



SonicQRcode User Guide

Version: 1.4
Last update: 16/09/2021

This document and all information contained herein is the sole property of CopSonic. No intellectual property rights are granted by the delivery of this document or the disclosure of its content. This document shall not be reproduced or disclosed to a third party without the express written consent of CopSonic. This document and its content shall not be used for any purpose other than that for which it is supplied.



Table of Contents

1. Introduction	3
2. The use case.....	3
3. Installation of the mobile application.....	4
3.1 Step-by-step installation procedure for Android.....	4
3.2 Step-by-step installation procedure for iOS.....	5
4. Accessing the demo website.....	6
5. Running the demo	7
5.1 Option A. Visible QR Code.....	9
5.2 Option B. Invisible QR Code	10
5.3 Option C. Visible + Invisible QR Code.....	12
6. The user experience through alternative use cases	15
7. Support and F.A.Q.....	16



1. Introduction

The purpose of this application is to enable carrying out demonstrations based on data transmission through sound waves as a communication channel between devices. This App integrates the CopSonic technology for ultrasound communication (hereinafter called "US").

SonicQRcode is an alternative or complement to regular QR codes using US communication between a web component and a mobile application.

Instead of using the smartphone to decipher the graphic QR code on the webpage, we emit a unique US (with a One-Time Password) which contains the same information as to achieve the same goal.

This demonstration has been developed for Android and iOS environments. It is NOT a final product or a service. This application must be considered as a valid support to enable testing.

In addition to this user guide, a general introduction to ultrasounds will help you understanding the fundamentals of this approach. This document is available on the following link:

➤ [Ultrasound General Introduction](#)

2. The use case

The illustrated use case is an authentication between a website (opened in the browser of any device: computer, smartphone, tablet...) and the smartphone of the user.

The standard demo offers 3 alternatives for the authentication process:

- A. Using a standard graphic QR code
- B. Using an US instead of the QR Code
- C. Using an ultrasound US in combination with a QR code, to offer stronger security

To perform this demo, you will need:

- 1) A device (computer, laptop, smartphone, tablet...) on which the demo website can be opened on any navigation browser.

Website: <https://SonicQRcode.copsonic.com/>

- 2) A smartphone with the mobile application "SonicQRcode". This App is available for Android and iOS. The CopSonic SDK allowed us to integrate the US technology within the Apps during their development. The installation process will be explained further in this document.

An internet connection (WiFi, 3G, 4G...) is required on both devices.



3. Installation of the mobile application

The compatible Operating System versions for the smartphone applications are:

Smartphone OS	Android	iOS
Version	4.0+	8.0+

3.1 Step-by-step installation procedure for Android

1- Download the demo application using the following link:

CopSonic Store: <https://apps.copsonic.com/ApplicationDetails.aspx?ApplicationId=187>

2- Launch the downloaded .apk file to start the installation process.

Before installation from CopSonic Store, your smartphone may inform you that the source is unreliable as it is not downloaded from an official App Store. See more about this issue in the following link:

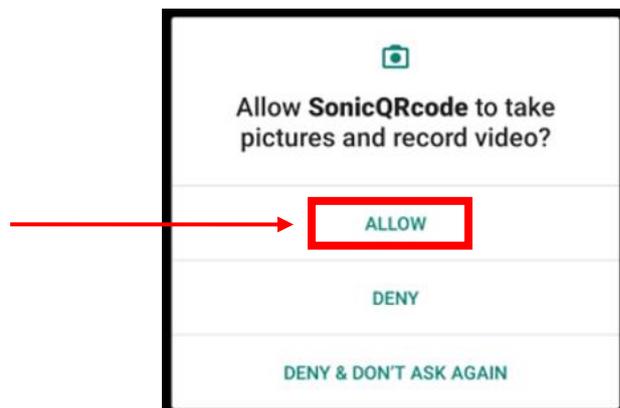
➤ [Allow the installation of external applications.](#)

Once installed, this icon will appear on your device:

