. Use 3/16" hex key (Q) to adjust pivot point tension screws to change pivot adjustment tension. (See Figure 1-22)

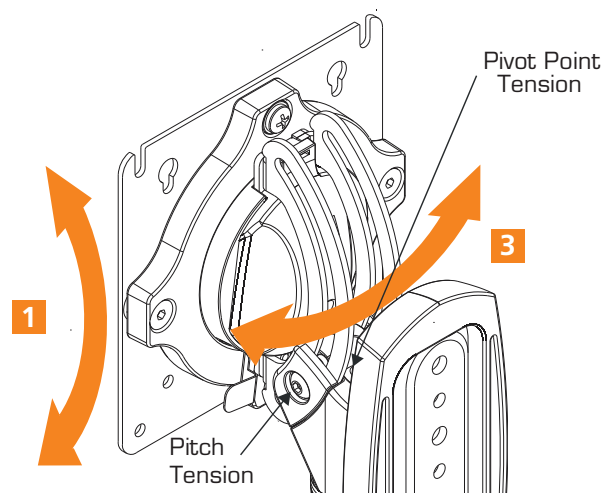


Figure 1-22 How to change the orientation of the Lingua RAD mount

Remove From Mount

Remove the radiator from the mount by pulling the quick release lever and sliding the faceplate off the mount. (See Figure 1-23).



Only remove the radiator from mount when the radiator can be lifted up from the mount!



DO NOT remove radiator unless the radiator is in the upright position!

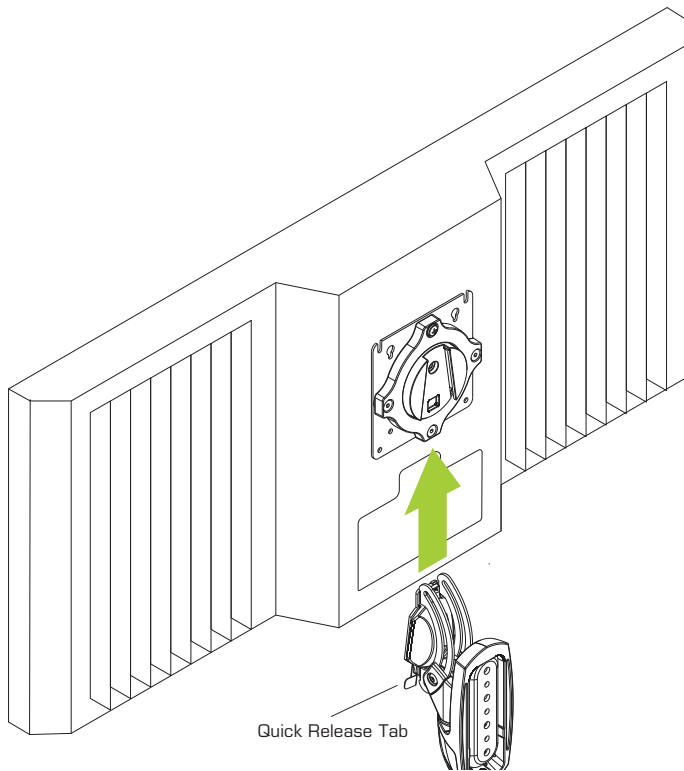


Figure 1-23 How to release the radiator from the RAD mount

COUPLE LINGUA IR COMPONENTS

Introduction

Lingua IR is specifically designed for the wireless language distribution. You need to connect the Lingua IR system with another system, such as a conference system, to feed the audio channels that needs to be transmitted. You can connect to different systems, below you can find a description of how to couple the Lingua IR components and how to connect to an external system.

Couple Transmitter And Radiators

Connect the radiators to the transmitter to send out the infrared signal. One transmitter can feed multiple radiators. When you couple the radiators to the transmitter, you should keep the following rules in mind:

- Only use **75 Ohm coax cables (RG59)** with well crimped BNC connectors
- You can daisy-chain a maximum of 20 radiators on one port (a total of 80 radiators per transmitter)
- The total cable length per port should not exceed 1 km



You also have the option to use multiple transmitters in one system. To connect the different transmitters use the LAN connections on the transmitters.

Connect Lingua IR System To A Network

Lingua IR is configured with a web server. Therefore the transmitter and charger needs to be connected to a network. Use an LAN cable and the LAN connection available on the different computers.

It is possible to daisy chain different charging cases. When using 125V a maximum 3 charging cases can be daisy chained, when using 230V this amount is 6.

Connect To A Conference System

The Lingua IR system was designed to make it possible to connect to different conference systems to input audio channels for transmission. Below you can find a detailed description of how to connect the different conference systems to the Lingua IR transmitter.

CONNECT TO PLIXUS SYSTEM

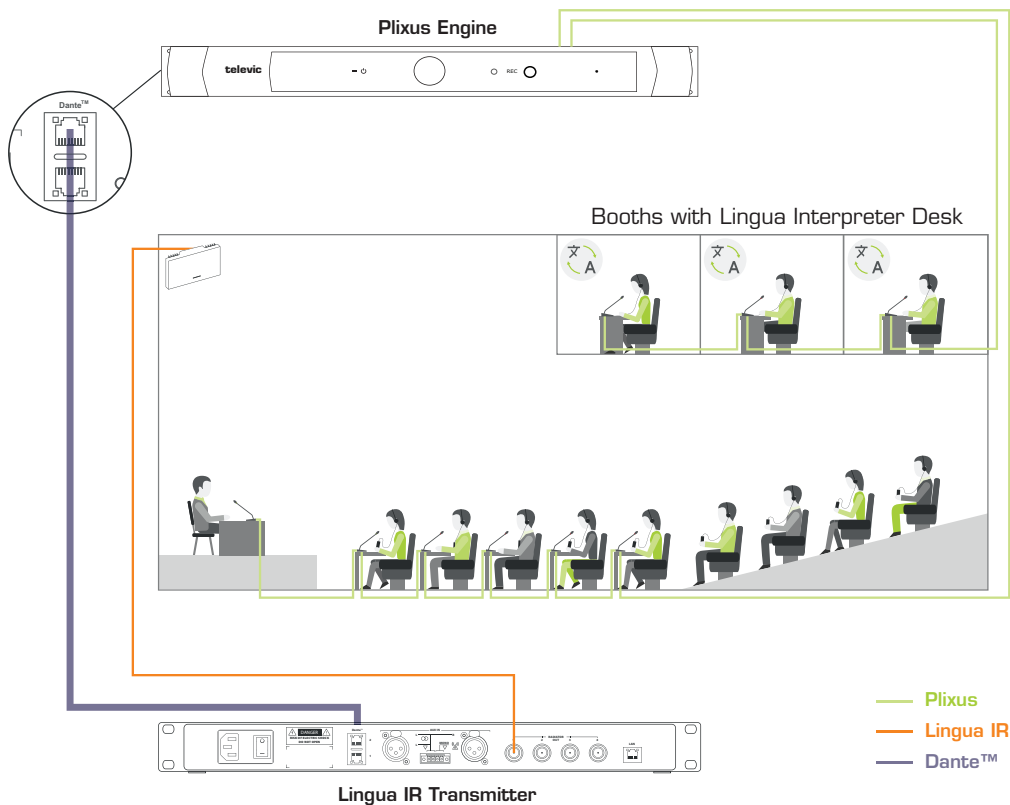


Figure 1-24 How to connect your Plixus conference system with the Lingua IR system to distribute the languages provided by the interpreters to the participants inside the room. Connection goes through the Dante™ connection on the Plixus engine and the Lingua IR transmitter.

You need to feed input into the Lingua IR system to broadcast this content to the receivers. One option is to use the audio from your Plixus conference system.

In a typical conference setup some delegates have a microphone and can join the discussion, others are passive participants that can hear the meeting in the language they prefer. **Interpreters** provide these languages with the Lingua Interpreter Desk. Transfer the languages from the Plixus system to the Lingua IR system over Dante. The **radiator** can then transmit the infrared signal with these languages to the **receivers** in the room.

Use the **Dante™ connection** on the engine and the transmitter to couple both systems. After connecting both systems, you still need to configure the Dante™ routing as described in "Set up Dante™" on page 57.

CONNECT TO CONFERENCE SYSTEM WITH DANTE

It is possible to connect with conference system from other manufacturers that provide a Dante™ on their system. Simply connect the conference system to the Lingua IR transmitter using an LAN cable together with the Dante™ connections on the devices. Configure the Dante™ routing as described in "Set up Dante™" on page 57

CONNECT TO CONFERENCE SYSTEM WITHOUT DANTE

When you have an analog conference system you can still connect it to the Lingua IR system: for this you need an analog IN to Dante™ converter. Connect the analog systems to the break-in converter and then connect Dante™ to the Lingua IR system.

Connect To An Emergency Signal

To connect the transmitter to an emergency signal system, connect a switch (normally open) to the emergency switch connector (AUX Right). When the switch closes then the emergency signal from the AUX R input will override all other audio input on all channels.

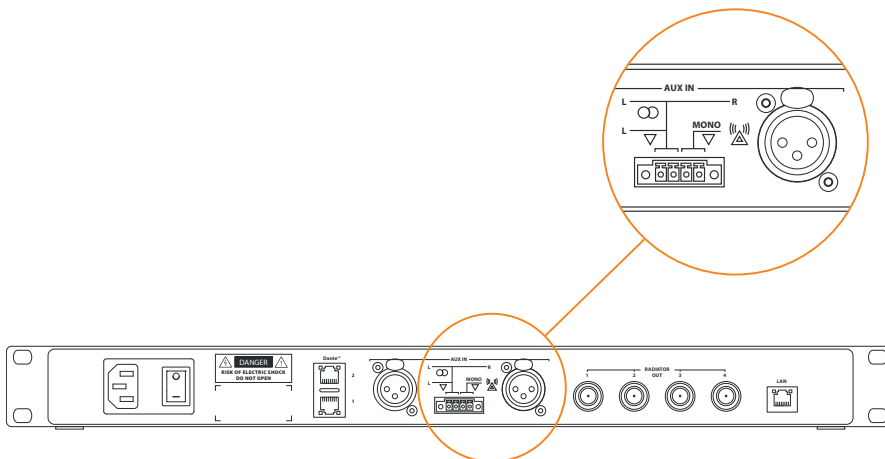


Figure 1-25 Where to connect the emergency signal system

Connect To An Audio Installation

When you want to connect an external audio system to the Lingua IR system to for example play music until the meeting starts. Connect the audio system to the AUX IN L and make sure to close the left switch of the connector.

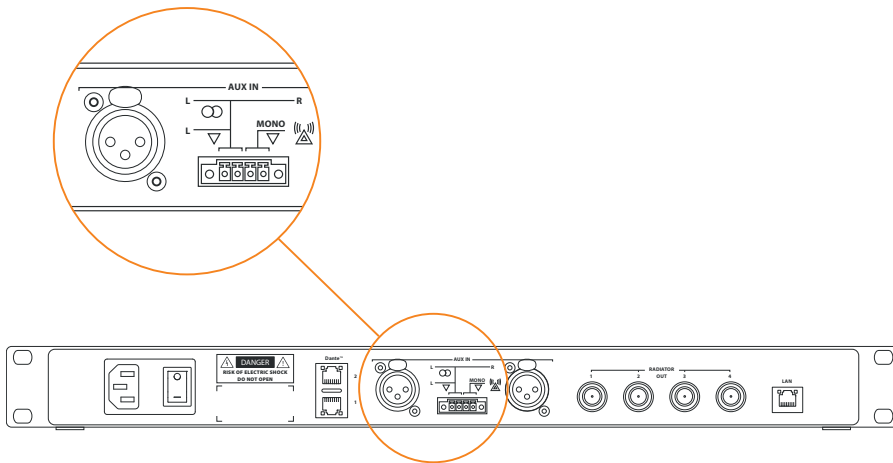


Figure 1-26 Where to connect an external audio system

RECEIVER BATTERIES

Change Receiver Batteries

To change the battery of the receiver follow the procedure described below:

1. Loosen the screws from the bottom of the receiver using a TX6 screwdriver.
2. Remove the bottom part of the receiver.
3. Hold the receiver upright to remove the battery from the receiver.
4. Insert the new battery with the text and the front of the receiver facing the same way.
5. Reattach the bottom of the receiver and tighten the screws.

