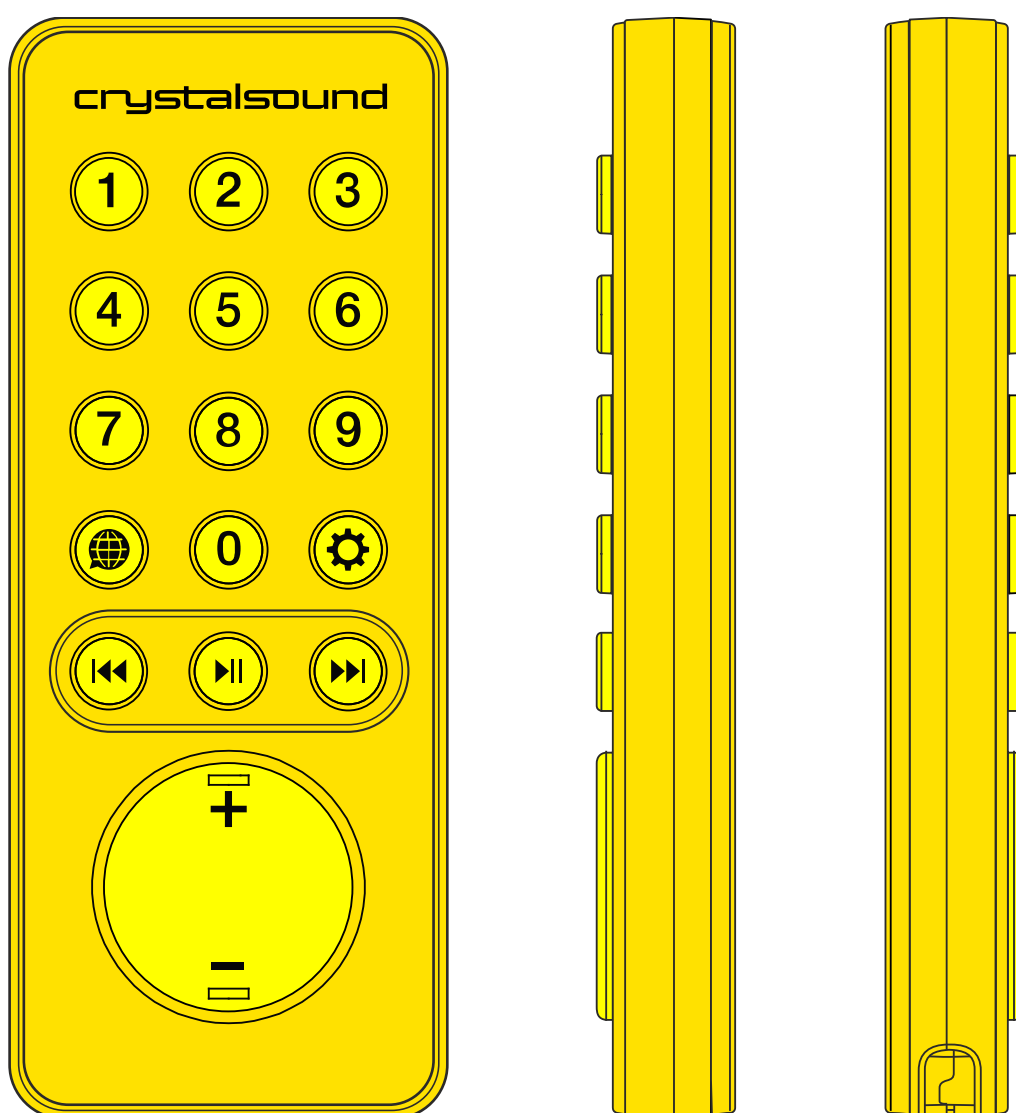


crystalsound DRA-210

Audioguide



Technical data sheet.
User manual

Table of contents

1. Safety instructions	2
2. Description	2
3. Kit	3
4. Features of DRA-210 audioguide	4
4.1. Characteristics	4
4.2. Dimensions	5
4.3. Additional parameters	5
4.4. Storage	5
4.5. Connectors and controls	6
4.6. Light indication	8
5. Recording content	9
5.1. Inserting and removing the memory card from the mp3 downloader	9
5.2. Preparing the file system	10
5.3. AudioConverter CrystalSound	11
6. Downloading mp3 files	15
6.1. Wireless downloading of mp3 files	15
6.2. File upload characteristics	16
6.3. Transferring Content to the CS.Leaderguide App	17
6.4. Device synchronization	18
7. Operation mode	18
7.1. Multispeaker mode	19
7.2. Bluetooth tags	20
8. Apps	20
8.1. CS.Tags - customising tags	20
8.2. Settings the tags for synchronised audio broadcasting from monitors	22
9. CS.Counter	24
10. CS.Leaderguide	25
11. Troubleshooting	28
12. Contacts	30
13. Warranty and service life	30
14. Useful links	31

1. Safety instructions

Read the user manual carefully and pay attention to all safety warnings.

Follow the recommendations in the manual when setting up and synchronising the devices.

- Switch off the device in places with appropriate signs to avoid interference.
- Do not install the equipment near heat sources such as radiators, electric heaters, cookers, etc.
- Repairs should only be carried out by CrystalSound specialists.
- To prevent hearing damage, avoid listening at high volume.
- Listening to music at high volume for long periods of time can cause temporary or permanent hearing loss.
- Clean the devices only with a dry cloth.

WARNING!

Do not use ammonia, petroleum solvents or abrasive cleaners to clean the devices.

2. Description

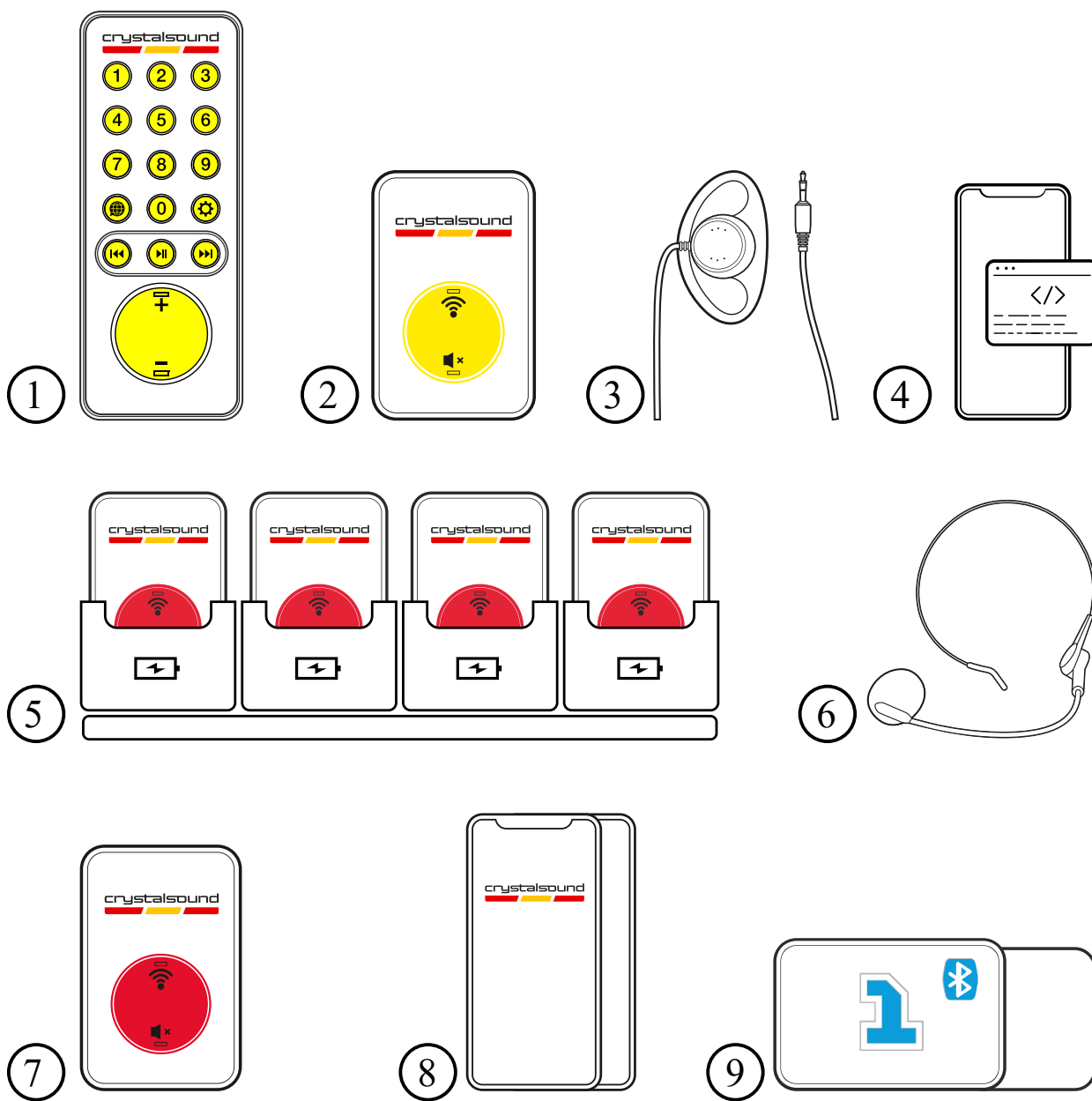
The user manual provides all the information you need to set up, operate and maintain your DRA-210 audioguide. Dimensions, specifications and images in the manual are subject to change without notice.