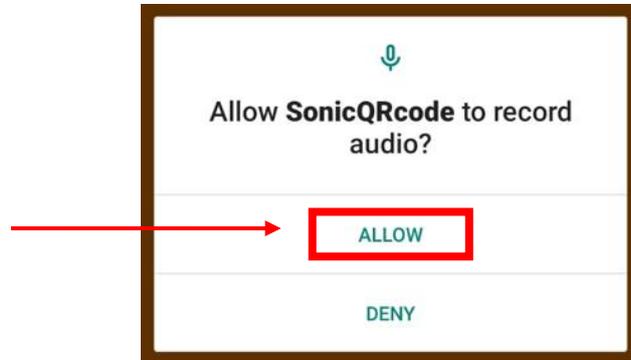


3- When activating the different options of the application for the first time, the necessary permissions will be requested:

- Camera: The application needs access to the camera to scan the QR code.



- Record Audio: Since the application needs to receive the audio signals through the microphone, this permission must be added.



The CopSonic technology is capable of generating ultrasonic audio signals with messages modulated within them, as well as detecting and reconstructing these messages after recording and analysing the audio samples that contain them. The messages are encoded using very high inaudible frequencies and the App just scans those frequencies. So, even though the recorded audio covers the whole spectrum of frequencies, CopSonic only analysis the inaudible bands once and the system not keep any kind of record whatsoever of any of the processed audio recordings.

3.2 Step-by-step installation procedure for iOS

- 1- Install the demo application using the following link:

CopSonic Store: <https://apps.copsonic.com/ApplicationDetails.aspx?ApplicationId=188>

- 2- Once the app is installed, when trying to run it, a warning might appear (if it is the first time that you are running CopSonic demos). This message will say that the certificate is not reliable since the App has not been downloaded from Apple's App Store.



The steps to solve this issue are described in the following link:

- [Allow the installation of external applications “Activate Trusted Certificates”.](#)

The required permissions are the same as for the Android application.

[See the description in the previous section.](#)

4. Accessing the demo website

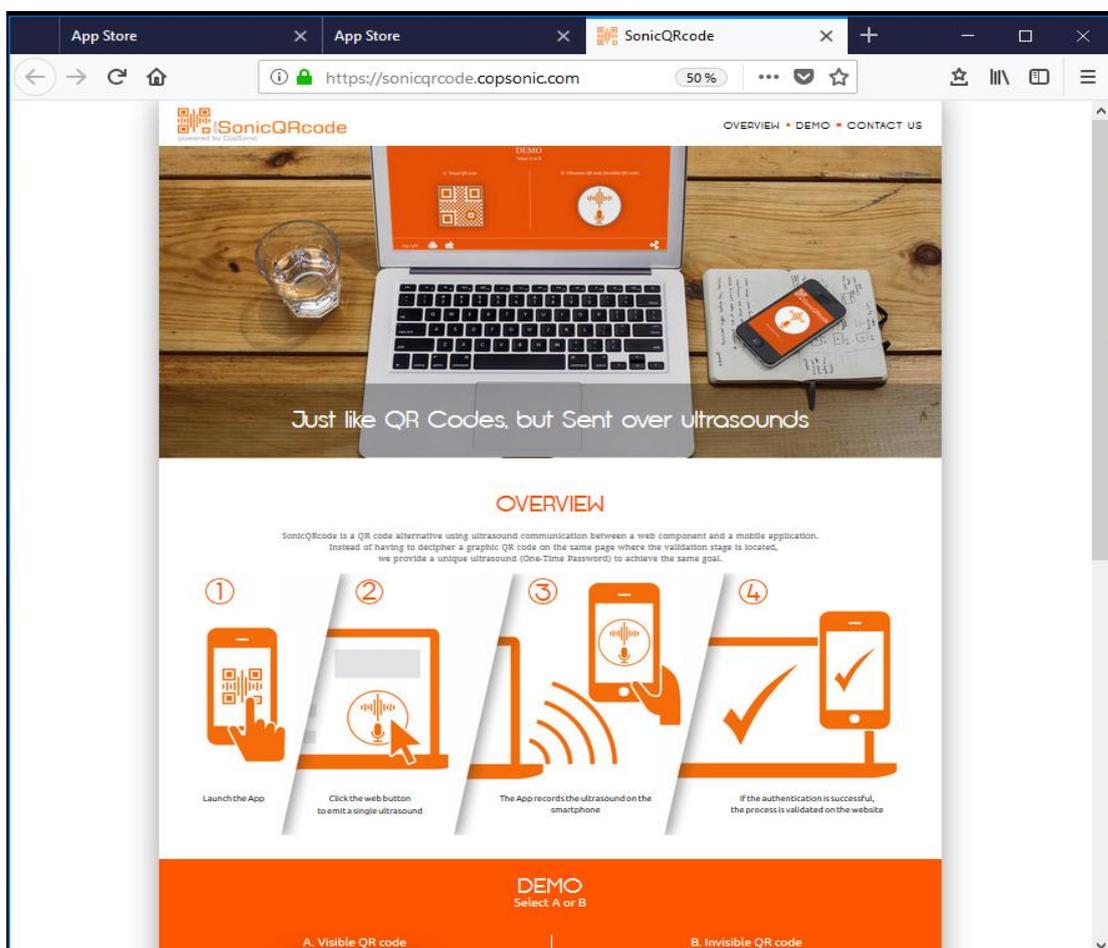
The demo website requires the following minimum browser compatibility:

Browser	Chrome	Firefox	IE	Edge	Safari
Version	68.0	61.0	11.0	42.0	11.0

To know your browser version, please use this link:

- <https://lehollandaisvolant.net/tout/tools/browser/>

Within your web browser, open <https://sonicqrcode.copsonic.com/>

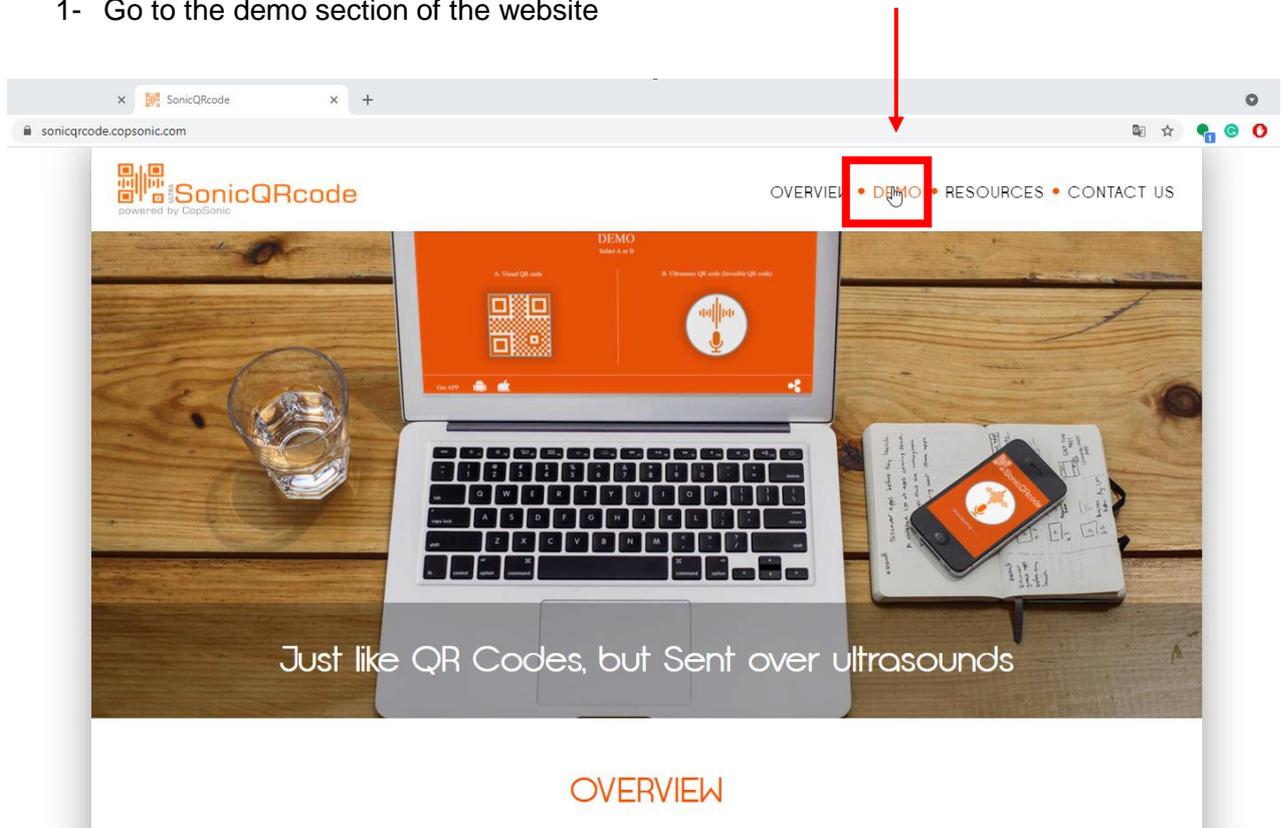




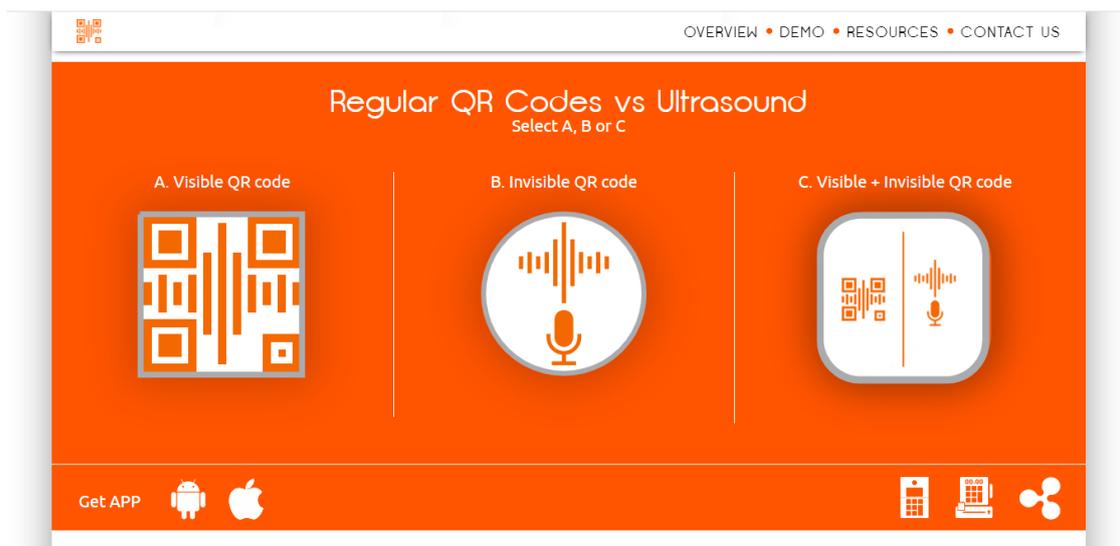
5. Running the demo

This chapter describes the steps to follow in order to carry out the demo after installing the mobile App and opening the demo website in your browser.

- 1- Go to the demo section of the website



Demo section:





2- Once the application is installed just open the App:



This demo environment offers to test 3 different options that appear on the home screen of both the App and the demo website:

- A. Visible QR Code
- B. Invisible QR Code
- C. Visible + Invisible QR code

3- Select the option you want to test.

At the time of the test, the option chosen on the website must correspond to the option chosen in the mobile application. For example, if you choose option B on the demo website, you have to choose option B on the mobile.

The following sections of this document describe how to carry out each of these demo options.