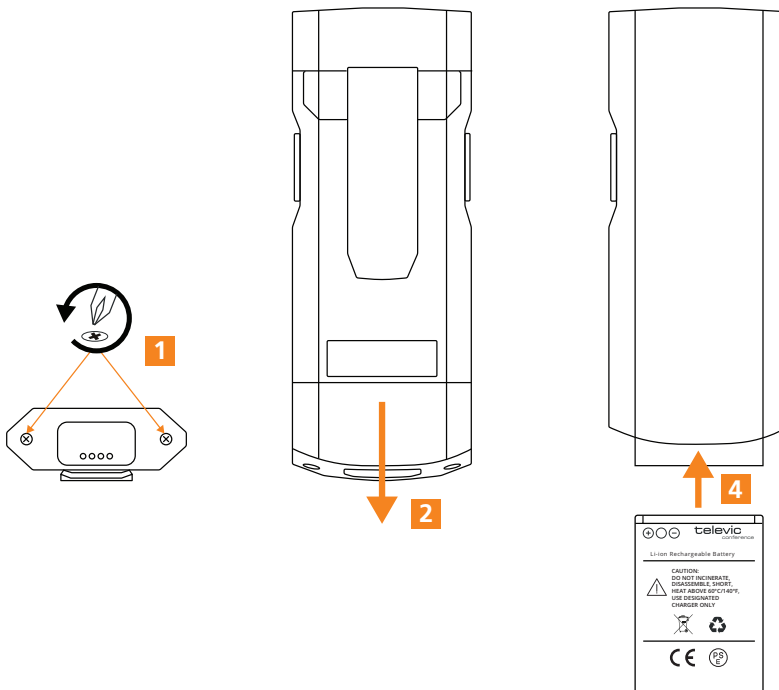


Figure 1-27 How to change the battery of the Lingua IR receiver



If you insert the batteries incorrect, you will not be able to reattach the bottom of the receiver.

Battery Maintenance

- For **low frequency** usage: less than four hours and not used daily
 - Remove the battery after three years.
- For **high frequency** usage: receivers are used over six hours per day and almost daily
 - Change batteries when the battery life of the receivers is significantly reduced.

SET UP DANTE™

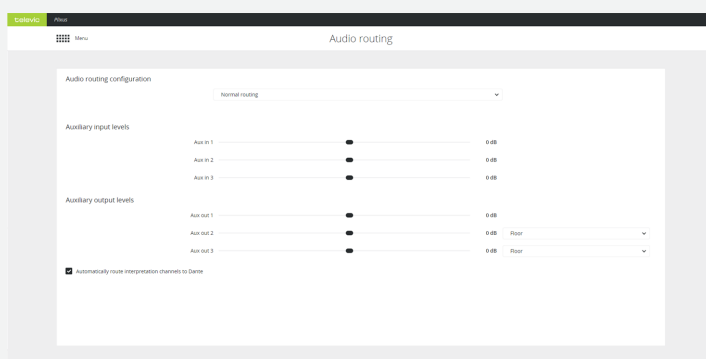
Prepare The System For Dante™ Configuration



If your setup requires more than 11 languages see the procedure described in "Set up Dante™ routing with more than 11 languages" on page 59



If you use the Plixus network with Core functionality, you need to activate the option **Automatically route interpretation channels to Dante** in the Plixus Core web server. With this option all interpretation channels will automatically be assigned to a Dante™ channel.



Note that this option is only available when your setup has 11 languages or less.

When you connect the Lingua IR transmitter to another conference system with Dante™, you need to configure some settings before you can use the system. To configure these settings you have to connect all devices to same network. Use a network switch to connect the central unit of the conference system, the Lingua IR transmitter and the computer running the Dante™ controller (you can download this from the Audinate website).

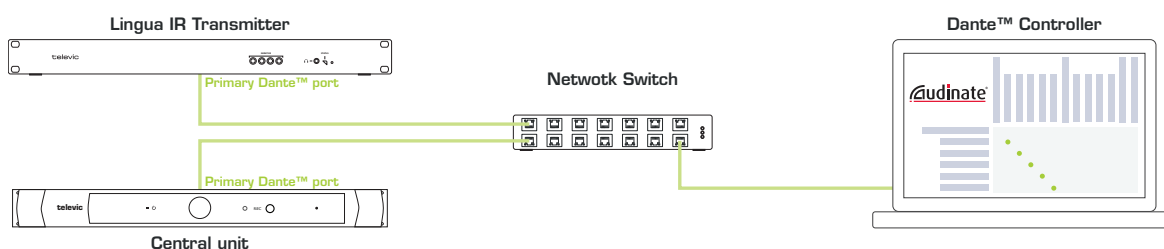


Figure 1-28 All Dante™ devices need to be connected before you can configure the Dante™ routing



Make sure your computer does **not have a fixed IP address**. A Dante-enabled device connected to a network will automatically setup its own network configuration, including its IP address.

If the network has a DHCP server, which may be the case for installed networks, it will receive its IP configuration using the standard DHCP protocol.

On a network without a DHCP server, which may be the case for temporary or smaller networks, the Dante-enabled device will automatically assign itself an address using link local protocols, in the same way PCs and printers often do.

Configure Dante™ Routing

Once the Dante™ devices are connected, you need to route the Dante™ channels from your input system to the Dante™ channels of the transmitter.

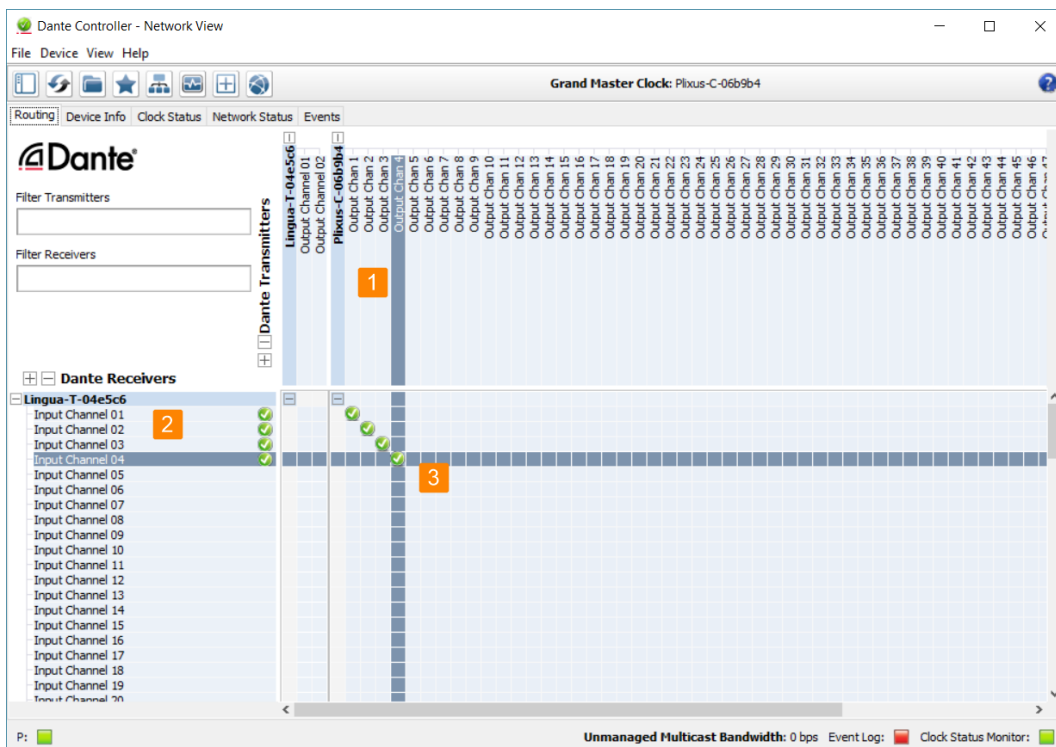


Figure 1-29 How to route the output from the conference system to the input of the Lingua IR transmitter

The **Routing** tab of the controller shows all Dante™ devices with their inputs and outputs. The top part shows the outputs. Here you can find the **output** from your **conference system** (1). The bottom part on the left hold all **inputs** together with the Dante **channels of the transmitter** (40 channels) (2).

Now **link the output** of the conference system **to the input channels** of the **transmitter** using the matrix (3). Do this by checking the box where the input and output intersect. A checkmark appears when the routing was successful.

Once you finish the configuration of the routing, this configuration is remembered on every Dante™ device. Therefore you can remove the network switch and connect the transmitter to the central engine directly.

Set Up Dante™ Routing With More Than 11 Languages

In Plixus Core it is only possible to configure up to 11 languages. If your setup requires more than 11 languages you need **CoCon Interpretation** and **CoCon Audio Routing** to configure the languages that will be available on the Dante™ channels. Use **CoCon Interpretation** to set up your languages and booths.

In **CoCon Audio Routing** you can configure which input language to route to which output channel of the microphone unit. Every input language you then also need to route to a Dante™ output channel, these will then be available on the receivers.

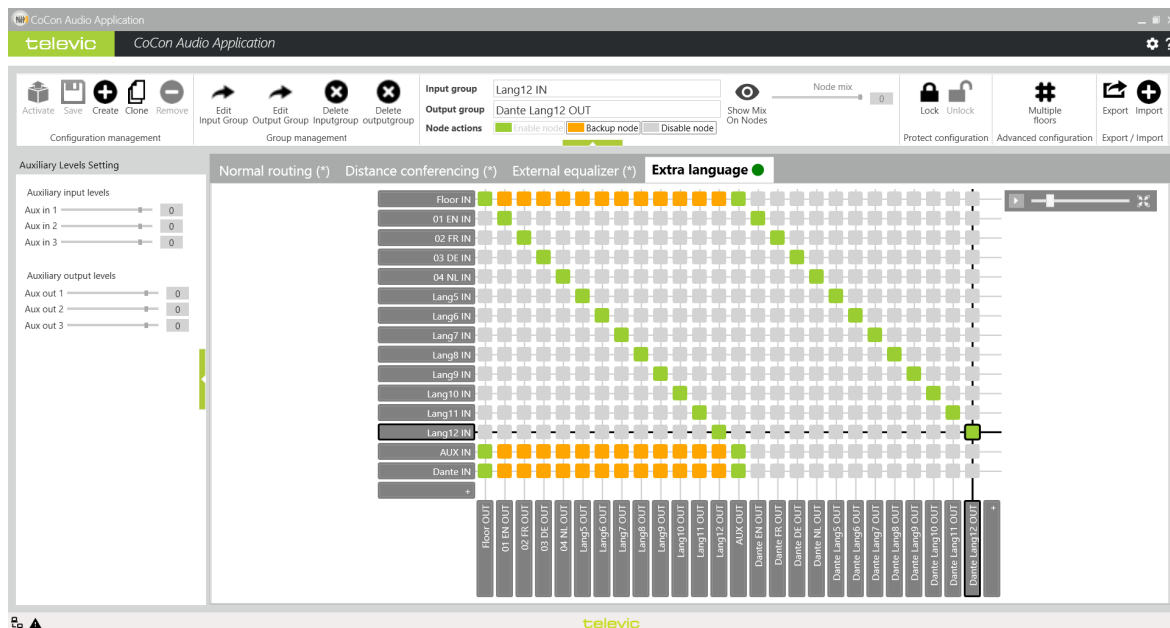


Figure 1-30 How to route the audio input to the Dante™ output channels in CoCon Audio Routing



For more information on the CoCon Interpretation and CoCon Audio Routing applications see the CoCon Core user guide.

