Leuze

User Manual

LBK SBV System

RCS Reader Tool

The Sensor People

We reserve the right to make technical changes
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1 Scope

The goal of this user manual is to describe the software RCS Reader Tool and its functionalities.

2 Introdution

2.1 What is the RCS Reader Tool

The RCS Reader Tool is an application provided with the LBK Designer application and can be used as an assist in setting the RCS threshold parameter with LBK SBV System.

When this parameter is set to a value higher than 0 dB, the sensor is able to detect the access of one or more objects with an RCS value bigger than it. In this way, the Custom target detection safety function is enabled in place of the standard Access Detection safety function (Human detection).

NOTICE	
	When the Custom target detection is enabled, the detection of a human body is no longer guaranteed. For more details about the function and the Radar Cross Section (RCS), please refer to the Operating instructions of LBK SBV System, downloadable with the LBK Designer application from www.leuze.com.

2.2 Operating system required

The tool is supported on the following operating systems:

- Microsoft Windows 10 or later
- Apple OS X 11.0 or later

2.3 Firmware and software version supported

The tool is available with the following versions:

- LBK Designer application: version 2.6.20 or later
- LBK SBV System controllers: firmware version 1.6.0 or later
- LBK SBV System sensors: firmware version 3.1 or later

2.4 How to launch the tool

In order to run the RCS Reader Tool, first of all you need the LBK Designer application.

You can launch the tool from the **Configuration** page.

If you are new to the LBK Designer application, please follow the instructions below:

Step 1 - Open the application and connect to the device, by selecting your actual connection mode.

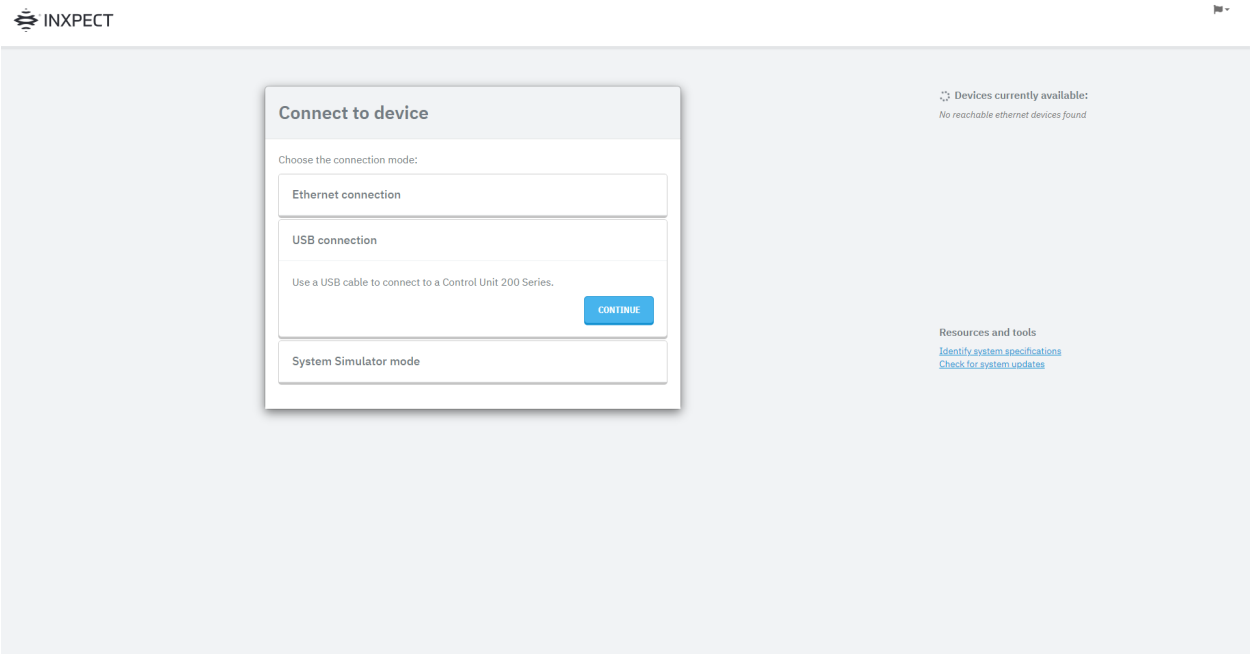

Figure 1 *Connection to the device*

Step 2 - Click on **User**, in the top right corner of the screen and access using your Admin password.