5.1 Option A. Visible QR Code

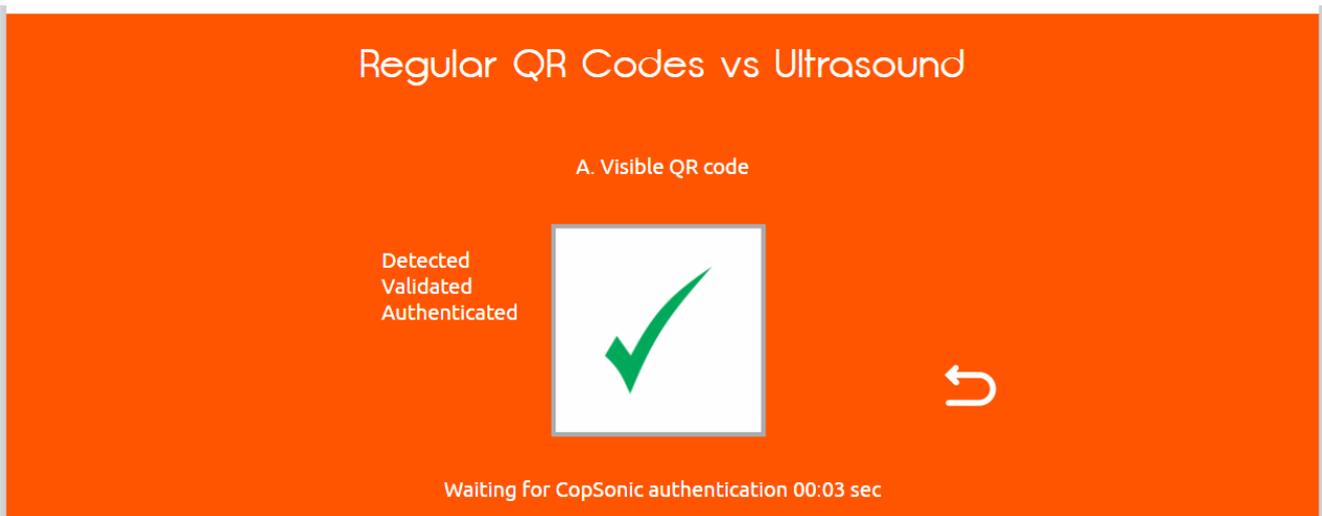
- 1- Select the option “A. Visible QR Code” on the demo website. The following screen will appear:



- 2- Select the option “A. Visible QR Code” on the App (the permission requested must be granted). The app will show the camera.
- 3- With the application, scan the QR code that appears on the website.

Once the authentication process is successful, the confirmation screen appears in both the App and the demo website.

Website confirmation screen:



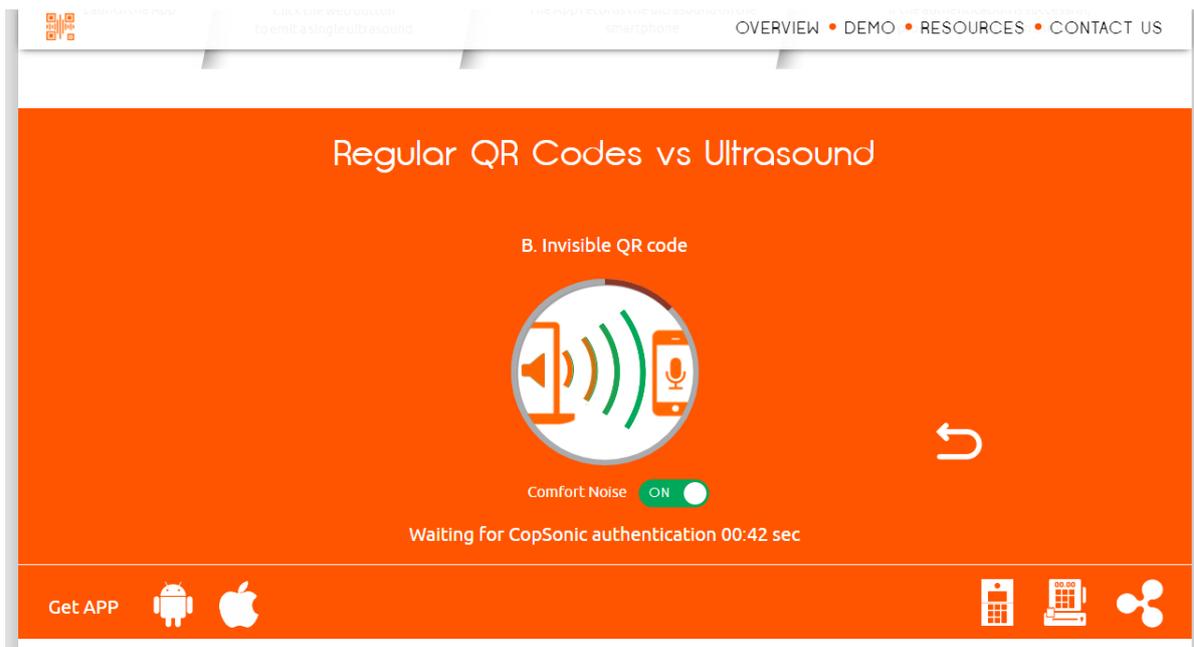


App confirmation screen:



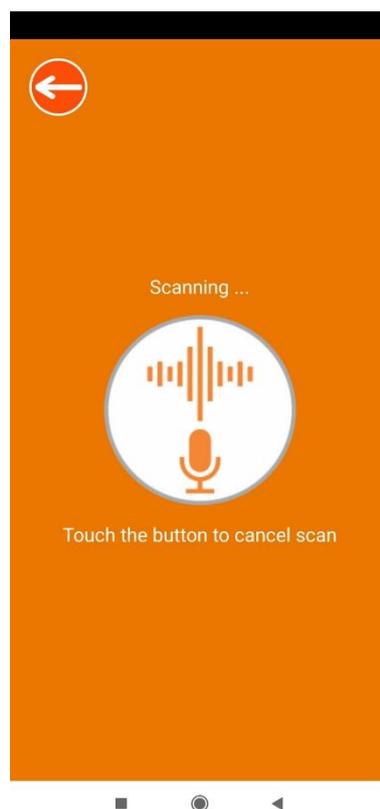
5.2 Option B. Invisible QR Code

1- Select the option “B. Invisible QR Code” on the demo website. The following screen will appear:



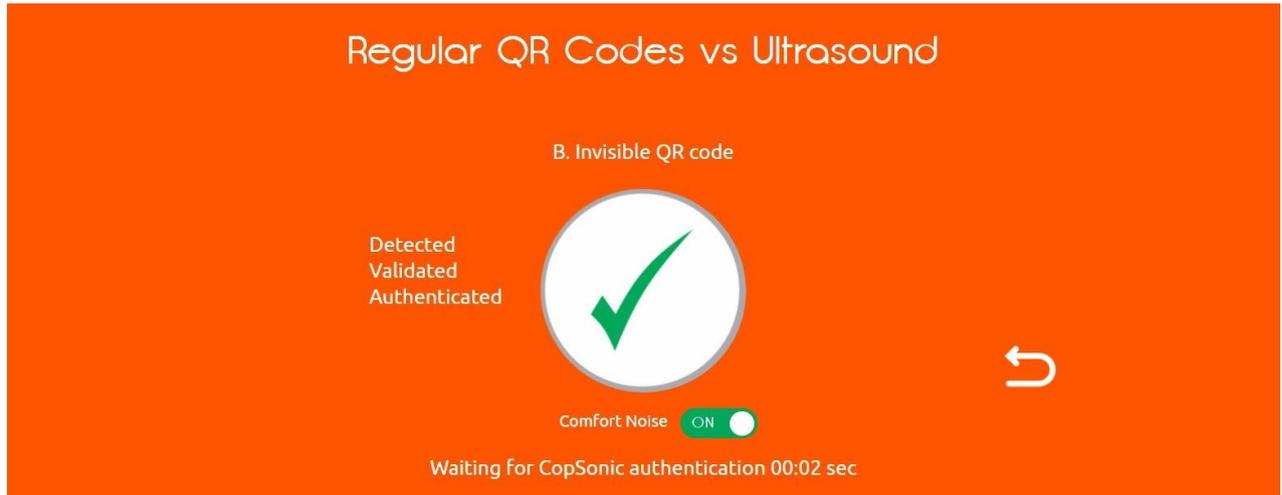


- 2- Select the option “B. Invisible QR Code” on the App (the permission requested must be granted). The following screen will appear:



Once the authentication process is successful, the confirmation screen appears in both the App and the demo website.

Website confirmation screen:



App confirmation screen:



5.3 Option C. Visible + Invisible QR Code

- 1- Select the option “C. Visible + Invisible QR Code” on the demo website. The following screen will appear:



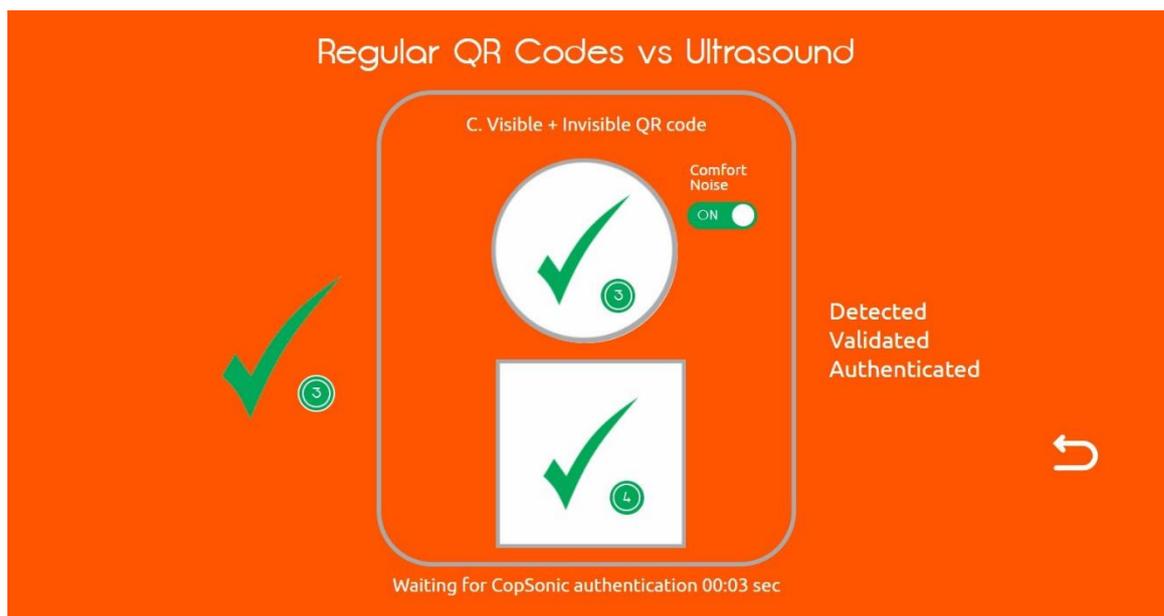
- 2- Select the option “C. Visible + Invisible QR Code” on the App (the permission requested must be granted). The App will show the following screen:



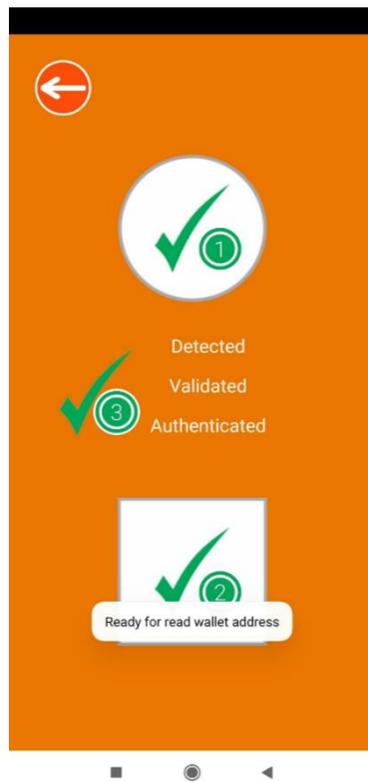
3- With the application, scan the QR code that appears on the website.