TEST RADIATOR COVERAGE

Best Practices For Good Infrared Signal Reception

- There should be **no objects between the receiver and the transmitter**.
- Do not attach any kind of object, such as the headphone cord or a sticker, on the top of the receiver where the infrared sensitive diode is located.

Test The Coverage Area

After installation you need to test the coverage of the transmitter in the room itself.

1. Configure the channels as described here .
2. **Activate the test tone** on the transmitter using the web server (see).
3. Plug in headphones to activate the receiver.
4. Test the reception quality in all positions and directions. Go around the room and test all positions that should receive the infrared signal using the test tone.

Causes For Bad Infrared Reception

RADIATOR TRANSMISSION

One option for the lack of reception is that you are testing an area that is not covered by the footprint of the radiator. Another reason is the presence of objects between the radiator and the receiver that block the infrared radiation. This could be structural elements such as balcony, poles or beams.

BLACK SPOTS

When the infrared system has multiple radiators which use different cable lengths, the signal will reach the radiators at different times. As a consequence the radiation from the different radiators can cancel each other out. Solve this by using the **automatic delay line compensation** (). It is possible that you may need to tune these settings a little inside the room.

Typically you can identify a black spot as an area of bad reception that only occurs along a specific line and/or rotating the receiver into another direction will restore the reception. Confirm this type of interference by turning of one of the radiators. Typically higher bands are more sensitive to black spots.



IR radiation that is reflected by highly reflective surfaces can also cause black spots.

INTERFERENCE

Other systems using infrared at certain frequencies can disturb the reception of the receivers. Disable the bands that can experience interference using the web server. See for more information.

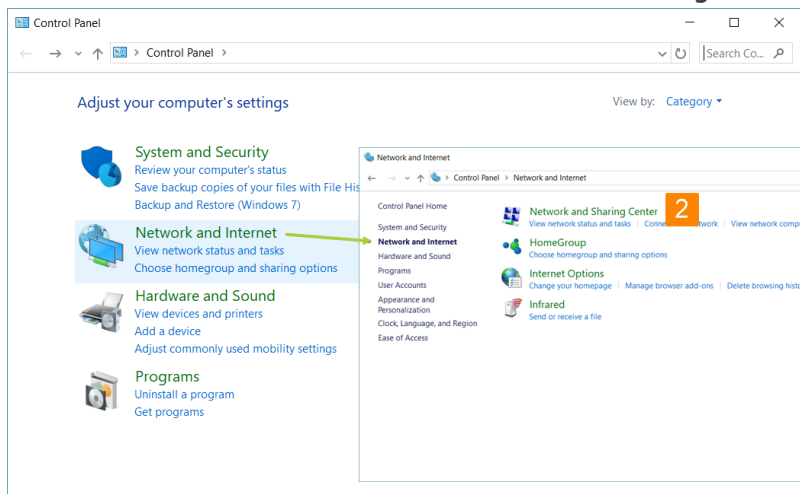
CONFIGURE IP SETTINGS

Before you start using the Lingua IR web server you need to configure your local IP settings to be able to access the web server. Follow the procedure below to configure this.

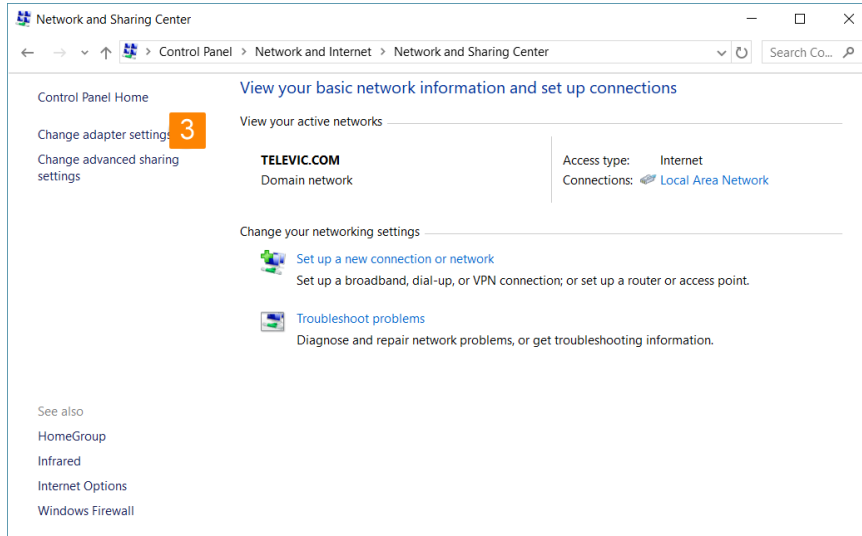
To be able to access the web server your computer needs an IP address and subnet mask that can access the IP address of the engine. The **default IP address** of the transmitter is **192.168.0.140** and of charging case **192.168.0.150**, which means the computer should have an IP address that is within the same subnet, like 192.168.0.200. The subnet mask must be the same for all equipment on the network, being 255.255.255.0.

Change IP Settings In Windows

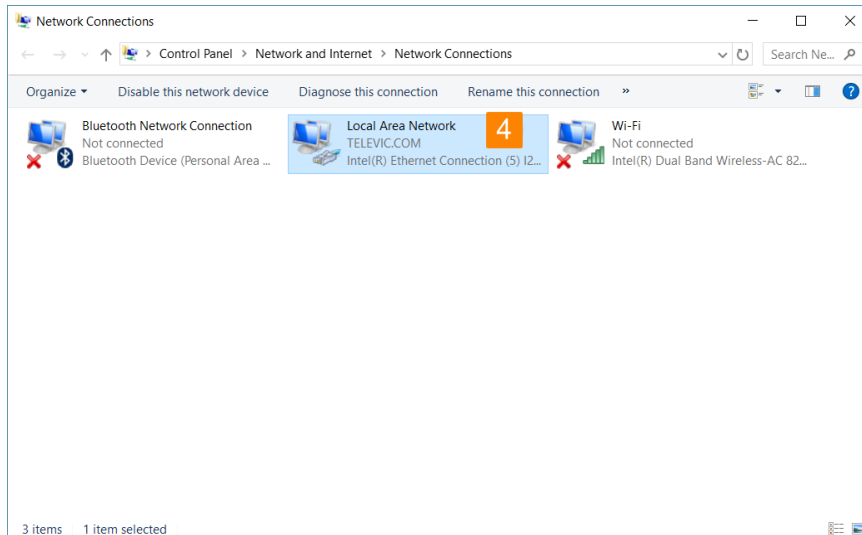
1. Go to **Control panel**.
2. Click **Network and Internet** and then **Network and sharing center**.



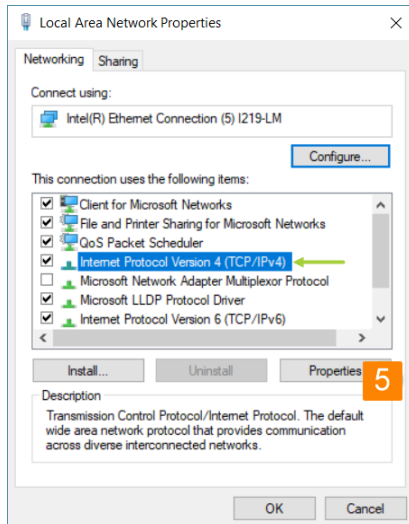
3. Click **Change adapter settings** in the menu on the left.



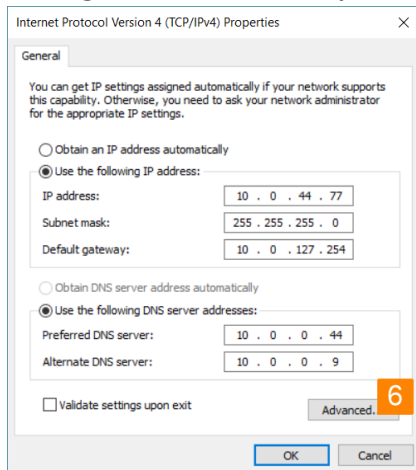
4. Right-click the **Local Area Connection** and select **Properties**.



5. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



6. To assign a fixed IP address to your computer, click **Advanced**.



7. Click **Add** in the IP address pane.
8. Enter an IP address in the range of the transmitter and charging case, for example 192.168.0.26. Fill in 255.255.255.0 as subnet mask.



When you use multiple networks on your computer (for example when your computer is connected to the Internet via WIFI, and it is connected to a central engine using a network cable), do not fill in the default gateway.

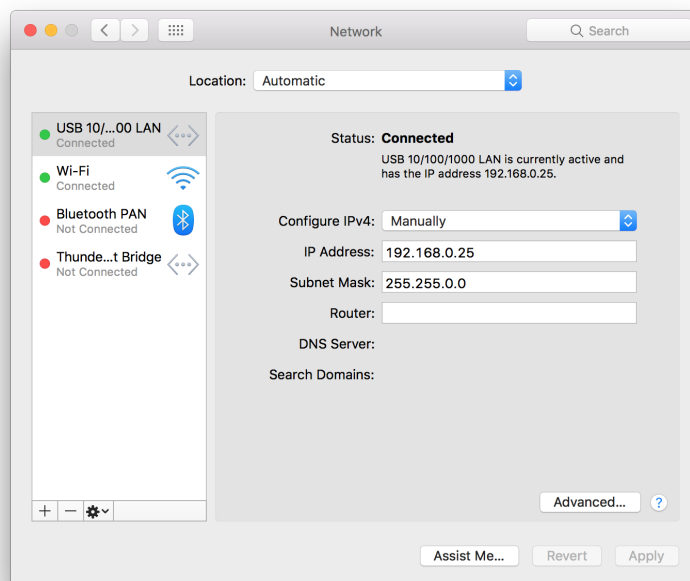
9. Click **OK**. You are now ready to access the Lingua IR system.

Change IP Settings In MacOS

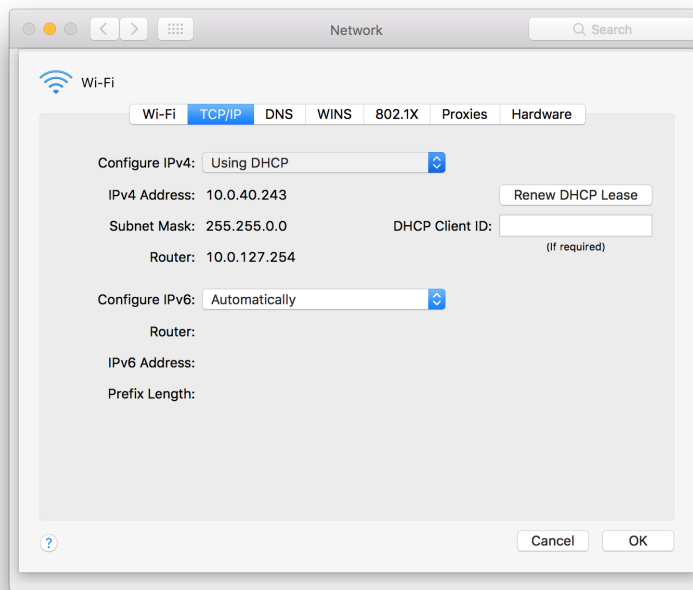
1. Go to the **Apple Menu** and select **System Preferences**.