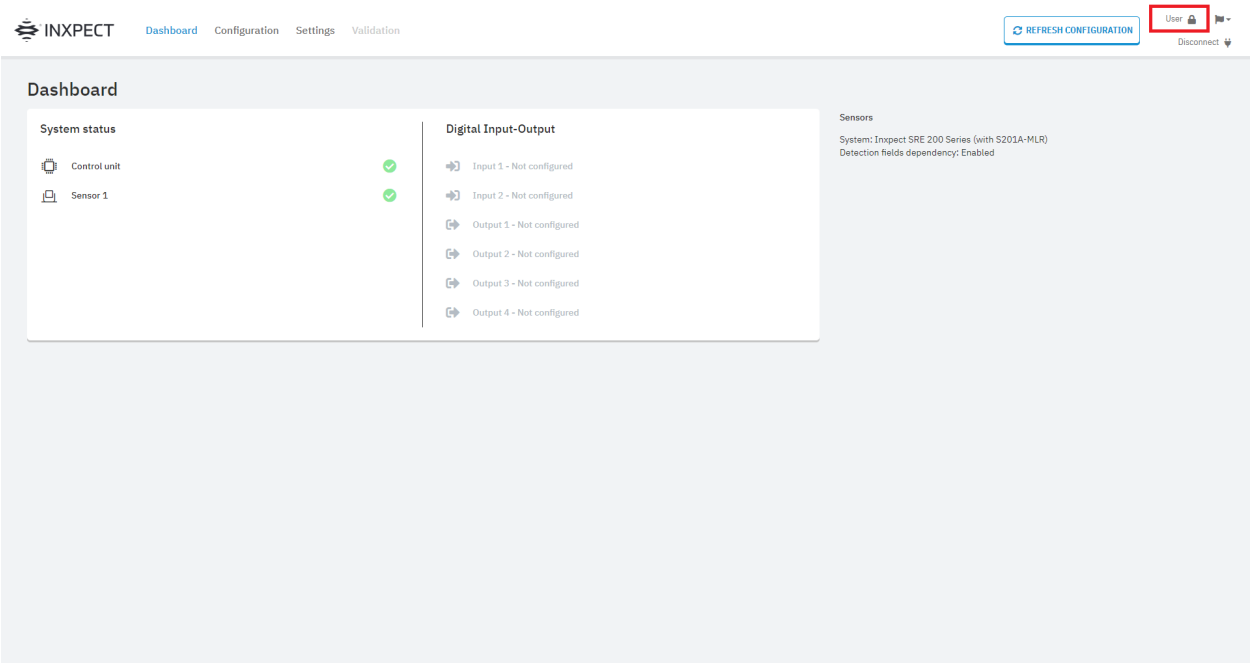

Figure 2 *Dashboard*

Step 3 - Go to **Configuration** page.

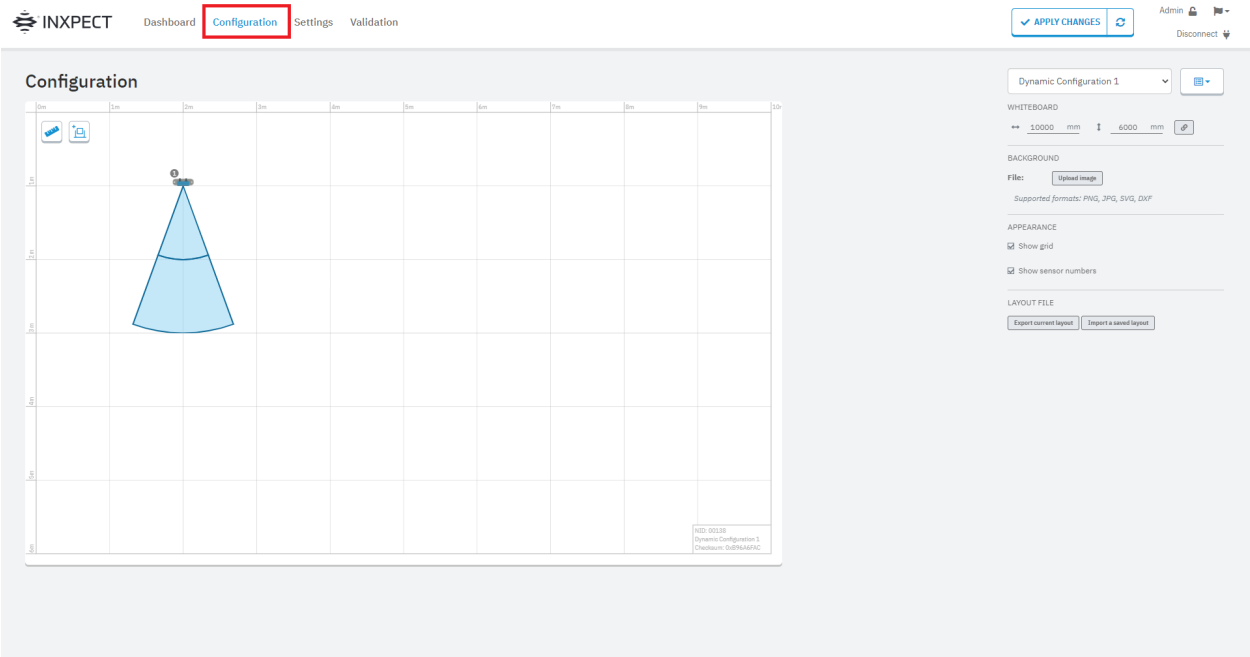

Figure 3 *Configuration page*

Step 4 - Click on the desired sensor.