The DRA-210 audioguide is a wide broadcast radio communication device that provides audio accompaniment to tours. The audioguide can play pre-recorded content and receive guide speech. The guide will require a transmitter with a microphone.

There are several ways to play back content:

- By selecting a track number on the device keyboard;
- CS.Leaderguide mobile app;
- Automatically, using Bluetooth tags.

3. Kit



- 1. Audioguide (receiver)
- 2. Downloader of mp3 files
- 3. Reusable earphone
- 4. Software
- 5. Charging station
- 6. Neck microphone (optional)
- 7. Transmitter (optional)
- 8. Smartphone (optional)
- 9. Bluetooth tag (optional)

4. Features of DRA-210 audioguide

- Control of group tours by phone or tablet, with simultaneous playback of pre-recorded tracks for all listeners;
- Control of self-guided tours using the audioguide buttons;
- Tour centre with automatic launching of files as you move through the exhibition;
- Change the language of the files at the touch of a button on the audioguide;
- Inbuilt memory capacity of up to 400 hours of audio files;
- Signal reception range from the transmitter up to 150 m;
- Signal reception range from Bluetooth tag up to 10 m;
- Intuitively simple operation.

The DRA-210 system operates via Bluetooth wireless communication, which, combined with low radiation power, allows the audioguide to be operated without authorisation. The device enclosures provide for custom branding. Branding includes design development and imprinting of images on the devices.

4.1. Characteristics

- **Output power of the devices:** 10 mW;
- **Power supply voltage:** 2.6 - 4.1 V;
- **Receiver/transmitter current consumption:**
 - Audioguide ~ 27 mA;
 - Multispeaker ~ 15 mA;
 - HD receiver ~ 15 mA;
 - Power efficiency ~ 0.25 mA;
- **Continuous operation time:**
 - 40 hours in audioguide mode;
 - 150 hours in radioguide mode;
 - 60 hours in multispeaker mode;
 - 60 hours in HD reception mode;
 - The energy efficiency is about 3600 hours (150 days);
- **Full charge time of receiver batteries:** 3 h;
- **Full charge time of transmitter batteries:** 2.5 h;
- **Estimated battery life:** up to 100 days;
- **Inbuilt lithium receiver battery:** 1200 mAh;
- **Inbuilt lithium transmitter battery:** 920 mAh;
- **Power supply of charging case/station:** from 220-240 V mains; 50 Hz;
- **Memory card:** Kingston Canvas Select Plus UHS-I U1 32 GB;
- **Operating temperature range:** -10°C to +45°C;
- **Plug types:**
 - one earphone - two-pin plug with two TS (mono) contacts;
 - two earphones - three-pin plug with three TRS contacts (stereo);
 - headset with microphone - four-pin plug with four TRRS contacts.

4.2. Dimensions

- **Audioguide dimensions:** 112 x 45 x 15 mm;
- **Transmitter dimensions:** 68 x 45 x 15 mm;
- **Weight with batteries:**
 - Transmitter 43 g;
 - Audioguide 73 g;
- **Dimensions of the charging case for transmitters:** 350 x 260 x 110 mm;
- **Weight of the charging case for transmitters:**
 - Empty 2.7 kg;
 - When fully loaded 4.8 kg.
- **Dimensions of the charging case for audioguides:** 255 x 245 x 215 mm;
- **Weight of the charging case for audioguides:**
 - Empty 0.471 kg;
 - Fully loaded 3.23 kg.

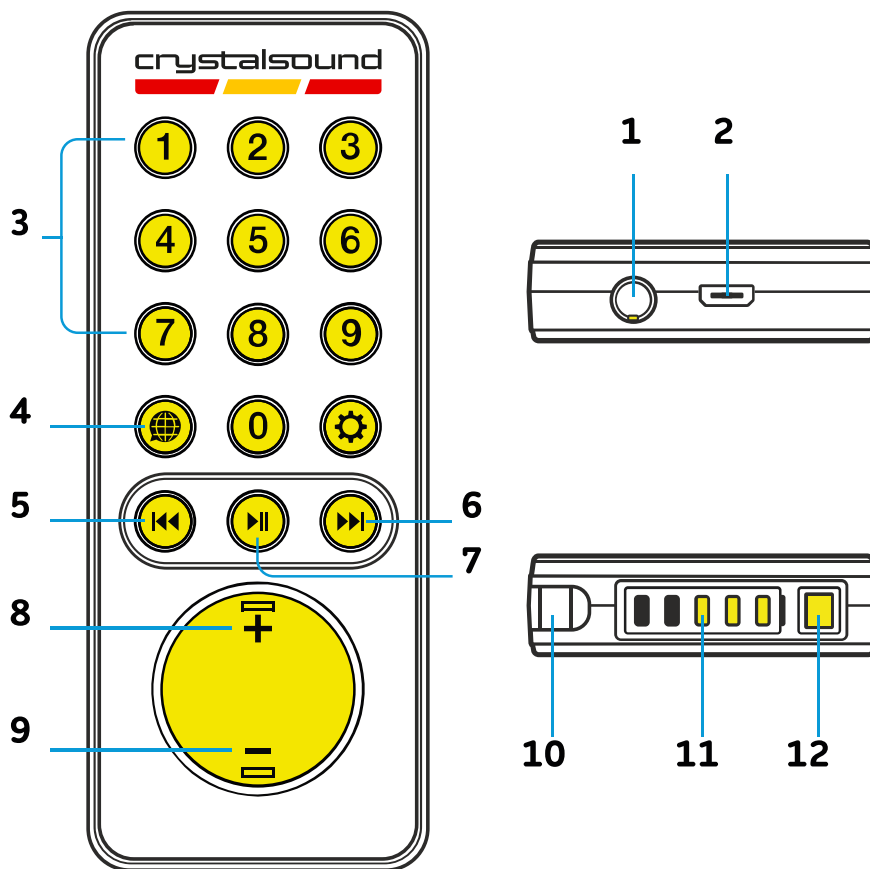
4.3. Additional parameters

- **Bluetooth LE 4.2 support.**
- **Signal reception range:**
 - 80 to 150 metres outdoors;
 - 30 to 50 metres indoors.
- Auto power saving/operation mode.
- **Frequency range:** 2360 MHz to 2500 MHz.
- **Transmitter charging:** up to 36 devices simultaneously.
- **Charging audioguides:** up to 20 devices simultaneously.
- **Availability of light and information indication blocks:** charge and status.
- Ability to control the device directly **by pressing buttons.**
- **Short circuit protection.**
- Protection against battery **over-discharge.**

4.4. Storage

- It is recommended to charge the devices up to 70 % before long-term storage and to store the equipment in clean, dry and well ventilated rooms.
- The storage temperature regime should be between +5°C and +25°C.
- It is recommended to check the operability of audioguides after long-term storage.
- It is advisable to charge the devices to 70% every three months.