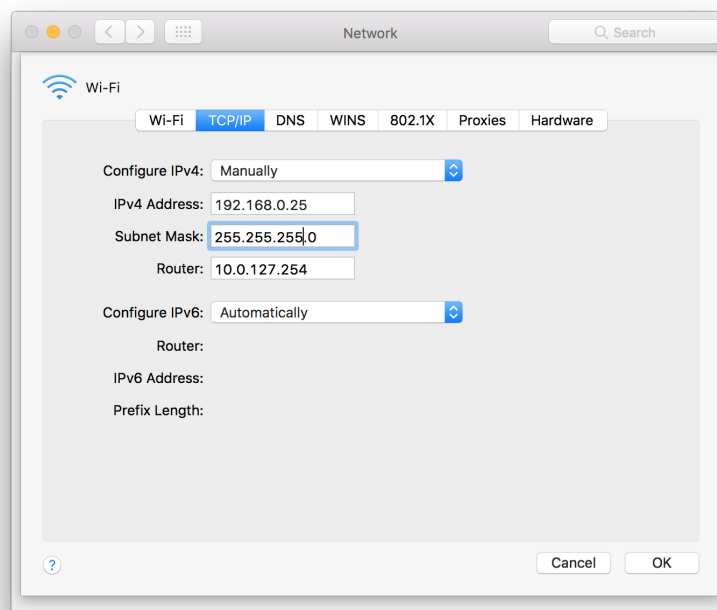
2. Select **Network** from the menu.



3. Click the **Advanced** button.



4. Select **TCP/IP** in the menu on top.
5. Change **Configure IPv4** to **Manually**.



6. Enter an IP address in the range of the engine, for example 192.168.0.25. Fill in 255.255.255.0 as subnet mask.
7. Click **OK**.

CONFIGURE THE TRANSMITTER SETTINGS

Introduction

Lingua IR has an intuitive web server that allows you to configure different transmitter and radiator settings. With the web server you can configure the audio settings, the radiator, the network settings, some monitoring settings, licensing and updates.

The default IP address of the transmitter web server is **192.168.0.140**. To be able to access the web server, configure your network settings as described in "Configure IP settings" on page 63.

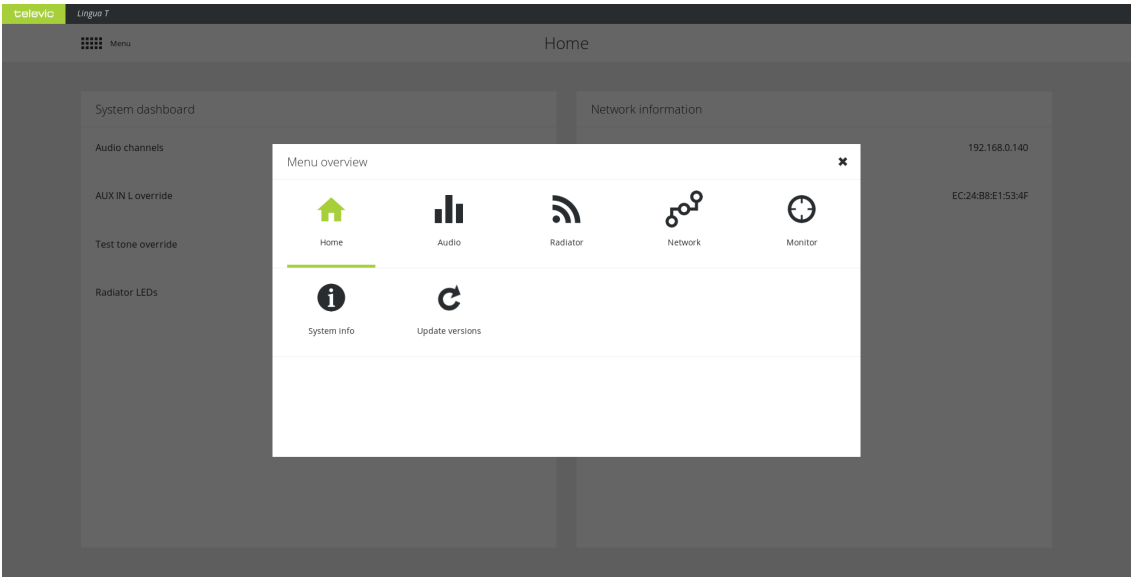


Figure 3-1 The main menu of the Lingua IR transmitter web server

The Home Screen

The Home screen is the landing page of the transmitter. This page shows a summary of the most important parameters, some of which you can adjust here or click the parameter to go to the page where you can configure them. Two group of settings are available: the **System dashboard** settings and the **Network information** settings.

The following system dashboard settings are displayed:

Setting	Description
Audio channels	The amount of configured channels

Setting	Description
AUX IN L override	Select to override the audio on all channels with the audio from the AUX IN L input.
Test tone override	Select to override the audio on all channels with a test tone
Radiator LEDs	Switch the radiator status LEDs on or off

The following network information is displayed:

Setting	Description
IP address	The IP address of the transmitter
MAC address	The MAC address of the computer you use to access the web server

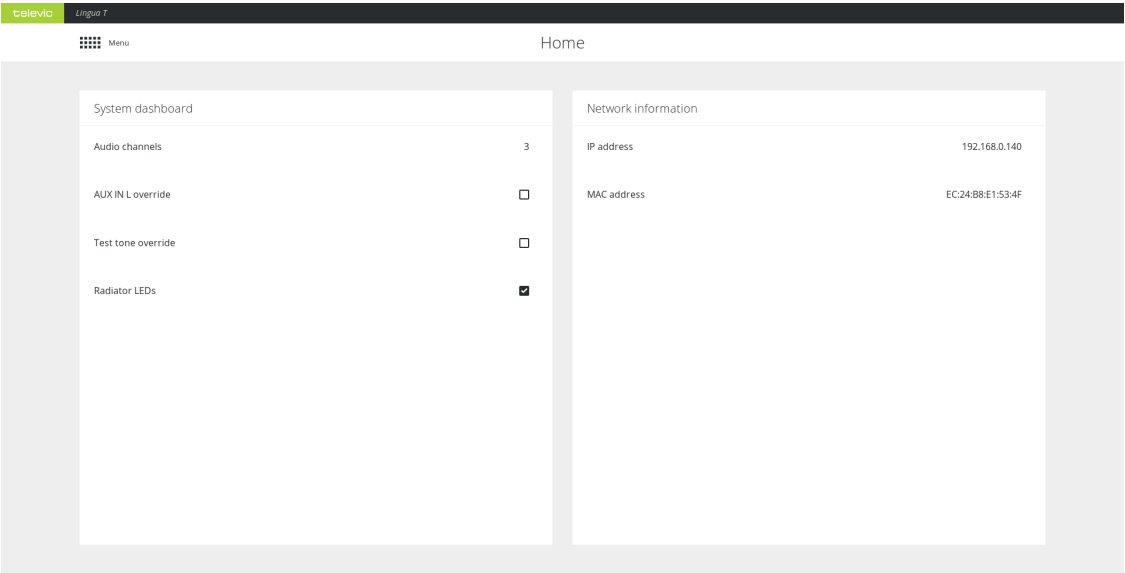


Figure 3-2 The transmitter Home page

CONFIGURE TRANSMITTER AUDIO SETTINGS

Set AUX IN Settings

With the AUX IN settings you can configure the following parameters

Parameter	Description
Override audio with AUX IN L	When you select this option, the AUX IN L audio will replace the audio on all output channels
AUX IN L volume	Set the volume of the AUX IN L audio
AUX IN R volume	Set the volume of the AUX IN R audio

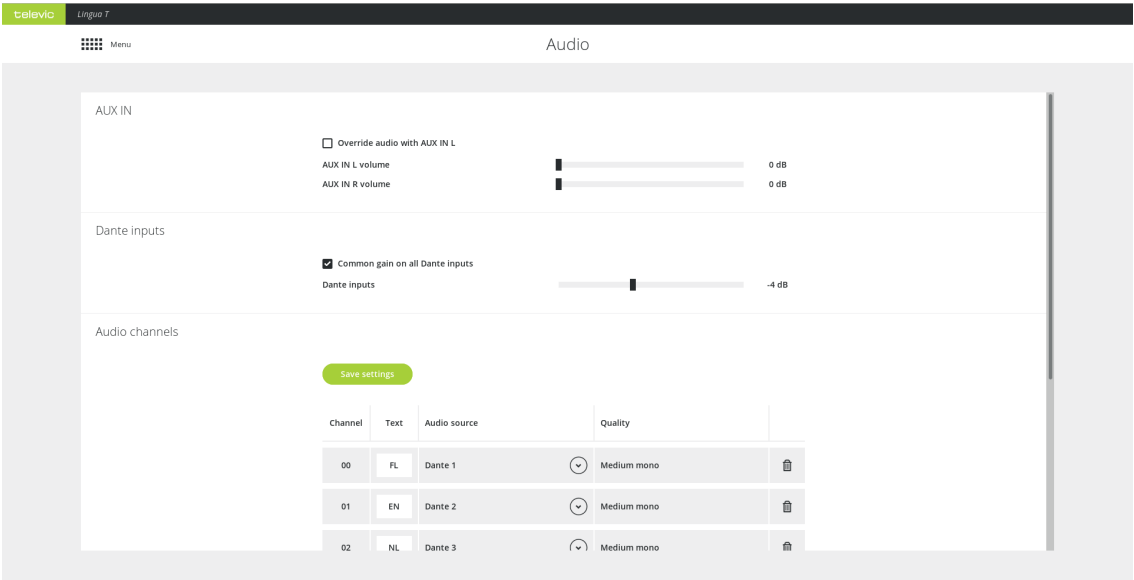


Figure 4-1 Transmitter audio settings (part one)

Configure Dante Input Gain Settings

The Dante inputs section allows you to set the gain of all Dante inputs at once or change the gain of the individual Dante channels. Select **Common gain on all Dante inputs** to use the same gain settings for all channels.

Configure Audio Channels

In the **Audio channels** section you can add or remove audio channels. Per channel you can set the text to be displayed on the receiver as well as which Dante™ channel is routed on that channel. Click **Save settings** to confirm the configuration.

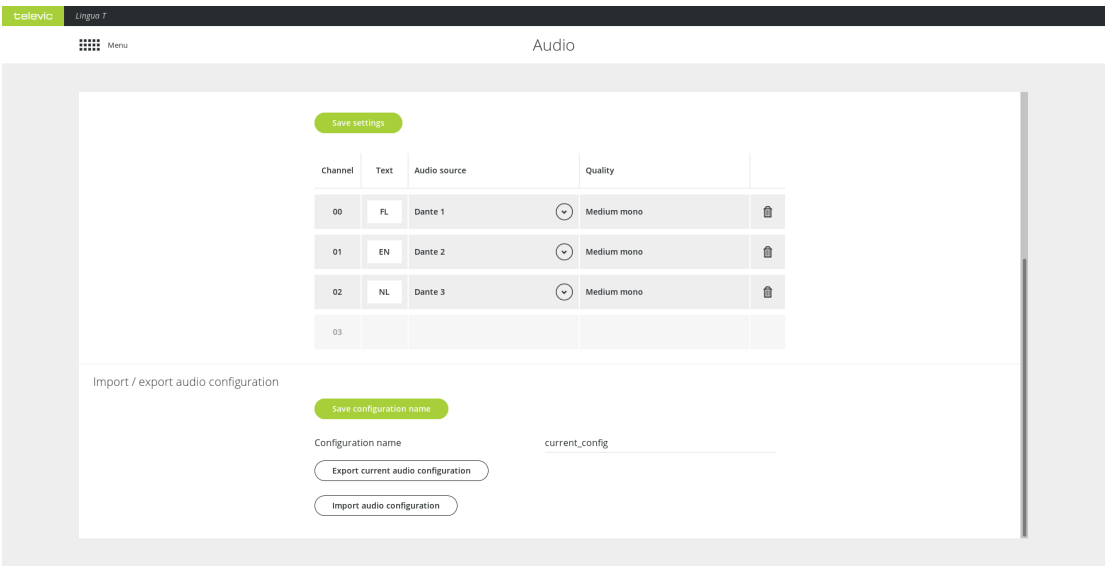


Figure 4-2 Transmitter audio settings (part two)



Beware that you cannot add more channels than specified in your license.