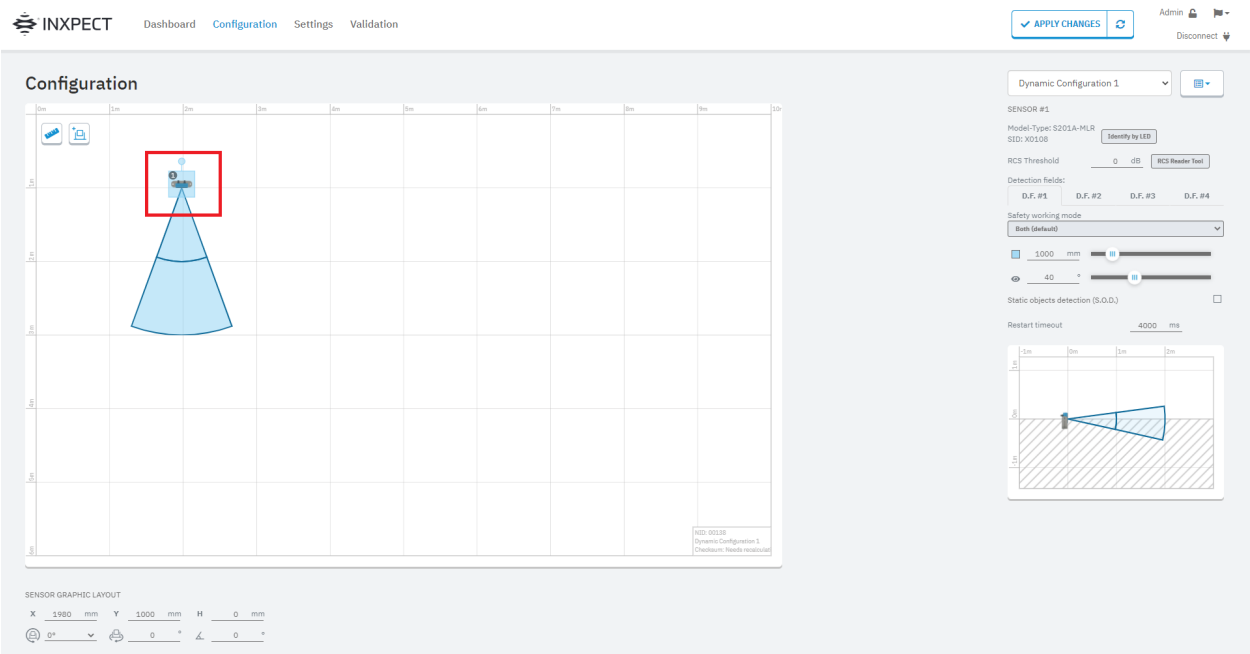

Figure 4 *Sensor selection*

Step 5 - Click on **RCS Reader Tool** on the right to open the software.

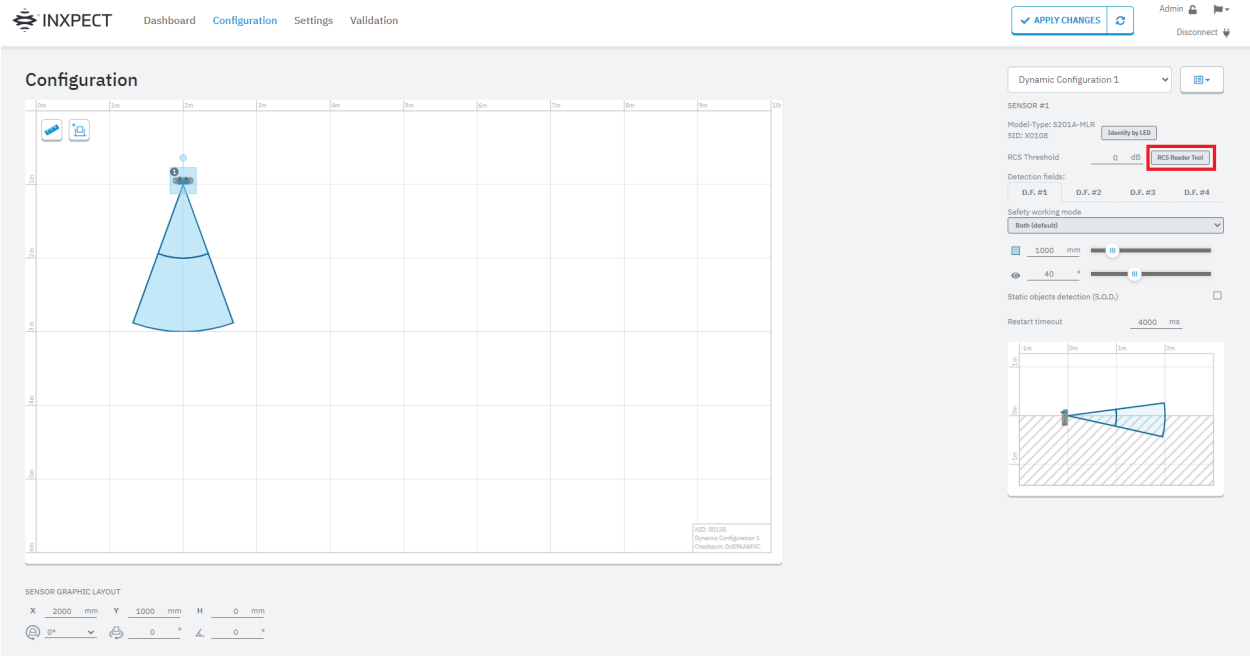

Figure 5 *RCS Reader Tool button*

3 Details of the RCS Reader Tool

Let's give a first glance at what the tool looks like (Figure 6).