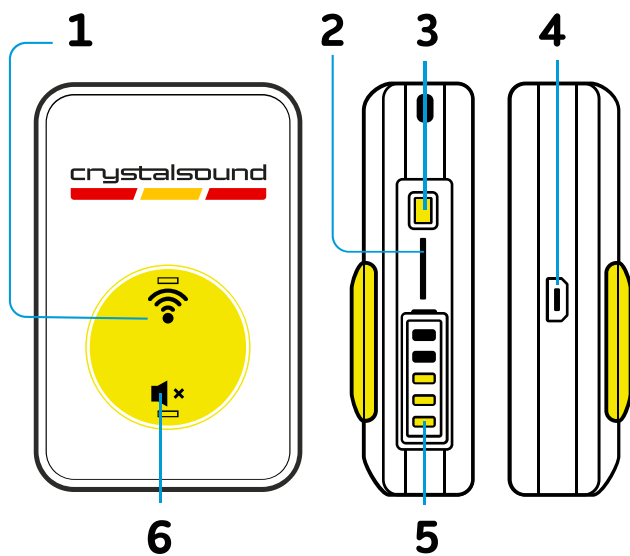
4.5. Connectors and controls



Audioguide

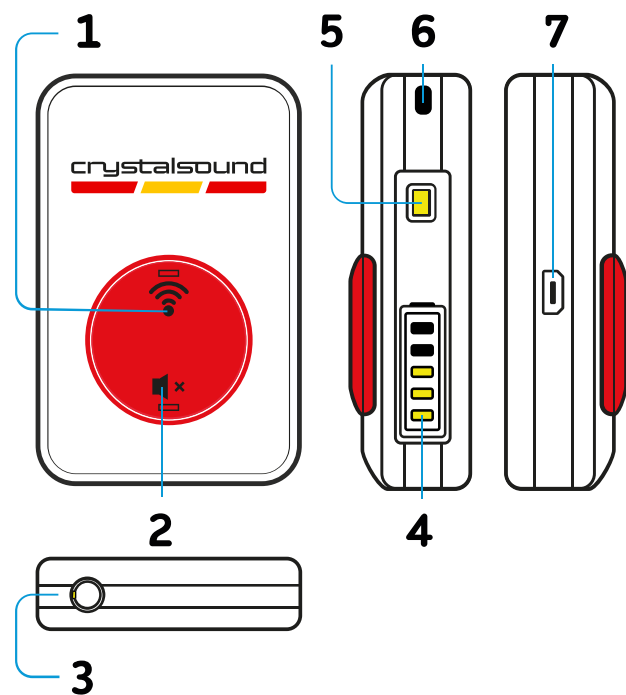
- | | |
|--------------------------------------|-----------------------------|
| 1. Headphone jack; | 7. Pause/playback; |
| 2. MicroUSB charging connector; | 8. Increase volume; |
| 3. Track start; | 9. Decrease the volume; |
| 4. Change track language; | 10. Strap hole; |
| 5. Rewind the track back 30 seconds; | 11. Charge level indicator; |
| 6. Fast forward 30 sec; | 12. Status indicator. |

Mp3 file downloader



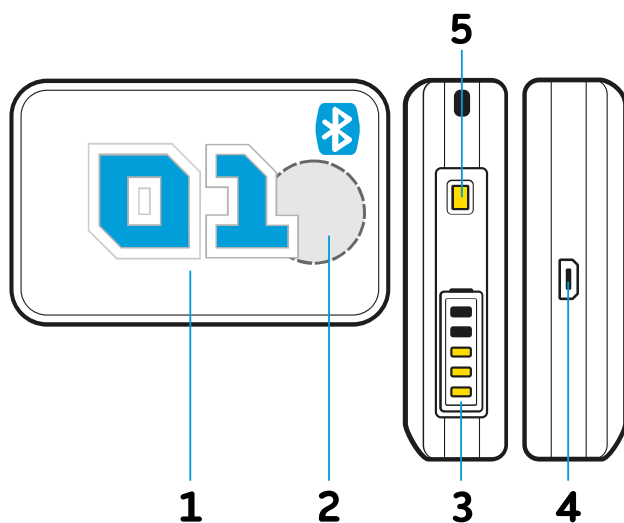
- 1. Button to start data transfer;
- 2. Memory card slot;
- 3. Status indicator;
- 4. MicroUSB charging connector;
- 5. Charge level indicator;
- 6. Data transfer end button.

Transmitter



- 1. Synchronisation button;
- 2. Microphone mute button;
- 3. Microphone jack;
- 4. Charge level indicator;
- 5. Status Indicator;
- 6. Strap connector;
- 7. MicroUSB charging connector.

Bluetooth tag




1. Tag number;
2. CS.Tags app connection indicator;
3. Charge level indicator;
4. MicroUSB charging connector;
5. Status indicator.


4.6. Light indication

 Battery level


- When you briefly press any button on the of the audioguide - displays the battery charge level.

 The green light on the receiver flashes

- Headphones are connected (receiver is ready for playback);
- Audio file is playing;
- Audio data is being received from the transmitter.

 The green indicator on the transmitter is blinking.


- Ready to transmit audio data;
- Audio data is being transmitted to the receiver.

 Red LED on the receiver blinks





- Audio file playback is finished or has not started / no signal from the transmitter.

 The green LED on the mp3 transmitter lights up continuously

- Contactless transfer of mp3 files to the receiver is in progress;
- The synchronisation button is pressed.

 The battery gauge on the mp3 transmitter flashes, animating sequentially;

- Contactless transfer of mp3 files to the receiver is in progress.

 The battery gauge on the mp3 file uploader flashes full	<ul style="list-style-type: none"> • Transmission of mp3 files is over.
 Numeric keypad illumination	<ul style="list-style-type: none"> • Pressing any key; • Charger/microphone/headphone connection.
 Digital keypad flashing	<ul style="list-style-type: none"> • Content is launched by CS.Leaderguide app; • Content is triggered by Bluetooth tags.
 Battery gauge on mp3 transmitter flashes, sequentially including animation	<ul style="list-style-type: none"> • Contactless transfer of mp3 files to the receiver is in progress.

5. Recording content

IMPORTANT!

Memory card recording should be done from a PC or laptop with Windows operating systems installed. It is not recommended to use macOS to record memory cards, as the system may index the music files and add macOS service information to them.

To write data you will need:

- a card reader capable of reading microSD memory cards;
- format the memory card (file system FAT32, cluster size 32 Kb) before starting to record files;
- to write to the memory card with Windows OS.

The developers at CrystalSound have introduced **Audioconverter**, a web interface for converting audio files into a format supported by the audioguide. When using third-party systems for conversion, please ensure that the files meet the requirements specified in Section 5.2 of the instructions.

5.1. Inserting and removing the memory card from the mp3 downloader

IMPORTANT!

The reliability and longevity of the memory card directly affects the reliability of the mp3 downloader.

When replacing a memory card, we recommend using only memory cards:

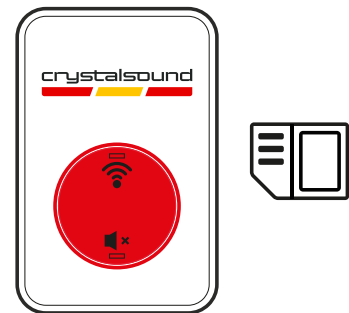
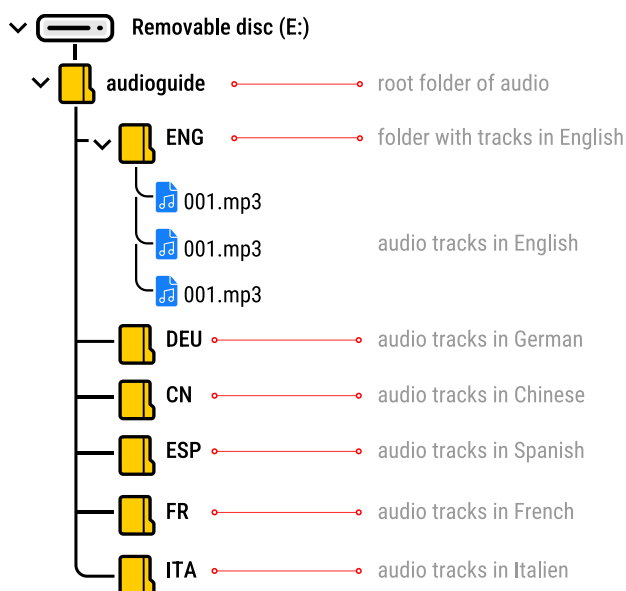
- SAMSUNG EVO Plus MB-MC32GA 32 GB;
- Kingston Canvas Select Plus UHS-I U1 32 GB or analogue.

The mp3 file downloader comes with a 32 GB memory card installed. The card slot is located on the end side of the transmitter. Insert the card with the contacts facing upwards until the card clicks into place. If necessary, use a thin object.

To remove the card:

- push the card in until it makes a similar click;
- hook the card by the side edge and pull it out of the slot.

To insert the card, place it with the contacts facing up and press until you hear a click. If needed, use a thin object.

**5.2. Preparing the file system****Instructions for Uploading Converted Tracks to the Content Upload Device:**

- Select the removable drive containing the memory card.
- Create a folder named “audioguide” on the memory card.
- Inside the “audioguide” folder, create separate folders for each language used. Folder names should be in Latin characters.
- Copy the files into the respective folders for each language.
- Ensure that file numbers for the same point are named identically across all languages. For example, if you add a track named “001.mp3” in the “RUS” folder, the same track in Italian should also be named “001.mp3” and located in the “ITA” folder.
- Make sure each language folder contains the same number of files.