Import / Export Audio Configuration

It is possible to import and export audio configuration settings. Define the **Configuration name** and click **Save configuration name** to confirm. Click **Export current audio configuration** to export the settings or **Import audio configuration** to import settings.

CONFIGURE TRANSMITTER NETWORK SETTINGS

Network Information

On the **Network** page you can configure the following parameters:

Parameter	Description
Hostname	The name you want to give to the Lingua IR system
MAC address	The MAC address of the transmitter
IP address	The IP address to access the transmitter, the default value is 192.168.0.140 . When you change the IP address of the transmitter, the page automatically reloads using the new IP address.
Subnet mask	Default subnet is 255.255.255.0
Gateway	The access point to another network.

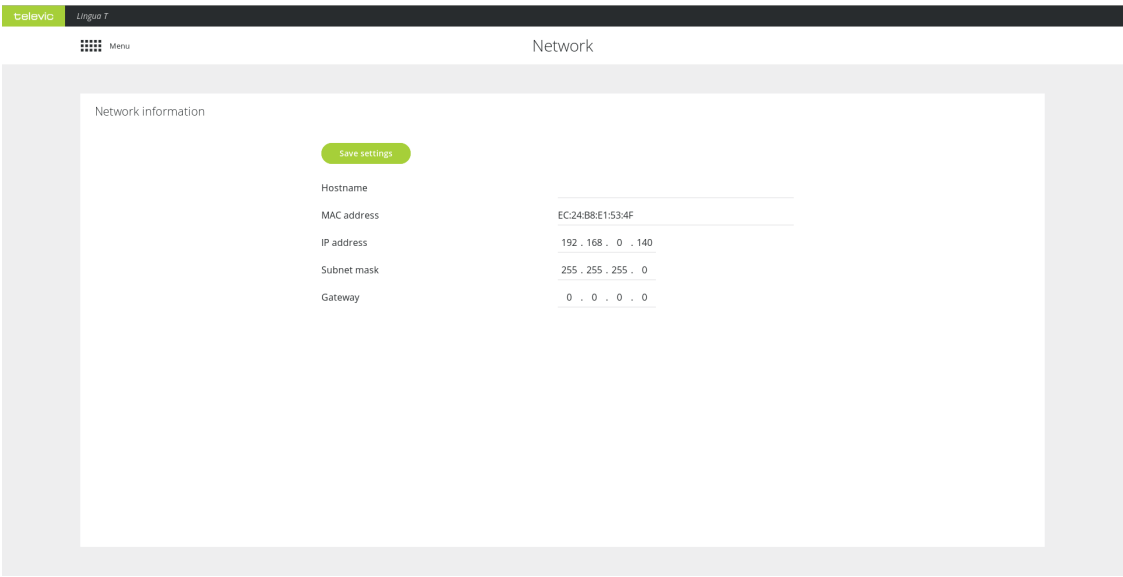


Figure 5-1 Network information page

CONFIGURE RADIATOR SETTINGS

Radiator Functionality

On the transmitter web server you can configure different radiator settings. You can only access and configure the radiator through the transmitter. On the radiator page you can choose to disable the radiator status LEDs. In order not to distract, the status LEDs of the radiators can be switched during a meeting.

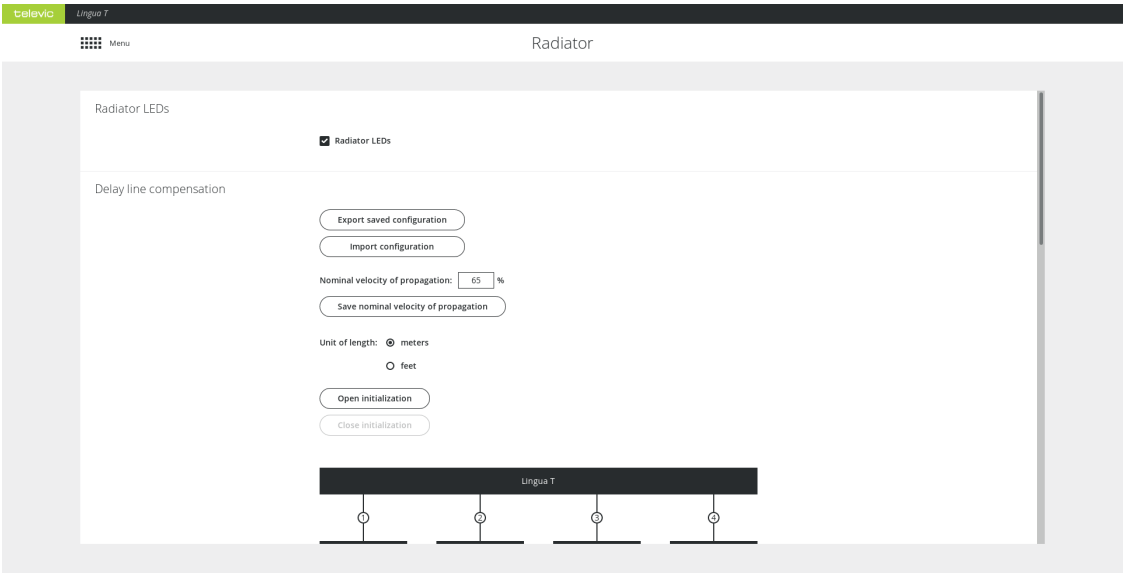
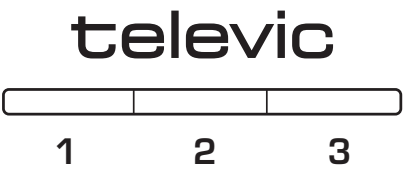



Figure 6-1 The Radiator page

You can also select the information the LEDs display. This is convenient when setting up the system. To change the LED indication mode click **Open initialization**. The following options are available:



Radiator LED mode	Description
Normal mode	When initialization is open the LED light will be blue indicating initialization. Normal mode use the LEDs as described in "Lingua Radiator" on page 1.

Radiator LED mode	Description
Radiator identification	<p>Shows the position of the radiator.</p> <p>> LED 1 shows the port number of the transmitter.</p> <p>> LED 2 and 3 show the position of the radiator on that branch.</p> <p> LED 2 shows multiples of ten and LED 3 shows the number zero to nine.</p>
Delay line compensation value	<p>> LED 2 and 3 show the delay line compensation value of the radiator.</p> <p>> LED 2 shows multiples of ten and LED 3 shows the number zero to nine.</p>
Power level	<p>> LED 3 shows the power level of the radiator. Zero means power off, one is reduced power, two is normal power and three is boost power. For more information on power levels see "Lingua Radiator" on page 1.</p>
Current radiator temperature	<p>> LED 2 and 3 show the current temperature of the radiator.</p> <p>> LED 2 shows multiples of ten and LED 3 shows the number zero to nine.</p>

Delay Line Compensation

When two or more radiators have overlapping footprints then the signal of these radiators can cancel each other out in the overlapping areas. This is the case when the length of the cable differs between the different radiators, due to the delay of the signal (●) over the cable. This can lead to **black spots**, where you are unable to receive the infrared signal of the radiators using the receivers.

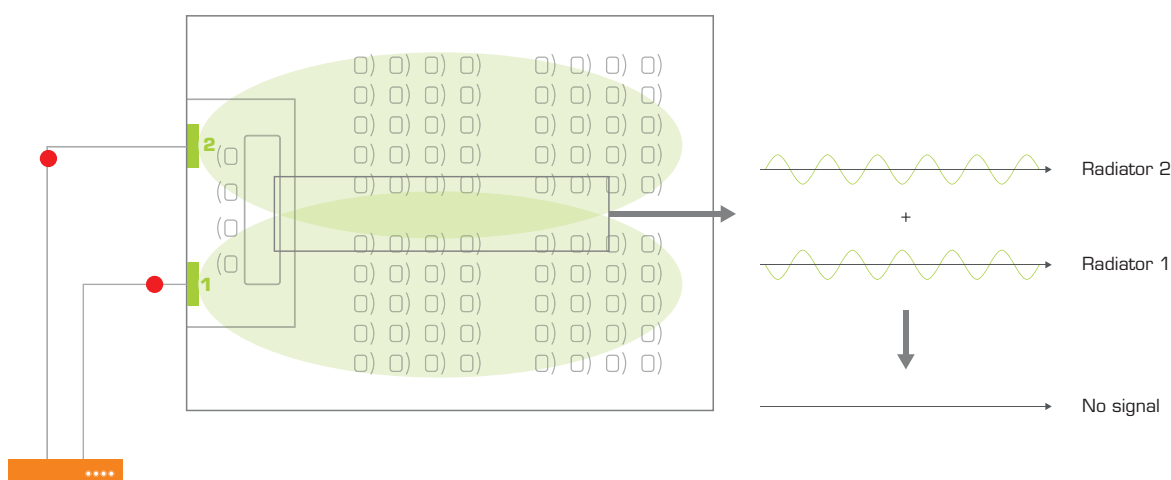


Figure 6-2 *The relation between the delay of a signal in the cable and the signal picked up by the receiver. When the infrared signals of the radiators are asynchronous, they cancel each other out. As a result the receiver will have no audio.*

To prevent this effect you need to compensate for this delay. This means that the radiators need to send their signal at the same time of that of the slowest radiator, delaying their signal until the slowest radiator receives the data. The slowest radiator is the one which has the longest cable between the transmitter and the radiator.

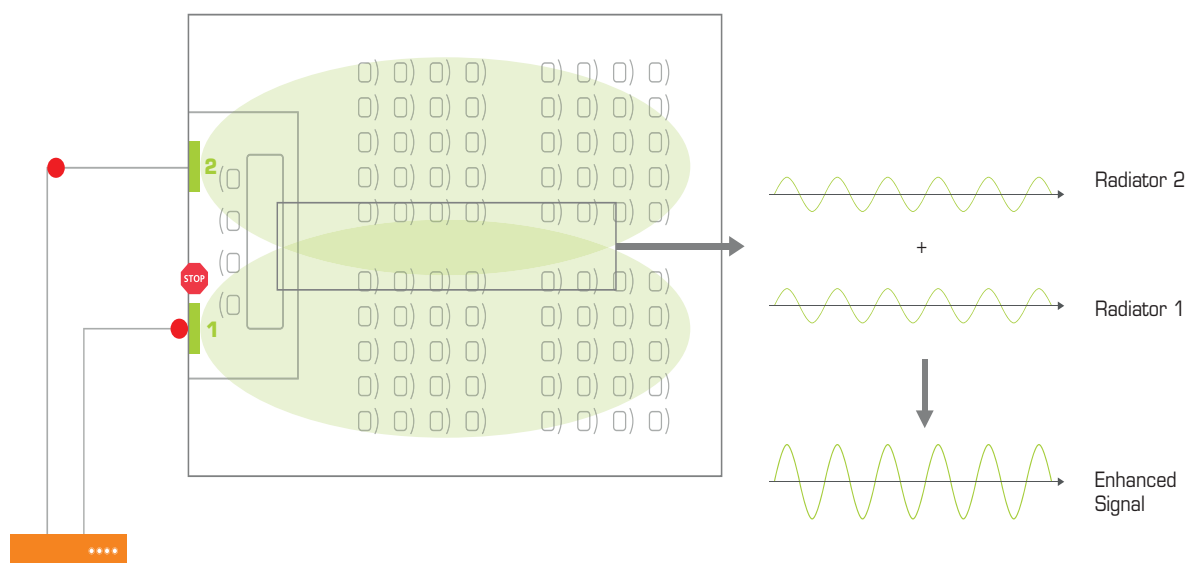


Figure 6-3 *After delay line compensation the radiator halts the transmission of its infrared signal until the slowest radiator also receives the signal.*

The Lingua IR system has an automatic delay line compensation mechanism where the software measures the delay based on pulses it sends over the cable. Based on the results it will specify the delay as a multiple of 25 ns (for 71.98.0223) or 12,5 ns (71.98.0220). The web server will also give a visual representation of all radiators and their distance to the transmitter.