The whiteboard in the center represents the field of view of the selected sensor.

On top of it, the targets are shown in the form of circles. The bigger the circle is, the greater its RCS is. Above the whiteboard, the minimum and maximum distances and angles of the acquisition are shown.

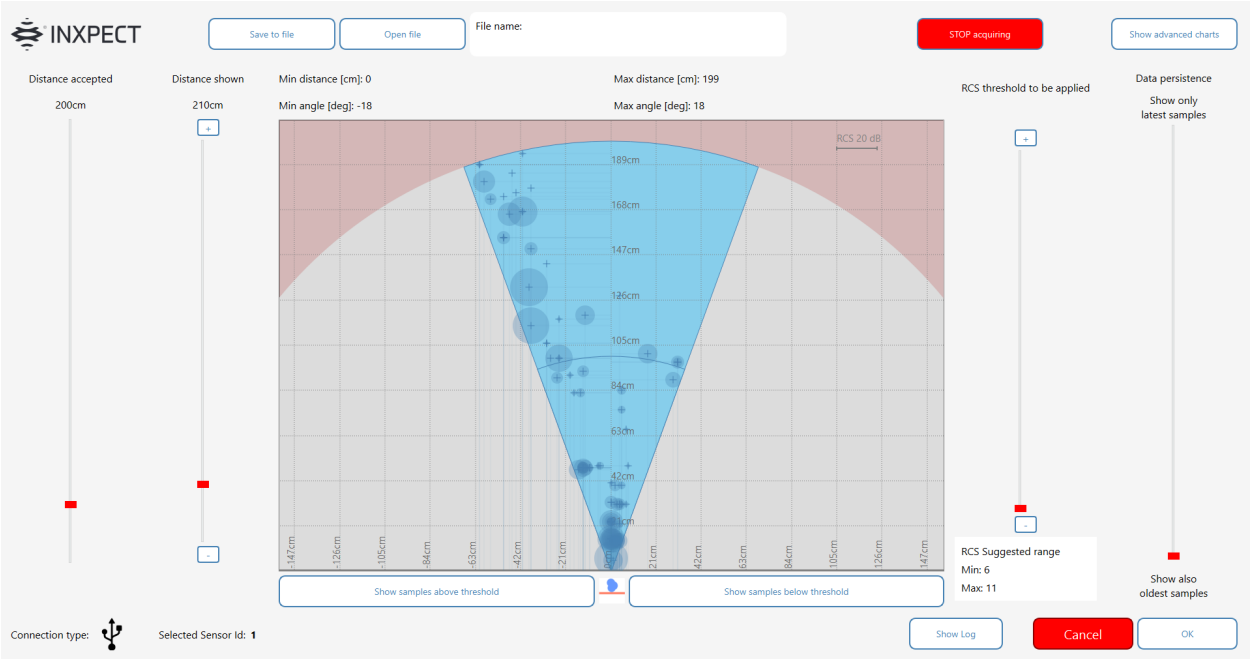

Figure 6 *A first view of the RCS Reader Tool*

On the left side of the main page (Figure 7), you can find two options related to the distance:

- **Distance accepted** [100 cm, 900 cm] allows you to filter out from the view the targets (and the reflections of the signal) farther than a specific distance.
- **Distance shown** [100 cm, 900 cm] is the maximum distance shown in the whiteboard; we can think of it as a scale of the whiteboard.