IMPORTANT!

The audio guide supports a limited number of languages — no more than 7.

File Names and Content

- The file name should start with numbers, for example, “001” — corresponding to the first track and first marker. For the audioguides to function correctly, the file name must begin with numbers such as 001, 002, and so on.
- After the numbers, you may add any information in Latin characters without spaces. If necessary, you may use an underscore.
- The name should not contain any numbers other than the track number.
- The content of track “001” in Russian should match the content of track “001” in Italian.
- It is recommended that all files have the same length. If the speech is faster in one language, the audio should continue in silence to match the duration of tracks across all languages. This will ensure simultaneous playback across all languages during automatic playback.

5.3. AudioConverter CrystalSound

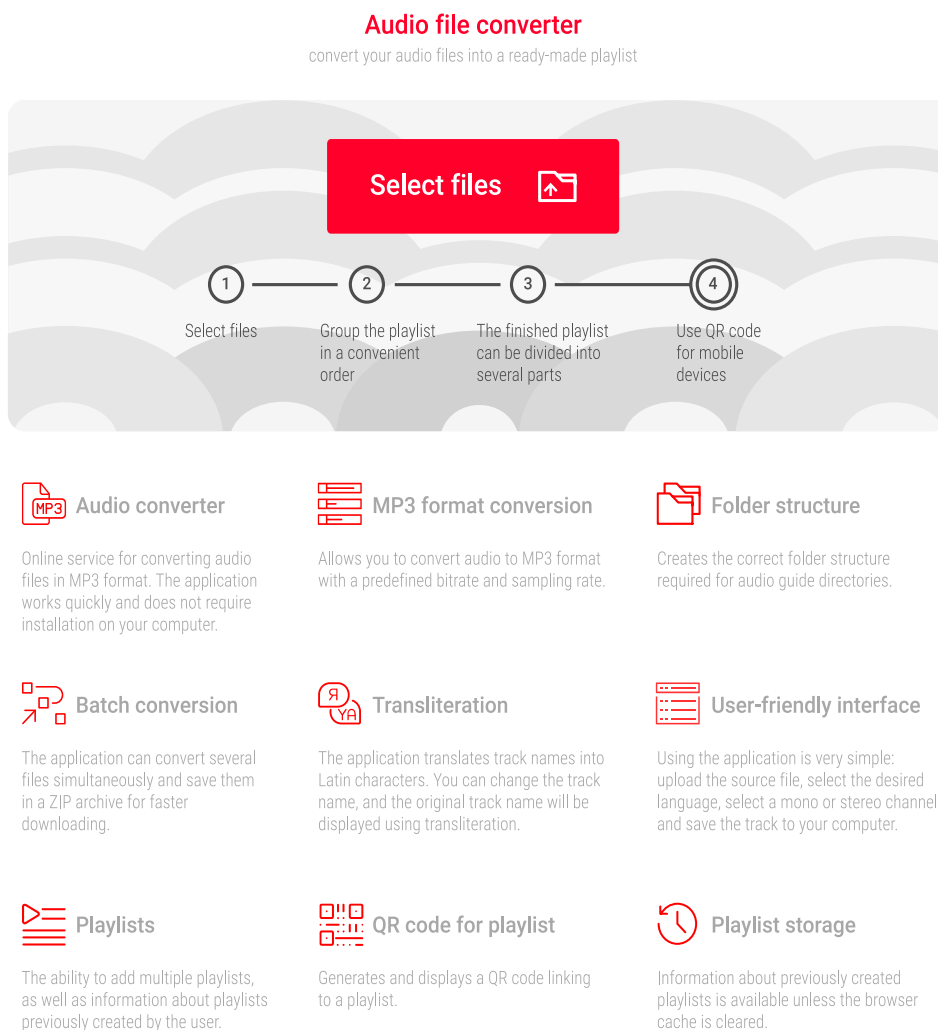
AudioConverter is a web interface designed for audio file conversion. It allows you to convert files into the required format for the audioguide, create and edit playlists, and upload them to the CS.Leaderguide mobile app.

The converter automatically renames and numbers files.



The CS.Leaderguide app manages file playback on devices, enables grouping audioguides, and synchronizes playback for a group of tourists. For more details about the CS.Leaderguide app, see Section 6.3.

Supported formats for mp3 conversion: FLAC, WAV, AAC, OGG, M4A, M4R.

1. Visit the Audioconverter CrystalSound website at <https://converter.crystal-sound.com>.










2. Upload the required number of files in the **Select Files** field and specify the language for the directory to which they will be converted. We recommend uploading no more than 150 tracks at a time.



3. After adding all files, enter the playlist name. Once the conversion is complete, you can change the audio file names. To edit, click the icon . To save changes, click .


Added audio files


convert your audio files into a ready-made playlist


Nº	Track title (editable)	Duration, min	Size, Mb	Delete
1	<u>Ekskursiya_po_gorodu_Obzornaya</u> <i>Ekskursiya_po_gorodu_Obzornaya</i>	4:02	9.33 Mb	 
2	<u>Obzornaya_po_kanalam</u> <i>Obzornaya_po_kanalam</i>	3:11	7.39 Mb	 
3	<u>Bol'shoj_krug_po_Ermitazhu</u> <i>Bol'shoj_krug_po_Ermitazhu</i>	3:37	5.89 Mb	 

Main playlist 

Conversion  25% 

 **Add files**

Eng 

Stereo 

Convert

Mono

Stereo

4. The archive will begin downloading automatically once the conversion is finished. The browser may block **automatic downloads**, in which case you'll need to confirm the download manually. Files can be **downloaded again** while you're still on the conversion page. After leaving the page, redownloading will not be possible, and you'll need to repeat the conversion process.

Recent downloaded files

 **Main Playlist.zip**
14,9 Mb 1 minute before


5. After creating a playlist, you will have the option to edit the playlist, split it, or download it again.


Playlist created

ready-made MP3 playlist for audioguide


Main playlist

05.11.2024 German 3 tracks 0:10:51 14.91 MB







Download
playlist



Edit
playlist



Split
playlist



Create a new
playlist



You can also create a route set, which can be quickly edited without manual data entry.

A route set is a playlist created based on tracks from the master playlist. CS.Leaderguide users can create these playlists in AudioConverter without manually entering track names and durations. This enables users to edit playlists without starting from scratch each time.

6. To create a route set, go to the playlist list or open the master playlist editing window.

My playlists

previously created playlists

Nº	Date of creation	Playlist name	Number of tracks	Total time	QR code	Edit	Split
1	05.11.2024	Main playlist	3	0:10:51			

7. Select the desired tracks for the route set from the master playlist and name the route set.

Split playlist

created MP3 playlist for audio guide

Master
playlist

Main Playlist

05.11.2024 German 3 tracks 0:10:51

Split master playlist

To create a new playlist, select the desired tracks in the list

Choose	№	Track title (editable)	Duration
<input type="radio"/>	1	Ekskursiya_po_gorodu_Obzornaya <small>Ekskursiya_po_gorodu_Obzornaya</small>	0:04:02
<input checked="" type="radio"/>	2	Obzornaya_po_kanalam <small>Obzornaya_po_kanalam</small>	0:03:11
<input type="radio"/>	3	Bol'shoj_krug_po_Ermitazhu <small>Bol'shoj_krug_po_Ermitazhu</small>	0:03:37

New route set







Selected
1 track
0:03:11


Create a route set

8. In the **my playlists** section, both the master playlist and the route set are now listed.

My playlists

previously created playlists



Nº	Date of creation	Playlist name	Number of tracks	Total time	QR code	Edit	Split	
1	05.11.2024	Main playlist	3	0:10:51				
1.1		Playlist_two	1	0:03:11				

9. To edit the route set, click the icon . Here, you can rename the set, add or remove tracks. Use the QR code to import the playlist into the CS.Leaderguide app.

6. Downloading mp3 files

6.1. Wireless downloading of mp3 files

To wirelessly record mp3 files to the audioguides, you need to use CrystalSound mp3 file downloader.