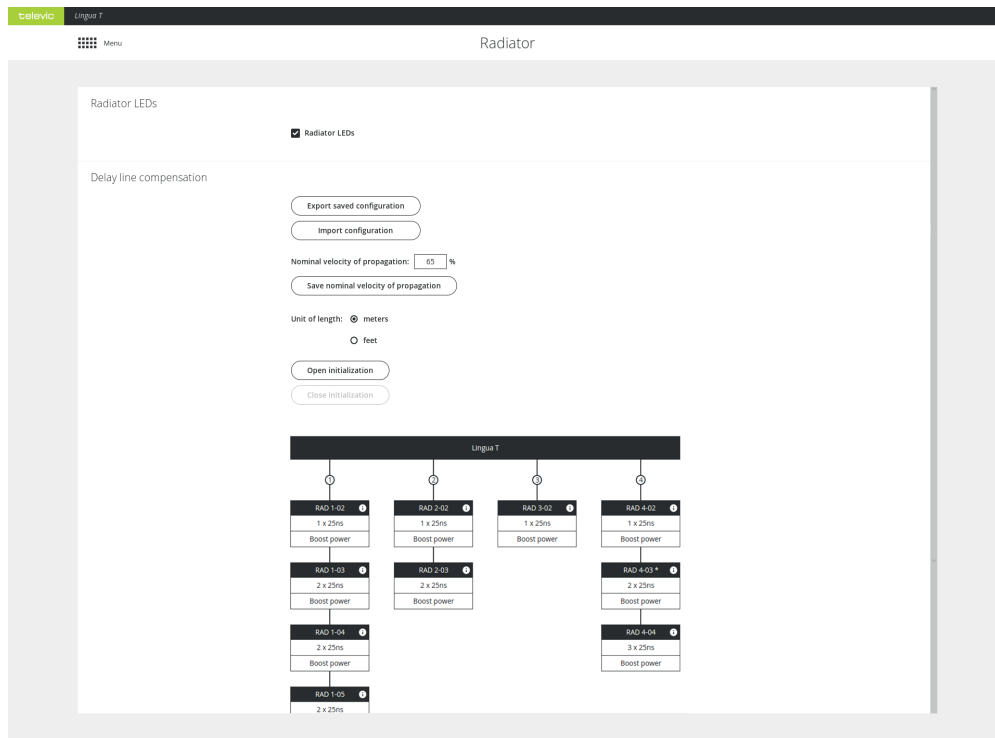


Figure 6-4 Automatic delay line compensation calibration using the Lingua IR web server

START AUTOMATIC DELAY LINE CALIBRATION

1. Define the **Nominal velocity of propagation**, this is the speed at which data signals travel down the cable expressed as a percentage of the speed of light in a vacuum. This value should be indicated on the datasheet of the cables you are using. A typical value for this type of cable is 65%. If no detailed value can be found it is save to use this value.
2. Click **Save nominal velocity of propagation**.
3. Click **Open initialization** to configure the delay line compensation.
4. To start the calibration click **Start automatic calibration**. A progress icon will show that the calibration process is ongoing. Select the check box below the port number to enable this port.
5. Once calibration is ready the web server will show a visual representation of the setup and its transferred values. Older versions of the radiator are indicated by an asterisk (71.98.0223).
6. Click **Close initialization**.
7. Test the audio reception in the room using the Lingua IR receiver and check whether there is full coverage.

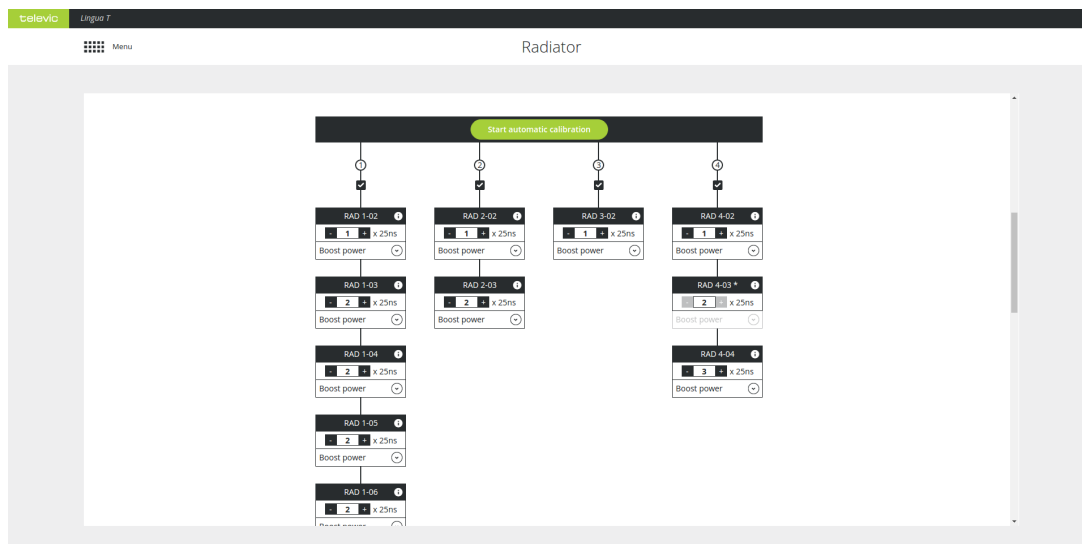


Figure 6-5 How to start automatic delay line compensation calibration using the Lingua IR web server

DELAY LINE COMPENSATION CALIBRATION RESULTS

When the calibration is ready, you get an overview of all radiators per transmitter port. Per radiator you can adjust the delay line compensation as well as the power level. However, when you have a previous version of the radiator (71.98.0223) it is not possible to change the power level (it is greyed out). These radiators are indicated by an asterisk *.

Select Infrared Bands

When you use infrared, sometimes interference from other systems using the same frequency can occur. In these cases you can disable bands.

On the Radiator page of the web server go to **Disable occupied infrared bands**, where you can disable infrared bands to avoid interference from other systems that use the same infrared band such as IR wireless microphones. Select those bands you want to disable and select **Save settings**.

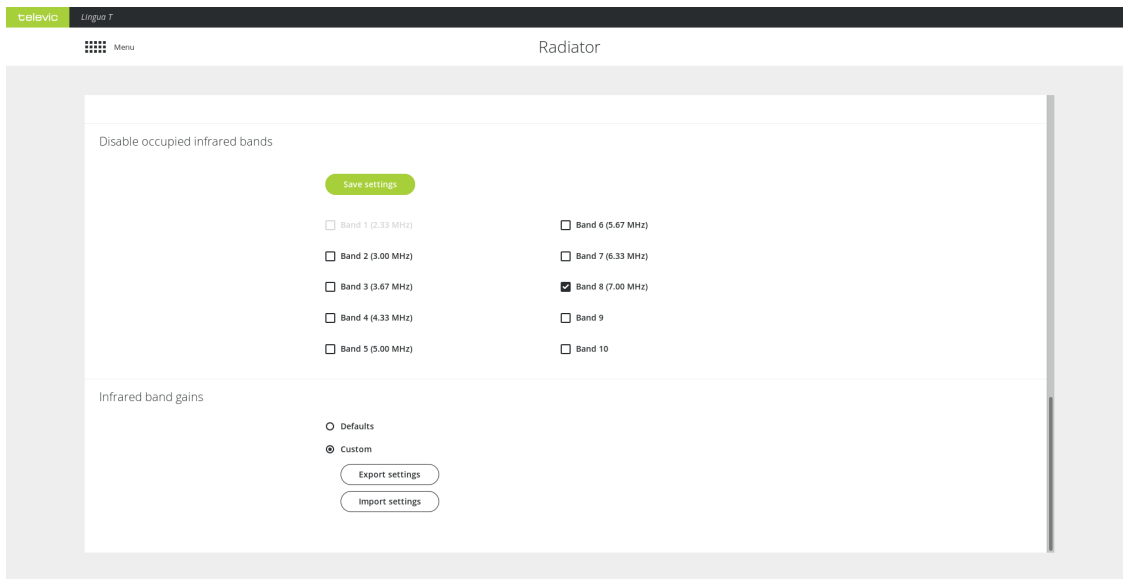


Figure 6-6 Configure infrared bands using the Lingua IR web server

Infrared Band Gains

With this setting you can configure the gain of individual infrared bands (see figure Figure 6-6). There are two options available:

- **Default:** flat gain configuration, meaning no gains are set on the radiated bands.
- **Custom:** when you select custom and do not upload a file, the radiator uses optimized radiated band gains. The radiator has built-in values optimized explicitly for optimal performance of an end-to-end Televic system (compensating for frequency response characteristics). In case of high channel counts (>12 audio channels), this will ensure that equal reception for all audio channels.

When your system contains third-party equipment, or you want to finetune the infrared band gains, you can upload a settings file containing the desired band gain values.



The settings file to define the custom band gain should have the extension **.tir_bc**. You can export the current gain settings and use these as reference to create a custom file.



When you upload a settings file with custom values, you do not return to the Televic optimized settings when you remove these values. To obtain these built-in settings, you need to upload a settings file containing these Televic optimized band gain values.

TEST THE LINGUA IR SYSTEM

Configure The Test Tone

When you set up the Lingua IR system, you need to test the audio inside the room. If during testing there is no audio is available, you can use the test tone to check whether the receivers have audio. Select **Override audio with test tone** on the **Monitor** page.

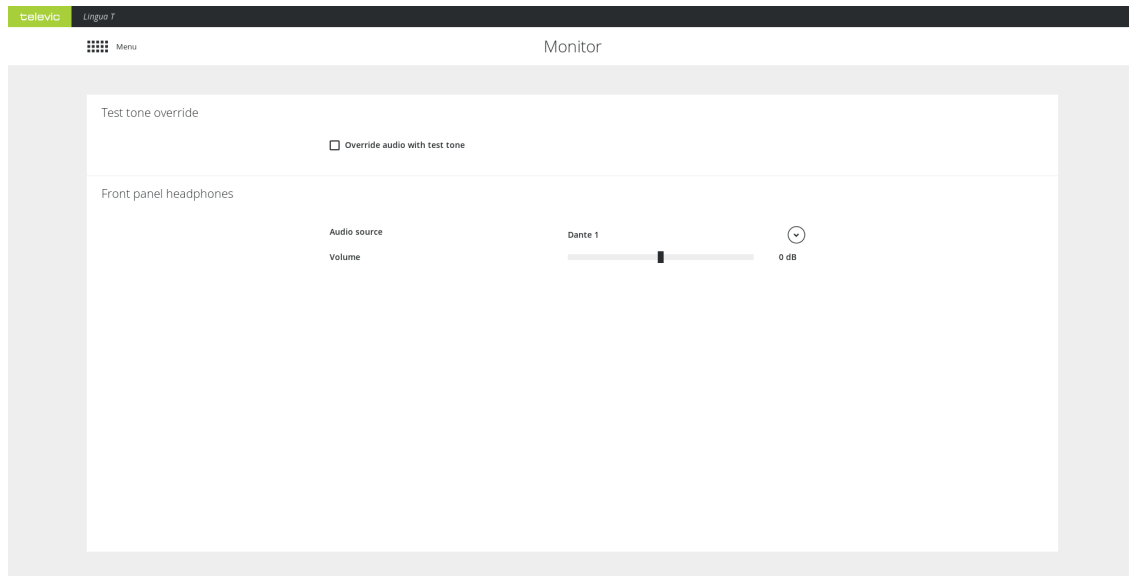


Figure 7-1 The Monitor page

Configure The Front Panel Headphones

On the transmitter it is possible to check the input of every Dante™ channel and the AUX input. To hear the input plug a headphone into the front of the transmitter. On the **Monitor** page of the transmitter you can select the Dante™ channel you want to listen to by opening the dropdown next to **Audio source**. Change the volume of the channel by adjusting the **Volume** slider.