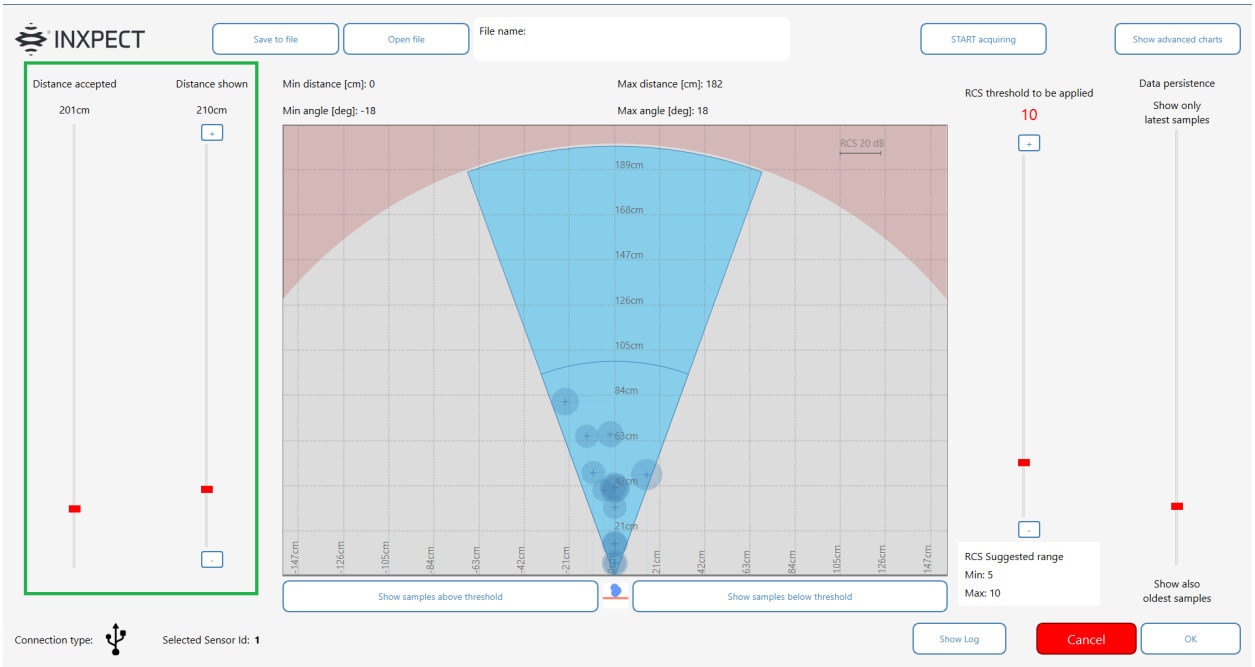

Figure 7 *RCS Reader Tool*

Just under the whiteboard (Figure 8), two buttons let us show either the targets above the set RCS threshold or below it. In this way, it is easier to understand if the RCS Threshold is the right one for our purpose or not.

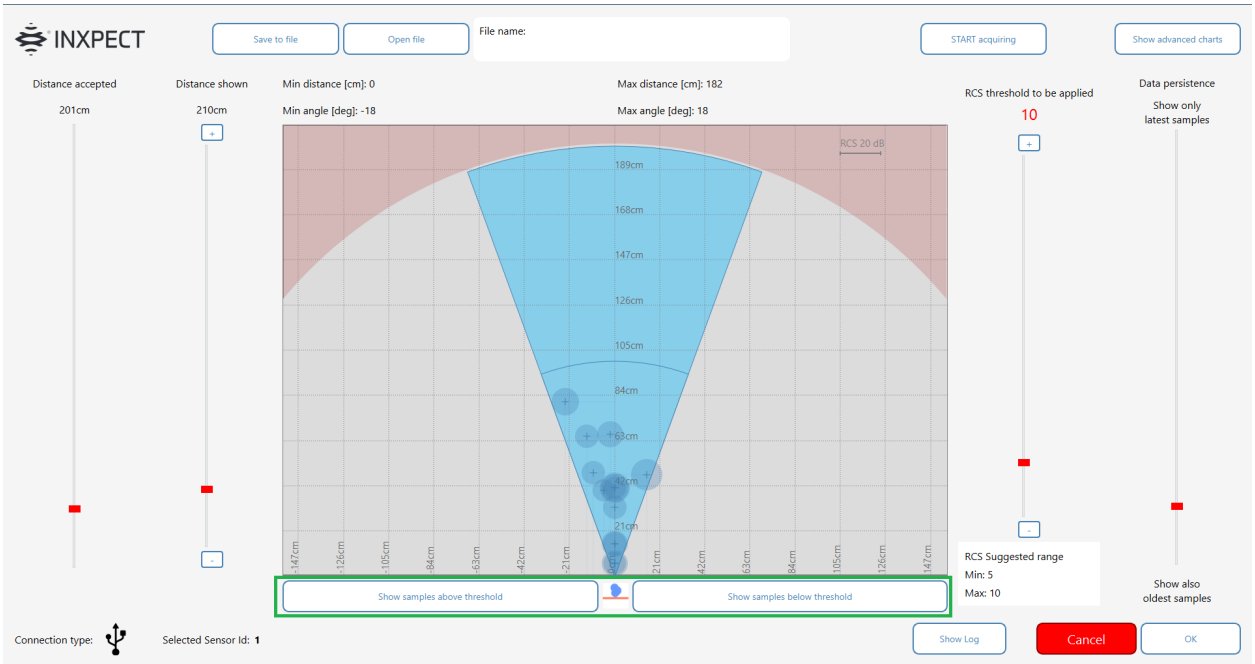

Figure 8 *RCS Reader Tool*

To the right of the whiteboard (Figure 9), two sliders are shown:

- **RCS threshold to be applied** [0 dB, 70 dB]
- **Data persistence**, that allows to show only the latest samples or even the older ones.