1. Insert the memory card into the CrystalSound mp3 file loader as described in step 5.1.
2. Make sure that the audioguides to which you want to download data are fully charged. If the amount of data to be downloaded is large, set the audioguides to charge so that they do not run out of power during the download process.
3. Press and hold the mp3 transmitter button  to start transferring mp3 files.
4. While continuing to hold the mp3 transmitter sync button depressed, bring the mp3 transmitter within 5 cm of the audioguides on which you want to download the desired content.
5. Wait for the light indication on the audioguides to switch on, indicating the transition to the file download mode.
6. Hold the transmitter to all audioguides in succession and wait for the light to turn on.
7. Release the synchronisation button on the transmitter. This will start the process of transferring files to the audioguides.
8. When the file transfer is successfully completed, the green indicator on the audioguides will light up and the five white LEDs will flash synchronously. The indication will remain on as long as the mp3 file transmitter is on.
9. Now, to switch off the display corresponding to the file transfer, switch off the mp3 file transmitter by pressing and holding the mp3 file switch off button  for 2 seconds.

Download error: if only the green LED on the side panel of the audioguide is blinking and the white LEDs are not lit. A file download error on one or more audioguides does not prevent the download from continuing on the other devices

The audioguide **works correctly**, if the track is played for 5 or more seconds and the audio is heard in the headphones at a loud enough volume level for perception.

IMPORTANT!

If you need to replace a single track, it must be replaced in the folder containing all content on the memory card. It is not possible to load a single track onto devices without re-uploading the remaining tracks. The process of replacing one track will take as much time as uploading all files.

If content needs updating, it is recommended to update only half of the audioguides first. This will allow the other devices to remain functional in case of an error.

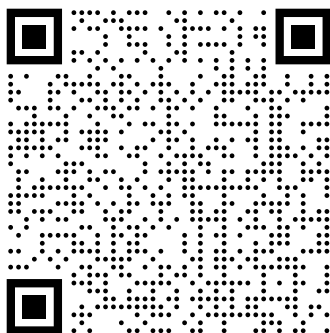
6.2. File upload characteristics

- In wireless upload mode, the battery level indicators on all audioguides should blink in sync.
- The upload process may take several hours, depending on the volume of files being transferred.
- The upload speed is 200–300 MB per hour, which depends on the number of devices, interference levels, and the distance between the transmitter and receivers. For files totaling around 150 MB, uploading data to a device will take approximately 30 minutes.
- To prevent errors, it is recommended to upload audio files to no more than 200 audioguides simultaneously.

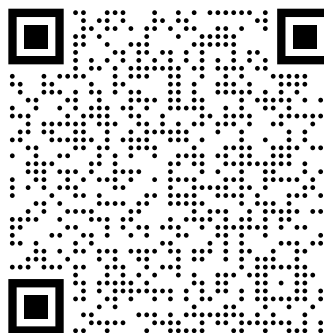
Number of audioguides	Average download speed [Kb/s]	Amount of data per hour [MB]
10	100	351
20	90	316
40	80	280
80	70	245
120	60	210
200	50	175

6.3. Transferring Content to the CS.Leaderguide App

The **CS.Leaderguide** app is a mobile application designed to group audioguides and control content playback within grouped units.

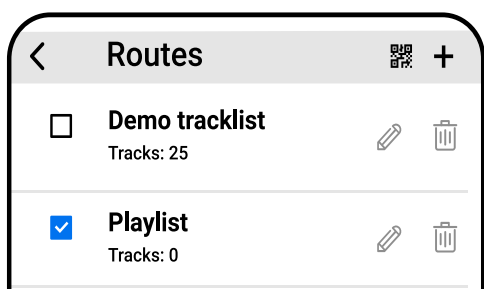


App Store




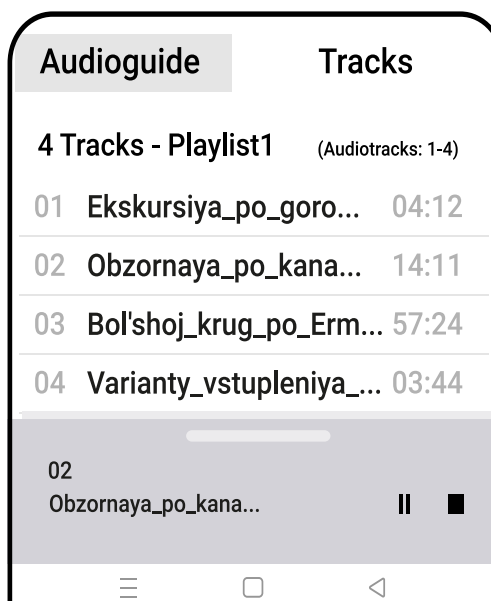
Google Play

Para cargar una lista de reproducción completa en la aplicación CS.Leaderguide, escanee el código QR desde la configuración de la lista de reproducción.



1. Open the CS.Leaderguide app and go to the **Route editor** tab.
2. In the top-right corner, tap the QR code icon.
3. Point the camera at the **QR code**. If the code is correct, the camera window will close, and you will see an updated playlist list with the newly added playlist.

4. Go to the **Route editor** section and select the newly downloaded playlist by checking the box next to it.
5. Return to the main screen of the CS.Leaderguide app and open the **Tracks tab**. Here, you can view the uploaded tracks and play them for your group during the tour.
6. To set an exact track playback time, simply press and hold the clock icon in the player window.
7. To edit the playlist in the CS.Leaderguide app, tap the icon .



Route edit

Route name

Demo tracklist

14/100

Tracks amount: 25

Start track: 8

Cancel Ok

- In playlist editing mode, you can manually set the number of tracks, choose the starting track number for playback, and also change the playlist name.

6.4. Device synchronization

Synchronisation is the tuning of the audioguide to the working channel of the transmitter. To synchronise the transmitter and audioguide:


- Press and hold the button on the transmitter;
- Bring the transmitter within 5 cm of the audioguides;
- When synchronisation is successful, the buttons and charge indicator on the receiver will start flashing;
- Release the synchronisation button on the transmitter.

7. Operation mode


The audioguide mode is the easiest and most convenient way to conduct excursions. Each group member can independently enter the exhibit number on the audioguide keyboard.

Tracks are started using the digits from «0» to «9» on the audioguide keyboard. To select tracks with a two-digit or three-digit number, dial the appropriate number. If you press a number by mistake, wait 5 seconds before pressing another key. Otherwise, pressing «9» and then «1» 2 seconds later will switch on track number 91 instead of 1. You can select a total of 999 tracks on the audioguide.

To operate in **audioguide** only mode, you need to:

- Connect headphones to the receivers.
- Select the desired track on the audioguide keyboard.
- Adjust the volume using the volume buttons.
- You can change the language by pressing the button .
- Simply switch off the headphones to end the operation.

To operate in **radioguide** only mode, you must:

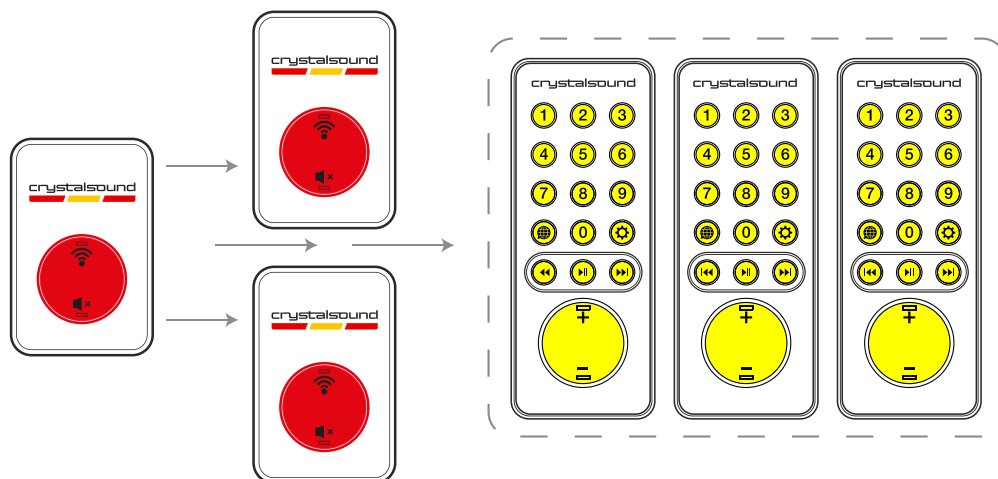
- Synchronise the transmitter with the audioguides.
 - Connect headphones to the receivers and a microphone to the transmitter.
 - Adjust the volume using the volume buttons.
 - The guide can mute the microphone by pressing the button .
 - Disconnect the microphone from the transmitter to complete the operation.
- The LEDs on the units should turn off. The receivers switch off automatically if there is no signal from the transmitter for more than three minutes.