GENERAL TRANSMITTER SETTINGS

On the **System info** page you can find different general transmitter settings such as the MAC address, as well as the software and hardware version of the transmitter. This is also the location where you can manage the transmitter licenses and import and export the configurations of all settings of the transmitter.

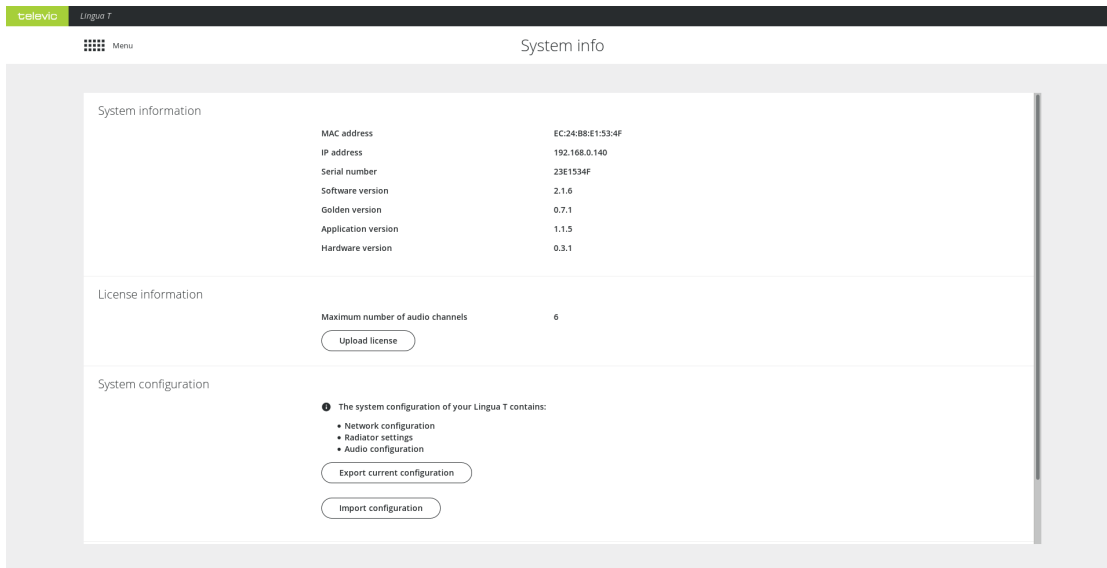


Figure 8-1 The System info page

View System Information

Under **System information** you can find all transmitter specifications such as the MAC address, the IP address and the serial number of the transmitter. Next to this information you can also see which versions are running on the transmitter.

Manage Transmitter Licenses

There are two different licenses available for the Lingua IR transmitter, which license you need depends on the amount of channels you require. There is a license for six, twelve or forty channels. You can upgrade the license whenever you require additional channels. Follow the procedure described below to acquire a new license. Once you have received the license, click **Upload license** on the **System info** page.

HOW OBTAIN A NEW LICENSE

When you want to upgrade your license perform the following procedure:

1. Go to <https://www.televic-conference.com/en/software-license-request> , the website describes where you can find all relevant information needed to request a license.

The screenshot shows a web page titled "Software License Request". At the top, there is a small text block: "Use the form below to request a software license for you Televic product. Before you fill out the form, make sure you have the MAC Address & Serial Numbers ready." To the right of this text is a link: "How to find your Mac Address and Serial Number." Below this is a large green box containing the "Software License Request Form". The form has the following fields: "Product" (a dropdown menu with "Lingua Transmitter" selected), "Serial Number" (a text input field), "MAC Address" (a text input field), "Your Name" (a text input field), "Your Company" (a text input field), "Your Email Address" (a text input field), "Project Name" (a text input field), and "Your Country" (a dropdown menu with "- None -" selected).

2. Fill in the request form with the product details and your contact information.
3. Click **Submit**.
4. You will receive an email with the license file on the email address specified in the form.

Manage System Configurations

When you have similar rooms with similar setups you can export the complete configuration of one room and upload it to the infrared system of the other room. The system configuration file contains the network settings, the radiator settings and the audio settings.

Click **Export current configuration** to export the configuration. To upload the configuration click **Import configuration**.

View System Logging

When you have some technical problems with your system it can help to view the logging of the system. To download the log files click **Download** under **Download log archive** on the **System info** page.



It may take some time to download the log files because the system first needs to retrieve all data and then compress them to a TAR file.

The most recent log file is it the one with the number 00.

UPDATE THE LINGUA IR TRANSMITTER AND RADIATOR

When there is a new version available for the transmitter or radiator, you can download it from the Televic Conference website (<https://www.televic-conference.com/en/lingua-ir-software-updates>). Then click **Load file** on the Update page and select the file, then click **Start update**. During update you can monitor the progress on the page.

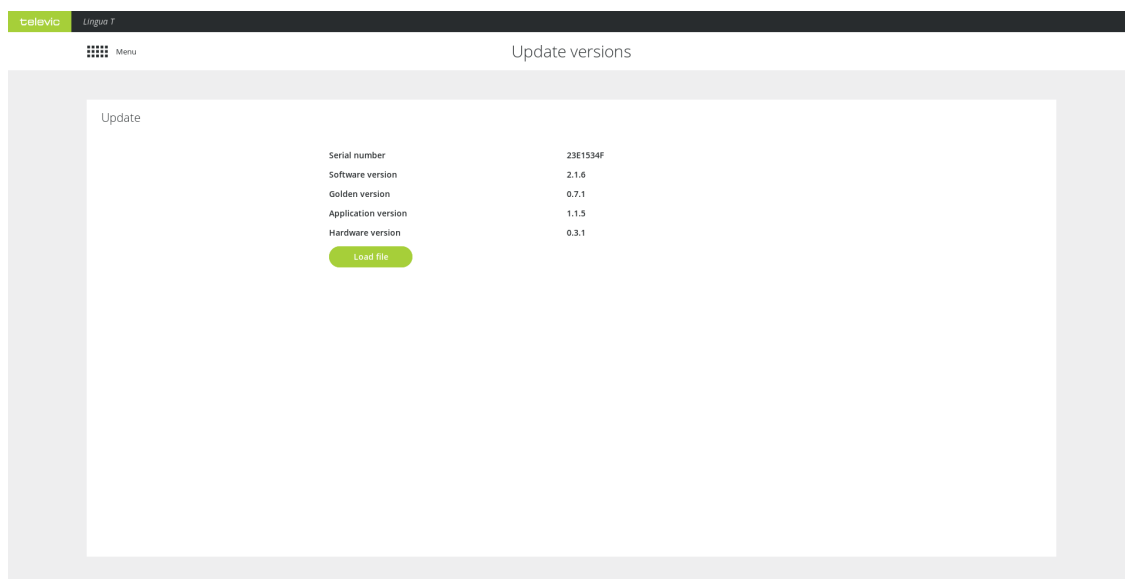


Figure 9-1 The Update page

On the update page you can find all versions related to the transmitter. The software version is the version for the web server, the fallback version is the firmware fallback version and the application version is the firmware version of the transmitter.



Perform a power cycle after the update to complete the update process.

CONFIGURE THE CHARGING CASE SETTINGS

Introduction

Lingua IR has an intuitive web server that allows you to configure and monitor different charging cases and receiver settings. With the web server you can configure the network settings, update the charging case and the receivers and monitor the receivers. You can easily navigate to the different pages using the main menu.

The default IP address of the transmitter web server is **192.168.0.150**. To be able to access the web server, configure your network settings as described in "Configure IP settings" on page 63.

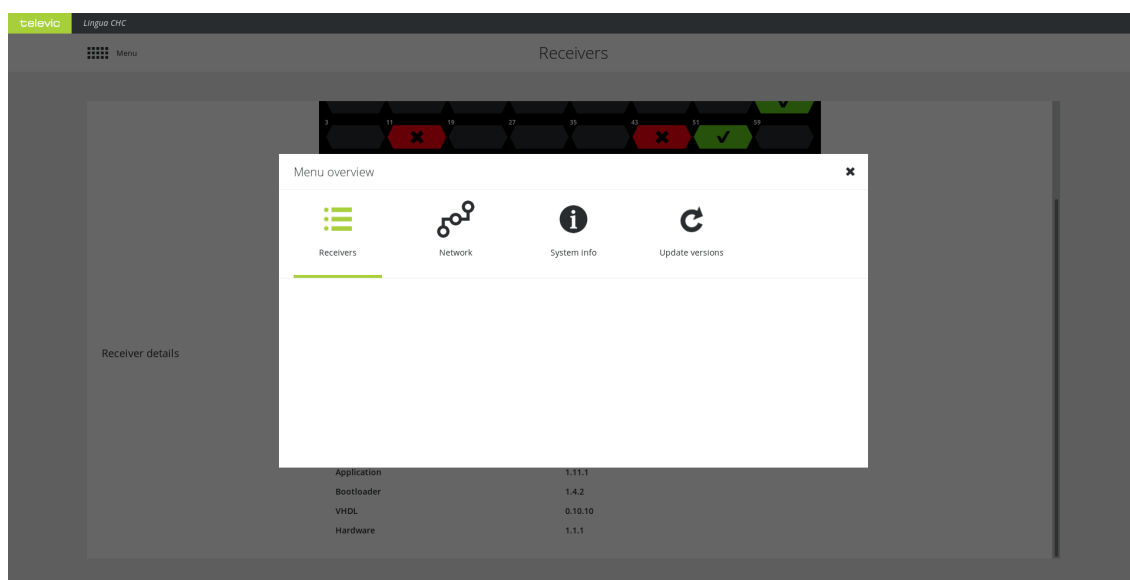


Figure 10-1 The main menu of the Lingua IR charging case web server



When you have more than one charging case, they will all have the same IP address by default. You need to change the IP address of all charging cases individually to be able to access them at the same time.

CONFIGURE CHARGING CASE NETWORK SETTINGS

Network Information

On the **Network** page you can configure the following parameters:

Parameter	Description
Hostname	The name you want to give to the Lingua IR system
MAC address	The MAC address of the charging case
IP address	The IP address to access the transmitter, the default value is 192.168.0.150 . When you change the IP address of the charging case, the page automatically reloads using the new IP address.
Subnet mask	Default subnet is 255.255.255.0
Gateway	The access point to another network.