Moreover, **RCS Suggested Range** is an interval of values recommended for the RCS Threshold.

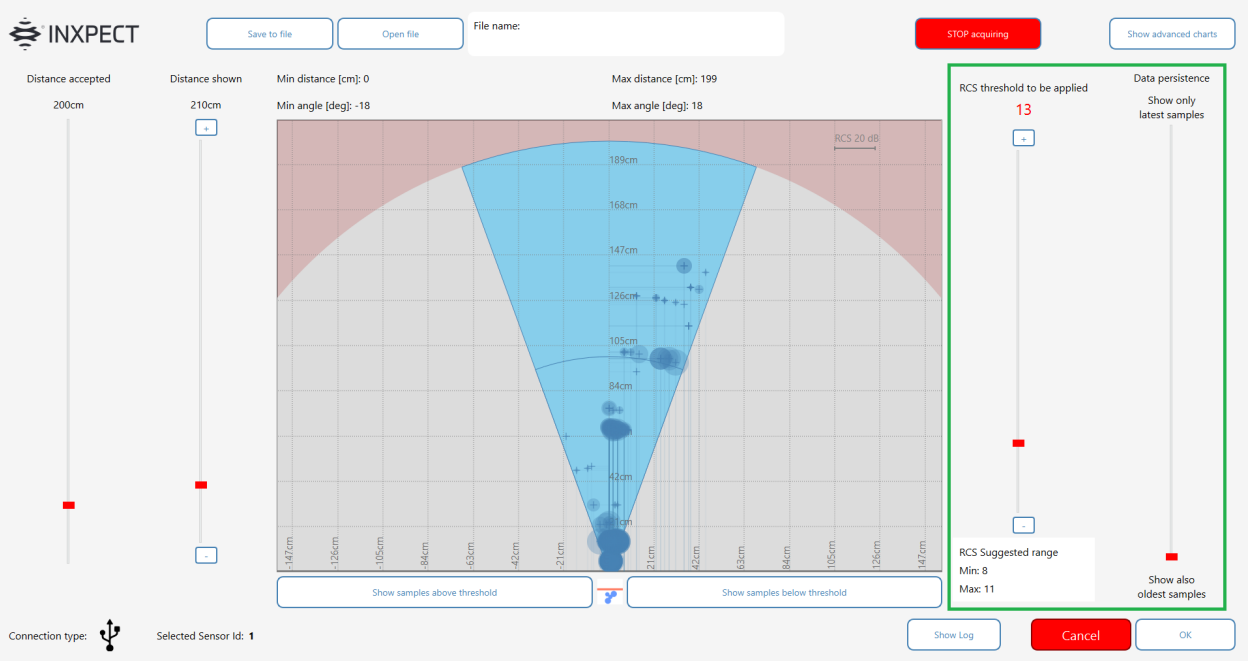

Figure 9 *RCS Reader Tool*

In the top part of the main page (Figure 10), you can see the following buttons:

- **Save to file** (.rcs format) the info related to the currently acquired targets; the values of the targets which are no longer shown on-screen are not saved in the file.
- **Open file** an acquisition (.rcs format)
- **START acquiring**, useful to erase the circles on the whiteboard and start a new acquisition of the targets in the area
- **Show/Hide advanced charts** (Figure 11), which opens a graphical representation of the targets acquired (**RCS chart**) or filtered (**Filtered chart**)