To work simultaneously in **audioguide and radioguide** mode, you need:

1. Synchronise the transmitter with the audioguides.
2. Connect headphones to the receivers. The microphone will only need to be connected to the transmitter when the speaker is speaking.
3. Listeners can listen to tracks. The guide can interrupt playback by connecting the microphone to the transmitter. Playback will start from the same place as soon as the guide disconnects the microphone from the transmitter. If the guide speaks for more than 2 minutes, playback of the track will not resume.
4. You can adjust the volume using the volume buttons.
5. Simply unplug the microphone from the transmitter to end the operation. The LEDs on the units should turn off. The receivers switch off automatically if there is no signal from the transmitter for more than three minutes.

7.1. Multispeaker mode

The multispeaker mode allows one master speaker and two additional speakers to work simultaneously.



1. Synchronise the master transmitter with the desired number of receivers and additional transmitters. To do this, press the synchronisation button on the master transmitter and bring it close to all devices to be synchronised. Connect headphones to the receivers and microphones to the master transmitter. Additional transmitters will only switch on if the master transmitter is active.
2. Use the +/- buttons on the receivers to adjust the volume.
3. To start a radio transmission from an additional transmitter, simply connect a microphone to it.
4. To disconnect an additional transmitter from the group, unplug the microphone and hold down the Mute button.
5. To terminate, disconnect the microphone from the master transmitter. The LEDs on the units should turn off. The receivers will switch off automatically if there is no signal from the transmitter for more than three minutes.

IMPORTANT!

To maintain the original order of operation of the master and secondary transmitters, it is recommended to keep the master transmitter on until the end of the session.

7.2. Bluetooth tags

When you approach a pre-set Bluetooth tag, the audioguide starts playing the corresponding track.

- Tags are placed near exhibits or at key points along the route;
- The activation radius (up to 10 metres) is adjustable via the CS.Tags mobile app;
- Track playback starts when you approach the Bluetooth tag.

If your audioguide automatically starts a track when you get within range of the Bluetooth tag, but you want to listen to a description of another exhibit, you can select and start another track yourself using the keypad.

To operate in audioguide mode with Bluetooth tag capability:

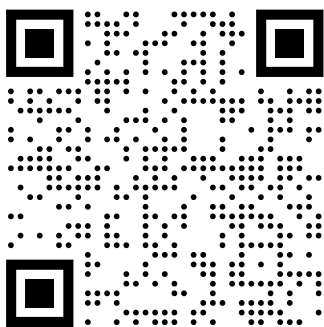
1. Connect headphones to the receivers;
2. When the audioguide comes within range of a Bluetooth tag, the audio track corresponding to that tag will automatically start;
3. You can adjust the volume using the volume buttons;
4. Simply disconnect the headphones from the audioguide to end the activity.
The LEDs on the devices should turn off.

8. Apps

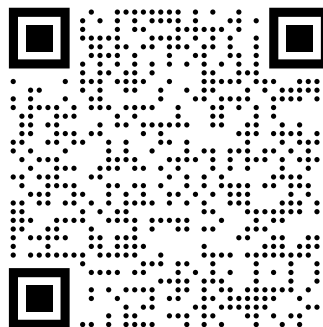
8.1. CS.Tags - customising tags

The application, by scanning the environment, finds tags that are nearby and retrieves the information conveyed by the tags.

Namely: tag number, charge level, background track and tag configuration.



App Store



Google Play

To configure it, you need to:

1. Turn on Bluetooth on your smartphone and access the CS.Tags app.
2. Bring the phone to the tag within 5 cm.
3. Tap the **Search Marks** button.
4. Tags are named Mark 1, Mark 2, etc. The number in the name corresponds to the number on the tag body. If the tag is not pre-configured by the developer, it is called CS-210n by default. For convenience, it should be renamed. The nearest tag to the phone will appear in the field above the "Search Marks" / "Stop search" button.
5. To set up a tag, enter pin code 1410 in the field below and press the confirmation icon.
6. To set up the tag, enter pin code 1410 in the field below and press the confirmation icon.

Mark - the number of the mark;
Track num - number of the track, which is played by the mark;
Distance, m - range of triggering;
Mode - tag operation parameter;
Name - tag name/number;
Pin code - 1410.

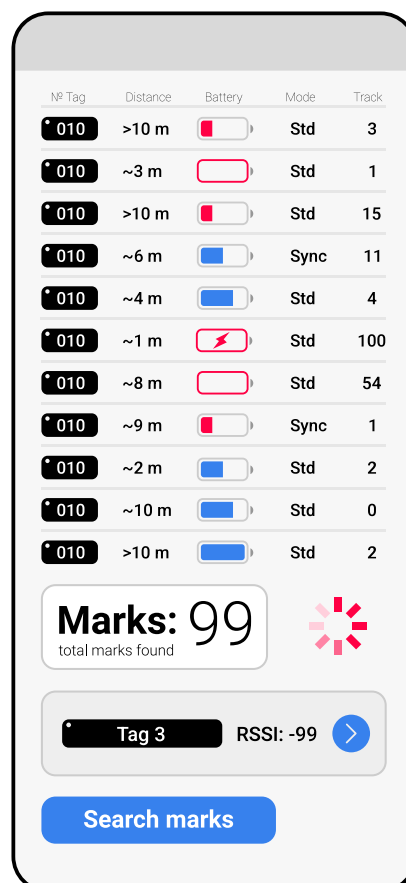
10. In the **Track num** field you can set the number of the mp3-file to be launched (usually the number corresponds to the sticker on the label). After making each change, you need to click on the «Save» button.
11. In the **Distance** field you can set the range of the tag triggering, it is recommended to choose values in the range from -40 to -90. When setting the distance, there is a range variation for each specific audioguide.
12. In the **Name** field you can enter a new name for the tag, which will be displayed when the device is detected by the application.
13. In the **Mode** field, you must select one of the four programmable operation parameters:
 - a. **std** - standard mode of operation of the tag;
 - b. **group** - setting the tag for one group only;
 - c. **next** - this tag starts only the next track. For example, mark 5 will start a track only if track 4 has been played before and/or is being played;
 - d. **sync** - when you approach this cue, the audioguide connects to a specific transmitter to play audio from the video.

Approximate sensing distance	Value in the app (signal level in decibels)
Up to 15 cm	-43
Up to 50 cm	-46
Up to 1,5 m	-50
Up to 3 m	-54
Up to 3 m	-54
Up to 5 m	-57

8.2. Settings the tags for synchronised audio broadcasting from monitors

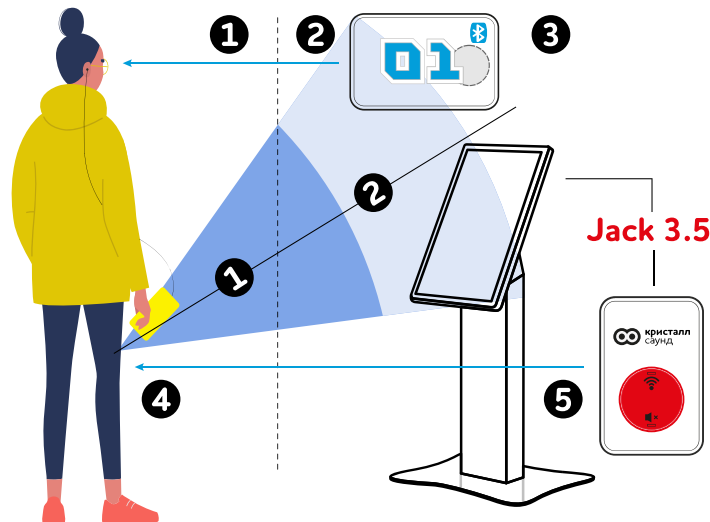
When approaching a preset Bluetooth marker, the audioguide automatically begins playing the corresponding track.

1. Markers are placed near exhibits or at key points along the route.
2. The activation radius (up to 10 meters) can be adjusted using the CS.Tags or CS.Configer mobile app.
3. Track playback begins upon approaching the Bluetooth marker.
4. The HD transmitter can be used to synchronize audio streaming from TVs, projectors, etc.
5. Simply connect the transmitter to the audio source and set the Bluetooth marker to the transmitter's channel.
6. The audioguide will automatically start playing audio in sync with the visuals on nearby screens as visitors approach.



Scheme of operation of the devices

1. The audioguide does not receive a signal from the marker because the user is outside the activation zone.
2. The user is within the activation zone, so the audioguide receives the signal from the Bluetooth marker.
3. The marker is set to the transmitter's active channel.
4. The audioguide receives a signal from the Bluetooth marker with the channel it needs to connect to.
5. The audioguide tunes to the specified transmitter channel, and playback begins for the user.