Once the authentication process is successful, the confirmation screen appears in both the App and the demo website.

Website confirmation screen:

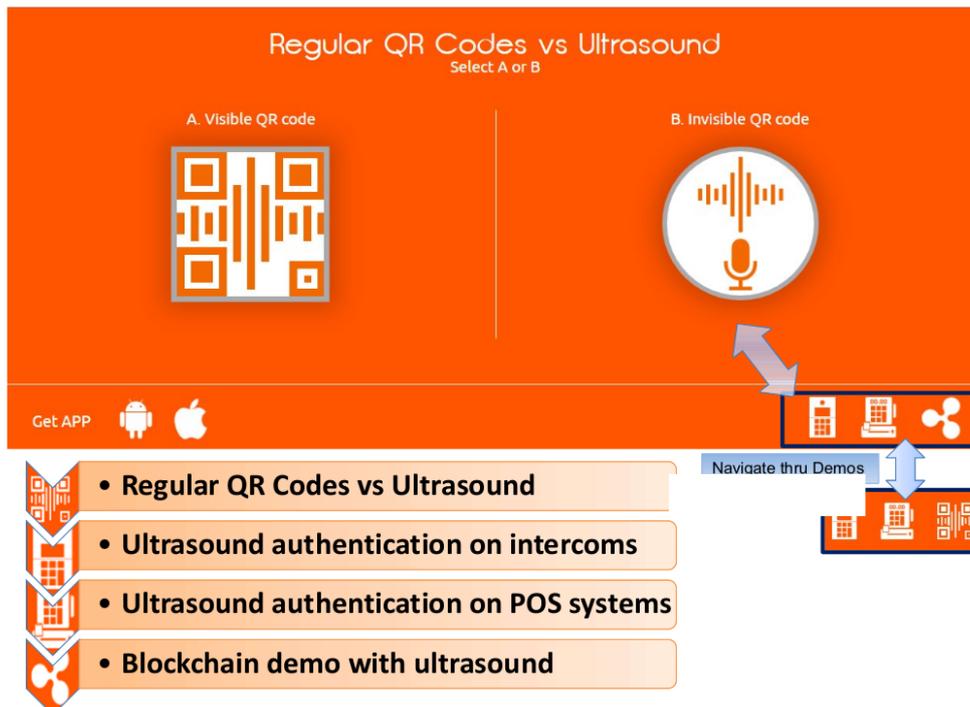


App confirmation screen:



6. The user experience through alternative use cases

The demo section offers alternative use cases. Reproduce the “Invisible QR Code” steps specified above to simulate the use of ultrasounds on other devices such as intercoms or POS systems.





7. Support and F.A.Q

Do not hesitate to contact us for assistance on this demo environment or for further information:

- By mail: support@copsonic.com

- By phone: +33 563 67 81 20

Smartphone error message « SonicAuth not reachable » :

- a) Check the network connection for the online demo
- b) If you have a connection but you still get this message, it may be because of something on your PC blocking the connection, a firewall for instance.
- c) If you already checked the previous steps and you still get the error message, the CopSonic Server may be down. Please contact our technical support for more details.

The Smartphone App does not catch the ultrasounds:

The US technology requires a loudspeaker on the emitting source. The source must be able to emit, so "mute" must be canceled and have an acceptable volume.

- a) Check the broadcasting source is not on mute.
- b) Check the volume of the speakers.
- c) Check if you have headphones connected.
- d) Make sure your smartphone is close enough to the speakers; we recommend starting with a 50 cm distance or less.
- e) Check that the smartphone App does not display a « SonicAuth not reachable » message.

- END of DOCUMENT -