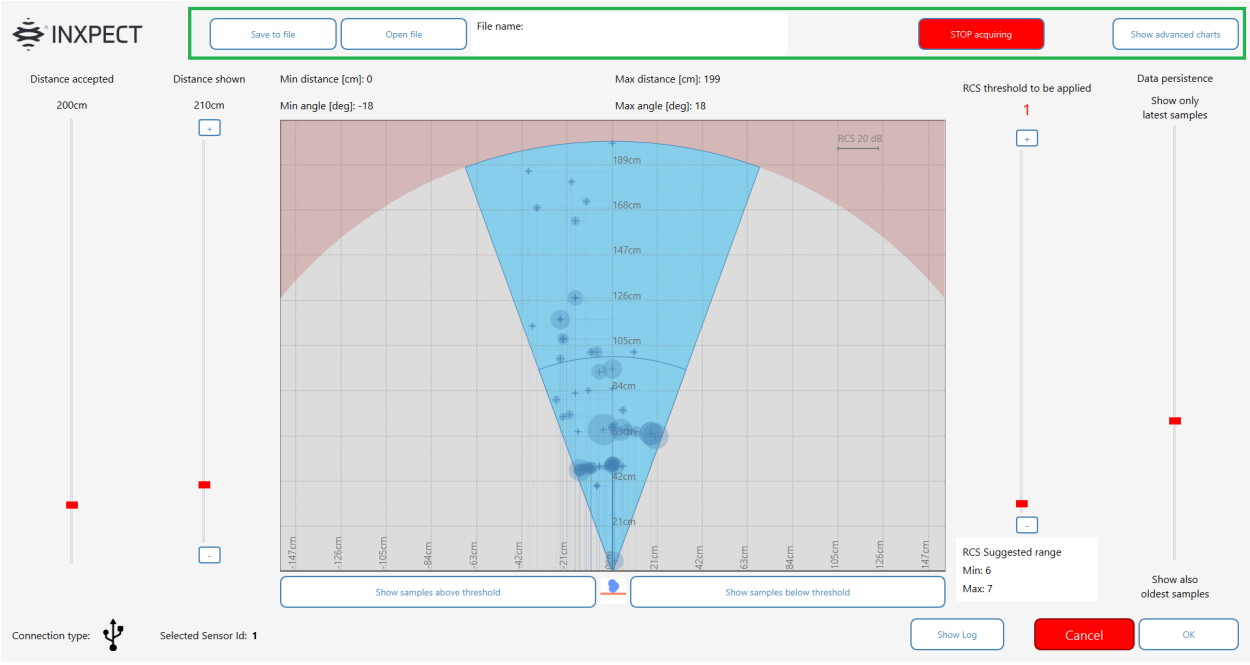

Figure 10 *RCS Reader Tool*

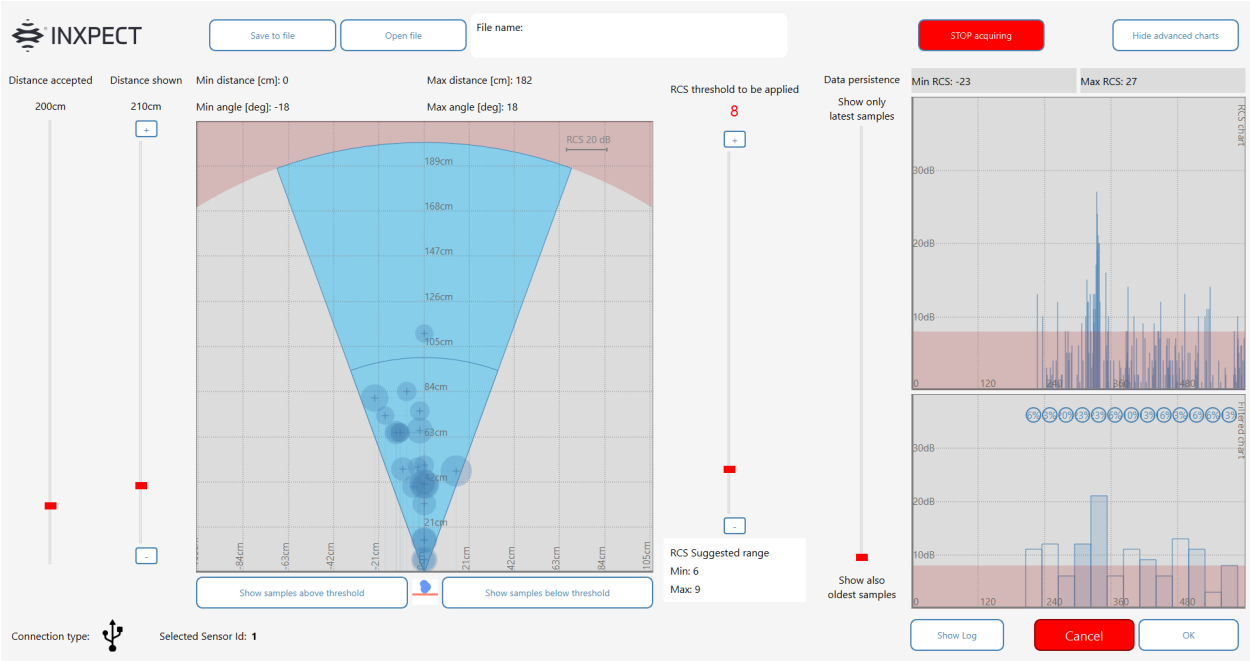

Figure 11 *Advanced charts*

Finally, the following options are available in the bottom part (Figure 12 and Figure 13):

- Information about the **Connection type** (HTTPS for Ethernet connection, or USB)
- Information about the **Node ID of the sensor** for which you would like to set an RCS Threshold higher than 0 dB (Custom target detection)
- the **Show/Hide log** button, that opens a window (Figure 14) with the log of the actions performed
- the **Cancel** button, that closes the tool without saving the RCS Threshold