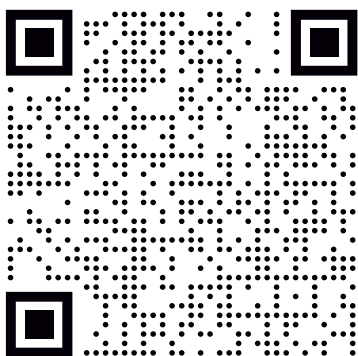


Tag setting:

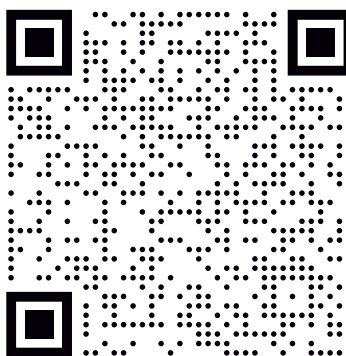
1. Switch on Bluetooth on your smartphone and access the CS.Tags app;
2. Bring the phone to the tag within 5 cm;
3. Tap the **Search Marks** button.
4. Tags are named Mark 1, Mark 2, etc. The number in the name corresponds to the number on the tag body. If the tag is not pre-configured by the developer, the default name is CS-210n. For convenience, it should be renamed. The nearest tag to the phone will appear in the field above the button «Search Marks»/ «Stop search».
5. After finding the required tag, press the arrow to establish a connection. On some phones or tablets this may take up to 30 seconds.
6. After the connection is established, the tag settings window will open. To configure the tag settings, enter pin code 1410 in the field at the bottom and press the confirmation icon.
7. In the **Track num** field, enter the physical channel number of the transmitter (PHY). If the PHY is 12, enter 12 in the Track num field.
8. The tag's **Mode** parameter should be changed to sync mode.
9. In the **Distance** field sets the range of tag operation, it is recommended to choose values in the range from -40 to -90. When setting the distance, there is a range variation for each specific audioguide.

9. CS.Counter

The app saves you time and automatically counts the number of devices. It functions with CrystalSound radioguides and audioguides.

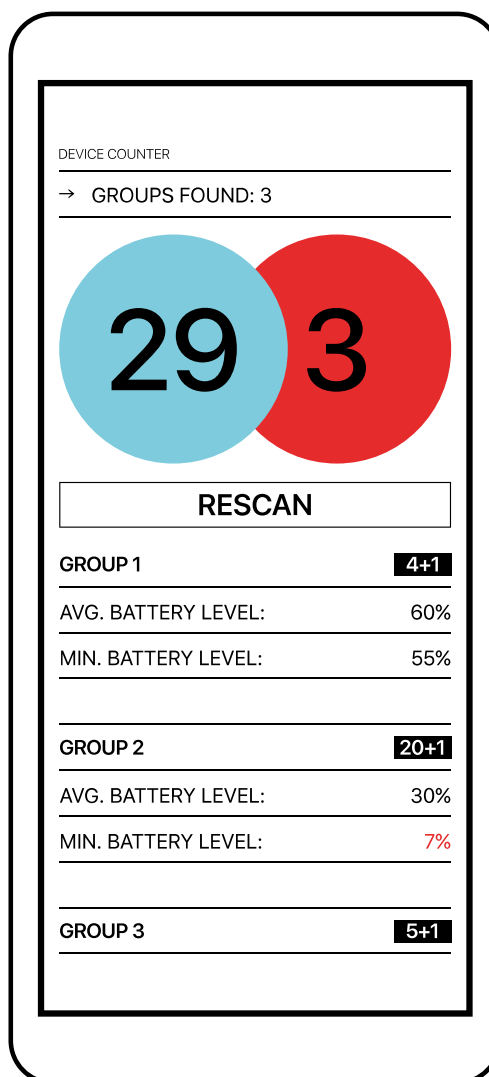


App Store



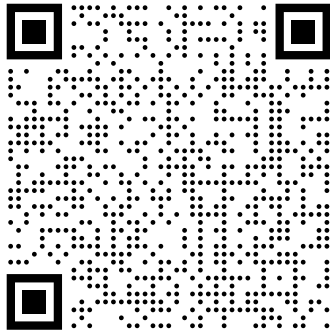
Google Play

1. Press the **Rescan** button to reset the information and before starting a new count.
2. To start counting, switch on the app on your phone and press the **Scan** button.
3. Hold your phone up to 30 cm away from the radioguides.
4. When the app finishes counting, you will see the number of receivers and transmitters counted: total and by group.
5. Also after scanning, you will see the average battery level in the group and the minimum battery level of each device.

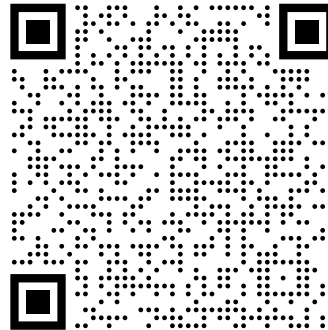


10. CS.Leaderguide

The CS.Leaderguide application is designed to control the launch of content on audioguides.



App Store



Google Play

The application allows you to:

- combine guides into one group;
- control the playback of audio tracks in a group of tourists.

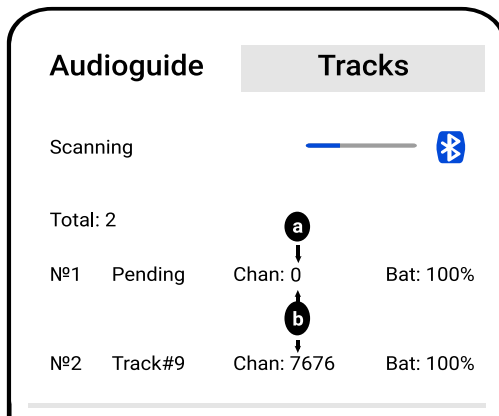
Before the first use it is necessary to set a digital channel (identifier) in each audioguide. Audioguides with the same identifier form a group. In a group, the same audio track is always played at the same minute and second (allowable time difference of up to 3 seconds).

An identifier is a unique digital channel that is installed in an app on your smartphone. With its help you can control a group of audioguides directly from your device, which guarantees a personalised tour for your group of tourists. Once the channel is installed, the control range is about 10-15 metres. Channel setup is required once when connecting a new smartphone, or when replacing the application ID.

The order of setting the identifier:

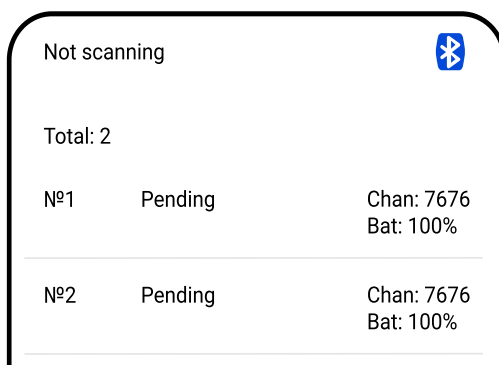
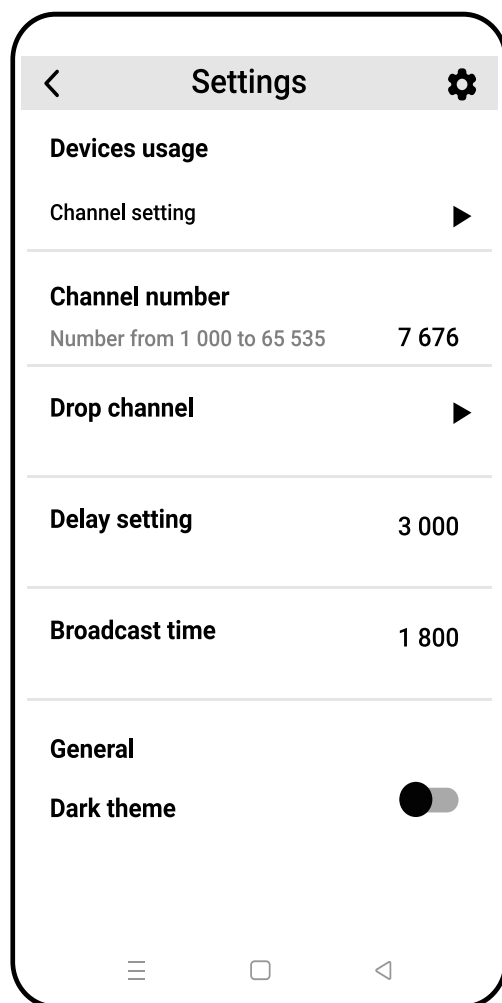
1. Connect headphones to the audioguide.
2. Switch on Bluetooth on your smartphone.
3. Hold your smartphone, with the CS.LeaderGuide app running, 1-3 cm away from the audioguide.
4. Tap the Bluetooth button in the app. The scanning will start.
5. After scanning, the audioguides tab in the main window of the app displays a list of audioguides connected to the smartphone and in operational mode. Information about the current status of the audioguides is also available here, including:
 - a. the track currently playing;
 - b. the battery level in per cent.