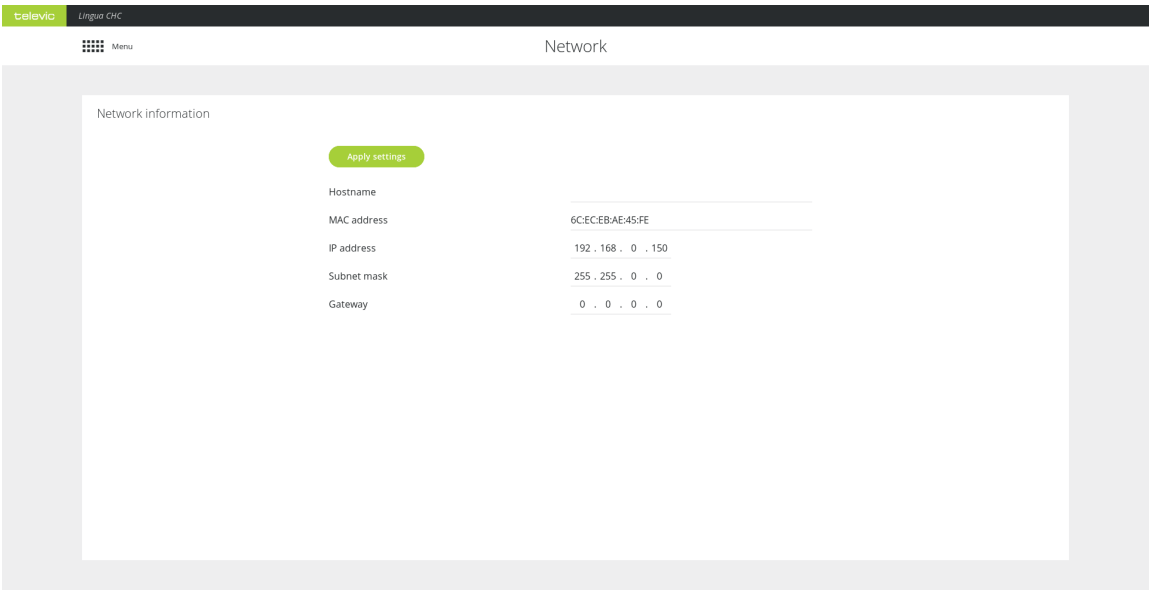


Figure 11-1 The Network page

CONFIGURE THE LINGUA IR RECEIVERS

Monitor Receivers

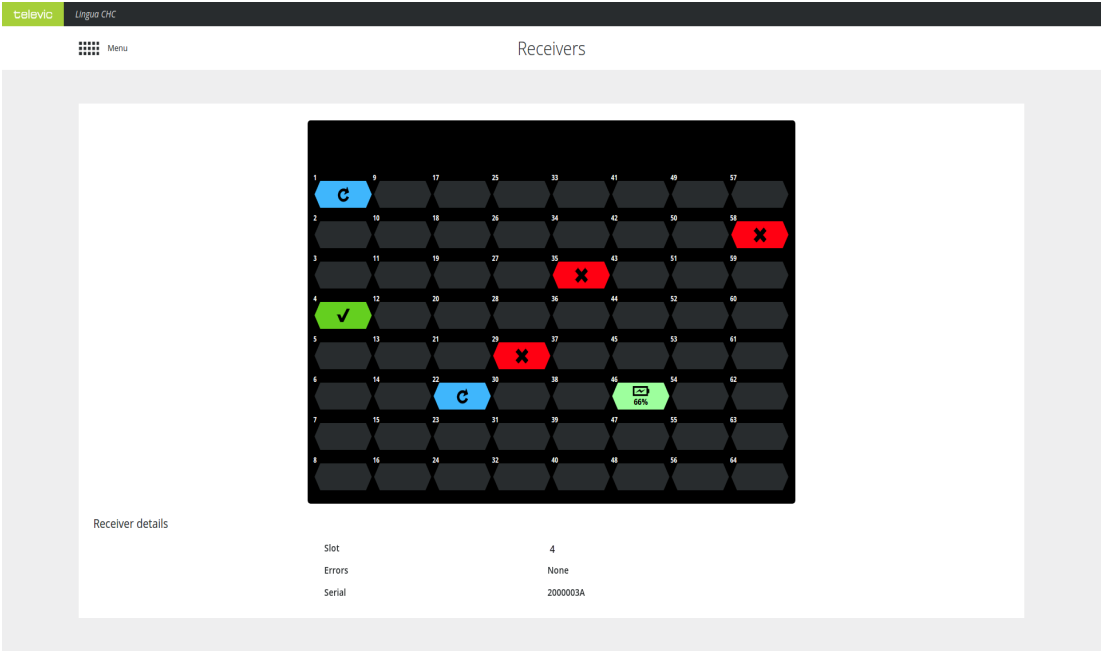


Figure 12-1 The Receiver page of the web server

On the Receiver page you get an overview of the receivers in the charging case. Here you can see on which positions receivers are charging. Different colors indicate different states of the receivers:

Color	Meaning
Green	Receiver fully charged and no errors
Light green	The receiver is updating
Red	Error with receiver. Depending on the error different actions are possible.
Blue	The receiver is updating

Below the table you can find additional receiver information when you click on a receiver in the overview image.

Parameter	Description
Slot	The position in the charging case were the receiver is located

Parameter	Description
Errors	Errors on the receiver
Serial	Serial number of the receiver
Battery charge	Battery percentage of the receiver
Maximum channels	Amount of licensed channels on the receiver
Application	Firmware version
Bootloader	Bootloader version
VHDL	VHDL version
Hardware	Hardware version

Update Receivers

To update the receivers download the tuf file from the Televic Conference website (<https://www.televic-conference.com/en/lingua-ir-software-updates>). Open the file and start the upload on the **Update** page. When the upload is complete, you can start the update process.

On the receiver page you can see the progress of the update process. Updating receivers are indicated in blue. When the receiver update is done click **Finish update**.



When there is a communication error on the receiver then that receiver will not update.

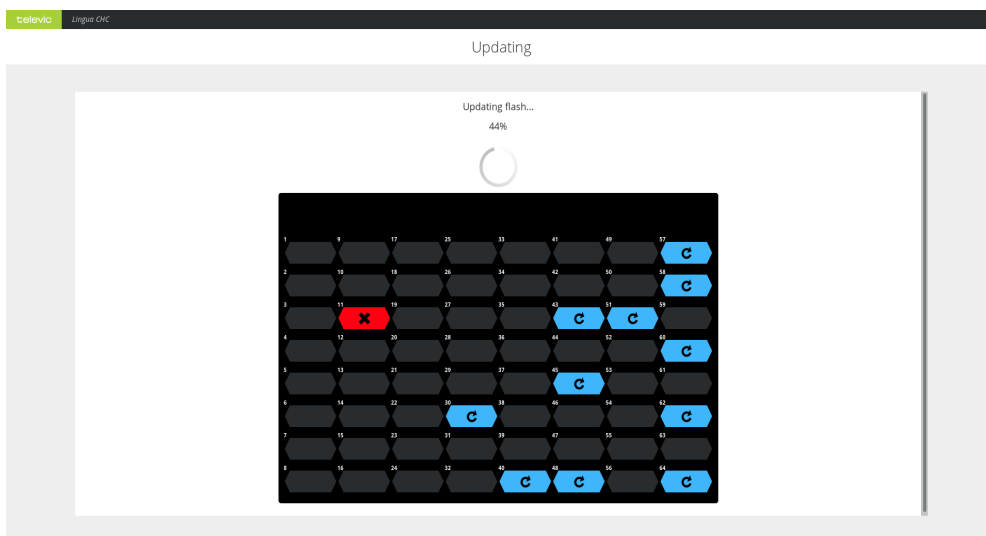


Figure 12-2 The charging case view when the receivers are updating

CHARGING CASE SYSTEM INFORMATION

The system info page shows the following information:

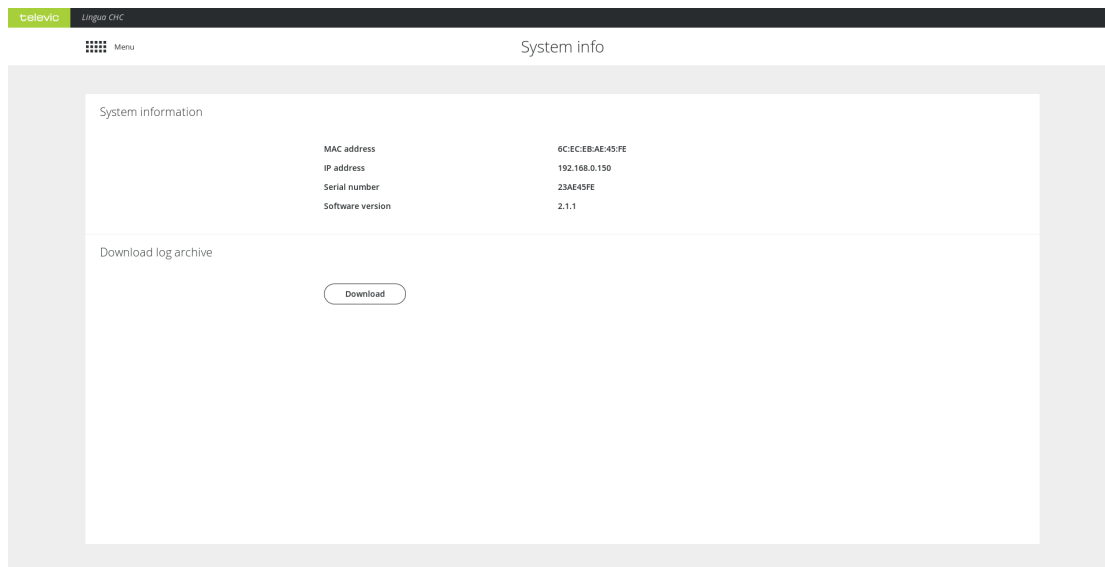


Figure 13-1 The System info page of the web server

SYSTEM INFORMATION

Parameter	Description
MAC address	The MAC address of the charging case
IP address	The IP address of the charging case (192.168.150) is the default address)
Serial number	The serial number of the charging case
Software version	The version of the web server

DOWNLOAD LOG ARCHIVE

For troubleshooting purposes it is interesting to have the log files containing all events. Click **Download** for all these log files.



It may take some time to download the log files because the system first needs to retrieve all data and then compress them to a TAR file. The latest log files is the one with the number 00.

UPDATE THE CHARGING CASE AND RECEIVER

When there is a new version available for the charging case or receivers, you can download these from the Televic Conference website (<https://www.televic-conference.com/en/lingua-ir-software-updates>). Then click **Load file** on the Update page and select the file, then click **Start update**. During update you can monitor the progress on the Update page.

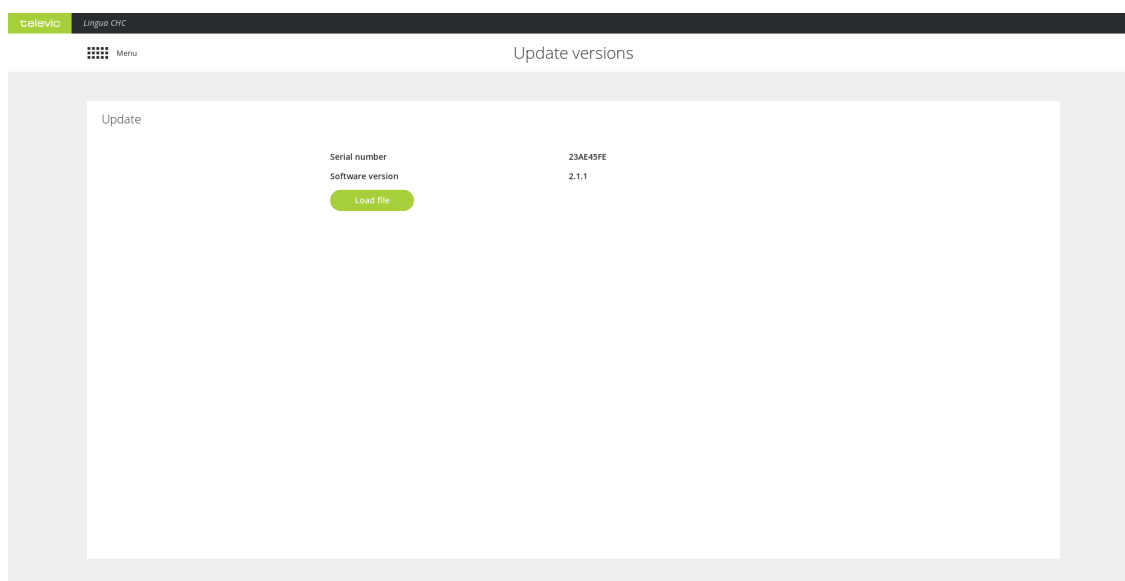


Figure 14-1 The Update page

On the update page you can find all versions related to the charging case. The software version is the version for the web server.

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