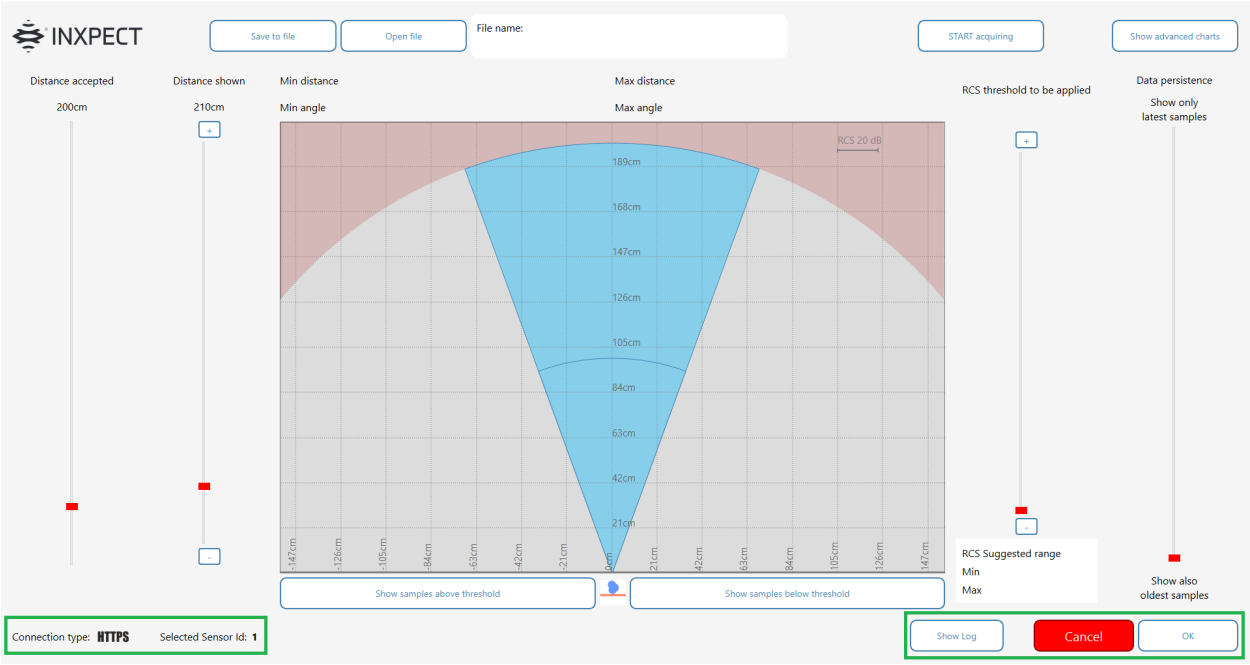

Figure 12 *RCS Reader Tool: HTTPS connection*

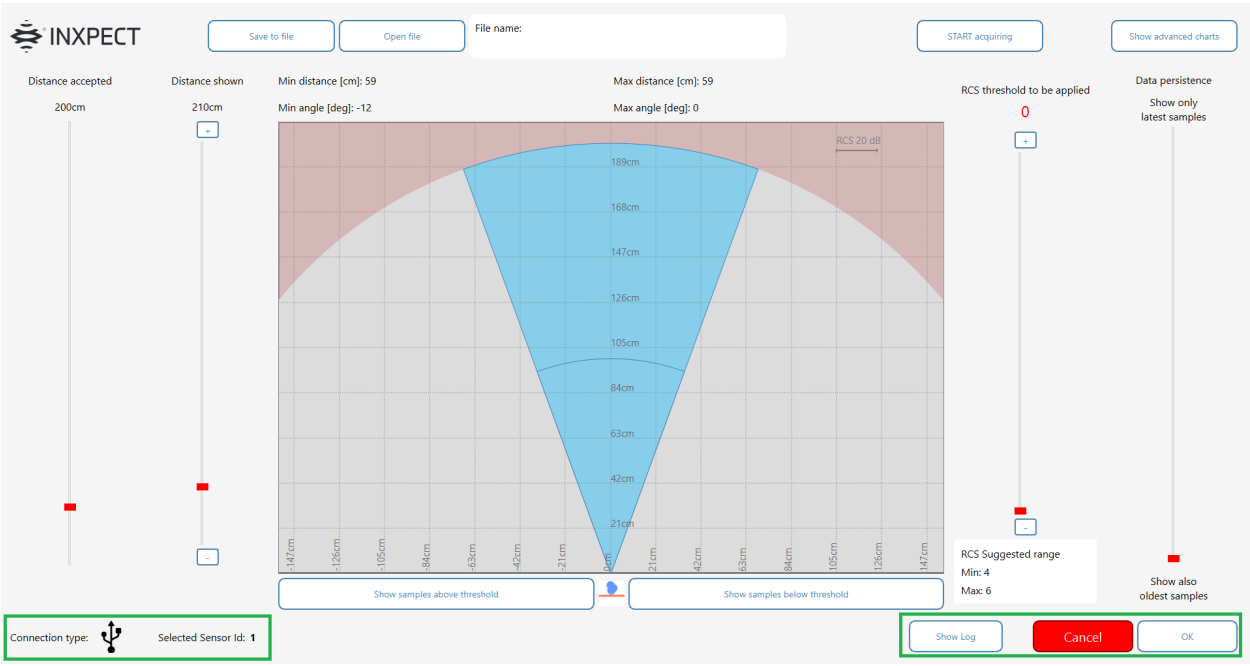

Figure 13 *RCS Reader Tool: USB connection*

Figure 14 *RCS Reader Tool: Action log window*