The figure shows two audioguides running on different channels. This means that when you start a track through the CS.Leaderguide app, only the audioguide whose channel matches the channel on your smartphone will play it (see Step 7 and Step 8 for details on resetting and setting the channel).



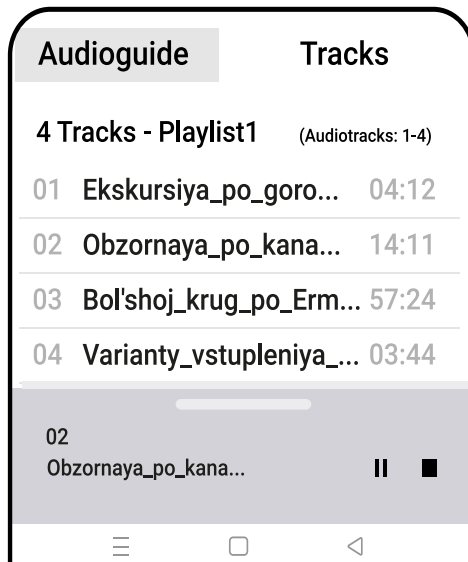
- a) the channel is not set, the track on the audioguide will not be played;
 b) the audioguides are not in the same group, because are set to different channels.

6. In the lower part of the main screen there are buttons for switching to the **Settings** menu and switching to the **Reset Channel**.
7. Go to the **Settings** menu and press the **Reset Channel** button to connect the found audioguides to the channel you need. The audioguide will confirm the reset and channel setting with a light indication.
8. Now press the **Set Channel** button, the channel number must start with 1000. This will set the ID of your application on the audioguide.
9. When the channel is successfully installed on the audioguide, the button lights will illuminate. You can then stop the channel installation process by pressing the **Set Channel** button again or the process will end automatically after 20 seconds.
10. You can set up a channel for a group of audioguides at the same time. After the channel is set, the «Audioguides» tab will display information about which audioguides have been connected and which have been tuned to the desired channel.




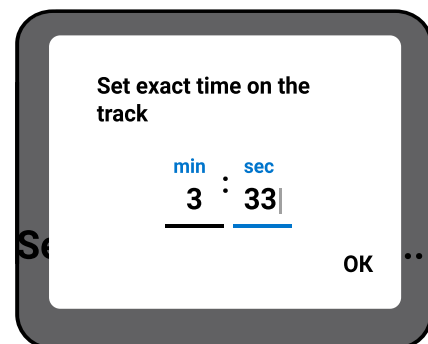
Please note, in order to play the same track on all audioguides at the same time, all audioguides must be tuned to the same channel.

11. If you want to control a group of audioguides from multiple smartphones, you must manually set the same application ID (digital channel) in each smartphone. After that, use any smartphone to set the channel on the devices.
12. Using the **Tracks** tab, the guide can select the desired idio file to be played on all connected audioguides. It is important to maintain a pause of 5-10 seconds between switching tracks to avoid errors.



13. At the bottom of the screen you will find a mini player. You can expand it to access additional functions. For example, you can set the exact start time of a track so that it starts not at the first minute, but, for example, from the 7th minute.
14. To set the exact playback time of a track, simply press and hold the clock icon in the player window.
15. At the bottom of the main screen are buttons to go to the **Route Editor** where you can change the playlist to play on the audioguides.

16. You can edit the playlist by pressing  icon. In playlist edit mode, you can manually set the number of tracks, select the starting track number to play, and change the playlist name.
17. You can create a new playlist by tapping the plus sign in the upper right corner.



11. Troubleshooting

IMPORTANT!

Do not open the product case by yourself.

Repair is necessary if:

- If the product cannot be repaired by yourself;
- The product is damaged in any way;
- If moisture or foreign objects get into the product;
- After a fall.

Repairs should only be carried out in workshops authorised by an authorised dealer.

Problem	Potential causes	Remedy
<p>When launching an audio track from CS.Leaderguide app:</p> <ul style="list-style-type: none"> • The backlight on the audioguide does not light up; • The audio track does not start. At the same time, headphones are connected to the audioguide. 	<ul style="list-style-type: none"> • The power saving mode built into Android OS may have been activated; • Perhaps not all receivers (audioguides) are set to the same channel (point 10 of this manual describes detailed channel setting on audioguides). 	<ul style="list-style-type: none"> • Check that the channel has been set on the audioguide see instruction 10; • Charge the phone more than 50%; • Check that Bluetooth is working on the phone; • Switch off all power saving modes and activity control of the CS.Leaderguide application on the phone; • Switch on airplane mode for 3 seconds and then switch it off; • Restart the CS.Leaderguide application.

Problem	Potential causes	Remedy
<p>Lack of audio track:</p> <ul style="list-style-type: none"> • When starting the audio track via the CS.Leaderguide app; • When approaching a Bluetooth tag; • When pressing the audioguide keys to launch tracks. <p>When doing so:</p> <ul style="list-style-type: none"> • The backlight of the audioguide's button and keypad blinks; • Headphones are connected to the audioguide. 	<ul style="list-style-type: none"> • Flashing/running backlight means that the audioguide is looking for a file to play on the memory card. • Faulty headphones. 	<ul style="list-style-type: none"> • Check the operation of the headphones; • There may be a loose contact connector, partially damaged cable or headphone connector; • Make sure that mp3 files correspond to the supported type and check that the directory structure on the memory card corresponds to the one described in section 5.2 of the instructions; • Upload mp3 files again using the mp3 file transmitter.
<p>An error occurs while wirelessly downloading mp3 files and is displayed as follows:</p> <ul style="list-style-type: none"> • Green LED blinks; • White LED is not lit. 	<ul style="list-style-type: none"> • External interference; • The memory card is not installed correctly; • The memory card does not work. 	<ul style="list-style-type: none"> • Wait for the download to complete on the audioguide set. After successful completion of the download, start re-downloading the files only for the audioguide with an error; • If the download error occurred at the very beginning of the process, it is recommended to stop the download process and start it again for the whole group of audioguides; • Check if the memory card is working and correctly installed / replace the memory card.

12. Contacts

Our specialists are always ready to answer any questions, help with installation, configuration, and troubleshooting that may arise while using the device.

In case of problems, contact technical support and provide explanation and demonstration video (if possible) of the problem. After remote diagnosis, the operator will provide clarification and solutions.

If the problem cannot be solved remotely, the customer can ship the defective goods to the address provided. The support team will carry out testing and further diagnosis. For problems covered by warranty, maintenance or replacement of devices will be carried out and sent to the customer. For problems not covered by warranty, the customer will be informed of the possible cost of repair (where possible).

Contacts for technical support:

+39 389 952 7860. Daily from 12 noon to 6 pm (whatsapp only).

+38 388 729 1127. Mon-Fri 9 am to 6 pm.

support@crystal-sound.com

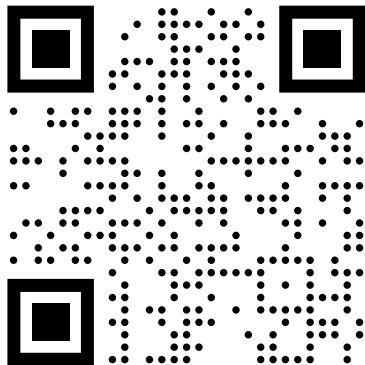
13. Warranty and service life

The warranty period is 2 years from the date of purchase. The service life of the devices is 5 years.

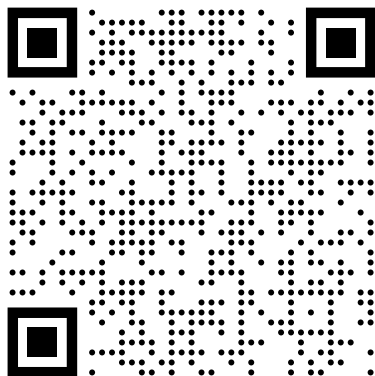
14. Useful links

You can find out all the possibilities using the QR code.

[CrystalSound.it](https://crystalsound.it)



[Linkedin](https://www.linkedin.com/company/crystalsound)



[YouTube](https://www.youtube.com/channel/UC...)

